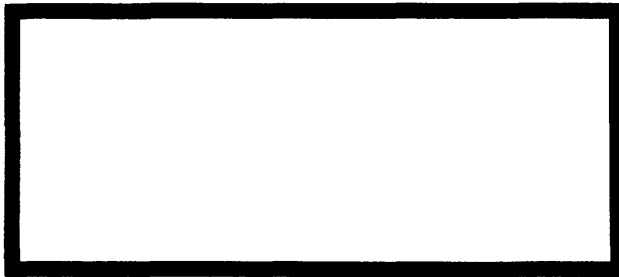**IBM** Machines

**IBM CONSULTANTS' MANUAL CHECKLIST
FOR MACHINES AND PROGRAMS**

Subscribers are responsible for keeping their manuals up to date. **The checklist provided with each monthly update reflects the current status of each page that should be in your manual.** The previous month's checklist is made obsolete when the current checklist is received.

Random Pages **(5 or less)** are available from IBM. Circle the page numbers needed, print your name and address in the box to the left, or attach your business card, and send the checklist to Central Files, IBM Corporation, 1133 Westchester Avenue, White Plains, NY 10604.

If you are missing more than 5 pages, you may have received an incomplete updating package. To satisfy your needs, please contact the marketing representative assigned to your account in your local IBM branch office.

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3278 DISPLAY STATION

Purpose: An enhanced cathode-ray tube (CRT) display station used in clusters with the 3274 Control Unit or the 3276 Control Unit Display Station for displaying alphameric data, and for entering data into and retrieving data from a System/3. A Keyboard, Selector Light-Pen, or both permit an operator to display and manipulate data on the screen in a flexible and efficient manner. With its set of basic and optional features, the 3278 meets both general-purpose and unique display requirements.

Model 2: For use with 3274 or 3276 to display up to 1920 characters . . . 24 lines of 80 characters each.

Model Changes: Not applicable. All features may be field installed. Features 1720 and 46XX (except for 4690) are CSU.

Highlights: Displays each character within a 7 x 14 dot matrix. (The 26 uppercase letters are developed in a 7 x 9 matrix.) There is a set of 94 characters: 26 uppercase letters, 26 lowercase letters, 10 numerals, and 32 special characters. A monocase switch is used for 3277 compatibility. Uses 3270 field formatting which permits individual fields of data on the screen to be program defined with various attributes such as alphameric, protected or unprotected, normal or intensified brightness, displayable or non-displayable, and Selector Light-Pen detection allowed or disallowed.

Operator Factors: The 3278 has an anti-glare screen. Indicators are displayed on the bottom row of the screen, outside the data display area, to provide useful operator information. Host display of data on the screen is accomplished without refresh interrupt (i.e., no blinking). The low profile keyboard provides a palm rest and has separators to help prevent accidental striking of control keys. The operator may select one of several cursor modes.

Editing Function: Cursor move, tab, home key, back tab, insert, delete, extended erase (erase to end-of-field, erase all keyboard input data, and erase entire screen) and cursor select keys are all basic for displays equipped with a keyboard. All alphameric, special symbol, and cursor move keys have typamatic capability. Double speed cursor typamatic is attained with a simultaneous depressing of the ALT key and a horizontal cursor positioning key.

Input Flexibility: A choice of keyboards or the Selector Light-Pen provide input flexibility. A Magnetic Slot Reader (optional) and, for 3278s attached to a 3274 Control Unit, a Magnetic Hand Scanner (optional) provide for the input of magnetically encoded data . . . See "Special Features" below. Fields of data can be selected by positioning the cursor and pushing the cursor select key, instead of using the Selector Light-Pen. Twelve Program Function (PF) keys are basic with all typewriter keyboards.

Security Functions: A special Non-Displayed Input mode provides for fields of data to be program-defined so that they will accept data entered from the keyboard without displaying the data on the screen. A Security Keylock (optional) prevents modification or display of data in the display buffer unless the key is turned to the "on" position. A Magnetic Slot Reader (optional) or a Magnetic Hand Scanner (optional) can also be attached. These capabilities allow customer-supplied security program routines and procedures to control access to data and audit of actions.

Problem Determination Procedures: Significant function has been designed into this unit to provide greater availability to the customer. This increased availability has been achieved through the use of problem determination and recovery procedures that are easily understood and used by the operator. The procedures are provided by the *Problem Determination Guide* manual that will be stored under the keyboard palm rest. See "Customer Responsibilities" below.

Customer Setup (CSU): The 3278 Model 2 is designated a customer setup device. The CSU allowance is 4 days.

For additional information on CSU, contact IBM.

Customer Responsibilities:

- Adequate site, system, and other vendor preparation.

- Receipt at customer's receiving dock, unpacking, and placement of 3278.

- Physical setup, connection of cables in customer access areas, switch settings, and check out.

- Contact Customer Engineering to make cable connections of IBM CSU units to IBM non-CSU units where customer access areas are not provided.

- Notify IBM of intent to relocate and follow IBM instructions for relocation.

- Use and follow the problem determination procedures and fill out a trouble report prior to calling for IBM service.

- Disconnecting, packing, and removal to the customer's shipping dock at the time of discontinuance appropriate instructions will be provided by IBM.

Prerequisites: Each 3278 requires a 3274 or 3276 with appropriate Terminal Adapters. See the M3274 or M3276 pages.

Publications: See KWIC Index G320-1621 or specific system bibliography.

SPECIFY

Default: Specify codes are not normally required to order a 3278. If codes are not specified, the machine is shipped with the following specifications:

- RPQs—Machine has no associated RPQs

- Voltage—120 V AC, 1-phase, 3-wire, 60 Hz

- Power Cable Plug—Non-locking

- Power Cable Length—2.8 meters (9 feet)

- Keyboard Cable Length—0.9 meters (3 feet)

If special circumstances require a deviation from the default values, the following codes may be specified:

1. RPQs: Specify #9841 if machine has any associated RPQs.

2. Power Cable Plug: Specify #9890 for locking plug.

3. Power Cable Length: If the standard 2.8 meter (9 feet) power cable is not desired, specify #9511 for a 1.8 meter (6 feet) cable, #9512 for a 3.7 meter (12 feet) cable, or #9513 for a 4.5 meter (15 feet) cable.

4. Keyboard Cable Length: If the standard 0.9 meter (3 feet) keyboard cable is not desired, specify #9399 for a 1.8 meter (6 feet) cable.

SPECIAL FEATURES

Note: Support of 3278 special features may require increments of 3274 control storage. When ordering any of the following special features, check the 3274 Control Storage Requirements tables to assure that adequate Extended Function Store is available.

Audible Alarm (#1090): An alarm, sounded under program control, to alert the operator to a special condition. This alarm, during keyboard operation, is also sounded when a character is entered into the next-to-last position on the screen. The operator may adjust the volume of the tone. **Maximum:** One.

Keyboard

Keyboards are provided with a standard 0.9 meter (3 feet) attachment cable. See "Specify" section for options.

(#4621) 75-Key EBCDIC Typewriter Keyboard, typewriter-like layout, movable, with 49 data keys and 26 control keys. Twelve program function keys are included in the top row of data keys through use of an alternate shift key.

(#4622) 75-Key EBCDIC Data Entry Keyboard, movable, with 35 data keys, 10 program function keys and 30 control keys.

(#4623) 75-Key EBCDIC Data Entry Keyboard, keypunch layout, movable, with 35 data keys, 10 program function keys and 30 control keys. This is the recommended keyboard for Data Entry.

(#4624) 75-Key ASCII Typewriter Keyboard, ASCII typewriter layout, movable, with 49 data keys and 26 control keys. Twelve program function keys are included in the top row of the data keys through use of an alternate shift key.

(#4627) 87-Key EBCDIC Typewriter Keyboard, typewriter-like layout, movable, with 49 alphameric data keys, 26 control keys, and 12 program function keys (24 total PF keys). Twelve of the program function keys are included in the top row of data keys through the use of an alternate shift key.

(#4628) 87-Key ASCII Typewriter Keyboard, ASCII typewriter-like layout, movable, with 49 alphameric data keys, 26 control keys, and 12 program function keys (24 total PF keys). Twelve of the program function keys are included in the top row of data keys and are available through the use of an alternate shift key.

Maximum: One of the above. The keyboard is set up by the customer. **Limitation:** Keyboards used on 3275 and 3277 machines are not interchangeable with keyboards used on 3276/3278/3279 machines.

Keyboard Numeric Lock (#4690): Provides the machine with the ability to lock keyboard #4621, #4622, #4623, #4624, #4627 or #4628 if a non-numeric key [other than 0-9, minus (–), decimal sign, or dup] is depressed in a pre-defined numeric-only field. **Maximum:** One. Contact Customer Engineering for installation.

Security Keylock (#6340): A lock and key which prevents modification or display of data in the display terminal when in the "off" position. **Maximum:** One.

Selector Light-Pen (#6351): A hand-held, pen-like device which permits the operator to select fields of data from a display for input to the host system. The Selector Light-Pen, while not being used, can be placed in a recess of the keyboard, which is for stowing incidental items. **Maximum:** One.

Switch Control Unit (#1720): Permits switching operational control of the display station between two different 3274 or 3276 control units. **Maximum:** One. **Customer Setup:** Yes.

Magnetic Reader Control (#4999): Provides the capability of attaching a Magnetic Slot Reader. (MSR) or Magnetic Hand Scanner (MHS) which read encoded information from a magnetic stripe. The MSR can be used when the 3278 is connected to either a 3274 or 3276, but the MHS can only be used when the 3278 is connected to a 3274 Control Unit. **Maximum:** One.

ACCESSORIES

The following items are available on a "Purchase Only" basis. For shipment with machine, order by using the feature number shown below.

Magnetic Hand Scanner (#9440/Part No. 4123495): The Magnetic Hand Scanner (MHS) attaches by a 1.5 meter (4.9 feet) coiled cable to a number of data entry and reporting devices that have an appropriate magnetic adapter feature. It allows the user to read magnetic stripe labels that are attached to shelves, cartons, machines, etc. It can also be used to read magnetic stripe tags which are hand-held or placed on a flat surface.

The MHS has three lights and a buzzer which provide feedback to the user on the status of the scanned data. It can read a stripe in either direction. **Field Installation:** Yes. **Prerequisite:** Magnetic Reader Control (#4999). See Note below.

Magnetic Slot Reader (#9441/Part No. 4123500): The Magnetic Slot Reader (MSR) attaches by a 1.5 meter (4.9 feet) cable to a number of data entry and reporting devices that have an appropriate magnetic adapter feature. The slot reader accommodates a wide range (height and length) of magnetic striped card stock and plastic badges including: job tickets, 80-column punch cards, identification badges, and credit cards.

The MSR has three lights and a buzzer which provide feedback to the user on the status of scanned data. Holes in the bottom of the MSR allow it to be fastened to an appropriate flat surface. **Field Installation:** Yes. **Prerequisite:** Magnetic Reader Control (#4999). See Note below. An *MHS/MSR Customer Service Manual*, GA24-3663, should be requested when ordering the MHS/MSR for field installation.

Note:

The following cable assemblies can be used to extend the Magnetic Hand Scanner and Magnetic Slot Reader distances. **Limitations:** Extension cables cannot be plugged into other extension cables.

Description	Feature/Part Number
6 meter (19.7 feet)	#9106/4832986
12 meter (39.4 feet)	#9107/4832987

Both the MHS and the MSR read magnetically encoded information from an alphameric character set; the MSR also reads the same 10-numerics-only character set as the 3277 Operator Identification Card Reader (#4600), which is not a subset of the alphameric character set. For a further description of both character sets, see *IBM 3270 Information Display System Character Set Reference*, GA27-2837. Either (*not both*) the alphameric or the 10-numerics-only character set may be selected for the 3274 Control Unit at customization

time for attached 3278s. The 3276 Control Unit Display Station and attached 3278s support only the MSR and the 10-numerics-only character set as used by the 3277. **Limitation:** If 10-numerics-only magnetic cards are coded with the Alternate End of Message character (hexidecimal C), they cannot be read by the MSR or MHS. The alphameric character set and the MHS are only supported on 3278s which are attached to 3274 Control Units. With the 10-numerics-only character set, the range of data characters that can be read is 7 to 37 at 75 BPI or 210 BPI (MSR only) and 7 to 118 at 127 BPI. A minimum of seven characters must be encoded between the start sentinel and end sentinel characters.

Locks and Keys: The 3278 with the Security Keylock (#6340) special feature is shipped with two keys, P/N 2577741. Additional keys may be purchased only from IBM. (Vendor will supply additional keys only to original purchaser.) Allow 2-3 weeks for shipment.

Keyboard Accessories:
The following keyboard accessories allow the customer to define and change the messages on the keytops of the 3278 Display Station keyboard. These accessories affect the keytops only and do not change any characters or functions of the display station.

Legendable Keytop: Consists of two parts: a molded key base and a clear plastic cover. The user may define unique keytop messages by writing on a piece of paper, affixing the paper to the keytop base, and sliding on the clear plastic cover. The keytop is available in three colors and with top keyboard row contour only (for example, the Clear key).

P/N 5188775	Legendable keytop, white
P/N 8627192	Legendable keytop, charcoal gray
P/N 8542831	Legendable keytop, light gray

Blank Keytop: For use as an unlabeled keytop or for customer engraved nomenclature. The keytop comes in three colors and is available with top keyboard row contour only (for example, the Clear key).

P/N 1853775	Blank keytop, white
P/N 1853567	Blank keytop, charcoal
P/N 1853563	Blank keytop, light gray

Keytop Extractor: A small tweezers-like device with which you can pull a keytop off its stem. The customer should use the extractor, P/N 9900373, whenever a keytop is to be removed from a keyboard.

Cables

Cables and/or associated parts may be purchased from IBM or from some other source. For the proper identification, installation, and application of the subject cables and parts, see the *3270 Installation Manual--Physical Planning,* GA27-2787, and the *Coaxial Cable and Accessories Manual,* GA27-2805. The customer is responsible for installation and maintenance of these cables and their associated parts.

A/N	2577672	Cable Assembly Indoor
B/N	0323921	Coax Wire (Note 1)
P/N	1836418	Connector Kit (Note 1)
A/N	1833108	Cable Assembly Outdoor
B/N	5252750	Coax Wire (Note 2)
P/N	1836419	Connector Kit (Note 2)
P/N	2621414	Modification Kit (Note 3)
P/N	1833106	Station Protector Attachment Kit (Note 5)
P/N	5252643	Adapter (Note 7)
P/N	1830818	Station Protector Kit, Gas (Note 4)
P/N	5252899	Station Protector Element, Gas (Note 6)

Note 1 Coax wire and one connector kit (includes two connectors, P/N 1836444) required for each indoor cable assembly.

Note 2 Coax wire and one connector kit (includes two connectors, P/N 1836447) required for each outdoor cable assembly.

Note 3 Customers replacing 2260 Display Stations may utilize the existing installed cables by use of this modification kit. One kit required for each cable.

Note 4 Must be used with outdoor cable assembly when installed outdoors (either above or below ground level. One kit required for each cable assembly.

Note 5 Used to attach outdoor cable to station protector. One kit required for each cable assembly.

Note 6 Replacement station protector elements.

Note 7 Used to join two P/N 2577672 or two P/N 1833108 cable assemblies.

3279 COLOR DISPLAY STATION

Purpose: A high quality color cathode ray tube (CRT) display station used in clusters with the 3274 Control Unit or the 3276 Control Unit Display Station for displaying alphameric data, and for entering data into and receiving data from a System/3. Data fields may be displayed in a choice of four colors. A Keyboard, Selector Light Pen, or both, permit an operator to display and manipulate data on the screen in a flexible and efficient manner.

Model 2A: For use with 3274 or 3276 to display up to 1920 characters in 24 lines of 80 characters each

Model Changes: Model changes from 2A to 2B and from 3A to 3B are field installable. Changes from Model 2x to Model 3x are not recommended for field installation. *Note:* Models 2B, 3A and 3B are not supported by System/3. All features except 6340 may be field installed. Features 1720 and 46XX (except 4690) are CSU.

Highlights: Characters are displayed within a 9 x 12 dot matrix. (The 26 uppercase letters are developed in a 7 x 9 dot matrix.) A set of 94 characters are displayed: 26 uppercase alphabetics, 26 lowercase alphabetics, 10 numerals, and 32 special characters. A monocase switch provides the capability of switching to uppercase alphameric mode. The 3279 uses 3270 field formatting capability which permits individual fields of data on the screen to be program defined with various attributes such as: protected/unprotected, normal/intensified intensity, displayable/nondisplayable, and selector light pen detection allowed/disallowed. An audible alarm is provided.

The 3279 uses the 3270 formatting attributes of protect and intensify for the additional purpose of displaying individual fields in base colors according to the following table:

Protected and intensified	white
Unprotected and intensified	red
Protected and normal intensity	blue
Unprotected and normal intensity	green

The 3279 Model 2A attaches to the 3276 Model 2 and to all models of the 3274.

The operator may initiate a local display-to-printer (monochrome or color 3287) copy function (i.e., without host intervention) from the keyboard of a 3279. When the 3279 is attached to a 3274 Control Unit, the printer designation is controlled by operator use of the IDENT key and by a customer definable matrix loaded from the system diskette at IML time. For further details, see the *IBM 3270 Information Display System Planning and Setup Guide* (GA27-2827).

When the 3279 is attached to a 3276, the printer designation is controlled by operator use of the IDENT key and by a configuration default matrix. This matrix is determined by the relative positions of devices attached to the 3276.

Operator Factors: The 3279 has an anti-glare screen to improve contrast and readability. Indicators are displayed in symbols on the bottom row of the screen, outside the data area, to provide useful operator information. These symbols, except those indicating color attributes, appear in blue. Display of data on the screen is accomplished without refresh interrupt (i.e., no blinking). The low-profile keyboard provides a palm rest and has separators to help prevent accidental striking of control keys. The operator may select one of several cursor modes. The cursor is displayed in white on the 3279.

A base color switch allows the 3279 Model 2A to run in 'monochrome mode' for 3278 compatibility. In this mode, fields are displayed in green for normal intensity and in white for high intensity.

For comfortable viewing, the CRT face is inclined and may be adjusted to 15 degrees, 17.5 degrees or 20 degrees from the vertical.

The operator may adjust the color convergence quickly and easily by using a simple keyboard procedure with a special screen test pattern.

Editing Functions: Cursor move, tab, home key, back tab, insert, delete, extended erase (erase to end-of-field, erase all keyboard input data, and erase entire screen) and cursor select keys are all basic for 3279 displays. All alphameric, special symbol, and cursor move keys have repeat action capability. Double speed cursor repeat action is attained with simultaneous depressing of the ALT key and a horizontal cursor positioning key.

Input Flexibility: A choice of keyboards and/or the Selector Light Pen provide input flexibility. A Magnetic Slot Reader (optional) or, for 3279s attached to a 3274 Control Unit, a Magnetic Hand Scanner (optional) is available for the input of magnetically coded data . . . see "Special Features" and "Accessories" below. Fields of data can be selected by positioning the cursor and operating the cursor select key, instead of by using the Selector Light Pen. Twelve Program Function (PF) keys are basic with all typewriter keyboards.

Security Functions: A special Non-Displayed Input mode provides for fields of data to be program defined so that they will accept data entered from the keyboard without displaying the data on the screen. A Security Keylock (optional) prevents modification or display of data in the display terminal unless the key is turned to the "on" position. These capabilities, and the terminal's ability to identify itself to the host program, allow customer-supplied security program routines to help control access to data and aid audit of actions. A Magnetic Slot Reader (optional), or for 3279s attached to a 3274 Control Unit, a Magnetic Hand Scanner (optional) is available to enter system user identification.

Problem Determination Procedures: Significant function has been designed into this unit to provide greater availability to the customer. This increased availability has been achieved through the use of problem determination and recovery procedures that are easily understood and used by the operator. The procedures are provided by the Problem Determination Guide manual that can be stored under the keyboard palm rest. See "Customer Responsibilities" below.

Customer Setup (CSU): The 3279 Model 2A is designated a customer setup device. The customer setup allowance is 4 days. For additional information on CSU, contact IBM.

Customer Responsibilities: The customer is responsible for:

- Adequate site, system, and other vendor preparation.

- Receipt at the customer's receiving dock, unpacking, and placement of the 3279.

- Physical setup, connection of cables in customer access areas, switch setting, and check out.

- Contacting Customer Engineering to make cable connections of IBM CSU units to non-CSU units where customer access areas are not provided.

- Notifying IBM of intent to relocate and following IBM instructions for relocation.

- Using and following the problem determination procedures and filling out a trouble report prior to calling for IBM service.

- Disconnecting, packing, and removal to the customer's shipping dock at the time of discontinuance. Appropriate instructions will be provided by IBM.

Prerequisites: Each 3279 requires a 3274 or 3276 with appropriate features. See the M3274 or M3276 pages.

Attachment	Device Adapter on Control Unit
3274-1C	Type A Adapter
3274-51C	None
3276-2	Color Display Attachment Feature (#1950)

Note: 3279 attachment to a 3274 may require an increment of 3274 control storage. Refer to 3274 control storage requirement tables to ensure that adequate Extended Function Store is available if required.

Each 3279 must be equipped with a keyboard.

Publications: See *KWIC Index* G320-1621 or specific system bibliography

SPECIFY

Default—Specify codes may not be necessary when ordering a 3279. If codes are not specified, the machine is shipped with the following specifications:

- Voltage—120 V, 1-phase, 3-wire, 60 Hz
- Power Cable Plug non-locking (#9891)
- Power Cable Length —2.8 meters (9 feet)
- Keyboard Cable Length—0.9 meters (3 feet)

If special circumstances require a deviation from the default values, the following codes may be ordered:

1. Power Cable: If standard 2.8 meter (9 feet) power cable is not desired, specify #9511 for 1.8 meter (6 feet) cable or #9513 for 4.5 meter (15 feet) cable.

2. Power Cable Plug: If locking plug required, specify #9890.

3. Keyboard Language: All 3279s in a 3274/3276 cluster must specify the same keyboard language as that used on the 3274/3276.

SPECIAL FEATURES

Switch Color Unit (#1720): This feature, when installed on a 3279 Color Display Station, permits switching operational control of that display between two different control units. **Maximum:** One. **Customer Setup:** Yes.

Keyboard

(#4621) 75-key EBCDIC Typewriter Keyboard, typewriter-like layout, movable, with 49 data keys and 26 control keys. Twelve program function keys are included in the top row of data keys and are available through use of an alternate shift key.

(#4622) 75-key EBCDIC Data Entry Keyboard, movable, with 35 data keys, 10 program function keys, and 30 control keys.

(#4623) 75-key EBCDIC Data Entry Keyboard, keypunch layout, movable, with 35 data keys, 10 program function keys, and 30 control keys. This is the recommended keyboard for data entry.

(#4624) 75-key ASCII Typewriter Keyboard, ASCII typewriter-like layout, movable, with 49 data keys and 26 control keys. Twelve program function keys are included in the top row of the data keys and are available through use of an alternate shift key.

(#4627) 87-key EBCDIC Typewriter Keyboard, typewriter-like layout, movable, with 49 alphameric data keys, 26 control keys, and 12 program function keys (24 total PF keys). Twelve of the program function keys are included in the top row of data keys and are available through the use of the alternate shift key.

(#4628) 87-key ASCII Typewriter Keyboard, ASCII typewriter-like layout, movable, with 49 alphameric data keys, 26 control keys, and 12 program function keys (24 total PF keys). Twelve of the program function keys are included in the top row of the data keys and are available through the use of an alternate shift key.

Limitations: Each 3279 Color Display Station must be equipped with a keyboard. Keyboards used on 3275/3277 machines are not interchangeable with keyboards used on 3276/3278/3279 machines. **Maximum:** One of the above. The keyboard is set up by the customer. A 0.9 meter (3 feet) keyboard cable is provided as standard.

Keyboard Numeric Lock (#4690): Provides the machine with the ability to lock keyboard #4621, #4622, #4623, #4624, #4627, or #4628 if a non-numeric key [other than 0-9, minus (—), decimal sign, or dup] is operated in a predefined numeric-only field. **Maximum:** One. Contact local Customer Engineering for installation.

Magnetic Reader Control (#4999): Provides for attaching a Magnetic Slot Reader or a Magnetic Hand Scanner which reads encoded information from a magnetic stripe. The MSR can be used when the 3279 is connected to either a 3274 or 3276, but the MHS can be used only when the 3279 is connected to a 3274 Control Unit. **Maximum:** One.

Security Key Lock (#6340): A lock and key which prevents modification or display of data in the display terminal when in the "off" position. **Maximum:** One. **Field Installation:** Not recommended.

Selector Light Pen (#6351): Hand-held, pen-like device which permits the operator to select fields of data from a display for input to the host system. The Selector Light Pen will detect on any color. The Selector Light Pen, while not being used, can be placed in a recess of the keyboard, which is for stowing incidental items. Selector Light Pen (and Cursor Select) operations include a designator character " & ". When this designator is used, the Read Modified operation returns both the addresses and the data of all modified fields on the screen. **Maximum:** One.

ACCESSORIES

The following items are available on a purchase only basis. For shipment with machine, order by using the feature number shown below.

Mercury Battery (Part #1743456): Provides power to sustain the convergence parameters in a 3279 when normal power is not present. This supply item is a 4.14 volt non-rechargeable mercury battery. It has a shelf life of one year under normal conditions and can be expected to provide 3.5 years of normal operation. **Field Installation:** Yes, by customer. *Note:*

Discharged battery should be returned to IBM for proper disposal.

Locks and Keys: The 3279 with the Security Keylock (#6340) special feature is shipped with two keys, P/N 2577741. Additional keys may be purchased only from IBM (vendor will supply additional keys only to original purchaser). Allow 2-3 weeks for shipment.

Keyboard Accessories:

The following keyboard accessories allow the customer to define and change the messages on the keytops of the 3279 Display Station keyboard. These accessories affect the keytops only and do not change any characters or functions of the display station.

Legendable Keytop: Consists of two parts: a molded key base and a clear plastic cover. The user may define unique keytop messages by writing on a piece of paper, affixing the paper to the keytop base, and sliding on the clear plastic cover. The keytop is available in three colors and with top keyboard row contour only (for example, the Clear key).

P/N 5188775	Legendable keytop, white
P/N 8627192	Legendable keytop, charcoal gray
P/N 8542831	Legendable keytop, light gray

Blank Keytop: For use as an unlabeled keytop or for customer engraved nomenclature. The keytop comes in three colors and is available with top keyboard row contour only (for example, the Clear key).

P/N 1853775	Blank keytop, white
P/N 1853567	Blank keytop, charcoal
P/N 1853563	Blank keytop, light gray

Keytop Extractor: A small tweezers-like device with which you can pull a keytop off its stem. The customer should use the extractor, P/N 9900373, whenever a keytop is to be removed from a keyboard.

Cables

Cables and/or associated parts may be purchased from IBM or from some other source. For the proper identification, installation, and application of the subject cables and parts, see the *3270 Installation Manual—Physical Planning,* GA27-2787, and the *Coaxial Cable and Accessories Manual,* GA27-2805. The customer is responsible for installation and maintenance of these cables and their associated parts.

A/N	2577672	Cable Assembly Indoor
B/N	0323921	Coax Wire (Note 1)
P/N	1836418	Connector Kit (Note 1)
A/N	1833108	Cable Assembly Outdoor
B/N	5252750	Coax Wire (Note 2)
P/N	1836419	Connector Kit (Note 2)
P/N	2621414	Modification Kit (Note 3)
P/N	1833106	Station Protector Attachment Kit (Note 5)
P/N	5252643	Adapter (Note 7)
P/N	1830818	Station Protector Kit, Gas (Note 4)
P/N	5252899	Station Protector Element, Gas (Note 6)

Note 1 Coax wire and one connector kit (includes two connectors, P/N 1836444) required for each indoor cable assembly.

Note 2 Coax wire and one connector kit (includes two connectors, P/N 1836447) required for each outdoor cable assembly.

Note 3 Customers replacing 2260 Display Stations may utilize the existing installed cables by use of this modification kit. One kit required for each cable.

Note 4 Must be used with outdoor cable assembly when installed outdoors (either above or below ground level. One kit required for each cable assembly.

Note 5 Used to attach outdoor cable to station protector. One kit required for each cable assembly.

Note 6 Replacement station protector elements.

Note 7 Used to join two P/N 2577672 or two P/N 1833108 cable assemblies.

Magnetic Hand Scanner (#9440/Part #4123495): The Magnetic Hand Scanner (MHS) attaches by a 1.5 meter (4.9 feet) coiled cable to a 3279 that has a Magnetic Reader Control special feature. It allows the user to read magnetic stripe labels that are attached to shelves, cartons, machines, etc. It can also be used to read magnetic stripe tags which are hand-held or placed on a flat surface.

The MHS has three lights and a buzzer which provide feedback to the user on the status of the scanned data. It can read a stripe in either direction. **Field Installation:** Yes. **Prerequisite:** Magnetic Reader Control (#4999). See Note below.

Magnetic Slot Reader (#9441/Part #4123500): The Magnetic Slot Reader (MSR) attaches by a 1.5 meter (4.9 feet) cable to a 3279 that has a Magnetic Reader Control special feature. The slot reader accommodates a wide range (height and length) of magnetic striped card stock and plastic badges including job tickets, magnetic striped 80-column cards, operator identification badges, and large and small credit cards.

The MSR has three lights and a buzzer which provide feedback to the user on the status of scanned data. Holes in the bottom of the MSR allow for fastening it to an appropriate flat surface. **Field Installation:** Yes. **Prerequisite:** Magnetic Reader Control (#4999). See Note below.

Note:

The following cable assemblies can be used to extend the Magnetic Hand Scanner and Magnetic Slot Reader distances. **Limitations:** Extension cables cannot be plugged into other extension cables.

Description	*Feature/Part Number*
6 meter (19.7 feet)	#9106/4832986
12 meter (39.4 feet)	#9107/4832987

The following *MSR/MHS Customer Service Manual* should be ordered: GA24-3663.

Both the MHS and MSR read magnetically encoded information from an alphameric character set. The MSR also reads the same 10-numerics-only character set as the 3277 Operator Identification Card Reader (#4600), which is not a subset of the alphameric character set. For a further description of both character sets, see *IBM 3270 Information Display System Character Set Reference* (GA27-2837). Either (not both) the alphameric or the 10-numerics-only character set may be selected for the 3274 Control Unit at customization time for attached 3278s and 3279s. The 3276 Control Unit Display Station and attached 3278s and 3279s support only the MSR and the 10-numerics-only character set as used by the 3277.

IBM Machines

Numeric and alphameric character set capacities are as follows:

MSR/MHS	Minimum Number of Hex Codes between Start Sentinel and End Sentinel Characters	Maximum Number of Characters between Start Sentinel and End Sentinel Characters	Bit Density	
			Bits per Inch	Bits per mm
3277 Like	7	37	75	3
10-Numeric Character Set	7	118	127	5
Alphameric Character Set*	7	37 numerics	75	3
	7	18 nonnumerics	75	3
	7	118 numerics	127	5
	7	59 nonnumerics	127	5
	7	37 numerics	**210	8.3

* 1 Hex Code = 1 numeric character
  2 Hex Codes = 1 non numeric character
** MSR only

Note: Full width encoding is recommended for the MSR and is required for the MHS.

Maximums shown are for all-numeric or for all-non-numeric characters. If a combination of numeric and non-numeric characters is recorded, the total number of hex codes must not exceed the numeric character maximum. For example: At 127 bpi, a combination of 60 numeric and 20 non-numeric characters is permissible.

Limitation: If 10-numerics-only magnetic cards are coded with the Alternate End of Message character (hexadecimal C), they cannot be read by the MSR or MHS. The alphameric character set and the MHS are only supported on 3278s and 3279s which are attached to 3274 Control Units.

A variety of magnetic documents, tags, and labels which the MSR and MHS can read may be obtained from the IBM Systems Supplies Division. Some of them, depending on their length, can be encoded by devices such as the 3642 Encoder Printer. For complete information on the availability of pre-encoded magnetic striped plastic cards, contact an SSD Marketing Representative.

3284 PRINTER

Purpose: Provides hard copy output at a speed of 40 cps.

Models

Model 1: Provides storage of 480 characters and attaches to:

- 3271 Model 1 or 2
- 3272 Model 1 or 2
- 3274
- Local Display Adapter (#4702 on System/3 Model 8 or 12)
- Display Adapter (#4601 on System/3 Model 15)
- 3284 Attachment (#7901 on System/3 Model 15)
- System/3 Model 4 as local work station.

For use with System/3, see below.

Model 2: Provides storage of 1,920 characters and attaches to:

- 3271 Model 2
- 3272 Model 2
- 3274
- Local Display Adapter (#4702 and #4705 on 5408 or 5412)
- Display Adapter (#4601 on System/3 Model 15)
- System/3 Model 4 as local work station (#4705 on 5404).

For use with System/3, see below.

Model 3:

Attaches to, and uses the storage buffer of, a 3275 Display Station Model 1, 2, or 3.

Also attaches to, and uses the storage buffer of, a 5275 Direct Numerical Control Station.

Model Changes: Model changes between Model 1 and Model 2 are field installable. Model 3 is field installable on the 3275 or 5275 but is not interchangeable with a Model 1 or Model 2.

Highlights: Provides hard copy output at a speed of 40 cps with the EBCDIC character set (for ASCII character sets, see "Specify" below).

Model 1 and 2 may print from the CPU or the contents of a 3277 Display Station or 3284 or 3286/3287 printer buffer via the 3271, 3272, or 3274 Control Unit.

Model 3 prints the contents of the buffers of the 3275 Display Station or the 5275 Direct Numerical Control Station.

The unit has a pin feed platen that enables the use of margin-punched continuous forms paper. Specify 120, 126, or 132 print positions. See "Specify". Line spacing is six lines/inch. Matrix characters are formed by 7 vertical wires printing dots in up to 4 of 7 possible horizontal positions. Use of the underscore in conjunction with another character will overprint the lowest dot in that character and is not recommended.

Up to 6-part forms can be printed with a maximum thickness of .018 inches (for optimum feeding and stacking, no more than three parts are recommended). Forms lengths can be 3 inches to 14 inches in increments of 1/6 inch. Card stock continuous forms are not recommended. Refer to GA24-3488 for forms design considerations and limitations.

For Local Work Station on System/3 Model 4: 3284 Printers (Models 1 and 2) may be intermixed with 3277 Display Stations (Models 1 and 2) and 3286 Printers (Models 1 and 2) and 3287 Printers (Models 1 and 2) and 3288 Line Printers (Model 2) for a maximum of 5 devices attached to the 5404.

Specify #9089 for EBCDIC Character Set. A 3271, 3272, or 3274 Control Unit is not required. A cable order is required. See "Specify" below for voltage and cable ordering information.

For Local Display Adapter on System/3 Model 8 or Model 12: 3284 Printers (Models 1 and 2) may be intermixed with 3277 Display Stations (Models 1 and 2) and 3286 Printers (Models 1 and 2) and 3287 Printers (Models 1 and 2) and 3288 Printers (Model 2) for a maximum of 12 devices attached via the Local Display Adapter (#4702) and its subfeatures on the 5408 or 5412. A 3271, 3272, or 3274 Control Unit is not required. A cable is required. Specify #9089 for EBCDIC Character Set. Not compatible with ASCII Character Sets. See "Specify" below for voltage and cable ordering information.

For Console Use with System/3 Model 15: A 3284 Model 1 is optional and is primarily used to provide console message logging. For Voltage, specify #9881 ... For Character Set, specify #9089 ... For Pin Feed Platen, specify as shown below. No cable order is required. **Prerequisite**: 3284 Attachment (#7901) on the 5415.

For Display Adapter on System/3 Model 15: 3284 Printers (Models 1 and 2) may be intermixed with 3277 Display Stations (Models 1 and 2) and 3286 Printers (Models 1 and 2) and 3287 Printers (Models 1 and 2) and 3288 Printers (Model 2) for a maximum of 30 devices attached via the Display Adapter (#4601/#4602) on the 5415. A 3271, 3272, or 3274 Control Unit is not required. A cable is required. Specify #9089 for EBCDIC Character Set. Not compatible with ASCII Character Set. See "Specify" below for voltage and cable ordering information.

Prerequisites:

Model 1: A 3271 Model 1 or 2, a 3272 Model 1 or 2, 3274, or #7901 on a 5415.

Model 2: A 3271 Model 2, a 3272 Model 2, or 3274.

Model 3: A 3275 Model 1, 2 or 3 with Printer Adapter (#5550) or a 5275 with Printer Adapter (#5555).

Publications: *System/370 System Summary*, GA22-7001

Supplies: A black ribbon, P/N 1136970 or equivalent, is required.

SPECIFY

1. Voltage (115 V AC, 1-phase, 3-wire, 60 Hz): #9880 for locking plug, or #9881 for non-locking plug.

   Note: The Hospital Grade Plug, RPQ 8K0696 (No-charge), is required for Hospital General Patient care areas. This RPQ is **NOT** field installable.

2. Pin Feed Platen: #9162 for 126 print positions (13-1/8 inches hole-to-hole), or #9167 for 120 print positions (12-1/2 inches hole-to-hole), or #9168 for 132 print positions (13-7/8 inches hole-to-hole). *Note:* Do not order #9167 or #9168 unless paper is available in your area.

3. Character Set: Specify one of the following:

   (#9089) for EBCDIC Character Set (available at time of manufacture only) ... provides the 64 ASCII characters described on the EBCDIC typewriter keyboard. #9089 required if used with the 3275 Model 3. **Prerequisite**: If used with the 3271, EBCDIC Transmission Code (#9761) required on the 3271.

(#9091) for ASCII Character Set A (available at time of manufacture only) ... provides the 64 ASCII characters but substitutes the Logical OR (|) and Logical NOT (¬) in place of the exclamation mark(!) and circumflex (^). **Prerequisite:** If used with the 3271, ASCII Transmission Code (#9762) is required on the 3271.

(#9092) for ASCII Character Set B (available at time of manufacture only) ... provides the standard 64 ASCII characters. **Prerequisite:** If used with the 3271, ASCII Transmission Code (#9762) is required on the 3271.

4. Cables: See "Accessories" for cable ordering instructions. For cable specifications, see the *System/370 Installation Manual—Physical Planning*, GC22-7004, or the *3270 Installation Manual—Physical Planning*, GA27-2787.

ACCESSORIES

Forms Stand #4450: This two-shelf forms stand permits placement of continuous forms on the stand above floor level and provides for stacking forms after printing. For shipment with the machine or for shipment to the field, order by feature number.

Cables

Cables and/or associated parts to attach the subject machines to the 3271/3272/3274 Control Units, the Local Display Adapter (#4702) on System/3 Model 8 and Model 12, or the Display Adaptor (#4601) on System/3 Model 15 or directly to the System/3 Model 4, may be purchased from IBM or from some other source. For proper identification, installation, and application of the subject cables and parts, see the *3270 Installation Manual —Physical Planning*, GA27-2787, and the *Coaxial Cable and Accessories Manual*, GA27-2805. The customer is responsible for installation and maintenance of these cables and their associated parts.

A/N	2577672	Cable Assembly Indoor
B/N	0323921	Coax Wire (Note 1)
P/N	1836418	Connector Kit (Note 1)
A/N	1833108	Cable Assembly Outdoor
B/N	5252750	Coax Wire (Note 2)
P/N	1836419	Connector Kit (Note 2)
P/N	2621414	Modification Kit (Note 3)
P/N	1833106	Station Protector Attachment Kit (Note 5)
P/N	5252643	Adapter (Note 7)
P/N	1830818	Station Protector Kit, Gas (Note 4)
P/N	5252899	Station Protector Element, Gas (Note 6)

Allow a lead time of 120 days when ordering.

Note 1 Coax wire and one connector kit (includes two connectors, P/N 1836444) required for each indoor cable assembly.

Note 2 Coax wire and one connector kit (includes two connectors, P/N 1836447) required for each outdoor cable assembly.

Note 3 Customers replacing 2260 Display Stations may utilize the existing installed cables by use of this modification kit. One kit required for each cable.

Note 4 Must be used with outdoor cable assembly when installed outdoors (either above or below ground level. One kit required for each cable assembly.

Note 5 Used to attach outdoor cable to station protector. One kit required for each cable assembly.

Note 6 Replacement station protector elements.

Note 7 Used to join two P/N 2577672 or two P/N 1833108 cable assemblies.

3286 PRINTER

Purpose: Provides hard copy output at a speed of 66 cps.

Models

Model 1: Provides storage of 480 characters and attaches to:

- 3271 Model 1 or 2
- 3272 Model 1 or 2
- 3274
- Local Display Adaptor (#4702 on System/3 Model 8 or 12)
- Display Adapter (#4601 on System/3 Model 15)
- System/3 Model 4 as local work station.

For use with System/3, see below.

Model 2: Provides storage of 1,920 characters and attaches to:

- 3271 Model 2
- 3272 Model 2
- 3274
- Local Display Adapter (#4702 and #4705 on 5408 or 5412)
- Display Adapter (#4601 on System/3 Model 15)
- System/3 Model 4 as local work station (#4705 on 5404).

For use with System/3, see below.

Model Changes: Model changes between Model 1 and Model 2 are field installable.

Highlights: Provides controls and storage, and provides hard copy output at a speed of 66 cps with the EBCDIC character set (for ASCII character sets, see "Specify" below).

The unit may print from a CPU or the contents of a 3277 Display Station or a 3284, 3286, or 3287 printer buffer via the 3271, 3272, or 3274 Control Unit. When attached to a 3735, the 3286 Model 3 prints under 3735 Program Control.

The unit has a pin feed platen that enables the use of margin-punched continuous forms paper. Specify 120, 126 or 132 print positions. See "Specify". Line spacing is 6 lines/inch. Matrix characters are formed by 7 vertical wires printing dots in up to 4 of 7 possible horizontal positions. Use of the underscore in conjunction with another character will overprint the lowest dot in that character and is not recommended.

Up to 6-part forms can be printed with a maximum thickness of .018" (for optimum feeding and stacking, no more than 3 parts are recommended). Forms lengths can be 3" to 14" in increments of 1/6". Card stock continuous forms are not recommended. Refer to GA24-3488 for forms design considerations and limitations.

For Local Work Station on System/3 Model 4: 3286 Printers (Models 1 and 2) may be intermixed with 3277 Display Stations (Models 1 and 2) and 3284 Printers (Models 1 and 2) and 3287 Printers (Models 1 and 2) and 3288 Line Printers (Model 2) for a maximum of 5 devices attached to the 5404. Specify #9089 for EBCDIC Character Set. A 3271, 3272, or 3274 Control Unit is not required, but a cable is needed. See "Specify" below for voltage and for cable ordering information.

For Local Display Adapter on System/3 Model 8 or Model 12: 3286 Printers (Models 1 and 2) may be intermixed with 3277 Display Stations (Models 1 and 2) and 3284 Printers (Models 1 and 2) and 3287 Printers (Models 1 and 2) and 3288 Printers (Model 2) for a maximum of twelve devices attached via the Local Display Adapter (#4702) and its subfeatures on the 5408 or 5412. A 3271, 3272, or 3274 Control Unit is not required. A

cable is required. Specify #9089 for EBCDIC Character Set. Not compatible with ASCII Character Sets. See "Specify" below for voltage and for cable ordering information.

For Display Adapter on System/3 Model 15: 3286 Printers (Models 1 and 2) may be intermixed with 3277 Display Stations (Models 1 and 2) and 3284 Printers (Models 1 and 2) and 3287 Printer (Models 1 and 2) and 3288 Printers (Model 2) for a maximum of 30 devices attached via the Display Adapter (#4601/#4602) on the 5415. A 3271, 3272, or 3274 Control Unit is not required. A cable is required. Specify #9089 for EBCDIC Character Set. Not compatible with ASCII Character Sets. See "Specify" below for voltage and for cable ordering information.

Prerequisites:

Model 1: a 3271 Model 1 or 2 or a 3272 Model 1 or 2 or a 3274.

Model 2: a 3271 Model 2 or a 3272 Model 2 or a 3274.

Model 3: a 3735 Model 1 with #7880 installed.

Publications: *System/370 System Summary,* GA22-7001.

Supplies: A black ribbon, P/N 1136970 or equivalent, is required.

SPECIFY

1. Voltage (115 V AC, 1-phase, 3-wire, 60 Hz): #9880 for locking plug or #9881 for non-locking plug.

   Note: The Hospital Grade Plug, RPQ 8K0696 (No-Charge), is required for Hospital General Patient Care areas. This RPQ is **NOT** field installable.

2. Pin Feed Platen: #9162 for 126 print positions (13-1/8 inches hole-to-hole), or #9167 for 120 print positions (12-1/2 inches hole-to-hole), or #9168 for 132 print positions (13-7/8 inches hole-to-hole). *Note:* Do not order #9167 or #9168 unless paper is available in your area.

3. Character Set. Specify one of the following:

   (#9089) For EBCDIC Character Set ... provides the 64 characters described on the EBCDIC typewriter keyboard. **Prerequisites:** If used with the 3271, EBCDIC Transmission Code (#9761) is required on the 3271. If used with the 3735, EBCDIC Transmission Code (#9761) is required on the 3735.

   (#9091) For ASCII Character Set A ... provides the 64 ASCII characters but substitutes the Logical OR (|) and Logical NOT (¬) in place of the exclamation mark (!) and circumflex (^). **Prerequisites:** If used with the 3271, ASCII Transmission Code (#9762) is required on the 3271.

   (#9092) For ASCII Character Set B ... provides the standard 64 ASCII characters. **Prerequisites:** If used with the 3271, ASCII Transmission Code (#9762) is required on the 3271. If used with the 3735, ASCII Transmission Code (#9762) is required on the 3735.

4. Cables: See "Accessories" for ordering instructions. For cable specifications, see the *System/370 Installation Manual—Physical Planning,* GC22-7004, or the *3270 Installation Manual—Physical Planning,* GA27-2787.

ACCESSORIES

Forms Stand #4450: This two-shelf forms stand permits placement of continuous forms on the stand above floor level and provides for stacking forms after printing. For shipment with the machine or to the field, order by feature number.

Cables

Cables and/or associated parts to attach the subject machines to the 3271/3272/3274 Control Units, the Local Display Adapter (#4702) on System/3 Model 8 and Model 12, or the Display Adaptor (#4601) on System/3 Model 15 or directly to the System/3 Model 4, may be purchased from IBM or from some other source. For proper identification, installation, and application of the subject cables and parts, see the *3270 Installation Manual—Physical Planning*, GA27-2787, and the *Coaxial Cable and Accessories Manual*, GA27-2805. The customer is responsible for installation and maintenance of these cables and their associated parts.

A/N	2577672	Cable Assembly Indoor
B/N	0323921	Coax Wire (Note 1)
P/N	1836418	Connector Kit (Note 1)
A/N	1833108	Cable Assembly Outdoor
B/N	5252750	Coax Wire (Note 2)
P/N	1836419	Connector Kit (Note 2)
P/N	2621414	Modification Kit (Note 3)
P/N	1833106	Station Protector Attachment Kit (Note 5)
P/N	5252643	Adapter (Note 7)
P/N	1830818	Station Protector Kit, Gas (Note 4)
P/N	5252899	Station Protector Element, Gas (Note 6)

Allow a lead time of 120 days when ordering.

Note 1   Coax wire and one connector kit (includes two connectors, P/N 1836444) required for each indoor cable assembly.

Note 2   Coax wire and one connector kit (includes two connectors, P/N 1836447) required for each outdoor cable assembly.

Note 3   Customers replacing 2260 Display Stations may utilize the existing installed cables by use of this modification kit. One kit required for each cable.

Note 4   Must be used with outdoor cable assembly when installed outdoors (either above or below ground level). One kit required for each cable assembly.

Note 5   Used to attach outdoor cable to station protector. One kit required for each cable assembly.

Note 6   Replacement station protector elements.

Note 7   Used to join two P/N 2577672 or two P/N 1833108 cable assemblies.

3287 PRINTER—MODELS 1 AND 2

Purpose: Provides hard copy output. The 3287 Models 1 and 2 attach to a 3271 Control Unit Model 1 or 2, or a 3272 Control Unit Model 1 or 2, or 3274 Control Unit Model 1C or 51C, or a 3276 Control Unit Display Model 2, or a System/3 Models 4, 8, 12, or 15 or as an optional console printer on System/3 Model 15.

Model 1: 80 cps maximum bi-directional printer.

Model 2: 120 cps maximum bi-directional printer.

Note: Actual printer throughput depends on operational and system characteristics. The controller configuration and line transmission speed, the output format, and the application program processing all have an effect on throughput.

Model Changes: Field installable. All features may be field installed. Features 4110 and 8700 are CSU.

Highlights: The 3287 consists of control functions, printer, and indicator lights in one integrally designed desk-top unit. Special features are available which permit tailoring the printer to the user's requirements.

Where the 3287 replaces a 3284 or 3286 Printer, the Variable Width Forms Tractor (Special Features) is used in lieu of the Pin Feed Platen or Forms Tractor RPQ WD4031. In addition, Friction Feed Paper Handling is available as a Special Feature.

Control Functions: Provides the control for all online operations. This unit requires the 3271/3272 Attachment (#8330) for receiving data from a 3271/3272 Control Unit, or a 3274 Control Unit (with Terminal Adapter B), or a System/3. The 3274/3276 Attachment (#8331) is used for receiving data from a 3274 Control Unit (with Terminal Adapter Type A), or a 3276 Control Unit Display Station.

Printer: Maximum printer throughput is obtained with bi-directional serial matrix printing and indexing with minimized print head movement. The printer dot matrix is 4 of 7 wide by 8 high. This presentation gives high legibility with character spacing at 10 to the inch. Line spacing is 6 and 8 lines to the inch. Up to 132 characters can be printed in a line. Up to six part forms [total thickness—0.457 mm (0.018 in)] may be used. For any multi-part or preprinted continuous forms, the Variable Width Forms Tractor (#8700) is recommended. Five-part and six-part continuous forms should be tried on an individual basis for acceptable feeding, registration and print quality.

The Friction Feed Paper Handling (#4110) is recommended for use with non-preprinted single part roll or fan-fold paper, with a minimum width of 203 mm (8 in), when the Variable Width Forms Tractor (#8700) is not used. Maximum overall forms width is 378 mm (14.9 in); card stock forms are not recommended. (See *Form Design Printers Reference Guide,* GA24-3488, for form specifications and limitations.)

Audible Alarm, Mono-Dual case, Single/Double line spacing 6/8 lines per inch, Page Length Control Selector Switches, and Maximum Print Position are standard functions. Dual Case is not supported for ASCIIB when using 3271/3272 Attachment (#8330) Mono/Dual switch is inoperative when the 3287 is copying from a display.

Problem Determination Procedures: Significant function has been designed into this unit to provide greater availability to the customer. This has been done through the use of problem determination and recovery routines and procedures that can be understood and used by the operator. See "Customer Responsibilities" below.

Customer Setup (CSU): The 3287 Models 1 and 2 are designated to be customer setup devices. The CSU allowance is 4 days.

For additional information on CSU, contact IBM.

Customer Responsibilities:

- Adequate site, system, and other vendor preparation.

- Receipt at the customer's receiving dock, unpacking, and placement of the 3287.

- Physical setup, connection of cables, switch settings, and checkout.

- Contacting Customer Engineering to make cable connections of IBM CSU units to IBM non-CSU units where customer access areas are not provided.

- Notifying IBM of intent to relocate and following IBM instructions for relocation.

- Using and following the problem determination procedures and filling out a trouble report prior to calling for IBM service.

- Disconnecting, packing, and removal to the customer's shipping dock at the time of discontinuance. Appropriate instructions will be provided by IBM.

- Provide a desk or table top to support the 3287.

Prerequisites:

Attachment	Attachment Feature on 3287	Device Adapter on Control Unit
3271/3272	#8330	Available port or added #3250
3274	#8331 or #8330	Type A or B Adapter (See the M3274 pages)
3276	#8331	Available port or added #3255, #3256, #3257

For Direct Local Attachment to a System/3
(via #8330 on the 3287 and available device interface on System/3 CPU):

System/3 Model 4	5404 Processing Unit
System/3 Model 8	#4701/#4702 on 5408 Processing Unit
System/3 Model 12	#4701/#4702 on 5412 Processing Unit
System/3 Model 15	#4601 on 5415 Processing Unit
For console use with System/3 Model 15	#8330 is required on 3287 #7901 is required on 5415

Variable Width Forms Tractor (#8700) or Friction Feed Paper Handling (#4110) must be ordered for each 3287.

Publications: See *KWIC Index* GA20-1621 or specific system bibliography.

Supplies: A black ribbon, IBM P/N 1136653 or equivalent, is required. Also available is a black ribbon cartridge capability

through RPQ 8Q0199. The replacement ribbon cartridge has IBM P/N 7034535.

SPECIFY

1. Voltage (120 V AC, 1-phase 3 wire 60 Hz): #9890 for locking plug, or #9891 for non-locking plug.

2. Power Cord: If standard 2.8 meter (9 feet) Power Cord is not desired, specify: #9511 for 1.8 meter (6 feet) Power Cord, #9512 for 3.7 meter (12 feet) Power Cord, or #9513 for 4.5 meter (15 feet) Power Cord.

3. Cables: See "Accessories" below for 3287 Models 1 and 2 ordering instructions. See the *3270 Installation Manual—Physical Planning,* GA27-2787, for cable details. A separate cable is not required when attaching to a System/3 Model 15 via #7901 on the 5415.

4. Character Set. Specify one of the following:

   (#9082) for EBCDIC Character Set.

   (#9084) for ASCII B Character Set. (Not for System/3 LDA/DA or as console printer)

   Note: The Character Set specified [EBCDIC or ASCII B] must be the same as the transmission code/character set used on the control unit to which it is attached.

5. Variable Width Forms Tractor—Paper Handling (#9185): Specify if Variable Width Forms Tractor (#8700) is ordered and there is a requirement to handle forms with an overall width from 76.2 to 203.2 mm (3 to 8 inches). **Prerequisite:** Variable Width Forms Tractor (#8700).

6. X Print Error Indication (#9488): To indicate an error an X is printed on the print line immediately below the last line normally printed.

7. Character Print Operations. With the 3271/3272 Attachment (#8330) specify one of the following:

   (#9520) (480 character print operation) for use with a 3271 Control Unit Model 1, or a 3272 Control Unit Model 1 or a 3274 Control Unit Model 1C (Adapter Type B), or a System/3 Model 4, 8, 12, or 15. *Note:* #9520 (480-character print operation) can also be specified for use with a 3271 Control Unit Model 2, or a 3272 Control Unit Model 2. #9520 is required for console printer on System/3 Model 15.

   (#9522) (1,920 character print operation) for use with a 3271 Control Unit Model 2, a 3272 Control Unit Model 2, or a 3274 Control Unit Model 1C (Adapter Type B), or a System/3 Model 4, 8, 12, or 15.

   With 3274/3276 Attachment (#8331) specify the following:

   (#9522) (1920 character print operation) for use with a 3276 Control Unit Display Station Model 2, or a 3278 Display Station Model 2 attached to a 3274 Control Unit (Adapter Type A).

8. Blower (#9030): Must be specified only for 3287 Model 1 or 2 to be used in an environment above 90°F (32.2°C) ambient temperature [specification limits up to 104°F (40.5°C)]. **Field Installation:** Yes.

9. System Attachment. Identify the attaching Control Unit or natively attached Host Processor by specifying one of the following codes:

Control Unit/natively attached Host Processor	*Code*
3271	#9251
3272	#9252
3274 Model 1C	#9551
3274 Model 51C	#9609
3276 Model 2	#9552
System/3 Model 4	#9288
System/3 Model 8	#9289
System/3 Model 12	#9290
System/3 Model 15	#9291

SPECIAL FEATURES

Friction Feed Paper Handling (#4110): For friction feeding of single part non-preprinted continuous roll and fan-fold paper with a minimum width of 203 mm (8 inch). Included in Special Feature #4110 is a paper tear bar for tearing continuous forms approximately 64 mm (2.5 inch) from the last line printed. This special feature is used interchangeably with the Variable Width Forms Tractor and is attached and removed by the customer. **Maximum:** One. **Customer Setup:** Yes.

3271/3272 Attachment (#8330): Provides one interface for attachment of a 3287 Model 1 or 2 to a 3271 Control Unit Model 1 or 2, a 3272 Control Unit Model 1 or 2, or a 3274 Control Unit Model 1C or 51C or a System/3 Model 4, 8, 12, or 15. Provides the buffer storage required for print operation. **Maximum:** One. **Limitation:** Cannot be installed with 3274 or 3276 Attachment (#8331). **Prerequisite:** For 3270 System . . . An available port or added #3250 on a 3271 Model 1, 2, or 3272 Model 1, 2 . . . See M3271 or M3272. For 3274 Control Unit . . . An available port (Type B) or added Type B Adapter . . . See M3274. For System/3 Model 4, 8, 12, or 15 . . . See M5404, M5408, M5412 or M5415 . . . An available device interface on the System/3 CPU. For console printer on System/3 Model 15, #7901 is required on 5415.

3274 or 3276 Attachment (#8331): Provides one interface for attachment of a 3287 Model 1 or 2 to a 3274 Control Unit Model 1C or 51C or to a 3276 Control Unit Display Station Model 2. Provides buffer storage required for print operation. Included in this feature is Buffer Reprint support. **Maximum:** One. **Limitation:** Cannot be installed with 3271/3272 Attachment (#8330). **Prerequisite:** An available port or added #3255, #3256, #3257, or a 3276, or an available port (Type A) or added Type A adapter on a 3274.

Variable Width Forms Tractor (#8700): A forms feeding device for continuous margin-punched forms. Overall forms width from 76.2 to 381.0 mm (3 to 15 inches) can be fed. **Prerequisites:** Variable Width Forms Tractor—Paper Handling (#9185) where there is a requirement to handle forms with an overall width from 76.2 to 203.2 mm (3 to 8 inches). **Maximum:** One. **Customer Setup:** Yes.

Note: If forms skipping is required, it is recommended that the Variable Width Forms Tractor (#8700) be used.

ACCESSORIES

Forms Stand #4450: This two-shelf forms stand permits placement of continuous forms on the stand above floor level and provides for stacking after printing. For shipment with the machine or to the field, order by feature number.

Cables

Cables and/or associated parts may be purchased from IBM or from some other source. For the proper identification, installation, and application of the subject cables and parts, see the *3270 Installation Manual—Physical Planning* (GA27-2787) and the *Coaxial Cable and Accessories Manual* (GA27-2805). The customer is responsible for installation and maintenance of these cables and their associated parts.

A/N	2577672	Cable Assembly Indoor
B/N	0323921	Coax Wire (Note 1)
P/N	1836418	Connector Kit (Note 1)
A/N	1833108	Cable Assembly Outdoor
B/N	5252750	Coax Wire (Note 2)
P/N	1836419	Connector Kit (Note 2)
P/N	2621414	Modification Kit (Note 3)
P/N	1833106	Station Protector Attachment Kit (Note 5)
P/N	5252643	Adapter (Note 7)
P/N	1830818	Station Protector Kit, Gas (Note 4)
P/N	5252899	Station Protector Element, Gas (Note 6)

Note 1 Coax wire and one connector kit (includes two connectors, P/N 1836444) required for each indoor cable assembly.

Note 2 Coax wire and one connector kit (includes two connectors, P/N 1836447) required for each outdoor cable assembly.

Note 3 Customers replacing 2260 Display Stations may utilize the existing installed cables by use of this modification kit. One kit required for each cable.

Note 4 Must be used with outdoor cable assembly when installed outdoors (either above or below ground level). One kit required for each cable assembly.

Note 5 Used to attach outdoor cable to station protector. One kit required for each cable assembly.

Note 6 Replacement station protector elements.

Note 7 Used to join two P/N 2577672 or two P/N 1833108 cable assemblies.

3287 PRINTER—MODELS 1C AND 2C

Purpose: Provides hard copy in black or color (by using replaceable ribbon cartridges) when attached to the 3274 Control Unit and the 3276 Control Unit Display Station.

Model 1C: 80 cps maximum with bi-directional printing for a single color on a line.

Model 2C: 120 cps maximum with bi-directional printing for a single color on a line.

Note: Actual printer throughput depends on operational and system characteristics. The controller configuration and line transmission speed, the output format, and the application program processing all have an effect on throughput.

Compared to black or monochrome printing, throughput will be reduced when printing in multi-color because a separate pass of the print head is required for each color on a line.

Model Changes: Model 1C to 2C is field installable. Model changes from Models 1 and 2 to Models 1C and 2C are not recommended for field installation. All features may be field installed and are CSU.

Highlights: The 3287 consists of control functions, printer and indicator lights in one integrally designed desk-top unit. Special features are available which permit tailoring the printer to the user's requirements.

Control Functions: Provides the control for all online operations. This unit requires receiving data from a 3274 Control Unit or from a 3276 Control Unit Display Station.

Printer: Maximum printer throughput is obtained with bi-directional serial matrix printing and indexing with minimized print head movement. The printer dot matrix is 4 of 7 wide by 8 high, which gives high legibility with character spacing at 10 to the inch. Line spacing is 6 and 8 lines to the inch.

With the replaceable black ribbon cartridge, up to 132 print positions can be printed in black on a line. With the replaceable multi-color ribbon cartridge, up to 120 print positions can be printed in the colors black, blue, green, or red, with print positions 121-132 printed in black or the whole line printed in black. With the multi-color ribbon, the machine can print in base color. Base color refers to a given color being printed at the field level as a function of the protect and intensity bit positions in the 3270 Data Stream attribute byte. Specifically, the display-to-printer color mapping is as follows:

3270 Attribute Byte	Color Displayed	Color Printed
Protected and Intensified	White	Black or Green
Unprotected and Intensified	Red	Red
Protected but not Intensified	Blue	Blue
Neither Protected nor Intensified	Green	Green or Black

The printing of black or green as shown in the table depends upon the Base Color selected—Black (#9135) or Green (#9136) Specify Code.

Up to six-part forms [total thickness 0.457 mm (0.018 in)] may be used. For any multi-part or preprinted continuous forms, the Variable Width Forms Tractor (#8700) is recommended. Five-part and six-part continuous forms should be tried on an individual basis for acceptable feeding, registration, and print quality.

Friction Feed Paper Handling (#4110) is recommended for use with non-preprinted, single part roll or fan-fold paper, with a minimum width of 203 mm (8 in), when the Variable Width Forms Tractor (#8700) is not used. Maximum overall forms width is 378 mm (14.9 in); card stock forms are not recommended. (See *Form Design Printers Reference Guide* (GA24-3488) for form specifications and limitations.)

Audible Alarm, Mono-Dual case, Single/Double line spacing, Page Length Control Selector Switches, 6/8 lines per inch, and Maximum Print Position are standard functions. Mono/Dual switch is inoperative when the 3287 is copying from a display.

Problem Determination Procedures: Significant function has been designed into this unit to provide greater availability to the customer. This has been done through the use of problem determination and recovery routines and procedures that can be understood and used by the operator. See "Customer Responsibilities" below.

Customer Setup (CSU): The 3287 Models 1C and 2C are designated to be customer setup devices. The CSU allowance is 4 days.

For additional information on CSU, contact IBM.

Customer Responsibilities:

- Adequate site, system, and other vendor preparation.

- Receipt at the customer's receiving dock, unpacking, and placement of the 3287.

- Physical setup, connection of cables, switch settings, and check out.

- Contacting Customer Engineering to make cable connections of IBM CSU units to non-CSU units where customer access areas are not provided.

- Notifying IBM of intent to relocate and following IBM instructions for relocation.

- Using and following the problem determination procedures and filling out a trouble report prior to calling for IBM service.

- Disconnecting, packing, and removal to the customer's shipping dock at the time of discontinuance. Appropriate instructions will be provided by IBM.

- Provide a desk or table top to support the 3287.

Prerequisites

Attachment	*Device Adapter on Control Unit*
3274-1C	Available Category A port or added #6901, #6902 or #6903
3274-51C	None
3276	Available port or Added Feature #3255, #3256, #3257

Note: The 3287 Model 1C or 2C cannot be attached to a System/3 via Local Display Adapter or #7901. Variable Width Forms Tractor (#8700) or Friction Feed Paper Handling (#4110) must be ordered for each IBM 3287 Model 1C or 2C.

Publications: See *KWIC Index* (GA20-1621) or specific system bibliography.

Supplies: A black ribbon cartridge, IBM P/N 7032482 or equivalent, is required for printing only black. A multi-colored ribbon cartridge, IBM P/N 7032483 or equivalent, is required for color printing.

SPECIFY

1. Plugs (Voltage 120 V AC, 1-phase, 3 wire, 60 Hz): #9890 for locking plug or #9891 for non-locking plug.

2. Power Cord: If standard 2.8 meter (9 feet) Power Cord is not desired, specify: #9511 for 1.8 meter (6 feet) Power Cord, #9512 for 3.7 meter (12 feet) Power Cord, or #9513 for 4.5 meter (15 feet) Power Cord.

3. Cables: See "Accessories" section below and see the *IBM 3270 Installation Manual—Physical Planning* (GA27-2787) for cable details.

4. Character Set:

   Specify one of the following:

   (#9082) for EBCDIC Character Set
   (#9084) for ASCII (B) Character Set

   Note: The Character Set specified [EBCDIC or ASCII (B)] must be the same as the transmission code/character set used on the control unit to which it is attached.

5. Variable Width Forms Tractor—Paper Handling (#9185): Specify if Variable Width Forms Tractor (#8700) is ordered and there is a requirement to handle forms with an overall width from 76.2 to 203.2 mm (3 to 8 inches). **Prerequisite:** Variable Width Forms Tractor (#8700).

6. X Print Error Indication (#9488): To indicate an error, an X is printed on the print line immediately below the last line normally printed.

7. Character Print Operation (#9522): (1920 character print operation) for use with a 3276 Control Unit Display Station Model 2, or a 3274 Control Unit.

8. Blower (#9030): Must be specified for 3287 Model 1C or 2C to be used in an environment above 90°F (32.2°C) ambient temperature [specification limits up to 104°F (40.5°C)]. **Field Installation:** Yes.

9. System Attachment. Identify the attaching control unit by specifying one of the following codes:

Control Unit	*Code*
3274 Model 1C	#9551
3274 Model 51C	#9609
3276 Model 2	#9552

10. Base Color: Applies only when printing in base color. Base color defined in the Highlights section.

    Black #9135: Specified to print in black when the 3279 Color Display Station displays in green or the equivalent 3270 attribute byte code is received. The Printer will print in green when the 3279 displays in white or the equivalent 3270 attribute byte code is received. **Limitations:** Cannot be installed with Base Color—Green (#9136).

    Green #9136: Specified to print in green when the 3279 Color Display Station displays in green or the equivalent 3270 attribute byte code is received. The printer will print in black when the 3279 displays in white or the equivalent 3270 attribute byte code is received. **Limitations:** Cannot be installed with Base Color—Black (#9135).

SPECIAL FEATURES

Friction Feed Paper Handling (#4110): For friction feeding of single part non-preprinted continuous roll and fan-fold paper with a minimum width of 203 mm (8 in). Included in this feature is a paper tear bar for tearing continuous forms approximately 64 mm (2.5 in) from the last line printed. Feature #4110 is used interchangeably with the Variable Width Forms Tractor and is attached and removed by the customer. **Maximum**: One. **Customer Setup**: Yes. *Note:* If forms skipping is required, the Variable Width Forms Tractor (#8700) should be used.

Variable Width Forms Tractor (#8700): A forms feeding device for continuous margin punched forms. Overall forms width from 76.2 to 381.0 mm (3 to 15 inches) can be fed. **Prerequisites**: Variable Width Forms Tractor—Paper Handling (#9185) where there is a requirement to handle forms with an overall width from 76.2 to 203.2 mm (3 to 8 inches). **Maximum**: One. **Customer Setup**: Yes.

ACCESSORIES

Forms Stand #4450: This two-shelf stand permits placing continuous forms on the stand above floor level and provides for stacking after printing. For shipment with the machine or to the field, order by feature number.

Cables

Cables and/or associated parts may be purchased from IBM or some other source. For the proper identification, installation, and application of the subject cables and parts, see *3270 Installation Manual—Physical Planning* (GA27-2787) and *Coaxial Cable and Accessories Manual* (GA27-2805). The customer is responsible for installation and maintenance of these cables and their associated parts.

A/N	2577672	Cable Assembly Indoor
B/N	0323921	Coax Wire (Note 1)
P/N	1836418	Connector Kit (Note 1)
A/N	1833108	Cable Assembly Outdoor
B/N	5252750	Coax Wire (Note 2)
P/N	1836419	Connector Kit (Note 2)
P/N	2621414	Modification Kit (Note 3)
P/N	1833106	Station Protector Attachment Kit (Note 5)
P/N	5252643	Adapter (Note 7)
P/N	1830818	Station Protector Kit, Gas (Note 4)
P/N	5252899	Station Protector Element, Gas (Note 6)

Note 1 Coax wire and one connector kit (includes two connectors, P/N 1836444) required for each indoor cable assembly.

Note 2 Coax wire and one connector kit (includes two connectors, P/N 1836447) required for each outdoor cable assembly.

Note 3 Customers replacing 2260 Display Stations may utilize the existing installed cables by use of this modification kit. One kit required for each cable.

Note 4 Must be used with outdoor cable assembly when installed outdoors (either above or below ground level). One kit required for each cable assembly.

Note 5 Used to attach outdoor cable to station protector. One kit required for each cable assembly.

Note 6 Replacement station protector elements.

Note 7 Used to join two P/N 2577672 or two P/N 1833108 cable assemblies.

3288 LINE PRINTER—MODEL 2

Purpose: Provides hard copy output at speeds up to 120 LPM.

Highlights:

Provides hard copy output at a speed of up to 120 LPM when using the EBCDIC or ASCII 64-character sets. See "Specify" below.

May print from the CPU or the contents of a 3277 Display Station.

Attaches to:

- 3271 Model 2 or 3272 Model 2
- Local Display Adapter (#4702 and #4705 on 5408 or 5412)
- Display Adapter (#4601 on System/3 Model 15)
- System/3 Model 4 as local work station (#4705 on 5404).

For use with System/3, see below.

Prints 10 characters per inch, 132 character positions per line, at 6 lines per inch on continuous fan-fold paper. The paper handling mechanism is adjustable to accept paper from widths of 8.9 cm (3.5 in) to 38.1 cm (15.0 in). Paper up to six parts plus carbon [maximum total thickness is 0.50 mm (0.20 in)] can be accommodated. Forms jam detection is provided. Use of card stock forms is not recommended.

Notes: (1) The 3288 Line Printer is recommended for use only in a machine room environment because of its appreciable noise level. The 3288 is supported by programming as a 3286 Printer Model 2.

For Local Work Station on System/3 Model 4: 3288 Line Printers (Model 2) may be intermixed with 3277 Display Stations (Models 1 and 2) and 3284 Printers (Models 1 and 2) and 3286 Printers (Models 1 and 2) and 3287 Printers (Models 1 and 2) for a maximum of 5 devices attached to the 5404. Specify #9089 for EBCDIC Character Set. A 3271, 3272, or 3274 Control Unit is not required. A cable order is required. See "Specify" below for voltage and cable ordering information.

For Local Display Adapter on System/3 Model 8 or 12: 3288 Line Printers (Model 2) may be intermixed with 3277 Display Stations (Models 1 and 2), 3284 Printers (Models 1 and 2), 3286 Printers (Model 1 and 2) and 3287 Printers (Models 1 and 2), for a maximum of twelve devices attached via the Local Display Adapter (#4702) and its subfeatures on the 5408 and 5412. A 3271, 3272, or 3274 Control Unit is not required. A cable is required. Specify #9089 for EBCDIC Character Set. See "Specify" below for voltage and cable ordering information.

For Display Adapter on System/3 Model 15: The 3288 Printer (Model 2) may be intermixed with 3277 Display Stations (Models 1 and 2) and 3284 Printers (Models 1 and 2) and 3286 Printers (Models 1 and 2), or 3287 Printers (Models 1 and 2) for a maximum of 30 devices attached via the Display Adapter (#4601/#4602) on the 5415. A 3271, 3272, or 3274 Control Unit is not required. A cable is required. Specify #9089 for EBCDIC Character Set. Not compatible with ASCII Character Sets. See "Specify" below for voltage and cable ordering information.

Prerequisite: A 3271 Control Unit Model 2, a 3272 or a 3274 Control Unit Model 2.

Supplies: A black ribbon, P/N 1136634 or equivalent, is required.

Publications: See KWIC Index G320-1621 or specific system bibliography.

SPECIFY

1. Voltage (115 V AC, 1-phase, 3-wire, 60 Hz): #9880 for locking plug or #9881 for non-locking plug.

2. Character Set. Specify one of the following:

   #9089 for EBCDIC Character Set (available at time of manufacture only) . . . provides the 64 characters described on the EBCDIC Typewriter Keyboard. **Prerequisite:** If used with the 3271 Model 2, EBCDIC Transmission Code (#9761) is required on the 3271 Model 2.

   #9091 for ASCII Character Set A (available at time of manufacture only) . . . provides the 64 ASCII characters but substitutes the Logical OR (|) and Logical NOT (¬) in place of the exclamation mark (!) and circumflex (^). **Prerequisite:** If used with the 3271 Model 2, ASCII Transmission Code (#9762) is required on the 3271 Model 2.

   #9092 for ASCII Character Set B (available at time of manufacture only) . . . provides the standard 64 ASCII characters. **Prerequisite:** If used with the 3271 Model 2, ASCII Transmission Code (#9762) is required on the 3271 Model 2.

3. X Print Error Indication: #9944 . . . to indicate an error, an X is printed on the print line immediately below the last line normally printed.

4. Vertical Forms Control: Specify #9850 . . . allows customer insertion of a Forms Feed Character (Hex OC) into the data stream. Upon detection of the FF character, the printer will skip to the first print line of the next form. The form length is entered into two decade switches by the operator and is variable from 00 to 99. (The implementation of this feature is the customer's responsibility.)

5. Cables: See 3288 cable ordering instructions. For cable specifications see the *System/370 Installation Manual—Physical Planning,* GC22-7004, or the *System/370 Installation Manual—Physical Planning,* GA27-2787.

ACCESSORIES

Forms Stand #4450: This two-shelf stand permits placing continuous forms on the stand above floor level and provides for stacking forms after printing. For shipment with the machine or to the field, order by feature number.

Cables

Cables and/or associated parts may be purchased from IBM or from some other source. For the proper identification, installation, and application of the subject cables and parts, see the *3270 Installation Manual—Physical Planning,* GA27-2787, and the *Coaxial Cable and Accessories Manual,* GA27-2805. The customer is responsible for installation and maintenance of these cables and their associated parts.

A/N	2577672	Cable Assembly Indoor
B/N	0323921	Coax Wire (Note 1)
P/N	1836418	Connector Kit (Note 1)
A/N	1833108	Cable Assembly Outdoor
B/N	5252750	Coax Wire (Note 2)
P/N	1836419	Connector Kit (Note 2)
P/N	2621414	Modification Kit (Note 3)
P/N	1833106	Station Protector Attachment Kit (Note 5)
P/N	5252643	Adapter (Note 7)
P/N	1830818	Station Protector Kit, Gas (Note 4)
P/N	5252899	Station Protector Element, Gas (Note 6)

Allow a lead time of 120 days when ordering the above items.

Note 1   Coax wire and one connector kit (includes two connectors, P/N 1836444) required for each indoor cable assembly.

Note 2   Coax wire and one connector kit (includes two connectors, P/N 1836447) required for each outdoor cable assembly.

Note 3   Customers replacing 2260 Display Stations may utilize the existing installed cables by use of this modification kit. One kit required for each cable.

Note 4   Must be used with outdoor cable assembly when installed outdoors (either above or below ground level). One kit required for each cable assembly.

Note 5   Used to attach outdoor cable to station protector. One kit required for each cable assembly.

Note 6   Replacement station protector elements.

Note 7   Used to join two P/N 2577672 or two P/N 1833108 cable assemblies.

3289 LINE PRINTER—MODELS 1 AND 2

Purpose: A line printer for attachment to a 3274 Control Unit or a 3276 Control Unit Display Station.

Highlights: Line printing is from characters engraved on a revolving metal belt. The 3289 models operate at the following speeds:

	Maximum Lines Per Minute*	Character Set
Model 1	155	48
	120	64
	80	94
Model 2	400	48
	300	64
	230	94

*Actual printer throughput depends on operational and system characteristics. Maximum print speed may be degraded by such factors as communication line speed, control unit load, and application program intricacies.

Model Changes: Not field installable. All features may be field installed. None are CSU.

Included is one interchangeable print belt (48, 64, and 94-character set)—see "Specify". A variable width forms tractor for feeding margin-punched continuous forms (one to six parts) up to 15 inches overall width is provided. The following functions are basic: paper jam detection; front forms loading; vertical forms control; vertical/horizontal format control; end of forms detection; single/double vertical spacing; 132 print positions; character spacing of 10 per inch; line spacing of six or eight lines per inch; and 4016 byte buffer. Standard color accent panel will be pebble gray; any other colors are via RPQ only.

Limitations: Refer to *Form Design Printers Reference Guide,* GA24-3488, for forms design considerations. Printed output is not supported for optical character reading.

Prerequisite: A 3274 Control Unit with appropriate adapter or a 3276 Control Unit Display Station. See the M3274 and M3276 pages for details.

Problem Determination Procedure: Significant function has been designed into this unit to provide greater availability to the customer. This has been done through the use of problem determination and recovery routines and procedures that are easily understood and used by the operator. See "Customer Responsibility" below.

Customer Setup (CSU): The 3289 Model 1 and 2 are designated to be customer setup devices. The CSU allowance is 4 days. For additional information on CSU, contact IBM.

Customer Responsibilities:

- Adequate site, system, and other vendor preparation.

- Receipt at the customer's receiving dock, unpacking, and placement of the 3289.

- Physical setup, connection of cables, switch settings, and check out.

- Notify IBM of intent to relocate and follow IBM instructions for relocation.

- Use and follow the problem determination procedures and fill out a trouble report prior to calling IBM for service.

- Disconnecting, packing and removal to the customer's shipping dock at the time of discontinuance appropriate instruction will be provided by IBM.

Publications: See KWIC Index G320-1621 or specific system bibliography.

Supplies: Black ribbon, IBM P/N 1136634 or equivalent for Model 1 or IBM P/N 1136670 or equivalent for Model 2, is required . . . see the *SSD Sales Manual.*

SPECIFY

1. Voltage (120 V AC, 1-phase, 3-wire, 60 Hz): #9890 for locking plug or #9891 for non-locking plug.

2. Power Cord: If standard 2.8 meter (9 feet) Power Cord is not desired, specify: #9511 for 1.8 meter (6 feet) Power Cord, #9512 for 3.7 meter (12 feet) Power Cord, or #9513 for 4.6 meter (15 feet) Power Cord.

3. Print Belt Character Set: Specify one. Available at time of manufacture only. See Print Belt, additional, below:

#9490	48-Character Set EBCDIC
#9491	64-Character Set EBCDIC
#9492	94-Character Set EBCDIC
#9493	48-Character Set ASCII (B)
#9494	64-Character Set ASCII (B)
#9495	94-Character Set ASCII (B)

   (Code must be the same as that specified for the control unit.)

4. Cabling: Customer is responsible for procurement, maintenance, and installation of coaxial signal cable. See below. See *3270 Installation Manual—Physical Planning,* GA27-2787, for cable details.

5. Print Error Indication: The letter X is printed on the line just below the last print line for a given data buffer when the printer is used in 3270 data stream mode. Specify #9488.

6. Character Print Operation: #9522 (1920-character print) to specify the printer buffer size when the printer is used in 3270 data stream mode. For use with a program which assumes the buffer size is 1920 bytes.

7. System Attachment: Identify the attaching control unit by specifying one of the following codes (reference only, no parts required):

Control Unit	Code
3274-1C	#9551
3274-51C	#9609
3276-2	#9552

SPECIAL FEATURE

Audible Alarm (#1090): Creates a sound that alerts the operator of conditions that require manual intervention. The operator can set the loudness level and duration (short or continuous).

ACCESSORIES

The following items are available on a purchase only basis. For shipment with machine, order the feature number as indicated below.

Print Belt, additional—Permits the customer to obtain more than one character set print belt.

#5821   48-Character EBCDIC
#5822   64-Character EBCDIC
#5823   94-Character EBCDIC
#5811   48-Character ASCII (B)
#5812   64-Character ASCII (B)
#5813   94-Character ASCII (B)

Cables

A/N	2577672	Cable Assembly Indoor
B/N	0323921	Coax Wire (Note 1)
P/N	1836418	Connector Kit (Note 1)
A/N	1833108	Cable Assembly Outdoor
B/N	5252750	Coax Wire (Note 2)
P/N	1836419	Connector Kit (Note 2)
P/N	2621414	Modification Kit (Note 3)
P/N	1833106	Station Protector Attachment Kit (Note 5)
P/N	5252643	Adapter (Note 7)
P/N	1830818	Station Protector Kit, Gas (Note 4)
P/N	5252899	Station Protector Element, Gas (Note 6)

Note 1   Coax wire and one connector kit (includes two connectors, P/N 5214874) required for each indoor cable assembly.

Note 2   Coax wire and one connector kit (includes two connectors, P/N 5252758) required for each outdoor cable assembly.

Note 3   Customers replacing 2260 Display Stations may utilize the existing installed cables by use of this modification kit. One kit required for each cable.

Note 4   Must be used with outdoor cable assembly when installed outdoors (either above or below ground level). One kit is required for each cable assembly.

Note 5   Used to attach outdoor cable to station protector. One kit required for each cable assembly.

Note 6   Replacement station protector elements.

Note 7   Used to join two P/N 2577672 or two P/N 1833108 cable assemblies.

3340 DIRECT ACCESS STORAGE FACILITY

Purpose: Multiple capacity, high-speed, direct access storage for attachment to:

- System/3 Model 12
- System/3 Model 15 with B, C, or D Processing Unit
- System/7 with E Model Processing Unit.

For use on System/370, see the "white pages" Consultants' Manual (SY20-0161).

Model A2: Two disk storage drives and associated control for attachment to a System/3 Model 15, with B, C, or D Model Processing Unit via native attachment, or a System/7 equipped with a 5998-T01, 3340 Attachment Module. It provides logic and power for the attachment of up to three 3340 Model B units.

Model B1: Contains one disk storage drive.

Configurations:

System/7: Up to three can be attached to a 3340 Model A2 to provide a 3-, 4-, or 5-drive configuration. Can be combined with Models A2 and B2 for a 5-, 6-, or 7-drive configuration.

System/3 Model 15 with B, C, or D Model Processor: One can be attached to a 3340 Model A2 to provide a 3-drive configuration.

Model B2: Contains two disk storage drives.

Configurations:

System/7: Up to three can be attached to a 3340 Model A2 for a 4-, 6-, or 8-drive configuration. Can be combined with Models A2 and B1 for a 5-, 6-, or 7-drive configuration.

System/3 Model 15 with B, C, or D Model Processor: One can be attached to a 3340 Model A2 to provide a 4-drive configuration.

Model C2: Contains two disk storage drives.

Configuration:

System/3 Model 12: One can be attached directly to the 5412 to provide a 2-drive configuration.

Model Changes: Available at time of manufacture only. All features may be field installed.

Highlights: Each 3340 contains an air filtration system and the load/unload mechanism for the 3348 Data Module. It features low cost, multiple capacity, fast access and high data rate . . . two drives (C2 only) attach to a System/3 Model 12 . . . , up to four drives attach to a System/3 Model 15 B, C, or D . . . , up to eight drives attach to a System/7.

The 3340 introduced a design in which a sealed cartridge (3348 Data Module) contains the disks, access arms, read/write heads and spindle. Multiple capacity options on each drive become possible through the modularity provided by this unique design. In addition, the 3348 Model 70F contains fixed heads which provide low cost, fixed head capability for the 3340 user. Users may place selected components of IBM software as well as their own programs in the fixed head area to increase device performance. The 3348 Model 70F requires the Fixed Head Feature (#4301) on the 3340. See "Special Features". *Note:* The 3348 Model 70 is the only model available on the System/3 Model 12 or Model 15.

3348 Cylinder Concepts

	Mdl 35 on System/7 (34.9MB)	Mdl 70 or 70F on System/7 (69.8MB)	Mdl 70 on System/3-12 or 15 (41.0MB)
Bytes per Track	8,368	8,368	12,288
Tracks per Cylinder	12	12	20
Cylinders per Data Module	348	696	210*
Bytes per Cylinder	100,416	100,416	245,760

*Note: For the Model 12 or 15, these are "logical" cylinders rather than physical cylinders. For capacities on the System/7 see System/7 under 3348.

Data Rate: 885,000 bytes per second. See GA09-1004 for Data Rate on System/7.

Access Time: For the 3348 Model 35 and 70, the average seek time is 25 ms, with a minimum of 10 ms and a maximum of 50 ms. For the Model 70F, the average seek time is less than 1 ms for cylinders 1 through 5, while all other cylinders retain the above seek timing. Rotation time is 20.2 ms, and latency is 10.1 ms, the same as for the 3348 Models 35 and 70.

Autoloading: Data Modules are automatically loaded after the Data Module is placed in the drive, the drive cover is closed and a switch is turned on. The Data Module is a sealed unit and requires no cover removal. Start up time is less than 20 seconds.

Read Only: A "write" switch on every 3340 drive can be activated only by inserting a latch in the Data Module. When the latch is not inserted, the Data Module is in read-only mode and is protected from being written on or erased.

Data Modules: Each drive requires a Data Module to operate. These must be ordered separately . . . see 3348.

3348 Data Module Model 70 provides 41,041,920 bytes of main data storage plus 9,830,400 bytes for program support on System/3 Model 12 and Model 15.

3348 Data Module Model 70F provides 69,889,536 bytes of storage of which 502,080 are accessible by fixed heads.

Only the 3348 Data Module Model 70 is available on System/3 Model 12 and Model 15.

The Model 35 and the Model 70 may operate on any drive, and they are interchangeable between drives, including drives with the Fixed Head feature (#4301 or #4302) installed. The Model 70F, however, requires the Fixed Head feature (#4301 or #4302) on the drive.

Data written on a data module by System/3 cannot be retrieved by System/370, and vice versa.

Prerequisites: A 3340 facility requires—a 3340 Model A2 (except System/3 Model 12, which supports only 3340 Model C2) . . . a System/3 Model 15 with a B, C, or D Model Processor, System/7 with a 5998-T01 Module . . . each 3340 drive requires a 3348 Data Module.

Maximum:

System/3 Model 12—two 3340 drives (C2)
System/3 Model 15B, 15C, or 15D—four 3340 drives
System/7 Model E—eight 3340 drives

SPECIFY

1. Voltage (AC, 3-phase, 4-wire, 60 Hz): #9903 for 208 V, or #9905 for 230 V . . . must be consistent with system voltage.

2. Color: #9041 for red, #9042 for yellow, #9043 for blue, #9045 for gray, or #9046 for white.

3. System Attachment: Specify #9589 for attachment of a Model A2 to System/3 Model 15. Feature #9589 must also be used for a Model B1 or B2 attached to the 3340 A2 to provide a 3 or 4-drive system.

Attachment	Specify
System/3 Model 15	#9589
System/7 Model E	#9590

The following must be specified for a 3340 Model C2.

Attachment	Specify
System/3 Model 12	#9600

4. For conversion of a 5415A Model CPU to a 5415B, 5415C, or 5415D Model CPU, specify deletion of Feature #9400; if a second 5444 is installed, specify deletion of Feature #9401 or #9402.

SPECIAL FEATURES

Fixed Head Feature (#4301, #4302). #4301 For Model A2 or B2 . . . #4302 For Model B1. To operate the 3348 Model 70F on the 3340. The Fixed Head Feature is available on System/7. Attachment is via the 5998-T01 on the System/7. See appropriate machines for additional requirements. **Limitations:** Not available on 3340s attached to System/3 Model 12 or 15.

3344 DIRECT ACCESS STORAGE

Purpose: Dual drive, large capacity, direct access storage for attachment via a 3340 Model A2 to a System/3 Model 15D.

For use on System/370, see the "white pages" Consultants' Manual (SY20-0161).

Model B2: Two-drive disk storage unit which attaches to a 3340 Model A2. On System/3 Model 15D, one 3344 B2 can be attached to a 3340 A2 to make a four-drive system.

Highlights: The 3344 features a large capacity, fixed storage medium. Each 3344 has two drives and requires eight logical device addresses. On a System/3 Model 15D, each drive is approximately equivalent to four logical 3348 Model 70s—each logical volume features a larger main data area, and a smaller area reserved for simulation, than on a 3348 data module.

Cylinder concept-System/3 Model 15D: Each drive has 828 logical cylinders with 20 tracks per cylinder. Maximum track capacity is 12,288 bytes providing up to 245,760 bytes per logical cylinder. Maximum drive capacity is 203,489,280 bytes. Data Rate—885,000 bytes per second.

Access Time: Average seek time is 25 ms, with a minimum of 10 ms and a maximum of 50 ms. Rotation time is 20.2 ms, and latency is 10.1 ms.

Read Only: A two position switch is provided for each drive. When the switch is in the "read only" position, the drive is protected from being written upon or erased.

Data Recovery (Plant Only): Should data in the field prove unrecoverable, data recovery assistance at the plant of manufacture will be provided.

Alternate Tracks: As used on System/3 Model 15D, there are 160 alternate tracks per drive (40 per logical volume). The 3344 will be shipped from the plant with not more than 5 flagged tracks per drive. Therefore, a minimum of 155 alternate tracks per drive are available for customer use.

Prerequisites: For use with System/3-15D, a 5415D with specify #9781 and #9784, and a 3340 Model A2, are required.

Limitations: Data written by System/3 cannot be retrieved by System/370. Data written by System/370 cannot be retrieved by System/3 using SCP support.

Publications: System/3 Bibliography, GC20-8080

SPECIFY

1. Voltage (AC, 3-phase, 4-wire, 60 Hz): #9903 for 208 V, or #9905 for 230 V . . . must be consistent with that of the unit to which the 3344 is attached.

2. Color: #9041 for red, #9042 for yellow, #9043 for blue, #9045 for gray, or #9046 for white.

3. System Attachment: Specify #9589 for attachment to System/3 Model 15D.

3348 DATA MODULE (SSD Product)

Purpose: A removable and interchangeable Data Module for the 3340 Disk Drive family.

Models: Three are available in two different capacities:

3348 Model 35	34,944,768 bytes
3348 Model 70	69,889,536 bytes on System/370 and 41,041,920 bytes of main data storage plus 9,830,400 bytes for program support on System/3 Model 12 and Model 15.
3348 Model 70F	69,889,536 bytes of which 502,080 are accessible by fixed heads.

System/7 Capacities Mode of Recording	Capacity by Model (MB)		
	35	70	70F
5022 Emulation	29.4	58.9	58.9
Native Max Record Length 7,294 bytes	30.4	60.9	60.9
Native Optimum Record Length 4,100 bytes	34.2	68.4	68.4

System/3 Model 12 and Model 15 use only the 3348 Model 70.

Highlights

Data Module Concept: The 3348 Data Module consists of direct access storage components within a sealed but removable cartridge. The Data Module contains the disks, the spindle, the read/write heads, and the access arms. The access arms and heads are not part of the drive as in other disk pack/disk drive combinations. The sealed module design protects the disk surfaces by excluding outside contamination. Multiple capacity options on each drive become possible through the modularity provided by this unique design. In addition, the Model 70F contains fixed heads which provide low cost, fixed head capability for the 3340 user. Users may place selected components of IBM software as well as their own programs in the fixed head area to increase device performance. The 3348 Model 70F requires that the Fixed Head Feature (#4301) be installed on the 3340.

Removable: Can be installed on and removed from the 3340 by the operator.

Interchangeable: The Model 35 or the Model 70 may operate on any drive and are interchangeable between drives, including those with the Fixed Head Feature (#4301) installed. The Model 70F, however, requires that Feature #4301 or #4302 be installed on the drive. The System/3 Model 12 and Model 15 use only the 3348 Model 70.

Auto-loading: Data Modules are automatically loaded after the Data Module is placed in the drive, the cover is closed, and a switch is turned on. Start-up time is less than 20 seconds.

Flag-Free: Data Modules are shipped from the plant free of flags. If within 90 days after receipt the customer is required to assign an alternate track (using DOS/VS System utilities), he may return the Data Module to IBM, and it will be repaired at no cost to the customer.

Capacity Upgrade (Plant Only): The Model 35 may be capacity upgraded to a Model 70. Data Modules must be returned to the plant of manufacture for the upgrade service. Downgrading is not available. Recorded data will not be recoverable. Upgrade of either the Model 35 or 70 to the Model 70F is available at time of manufacture only.

Dimensions:	Model 35	Model 70	Model 70F
Height	8"	8"	8"
Width	16"	16"	16"
Maximum Length	18"	18"	18"
Shipping Weight (lbs)	21	23	24

Covers are sealed at the plant and are unbreakable and noninflammable. A large handle is provided for ease of installation, removal and transportation. The Data Module has an aperture that is opened (or closed) automatically by the drive during loading (or unloading). The Data Module is then connected to the drive for power and communications.

A CE cylinder is assigned to facilitate maintenance of the 3340.

Data Recovery (Plant Only): Should data in the field, for any reason, prove unrecoverable, a method for data recovery assistance at the plant of manufacture will be provided.

Initialization: The Data Module will be initialized at the plant. Home addresses and record zero will be written for each track.

3348 Data Module Repair Service (Plant Only): Replace one or more defective disks (including servo disk) and/or heads, clean and lubricate, and retest to new Data Module performance specifications:

	Model 35	Model 70	Model 70F
Repair Service	*	*	*

* Contact IBM to ascertain the cost of service.

If in addition to normal repair service a new cover is required, there will be an additional charge.

3370 DIRECT ACCESS STORAGE

Purpose: High speed, large capacity, fixed medium, direct access storage for attachment to a System/38 5381 System Unit.

Model A11: Single drive disk storage with two access arms and associated control for attachment to 5381 System Unit (Models 4 and 5 only) with a 3370 Attachment Adapter. The Model A11 provides logic and power for the attachment of up to three 3370 Model B11 units.

Model B11: Single drive disk storage with two access arms. Up to three 3370 Model B11 units may be attached to a 3370 Model A11.

Model Changes: Available at time of manufacture only.

Highlights: The 3370 features high data rate, fast access, fixed block format, and low cost per byte. It employs a fixed, sealed Head/Disk Assembly (HDA) as the storage medium. The HDA is a field replaceable unit. Two access arms per spindle (each arm accessing one half of the data) separately addressable with overlapped operation—seeking and/or reading/writing of the other actuator. Reduced power and space requirements.

Fixed Block Format:

Bytes per block (usable)	512
Blocks per actuator	558,000
Bytes per actuator	285,696,000
Bytes per spindle	571,392,000

Blocks are separately addressable, and they jointly form a contiguous address space.

Data Rate: 1.859 megabytes per second (nominal).

Access Time:

Minimum seek time - 5 ms
Average seek time - 20 ms
Maximum seek time - 40 ms
Average Rotational Delay - 10.1 ms

Error Correction: Provides capability of correcting single data error bursts of up to 9 bits span as well as detecting all single error bursts of up to 16 bits span.

Rotational Position Sensing: Fixed Block Architecture provides for relative block addressing, each block separately addressable.

HDA Data Recovery (Plant Only): Should data in the field prove unrecoverable, data recovery assistance at the plant of manufacture will be provided.

Prerequisites:

1. A 3370 requires an attachment feature (#1130) on the 5381 System Unit (Models 4 and 5 only).

2. A Specify code is required for the 5381 System Unit to designate the 3370 units to be attached. See "Specify" under the 5381 description.

Maximum: One A11 and three B11s per System/38 5381 System Unit (Models 4 and 5 only).

SPECIFY

1. Voltage (AC, 3-phase, 4-wire, 60 Hz) Must be consistent with system voltage: #9903 for 208 V or #9915 for 240 V. If a 5381 System Unit uses 230 V, specify #9915 for the 3370).

2. Accent Panel Color One must be specified: Willow Green #9060, Garnet Rose #9061, Sunrise Yellow #9062, Classic Blue #9063, Charcoal Brown #9064, Pebble Gray #9065.

Note: The color for the base enclosure is Pearl White.

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3410 MAGNETIC TAPE UNIT
3411 MAGNETIC TAPE UNIT AND CONTROL

Purpose: Magnetic tape units and controls for a System/3 (Models 8/10/12/15) or System/38. The 3410 Model 001 can be used with a 3881 Optical Mark Reader Model 002 or a 3886 Optical Character Reader Model 002. Refer to the "white pages" Consultants' Manual (SY20-0161) for use with System/360 and System/370.

Models:

Data rates in 8-bit bytes per second (1600 bpi).

	3410	*3411*
Model 001	20,000	20,000
Model 002	40,000	40,000
Model 003	80,000	80,000

Model Changes: Field installable. All features may be field installed.

Highlights: The 3410 is a single tape unit controlled by a 3411. The 3411 is a single channel control unit with one tape drive.

- Efficient, compact space saving design.
- Dual Density feature . . . allows processing of data recorded at 1600 bpi PE or 800 bpi NRZI.
- Seven Track feature . . . tape written in seven track format compatible with tapes written at 200, 556, 800 bpi by 729/7330/7335 and 2401/2402/2403/2404/2415/3420 tape drives equipped with 7-track read/write heads.
- Radial attachment of tape units permits limited offline maintenance.
- Simplified tape threading path.

Checking: During write operations, both parity and signal amplitude are checked. (When used with a 3881 Optical Mark Reader, both are checked in 800 bpi NRZI . . . signal amplitudes only in 1600 bpi). During read operations, parity is checked.

Error Correction: In 1600 bpi PE recording format single track error correction in flight takes place. For 9-track, 800 bpi NRZI, track in error (T.I.E.) is provided. (Not applicable when used with a 3881 Optical Mark Reader.)

Functions: The following table indicates feature numbers for corresponding functions:

Subsystem Function	*Feature Name*	*3411 Control Unit*	*3410* Tape Unit (includes tape unit on 3411)*
1600 bpi 9-track only	Single Density	Standard	#3211
1600 bpi PE/800 bpi NRZI 9-track	Dual Density	#9150	#3211 or #3221
1600 bpi PE/200-556-800 bpi NRZI 7-track	Seven Track	#9160**	#3211 or #6550

* Tape units must all be the same model as 3411.

** Feature #9160, seven track, not available on System/38

Characteristics	*Model 001*	*Model 002*	*Model 003*
Data Rate (kb/sec)			
at 1600 bpi (P.E.)	20	40	80
at 800 bpi (NRZI)	10	20	40
at 556 bpi	6.9	13.9	27.8
at 200 bpi	2.5	5.0	10.0
Recording Density (bpi)	1600/800/556/200—all models		
Tape Speed (ips)	12.5	25	50
Nominal IBG (inch)			
- 9 Track	.6	.6	.6
- 7 Track	.75	.75	.75
Nominal IBG Time (ms)			
- 9 Track	48	24	12
- 7 Track	60	30	15
Nominal Read/Write Access Time (ms)	15	12	6
Rewind Time Full Reel (min)	3	3	2

Maximums: Interconnected 3410s and 3411s must be of the same model . . . models cannot be intermixed. The maximum number of tape units (3410s) per 3411 are:

Model 001 Up to three 3410 Model 001s . . . a total of 4 drives.
Model 002 Up to three 3410 Model 002s . . . a total of 4 drives.
Model 003 Up to three 3410 Model 003s . . . a total of 4 drives.

Limitation: A maximum of four tape drives (any model) can be attached to a System/3 Model 8/10/12/15, or to a System/38. A maximum of one 3410 Model 001 can be attached to the 3881 or 3886.

Prerequisites: Each 3411 requires the following:

For System/3 Model 10/15—a 3411 Magnetic Tape Attachment (#7951) on the 5410 or 5415 and a System/3 Model 8/10/12/15 and System/38 Attachment (#7003) on the 3411. See "Special Features".

For System/3 Model 8—A 3411 Magnetic Tape Attachment (#7960) on the 5408 and a System/3 Model 8/10/12/15 and System/38 Attachment (#7003) on the 3411. See "Special Features".

For System/3 Model 12—a Basic Attachment Feature (#4701) and a 3411 Magnetic Tape Attachment (#7960) on the 5412, a System/3 Model 8/10/12/15 and System/38 attachment (#7003) on the 3411. See "Special Features".

For System/38—a 3411 Magnetic Tape Adapter (#7960) on the System/38 and a System/3 Model 8/10/12/15 and System/38 Attachment (#7003) on the 3411. See "Special Features".

Each 3410 requires an appropriate model of the 3411, except when a 3410 Model 001 is attached to a 3881 or 3886.

Magnetic Tape: The following tapes and reels can be used: IBM Series 500, IBM Heavy Duty, IBM Dynexcel, or competitive formulations which meet the tape and reel criteria in Tape Specifications GA32-0006.
Note: IBM tapes other than those above do not provide adequate reliability and should not be used.

Publications: *System/3 Bibliography*, GC20-8080; *IBM 3881 Optical Mark Reader Reference Manual*, GA21-9143; and the *System/34 Planning Guide*, GC21-5154. Also *IBM 3410/3411 Component Summary*, GA32-0022.

Metering: 3410 (all Models)—I/O Unit (online) . . . 3410 Model 001 when used with a 3881 Model 2—I/O Unit (offline). 3411—Assignable Unit.

SPECIFY

1. Voltage (AC, 1-phase, 3-wire, 60 Hz): #9902 for 208 V, or #9904 for 230 V. If used with a 3881 Optical Mark Reader or a 3886 Optical Character Reader, voltage must be consistent.

2. Dual Density Control (3411 only): #9150. Permits attaching 3410s equipped with Dual Density Tape Unit (#3221) and installation of Dual Density Tape Unit (#3221) on the 3411 itself. 3410s equipped with Single Density Tape Unit (#3211) can also be attached. **Limitation:** Cannot be installed on same 3411 with Seven Track Control (#9160). **Field Installation:** Yes.

3. Seven Track Control (3411 only): #9160. Permits attaching 3410s equipped with Seven Track Tape Unit (#6550) and installation of Seven Track Tape Unit (#6550) on the 3411 itself. 3410s equipped with Single Density Tape Unit (#3211) can also be attached. #9160 includes the translator function which, when used, causes 8-bit bytes from the I/O interface to be written on tape as 6-bit BCD characters, and causes 6-bit characters read from tape to be translated into their EBCDIC equivalents. The Data Conversion function, also included, allows reading and writing 8-bit bytes on 7-track tape by converting four tape characters to three storage bytes, and vice versa. **Limitation:** Cannot be installed with Dual Density Control (#9150). Not available on System/38. **Field Installation:** Yes.

4. Color: #9041 for red, #9042 for yellow, #9043 for blue, #9045 for gray, or #9046 for white.

5. Density Formats: The 3410/3411 subsystem can operate in three density formats . . . 1600 bpi PE, single density . . . or 1600/800 bpi, dual density . . . or 200/556/800 bpi, seven track. With the exception of single density, which is standard on the control unit of the 3411, a feature number for the format desired must be specified for each tape unit and the control unit. See "Special Features" for limitations. Dual Density Control (#9150) is required on the 3411 for Dual Density Tape Unit (#3221) on the 3411 and attached 3410s. See Specify 2 above. Seven Track Control (#9160) is required on the 3411 for Seven Track Tape Unit (#6550) on the 3411 and attached 3410s. See Specify 3 above.

6. System Attachments: A System/3 Model 8/10/12/15 and System/38 Attachment (#7003) is required for attachment to a System/3 Model 8, 10, 12 or 15, or to a System/38.

SPECIAL FEATURES

Single Density Tape Unit (#3211): (3410, 3411—any Model) Permits the 3410 or the tape unit on a 3411 to operate at 1600 bpi PE only. Limitation: Cannot be installed with Dual Density Tape Unit (#3221) or Seven Track Tape Unit (#6550). **Prerequisite:** If installed on the 3886 Optical Character Reader, Single Density Tape Adapter (#6490) on the 3886.

Dual Density Tape Unit (#3221): (3410, 3411—any Model) Permits the 3410, or the tape unit on a 3411 Model 001, 002 or 003, to operate at 800 bpi as well as 1600 bpi. **Limitation:** Cannot be installed with Single Density Tape Unit (#3211) or Seven Track Tape Unit (#6550). **Prerequisite:** Dual Density Control (#9150) on the 3411. See "Specify," or Dual Density (#3550) on the 3881 Optical Mark Reader, or Dual Density Tape Adapter (#6485) on the 3886 Optical Character Reader.

Seven Track, Tape Unit (#6550): (3410, 3411—any model) Permits the 3410 or the tape unit on the 3411 to operate at 200, 556 or 800 bpi NRZI in the seven track format compatible with 729, 7330, 7335, and with 2401, 2402, 2403, 2404, 2415,

and 3420 tape units equipped with seven-track read/write heads. Tape units with this feature will read or write only 7-track tape. **Limitation:** Cannot be installed with Single Density Tape Unit (#3211), or Dual Density Tape Unit (#3221), or on System/38. **Prerequisite:** Seven Track Control (#9160) on the 3411.

System/3 Mdl 8/10/12/15/System/38 Attachment (#7003): (3411 Model 001, 002, 003) To attach the 3411 with up to three 3410s to a System/3 Model 8, 10, 12 or 15, or System/38. **Limitation:** Cannot be installed with System/360/370 Attachment (#7360) or System/370 Model 115/125 Attachment (#7361). **Prerequisite:** 3411 Magnetic Tape Attachment (#7960) on the 5408 and 5412 or 3411 Magnetic Tape Attachment (#7951) on the 5410 and 5415, or 3411 Magnetic Tape Adapter (#7960) on the System/38.

3601 FINANCE COMMUNICATION CONTROLLER
(withdrawn from marketing as of 15 June 1983) Purpose:
A programmable controller for attachment of 3600 Finance Communication System Terminals to System/34 and System/3 Model 15 processors.

Attachment to System/34 is via SDLC transmission over various common carrier or user-owned facilities.

Attachment to System/3 Model 15 is via Binary Synchronous Communications (BSC)— see 3601/3602 RPQ 8K0598 and 8K0623 and 5415 RPQ S40156.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs).

Model 2A: A programmable controller with a diskette drive which accommodates one-sided removable diskettes, a maximum of three loops, and a maximum of 120K bytes of user programmable storage.

Remote terminal attachments* are available.

Model 2B: A programmable controller with a diskette drive which accommodates one or two-sided removable diskettes, a maximum of three loops, and a maximum of 120K bytes of user programmable storage.

Remote terminal attachments* are available.

Model 3A: A programmable controller with a maximum of two diskette drives which accommodates one-sided removable diskettes, a maximum of six loops and a maximum of 120K bytes of user programmable storage.

Remote terminal attachments* are available. A local device cluster attachment is available.

Model 3B: A programmable controller with a maximum of two diskette drives which accommodates one-sided or two-sided removable diskettes, a maximum of six loops and a maximum of 120K bytes of user programmable storage.

Remote terminal attachments* are available. A local device cluster attachment is available.

* Remote terminal attachments can be achieved on the total number of loops indicated by one or a combination of the following, as applicable.

Device or Feature	Device or Feat. No.	2A	2B	3601 3A	3B
1200 bps Loop Integrated Modem	#8001	—	—	5	5
Term. Attach Unit	3603-1, 2	3	3	6	6
EIA Interface	RPQ	2	2	5	5

Model Changes: Model 2A can be changed to Model 2B, 3A or 3B. Model 2B to Model 3B. Model 3A to Model 3B. **Field Installation:** Yes. Model 2A to 2B, 2A to 3B, or 3A to 3B requires replacement of the diskette storage device. Adequate provision must be made for retaining data contained on the diskette by having the user remove it prior to the start of any conversion.

Customers must be advised that making a model change involves removal of parts which become the property of IBM.

All features may be field installed.

Highlights: Controls all the functions of 3600 Finance Communications System terminals. Controls data transmission between those terminals and the central processing site. Four SDLC Communications features are available one of which is required for transmission to and from the Host. An SDLC Communications feature at speeds from 1200 bps to 4800 bps or an SDLC Communications (Model 3A or 3B) feature at speeds from 1200 bps to 9600 bps can be selected. Besides Host link speed differences, the SDLC feature to 9600 bps allows a maximum controller aggregate baud rate of 12,000 bps for the loops independent of the host link speed...see "Communications Features".

For Binary Synchronous Communications (BSC), see 3601/3602 RPQs 8K0598 and 8K0623. Contact IBM.

Models 2A, 2B, 3A, and 3B contain approximately 24K bytes of programmable storage. Six additional increments of 16K bytes or three increments of 32K bytes of programmable storage (for a total of 120K) are available. The amount of programmable storage available for application programming depends upon the attached terminal configuration and user environment. See "Additional Storage Feature" (#1006 or #1007). Specify #9591 for Control Storage. Specify #9592 for User Programmable Storage.

Models 2A and 3A house a direct access diskette drive with a one-sided removable diskette which provides permanent storage for control and user programs, plus temporary and permanent storage for user data (sequential logging, random retrieval of data records, etc.). Model 3A allows the attachment of one additional one-sided diskette drive.

Models 2B and 3B house a direct access diskette drive with a two-sided removable diskette which provides permanent storage for control and user programs, plus temporary and permanent storage for user data (sequential logging, random retrieval of data records, etc.). Model 3B allows the attachment of one additional two-sided diskette drive.

All 3600 System terminals are attached by loops which operate at speeds of 1200, 2400 or 4800 bps for locally attached terminals and at 1200 bps or 2400 bps for remotely attached terminals. The base unit provides one loop. Two additional loops are available on Models 2A and 2B while five additional loops are available on Models 3A and 3B. 1200 bps loops integrated modems are available on Models 3A and 3B only. See "Special Features". The Device Cluster Adapter feature may be attached to the 3601 Models 3A and 3B.

Communication between the controller and the host may be through an external modem with EIA Interface (#3701) or a 1200 bps Integrated Modem (#5500). See "Modems" and "Special Features" below. Each 3601 operates in half-duplex mode. Duplex communication line operations are possible with multiple 3601s attached to the line...one 3601 transmitting while the other receives.

For attachment to System/3 Model 15, contact IBM to see 3601/3602 RPQs 8K0598 and 8K0623 and 5415 RPQ S40156.

Can be programmed to operate independently when the CPU is unavailable. Capable of controlling all terminal functions, executing arithmetic, and capturing data from the terminals for later transmission to the CPU. A keylock is provided for the removable diskette. One key is provided.

Transmission: The 3601 operates over common carrier provided or equivalent customer owned communications facilities. For information concerning these facilities, see the M2700 "white pages".

Modems: External modems operating at up to 4800 bps may be attached when used with SDLC Feature #6301 or #6302. Speeds up to 9600 bps may be achieved with SDLC Feature #4501 or #4502.

Modem	Speed (bps)	Facility
3863	2400	Switched or non-switched voice grade lines
3872	2400	Switched or non-switched voice grade lines
3874	4800	Switched or non-switched voice grade lines
3864	4800	Switched or non-switched voice grade lines
3865	9600	Non-switched voice grade lines
*	9600	Non-switched digital data svc.

* See RPQ for IBM DDSA.

See the M2700 pages for further information. Non-IBM Modems may be attached subject to the IBM Multiple Supplier System Policy.

Note: Switched line operation is not supported by the 3601/3602 integrated 1200 bps modem.

Publications: GC27-0001, *IBM 3600 Finance Communication System, System Summary.*

Supplies: For customer-usable diskettes, see the *SSD Sales Manual.*

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz). #9880 for locking plug or #9881 for non-locking plug. **Field Installation:** Not recommended.

2. Controller Designation. Media distribution of Controller Data: Specify #9491 to identify the initial 3601 ordered for use with a host system location, or specify #9492 to identify additional 3601s per host system.

   Note: Customers using the 3600 program preparation service should choose not to receive the controller data separately. In this case, #9492 should also be specified for the initial 3601.

   If #9491 is specified for the 3601, specify #9494 if there is no 3614/3624 with a first position designator attached to any 3601 on the same host system, or #9495 if there is a 3614/3624 with a first position designator and #9001 attached to any 3601 on the same host system. See 3614/3624 Host Attachment Designation under "Specify" for the 3614/3624.

   If #9491 is specified, select the code number of the desired medium:

   #9412   9/800 Magnetic Tape
   #9413   9/1600 Magnetic Tape

   If tape drives are not available at the host location, contact IBM for guidance.

   When feature #9491 is specified, contact IBM for additional shipping information required.

3. Cables: See "Accessories" for ordering instructions. Also see *Installation Manual—Physical Planning,*GA27-2766.

4. If ordering a 3614/3624 with 1st position designator (see Host Attachment Designation under "Specify" for the 3614/3624) to be added to any existing 3601, an MES order transaction should be used against the initial 3601 (specify code #9491 with #9494) requesting to delete #9494 and add #9455 for the initial 3601.

   Refer to specify items for further explanation of these specify codes and their use when (1) ordering a loop-attached 3614/3624 in a network where no

3614/3624s are previously attached, and (2) field installation of feature #9001 on a loop-attached system.

If all installed or on order 3614/3624s for loop attachment to the 3601 are removed or cancelled, an MES order transaction should be used against the initial 3601 (specify code #9491 with #9495) to delete #9495 and add #9494. Contact IBM for clarification.

SPECIAL FEATURES

Additional Storage Features

- **#1006** provides an additional 16K bytes of control storage for device attachment (Models 2A, 2B, 3A, and 3B only), or an additional 16K bytes of user programmable storage (Models 2A, 2B, 3A, and 3B only). This additional storage can be utilized for the following four purposes: (1) User Programmable Storage, (2) User Programmable Storage Expansion, (3) Control Storage, or (4) Control Storage Expansion. See below for description and limitations. Specify: #9591 for Control Storage, or #9592 for User Programmable Storage.

- **#1007** provides an additional 32K bytes of User Programmable Storage (Models 2A, 2B, 3A, and 3B only). This additional storage can be used for (1) User Programmable Storage or (2) User Programmable Storage Expansion. See below for description and limitations. Specify #9602.

  1. **User Programmable Storage:** Used for configuration data and application programs.

     Feature #1006, Specify #9592, provides an additional 16K bytes of User Programmable Storage. **Maximum:** For #1006 with #9592, two.

     Feature #1007, Specify #9602, provides an additional 32K bytes of User Programmable Storage. **Maximum:** For #1007 with #9602, one. **Field Installation:** Yes. **Prerequisite:** On controllers shipped prior to 'EC 745887, Storage Expansion Feature (#6501) is required.

  2. **User Programmable Storage Expansion:** (Models 2A, 2B, 3A, and 3B only)

     Used in addition to two #1006, specify #9592, increments or one #1007, specify #9602, increment of User Programmable Storage described above for the instruction sections of application programs and a limited amount of configuration data and application program constants. Most configuration data and application program constants *cannot* reside in expanded user programmable storage.

     Feature #1006, Specify #9592, provides an additional 16K bytes of User Programmable Storage. **Maximum:** (For User Programmable Storage plus User Programmable Storage Expansion): For #1006 with #9592 specified and with Storage Expansion Feature (#6501) - six. **Prerequisite:** If more than two Additional Storage Features (#1006 with specify #9592) are ordered, the Storage Expansion Feature (#6501) is required.

     Feature #1007, specify #9602, provides an additional 32K bytes of User Programmable Storage. **Maximum** (for User Programmable Storage plus User Programmable Storage Expansion): For #1007 with #9602 specified and with Storage Expansion Feature (#6501), three. **Prerequisite:** If more than one Additional Storage Feature (#1007 with specify #9602) are ordered, or if in conjunction with any Additional

Storage Feature (#1006 with Specify #9592), then Storage Expansion Feature (#6501) is required.

3. **Control Storage:** Used for attachment of any combination of device types/functions/features which have associated attachment factors. See Device Attachment Table C in the M3601 "white pages" (Consultants' Manual SY20-0161). Some combinations of device types can be accommodated with no further increments of Control Storage, while other combinations require additional increments of Control Storage.

Note: Accumulation of attachment factors is not required if an IBM 3600 FDP is used.

Feature #1006, Specify #9591 (Models 2A, 2B, 3A, and 3B only), provides one increment of 16K bytes of Control Storage for device attachment.

Two additional increments, for a total of 3, are available with Control Storage Expansion (see below). To determine whether and how many Control Storage increments (#1006 with specify #9591) are required, refer to Device Attachment Table C in the M3601 "white pages" (Consultants' Manual SY20-0161). Calculate the sum of the attachment factors for the combination of devices and/or functions required. Add the attachment factor one time only for each device type, function, or feature. If the attachment factor sum is 10 or less, feature (#1006 with specify #9591) is not required. If the attachment factor sum is greater than 10 feature (#1006 with specify #9591) is required. An attachment factor sum greater than 22 is not allowed in this base attachment factor calculation. **Maximum.** For Control Storage: For #1006 with specify #9591, one.

4. **Control Storage Expansion (CSE):** Feature #1006 specify #9591 (Models 2A, 2B, 3A, and 3B only). Used to provide a greater attachment factor capability for certain features or devices which require an attachment factor. CSE supplements the base attachment factor limit of 22 by providing second and third increments of additional storage. An additional attachment factor capability of 12 can be obtained by utilizing the second increment of #1006 with specify #9591, or 28 by utilizing the second and third increments of #1006 with specify #9591. Only the attachment factors associated with certain device types, features, or functions can be applied against this expanded attachment factor capability. See Device Attachment Table C in the M3601 "white pages".

While Control Storage Expansion provides additional attachment factor capability, the CSE attachment factor must be considered separately from the base attachment factor calculation. Specifically, the attachment factor for a given device or feature must be allocated against either the base or the expanded attachment factor but not both. **Maximum.** For Control Storage plus Control Storage Expansion: For #1006 with #9591 specified and with Storage Expansion Feature (#6501), Three. **Prerequisite:** If more than one #1006 with #9591 is ordered, the Storage Expansion Feature (#6501) is required.

Limitation: The maximum number of #1006s is nine (whatever the combination of specify #9591 and #9592) for controllers with serial numbers of 13100 or higher, or if the controller is a reconditioned unit incorporating EC

745887. For units with lower serial numbers, without EC 745887, the maximum number of #1006s is seven.

The maximum number of #1007 plus #1006 (whatever the combination of specifies #9602, #9591, or #9592) for controllers shipped prior to EC 745887 is;

	#1007	+	#1006
QTY	3	+	1
QTY	2	+	3
QTY	1	+	5
QTY	0	+	7

The maximum number of #1007 plus #1006 for controllers with EC 745887 is;

	#1007	+	#1006
QTY	3	+	3
QTY	2	+	5
QTY	1	+	7
QTY	0	+	9

Device Attachment Table C

See the M3601 "white pages" for this detailed table of attachment factors and their values.

Auxiliary Diskette Drive .25 Megabyte (#1025): [Model 3A only] Provides approximately 280K bytes of additional diskette storage via two diskette drives. No area of the diskette to be mounted in the auxiliary (or secondary) drive will be reserved for the control program. **Maximum:** One.

Auxiliary Diskette Drive .5 Megabyte (#1035): [Model 3B only] Provides approximately 560K bytes of additional diskette storage via two diskette drives. No area of the diskette to be mounted on the auxiliary (or secondary) drive will be reserved for the control program. **Maximum:** One.

Note: Support for features #1025 and #1035 is provided by the Extended Diskette Access Method (EDAM) Base, EDAM Allocate or Deallocate (LDKT instruction), and EDAM Temporary File Support. Refer to Device Attachment Table C and the Attachment Factor Functions paragraph in the M3601 "white pages".

Field installation of these features requires replacement of diskette storage device. Adequate provision must be made for retaining data contained on the diskette by having the user remove it prior to installation of the feature.

Customers must be advised that installing this feature involves removal of parts which become the property of IBM.

Device Cluster Adapter (#3101): [Models 3A and 3B only] Provides for the local attachment of a mix of 3278-2 Display Stations, 3287 Printers and 3289 Printers up to a maximum of eight devices. When attaching the 3278-2 Display Station to the Device Cluster Adapter, no charge RPQ 8K0880 is required. **Maximum:** One. **Limitations:** 1) Maximum distance from controller to terminal is 1500 meters (5000 feet). 2) When the Device Cluster Adapter is installed, loop number 4 is no longer available. The maximum number of loops available on the 3601-3 is therefore reduced to five.

EIA Interface (#3701): Provides the appropriate cables and interface logic necessary to attach an external IBM modem for communications to the System/3 Model 15 or System/34 or for local attachment to the System/3 Model 15 without requiring modems. Non-IBM modems may be attached subject to the multiple Suppliers System Policy. **Maximum:** One. **Prerequisite:** SDLC Communications Feature with Clocking (#6301 or #4501) or SDLC Communications Feature without

Clocking (#6302 or #4502). **Limitation:** Cannot be installed with a 1200 bps Integrated Modem (#5500).

Loop Feature, Additional (#4735): Provides the ability to attach additional 3600 Finance Communication System terminals. **Maximum:** Two per Models 2A and 2B. Five per Models 3A and 3B. **Prerequisite:** For each loop with any remotely attached terminals. 1200 bps Loop Integrated Modem (#8001 or #8002) on a terminal or a 3603 is required. **Limitation:** A maximum of two loops (including the provided local loop) operating at 4800 bps, per 3601 are allowed when one of the SDLC communication features (#4501 or #4502) are specified. Loop Integrated Modem (#8001) cannot be installed on Models 2A and 2B. *Note:* The sum of speeds of all loops in bits per second (bps) plus the speed of the SDLC link (#6301 or #6302) in bps cannot exceed 10,800 bps. When SDLC feature (#4501 or #4502) is installed, the sum of all loops cannot exceed 12,000 bps (do not use the host link speed).

1200 bps Integrated Modem (#5500): An integrated modem for operation at 1200 bps over non-switched half-duplex or duplex voice grade lines for communication to an appropriately featured System/3 Model 15 communication adapter (see 5415 RPQ S40156) or a System/34. **Specify:** #9651 for 4-wire strapping or #9652 for 2-wire strapping. **Maximum:** One. **Prerequisite:** SDLC Communications Feature with Clocking (#4501 or #6301). **Limitation:** Cannot be installed with EIA Interface (#3701).

Communications Features: Each 3601 must be equipped with one of the following SDLC features and either the EIA Interface (#3701) or the 1200 bps Integrated Modem (#5500) for communication with the host processor.

SDLC Communications Feature with Business Machines Clocking (#4501): [Model 3A or 3B only] Required for attachment to communication lines through the 1200 bps Integrated Modem (#5500) or any external modem which does not have internal clocking. The SDLC link speed of this feature need not be included when calculating the sum of loop speeds not to exceed the controller aggregate baud rate of 12,000 bps. **Maximum:** One. **Limitations:** Cannot be installed with #6301, #6302, or #4502.

SDLC Communications Feature without Business Machine Clocking (#4502): [Model 3A or 3B only] Required for attachment to communication lines through an external modem which does not have internal clocking at speeds up to 9600 bps. The SDLC link speed of this feature need not be included when calculating the sum of the loop speeds not to exceed the controller aggregate baud rate of 12,000 bps. **Maximum:** One. **Limitation:** Cannot be installed with #6301, #6302, or #4501. **Prerequisite:** EIA Interface (#3701).

SDLC Communications Feature with Business Machine Clocking (#6301): Required for attachment to communication lines through the 1200 bps Integrated Modem (#5500) or any external modem which does not have internal clocking. **Maximum:** One. **Limitation:** Cannot be installed with #6302, #4501, or #4502.

SDLC Communications Feature without Business Machine Clocking (#6302): Required for attachment to communications lines through an external modem which does have internal clocking at speeds up to 4800 bps. **Maximum:** One. **Limitation:** Cannot be installed with #6301, #4501, or #4502. **Prerequisite:** EIA Interface (#3701).

Storage Expansion Feature (#6501): (Models 2A, 2B, 3A, and 3B only) Provides capability of (1) expanding User Programmable Storage (#1006 with specify #9592 or #1007 with specify #9602) beyond 56K bytes, and/or (2) adding additional increments of #1006 with specify #9591, beyond 16K bytes. **Maximum:** One. This feature (#6501) is required when more than one Additional Storage Feature (#1006 specify #9591), or more than two Additional User Programmable Storage Feature (#1006 specify #9592) or more than one Additional Storage Feature (#1007 specify #9602) are ordered.

Note: #6501 is a prerequisite for #1007 on Models 2A, 2B, 3A, and 3B shipped prior to EC 745887.

Limitation: If Independent Release 4 and Controller Data ECs 745122 and 745123 are utilized, the controller will work properly with the Storage Expansion Feature (#6501) installed, but Control Storage Expansion cannot be utilized. If releases earlier than Independent Release 4 and Controller Data ECs 745122 and 745123 are utilized, neither the Storage Expansion Feature (#6501) nor more than one Additional Storage Feature (#1006 with specify #9591) should be installed.

1200 bps Loop Integrated Modem (#8001): [Model 3A or 3B only] An integrated modem for transmission to remotely located 3600 Finance Communication System terminals. Operates at 1200 bps over non-switched normal quality voice grade lines.

Note: Several remote loop configuration variations can be realized; for examples, see the IBM 3600 FCS Configurator, GA27-2762. However, regardless of configuration, the interconnecting common carrier facilities are always point-to-point circuits; either 2-wire half-duplex or 4-wire duplex. The common carrier does not tariff 3600 "remote loops". The customer should be referred to the configurator or information in the M2700 white pages for definition of the tariffed elements of the remote loop. **Maximum:** One per Additional Loop Feature (#4735). **Prerequisite:** Additional Loop Feature (#4735). Each remote location must have either a 3604 Keyboard Display Model 2, 3, or 4 equipped with a 1200 bps Loop Integrated Modem (#8001 or #8002), a 3614/3624 Consumer Transaction Facility with a 1200 bps Loop Integrated Modem (#8001) or a 3603 as the first attached remote unit in each physical (geographic) location.

3600 ACCESSORIES

Cables (3600): Cables to attach 3600 units may be purchased from IBM or some other source. See *Physical Planning Manual* GA27-2766 for cable and connector specifications. The customer is responsible for installation and maintenance of these cables. Assembled cables may be purchased from IBM. Specify bulk number, cable assembly number or part number as appropriate. Allow a lead time of 6 weeks.

Item No.	Description	Maximum Length
A/N 1563155	Loop Cable Assembly	609.6 m (2000 ft)
A/N 1741656	Cable Assy (joining 2 telephone lines)	N/A
A/N 1745348	Cable Assy (3603 to Loop Terminal Box)	7.62 m (25 ft)
A/N 1745372	Cable Assy (Loop Repeater to Loop Terminal Box)	7.62 m (25 ft)
A/N 1745349	Cable Assy (DDA to 3603)	7.62 m (25 ft)
A/N 1745350	Cable Assy (3603 to Leased Lines)	7.62 m (25 ft)
B/N 5252769	Bulk Cable (2 Conductor)	N/A
B/N 5252913	Bulk Cable (4 Conductor)	N/A
P/N 1561344	Strain Relief	
P/N 1745363	Connector Assembly (3603)	
P/N 5252763	Male Plug	
P/N 5252765	Female Plug	
P/N 5420242	Mini-Ty (used with 1745363)	

Locks and Keys: 3601: The 3601 is shipped with two keys. Additional keys may be purchased from IBM. Indicate serial number of lock.

3610, 3612: The 3610 Model 2 and 3612 Model 2 with the Journal Takeup with Locked Cover (#4651) special feature are shipped with two keys. Additional keys may be purchased from IBM. Indicate serial number of lock.

3610 Model 4, 3616: The 3610 Model 4 and the 3616 are shipped with two keys. Additional keys may be purchased from IBM. Indicate serial number of lock.

Forms Stand (#4450): Permits placement of continuous forms (out of carton) on stand above floor level and provides for stacking after printing. This accessory is applicable to the 3610 Model 3, 3612 Model 3, 3615, and 3618.

Loop Repeater (P/N 4400002) (3600 System): Plugs into the Loop cable and redrives all signals being transmitted in a 3600 Finance Communication System. Each Loop Repeater contains Loop redriving capabilities which allow for the extension of the Loop cable length by 2000 feet. Loop Repeaters may be employed on a Loop to extend its overall length to a maximum of 20,000 cable-feet. The unit can be physically mounted on a wall in an out-of-the-way location.

Prerequisite: An operating 3600 System Local Loop or Remote Subloop.

Publications: GC22-0005

Customer Responsibilities: (1) The customer is responsible for making certain that the use of the equipment complies with all Federal, State, and Local Laws, Regulations, and Ordinances ... (2) The customer is responsible for price quotations, installation and cost (initial and recurring) of common carrier equipment and service ... (3) The customer is responsible for the setup of the unit ... (4) The customer will determine the failing unit (see "Maintenance" below) ... (5) the customer is responsible for determining the required number of spares.

Physical Planning and Setup: Physical planning and setup is the responsibility of the customer. Attachment to the Loop cable is provided by ordering External Signal Cable Assembly, IBM P/N 174372 or equivalent. See *IBM 3600 Finance Communication System Installation Manual—Physical Planning,* GA27-2766.

Spares: The customer may wish to replace a failing unit with a spare and must be advised to purchase sufficient spare units for such use. The number of spare units recommended is dependent upon the number of units the customer has installed, application requirements, physical locations and layouts. However, the minimum number of spare units recommended is shown in the following table:

# of Loop Repeaters Installed	Minimum # Spares Recommended
100	2

Warranty: Service is available at the designated IBM Repair Center during the 90 day warranty period, which commences 30 days following date of shipment from the plant of manufacture (Raleigh). It shall be the customer's responsibility to set up the equipment. It shall be the customer's responsibility to determine the failing unit and remove it from the Loop, and if the unit is still under warranty, to pack it in the designated shipping container and ship it prepaid to the designated IBM Repair Center. IBM will return the serviced unit, shipping charges prepaid. There is no regularly scheduled preventive maintenance recommended by IBM on these units.

Maintenance agreements are not available. FE on-site service will not be provided.

Ordering: Order P/N 4400002.

	Machine	Part No.
Loop Repeater	3601	4400002
Loop Repeater	3602	4400002

Miscellaneous: Accessories for 3600 System equipment may be purchased from IBM or some other source. Allow a lead time of 120 days when ordering.

	Part Number	Description
3601		
	789999	Fuse (.5A Slow Blow)
3603		
	111262	Fuse (.4 Slow Blow)
	1176668	Fuse (1.5A Flow Blow)
	1745353	Jumper Assembly (Signal Attenuation)
	5929886	Wall Plate Assembly
3604 Keytop Labels		
Models 1, 2, 3, 4		
	1561332	Blank Base for Customization
	1562333	Clear Protective Overlay
	1561341	Preprinted (Group 1)
	1561342	Preprinted (Group 2)
3604 Reledgendable Keytops		
Models 1, 2, 3, 4, 7		
	5188775	Key Button Assembly (2 part)
	5188762	Lens (replacement)
3604 Overlays		
Models 5, 6		
	4942506	White Background 45 Key
	4942515	Blue Insert 15 Key
	4943749	Clear Protective Cover 45 Key
	4405939	Clear Protective Cover 45 Key (without indicator holes)

3606/3608

1652103	Fuse Holder Assembly	
1702817	Display Filter - Standard	
1702847	Keyboard Overlay - Standard	
1702848	Keyboard Overlay - Blank except for Numerics	
1702849	Keyboard Overlay - Protective Cover	
1702867	Keyboard Overlay - Standard Function Key Nomenclature Calculator Numeric Arrangement	
1702904	Display Filter - Blank Red	
1702934	Keyboard Overlay - Blank Function Key Nomenclature Calculator Numeric Arrangement	
6812758	Cap Fuse Holder	

The following accessories may be obtained by contacting the local SSD marketing representative.

Diskettes
Magnetic Passbook Labels
Ink Rolls
3616/3618 Printer Ribbons
3610, 3612, 3616 Journal Roll Paper

IBM 3600 FDP SUPPORT

Listed below is a quick index of 3600 devices, features, and specifies that are currently supported by IBM 3600 Field Developed Programs (FDPs) for both the System/3-15 and System/34. Customers wishing to utilize devices, features, or specifies not supported by an FDP require user written controller code written in Finance Communication Language on a System/370.

Device/Feature/Specify	System/3-15	System/34
3601 Models 2A, 3A	Yes	Yes
#1006	Yes	Yes
#9591	5798 NYZ Only	Yes
#9592	Yes	Yes
#1007	Yes	Yes
#9602	Yes	Yes
#3701	Yes	Yes
#4735	Yes	Yes
#6302	Yes	Yes
#6501	No	Yes
8K0598	Yes	No
8K0623	Yes	No
#9413	Yes	Yes
#9491	Yes	No
#9492	Yes	Yes
#9494	Yes	No
#9881	Yes	Yes
3603 Models 1, 2	Yes	Yes
#6352	Yes	Yes
#9901	Yes	Yes
3604 Model 1	Yes	No
#4663	Yes	No
#4901	5798 NKZ Only	No
#4905	5798 NYZ Only	No
#9181	Yes	No
#9481	5798 NKZ Only	No
#9482	5798 NYZ Only	No
#9881	Yes	No
MG1586	5798 NYZ Only	No
8K0559	5798 NKZ Only	No
3604 Model A02	Yes	Yes
#4774	Yes	Yes
#4906	Yes	Yes
#9181	Yes	Yes
#9481	5798 NKZ Only	No
#9482	5798 NYZ Only	Yes
#9881	Yes	Yes
MG1586	Yes	Yes
8K0612	5798 NXL Only	No
3604 Model 6	Yes	Yes
#1501	Yes	Yes
#4903	Yes	Yes
#9881	Yes	Yes
MG1586	Yes	Yes
8K0597	5798 NKZ Only	No
3606 Model 1	5798 NYZ Only	Yes
#9031	5798 NYZ Only	Yes
#9481	5798 NYZ Only	Yes
#9901	5798 NYZ Only	Yes

Device/Feature/Specify	System/3-15	System/34
3608 Model 1	5798 NYZ Only	Yes
#9031	5798 NYZ Only	Yes
#9481	5798 NYZ Only	Yes
#9540-9544	5798 NYZ Only	Yes
#9901	5798 NYZ Only	Yes
3610 Model 4	Yes	Yes
#6350	5798 NKZ Only	No
#9881	Yes	Yes
MG1586	Yes	Yes
3611 Model A02	Yes	Yes
#6904	Yes	Yes
#9881	Yes	Yes
MG1586	Yes	Yes
3612 Model A03	5798 NYZ Only	No
3612 Model A02	Yes	No
#4652	Yes	No
#6350	5798 NKZ Only	No
#6904	Yes	No
#9881	Yes	No
MG1586	Yes	No
3614 Models 1, 2	5798 NYZ Only	No
#3322	5798 NYZ Only	No
#7820	5798 NYZ Only	No
#7900	5798 NYZ Only	No
#9001	5798 NYZ Only	No
#9062-9064	5798 NYZ Only	No
#9091	5798 NYZ Only	No
#9402	5798 NYZ Only	No
#9457	5798 NYZ Only	No
#9571	5798 NYZ Only	No
#9572-9574	5798 NYZ Only	No
#9802	5798 NYZ Only	No
#9901	5798 NYZ Only	No
3616 Model 1	No	Yes
#9891	No	Yes
3624 Model 11	5798 NYZ Only	Yes
#3233	5798 NYZ Only	Yes
#3245	5798 NYZ Only	Yes
#5510	5798 NYZ Only	Yes
#7820	5798 NYZ Only	Yes
#7950	5798 NYZ Only	Yes
#8001	5798 NYZ Only	Yes
#8201	5798 NYZ Only	Yes
#9062-9063	5798 NYZ Only	Yes
#9091	5798 NYZ Only	Yes
#9110	5798 NYZ Only	Yes
#9301	5798 NYZ Only	Yes
#9402	5798 NYZ Only	Yes
#9413	5798 NYZ Only	Yes
#9462	5798 NYZ Only	Yes
#9492	5798 NYZ Only	Yes
#9911	5798 NYZ Only	Yes
3624 Model 12	5798 NYZ Only	Yes
#1490-1491	5798 NYZ Only	Yes
#3150	5798 NYZ Only	Yes
#3155	5798 NYZ Only	Yes
#3243	5798 NYZ Only	Yes
#3245	5798 NYZ Only	Yes
#3310	5798 NYZ Only	Yes

Device/Feature/Specify	System/3-15	System/34
#3312	5798 NYZ Only	Yes
#3375	5798 NYZ Only	Yes
#3902	5798 NYZ Only	Yes
#3951	5798 NYZ Only	Yes
#3961-3962	5798 NYZ Only	Yes
#4902	5798 NYZ Only	Yes
#7820	5798 NYZ Only	Yes
#7950	5798 NYZ Only	Yes
#8001	5798 NYZ Only	Yes
#8201	5798 NYZ Only	Yes
#9062-9063	5798 NYZ Only	Yes
#9091	5798 NYZ Only	Yes
#9110	5798 NYZ Only	Yes
#9251	5798 NYZ Only	Yes
#9253	5798 NYZ Only	Yes
#9301	5798 NYZ Only	Yes
#9402	5798 NYZ Only	Yes
#9462	5798 NYZ Only	Yes
#9492	5798 NYZ Only	Yes
#9701-9703	5798 NYZ Only	Yes
#9911	5798 NYZ Only	Yes

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3602 FINANCE COMMUNICATION CONTROLLER

Purpose: A programmable controller for attachment of 3600 Finance Communication System Terminals to System/34 and System/3 Model 15 processors.

Attachment to System/34 is via SDLC transmission over various common carrier or user-owned facilities.

Attachment to System/3 Model 15 is via Binary Synchronous Communications (BSC). Contact IBM to see 3601/3602 RPQs 8K0598 and 8K0623 and 5415 RPQ S40156.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Development Programs (FDPs).

Model 1A: A large-file programmable controller with a 5.2 MB disk, a drive which accommodates one-sided or two-sided removable diskettes, 16K or 32K increments of storage, and a maximum loop capacity of eight, of which seven can be remote.

Model 1B: A large-file programmable controller with a 9.3 MB disk, a drive which accommodates one-sided or two-sided removable diskettes, 16K or 32K increments of storage, and a maximum loop capability of eight, of which seven can be remote.

Model Changes: Model 1A can be changed to Model 1B. This upgrade requires replacement of the disk storage (not diskette) device. Adequate provision must be made for retaining data contained on disk storage and elimination of user proprietary information. **Limitation:** Field installation of the additional disk heads for Model 1B (#1011) concurrently with a model change from Model 1A to Model 1B requires the submission of an RPQ.

Customers must be advised that making a model change involves removal of parts which become the property of IBM.

All features except 1010, 1011 and 1015 may be field installed.

Highlights: Controls all the functions of 3600 Finance Communication System terminals. Controls data transmission between those terminals and the central processing site. Four SDLC Communication features are available one of which is required for transmission to the Host. An SDLC Communications feature at speeds from 1200 bps to 4800 bps or an SDLC Communications feature at speeds from 1200 bps to 9600 bps can be selected. Besides Host link speed differences the SDLC feature to 9600 bps allows a maximum controller aggregate baud rate of 12,000 bps for the loops independent of the Host link speed...see "Communications Features". For Binary Synchronous Communications (BSC) see RPQs 8K0598 and 8K0623.

Contains approximately 24K bytes of programmable storage. Six more increments of 16K bytes or three increments of 32K bytes of programmable storage (for a total of 120K) are available. The amount of programmable storage available for application programming depends upon the attached terminal configuration and user environment. See "Additional Storage Feature" (#1006 or #1007).

Houses a direct access diskette drive with two-sided removable diskette which provides permanent storage for control and user programs, plus temporary and permanent storage for user data (sequential logging, random retrieval of data records, etc.). With Auxiliary Diskette Drive (#1015), the 3602 permits attachment of two 2-sided diskette drives.

Houses a disk storage device for storage of user data. This storage device is not removable except by service personnel.

Includes a fixed head feature which will provide eight additional heads with access to disk data on eight tracks. See Additional Disk Heads Feature (#1010, #1011).

All 3600 System terminals are attached by loops which operate at speeds of 1200, 2400 or 4800 bps for locally attached terminals and at 1200 bps or 2400 bps for remotely attached terminals. The base unit provides one loop. Seven additional loops are available. Integrated modems are available on both models. See "Special Features". *Note:* Only one 4800 bps loop per 3602 may be specified for System/3 Host attachment.

Communication between the controller and the System/34 or System/3 Model 15 may be either through an integrated 1200 bps modem or through an external modem with EIA Interface (#3701), or via the EIA local attachment feature of the System/3 Model 15. See "Modems" and "Special Features" below. Each 3602 operates in half-duplex mode. Duplex communication line operations are possible with multiple 3601/3602s attached to the line...one 3602 transmitting while the other receives.

For attachment to System/3 Model 15, contact IBM to see 3601/3602 RPQ 8K0598 and 5415 RPQ S40156.

Can be programmed to operate independently when the CPU is unavailable. Capable of controlling all terminal functions, executing arithmetic, and capturing data from the terminals for later transmission to the CPU.

Transmission: The 3602 operates over common carrier provided or equivalent customer owned communications facilities. For information concerning these facilities, see the M2700 "white pages" (Consultants' Manual SY20-0161).

Modems: External modems operating at up to 4800 bps may be attached when used with SDLC Feature #6301 or #6302. Speeds up to 9600 bps may be achieved with SDLC Feature (#4501 or #4502).

Modem	Speed (bps)	Facility
3863	2400	Switched or non-switched voice grade lines
3872	2400	Switched or non-switched voice grade lines
3874	4800	Switched or non-switched voice grade lines
3864	4800	Switched or non-switched voice grade lines
3865	9600	Non-switched voice grade lines
*	9600	Non-switched digital ser.

* See RPQ for IBM DDSA

See the M2700 white pages for further information. Non-IBM Modems may be attached subject to the IBM Multiple Supplier System Policy.

Note: Switched line operation is not supported by the 3601/3602 integrated 1200 bps modem.

Publications: GC27-0001, *IBM 3600 Finance Communication System, System Summary.*

Supplies: For customer-usable diskettes, see the *SSD Sales Manual.*

SPECIFY

1. Voltage (AC, 1-phase, 60 Hz): Locking Plug—#9880 for 115 V, #9884 for 208 V, #9886 for 230 V. Non-locking Plug—#9881 for 115 V, #9885 for 208 V, #9887 for 230 V. **Field Installation:** Not recommended.

2. Controller Designation. Media distribution of Controller

Data: Specify #9491 to identify the initial 3602 ordered for use with a host system location, or specify #9492 to identify additional 3602s per host system.

Note: Customers using the 3600 program preparation service should choose not to receive the controller data separately. In this case, #9492 should also be specified for the initial 3602.

If #9491 is specified for the 3602, specify #9494 if there is no 3614/3624 with a first position designator attached to any 3602 on the same host system, or #9495 if there is a 3614/3624 with a first position designator and #9001 attached to any 3602 on the same host system. See 3614/3624 Host Attachment Designation under "Specify" for the 3602.

If #9491 is specified, select the feature number of the desired media.

> #9412   9/800 Magnetic Tape
> #9413   9/1600 Magnetic Tape

If tape drives are not available at the host location, contact your IBM marketing representative for guidance.

When feature #9491 is specified, contact IBM for additional shipping information required.

3. Cables: See "Accessories" at the end of the M3601 pages for ordering instructions. Also see the *IBM 3600 Installation Manual—Physical Planning,* GA27-2766.

4. If ordering a 3614/3624 with 1st position designator (see 3614/3624 Host Attachment Designation under "Specify" for the 3602) to be added to any existing 3602, an MES order transaction should be used against the initial 3602 (specify code #9491 with #9494) requesting to delete #9494 and add #9493 for the initial 3602.

If all installed or on order 3614/3624s for loop attachment to the 3602 are removed or cancelled, an MES order transaction should be used against the initial 3602 (specify code #9491 with #9495) requesting to delete #9495 and add #9494. Contact IBM for clarification.

Refer to Specify item 2 for further information about these specify codes and their use (1) when ordering a loop attached 3614/3624 in a network where no 3614/3624s are previously attached and (2) when field installation of feature #9001 on a loop attached 3614/3624.

SPECIAL FEATURES

Additional Storage Features

- **#1006** - Provides an additional 16K bytes of Control Storage for device attachment or an additional 16K bytes of User Programmable Storage. Additional storage can be utilized for the following four purposes: (1) User Programmable Storage, (2) User Programmable Storage Expansion, (3) Control Storage, or (4) Control Storage Expansion (see below for description and limitations). Specify: #9591 for Control Storage, or #9592 for User Programmable Storage.

- **#1007** - Provides an additional 32K bytes of User Programmable Storage. Additional storage can be used for (1) User Programmable Storage or (2) User Programmable Storage Expansion. (See below for description and limitations.) Specify #9602.

1. **User Programmable Storage:** Used for configuration data and application programs.

Feature #1006, Specify #9592, provides an additional 16K bytes of User Programmable Storage. **Maximum:** For #1006 with #9592, two.

Feature #1007, Specify #9602, provides an additional 32K bytes of User Programmable Storage. **Maximum:** For #1007 with #9602, one.

2. **User Programmable Storage Expansion:** Used in addition to two #1006 specify #9592 increments or one #1007 specify #9602 increment of User Programmable Storage, described above, for the instruction sections of application programs and a limited amount of configuration data and application program constants. Most configuration data and application program constants *cannot* reside in expanded user programmable storage.

Feature #1006, Specify #9592, provides an additional 16K bytes of User Programmable Storage. **Maximum:** (For User Programmable Storage plus User Programmable Storage Expansion); For #1006 with #9592 specified and with Storage Expansion Feature (#6501) - six. **Prerequisite:** If more than two Additional Storage Features (#1006 with specify #9592) are ordered, the Storage Expansion Feature (#6501) is required.

Feature #1007, Specify #9602, provides an additional 32K bytes of User Programmable Storage. **Maximum:** (For User Programmable Storage plus User Programmable Storage Expansion): For #1007 with #9602 specified and with Storage Expansion Feature (#6501), three. **Prerequisite:** If more than one Additional Storage Feature (#1007 with specify #9602) are ordered, or if in conjunction with any Additional Storage Feature (#1006 with Specify #9592), then the Storage Expansion Feature (#6501) is required.

3. **Control Storage:** Feature #1006, Specify #9591. Used for attaching any combination of device types, functions, or features which have associated attachment factors. See Device Attachment Table C in the M3601 "white pages" (Consultants' Manual SY20-0161). Some combination of device types can be accommodated with no further increments of control storage, while other combinations require additional increments of control storage provided by the use of feature #1006 with specify #9591.

One additional increment of Control Storage is available without utilizing Control Storage Expansion (#6501). Three additional increments, for a total of four, are available with #6501. To determine whether and how many Control Storage increments (#1006 with specify #9591) are required, refer to the "Device Attachment Table". Calculate the sum of the attachment factors for the combination of devices and/or functions required. Add the attachment factor one time only for each device type, function, or feature. If the attachment factor sum is 10 or less, feature #1006 with specify #9591 is not required. If the attachment factor sum is greater than 10, feature #1006 with specify #9591 is required. An attachment factor sum greater than 22 is not allowed in this base attachment factor calculation. **Maximum:** (For Control Storage) #1006 with specify #9591, one.

Note: Accumulation of attachment factors is not required if an IBM 3600 FDP is used.

4. **Control Storage Expansion (CSE):** Feature #1006, Specify #9591. Used to provide a greater attachment factor capability for certain features or devices which require an attachment factor. CSE supplements the base attachment factor limit of 22.0 by providing second, third, and fourth increments of additional storage. An additional attachment factor capability of 12 can be obtained by utilizing the second increment of #1006 with specify #9591, 28 by utilizing the second and third increments of #1006 with specify #9591 or 44 by utilizing the second, third, and fourth increments of #1006 with specify #9591. Only the attachment factors associated with certain device types, features, or functions can be applied against this expanded attachment factor. See Device Attachment Table C noted in 3 above. While Control Storage Expansion provides additional attachment factor capability, the CSE attachment factor must be considered separately from the base attachment factor calculation. Specifically, the attachment factor for a given device or feature must be allocated against either the base or the expanded attachment factor but not both. **Maximum.** For Control Storage plus Control Storage Expansion: For #1006 with specify #9591, four. **Prerequisite:** If more than one Control Storage Feature (#1006 with specify #9591) is ordered, Storage Expansion Feature (#6501) is required.

Limitation: The maximum number of #1006s (with any combination of specifies #9591 and #9592) is ten.

The maximum number of #1007s is three.

The maximum number of #1007s plus #1006s (whatever the combination of specifies #9602, #9591, or #9592) is;

	#1007	+	#1006
QTY	3	+	4
QTY	2	+	6
QTY	1	+	8
QTY	0	+	10

Device Attachment Table C

See the M3601 "white pages" for this detailed table of attachment factors and their values.

Additional Disk Heads (#1010, #1011): [#1010 for Model 1A...#1011 for Model 1B] Provides additional disk heads (8) for the disk file as specified by model type selected. **Maximum:** One. **Field Installation:** Not recommended.

Auxiliary Diskette Drive (#1015): Provides approximately 560,000 bytes of additional diskette storage capacity via a second diskette drive. No area on the auxiliary (or secondary) drive will be reserved for the control program. **Maximum:** One. **Field Installation:** Available at time of manufacture only.

Note: Support for this feature is provided by the Extended Diskette Access Method (EDAM) Base, EDAM Allocate or Deallocate (LDKT instruction), and EDAM Temporary File Support. Refer to the Device Attachment Table C and the Attachment Factor Functions paragraph in the M3601 "white pages". The EDAM function is not required to use the Auxiliary Diskette Drive feature. The level of support provided without EDAM is limited to direct (absolute) addressing at the track and sector level.

Device Cluster Adapter (#3101): Provides for local attachment of a mix of up to eight 3262 Line Printer Model 3s/13s or 3287 Printer Model 1s/2s and 3278 Display Station Model 2s on a 3602. The number operable in a given application depends upon the user application program.

Maximum: One. **Prerequisites:** When attaching the 3278 Model 2 to this feature, no-charge RPQ 8K0880 is required. **Limitations:** (1) Maximum distance from controller to terminal is 1500 meters (4920 feet). (2) When this feature is installed, loops number 4 and 8 are no longer available.

EIA Interface (#3701): Provides the appropriate cables and interface logic necessary to attach an external IBM modem for communications to the System/3 Model 15 or System/34 or for local attachment to the System/3 Model 15 without requiring modems. Non-IBM modems may be attached subject to the Multiple Suppliers System Policy. **Maximum:** One. **Prerequisite:** SDLC Communications Feature with Clocking (#6301 or #4501) or SDLC Communications Feature without Clocking (#6302 or #4502). **Limitation:** Cannot be installed with a 1200 bps Integrated Modem (#5500).

Loop Feature, Additional (#4735): Provides the ability to attach additional 3600 Finance Communication System terminals. **Maximum:** Seven without #3101, five with #3101. **Prerequisite:** For each loop with any remotely attached terminals, a 1200 bps Loop Integrated Modem (#8001 or #8002) or a 3603 is required. **Limitation:** A maximum of two loops (including the provided local loop) operating at 4800 bps, per 3602 are allowed when one of the SDLC Features (#4501 or #4502) are used. Otherwise, the maximum is one loop operating at 4800 bps (including the provided local loop).

Note: The sum of the speeds of all loops in bits per second (bps) plus the speed of the SDLC link (#6301 or #6302) in bps cannot exceed 12,000 bps. When SDLC Feature is installed the sum of the loops cannot exceed 12,000 bps.

1200 bps Integrated Modem (#5500): An integrated modem for operation at 1200 bps over non-switched half-duplex or duplex voice grade lines for communication with a System/34 or with an appropriately featured System/3 Model 15 communications adapter. See 5415 RPQ S40156. **Maximum:** One. **Prerequisite:** SDLC Communications Feature with Clocking (#6301 or #4501). **Limitation:** Cannot be installed with EIA Interface (#3701).

Communications Features: Each 3602 must be equipped with one of the following SDLC features and either the EIA Interface (#3701) or the 1200 bps Integrated Modem (#5500) for communication with the host processor.

SDLC Communications Feature with Business Machine Clocking (#4501): Required for attachment to communication lines through the 1200 bps Integrated Modem (#5500) or any external modem which does not have internal clocking. The SDLC link speed of this feature need not be included when calculating the sum of the loop speeds not to exceed the controller aggregate baud rate of 12,000 bps. **Maximum:** One. **Limitation:** Cannot be installed with #6301, #6302 or #4502.

SDLC Communications Feature without Business Machine Clocking (#4502): Required for attachment to communication lines through an external modem which does have internal clocking at speeds up to 9600 bps. The SDLC link speed of this feature need not be included when calculating the sum of the loop speeds not to exceed the controller aggregate baud rate of 12,000 bps. **Maximum:** One. **Limitation:** Cannot be installed with #6301, #6302 or #4501. **Prerequisite:** EIA Interface (#3701).

SDLC Communications Feature with Business Machine Clocking (#6301): Required for attachment to communication lines through the 1200 bps Integrated Modem (#5500) or any external modem which does not have internal clocking.

Maximum: One. **Limitation:** Cannot be installed with #6302, #4501 or #4502.

SDLC Communications Feature without Business Machine Clocking (#6302): Required for attachment to communication lines through an external modem which does have internal clocking at speeds up to 4800 bps. **Maximum:** One. **Limitation:** Cannot be installed with #6301, #4501 or #4502. **Prerequisite:** EIA Interface (#3701).

Storage Expansion Feature (#6501): Provides capability of (1) expanding User Programmable Storage (#1006 with specify #9592 or #1007 with specify #9602) beyond 56K bytes and/or (2) adding additional increments of #1006 with specify #9591, beyond 16K bytes. **Maximum:** One. This feature (#6501) is required when more than 16K of additional Control Storage, Additional Storage Feature (#1006 with specify #9591) or more than 32K of additional User Programmable Storage, Additional Storage Feature (#1006 specify #9592) or Additional Storage Feature (#1007 specify #9602) are ordered. **Limitations:** If Independent Release 4 and Controller Data EC's 745122 and 745123 are utilized, the controller will work properly with the Storage Expansion Feature (#6501) installed, but Control Storage Expansion cannot be utilized. If releases earlier than Independent Release 4 ad Controller Data EC's 745122 and 745123 are utilized, neither the Storage Expansion Feature (#6501) nor more than one Additional Storage Feature (#1006 with specify #9591) should be installed.

1200 bps Loop Integrated Modem (#8001): An integrated modem for transmission to remotely located 3600 Finance Communication System terminals. Operates at 1200 bps over non-switched normal quality voice grade lines. *Note:* Several remote loop configuration variations can be realized; for examples, see the *IBM 3600 FCS Configurator,* GA27-2762. However, facilities are always point-to-point circuits; either 2-wire half-duplex or 4-wire duplex. The common carrier does not tariff 3600 "remote loops". The customer should be referred to the configurator or information in the M2700 "white pages" for definitions of the tariffed elements of the remote loop. **Maximum:** One per Additional Loop Feature (#4735). **Prerequisite:** Additional Loop Feature (#4735). Each remote location must have either a 3604 Keyboard Display Model 2, 3, or 4 equipped with a 1200 bps Loop Integrated Modem (#8001 or #8002), a 3614 Consumer Transaction Facility with a 1200 bps Loop Integrated Modem (#8001), or a 3603 as the first attached remote unit in each physical (geographic) location.

ACCESSORIES

See "Accessories" at end of the M3601 pages.

IBM Machines

3603 TERMINAL ATTACHMENT UNIT

Purpose: Attaches all 3600 System and 4700 System Controllers and terminals to their communication facilities. The 3603 enables remote subloop operation by connecting the controller loop feature to the communication facilities which connect to a remote 3603 with the subloop of terminals.

Model 1: Provides 1200 bps integrated circuitry for attachment to communication facilities and has switched network backup capability for use if the non-switched communication line fails.

Model 2: Provides an EIA RS-232-C interface to an external asynchronous modem (1200, 2400 bps).

Model Changes: Available at time of manufacture only. No features may be field installed. None are CSU.

Highlights: Can be physically installed on a wall ... has self-test facilities to establish valid operation of the 3603 on a local loop exclusive of the non-switched network.

Prerequisites:

1. The 3603 Model 2 without Clocking requires an asynchronous modem.

2. The 3603 Model 2 with Clocking (#6352) requires a synchronous modem that accepts transmit signal element timing from the 3600 System or 4700 System equipment. Before ordering the 3603 Model 2, the customer must check with the modem manufacturer to determine the mode of operation.

3. A 3601 or 3602 with an Additional Loop Feature (#4735) or a 4701 with or without Additional Loop Feature (#4745) is required for each remote loop that is attached with a 3603.

4. As an alternate to a 3603, a 1200 bps Loop Integrated Modem (#8001) in the 3601 or 3602 may be used.

Note: The loop is unidirectional. Therefore, if there is only one 3603 attached, there must be a four-wire duplex communication channel interconnecting the 3601/3602/4701 and the 3603. If there is more than one 3603 location attached to a single loop, there must be a two-wire line linking all the 3603s in the loop, plus a two-wire line from the 3601/3602/4701 to the first 3603 and from the last 3603 to the 3601/3602/4701. The 3603 attaches to normal quality voice grade lines. When using a 3603 on a loop it is recommended that a 3603 be used at the 3601/3602/4701 to maximize backup capabilities.

Customer Setup (CSU): The 3603 is designated a customer setup device. For additional information on CSU, contact IBM. The IBM Marketing Representative must advise the customer of his responsibilities before receipt of the machine.

The CSU allowance is one day.

Customer Responsibilities: The customer must be advised that [1] He is responsible to make certain that the use of the equipment complies with all Federal, State, and Local Laws, Regulations, and Ordinances...[2] He is responsible for price quotations, installation and cost (initial and recurring) of common carrier equipment and service...[3] He is responsible for set up of the unit...[4] The customer will determine the failing unit (see "Maintenance" below)...[5] He is responsible to determine required spares...[6] Purchaser agrees that IBM is relieved of responsibility for all claims including, but not limited to, loss of funds contained in, dispensed by or associated with the 3603.

The customer is also responsible for the provision of a telephone local loop conditioned for data above 300 bps, and for a CDT Data Access Arrangement in order to use the Switched Network Backup Function. A cable is available from IBM, for a fee, for the DAA attachment. A similar cable is available, also for a fee, to connect the 3603 to the non-switched line connector. Installation of the cable is also a customer responsibility.

The IBM 3600 *Finance Communication System Installation Manual—Physical Planning*, GA27-2766, and the IBM 3600 *Finance Communication System Financial Services Terminal—Terminal Installation Guide*, GA27-2796, should be ordered for each customer installation.

Spares: The customer may wish to replace a failing 3603 with a spare and must be advised to purchase sufficient spare unit for such use. The number of spare units recommended is dependent upon the number of units the customer has installed, his applications requirements, physical locations, and layouts. However, the minimum number of spare units recommended is shown in the following table:

Number of 3603s installed	Minimum Number of Spares Recommended	
	Model 1	Model 2
100	2	3

Maintenance: Maintenance of the 3603 will normally be at a designated IBM Repair Center. All maintenance, parts replacement, adjustments, and repair shall normally be performed at the designated IBM Repair Center. It shall be the customer's responsibility to set up the equipment and to determine when remedial maintenance is required. When remedial maintenance is required, it shall be the customer's responsibility to determine the failing unit, pack the unit in the designated shipping container and ship it prepaid to the designated IBM Repair Center. IBM will pay the transportation charges for return of the repaired unit. There is no regularly scheduled preventive maintenance recommended by IBM on these units.

The repair service is available under an IBM Repair Center Maintenance Supplement to the IBM Maintenance Agreement or on a time and material basis.

Customers with machines not under an IBM Maintenance Agreement have the option of shipping the machines to the designated IBM Repair Center for repair under the IBM Machine Repair Authorization Form, G120-2165, in which case repair will be made (if the machine is repairable). Alternatively, upon request, IBM will provide, for a minimal charge, an estimate of repair costs. This charge covers handling, inspection, cleaning, adjustments, testing, and estimating of repair charges.

IBM Repair Center Service: The 3603 is eligible for maintenance coverage immediately following expiration of the service and parts warranty at the monthly charge shown under MMMC in the Machines Price List.

If maintenance coverage is not contracted for immediately following expiration of any service and parts warranty and the customer now wants maintenance coverage, he may ship the machine(s) to the designated IBM Repair Center for an inspection.

If, on the basis of an inspection, the repair center concludes that a machine is not repairable, no further work will be performed and the machine will be returned to the customer without charge.

In all other cases, a minimum charge per machine to cover handling, inspection, cleaning, adjustments, and testing will be

applied. In addition, all parts needed will be billed at IBM's prevailing parts prices and the additional time required for repairs will be billed at IBM's applicable service rates. The machine will then be eligible for maintenance coverage.

Publications: IBM Financial Services Terminals: Complementing Manual, GC27-0002, and the *IBM 3600 Finance Communication System Summary,* GC27-0001.

SPECIFY

1. Voltage (115 V AC,1-phase, 60 Hz): #9901.

2. Cables: See *Installation Manual—Physical Planning,* GA27-2766. Also see "Accessories" at the end of the M3601 pages.

SPECIAL FEATURES

Clocking (#6352): (Model 2 only) Provides Transmit Signal Element Timing to synchronous modems (1200, 2400 bps). This feature is required for all synchronous modems (including WE 201C and equivalent modems). **Field Installation:** Not recommended.

ACCESSORIES

See "Accessories" at the end of the M3601 pages.

3604 KEYBOARD DISPLAY—MODELS 1, 2, 3, AND 4 (withdrawn from marketing as of 15 June 1983)

Purpose: A combination keyboard and gas-panel display terminal, for input and output in interactive banking applications.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs).

Model 1 (Purchase Only): Displays 240 characters—six rows of 40 characters. May have numeric or function keys.

Model 2: Displays 240 characters—six rows of 40 characters. May have alphanumeric, numeric and function keys. May have an integrated modem.

Model 3: Displays 480 characters—12 rows of 40 characters. May have numeric, alphanumeric and function keys. May have an integrated modem.

Model 4: Displays 1024 characters—16 rows of 64 characters. May have numeric, alphanumeric and function keys. May have an integrated modem.

Model Changes: Available at time of manufacture only. All keyboard features are not recommended for field installation. All other features may be field installed.

Highlights: The 3604 displays up to 153 different characters under programmed control of a 3601 or 3602 Finance Communication Controller.

Has a variety of keyboards to meet input requirements. See "Special Features".

Can be equipped to read a magnetic stripe on either a plastic card or a passbook and/or to encode a magnetic stripe on a passbook.

May be either locally or remotely attached to a 3601 or 3602.

Prerequisites:

1. An available position on a local or remote loop of a 3601 or 3602. If located remotely from the 3601 or 3602, the remote location must have either a 3603 Terminal Attachment Unit, a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or a 3604 Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and appropriate modem. If both a 3614/3624 and a 3604 Model 2, 3, or 4 are installed in the same remote location, it is recommended that the loop modem be located with the 3614/3624 since the 3614/3624 will often be operating when the 3604 Model 2, 3, or 4 is not.

2. One keyboard type must be selected to complete the order. See "Keyboards" under "Special Features".

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz): #9880 for locking plug or #9881 for non-locking plug. **Field Installation:** Not recommended.

2. Cables: See *Installation Manual—Physical Planning,* GA27-2766. Also see "Accessories" at the end of the M3601 pages.

3. Numeric Engraving: For bottom row of engraved numeric keypad (from left to right)—#9481 for zero, double-zero, triple-zero; #9482 for zero, double-zero, decimal point; or

#9483 for zero, triple-zero, decimal point. See "Special Features". **Field Installation:** Not recommended.

4. Function/Transaction Key Configuration: For the Function/Transaction keyboard to the right of the engraved numeric section—#9181 if all individual keys, or #9182 if 3 bottom keys in leftmost column are to be replaced by a single raised "Motorbar" key. See "Special Features". **Field Installation:** Not recommended. *Note:* Motorbar key is available on Numeric Keyboard (#4661, #4771), Expanded Numeric Keyboard (#4663, #4773), or Expanded Alphanumeric Keyboard (#4774). It is not available with Alphanumeric Keyboard (#4772); therefore, no Specify Feature if #4772 is selected.

SPECIAL FEATURES

Keyboards: All keyboards will have a combination of pre-engraved and non-engraved keytops. Each 3604 will be provided with three sets of self-adhesive keytop labels. One set will be preprinted with commonly-used function nomenclature and will have a protective plastic coating applied. Also, a set of blank labels will be provided so that the user may create his own labels.

Each keyboard will have an engraved numeric keypad consisting of 15 keys arranged in three columns of five rows. The bottom row of this section will be engraved as specified. See item 3 under "Specify". The next three rows will be engraved with the digits 1 through 9. The top row will contain three non-engraved function/transaction keys. All keyboards will also contain at least one function/transaction keypad consisting on non-engraved keys arranged in some number of columns which are five keys high.

Numeric Keyboard (#4661) [Model 1 Only]: A three-column function/transaction keypad to the right of an engraved numeric keypad. See items 3 and 4 under "Specify". **Maximum:** One. **Limitation:** Cannot be installed with Keyboard #4663. **Field Installation:** Not recommended.

Expanded Numeric Keyboard (#4663) [Model 1 Only]: Same as #4661 plus an additional three-column function/transaction keypad to the left of the engraved numeric keyboard. See items 3 and 4 under "Specify". **Maximum:** One. **Limitation:** Cannot be installed with Keyboard #4661. **Field Installation:** Not recommended.

Numeric Keyboard (#4771) [Models 2, 3, and 4 Only]: A three-column function/transaction keypad to the right of an engraved numeric keypad. See items 3 and 4 under "Specify". **Maximum:** One. **Limitation:** Cannot be installed with Keyboard #4772, #4773, or #4774. **Field Installation:** Not recommended.

Alphanumeric Keyboard (#4772) [Models 2, 3, and 4 Only]: An alphanumeric section pre-engraved as a typewriter keyboard to the left of an engraved numeric keyboard plus a one-column function/transaction keypad to the right of the engraved numeric Keypad. See items 3 and 4 under "Specify". **Maximum:** One. **Limitation:** Cannot be installed with Keyboard #4771, #4773, or #4774. **Field Installation:** Not recommended.

Expanded Numeric Keyboard (#4773) [Models 2, 3, and 4 Only]: Same as #4771 plus an additional three-column function/transaction keypad to the left of the engraved numeric keypad. See items 3 and 4 under "Specify". **Maximum:** One. **Limitation:** Cannot be installed with

Keyboard #4771, #4772, or #4774. **Field Installation:** Not recommended.

Expanded Alphanumeric Keyboard (#4774) [Models 2, 3, and 4 Only]: Same as #4772 except that function/transaction keyboard is five columns wide. See items 3 and 4 under "Specify". **Maximum:** One. **Limitation:** Cannot be installed with Keyboard #4771, #4772, or #4773. **Field Installation:** Not recommended.

Magnetic Stripe Capability: The 3604 can be equipped with a Magnetic Stripe Reader or a Magnetic Stripe Encoder/Reader which mounts on top of the 3604. To use these features, an operator manually passes a magnetic striped plastic identification card or credit card (for reading), or a passbook with a magnetic stripe label attached (for reading or encoding), through a slot. The 3604 encoding is a unique format at 210 bits per inch. Standard ABA encoding is at 75 bits per inch; therefore, credit cards cannot be encoded to ABA specifications and, thus, must be used as "read-only" documents. The 3604 is capable of reading either the standard ABA format or the 3604 passbook format. The encoder requires low coercivity magnetic stripe material. Self-adhesive magnetic stripe labels are available from SSD. These mylar base labels are approximately 12.7 mm (0.50 in) by 19.4 mm (3.6 in) and are easily applied by hand to passbooks.

Magnetic Stripe Reader (#4901) [Model 1 Only]: Has read capability only. **Maximum:** One. **Limitation:** Cannot be installed with Magnetic Stripe Encoder-Reader (#4905).

Magnetic Stripe Encoder-Reader (#4905) [Model 1 Only]: Has encode and read capability. **Maximum:** One. **Limitation:** Cannot be installed with Magnetic Stripe Reader (#4901). **Prerequisite:** Depending upon the configuration, the Additional Storage Feature (#1006 or #1007) may be required on the 3601 or 3602. See the M3601 or M3602 pages for further details.

Magnetic Stripe Reader (#4902) [Models 2, 3 and 4 Only]: Has read capability only. **Maximum:** One. **Limitation:** Cannot be installed with Magnetic Stripe Encoder-Reader (#4906).

Magnetic Stripe Encoder-Reader (#4906) [Models 2, 3, and 4 Only]: Has encode and read capability. **Maximum:** One. **Limitation:** Cannot be installed with Magnetic Stripe Reader (#4902). **Prerequisite:** Depending upon the configuration, the Additional Storage Feature (#1006 or #1007) may be required on the 3601 or 3602. See the M3601 or M3602 pages.

Modems [Models 2, 3, and 4 Only]: One modem or a 3603 is required at each location which has 3600 Finance Communication System terminals remotely attached to the 3601 or 3602 Finance Communication Controller. The following features provide the required modem capability in the 3604 Keyboard Display Model 2, 3, or 4.

Line Feature Base (#4752) [Models 2, 3 and 4 Only]: Required to operate the 1200 bps Loop Integrated Modem (#8002) below. **Maximum:** One. **Limitation:** Only with #8002.

1200 bps Loop Integrated Modem (#8002) [Models 2, 3, and 4 Only]: An integrated modem for communications with a remotely located 3601 or 3602 Finance Communication Controller. Operates at 1200 bps over unconditioned voice-grade lines. **Maximum:** One. **Limitation:** Not required if a 3614/3624 with a 1200 bps integrated modem or a 3603 exists at the same location. **Prerequisites:** Line Feature Base (#4752) on the 3604, and a 1200 bps Loop Integrated Modem

(#8001) or an Additional Loop Feature (#4735) on the 3601. See the M3601 or M3602 pages for further details.

ACCESSORIES

See "Accessories" at the end of the M3601 pages.

Repair Center Maintenance: See "Repair Center Maintenance" following the M3604 Model 5 and 6 pages.

Deferred Central Facility Maintenance (DCFM): The 3604 Models 1, 2, 3 and 4 qualify for DCFM. For details see "Deferred Central Facility Maintenance" in the M3604 Models 5 and 6 pages.

3604 KEYBOARD DISPLAY—MODELS 5 AND 6

Purpose: A combination keyboard and gas-panel display terminal for input and output in interactive banking applications.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs).

Model 5 (withdrawn from marketing as of 15 June 83): Displays 120 characters—3 rows of 40 characters. Included with the keyboard display is a 45-key keyboard, the keys of which may be designated by the customer to represent any numeric, alphabetic, or special character, or to represent a preprogrammed function.

Model 6: Displays 240 characters—6 rows of 40 characters. The same 45-key keyboard is available as described above on the model 5.

Model Changes: Model 5 to Model 6—Not recommended for field installation. All other model changes—at time of manufacture only. All features may be field installed. None are CSU.

Highlights: The 3604 Keyboard Display Model 5 displays characters with a 5 x 7 dot matrix. The 3604 Model 6 displays characters with a 7 x 9 dot matrix.

A 45-key keyboard is standard. Can be equipped to read a magnetic stripe on either a plastic card or a passbook. Can be equipped with an audible alarm which is activated under program control. Dimensions are: 247.67 mm (9.75 in) high x 457.2 mm (18.0 in) wide x 190.5 mm (7.5 in) deep. May be either locally or remotely (see Prerequisites) attached to the 3601 or 3602.

Keyboard: The 45-key keyboard contains three clusters of 15 keys. The layout of each cluster is a matrix of five rows, with three keys in each row. The keyboard includes a blank overlay which may be designated with any notation the customer desires. A second overlay identifies the 10 numeric keys in a blue field, which may be placed in any of the three 15-key clusters the customer desires. Covering these overlays is a clear plastic, protective overlay. Additional overlays and clear protective overlays are also available.

Indicator Lights: Five indicator lights are provided; three of them can be lighted under program control.

Customer Setup (CSU): The Models 5 and 6 are designated to be customer setup devices. For additional information on CSU, contact IBM.

The CSU allowance is four days.

Customer Responsibilities:

- Adequate site, system, and other vendor preparation.
- Receipt at the customer's receiving dock, unpacking, and placement of the 3604.
- Physical setup, connection of cables in protected customer access areas, switch settings, and checkout.
- Contact Field Engineering to make cable connections of IBM CSU units to non-CSU units where customer access areas are not provided.
- Notify IBM of intent to relocate and follow IBM instructions for relocation.
- Use and follow the problem determination procedures and fill out a trouble report prior to calling for IBM service.

- Disconnecting, packing and removal to the customer's shipping dock at the time of discontinuance. Appropriate instructions will be provided by IBM.

Limitation: The customer should complete the setup and checkout of the 3604 Model 5 and 6 prior to calling the IBM CE to adjust the audible alarm feature #1050. The audible alarm feature #1050 requires special tools and skills for initial installation.

Prerequisites: An available position on a local or remote loop of a 3601 or 3602. If located remotely from the 3601 or 3602, the remote location must have either a 3603 Terminal Attachment Unit, a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or a 3604 Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and appropriate modem. If both a 3614/3624 and 3604 Model 2, 3, or 4 are installed in the same remote location, it is recommended that the loop modem be located with the 3614/3624 since the 3614/3624 will often be operating when the 3604 Models 2, 3, or 4 is not.

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz): #9880 for locking plug or #9881 for non-locking plug. **Field Installation:** Not recommended.

2. Cables: See *3600 Installation Manual—Physical Planning,* GA27-2766. Also see "Accessories" at the end of the M3601 pages.

3. Color: The standard color for this unit is pearl white. The accent color must be specified, either #9065 for pebble gray or #9068 for raven black. **Field Installation:** Not recommended.

SPECIAL FEATURES

Audible Alarm (#1050): The 3604 Model 5 or 6 can be equipped with an audible alarm which can be enabled or disabled under program control. The audible alarm can be programmed to work with any of the programmable indicator lights. **Maximum:** One.

Magnetic Stripe Capability: The 3604 Model 5 or 6 can be equipped with a Magnetic Stripe Reader which is located in front of the display panel, to the left of the keyboard keys, or with a Magnetic Stripe Encoder-Reader attached by a 30 inch cable. To use these features, an operator manually passes a magnetic striped plastic identification card or credit card (for reading), or a passbook with a magnetic stripe label attached (for reading or encoding), through a slot. The 3604 encoding is in a unique format at 210 bits per inch. Standard ABA encoding is at 75 bits per inch; therefore, credit cards cannot be encoded to ABA specifications and, thus, must be used as "read-only" documents. The 3604 is capable of reading either the standard ABA format or the 3604 passbook format. The encoding requires low coercivity magnetic stripe material. Self-adhesive magnetic stripe labels are available from SSD. These mylar base labels are approximately 12.7 mm (0.50 in) by 91.4 mm (3.6 in) and are easily applied by hand to passbooks.

Magnetic Stripe Encoder-Reader (#1501): Has encode and read capability. **Maximum:** One on the Model 5 or 6. **Limitation:** Cannot be installed with Magnetic Stripe Reader (#4903). **Prerequisite:** Depending upon the configuration, the Additional Storage Feature (#1006 or #1007) may be required

on the 3601 or the 3602. See the M3601 or M3602 pages for further detail.

Magnetic Stripe Reader (#4903): Has read capability only. **Maximum:** One on the Model 5 or 6. **Limitation:** Cannot be installed with Magnetic Stripe Encoder—Reader (#1501).

ACCESSORIES

See "Accessories" at the end of the M3601 pages.

Repair Center Maintenance: For the IBM 3604 Models 1, 2, 5, and 6 an alternative maintenance plan is offered at a repair center. Under this plan, maintenance, parts replacement, adjustments, and repair of the applicable keyboard displays will be performed at a designated IBM Repair Center.

IBM will install the 3604 Models 1 and 2 initially (Models 5 and 6 are CSU). During the warranty period for purchased machines IBM will provide on-site maintenance or, at the customer's option, repair center maintenance under the terms and conditions of the repair center offering. For lease customers, repair center maintenance is available immediately following execution of the repair center amendment to the agreement for lease or rental of IBM machines. The customer utilizing repair center maintenance is responsible for:

1. Determining when remedial maintenance is required.

   To verify that remedial maintenance is required, the customer should replace a suspected 3604 with one known to be operational. The customer may wish to replace a failing machine with a spare unit; sufficient spare units must be on hand for such use. The number of spare units recommended is dependent upon the number of machines installed, application requirements, physical locations and layouts. The minimum number of spare units recommended is:

No. of Machines	3604-1, 2	3604-5,6
50	2	2
100	3	2
200	4	2
300	5	3

2. Removing and replacing machines in the operational environment

3. Checking machine performance while machines are installed in the operational environment

4. Shipping machines prepaid to the IBM Repair Center and utilizing designated containers available from IBM for such shipment

IBM will prepay return shipping charges from the IBM Repair Center to locations within the United States and Puerto Rico. IBM will not be responsible for loss or damage to customer-owned machines during the period the machines are in transit to and from an IBM Repair Center or in IBM's possession at an IBM Repair Center, except for loss or damage caused by IBM negligence. Replaced parts become the property of IBM.

The 3604 Repair Center Maintenance Plan applies to the base machine and, except for the limitations noted below, features and RPQs installed on the base machine. Under this plan, charges for the base machine have been reduced; charges for features and RPQs remain unchanged. Should a customer operating under this plan desire repair service on the customer's site, IBM will provide this service at a charge for the time required. No additional charge, however, will be made for parts.

Field installable features and RPQs will be installed by IBM at the standard field installation prices.

Field installation of features will normally be done by IBM on the customer's site. Should a customer operating under this plan desire installation of the feature at the repair center, IBM must be notified that this option has been selected. The customer must coordinate the shipment of machines and feature packages with the IBM Repair Center.

Repair Center maintenance for the 3604-1, -2, -5, and -6 is available under the following agreements:

Deferred Central Facility Maintenance Service (DCFM): The 3604 Models 5 and 6 qualify for DCFM. The customer will provide a facility at which the machines will be serviced.

The customer is responsible for determining when remedial maintenance is required and for transporting the machines to and from the facility.

A specified minimum number of machines must require remedial maintenance before the customer places a call for maintenance service. For the minimum number, contact IBM. If the customer places a call for remedial maintenance involving fewer than the specified number of machines, the customer will be charged an additional amount which is determined by multiplying the additional service charge period (currently one-half hour) by IBM's applicable per-call rate then in effect. IBM may increase the additional service charge period upon prior written notice to the customer.

IBM will normally respond to requests for service on the business day following the day on which the call was placed.

Machines designated to be serviced at each customer facility will be listed on a separate Deferred Central Facility Maintenance Service Machine List (Z120-2988).

Purchased Machines: IBM Maintenance Service Option Amendment to IBM Maintenance Agreement

Rented or Leased Machines: Amendment to the Agreement for Lease or Rental of IBM Machines

Limitations:

1. Machines under the Pilot Test Plan (PTP) will not be accepted for repair center maintenance.

2. The 3604 Model 2 with Line Feature Base (#4751 or #4752) will not be accepted for repair center maintenance.

3. Each RPQ installed on the base machine must be evaluated individually to determine acceptability for repair center maintenance. Contact IBM to determine acceptability.

The following RPQs are acceptable:

    RPQ X45632 Keyboard Mod 2
    RPQ 8K0648 Keyboard
    RPQ MG1586 Address Sharing
    RPQ 8K0567 Audible Alarm
    RPQ 8K0596 Audible Alarm Mod A02
    RPQ 8K0559 Pin Pad 3604 Mod 1
    RPQ 8K0611 Pin Pad 3604 Mod 2
    RPQ 8K0612 Pin Pad 3604 Mod A2
    RPQ 8K0597 Pin Pad 3604 Mod 5 & 6
    RPQ S25148 3790 Support

The following RPQs are not acceptable for repair center maintenance:

RPQ 8K0552 Loop EIA Interface with Clock
RPQ 8K0595 Loop EIA Interface with Clock
RPQ 7B0184 Optical Scanner
RPQ 8K0903 Optical Scanner
RPQ EJ3715 Power 50 Hz 220 V
RPQ X47766 Keyboard w/o Keytops
RPQ YA2300 Keyboard w/o Keytops

Designated Repair Centers: The 3604 Repair Center Maintenance Plan is available at the Paramus, Chicago, or Los Angeles Repair Centers.

3604 ADMINISTRATIVE KEYBOARD DISPLAY—MODEL 7
(withdrawn from marketing as of 15 June 1983)

Purpose: A 1920 character CRT display and keyboard terminal for adminstrative applications in a Finance Communications System.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs).

Model Changes: Not applicable. All features may be field installed. None are CSU.

Highlights: Displays 1920 characters in an 80-column by 24-row format. The characters are presented within a 7 x 14 dot matrix. Displays 167 unique characters: 26 uppercase alphabetics, 26 lowercase alphabetics, 10 numerics, and 105 special characters, in either normal or high intensity. By invoking the optional 3270/3600 Datastream Mapping facility and implementing the appropriate SNA/SDLC SLU-2 protocol interface in the associated controller, 3270 compatible host datastreams can be used. Field formatting capability, via 3270 or 3600 Datastream Mapping, permits individual fields to be program defined with various attributes such as protected or unprotected, alphanumeric, displayable or non-displayable, and high or normal intensity.

Keyboard: A 99-key keyboard, cable attached to the display enclosure, is standard. Keys are divided into four clusters: a typewriter arrangement, an adding machine arrangement, and two groups of 15 function keys. The tops of the typewriter and adding machine keys are engraved. Keys are defined by a translation table in the associated control unit.

Indicators: Both on-screen and discrete indicators are provided. The discrete indicators loop synchronization, sweep and power status. Six on-screen graphic indicators are located at the bottom of the screen separate from the data area. Four are under the user's program control, while two ("Ready" and "Security Keylock Off") are under hardware control.

Operational Factors: The 3604 Model 7 CRT is covered by a low-glare screen. On-screen indicators are easily viewed by the operator. Constant displays are maintained during the display refresh operation, eliminating blinking. Both underscore and reverse video cursors are available to the operator, as well as cursor blinking, under function key control. A Clicker is also under operator control to provide audible feedback when keying data. Any key or all of 16 keys (other than "Shift" and "Reset") can be designated to have typematic action under program control.

Security Functions: A Security Keylock (optional) prevents keyboard entry or display of data in the terminal unless the key is turned to the 'on" position.

Customer Setup (CSU): The 3604-7 is designated a customer setup device. For additional information on CSU, contact IBM. One copy of the CSU instructions is shipped with each 3604-7.

The CSU allowance is four days.

Customer Responsibilities:

- Adequate site, system, and other vendor preparation.
- Receipt at the customer's receiving dock, unpacking, and placement of the 3604-7.
- Physical setup, connection of cables in protected customer access areas, switch settings, and checkout.

- Contact Field Engineering to make cable connections of IBM CSU units to non-CSU units where customer access areas are not provided.
- Notify IBM of intent to relocate and follow IBM instructions for relocation.
- Use and follow the problem determination procedures and fill out a trouble report prior to calling for IBM service.
- Disconnecting, packing, and removal to the customer's shipping dock at the time of discontinuance. Appropriate instructions will be provided by IBM.

Prerequisites: An available position on a local or remote loop of a 3601 or 3602. If located remotely from the 3601 or 3602, the remote location must have either a 3603 Terminal Attachment Unit, a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or a 3604 Model 2, 3, or 4 equipped with a Line Feature Base (#4752) and appropriate modem, or a 3604 with RPQ 8K0552/8K0595 and an appropriate modem. If both a 3614/3624 and a 3604 Model 2, 3, or 4 are installed in the same remote location, it is recommended that the loop modem be located with the 3614/3624 since the Consumer Transaction Facility will often be operating when the 3604 Model 2, 3, or 4 is not.

SPECIFY

1. Voltage (120 V AC, 1-Phase, 60 Hz): #9890 for locking plug or #9891 for non-locking plug. If standard 2.8 meter (9 foot) power cable is not desired, specify: #9511 for 1.8 meter (6 foot) cable, #9512 for 3.7 meter (12 foot) cable, or #9513 for 4.5 meter (15 foot) cable.

2. Numeric Keypad Zero Keys: (Bottom Three Keys)

   Engraved Nomenclature:

0	00	000		#9481
0	00	Decimal Point		#9482
0	000	Decimal Point		#9483

SPECIAL FEATURES

Audible Alarm (#1090): A short tone sounded under program control, in conjunction with the programmable indicators, to alert the operator to special conditions. Adjustable volume. Alarm sounds when any of the four programmable indicators are set. **Maximum: One.**

Security Keylock (#6340): A physical keylock, located on the Display enclosure, used to limit use of the terminal to authorized persons. In the "secure" position, the display is blanked and the keyboard is disabled. **Maximum: One.**

3606 FINANCIAL SERVICES TERMINAL

Purpose: A keyboard display terminal for use with the 3600 Finance Communication System in point of sale or other applications.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs).

Model 1: Attaches to the 3601 or 3602 Finance Communication Controller local or remote loop. If located away from the 3601 or 3602, the remote location must have (1) a 3603 Terminal Attachment Unit, (2) a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or(3) a 3604 Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and appropriate modem.

Model 2: Attaches to the 3601 or 3602 Finance Communication Controller remote loop.

Model Changes: Available at time of manufacture only. There are no special features available.

Highlights: Has eight position numeric display, nine message indicators, a numeric keyboard, six function keys and a magnetic stripe reader capable of reading either standard ABA format (75 bpi) or the 3604 passbook format (210 bpi).

The 3606 is used as an interactive terminal in point of sale and other applications (credit authorization, data capture, check verification, funds transfers).

Prerequisites:

1. Model 1 If located remotely from the 3601 or 3602, the remote location must have (1) a 3603 Terminal Attachment Unit, (2) a 3614/3624 Consumer Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or (3) a 3604 Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and appropriate modem. If both a 3614/3624 and a 3604 Model 2, 3, or 4 are installed in the same remote location, the loop modem should be located with the 3614/3624, since the 3614/3624 will often be operating when the 3604 Model 2, 3, or 4 is not.

2. Model 2—Common carrier termination at location of installation.

Customer Setup (CSU): The 3606 is designated a customer setup device. For additional information on CSU, contact IBM. The IBM Marketing Representative must advise the customer of his responsibilities before receipt of the machine.

The CSU allowance is one day.

Customer Responsibilities: The customer must be advised that (1) He is responsible to make certain that the use of the equipment complies with all Federal, State, and Local Laws, Regulations, and Ordinances...(2) He is responsible for price quotations, installation and cost (initial and recurrent) of common carrier equipment and service...(3) He is responsible for the installation of the unit...(4) The customer will determine the failing unit (see "Maintenance" below)...(5) He is responsible to determine required spares...(6) Purchaser agrees that IBM is relieved of responsibility for all claims including, but not limited to, loss of funds contained in, dispensed by or associated with the 3606.

Spares: The customer may wish to replace a failing 3606 with a spare and must be advised to purchase sufficient spare units

for such use. The number of spare units recommended is dependent upon the number of units the customer has installed, his application requirements, physical locations, and layouts. However, the minimum number of spare units recommended is shown in the following table:

	Minimum Number of Spares Recommended	
Number of 3606s Installed	Model 1	Model 2
100	2	2
200	3	4

Maintenance: All maintenance of the 3606 parts replacement, adjustments, and repair shall normally be performed at the designated IBM Repair Center. It shall be the customer's responsibility to install the equipment and to determine when remedial maintenance is required. When remedial maintenance is required, it shall be the customer's responsibility to determine the failing unit, pack the unit in the designated shipping container and ship it prepaid to the designated IBM Repair Center. IBM will pay the transportation charges for return of the repaired unit. There is no regularly scheduled preventive maintenance recommended by IBM on these units.

The repair service is available under an IBM Repair Center Maintenance Supplement to the IBM Maintenance Agreement or on a time and material basis.

Customers with machines not under an IBM Maintenance Agreement have the option of shipping the machines to the designated IBM Repair Center for repair under the IBM Machine Repair Authorization Form, G120-2165, in which case the repair will be made (if the machine is repairable). Alternatively, upon request, IBM will provide, for a minimal charge, an estimate of repair costs. This charge covers handling, inspection, cleaning, adjustments, testing, and estimating of repair charges.

IBM Repair Center Services: The 3606 is eligible for maintenance coverage immediately following expiration of the service and parts warranty at the monthly charge shown under MMMC in the Machines Price List.

If maintenance coverage is not contracted for immediately following expiration of any service and parts warranty and the customer now wants maintenance coverage, he may ship the machine(s) to the designated IBM Repair Center for an inspection.

If on the basis of an inspection, the repair center concludes that a machine is not repairable, no further work will be performed and the machine will be returned to the customer without charge.

In other cases, a minimal charge per machine to cover handling, inspection, cleaning, adjustments, and testing will be applied. In addition, all parts needed will be billed at IBM's prevailing parts prices and the additional time required for repairs will be billed at IBM'S applicable service rates. The machine will then be eligible for maintenance coverage.

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz): #9901.

2. Cables: See the *IBM 3600 Installation Manual—Physical Planning,* GA27-2766. Also see "Accessories" at the end of the M3601 pages.

3. Terminals are shipped with standard keyboard and indicator

light nomenclature unless specified as follows: Specify #9031 for a blank filter panel. Specify #9481 for a numerics-only keyboard overlay. The customer may choose the nomenclature to suit an application. All keyboard overlays and filter panels are also available for a fee. See "Accessories" in the M3601 pages for ordering instructions.

4. Keyboard Arrangement: (Top row—7, 8, 9; second row—4, 5, 6; third row—1, 2, 3; 0 in bottom row). If #9390 is not specified, the standard keyboard arrangement will be shipped (top row—1, 2, 3; second row—4, 5, 6; third row—7, 8, 9; 0 in bottom row). **Field Installation:** Not recommended.

ACCESSORIES

See "Accessories" at the end of the M3601 pages.

3608 PRINTING FINANCIAL SERVICES TERMINAL

Purpose: A keyboard display terminal, with printer, for use with the 3600 Finance Communication System in point of sale or other applications.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs).

Model 1: Attaches to the 3601 or 3602 Finance Communication Controller local or remote loop. If located remotely from the 3601 or 3602, the remote location must have (1) a 3603 Terminal Attachment Unit, (2) a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or (3) a 3604 Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and appropriate modem.

Model 2: Attaches to the 3601 or 3602 Finance Communication Controller remote loop.

Model Changes: Available at time of manufacture only. All features are available at time of manufacture only.

Highlights:

- Can print three lines of alphameric data on sales slips, charge receipts, or other documents used in point of sale applications. Line positions must be specified. See "Specify".

- Has 45-character set. Optional 10 character numeric OCR 7B font for uppermost print row is available as a special feature. See "Special Features".

- Document to be printed is inserted into the chute at the right of the terminal, is fed past spring wheels, printed, and ejected at the left side of the terminal.

- Has eight position numeric display, nine message indicators, a numeric keyboard, six function keys, and a magnetic stripe reader capable of reading either standard ABA format (75 bpi) or the 3604 passbook format (210 bpi).

- Used as interactive terminal in point of sale and other applications (e.g., credit authorization, data capture, check verification, funds transfers).

Forms Characteristics: Printing on the standard 3608 is possible on single part forms of the following dimensions: From 69.9 mm (2.75 in) up to 82.6 mm (3.25 in) high by 147.3 mm (5.8 in) to 215.9 mm (8.5 in) wide by 0.10 mm (0.004 in) to 0.28 mm (0.011 in) thick. In addition, the following dimensions apply to multi-part charge forms: 82.6 mm (3.25 in) high by 121.9 mm (4.8 in) to 215.9 mm (8.5 in) wide by 0.18 mm (0.007 in) to 0.2 mm (0.008 in) thick. Refer to the *IBM Form Design Reference Guide for Printers*, GA24-3488, for more information. OCR 7B (not inked) printing is intended for two and three-part charge forms. Because of variations in card, paper, and carbon stock, the customer should evaluate his printed forms to determine if they meet his performance objectives. An optional feature to allow printing of documents up to 88.9 mm (3.5 in) in height is available. See Specify #9701.

Character Sets:

OCR is 0-9

10-pitch is 0-9, A-Z, number sign (#), at sign (@), comma (,), minus ( ), dollar ($), period (.), ampersand (&), slash (/), and percent sign (%).

Prerequisites:

1. Model 1—If located remotely from the 3601 or 3602, the remote location must have (1) a 3603 Terminal Attachment Unit, (2) a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or (3) a 3604 model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and appropriate modem. If both a 3614/3624 and a 3604 model 2, 3, or 4 are installed in the same remote location, the loop modem should be located with the 3614/3624, since the 3614/3624 will often be operating when the 3604 model 2, 3, or 4 is not.

2. Model 2—Common carrier termination at location of installation.

Customer Setup (CSU): The 3608 is designated a customer setup device. For additional information on CSU, contact IBM. The IBM Marketing Representative must advise the customer of his responsibilities before receipt of the machine.

The CSU allowance is one day.

Customer Responsibilities: The customer must be advised that (1) He is responsible to make certain that the use of the equipment complies with all Federal, State, and Local Laws, Regulations, and Ordinances...(2) He is responsible for price quotations, installation and cost (initial and recurrent) of common carrier equipment and service...(3) He is responsible for the installation of the unit...(4) The customer will determine the failing unit (see "Maintenance" below)...(5) He is responsible to determine required spares...(6) Purchaser agrees that IBM is relieved of responsibility for all claims including, but not limited to, loss of funds contained in, dispensed by or associated with the 3608.

Spares: The customer may wish to replace a failing 3608 with a spare and must be advised to purchase sufficient spare units for such use. The number of spare units recommended is dependent upon the number of units the customer has installed, his application requirements, physical locations, and layouts. However, the minimum number of spare units recommended is shown in the following table:

Number of 3606s Installed	Minimum Number of Spares Recommended Model 1	Model 2
100	5	5
200	8	9

Maintenance: All maintenance of the 3608—parts replacement, adjustments, and repair—shall normally be performed at the designated IBM Repair Center. It shall be the customer's responsibility to install the equipment and to determine when remedial maintenance is required. When remedial maintenance is required, it shall be the customer's responsibility to determine the failing unit, pack the unit in the designated shipping container and ship it prepaid to the designated IBM Repair Center. IBM will pay the transportation charges for return of the repaired unit. There is no regularly scheduled preventive maintenance recommended by IBM on these units.

The repair service is available under an IBM Repair Center Maintenance Supplement to the IBM Maintenance Agreement or on a time and material basis.

Customers with machines not under an IBM Maintenance Agreement have the option of shipping the machines to the designated IBM Repair Center for repair under the IBM

Machine Repair Authorization Form, G120-2165, in which case repair will be made (if the machine is repairable). Alternatively, upon request, IBM will provide, for a minimal charge, an estimate of repair costs. This charge covers handling, inspection, cleaning, adjustments, testing, and estimating of repair charges.

IBM Repair Center Services: The 3608 is eligible for maintenance coverage immediately following expiration of the service and parts warranty at the monthly charge shown under MMMC in the Machines Price List.

If maintenance coverage is not contracted for immediately following expiration of any service and parts warranty and the customer now wants maintenance coverage, he may ship the machine(s) to the designated IBM Repair Center for an inspection.

If, on the basis of an inspection, the repair center concludes that a machine is not repairable, no further work will be performed and the machine will be returned to the customer without charge.

In all other cases, a minimal charge per machine to cover handling, inspection, cleaning, adjustments, and testing will be applied. In addition, all parts needed will be billed at IBM's prevailing parts prices and the additional time required for repairs will be billed at IBM'S applicable service rates. The machine will then be eligible for maintenance coverage.

Publications: *IBM Form Design Reference Guide for Printers,* GA24-3488.

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz): #9901.

2. Cables: See "Accessories" at the end of the M3601 pages for ordering instructions. Also see the *3600 Installation Manual—Physical Planning,* GA27-2766.

3. Terminals are shipped with standard keyboard and indicator light nomenclature unless specified as follows: Specify #9031 for a blank filter panel. Specify #9481 for a numerics-only keyboard overlay. The customer may choose the nomenclature to suit an application. See *Financial Services Terminals: Complementing Manual,* GC27-0002. Additional quantities of all keyboard overlays and filter panels are also available for a fee. (See "Accessories" at the end of the M3601 pages for ordering instructions.)

4. Print Line Positions [at time of manufacture only]: The following are standard combinations...see Line Position Chart A.

   #9540 for 1, 4, 10
   #9541 for 1, 5, 10
   #9542 for 1, 3, 6
   #9543 for 1, 7, 10
   #9544 for 4, 7, 10

5. Keyboard Arrangement: Top row—7, 8, 9; second row—4, 5, 6; third row—1, 2, 3; 0 in bottom row.) If #9390 is not specified, the standard keyboard arrangement will be shipped (top row—1, 2, 3; second row—4, 5, 6; third row—7, 8, 9; 0 in bottom row). **Field Installation:** Not recommended.

6. Document Chute: Specify #9701 for a document chute to provide capability for handling documents up to 88.9 mm (3.5 in) in height.

This feature shifts the print line positions up so that the distance from the bottom of the form to the nominal center location of the print line is increased by 3.5 mm (0.125 in).

It is only available with 4, 7, 10 print line positions #9544 (see Line Position Chart B, and it is not available with OCR 7B Font #5454.

Installation: Available at time of manufacture only.

Line Position Chart A [Standard 82.6 mm (3.25 in) chute only]

Line Pos.	Font	Nominal Center Line Location, distance from bottom edge of document	Note
OCR	OCR 7B	77.0 mm (3.031 in) [5.56 mm (.219 in) from top edge of 85.1 mm (3.35 in) document]	Available as Special Feature (#5454) only:
1	10-pitch	77.0 mm (3.031 in)	Not with #5454
2	10-pitch	71.9 mm (2.831 in)	Not with #5454
3	10-pitch	66.8 mm (2.631 in)	
4	10-pitch	61.7 mm (2.431 in)	
5	10-pitch	56.7 mm (2.231 in)	
6	10-pitch	51.6 mm (2.031 in)	
7	10-pitch	46.5 mm (1.831 in)	
8	10-pitch	41.4 mm (1.631 in)	
9	10-pitch	36.3 mm (1.431 in)	
10	10-pitch	31.3 mm (1.231 in)	
11	10-pitch	26.2 mm (1.031 in)	Only with #5454
12	10-pitch	21.1 mm (0.831 in)	Only with #5454

If a customer desires three print lines positioned in locations other than the five feature combinations shown, an RPQ may be submitted at order time. RPQs to change print line positions or to add the OCR print feature will not be accepted after manufacture and shipment to the customer.

Line Position Chart B [88.9 mm (3.5 in) chute]

Line Pos.	Font	Nominal Center Line Location, distance from bottom edge of document
4	10-pitch	64.9 mm (2.556 in)
7	10-pitch	49.7 mm (1.956 in)
10	10-pitch	34.4 mm (1.356 in)

SPECIAL FEATURES

OCR 7B Font (#5454): The 10-character OCR 7B font can be substituted for the standard font in the uppermost print row. The 3 print line positions, when this feature is installed, are OCR, 3 and 5. The OCR 7B characters impact printed when #5454 is used can be read on a 1287 Optical Character Reader equipped with the OCR 7B special feature (#3945). **Field Installation:** Available at time of manufacture only.

ACCESSORIES

See "Accessories" at the end of the M3601 pages.

3610 DOCUMENT PRINTER—MODEL 3
(withdrawn from marketing as of 15 June 1983)

Purpose: A printer for use with the 3600 Finance Communications System to provide a hard-copy output of banking transactions.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs).

Model 3: Prints on a cut form and on continuous fanfold paper.

Model Changes: Available at time of manufacture only. Feature 6350 may be field installed. All other features available at time of manufacture only.

Highlights: The 3610 Printer provides for a hard-copy output on a variety of cut forms and paper stock to meet the customer's printing requirement in banking applications. When combined with a 3604 Keyboard Display, the 3610 provides a bank teller with a work station to use in performing bank transactions. The 3610 Printer can also be used alone for administrative printing of required reports. A document-handling device provides the capability to print on cut forms. The forms can be those usually used for printing of one line or a number of lines. When a single line document is used, a lever is provided to engage a document stop which positions the bottom of the printed line 19.4 ± 1.65 mm (0.765 in ± 0.065 in) from the bottom of the document. The lever is disengaged when the teller wishes to insert the document further into the printer. Printing occurs at 10 characters/inch and 5 or 6 lines/inch. At time of installation, the CE will set line spacing at 5 LPI or 6 LPI as requested by the customer. Speeds range from 15 cps to 30 cps. See "Special Features".

Model 3—contains a pin feed platen assembly which allows printing to occur on continuous fanfold paper stock. A cut form can be placed in front of the continuous form so that printing can occur simultaneously on both documents with the appropriate carbon or impact paper.

Prerequisites:

1. An available position on a local or remote loop of a 3601 or 3602. If located remotely from the 3601 or 3602, the remote location must have (1) a 3603 Terminal Attachment Unit, (2) a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or (3) a 3604 Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and appropriate modem. If both a 3614/3624 and 3604 Model 2, 3, or 4 are installed in the same remote location, it is recommended that the loop modem be located with the 3614/3624, since the 3614/3624 will often be operating when the 3604 Model 2, 3, or 4 is not.

2. Selection of print speed. See "Special Features".

3. Depending upon the configuration, the Additional Storage Feature (#1006 or #1007) may be required on the 3601 or 3602. See the M3601 or M3602 pages.

Forms Specification: See the *Form Design Reference Guide for Printers*, GA24-3488.

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz): #9880 for locking plug or #9881 for non-locking plug. **Field Installation:** Not recommended.

2. Cables: See the *IBM 3600 Installation Manual—Physical Planning*, GA27-2766. Also see "Accessories" at the end of the M3601 pages.

3. Print Speed: Either #6903 or #6904 must be selected to complete the machine order. See "Special Features" for description.

SPECIAL FEATURES

Shared Terminal (#6350): Provides two pushbuttons each labeled START PRINT. These pushbuttons provide teller identification to the 3601 or 3602 Finance Communication Controller when two tellers are sharing one printer. **Maximum:** One. **Limitation:** Cannot be installed with Address Sharing RPQ MG1586.

15 CPS with 64-Character Set (#6903: Provides a set of 63 printable graphics and a space (blank). **Maximum:** One. **Limitation:** Cannot be installed with #6904. **Field Installation:** Available at time of manufacture only.

Up to 30 CPS with 96-Character Set (#6904): Provides a set of 95 printable graphics and a space (blank). **Field Installation:** Available at time of manufacture only. **Maximum:** One. **Limitation:** Cannot be installed with #6903.

ACCESSORIES

See "Accessories" at the end of the M3601 pages.

3610 DOCUMENT PRINTER—MODEL 4

Purpose: A printer for use with the 3600 or 4700 Finance Communications System to provide a hard-copy output of banking transactions. The 3610 Model 4 prints on a cut form and on a journal roll/audit roll.

IBM Programming Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs). The 3610 Model 4 is also supported by the 4700 PRPQ 5799-BGB.

Model Changes: Available at time of manufacture only. All features may be field installed.

Highlights: The 3610 Document Printer Model 4 provides a hard-copy output on a variety of cut forms and paper stock to meet the customer's printing requirements in banking applications. In addition, the 3610 Model 4 has the capability of printing single or multiple lines as well as being able to print on a one or two part journal roll. When a single line document is used, a lever is provided to engage a document stop which positions the bottom of the printed line 19.4 ± 1.65 mm (0.765 ± 0.065 in) from the bottom of the document. A cut form can be positioned in front of the journal roll so that printing can occur simultaneously on the cut form and journal roll, provided that appropriate carbon or impact paper is used.

Printing occurs at 10 characters per inch, and 5 or 6 lines per inch. At time of installation the customer engineer will set the line spacing at 5 or 6 lines per inch as requested by the customer. The 3610 Model 4 prints at speeds up to 30 characters/sec. Forms control capabilities include a right-hand forms-advance knob, and a forms tear bar located 66.675 mm ± 6.35 mm (2.625 in. ± 0.25 in) above the print line. When one part of the journal paper is attached to the take-up roll, the forms-advance knob may be used to advance the paper. Otherwise, the paper must be advanced manually.

The size of the 3610 Model 4 is 266.7 mm (10.5 in) high x 457.2 mm (18.0 in) wide x 266.7 mm (10.5 in) deep. When used with the 3604 Keyboard Display Model 5 or 6 it provides a teller with a work station which fits within a work area with dimensions 266.7 mm (10.5 in) high x 457.2 mm (18.0 in) wide x 457.2 mm (18.0 in) deep.

Journal Take-up with Locked Cover: Provides a journal take-up roll for accumulating one part of a two-part journal after it is printed. (The other part of the journal exits from the printer past a tear bar.) A locked cover is also provided to prevent unauthorized access to the take-up roll. Two keys are provided for the lock. When a single-part journal is used, it should exit the printer past the tear bar. The journal take-up roll can accommodate up to a maximum of 50 feet (15.24 m) of paper.

48-Character Set: Provides a set of 47 printable graphics and a space (blank).

Prerequisites

1. An available position on a local or remote loop of a 3600 or 4700 controller. If located remotely from the 3600 or 4700 controller, the remote location must have (1) a 3603 Terminal Attachment Unit, (2) a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or (3) a 3604 Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and appropriate modem. If both a 3614/3624 and a 3604 Model 2, 3, or 4 are installed in the same remote location, the loop modem should be located with the 3614/3624,

since the 3614/3624 will often be operating when the 3604 Model 2, 3, or 4 is not

2. Depending upon the configuration, the Additional Storage Feature (#1006 or #1007) may be required on the 3600 controller or (#1008) on the 4700 controller. See the M3601, M3602, or M4701 pages for further details.

Forms Specifications: Refer to *Form Design Reference Guide for Printers,* GA24-3488.

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz): #9880 for locking plug or #9881 for non-locking plug. **Field Installation:** Not recommended

2. Cables: See the *IBM 3600 Installation Manual—Physical Planning,* GA27-2766. Also see "Accessories" at the end of the M3601 pages.

3. Color: The standard color for this unit is pearl white. The accent color must be specified, either #9065 for pebble gray or #9068 for raven black. **Field Installation:** Not recommended.

SPECIAL FEATURES

Shared Terminal (#6350): Provides two pushbuttons for teller identification to the 3600 or 4700 controller when two tellers are sharing one printer. **Maximum:** One. **Limitation:** Cannot be installed with the Address Sharing RPQ MG1586.

Deferred Central Facility Maintenance (DCFM): The 3610 Model 4 qualifies for DCFM. For details see "Deferred Central Facility Maintenance" in the M3604 Models 5 and 6 pages.

IBM Machines

3611 PASSBOOK PRINTER
(withdrawn from marketing as of 15 June 1983)

Purpose: A printer used in the 3600 or 4700 Finance Communications System to print on horizontal fold or vertical fold passbooks or on single-part or multiple-part cut forms.

IBM Programming Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs). The 3611 is also supported by the 4700 PRPQ 5799-BGB.

Model 2: Prints on passbooks and cut forms.

Model Changes: Not applicable. Feature #6350 may be field installed. All other features available at time of manufacture only.

Highlights: The 3611 printer has the ability to print on a variety of passbooks and forms to meet a customer's requirements in banking applications.

The 3611 is a physically compact unit with a flat top suited for placement of a 3604 Keyboard display. When combined with a 3604, the 3611 provides a high function work station in a limited amount of space.

Passbook specifications are the same as for the 3612 passbook printers. Passbook and forms printing occurs at 12 characters/inch and may be at 5 or 6 lines/inch, with a print line as long as 211 mm (8.3 in.) having 100 characters.

Model 2—prints on a horizontal fold or vertical fold passbook. Variable size, single or multipart documents can be printed in the passbook chute. The size of document which can be accommodated is determined by the width of the passbook to which the passbook chute is adjusted. The maximum document width is equal to 1/2 the passbook width plus 110 mm (4.35 in).

Prerequisites:

1. An available position on a local or remote loop of a 3600 or 4700 controller. If located remotely from the 3600 or 4700 controller, the remote location must have (1) a 3603 Terminal Attachment, (2) a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or (3) a 3604 Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and appropriate modem. If both a 3614/3624 and 3604 Model 2, 3, or 4 are installed in the same remote location, the loop modem should be located with the 3614/3624, since the 3614/3624 will often be operating when the 3604 Model 2, 3, or 4 is not.

2. Selection of print speed. See "Special Features".

3. Depending upon the configuration, the Additional Storage Feature (#1006 or #1007) may be required on the 3600 controller or Feature #1008 on the 4700 controller. See the M3601, M3602, or M4701 pages for further details.

Forms Specifications: See the *Form Design Reference Guide for Printers,* GA24-3488.

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz): #9880 for locking plug or #9881 for non-locking plug. **Field Installation:** Not Recommended

2. Cables: See the *IBM 3600 Installation Manual—Physical Planning,* GA27-2766. Also see "Accessories" at the end of the M3601 pages.

3. Short Page Passbooks: #9650—provides a passbook stop position for passbooks with short pages, cutouts, notches or windows. Optional stop position required when the distance between the edge of the short pages, cutouts, notches or windows and the leading edge of the passbook cover is between 9.14 mm (0.36 in) and 16.7 mm (0.657 in). **Field Installation:** Not recommended.

4. Print Speed: Either #6903 or #6904 must be selected to complete the machine order. See "Special Features" for description.

SPECIAL FEATURES

Shared Terminal (#6350): Provides two pushbuttons, labelled START PRINT. These pushbuttons provide teller identification to the 3600 or 4700 controller when two tellers are sharing one printer. **Maximum:** One. **Limitations:** Cannot be installed with Address Sharing RPQ MG1586.

15 CPS with 64-Character Set (#6903): Provides a set of 63 printable graphics and a space (blank). **Maximum:** One. **Limitation:** Cannot be installed with #6904. **Field Installation:** Available at time of manufacture only.

Up to 30 CPS with 96-Character Set (#6904): Provides a set of 95 printable graphics and a space (blank). **Maximum:** One. **Limitation:** Cannot be installed with #6903. **Field Installation:** Available at time of manufacture only.

3612 PASSBOOK AND DOCUMENT PRINTER
(withdrawn from marketing as of 15 June 1983)

Purpose: A printer used in the 3600 Finance Communication System to print on a variety of forms, documents, and passbooks.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs).

Model 2: Prints on a passbook and has the capability of printing on a one-part or two-part journal roll, which can be used to maintain an audit trail of bank transactions. A cut form can be positioned in front of the journal so that printing can occur simultaneously on the cut form and journal roll, provided that appropriate carbon or impact paper is used.

Model 3: Prints on a passbook and contains a pin feed platen assembly that allows printing to occur on continuous fanfold paper stock. A cut form can be placed in front of the continuous form so that printing can occur simultaneously on both documents with the appropriate carbon or impact paper. *Note:* Passbook unit (as opposed to forms printing unit) is 12 pitch with a 211 mm (8.3 in) print line of 100 characters for all models.

Model Changes: Available at time of manufacture only. Features 4652 and 6350 may be field installed. All other features available at time of manufacture only.

Highlights: The 3612 printer has the ability to print on a variety of forms and passbooks to meet the customer's requirements in banking applications. This printer, when combined with a 3604 Keyboard Display, provides a full-function work station for handling the wide range of banking transactions through the incorporation of two independent print mechanisms. A document-handling device provides the capability to print on cut forms. The forms can be those usually used for printing of one line or a number of lines. When a single-line document is used, a lever is provided to engage a document stop which positions the bottom of the printed line 19.43 ± 1.65 mm (0.765 ± 0.065 in) from the bottom of the document. The lever is disengaged when the customer wishes to insert the document further into the printer. Passbooks are inserted in the bottom half of the printer while cut forms/documents may be inserted in the top half. With this facility, the printer is able to print on the passbook and print on the cut forms. Forms printing occurs at 10 characters per inch and 5 or 6 lines per inch. A maximum of 80 characters may be printed across a 200 mm (8.0 in) line. Passbook printing occurs at 12 characters per inch and 5 or 6 lines per inch with up to an 211 mm (8.3 in) print line of 100 characters. At time of installation, the Customer Engineer will set line spacing to 5 LPI or 6 LPI as requested by the customer. *Note:* Only one print element (either passbook or cut form) prints at a time. Both must be selected with the same print speed.

Prerequisites:

1. An available position on a local or remote loop of a 3601 or 3602. If located remotely from the 3601 or 3602, the remote location must have (1) a 3603 Terminal Attachment Unit, (2) a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or (3) a 3604 Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and appropriate modem. If both a 3614/3624 and 3604 Model 2, 3, or 4 are installed in the same remote location, the loop modem should be located with the 3614/3624, since the 3614/3624 will often be operating when the 3604 Model 2, 3, or 4 is not.

2. Selection of print speed. See "Special Features".

3. Depending upon the configuration, the Additional Storage Feature (#1006 or #1007) may be required on the 3601, or the 3602. See M3601 or M3602 pages for further details.

Forms Specifications: See the *Form Design Reference Guide for Printers,* GA24-3488.

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz): #9880 for locking plug or #9881 for non-locking plug. **Field Installation:** Not recommended

2. Cables: See *Installation Manual—Physical Planning,* GA27-2766. Also see "Accessories" at the end of the M3601 pages.

3. Short Page Passbooks: #9650 Provides a passbook stop position for passbooks with short pages, cutouts, notches, or windows. Optional stop position required when the distance between the edge of short pages, etc., and the leading edge of the passbook cover is between 9.14 mm (0.36 in) and 16.7 mm (0.657 in). **Field Installation:** Not recommended

4. Print Speed: Either #6903 or #6904 must be selected to complete the machine order. The selected speed applies to both print units, passbook, and forms. See "Special Features" for description.

SPECIAL FEATURES

Journal Takeup with Locked Cover (#4652): [Model 2 only] Provides a paper roll on which one or both parts of the printed journal can be taken up after it has been printed. If two-part journal paper is used, one part may be put on the takeup roll, while the original can exit past a tear bar. A locked cover is also provided over the takeup roll to prevent unauthorized access to the journal roll. Two keys are provided. **Maximum:** One.

Shared Terminal (#6350): Provides two pushbuttons each labelled START PRINT. These pushbuttons provide teller identification to the 3601 or 3602 Finance Communication Controller when two tellers are sharing one printer. **Maximum:** One. **Limitations:** Cannot be installed with Address Sharing RPQ MG1586.

15 CPS with 64-Character Set (#6903): Provides a set of 63 printable graphics and a space (blank). **Maximum:** One. **Limitation:** Cannot be installed with #6904. **Field Installation:** Available at time of manufacture only.

Up to 30 CPS with 96-Character Set (#6904): Provides a set of 95 printable graphics and a space (blank). **Maximum:** One. **Limitation:** Cannot be installed with #6903. **Field Installation:** Available at time of manufacture only.

ACCESSORIES

See "Accessories" at the end of the M3601 pages.

3614 CONSUMER TRANSACTION FACILITY

Note: Withdrawn from marketing. Features, Accessories and RPQs will continue to be marketed on an "as available" basis.

Purpose: An unattended self-service banking terminal that issues variable amounts of money, accepts deposits, and performs other transactions. It attaches to a 3601 or 3602 Finance Communication Controller.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs).

Model 1: Consumer Transaction Facility, Lobby. Designed for use inside a building. Consists of the basic unit with a protective covers, a protective front panel, and a bezel around the front panel. The protective cover contains provision for customer insertion of two keylock cylinders.

Model 2: Consumer Transactions Facility, Through the Wall. Designed for use through the wall of a building. Has a motorized protective door over the keyboard/guidance area for outdoor environmental protection. Can be attached to a heavy duty enclosure, with a through-the-wall bezel, and mounted on a 4 inch, 7 inch, or 10 inch stand. The heavy duty enclosure contains a combination lock and provision for customer insertion of bank examiner's type keylock for locking the combination dial.

Model 11: Same as Model 1 with a capability of issuing two denominations during one transaction. Can also be loaded with a single denomination, doubling the bill capacity currently available in the 3614 Model 1.

Model 12: Same as Model 2 with a capability of issuing two denominations during one transaction. Also can be loaded with a single denomination, doubling the bill capacity currently available in the 3614 Model 2.

Model Changes: Available at time of manufacture only. All features may be field installed.

Highlights:

Issues Cash: Withdrawal transaction issues single (Model 1 or 2) or dual denominations (Model 11 or 12) up to a maximum of 20 bills from a single account. Withdrawal is from a choice of four accounts.

Accepts Deposits: Deposit transaction and depository with controlled access slot allows users to deposit to checking or savings accounts.

Accepts Payments: Allows user to make various payments by depositing cash or a check. User may also deposit payment coupon and have financial institution deduct funds from his account.

Cash Check: A single transaction that allows cash to be issued to user following deposit of a check drawn on another institution.

Additional Transactions: The 3614 provides a general purpose special transaction, an account inquiry transaction, and a funds transfer transaction.

Transaction Chaining: A series of multiple transactions can be performed with a single insertion of magnetic stripe card and single keyed entry of personal identification number.

Issues Statements: Can print and issue a statement or message to user.

Journaling: Transaction documents can be printed and retained in the 3614, as an aid in machine balancing.

Keyboard/Guidance: Guidance display steps user through a transaction. Customer can specify messages to be displayed.

Encrypt/Decrypt Feature: Encryption/decryption of sensitive data during communication line transmission...uses the U. S. Federal Information Processing Data Encryption Standard (DES) algorithm. See "Specify".

Multi-Institution Usage: Provision to accept magnetic stripe cards for 50 different card issuer identifiers with Data Encryption Standard (DES) technique.

Off-Host Operation: Offline operation via a 3601 or 3602 controller possible.

Customizing Capability: Customer can customize terminal operation (within limits) and change guidance messages.

Identification: The user is identified through the reading of his ABA-standard magnetic stripe card. As a second check, the user is verified by a comparison of a keyed personal identification number.

Installation: Can be installed for use inside the building or through-the-wall for outside use.

Bill Issue: Issues bills directly. No packets or cartridges are used.

Heavy Duty Enclosure: A strong steel protective enclosure to protect bills...available for purchase on Model 2 or 12.

Logo Panel: The 3614 logo panel is a purchase-only accessory. It provides an area on the top half of the front of the 3614 for personalization by the customer (silk screen, painting, etc.). An area is provided for name, logo, and advertising purposes. A logo panel is required with all models of the 3614. Lack of a logo panel detracts from the appearance of the 3614.

Prerequisites:

1. Each 3614 must have loop attachment to a 3601/3602.

   For Attachment to a 3601/3602 there must be an available position on a local loop or remote loop of the 3601/3602. The 3614 must have Terminal Loop Feature (#7820) ... if located remotely from the 3601/3602 the remote location must have a 3614 with Loop Integrated Modem (#8001), a 3604 Model 2, 3, or 4 with Line Feature Base (#4751 or 4752) and appropriate modem, or a 3603 Terminal Attachment Unit. If a 3603 is at the remote location, the 3614 does not require a Loop Integrated Modem (#8001). If both a 3614 and a 3604 Model 2, 3, or 4 are installed in the same remote location without a 3603, it is recommended that the loop modem be located with the 3614 since the 3614 might often be operating when the 3604 is not, e.g., on weekends and holidays.

2. Depending upon the configuration, the Additional Storage Feature #1006 or #1007 may be required on the 3601, or the 3602 ... see M3601 or M3602 pages for further details.

3. Logo Panel (#9401 or #9402) ... see "Specify". Purchase Only.

4. The 3614 Model 2 and 12 require Model 2/12 Accessory Group #9571 ... see "Specify". Purchase Only.

Customer Responsibilities: Because the 3614 Model 2 or 12 is attached to customer premises, installation of cables, mounting stand, and enclosure and bezel is a customer

responsibility. The customer is also responsible for site preparation, such as cutting a hole in the wall for mounting the 3614 Model 2 or 12. Installation of cables and site preparation is also a customer responsibility for the 3614 Model 1 or 11. IBM is not responsible for any loss of money incurred through the use of the 3614.

Sub host operation under control of the 3601 or 3602 Finance Communication Controller requires special customer systems design and support. Maintenance of system integrity in the sub host mode is a customer responsibility.

IBM is not responsible for intentional damage to the 3614 Models 1, 2, 11, or 12. Repair of such damage is not covered under the IBM Rental Agreement or Maintenance Contract. Repair of such damage at cost of time and materials will be made to rental machines and can be provided for purchased machines.

Customer Responsibilities—Currency Sorting: The general condition of used currency may vary. To achieve satisfactory operation, the customer must ensure that only **good quality** currency is used and it must be inspected to remove excessively worn, damaged or torn notes. The 3614 Operator's Guide GA66-0001 contains procedures for loading the 3614. The customer must ensure that each hopper of the 3614 Model 11 and 12 is loaded with the proper denomination currency.

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz): #9901.

2. Keyboard: Specify one of the following. All are field installable.

Specify Number	Mdl		Transaction								From/To Account				Change Making (Note 1)	Prerequisite: Depository (#3322)
	1 and 2	11 and 12	Withdrawal	Special	Inquiry	Transfer	Deposit	Payment Enclosed	Payment from Account	Cash Check	Checking	Savings	Credit Card	Special		
9351	o	o	*								*					
9352	o	o	*								o	o	o			
9353	o	o	o		o						o	o	o			
9354	o	o	o	o							o	o	o	o		
9355	o	o	o	o	o						o	o	o			
9356	o	o	o	o	o						o	o	o	o		
9357	o	o	o	o	o	o	o	o	o	o	o	o	o	o		o
9358	o	o	o	o	o		o	o			o	o	o	o		o
9359	o	o	o	o	o	o					o	o	o	o		
9360	o	o	o	o	o		o				*					o
9361	o	o	o	o	o						*					
9362	o	o	o	o	o	o	o	o	o	o	o	o	o	o		o
9363	o	o	o	o	o		o			o	o	o	o	o		o
9364	o	o	o	o	o		o			o	*					o
9451		o	*								*				o	
9452		o	*								o	o	o		o	
9453		o	o		o						o	o	o		o	
9454		o	o	o							o	o	o	o	o	
9455		o	o	o	o						o	o	o		o	
9456		o	o	o	o						o	o	o	o	o	
9457		o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
9458		o	o	o	o		o	o			o	o	o	o	o	o
9459		o	o	o	o	o					o	o	o	o	o	
9460		o	o	o	o		o				*				o	o
9461		o	o	o	o						*				o	
9462		o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
9463		o	o	o	o		o			o	o	o	o	o	o	o
9464		o	o	o	o		o			o	*				o	o

(*) Does not have any transaction select or "from Account" keys. *Note:* Two currency denominations must be specified.

3. Cables: See *Installation Manual—Physical Planning,* GA27-2766. Also see "Accessories" at the end of the M3601 pages.

4. Currency Denomination: #9091 for $5, $10, $20.

5. Logo Panel [Purchase Only]: See "Accessories" at the end of the M3614 pages.

6. Model 2/12 Accessory Group [Purchase Only]: #9571. See "Accessories" at the end of the M3614 pages.

7. 3614 Host Attachment Designation: 1st and 2nd position designation is required to control distribution of 3614 controller-data media to host system location.

   Note: Contact your IBM marketing representative for guidance on the following paragraphs. IBM supports DES (#9001) and the 3601/2 Loop Attachment (#9802) only.

   1st Position Designator—identifies first 3614 of each different Controller Data Version attached to a host system ... used to limit distribution of controller-data media to one copy of each version per host system location.

   2nd Position Designator—identifies additional 3614s of each version ... controller-data media is not distributed to host system location for 2nd position designated 3614s.

   The following matrix identifies individual Controller Data Versions and their corresponding 1st and 2nd position specify codes. **Limitations:** Each 3614 must have either 1st or 2nd position specified ... one 1st position must be specified for each version ... only one 1st position may be specified for each version.

Specify either 1st or 2nd Pos Code below: 1st	2nd	Version	Host Attachment: Loop-3601/2	Encryption Technique DES (#9001)
#9801	#9802	5	Loop	DES

   When 1st position (#9701, #9703, #9801 or #9803) is specified, also specify one of the following to indicate magnetic tape density used at the host system location:

   #9412   9-track 800 bpi
   #9413   9-track 1600 bpi

   If tape drives are not available at the host location, contact your IBM marketing representative for guidance.

   When #9701, #9703, #9801, or #9803 is specified, additional information is required to indicate shipping address of host system location. Contact IBM for guidance.

8. Data Encryption Standard (DES): #9001—Provides the data encryption technique in conformity with the U.S. Federal Information Processing Data Encryption Standard sponsored by the U.S. National Bureau of Standards. DES facilitates multi-institution usage by providing for personal identification number (PIN) validation based on individual user PIN encryption keys for 50 different card issuer identifiers ... PIN offset value may be recorded on magnetic stripe to be used to validate PINs in 3614 which were not based originally on DES technique ... accepts 4 to 16 digit fixed or variable length PINs ... option to load PIN encryption keys via communication line from host. **Field Installation:** Yes. **Prerequisite:** DES encryption capability required on the 3601 or 3602 and in host system ... see the M3601 and M3602 pages for further details. DES is used to

determine 3614 Host 1st and 2nd Position Host Attachment designation. See Specify 7 above.

SPECIAL FEATURES

Depository (#3322): Provides a controlled access slot in the front of the 3614 leading to an internal receptacle for collecting deposit documents. In addition to the controlled access slot, the chute is designed to discourage tampering with previously inserted deposits. **Prerequisite:** One of the following keyboards—#9357, #9358, #9360, #9457, #9458, or #9460.

EIA Interface (#3701): Provides an interface for external modems. **Limitation:** Not available on Terminal Loop Feature (#7820). **Prerequisite:** SDLC Communication Feature.

Expanded Function Feature (#3895): Provides the options of transaction chaining, journal printing, and cash check transactions. **Prerequisite:** DES (specify code #9001). **Specify:** Any combination of the following functions may be specified with #3895. Specify at least one:

(1) *Transaction Chaining (#9721)*—allows a series of multiple transactions with single insertion of magnetic stripe card and single keyed entry of PIN.

(2) *Journal Printing (#9722)*—print statement documents and retain in 3614 ... can be used as an aid in machine balancing and settlements. **Prerequisite:** Transaction Statement Printer (#7900).

(3) *Cash Check (#9723)*—in a single transaction, cash is issued to user after he deposits a check drawn on another institution. **Prerequisites:** Depository (#3322) and one of the following keyboards ... #9362, #9363, #9364, #9462, #9463, or #9464.

Terminal Loop Feature (#7820): Provides the capability to attach either to a local or remote 3601/3602 Finance Communication Controller loop directly; or to a remote 3601/3602 loop via a 3603 or 3604 Model 2, 3, or 4. **Prerequisites:** (1) Available positions on the loop ... (2) Depending on the configuration, the Additional Storage Feature (#1005 or #1006) may be required on the 3601/3602. See the M3601 or M3602 pages ... (3) Attachment to remote 3601/3602 loop directly requires a 1200 bps Loop Integrated Modem (#8001). **Specify:** If loop attachment is without Loop Integrated Modem (#8001), specify one of the following loop speeds: [1] For local loop attachment to 3601/3602, specify: #9062 for 1200 bps, #9063 for 2400 bps, or #9064 for 4800 bps ... [2] For remote loop attachment via a 3603 or 3604 Model 2, 3, or 4, specify #9062 for 1200 bps. **Limitations:** Remote loop speed is 1200 bps. **Maximum:** One.

Transaction Statement Printer (#7900): Prints a statement showing the record of the transaction and passes the printed statement to the customer through the cash issue slot. Data is printed on 96-column card stock (2-5/8 inches by 3-1/4 inches). A 57-character set provides 56 printable graphics and a space (blank). Four lines, one character per line, are printed simultaneously, for up to 34 characters per line...a total of 136 characters on each statement. The data to be printed is determined by the host application program and by the data stored in the 3614. Printing is overlapped with the cash issue cycle and the user deposit cycle. **Prerequisites:** If a statement is to be issued for any transaction on a given keyboard, then the Transaction Statement is required. **Card Limitations:** The 96-column card stock used in the transaction statement printer must not have the optional 60 degree corner cuts. Detailed disclosure specifications describing the 96-column card stock

are available from the IBM Corporation, Commercial Development Officer, Armonk, N.Y. Card configurations or card stocks which do not conform to these specifications may result in unsatisfactory performance. The configurations available from IBM are listed in the SSD Sales Manual.

1200 bps Loop Integrated Modem (#8001): Provides an integrated 1200 bps modem for use over normal quality voice grade lines. **Limitation:** If a 3604 Model 2, 3, or 4 and a 3614 are located at the same remote loop location, it is recommended that the loop modem be located on the 3614 because the 3614 will often be operating when the 3604 is not; e.g., weekends. **Prerequisite:** Terminal Loop Feature (#7820).

ACCESSORIES—3614 (ALL MODELS)

3614 Logo Panel #9401 or #9402: The personalization panel provides an area on the top half of the front of the 3614 (all models) that can be personalized by the customer (silk-screened, painted, etc.). The area is provided for customer name and/or advertising purposes.

If #9401 is specified, logo panel will be shipped with the 3614.

If #9402 is specified, logo panel will be shipped before the 3614.

Note: Additional logo panels, P/N 2750814, may be ordered.

3614 Model 2/12 Accessory Group (#9571): The 3614 Model 2/12 Accessory Group consists of a heavy duty enclosure, a through-the-wall bezel, and a mounting stand.

Heavy Duty Enclosure: Provides a strong steel enclosure for the through-the-wall configuration. This enclosure has a rear access door with a resettable combination lock and a provision for a keylock. The combination for the combination lock is set by the customer. The customer must provide the actual keylock and the key. **Limitation:** For 3614 Model 2 or 12 only.

Through the Wall Bezel: Provides a frame around the through-the-wall portion of the 3614 Model 2 or 12 and provides a casement for the hole in the wall.

Mounting Stand: Provides a support stand for the 3614 Model 2 or 12 that comes in three different heights. **Specify:** Height—#9572 for 4 inches, #9573 for 7 inches, or #9574 for 10 inches.

Note: These items are provided as accessories to the 3614 Model 2 or 12 to facilitate installation of the 3614 Model 2 or 12 through-the-wall. Installation, checkout, and maintenance of these items will not be provided by IBM. All responsibility and expenses involved must be borne by the customer.

Warranty for 3614 Model 2/12 Accessory Group: For 90 days commencing on the date of installation or 30 days after shipment, whichever comes first, these accessories are warranted free from defects in materials and workmanship. IBM's obligation is limited to providing replacement parts on an exchange basis.

Delivery Instructions: Contact IBM. Because of installation requirements, the Accessory Group will generally be shipped three weeks before the 3614.

The "Heavy Duty Enclosure" included in this Accessory Group is, in effect, a steel safe with dimensions of approximately 43 inches x 28 inches x 63 inches and weighing approximately 2800 pounds. It does not have casters and will be transported on a skid. The item will be shipped via common carrier to the

delivery point designated by the customer and will probably require special handling or rigging at destination. The customer should be advised to have this item delivered directly to a local drayman who has the facilities to move an item of these dimensions and weight. The customer should then make local provisions to have the Accessory Group delivered for physical installation at the selected site.

3615 ADMINISTRATIVE TERMINAL PRINTER

Purpose: A printer for use with the 3600 Finance Communication System to provide a hard-copy output of banking transactions.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs).

Model 1: Prints at 60 cps (local or remote loops)

Model 2: Prints at 120 cps (local loops only)

Model Changes: Available at time of manufacture only. All features may be field installed.

Highlights:

The 3615 provides a hard copy output on a variety of cut forms and fan-fold continuous forms to meet the customer's printing requirement in banking applications. When combined with a 3604 Keyboard Display, the 3615 provides a bank teller or officer with a work station to use in performing banking administrative transactions. The 3615 can also be used alone for administrative printing of required reports. The forms can be those usually used for printing of one line or a number of lines. Speed ranges from 60 cps for the Model 1 to 120 cps for the Model 2. This micro-processor controlled printer is a bi-directional matrix printer with high speed tabulation (Model 1 only) and indexing capability to avoid unnecessary print head movement. The printer's dot matrix is 4 of 7 wide by 8 high. The 3615 prints up to 132 print positions with character spacing at 10 to the inch. Line spacing is six lines to the inch. Up to 6-part forms (total thickness— 0.44 mm or 0.018 in) may be used. Five-part and six-part forms should be tried individually for acceptable feeding registration and print quality. For continuous fan-fold forms, the Variable Width Forms Tractor (#8700) is required ... see "Special Features". Maximum overall width for continuous forms is 381 mm (15 in), and 355.6 mm (14 in) for cut forms. Card stock forms are not recommended.

Prerequisites:

1. An available position on a local or remote loop of a 3601 or 3602. If located remotely from the 3601 or 3602, the remote location needs (1) a 3603 Terminal Attachment Unit, (2) a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or (3) a 3604 Keyboard Display Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and an appropriate modem. If both a 3614/3624 and a 3604 Model 2, 3, or 4 are installed in the same remote location, the loop modem should be located with the 3614/3624, since the 3614/3624 will often be operating when the 3604 Model 2, 3, or 4 is not.

   Note: The 3615 Model 1 will attach to local or remote loops ... the 3615 Model 2 will attach to local loops only.

2. Depending upon the configuration, the Additional Storage Feature (#1006 or #1007) may be required on the 3601 or 3602. See the M3601 or M3602 pages for further details.

Forms Specifications: See the *Form Design Reference Guide for Printers*, GA24-3488.

Supplies: A black ribbon, P/N 1136653 or equivalent, is required. See the *SSD Sales Manual*.

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz): #9880 for locking plug or #9881 for non-locking plug. **Field Installation:** Not recommended.

2. Cables: See "Accessories" at the end of the M3601 pages for ordering instructions. Also see the *3600 Installation Manual Physical Planning*, GA27-2766.

SPECIAL FEATURES

Variable Width Forms Tractor (#8700): A forms feeding device for continuous edge-punched fan-fold forms. Overall form widths from 3 to 15 inches can be fed. This feature is required for use of continuous forms. Friction fed cut forms may also be used without removing the forms tractor. In this case, printing is limited to 127 print positions.

ACCESSORIES

See "Accessories" at the end of the M3601 pages.

3616 PASSBOOK AND DOCUMENT PRINTER

Purpose: A matrix printer used on the 3600 or 4700 controllers to print on passbooks, journal, and a variety of forms and documents.

IBM Programming Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs). The 3616 is also supported by the IBM 4700 PRPQ 5700-BGB.

Model Changes: Not applicable. All features available at time of manufacture only.

Highlights: The 3616 printer provides the ability to print on a variety of forms and passbooks to meet printing requirements of financial applications. This printer, when combined with a 3604 or 4704 Keyboard Display, provides a teller or other operator with a full function workstation capable of handling a wide range of financial transactions. The printer is a bi-directional matrix printer with a print speed of 120 cps. The printer dot matrix is 4 of 7 wide by 8 high.

The printer has two separate print stations serviced by one print head. The passbook print station can print up to 100 characters on passbooks or single or multipart cutforms requiring single or multi-line printing. The basic machine accepts horizontal fold passbooks of a variety of sizes. Print spacing and line indexing are both program selectable, spacing at 10 or 12 characters per inch, indexing at five or six lines per inch. *Note:* For the Vertical Fold Passbook Feature (#8701) limitations, see the *Form Design Reference Guide for Printers*, GA24-3488.

The journal print station prints up to 57 characters on one-part or two-part journal paper, with a locked internal take-up roll. Journal entries are visible after the entire line is printed, and remain visible for several entries thereafter. The journal may be manually advanced, but not reversed. Cut forms may be inserted in front of the journal for validation type printing of one line of print in a fixed location on the lower left-hand corner of the document. Print spacing is program selectable at 10 or 12 characters per inch. Journal indexing is nominally six lines per inch.

In either station, wide bold characters may be printed at five or six characters per inch. The customer may define and use up to 16 special characters, addressable separately from the basic character set, by defining their matrix patterns at CPGEN.

The printer has eight operator status lights, including three user programmable. The machine has two separated "Start" pushbuttons which may be used to identify individual tellers to the 3600 or 4700 controllers when two tellers are sharing the printer.

The 3616 provides address sharing between like and unlike devices. That is, two 3616s or a 3616 with a 3604 (that has RPQ MG1586) or a 3616 with a 4704.

Prerequisites

1. An available position on a local or remote loop of a 3600 or 4700 controller. If located remotely from the 3600 or 4700 controller, the remote location must have (1) a 3603 Terminal Attachment Unit, (2) a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or (3) a 3604 Keyboard Display Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and an appropriate modem. If both a 3614/3624 and a 3604 Model 2, 3, or 4 are installed in the same remote location, the loop modem should be located with the 3614/3624, since the Consumer Transaction Facility may be operating when the 3604 Model 2, 3, or 4 is not.

2. Depending upon the configuration, the Additional Storage Feature (#1006 or #1007) may be required on the 3600 controller, or Feature #1008 may be required on the 4700 controller. See the M3601/3602 or M4701 pages for further details.

Forms Specifications: Refer to the *Form Design Reference Guide for Printers*, GA24-3488.

SPECIFY

1. Voltage: (120 V AC, 1-phase, 60 Hz): #9890 for locking plug or #9891 for non-lock plug.

2. Cables: See the *IBM 3600 Installation Manual—Physical Planning*, GA27-2766. Also see "Accessories" at the end of the M3601 pages.

3. Journal Security Feature: #9351. Provides a change in the covers so that a cutform cannot be inserted in front of the journal. **Field Installable:** Not recommended. **Limitation:** Not compatible with Two Part Journal.

4. Color: The standard color for this unit is pearl white. The accent color must be specified, either #9065 for pebble gray or #9068 for raven black. **Field Installation:** Not recommended.

SPECIAL FEATURES

Vertical Fold Passbook (#8701). Provides modifications to the basic machine to enable it to accept a single size of vertical fold passbook in the passbook station. The size is adjustable by the CE at initial installation. For details and limitations, see the *Form Design Reference Guide for Printers*, GA24-3488. **Maximum:** One. **Field Installation:** Available at time of manufacture only.

3618 ADMINISTRATIVE LINE PRINTER (withdrawn from marketing as of 15 June 1983)

Purpose: A medium-speed line printer for use in the 3600 Finance Communication System.

IBM 3600 FDP Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs).

Model Changes: Not applicable. All features are **not recommended** for field installation.

Highlights: Provides the capability to print on continuous fanfold paper up to 80 print positions on an 200 mm (8.0 in) print line. The unit has a pin feed mechanism. It accepts paper widths of 89 mm (3.5 in) to 229 mm (9.0 in) pin hole center to center. Paper up to 378 mm (14.88 in) can be handled with Expanded Print Line (#3860). See "Special Features". Paper up to six parts plus carbon [maximum total thickness is 0.5 mm (0.02 in)] can be accommodated. A form jam detection capability is provided. Print speeds are dependent upon the number of characters printed per line, loop speed, and available slot position on the loop.

Character Set	Nominal Print Speed
48	155 lpm
64	120 lpm
96	80 lpm

Prerequisites:

1. An available position on a local or remote loop of a 3601 or 3602. If located remotely from the 3601 or 3602, the remote location must have (1) a 3603 Terminal Attachment Unit, (2) a 3614/3624 Consumer Transaction Facility equipped with a Terminal Loop Feature (#7820) and an appropriate modem, or (3) a 3604 Model 2, 3, or 4 equipped with a Line Feature Base (#4751 or #4752) and appropriate modem. If both a 3614/3624 and 3604 Model 2, 3, or 4 are installed in the same remote location, the loop modem should be located with the 3614/3624, since the 3614/3624 will often be operating when the 3604 Model 2, 3, or 4 is not.

2. Depending upon the configuration, the Additional Storage Feature (#1006 or #1007) may be required on the 3601 or the 3602. See the M3601 or M3602 pages for further details.

Forms Specifications: See the *Form Design Reference Guide for Printers,* GA24-3488.

SPECIFY

1. Voltage (115 V AC, 1-phase, 60 Hz): #9880 for locking plug or #9881 for non-locking plug. **Field Installation:** Not recommended

2. Cables: See the *IBM 3600 Installation Manual—Physical Planning,* GA27-2766. Also see "Accessories" at the end of the M3601 pages.

3. Character Set Size: #9071 for 48 characters, #9072 for 64, or #9073 for 96. A space (blank) character is included in each character set, resulting in 47, 63, or 95 printable graphics. **Field Installation:** Not recommended.

SPECIAL FEATURES

Dual Independent Form Feed (#3550): Provides two independently indexed pin feed mechanisms. Different sizes of forms can be handled in each paper feed. **Maximum:** One. **Field Installation:** Not recommended.

Expanded Print Line (#3860): Expands the print line to 132 print positions on a 33.5 cm (13.2 in) line. **Maximum:** One. **Field Installation:** Not recommended.

ACCESSORIES

See "Accessories" at the end of the M3601 pages.

3624 CONSUMER TRANSACTION FACILITY

Purpose: An unattended self-service banking terminal that issues variable amounts of money, accepts deposits, and performs other financial transactions ... issues traveler's checks if the requester satisfies a document issue qualification test ... attaches to a 3600 or 4700 Finance Communication Controller via loop.

IBM Programming Support: Refer to the end of the M3601 pages for a quick index of devices, features, and specifies supported by IBM 3600 Field Developed Programs (FDPs). The 3624 is also supported by the IBM 4700 PRPQ 5799-BGB.

Model 1: Lobby—Single Document Feed Mechanism. For use inside a building in a secure attended location. The basic model includes a single cartridge feed station, card reader, user guidance keyboard and display unit and is suitable for counter-top or free-standing mounting ... includes covers and front trim paneling ... covers contain locking handle, with a standard key, and provision for customer insertion of an additional keylock cylinder. A backlighted logo panel, required for installation of a lobby model, is available as a purchase accessory. A pedestal is available as a purchase accessory to mount the basic lobby model. A pedestal base is included as part of the depository special feature when the depository is added to the basic model.

Model 2: Through the Wall—Single Document Feed Mechanism. For outdoor, vestibule, drive-up, and otherwise less secure, unattended locations to provide availability on a 24-hour basis. The basic model includes a single cartridge feed station, card reader, user guidance keyboard and display unit, and has provision for mounting the currency dispensing and depository mechanisms inside a heavy-duty security enclosure. Covers are provided for the components not contained within the heavy-duty enclosure. A heavy-duty enclosure, pedestal base for mounting the enclosure, through-the-wall bezel, front trim paneling, and logo panel, for through-the-wall installation, are required and available as purchase accessories.

Model 11: Same as the Model 1, but with dual document feed mechanism. Provides capability to issue the same or two different denominations in a single transaction; to load the same denomination in both dispensers, effectively doubling the bill capacity of a single denomination 3624 model 1; or to issue currency and other documents as separate transactions (e.g., cash and traveler's checks).

Model 12: Same as the Model 2, but with dual document feed mechanism. Provides capability to issue the same or two different denominations in a single transaction; to load the same denomination in both dispensers, effectively doubling the bill capacity of a single denomination 3624 model 2; or to issue currency and other documents as separate transactions (e.g., cash and traveler's checks).

Model Changes: Available at time of manufacture only. All features except 7950 may be field installed.

Highlights:

Cartridge Loading: Currency cartridge provides for quick, easy loading and convenient, tamper-resistant transportation of the currency.

Issues Cash: Issues one denomination (Models 1 and 2), or two denominations (Models 11 and 12) up to a maximum of 20 bills from a choice of accounts. Issues all bills at one time in a single stack ... no prepackaging or packets are used.

Individual Document-Feed Control: Allows each cartridge drive station on the dual-feed Models 11 and 12 to be associated with a separate transaction select key (e.g., cash and traveler's checks).

Accepts Deposits: Allows user to make a deposit to choice of accounts. Built-in depository envelope holder available as an accessory on Models 2 and 12. Envelope holder included with depository on Models 1 and 11.

Cash-Check: A single transaction that allows cash to be issued to a person after he deposits a check.

Accepts Payments: Allows user to make various payments by depositing cash or check or by having funds deducted from user's account.

Depository Cartridge Locking System: Prevents removal of cartridge from machine unless cartridge is closed and locked...reduces need for dual-custody depository servicing.

Depository Envelope Printer: A special feature which prints unit and sequence number on envelope as it is deposited.

Additional Transactions: Provides account balance inquiry, funds transfer transaction, and special transactions.

Keyboard/Guidance: Comprehensive set of function keys and customized display messages step a user through a transaction ... keyboard and transaction functions can be modified through programming. Option for either numeric or alphanumeric keypad.

Multiline Display: A special feature which provides 240-character, 6-line display. Includes display-related user-response capability for expanded interaction between user and machine.

Transaction Chaining: Allows user to perform a series of transactions with a single insertion of the magnetic stripe card.

Transaction Statements: Can print and issue individual statements or messages to user.

Journaling: Can print and retain documents within the 3624.

Backlighted Logo: Backlighted logo panel that can be customized; extends across full width of the front panel.

Host/Subhost Attachment: Attaches to the System/3 Model 15 via BSC and the System/34 via SDLC through a subhost 3600 or 4700 controller.

Encrypt/Decrypt: Encryption of sensitive data for communication line transmission ... uses the U.S. Federal Information Processing Data Encryption Standard (DES) algorithm.

Multi-Institution Usage: Provision to accept magnetic stripe cards of many different card issuers. Base capacity of issuer identifier table within the 3624 can be expanded by table overflow request message to host or with Additional Storage Feature (#1301). See "Special Features".

Personal Identification: User account is identified through reading magnetic stripe card. To validate the identity of the person using the card, a personal identification number (PIN) is used ... validation of PIN (up to 16 digits) may be performed in the 3624.

Installation Configurations: Can be installed inside a building, for lobby use; or through the wall of a building, for walk-up or drive-up use.

Multiple Languages: Capability to display different languages based on identifier code recorded on magnetic stripe card.

Third Track: A special feature provides reading and writing third track data recorded on magnetic stripe card ... see "Special Features".

Additional Storage: Special feature(s) provide additional memory for expanding the number of custom messages and Financial Institution Table entries. See "Special Features".

Modular Packaging: For Model 2 or 12 through-the-wall installation, currency dispenser and depository mechanisms are contained in a heavy-duty enclosure independent of other functional modules. This allows maintenance of non-secured areas without access to currency area.

Compatability: 3614 family compatibility, designed to minimize transition requirements.

Security: Models 2 and 12 installed with heavy-duty enclosure and through-the-wall installation accessories meet security requirements of UL291 and comply with the intent of U.S. Federal Regulation P for unattended automated paying and receiving machines used when banking offices are closed.

Installation Units and Accessories: Heavy-duty enclosure, through-the-wall bezel, optional pedestal base, front dress panel and front trim border are required for installation of through-the-wall Models 2 and 12 ... these are available as purchase-only accessories. See "Accessories".

Walk-up Configuration: Recessed through-the-wall bezel, designed to provide a shelf surface for the user, is recommended for walk-up use.

Drive-up Configuration: Non-recessed through-the-wall bezel, designed to position the user area nearer the outer wall surface, is recommended for drive-up use.

A pedestal for mounting lobby Models 1 and 11 is available as an optional purchase-only accessory. See "Accessories".

A logo panel and cartridges are required for installation of all models and are available as purchase-only accessories. See "Accessories".

Prerequisites

1. Each 3624 must be loop attached to a 3600 controller for attachment to a System/3 Model 15 or a 3600 or 4700 controller for attachment to a System/34.

   For Loop Attachment to a 3600 or 4700 controller: There must be an available position on a local or remote loop of the 3600 or 4700 controller. The 3624 must have Terminal Loop Feature (#7820). If located remotely from the 3600 or 4700 controller, the 3624 can be attached to a remote loop via any of the following: 1) Directly, using the 1200 bps Loop Integrated Modem (#8001) ... 2) Via a subloop through a 3603 Terminal Attachment Unit Model 1 for 1200 bps or a 3603 Model 2 for 1200 or 2400 bps ... 3) Via subloop through a 3604 Keyboard Display Model 2, 3, or 4 equipped with Line Feature Base (#4751 or #4752) and an appropriate modem ... 4) (3601 or 3602 only) Via a subloop through a 3614 equipped with Terminal Loop Feature (#7820) and 1200 bps Loop Integrated Modem (#8001) ... 5) Via a subloop through another 3624 equipped with Terminal Loop Feature (#7820) and 1200 bps Loop Integrated Modem (#8001). *Note:* The 3624 does not require #8001 if it is attached to a remote loop via a subloop through a 3603, 3604, 3614, 3624, or if the 3624 is

attached to a local loop. It is recommended that the 3624 not be attached through a 3604, as the 3624 might often be operating while the 3604 is not, e.g., weekends and holidays.

2. Depending upon the configuration, Additional Storage Feature (#1006 or #1007) may be required on the 3600 controller or Additional Storage Feature (#1008) may be required on the 4701...see M3601/3602 or M4701 pages for details.

3. *For 3624 Models 1 and 11:* Pedestal, Lobby (#5510) is available as an option for free-standing lobby configuration without a depository feature ... see "Accessories". #5510 is purchase only. *Note:* A pedestal is included with the Depository, Lobby feature (#3233).

4. *For 3624 Models 2 and 12:* The following units are required for through-the-wall installation: (1) Heavy-duty Enclosure, Single Function (#3901) or Dual Function (#3902). *Note:* Single function enclosure cannot be field modified to a dual function enclosure ... (2) Bezel, Through-the-Wall, Recessed or non-Recessed. Recessed Bezel (#1490) is recommended for walk-up configuration. Non-Recessed Bezel (#1491) is recommended for drive-up configuration ... (3) Front Dress Panel (#3851) ... (4) Front Trim Border, with Envelope Holder (#3961) or without Envelope Holder (#3962) ... (5) Pedestal for single function heavy duty enclosure (#4901) or dual function heavy duty enclosure (#4902) is optional for mounting heavy duty enclosure at appropriate height for walk-up or drive-up use. Storage Cabinet (#4903) is optional when mounting dual function heavy-duty enclosure without pedestal. *Note:* Storage cabinet is included with Pedestal (#4901 or #4902). See "Accessories" for descriptions and ordering information. These accessories are for purchase only.

5. *Logo Panel:* Required on all 3624 models. Shipment of the logo panel is determined by the following specify codes: (1) #9401 if panel is to be shipped with the 3624. (2) #9402 if panel(s) are to be shipped prior to the 3624. *Note:* Specify feature #9402 can be used to order more than one panel if the customer desires to have several panels delivered before the 3624 (e.g., for customization at one time). (3) #9403 if panel is not to be ordered with the 3624 as it will either be ordered separately by part number through an MES or ordered under specify code #9402 on another 3624 ... see "Specify" and "Accessories". Purchase only.

6. *Currency Cartridge:* For 3624 Models 1 and 2, one is required. For 3624 Models 11 and 12, two are required. Currency cartridges are not included with the basic 3624 and must be ordered separately. Spare cartridges are recommended for convenience of operation. A minimum of one spare cartridge for Models 1 and 2 and two spare cartridges for Models 11 and 12 must be made available by the customer to the CE for normal 3624 maintenance. See "Accessories". Purchase-only item. See "Customer Responsibilities—3624 Currency Cartridge" for installation and maintenance requirements.

Customer Responsibilities

Installation Facilities: Because the 3624 Model 2 or 12 attaches to customer premises, installation of cables, pedestal, heavy-duty enclosure, through-the-wall bezel, front dress panel, front trim border, and logo panel are customer responsibilities. The customer is also responsible for site preparation, such as cutting a hole in the wall. For Models 2

and 12, the customer is responsible for placement of the document feed and depository modules into the heavy-duty enclosure and attachment of the I/O module to the heavy-duty enclosure. Installation of cables and site preparation are customer responsibilities also, for 3624 lobby Models 1 and 11.

Machine Maintenance: IBM will not provide warranty or maintenance service on a 3624 containing money. The customer will be responsible for removing, controlling and reloading all money in the 3624 so that IBM can fulfill its warranty and maintenance obligations.

Keylocks: Covers included with lobby Models 1 and 11 have a locking handle, with a standard key, and provide for customer insertion of an additional keylock cylinder. Covers included with through-the-wall Models 2 and 12 have a keylock cylinder, with a standard key. Cabinet doors, included in all pedestals, have a keylock cylinder with a standard key. The Currency Area Lockoff accessory includes a keylock with a standard key. Currency cartridges provide for customer insertion of a keylock. Depository cartridge used with depository cartridge locking feature requires customer insertion of the depository keylock. Depository locking mechanism in the 3624 requires customer installation of the depository cartridge locking key. If the customer desires to change the locks and/or keys included with those units or to install additional keylock cylinders where provided for, he is responsible for their procurement and installation.

Accessories Maintenance: The customer is responsible for maintenance and parts procurement on all accessories. Repair of the currency issue and depository slot protective environmental gates in the heavy-duty enclosure can be provided by IBM on a time and material basis.

Currency Cartridge: The 3624 Currency Cartridge is a purchase only accessory and is not included with the basic 3624. One cartridge is necessary for Models 1 and 2, and two for Models 11 and 12 for installation checkout and operation of the 3624. Models 2 and 12 may also be operated with a single cartridge. Cartridges are not maintained by IBM under the normal lease agreement or MMMC for a purchased machine. The customer is responsible for determining if the cartridge is the failing unit; for providing cartridge for CE 3624 maintenance and testing (a minimum of one spare cartridge for Models 1 and 2 and two for Models 11 and 12 must be made available by the customer to the CE for normal 3624 maintenance); and for setting the keying system on the cartridges and drive stations to establish the desired match of currency denomination to drive station. See "Customer Responsibilities—3624 Currency Cartridge" in "Accessories" for installation and maintenance requirements.

Currency Sorting: To achieve satisfactory operation, the customer must ensure that only new currency and good-quality used currency are used in the 3624. The general condition of used currency may vary. Used currency must be inspected to remove excessively worn, damaged, or torn bills. The *IBM 3624 Operator's Guide,* GA66-0006, and the *IBM 3624 Cartridge Owner's Manual,* GA66-0005, contain procedures for preparation of new currency and inspection of used currency for operation in the 3624. For the 3624 Models 11 and 12, the customer must ensure that each feed mechanism is loaded with the proper denomination currency. The cartridges contain a keying mechanism which can be set by the customer to ensure a match between specific cartridges and cartridge drive stations.

Printer Ink Rolls: The customer is responsible for procurement and replacement of ink rolls in transaction statement and depository printers.

Logo Lamp: The customer is responsible for procurement and replacement of the lamp in the logo panel light assembly.

Damage: IBM is not responsible for intentional damage to the 3624 or any 3624 accessories. Repair of such damage is not covered under the IBM Maintenance Contract, under the Lease Agreement, or under the Pilot Test Plan. Repair of such damage at cost of time and materials will be provided for leased machines, Pilot Test machines, and purchase machines.

System Integrity: Subhost operation, under control of the 3600 or 4700 Finance Communication Controller, requires customer systems design and support. Maintenance of system integrity in the subhost is a customer responsibility.

IBM is not responsible for any loss of money to the financial institution or its customers through the use of the 3624.

Third Track System Security Statement: Customers ordering the Third Track feature (#7950) must be advised as follows:

"IBM believes that the system security is optimized in an online environment, where PIN validation and transaction authorization can be performed in conjunction with positive-file data bases. The scope of security exposure expands with the degree of offline implementation, for which the Third Track might be used. The U.S. Federal Information Processing Data Encryption Standard (DES) algorithm is utilized to provide cryptographic security in the 3624 and may be used in conjunction with the third track application. IBM recommends that the customer consider using DES for this purpose. An optional security feature of the proposed ANSI/ISO Third Track Data Content standard is a Crypto Check Digits (CCD) field in the card, that may be used to relate the data elements of track 3 to the magnetic stripe. This does not imply, however, that its use is not subject to fraud techniques. ANSI/ISO has not prescribed using the optional CCD field or any specific CCD implementation technique. IBM recommends that the customer consider its value in his application, weighing possible enhancements in security with economic and performance implications for his system. IBM will continue to pursue a course of action with customers and industry to maintain a high level of system security.

IBM reserves the right to modify the parameters of the track 3 function if the parameters of the final ANSI/ISO standard differ from those now in the process of standardization. However, this reservation of rights is not intended nor should it be construed as a commitment by IBM to support parameters different from those published by ISO/DIS 4909-June 1976".

SPECIFY

1. Voltage (120 V, AC, 1-phase, 60 Hz): #9911 ... usable on 115 V.

2. Cabling: See the *IBM 3600 Installation ManualPhysical Planning,* GA27-2766, and related manual GA26-1658. See also "Accessories" at the end of the M3601 pages.

3. Keyboard Arrangement: Numeric-only keypad (#9301), or alphanumeric keypad with the letters "QZ" printed over the numeric "0" (#9302) or over the Numeric "1" (#9303).

4. Currency Cartridge: See "Accessories" for ordering instructions.

5. Currency Denomination: #9091 for 5, 10, 20 dollar.

6. Keyboard: Specify one of the following for standard keyboard ... an RPQ should be submitted for any keyboard not shown below. All are field installable. The Change key, available on Models 11 and 12, allows the user to request a change in the denomination mix to be issued.

Specify Number		Transaction Type								From Account To Account			
All Models .... w/o Change Key	Models 11/12 for All Models w #4750 ... with Change Key	Withdrawal	Special (3)	Balance	Transfer	Deposit (2)	Payment Enclosed (2)	Payment from Account (2)	Cash Check (2)	Checking	Savings	Credit Card	Other
#9351	*9451	(1)								(1)			
9352	9452	(1)								0	0	0	
9353	9453	0		0						0	0	0	
9354	9454	0	0							0	0	0	0
9355	9455	0	0	0						0	0	0	
9356	9456	0	0	0						0	0	0	0
9357	9457	0	0	0	0	0	0	0		0	0	0	0
9358	9458	0	0	0		0				0	0	0	0
9359	9459	0	0	0	0					0	0	0	0
9360	9460	0	0	0		0				(1)			
9361	9461	0	0	0						(1)			
9362	9462	0	0	0	0	0	0	0	0	0	0	0	0
9363	9463	0	0	0		0			0	0	0	0	0
9364	9464	0	0	0		0			0	(1)			

Notes for Chart above:

(1) Key position does not appear on the keyboard panel; single function is selected automatically.

(2) Prerequisite: Depository #3233 or #3243.

(3) Prerequisite: Depository #3233 or #3243 if any special transactions are customized to require a deposit step.

7. Logo Panel Group: Specify one of the following: #9401 if logo panel is to be shipped with 3624 ... #9402 if logo panel(s) is to be shipped before the 3624 ... #9403 if logo panel is not to be ordered with 3624 and will either be ordered separately by part number through an MES or has been ordered through #9402 on another 3624. *Note:* More than one panel may be ordered on specify code #9402 if customer desires to have several panels delivered before the 3624 (e.g., for customization at one time). Purchase only. See "Accessories" for order information.

8. Controller-Data Designation: 1st and 2nd position designation is required to control distribution and maintenance of controller-data media necessary for 3624 load images. Specify #9491 or #9492 as follows in item 9.

9. 1st Position Designator (#9491): Used in combination with individual 3624 feature codes to determine which specific controller data set is to be distributed to the host-system location.

10. 2nd Position Designator (#9492): Used to identify additional 3624s attached to host system ... controller data set medium is not distributed to host-system location for any 2nd position designated 3624s. May be used also when controller data set medium is not required for host system (e.g., System/3 Model 15 or System/34).

When 1st position (#9491) is specified, also specify one of the following codes if magnetic tape is used at the host-system location:

#9412   9-track, 800 bpi
#9413   9-track, 1600 bpi

When 1st position (#9491) is specified, contact IBM for guidance in supplying the shipping address of the controller data medium.

This is the address to which a controller data medium will be automatically shipped after first 3624 is ordered.

11. Changes to 1st Position Designators for On-order and Installed 3624s: If a 1st position (#9491) 3624 is deferred, cancelled, or discontinued and 2nd position (#9492) 3624s have been specified, then one 2nd position 3624 must be altered from 2nd to 1st position (from #9492 to #9491) to ensure continued distribution of controller-data media to the host system location. When altering a 3624 to 1st position, include all items as required to be specified when #9491 is specified (items specified on previous 1st position 3624) ... if the host system location changes the input medium (e.g., from 800 bpi to 1600 bpi tape), the media specify code must be changed on the 3624 with #9491 specified. In this case, the former media specify code must be deleted and the new one added.

SPECIAL FEATURES

Additional Storage Feature (#1301): Provides an additional 2,048 bytes of storage. The user can utilize this to increase the number of custom messages, entries in Financial Institution Table, and as might be necessary for RPQs. To determine the number of additional storage features required, see *IBM 3624 Programmer's Reference Manual and Component Description,* GC66-0009. **Maximum:** Two ... 4,096 bytes total.

Depository Cartridge Locking Feature (#3150): [Models 2 and 12 Only] Provides locking mechanism in the depository that prevents removal of the depository cartridge unless it is closed and locked. Operates with Depository Cartridge (#3155). **Maximum:** One. **Prerequisites:** Through-the-Wall Depository (#3243). Minimum of one Depository Cartridge (#3155) is required for operation.

Depository, Lobby (#3233): [Models 1 and 11 Only] Provides envelope transport mechanism leading from a controlled access slot to deposit receptacle inside the 3624. The depository transport is designed to discourage tampering with previously inserted deposits. Includes a pedestal stand, with lockable rear access door and standard key, and a built-in depository envelope holder. Deposit envelopes may vary in size from 88.9 mm x 152.4 mm (3.5 in x 6.0 in) to 114.3 mm x 247.7 mm (4.5 in x 9.75 in) and shall be constructed of paper having basic weight of sub 20 through sub 28. Maximum thickness of a deposit envelope and its contents is 12.7 mm (0.5 in). **Limitation:** Cannot be installed in Pedestal, Lobby (#5510). **Maximum:** One.

Depository, Through-the-Wall (#3243): [Models 2 and 12 Only] Provides envelope transport mechanism leading from a

controlled access slot in the security enclosure to deposit receptacle inside the 3624. In addition to the controlled access slot in the security enclosure, the depository transport is designed to discourage tampering with previously inserted deposits. Deposit envelopes may vary in size from 88.9 mm x 152.4 mm (3.5 in x 6.0 in) to 114.3 mm x 247.7 mm (4.5 in x 9.75 in) and shall be constructed of paper having basic weight of sub 20 to sub 28. Maximum thickness of a deposit envelope and its contents is 12.7 mm (0.5 in). **Prerequisite:** Heavy-Duty Enclosure, Dual Function (#3902) ... see "Accessories". **Limitation:** Cannot be installed with Heavy-Duty Enclosure, Single Function (#3901). **Maximum:** One. *Note:* Field installation requires that Heavy-Duty Enclosure, Dual Function (#3902) has been initially ordered.

Depository Printer (#3245): Prints sequence number on envelope as it passes through the depository throat. Six numeric digits are printed horizonatally at repeated intervals along the envelope. Three digits are set by the customer engineer to identify the unit, and three digits are automatically sequenced when envelope passes print station. The depository ink roll is IBM P/N 457149. It is the customer's responsibility to purchase and replace the ink roll when required. **Prerequisites:** Depository, Lobby (#3233) or Depository, Through-the-Wall (#3243). **Maximum:** One.

Multiline Display (#4750): Displays up to 240 characters ... six lines of 40 characters each. Characters are presented in predefined 7 x 9 and 7 x 7 dot matrices for upper case alphameric, special characters, and language-unique characters including the Hebrew alphabet. Additional interactive functions are provided for expanded communications between the user and the attached host. **Maximum:** One. **Prerequisites:** (1) The Change key is required if display paging ... see Keyboard under "Specify" or (2) Increased storage may be required to support larger size of display and additional interaction function ... see Additional Storage Feature (#1301) and Storage Expansion Feature (#6501).

Storage Expansion Feature (#6501): Provides capability to add increments of the Additional Storage Feature (#1301) if Multiline Display (#4750) is installed. Required for either: (1) the first #1301 Increment when ordered with #4750 or (2) the third #1301 Increment when ordered with #4750 and Terminal Loop Feature (#7820). **Prerequisite:** Multiline Display (#4750). **Maximum:** One.

Terminal Loop Feature (#7820): Provides capability to attach to a 3600 or 4700 loop. Attachment to local loop is directly. Attachment to remote loop can be either directly or via remote subloop through a 3603, a 3604 Model 2, 3, or 4, a 3614, or another 3624. **Prerequisites:** (1) Available position on the loop. (2) Depending upon the configuration, the Additional Storage Feature (#1006 or #1007) may be required on the 3600 controller, or Additional Storage Feature (#1008) on 4700 controller. See M3601, M3602, or M4701 pages for details. (3) Attachment to a 3600 or 4700 local loop directly does not require an additional feature. (4) Attachment to a 3600 or 4700 remote loop directly requires 1200 bps Loop Integrated Modem (#8001). (5) Attachment to a 3600 or 4700 remote loop via remote subloop requires one of the following: 3603 Terminal Attachment Unit Model 1 or 2 for 1200 bps or Model 2 for 2400 bps ... 3604 Model 2, 3, or 4 with Line Feature Base (#4751 or #4752) and appropriate modem ... 3614 with Terminal Loop Feature (#7820) and 1200 bps Loop Integrated Modem (#8001) ... or another 3624 with Terminal Loop Feature

(#7820) and 1200 bps Loop Integrated Modem (#8001) or another 3624 with Terminal Loop Feature (#7820) and 1200 bps Loop Integrated Modem (#8001).

Specify (for #7820)

1. For attachment to a 3600 or 4700 local loop specify one of the following loop speeds: #9062 for 1200 bps, #9063 for 2400 bps, or #9064 for 4800 bps.

2. For attachment to 3600 or 4700 remote loop via subloop through a 3603 Model 1 or 2 at 1200 bps, #9062.

3. For attachment to 3600 or 4700 remote loop via subloop through 3603 Model 2 at 2400 bps, #9063.

4. For attachment to 3600 or 4700 remote loop via subloop through 3604, 3614, or another 3624, #9062 for 1200 bps.

Limitations: (1) Remote loop speed is 1200 bps maximum when attached directly or via subloop through 3603 Model 1 or 2, 3604, 3614, or another 3624 ... is 2400 bps maximum via subloop through 3603 Model 2. (2) Loop Integrated Modem (#8001) is not required if the 3624 is attached to a local loop, or via subloop to remote loop through 3603, 3604, 3614, or another 3624. **Maximum:** One.

Third Track (#7950): Provides for reading data on track two and/or both reading and writing data on track three of magnetic stripe card. Presently conforms to ISO/3554/AD1 Third Track Standard, and proposed Data Content Standard ISO/DIS 4909. Can read tracks two and three independently or in conjunction with each other. **Maximum:** One. **Field Installation:** Not recommended.

1200 bps Loop Integrated Modem (#8001): An internal modem for attachment to a 3600 or 4700 remote loop. Operates at 1200 bps over non-switched unconditioned voice-grade lines. **Prerequisite:** Terminal Loop Feature (#7820). **Limitation:** Not required if 3624 is attached to a 3600 or 4700 remote loop through a 3603, 3604 Model 2, 3, or 4, 3614, or another 3624 ... or if attached to a 3600 or 4700 local loop. If there are both a 3604 and a 3624 located at the same remote loop location that does not have a 3603 or 3614, it is recommended that the loop modem (#8001) be located on the 3624, because the 3624 might often be operating while the 3604 is not, e.g., on weekends. **Maximum:** One.

Transaction Statement Printer (#8201): Prints document showing record of transaction and issues to user through the transaction statement slot. Prints documents for audit use that can be retained in a journal stacker in the 3624. Print feed hopper has a capacity of 2,000 documents. Journal stacker has a capacity of 400 documents. Data is printed on 96-column card stock 66.7 mm x 82.6 mm (2.63 in x 3.25 in) in size. Provides a 57 character set consisting of 56 printable graphics and space (blank). Four lines can be printed with up to 34 characters per line ... maximum of 136 characters on each document. The data to be printed is determined by the host application program. Printing is overlapped with currency issue and user deposit cycles. **Card Limitations:** The 96-column card stock used in the statement printer must not have corner cuts. Detailed disclosure specifications describing 96-column card stock are available from the IBM Corporation, Commercial Development Office, Armonk, N.Y. The configurations available from IBM are listed in the *SSD Sales Manual*. **Maximum:** One.

ACCESSORIES—3624 MODELS 2 and 12

These purchase-only items provide a steel enclosure, through-the-wall bezel, front trim border, front dress panel, and pedestal base for installation of Models 2 and 12 in configurations suitable for walk-up or drive-up use.

A heavy-duty enclosure is required. Two heavy-duty enclosures are available. A single function enclosure houses the currency dispensing mechanism on Models 2 and 12 that do not have a depository. A dual function enclosure houses both the currency dispensing and the depository mechanisms on Models 2 and 12 that have a depository. The dual function enclosure can also be used to house the currency dispensing mechanism only, on Models 2 and 12 that do not have a depository. Both enclosures have a single rear access door that includes a combination lock and provides for a dial lock. The combination of the combination lock is set by the customer. The dial lock must be procured by the customer. A second combination lock is available as an optional feature. Both enclosures have a penetration-detection alarm grid across the inside of the front face. Construction of the heavy-duty enclosures meets requirements of UL291 and complies with the intent of U. S. Federal Regulation P for unattended paying and receiving machines.

Pedestal bases are available in a number of sizes to mount the enclosure at a height most suitable for walk-up or drive-up use. The recommended nominal mounting heights are 1321 mm (52 in) from keyboard centerline to walkway for walk-up use and 1067 mm (42 in) from keyboard centerline to driveway for drive-up use. The difference in elevation between walkway or driveway and the mounting surface should be considered in selecting the pedestal height ... refer to *Installation Manual—Physical Planning*, GA27-2766 and GA26-1658. A lockable storage cabinet with standard key is included in the pedestal base. A lockable storage cabinet only is also available that can be used with the dual function heavy-duty enclosure to mount the enclosure directly to a floor surface where a pedestal is not required.

A through-the-wall bezel, front trim border that fits around the bezel, and front dress panel that fits within the bezel are required. Two through-the-wall bezels are available—one with a recessed bezel providing a convenient shelf surface for user and recommended for a walk-up installation, and another with a non-recessed bezel positioning the user guidance area near the outside wall surface for more convenient use by a vehicle occupant and recommended for a drive-up installation. Two front trim borders are available—one with an envelope holder for depository transactions, and another without an envelope holder.

Warranty: These accessories are warranted free from defects in materials and workmanship for 90 days, commencing either on the date of installation or 30 days after shipment, whichever occurs first. IBM's obligation is limited to providing replacement parts on an exchange basis during the warranty period.

Delivery Instructions: The 3624 Model 2 and 12 will be shipped as three separate packages.

The first package includes the heavy duty enclosure, pedestal/storage cabinet and I/O module. This unit will be shipped on a pallet and will be 45" x 55" x 83" in total size. The total weight of the unit with pallet is approximately 3500 lbs (3100 lbs for 3624 without pallet).

The second package will contain the bezel and trim border. This is a palletized container weighing approximately 190 lbs and has dimensions of 59" x 45" x 24", including pallet.

The third package will contain miscellaneous ship items. This is a palletized container which may weigh as much as 250 lbs (depending on features and quantities ordered) and has dimensions of 50" x 42" x 40" including pallet.

Heavy-Duty Enclosure, Single Function (#3901): Used to enclose currency dispensing mechanism on 3624 Models 2 or 12 that do not have a depository. **Prerequisite:** Bezel, Through-the-Wall (#1490 or #1491), Front Dress Panel (#3951), and Front Trim Border Without Envelope Holder (#3962). *Note:* Pedestal (#4901), that includes a lockable storage cabinet, is available in several heights to mount the single function enclosure. **Limitation:** Cannot be installed with Depository, Through-the-Wall (#3243 or #3244), Pedestal for Dual Function Heavy-Duty Enclosure (#4902), Storage Cabinet for Dual-Function Heavy-Duty Enclosure (#4903), or Front Trim Border with Envelope Holder (#3961). Single Function Heavy-Duty Enclosure (#3901) cannot be field upgraded to a Dual Function Heavy-Duty Enclosure (#3902).

Heavy-Duty Enclosure, Dual Function (#3902): Used to enclose the currency dispensing and the depository mechanisms on 3624 Models 2 or 12 that have a depository. May also be used to enclose the currency dispensing mechanism only and provide spare lockable storage space on 3624 Models 2 or 12 that do not have a depository. **Prerequisites:** Bezel, Through-the-Wall (#1490 or #1491), Front Dress Panel (#3951), and Front Trim Border, With or Without Envelope Holder (#3961 or 3962). *Note:* Pedestal (#4902), that includes a lockable storage cabinet, is available in several heights to mount the dual function enclosure ... a lockable storage cabinet only (#4903) is also available to mount dual function enclosure directly to a floor surface where a pedestal is required. **Limitation:** Cannot be installed with Pedestal for Single Function Heavy-Duty Enclosure (#4901). Single Function Heavy-Duty Enclosure (#3901) cannot be field upgraded to a Dual Function Heavy-Duty Enclosure (#3902).

Dial Lock (#3310): (Optional) Provides keylock for the combination dial on a heavy-duty enclosure. Can be used where dual control and/or bank examiner type lock is desired. When locked, the combination dial cannot be turned. **Specify:** #9251 for key removable when locked or unlocked, dial must be locked by key ... #9253 for key removable when locked only, dial must be locked by key. **Maximum:** One. **Limitation:** Installed on only one combination dial when Dual Lock (#3375) is also ordered. **Field Installation:** Available at time of manufacture only.

3624 Currency Area Lockoff (#3312): Provides a security panel to enclose the currency area. Enables the document feed mechanism to be locked in the machine. When used with the Depository Cartridge Locking Feature (#3150), it restricts access to the currency area during normal operational servicing of the depository and/or other areas of the 3624. Includes keylock and standard key. *Note:* This accessory does not change the customer's responsibility to remove any currency in the 3624 when the unit has to be serviced by a CE. If customer desires to change lock and/or key provided, customer is responsible for their procurement and installation. **Limitation:** Cannot be installed with Heavy-Duty Enclosure, Single Function (#3901). **Maximum:** One. **Field Installation:** Yes.

Dual Lock (#3375): (Optional) A second combination-lock for the rear access door of a Heavy-Duty Enclosure (#3901 or #3902). **Field Installation:** Available at time of manufacture only.

Bezel, Through-the-Wall, Recessed (#1490), Non-Recessed (#1491): Bezel for through-the-wall installation of 3624. #1490 is recessed, providing a shelf surface, and is recommended for walk-up installation. #1491 is non-recessed, placing the user guidance area nearer the outside wall surface for convenience of a vehicle occupant, and is recommended for drive-up installation. **Prerequisites:** Heavy-Duty Enclosure, Single or Dual Function (#3901 or #3902). Front Dress Panel (#3951), and Front Trim Border With or Without Envelope Holder (#3961 or #3962).

Pedestal, for Heavy-Duty Enclosures (#4901 or #4902): Available for installation of Models 2 and 12. A mounting stand to locate the 3624 at a height most convenient for user operation ... includes a lockable storage cabinet ... available for single and dual function heavy-duty enclosures in heights appropriate for walk-up or drive-up use. Recommended nominal keyboard heights are 1321 mm (52.0 in) for walk-up, 1067 mm (42.0 in) for drive-up. #4901—for 3624s that use the single function enclosure (#3901) ... #4902—for 3624s that use the dual function enclosure (#3902). **Specify:** For keyboard centerline height from mounting surface—#9701 for 1067 mm (42.0 in) ... #9702 for 1194 mm (47.0 in) ... or #9703 for 1321 mm (52.0 in).

Note: If single function enclosure is installed without a pedestal, the keyboard centerline is 368 mm (14.5 in) from mounting surface.

Note: See storage cabinet for dual function heavy-duty enclosure (#4903) for installing with keyboard centerline height lower thatn 1067 mm (42.0 in) from mounting surface.

Storage Cabinet for Dual Function Heavy-Duty Enclosure (#4903): Lockable storage cabinet only, for 3624 Models 2 or 12 dual function enclosure mounted directly to floor surface without pedestal. The keyboard centerline height is 965 mm (38 in) from mounting surface. A standard key is provided. **Prerequisite:** Heavy-Duty Enclosure, Dual Function (#3902). **Limitation:** Cannot be installed with Heavy-Duty Enclosure, Single Function (#3901). *Note:* Storage cabinet is included with the Pedestal for Dual Function Heavy-Duty Enclosure (#4902).

Front Dress Panel (#3951): Provides panel to cover face of heavy-duty enclosure and I/O module. **Prerequisites:** Bezel, Through-the-Wall, Recessed or Non-Recessed (#1490 or #1491), and Heavy-Duty Enclosure, Single or Dual Function (#3901 or #3902).

Front Trim Border, With Envelope Holder (#3961), Without Envelope Holder (#3962): Provides trim paneling around the bezel to seal through-the-wall installation. #3961 includes built-in depository envelope holder and is available only when the depository feature is installed. #3962 does not include a depository envelope holder. **Prerequisites:** (1) Bezel, Through-the-Wall, Recessed or Non-recessed (#1490 or #1491) ... (2) Front Trim Border, With Envelope Holder (#3961) requires Depository, Through-the-Wall (#3243 or #3244).

Depository Cartridge (#3155): Portable container for receiving and transporting deposits. Required for operation with Depository Cartridge Locking Feature (#3150).

Capacity of approximately 300 deposited envelopes (certain conditions could cause capacity to vary). Cartridge case is made of a high impact resistant, fire retardant material. Built-in carrying handle provides ease of loading and transportation. Locking mechanism provides for customer insertion of keylock. The cartridge is loaded into the 3624 depository in the closed and locked condition. During loading, the locking mechanism in the depository unlocks and slides the cartridge door open without allowing access to the contents of the cartridge. During unloading, the locking mechanism slides the cartridge door closed and locks it before the cartridge may be removed from the 3624. Cartridges can be opened only by a companion key corresponding to the key in the 3624.

There is also provision for affixing a seal to the locked cartridge. A mechanical counter, enclosed within the cartridge, is incremented each time the door is partially opened, providing an audit against unauthorized access.

Customer Responsibilities—3624 Depository Cartridge: The customer must be advised that (1) Customer is responsible for procurement and installation of cartridge lock and for installation of the companion cartridge lock key in the 3624 depository locking mechanism ... (2) The customer is responsible for determining required spares (see "Spares" below) ... (3) The customer is responsible for determining if the cartridge is the failing unit ... (4) The customer is responsible for providing a cartridge when required for CE 3624 depository maintenance and testing ... (5) The customer is responsible for replacement, if required, of the cartridge audit counter ... (6) Purchaser agrees that IBM is relieved of responsibility for all claims, including but not limited to, loss of currency or documents contained in or associated with the depository cartridge ... (7) The customer will be responsible for removing, controlling, and reloading all money and deposits in the 3624 when the unit has to be serviced by a CE.

Maintenance: Cartridges are not maintained by IBM under the normal lease agreement of MMMC for purchase machines. The security lock and the internal audit counter in the cartridge is the responsibility of the customer. IBM Maintenance Agreements are not available. Field engineering on-site service will not be provided IBM Repair Center service is not available.

Spares: To maintain continual depository operations at the ATM, at least two cartridges are required. Additional spares may be required, depending upon deposits, volume between scheduled unloadings such as over weekends, physical location of 3624s, where cartridge contents are removed, where temporarily stored, and the needs for problem determination in the event of depository malfunctioning. A recommended nominal quantity of cartridges per 3624, including spares, is shown below. The assumption is that for every depository cartridge loaded in a machine, another cartridge has been unloaded, emptied, and made available. In addition, approximately one spare is available for every five 3624s. These quantities should provide sufficient spares for the customer and the CE to test the 3624 and for replacement of inoperative cartridges. These quantities should be adjusted to the customer's particular system requirements.

3624s	Recommended Quantity of Cartridges (including Spares)
1	3
2	5
3	7
4	9
5	11
6	14
7	16
8	18
9	20
10	22

Cartridges required for more than ten 3624s can be extrapolated from the above table by taking a multiple of these numbers.

Warranty: The cartridge is warranted free from defects in workmanship and material for a period of 90 days, commencing either on the date of installation or 30 days after shipment, whichever occurs first. Defective cartridges will be replaced under the warranty provisions.

ACCESSORIES—3624 MODELS 1 and 11

Pedestal, Lobby (#5510): A mounting stand for free-standing configuration of lobby model without the depository feature. *Note:* #5510 is not required if customer intends to install a 3624 Model 1 or 11, without the depository feature, on an alternative mounting surface or stand. #5510 is not required if a 3624 Model 1 or 11 is installed with a depository feature (#3233) since a pedestal base in included in #3233.

ACCESSORIES—ALL MODELS

3624 Logo Panel (#9401, #9402, or #9403): Backlighted Logo Panel, suitable for customization by silkscreening or other acceptable process.

If #9401 is specified, logo panel will be shipped with 3624.

If #9402 is specified, logo panel will be shipped approximately three weeks prior to 3624. *Note:* More than one panel may be ordered when #9402 is specified (e.g., customer may desire to order spares or to arrange to have several panels delivered for customization at one time). When more than one panel is ordered using #9402, then #9403 should be specified on the other 3624s to avoid duplicating orders for logo panels.

If #9403 is specified, logo panel will not be ordered with 3624 and must have been ordered either separately by part number or as Feature #9402 on another 3624. Order by Part Number as follows:

	Machine	Part No.
Logo Panel	3624 Model 1 or 11	945618
Logo Panel	3624 Model 2 or 12	945617

Note: Additional logo panels can be ordered by Part Numbers 945617 or 945618. **3624 Currency Cartridge (#9110):** Portable currency container, interchangeable between 3624s. Cartridge case is made of a high-impact resistant, fire retardant material. Removable access cover and built-in carrying handle, for ease of loading and transportation. Locking mechanism provides for customer installation of keylock and affixing security seals to help prevent unauthorized access to contents during storage or transport of the cartridge. The cartridge is connected to a cartridge drive station in the 3624 for power and communication of cash-low and cash-out currency levels.

A keying system is provided so that a match between the cartridge and the cartridge drive station must be satisfied before the cartridge can be properly loaded in the drive station. The maximum new bill capacity is 2300 bills. The used bill capacity is approximately 2000.

Customer Responsibilities—3624 Currency Cartridge: The customer must be advised that: (1) The customer is responsible for determining if the cartridge is the failing unit ... (2) The customer should schedule the frequency of cleaning and belt replacement procedure for optimum cartridge performance according to the usage, to maintain maximum machine availability ... (3) The customer may repair cartridge or send back to Repair Center (see "Maintenance" below) ... (4) The customer is responsible for determining required spares (see "Spares" below) ... (5) The customer is responsible for providing cartridge for CE 3624 maintenance and testing; a minimum of one spare cartridge for Models 1 and 2 and two spare cartridges for Models 11 and 12 must be made available by customer to the CE for normal 3624 maintenance ... (6) The customer is responsible for setting the keying system on the cartridges and drive stations so that there is the desired match of currency denomination to drive station ... (7) Purchaser agrees that IBM is relieved of responsibility for all claims, including, but not limited to, loss of currency or documents contained in, dispensed by, or associated with the cartridge.

Spares: The customer may wish to replace (1) an empty or partially loaded cartridge with a fully loaded cartridge, (2) a failing cartridge with a spare for problem determination or while malfunctioning cartridge is being repaired, (3) a cartridge to enable the IBM CE to perform 3624 maintenance and testing. The customer should be advised to purchase sufficient cartridges to cover the above uses. The number of cartridges recommended is dependent upon the total number of cartridge drive stations the customer has installed, application requirements, physical location of 3624s, and location where cartridges are temporarily stored and loaded. The customer must be advised that spare cartridges should be put to use and not be stored for extended periods. A recommended quantity of spare cartridges and spare replacement belts per cartridge drive station is shown below. The assumption is that for every loaded cartridge installed in a cartridge drive station, another cartridge is available for currency replenishment. In addition, approximately one spare is available for every three cartridge drive stations. These quantities should provide sufficient spares for the customer and the CE to test the 3624 and for temporary replacement of cartridges in repair. These quantities should be adjusted to the customer's particular application requirements once the physical environment and usage affect on the cartridge and belt wear is understood. The customer can replace separator and restraint belts in conjunction with performing the recommended operator cleaning and belt replacement procedure. Belts can be ordered by contacting a System Supplies Division branch office.

Cartridge Drive Stations	Recommended Quantity of Cartridges (including spares)	Recommended Minimum Quantity Spare Replacement Belts	
		Separator Belt P/N 945307	Restraint Belt P/N 945242
1	3	1	1
2	5	1	1
3	7	1	1
4	10	2	2
5	12	2	2
6	14	2	2
7	17	3	3
8	19	3	3
9	21	3	3
10	23	3	3

3624 Models 1 and 2 have one cartridge drive station and Models 11 and 12 have two cartridge drive stations. Cartridges and belts required for more than ten drive stations can be extrapolated from the above table by taking a multiple of these numbers. Additional quantities over the recommended minimum quantity of spare replacement belts should be ordered as required, as part of the customer periodic belt inspection and replacement schedule for cartridges (in conjunction with IBM's general recommendation).

Maintenance: Cartridges are not maintained by IBM under the normal lease agreement or MMMC for purchased machine. A recommended operator cleaning and belt replacement procedure is provided in the *IBM 3624 Cartridge Owner's Manual*, GA66-0005; under adverse operator conditions, the customer should modify the procedure to meet his own particular requirements. The customer can replace separator and restraint belts in conjunction with performing the recommended procedure. If the cartridge is in need of repair, he can send it to a designated IBM Repair Center. It is the customer's responsibility to package the unit in the designated shipping container and ship it prepaid to the designated IBM Repair Center.

IBM Repair Center Service: For cartridge repair, the customer will fill out an *IBM Repair Authorization Form* GX27-2981, pack it and the defective cartridge in the designated shipping container, and ship it prepaid to the designated IBM Repair Center, where repair will be made if the cartridge is repairable. The charge for the repair of the cartridge at IBM Repair Center will cover handling, inspection, cleaning, repair, adjustment, testing, and return shipping. Billing will be at IBM's applicable hourly rates. In addition, all parts needed will be billed at IBM's prevailing parts prices. Alternatively, upon request, the IBM Repair Center will provide, for a minimal charge, an estimate of repair costs.

If on the basis of an inspection, the repair center concludes that a cartridge is not repairable, no further work will be performed and the cartridge will be returned to the customer with a minimum charge to cover handling, inspection, testing, and return shipping charges.

Warranty: The cartridge is warranted to be free from defects in workmanship and material for a period of 90 days, commencing either on the date of installation or 30 days after shipment, whichever occurs first. Warranty service for the cartridge will be performed at the IBM Repair Center. If warranty service is performed at an IBM Repair Center, the customer will fill out an *IBM Repair Authorization Form*, GX27-2981, pack it and the defective cartridge in the designated shipping container, and ship it prepaid to the designated IBM Repair Center.

Note: For cartridge parts, refer to the *IBM 3624 Cartridge Owner's Manual*, GA66-0005.