IBM Systems Reference Library
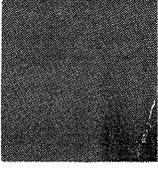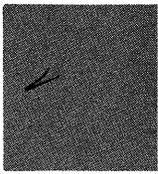
IBM System/360

Input/Output Configurator

This configurator presents the various input/output equipment for the System/360, Models 30 to 75. This input/output equipment is classified according to types. Each type appears on a separate page.

Configurator for Disk, Drum, and Data Cell Storage and Controls

(Applicable for Models 30-75 unless otherwise specified)

* Attachment feature required in 2841

** On Selector Subchannels, the 2841 can be used only to attach 2321's

Ⓢ Selector Channel

Ⓜ Multiplexor Channels

Ⓧ Selector Subchannel of 2870 -- Models 65 and 75 only

Configurator for Magnetic Tape Units and Controls

(Applicable for Models 30-75 unless otherwise specified)

(Except Models 44 and 67)

2415 Magnetic Tape Unit and Control

800 bytes/inch -- 15 KB/sec

Model 1 – Two 800 bpi drives and single-channel control
Model 2 – Four 800 bpi drives and single-channel control
Model 3 – Six 800 bpi drives and single-channel control

800/1600 bytes/inch -- 15/30 KB/sec

Model 4 – Two 800/1600-bpi drives and single-channel control
Model 5 – Four 800/1600-bpi drives and single-channel control
Model 6 – Six 800/1600-bpi drives and single-channel control

Features
Data Conversion (All Models)
9-Track (800 bpi, NRZI) Compatibility (Models 4, 5, and 6)
7-Track Compatibility (All Models)
7- and 9-Track (800 bpi, NRZI) Compatibility (Models 4, 5, and 6)

2403 Magnetic Tape Unit and Control
(One drive plus single-channel control for it and seven additional drives)

800 bytes/inch	1600 bytes/inch
Mod 1 – 30 KB/sec	+Mod 4 – 60 KB/sec
Mod 2 – 60 KB/sec	+Mod 5 – 120 KB/sec
Mod 3 – 90 KB/sec	*+Mod 6 – 180 KB/sec

Features
Data Conversion
Dual Density 800/1600 bpi (Mods 4, 5, and 6)
9-Track (800 bpi, NRZI) Compatibility (Mods 4, 5, and 6)
Remote Switch Attachment (Mod 1, 2, and 3 in System/360 Mod 67 only)
7-Track Compatibility
7 and 9-Track (800 bpi, NRZI) Compatibility (Mods 4, 5, and 6 only)
16-Drive Addressing
Two-Channel Switch (Mods 1, 2, and 3 in System/360 Mod 67 only)

2402 Magnetic Tape Unit
(Double Drive)

800 bytes/inch	1600 bytes/inch
Mod 1 – 30 KB/sec	+Mod 4 – 60 KB/sec
Mod 2 – 60 KB/sec	+Mod 5 – 120 KB/sec
Mod 3 – 90 KB/sec	*+Mod 6 – 180 KB/sec

Features
Dual Density 800/1600 bpi (Mods 4, 5, and 6)
Mode Compatibility. (To attach Mod 1, 2, or 3 tape drives to a 2403 Mod 4, 5, 6, or a 2803/2804 Mod 2)
Simultaneous Read-while-Write (All Models when used on 2404 or 2804 Controls)

2401 Magnetic Tape Unit
(Single Drive)

800 bytes/inch	1600 bytes/inch
Mod 1 – 30 KB/sec	+Mod 4 – 60 KB/sec
Mod 2 – 60 KB/sec	+Mod 5 – 120 KB/sec
Mod 3 – 90 KB/sec	*+Mod 6 – 180 KB/sec

Features
Dual Density 800/1600 bpi (Mods 4, 5, and 6)
Mode Compatibility. (To attach Mod 1, 2, or 3 tape drives to a 2403 Mod 4, 5, 6, or a 2803/2804 Mod 2)
Simultaneous Read-while-Write (All Models when used on 2404 or 2804 Controls)

2803 Tape Control

Model 1 – Single-channel control for up to eight 800-bpi tape drives. (2401/2402 Models 1, 2, 3)
Model 2 – 800/1600 bpi tape drives. ‡

Features
Data Conversion
7-Track Compatibility
16-Drive Addressing
9-Track (800-bpi NRZI) Compatibility (Model 2 only)
7- and 9-Track (800 bpi, NRZI) Compatibility (Model 2 only)
Remote Switch Attachment (Model 1 - for System/360 Model 67 only)
Two-Channel Switch (Model 1 - For System/360 Model 67 only)

2816-1 Switching Unit permits switching of 4 or 8 drives to 2 channels (expandable to 3 or 4 channels). With 16-Drive Addressing feature and a second 2816, 4, 8, 12 or 16 Drives can be switched between 2, 3 or 4 channels

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2401, 2402, or 2403 Magnetic Tape Unit

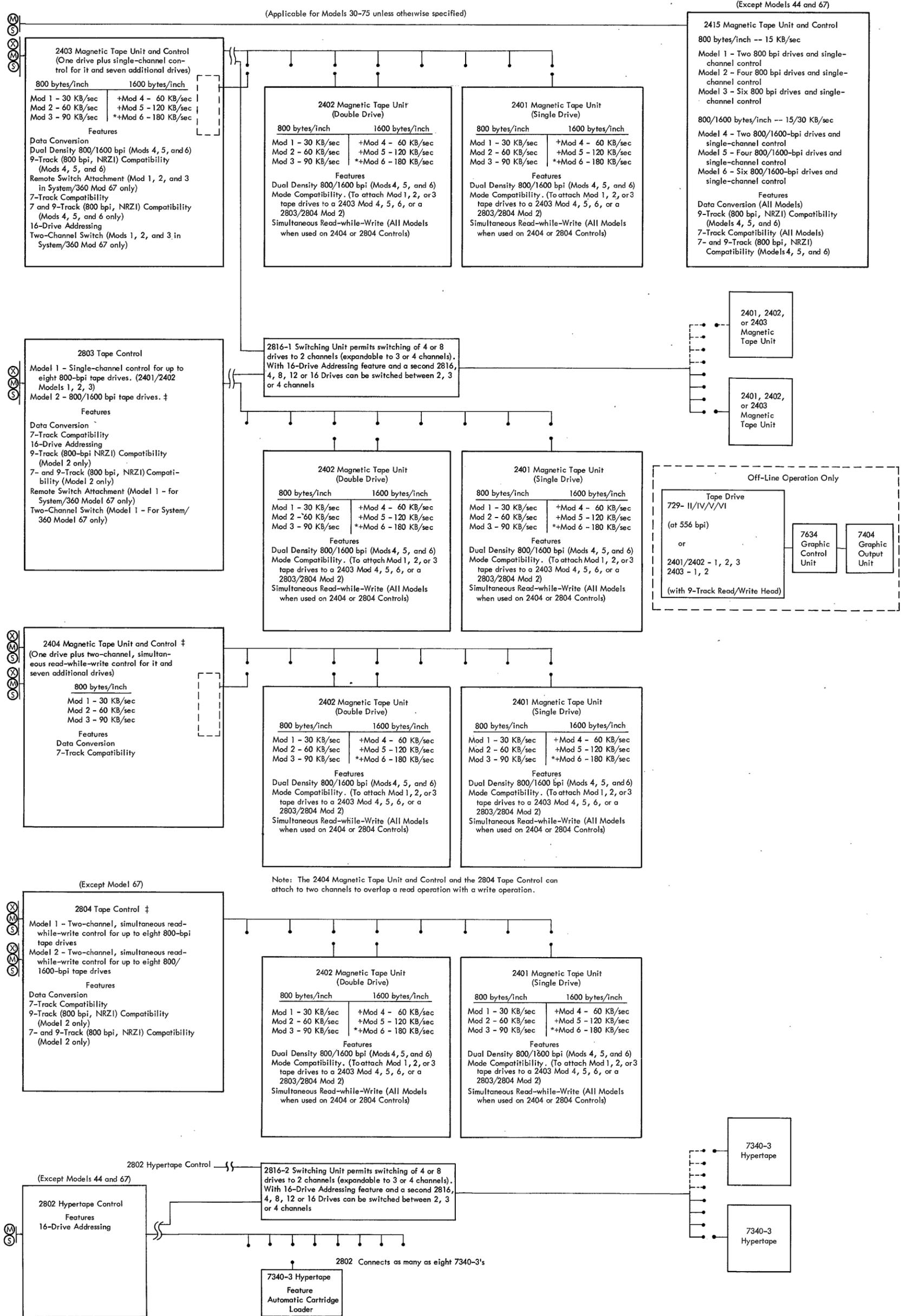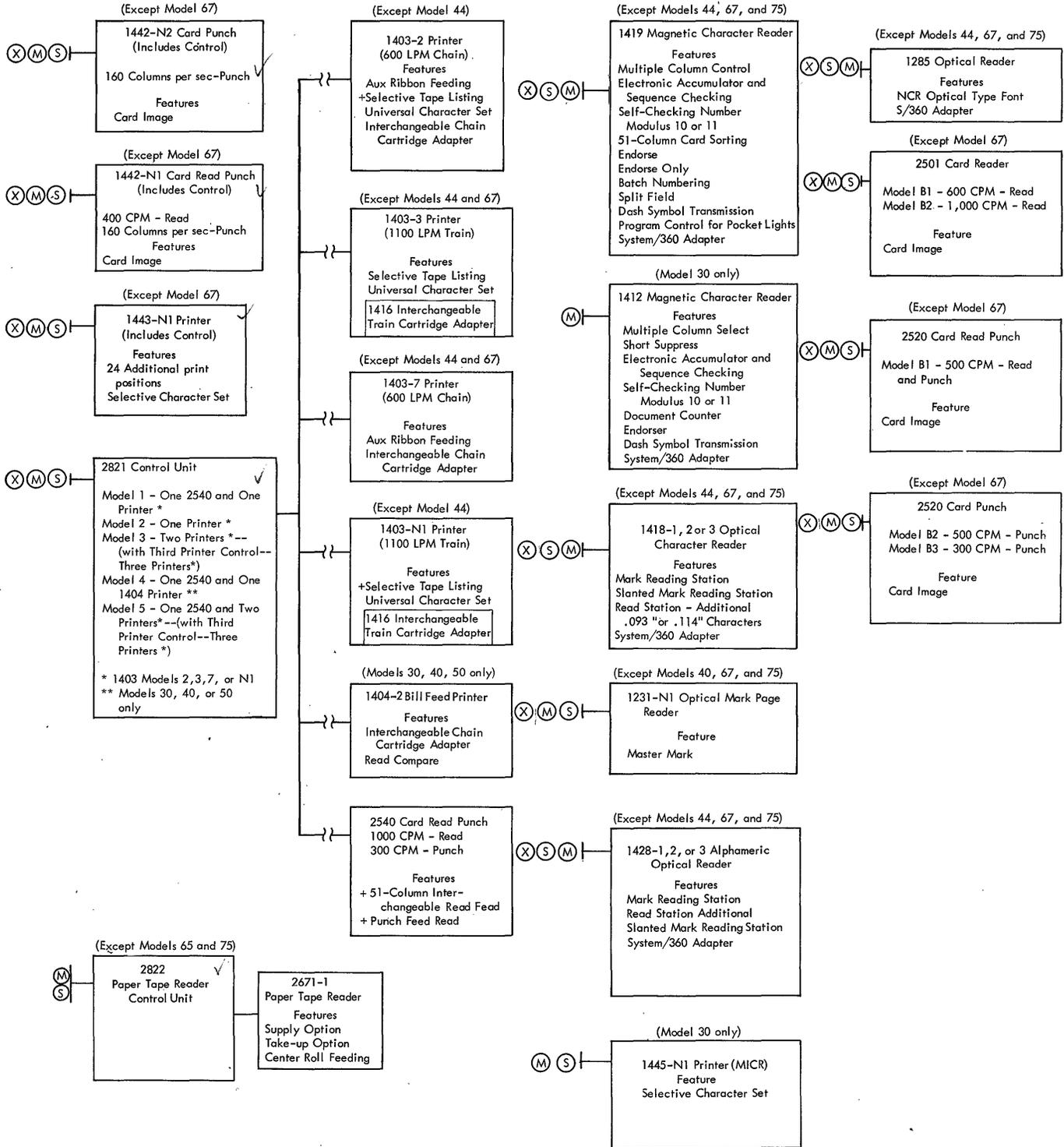2401, 2402, or 2403 Magnetic Tape Unit

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2402 Magnetic Tape Unit
(Double Drive)

800 bytes/inch	1600 bytes/inch
Mod 1 – 30 KB/sec	+Mod 4 – 60 KB/sec
Mod 2 – 60 KB/sec	+Mod 5 – 120 KB/sec
Mod 3 – 90 KB/sec	*+Mod 6 – 180 KB/sec

Features
Dual Density 800/1600 bpi (Mods 4, 5, and 6)
Mode Compatibility. (To attach Mod 1, 2, or 3 tape drives to a 2403 Mod 4, 5, 6, or a 2803/2804 Mod 2)
Simultaneous Read-while-Write (All Models when used on 2404 or 2804 Controls)

2401 Magnetic Tape Unit
(Single Drive)

800 bytes/inch	1600 bytes/inch
Mod 1 – 30 KB/sec	+Mod 4 – 60 KB/sec
Mod 2 – 60 KB/sec	+Mod 5 – 120 KB/sec
Mod 3 – 90 KB/sec	*+Mod 6 – 180 KB/sec

Features
Dual Density 800/1600 bpi (Mods 4, 5, and 6)
Mode Compatibility. (To attach Mod 1, 2, or 3 tape drives to a 2403 Mod 4, 5, 6, or a 2803/2804 Mod 2)
Simultaneous Read-while-Write (All Models when used on 2404 or 2804 Controls)

Off-Line Operation Only

Tape Drive
729- II/IV/V/VI
(at 556 bpi)
or
2401/2402 - 1, 2, 3
2403 - 1, 2
(with 9-Track Read/Write Head)

7634 Graphic Control Unit

7404 Graphic Output Unit

2404 Magnetic Tape Unit and Control ‡
(One drive plus two-channel, simultaneous read-while-write control for it and seven additional drives)

800 bytes/inch

Mod 1 – 30 KB/sec
Mod 2 – 60 KB/sec
Mod 3 – 90 KB/sec

Features
Data Conversion
7-Track Compatibility

2402 Magnetic Tape Unit
(Double Drive)

800 bytes/inch	1600 bytes/inch
Mod 1 – 30 KB/sec	+Mod 4 – 60 KB/sec
Mod 2 – 60 KB/sec	+Mod 5 – 120 KB/sec
Mod 3 – 90 KB/sec	*+Mod 6 – 180 KB/sec

Features
Dual Density 800/1600 bpi (Mods 4, 5, and 6)
Mode Compatibility. (To attach Mod 1, 2, or 3 tape drives to a 2403 Mod 4, 5, 6, or a 2803/2804 Mod 2)
Simultaneous Read-while-Write (All Models when used on 2404 or 2804 Controls)

2401 Magnetic Tape Unit
(Single Drive)

800 bytes/inch	1600 bytes/inch
Mod 1 – 30 KB/sec	+Mod 4 – 60 KB/sec
Mod 2 – 60 KB/sec	+Mod 5 – 120 KB/sec
Mod 3 – 90 KB/sec	*+Mod 6 – 180 KB/sec

Features
Dual Density 800/1600 bpi (Mods 4, 5, and 6)
Mode Compatibility. (To attach Mod 1, 2, or 3 tape drives to a 2403 Mod 4, 5, 6, or a 2803/2804 Mod 2)
Simultaneous Read-while-Write (All Models when used on 2404 or 2804 Controls)

Note: The 2404 Magnetic Tape Unit and Control and the 2804 Tape Control can attach to two channels to overlap a read operation with a write operation.

(Except Model 67)

2804 Tape Control ‡

Model 1 – Two-channel, simultaneous read-while-write control for up to eight 800-bpi tape drives
Model 2 – Two-channel, simultaneous read-while-write control for up to eight 800/1600-bpi tape drives

Features
Data Conversion
7-Track Compatibility
9-Track (800 bpi, NRZI) Compatibility (Model 2 only)
7- and 9-Track (800 bpi, NRZI) Compatibility (Model 2 only)

2402 Magnetic Tape Unit
(Double Drive)

800 bytes/inch	1600 bytes/inch
Mod 1 – 30 KB/sec	+Mod 4 – 60 KB/sec
Mod 2 – 60 KB/sec	+Mod 5 – 120 KB/sec
Mod 3 – 90 KB/sec	*+Mod 6 – 180 KB/sec

Features
Dual Density 800/1600 bpi (Mods 4, 5, and 6)
Mode Compatibility. (To attach Mod 1, 2, or 3 tape drives to a 2403 Mod 4, 5, 6, or a 2803/2804 Mod 2)
Simultaneous Read-while-Write (All Models when used on 2404 or 2804 Controls)

2401 Magnetic Tape Unit
(Single Drive)

800 bytes/inch	1600 bytes/inch
Mod 1 – 30 KB/sec	+Mod 4 – 60 KB/sec
Mod 2 – 60 KB/sec	+Mod 5 – 120 KB/sec
Mod 3 – 90 KB/sec	*+Mod 6 – 180 KB/sec

Features
Dual Density 800/1800 bpi (Mods 4, 5, and 6)
Mode Compatibility. (To attach Mod 1, 2, or 3 tape drives to a 2403 Mod 4, 5, 6, or a 2803/2804 Mod 2)
Simultaneous Read-while-Write (All Models when used on 2404 or 2804 Controls)

7340-3 Hypertape

7340-3 Hypertape

2802 Hypertape Control

(Except Models 44 and 67)

2802 Hypertape Control
Features
16-Drive Addressing

2816-2 Switching Unit permits switching of 4 or 8 drives to 2 channels (expandable to 3 or 4 channels). With 16-Drive Addressing feature and a second 2816, 4, 8, 12 or 16 Drives can be switched between 2, 3 or 4 channels

2802 Connects as many as eight 7340-3's

7340-3 Hypertape
Feature
Automatic Cartridge Loader

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* Not for use on Model 44 Multiplexor Channel
+ Not for use on System/360 Model 67 or with a 2404
‡ Not for use on System/360 Model 67
Ⓜ Multiplexor Channel
Ⓢ Selector Channel
Ⓧ Selector Subchannel of 2870--Models 65 and 75 only

IBM System/360 Input/Output

Configurator for Card Input/Output, Printers,

Paper Tape Input/Output, and Magnetic and Optical Character Readers

(Applicable for Models 30-75 unless otherwise specified)
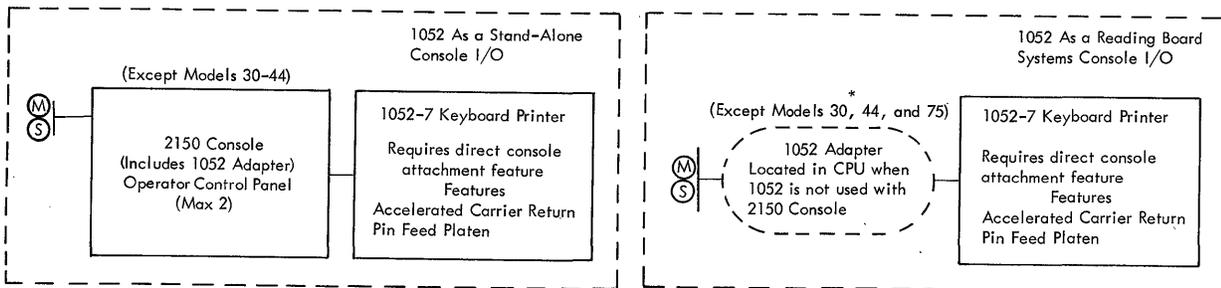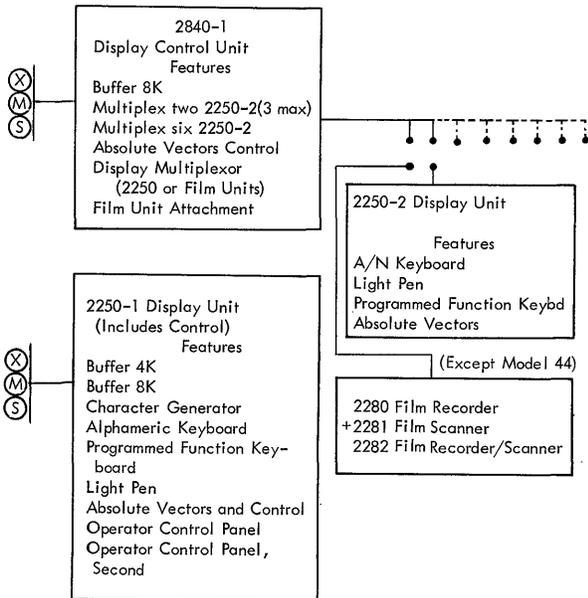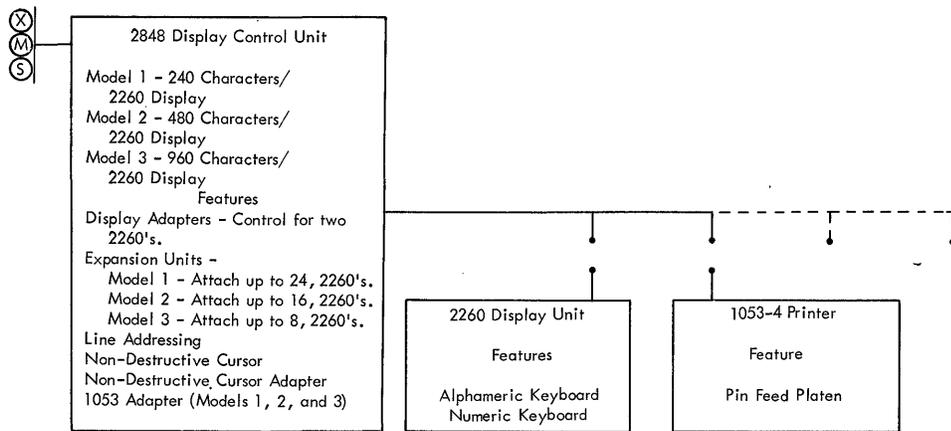
(Except Model 67)

1442-N2 Card Punch
(Includes Control)

160 Columns per sec-Punch

Features
Card Image

(Except Model 67)

1442-N1 Card Read Punch
(Includes Control)

400 CPM - Read
160 Columns per sec-Punch
Features
Card Image

(Except Model 67)

1443-N1 Printer
(Includes Control)
Features
24 Additional print positions
Selective Character Set

2821 Control Unit

Model 1 - One 2540 and One Printer *
Model 2 - One Printer *
Model 3 - Two Printers *--
(with Third Printer Control--
Three Printers*)
Model 4 - One 2540 and One 1404 Printer **
Model 5 - One 2540 and Two Printers*--(with Third Printer Control--Three Printers *)

* 1403 Models 2,3,7, or N1
** Models 30, 40, or 50 only

(Except Models 65 and 75)

2822
Paper Tape Reader Control Unit

2671-1
Paper Tape Reader
Features
Supply Option
Take-up Option
Center Roll Feeding

(Except Model 44)

1403-2 Printer
(600 LPM Chain)
Features
Aux Ribbon Feeding
+Selective Tape Listing
Universal Character Set
Interchangeable Chain Cartridge Adapter

(Except Models 44 and 67)

1403-3 Printer
(1100 LPM Train)

Features
Selective Tape Listing
Universal Character Set

1416 Interchangeable Train Cartridge Adapter

(Except Models 44 and 67)

1403-7 Printer
(600 LPM Chain)

Features
Aux Ribbon Feeding
Interchangeable Chain Cartridge Adapter

(Except Model 44)

1403-N1 Printer
(1100 LPM Train)

Features
+Selective Tape Listing
Universal Character Set

1416 Interchangeable Train Cartridge Adapter

(Models 30, 40, 50 only)

1404-2 Bill Feed Printer
Features
Interchangeable Chain Cartridge Adapter
Read Compare

2540 Card Read Punch
1000 CPM - Read
300 CPM - Punch

Features
+ 51-Column Inter-changeable Read Feed
+ Punch Feed Read

(Except Models 44, 67, and 75)

1419 Magnetic Character Reader

Features
Multiple Column Control
Electronic Accumulator and Sequence Checking
Self-Checking Number Modulus 10 or 11
51-Column Card Sorting
Endorse
Endorse Only
Batch Numbering
Split Field
Dash Symbol Transmission
Program Control for Pocket Lights
System/360 Adapter

(Model 30 only)

1412 Magnetic Character Reader

Features
Multiple Column Select
Short Suppress
Electronic Accumulator and Sequence Checking
Self-Checking Number Modulus 10 or 11
Document Counter
Endorser
Dash Symbol Transmission
System/360 Adapter

(Except Models 44, 67, and 75)

1418-1, 2 or 3 Optical Character Reader

Features
Mark Reading Station
Slanted Mark Reading Station
Read Station - Additional .093 "or .114" Characters
System/360 Adapter

(Except Models 40, 67, and 75)

1231-N1 Optical Mark Page Reader

Feature
Master Mark

(Except Models 44, 67, and 75)

1428-1,2, or 3 Alphameric Optical Reader

Features
Mark Reading Station
Read Station Additional
Slanted Mark Reading Station
System/360 Adapter

(Model 30 only)

1445-N1 Printer (MICR)
Feature
Selective Character Set

(Except Models 44, 67, and 75)

1285 Optical Reader

Features
NCR Optical Type Font
S/360 Adapter

(Except Model 67)

2501 Card Reader

Model B1 - 600 CPM - Read
Model B2 - 1,000 CPM - Read

Feature
Card Image

(Except Model 67)

2520 Card Read Punch

Model B1 - 500 CPM - Read and Punch

Feature
Card Image

(Except Model 67)

2520 Card Punch

Model B2 - 500 CPM - Punch
Model B3 - 300 CPM - Punch

Feature
Card Image

+ (Except Model 67)
Ⓜ Multiplexor Channel
Ⓢ Selector Channel
Ⓧ Selector Subchannel of 2870 -- Models 65 and 75 only

Configurator for Display Units and Controls

(Applicable for Models 30-75 unless otherwise specified)

Ⓧ Ⓜ Ⓢ

2848 Display Control Unit

Model 1 - 240 Characters/
  2260 Display
Model 2 - 480 Characters/
  2260 Display
Model 3 - 960 Characters/
  2260 Display
        Features
Display Adapters - Control for two
  2260's.
Expansion Units -
  Model 1 - Attach up to 24, 2260's.
  Model 2 - Attach up to 16, 2260's.
  Model 3 - Attach up to 8, 2260's.
Line Addressing
Non-Destructive Cursor
Non-Destructive Cursor Adapter
1053 Adapter (Models 1, 2, and 3)

2260 Display Unit

Features

Alphameric Keyboard
Numeric Keyboard

1053-4 Printer

Feature

Pin Feed Platen

Ⓧ Ⓜ Ⓢ

2840-1
Display Control Unit
        Features
Buffer 8K
Multiplex two 2250-2(3 max)
Multiplex six 2250-2
Absolute Vectors Control
Display Multiplexor
  (2250 or Film Units)
Film Unit Attachment

2250-2 Display Unit

        Features
A/N Keyboard
Light Pen
Programmed Function Keybd
Absolute Vectors

(Except Model 44)

2280 Film Recorder
+2281 Film Scanner
2282 Film Recorder/Scanner

Ⓧ Ⓜ Ⓢ

2250-1 Display Unit
(Includes Control)
        Features
Buffer 4K
Buffer 8K
Character Generator
Alphameric Keyboard
Programmed Function Key-
  board
Light Pen
Absolute Vectors and Control
Operator Control Panel
Operator Control Panel,
  Second

1052 As a Stand-Alone Console I/O

(Except Models 30-44)

Ⓜ Ⓢ

2150 Console
(Includes 1052 Adapter)
Operator Control Panel
  (Max 2)

1052-7 Keyboard Printer

Requires direct console
attachment feature
        Features
Accelerated Carrier Return
Pin Feed Platen

1052 As a Reading Board Systems Console I/O

*
(Except Models 30, 44, and 75)

Ⓜ Ⓢ

1052 Adapter
Located in CPU when
1052 is not used with
2150 Console

1052-7 Keyboard Printer

Requires direct console
attachment feature
        Features
Accelerated Carrier Return
Pin Feed Platen

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* For attachment of the 1052 to Model 30, see IBM System/360 Model 30 Configurator, Form A24-3232.

\+ (Except Model 67)

Ⓜ Multiplexor Channel

Ⓢ Selector Channel

Ⓧ Selector Subchannel of 2870 -- Models 65 and 75 only

Configurator for Audio Communications

(Applicable for Models 30-75 unless otherwise specified)

(Except Models 44 and 67)

IBM 7772 AUDIO RESPONSE UNIT

Features

EOI Disable
I/O Line Expander (See Chart)
Vocabulary Word, Additional

Number of I/O Lines	2	4	6	8
I/O Line Expander *		1	2	3

* One I/O Line Expander is required for each increment of 2
I/O lines in excess of the first 2

Vocabulary: Response composed from vocabulary
stored in random access storage devices
as a digitally-coded voice

Ⓜ⊢————⊣

(Except Models 44 and 67)

IBM 7770 AUDIO RESPONSE UNIT   Features
Model 3
EOI Disable
I/O Line Expander (See Chart)
I/O Line Panel (See Chart)
I/O Line Frame (See Chart)
Vocabulary Words, Additional

Number of I/O Lines	4	8	12	16	20	24	28	32	36	40	44	48
I/O Expander *		1	2	3	4	5	6	7	8	9	10	11
I/O Line Panel **			1	1	2	2	3	3	4	4	5	5
I/O Line Frame ▽					1	1	1	1	1	1	1	1

 * One I/O line expander is required for each increment of 4 I/O lines in excess of the first 4
** One I/O line panel is required for each increment of 8, or portion thereof, I/O lines in excess
of 8
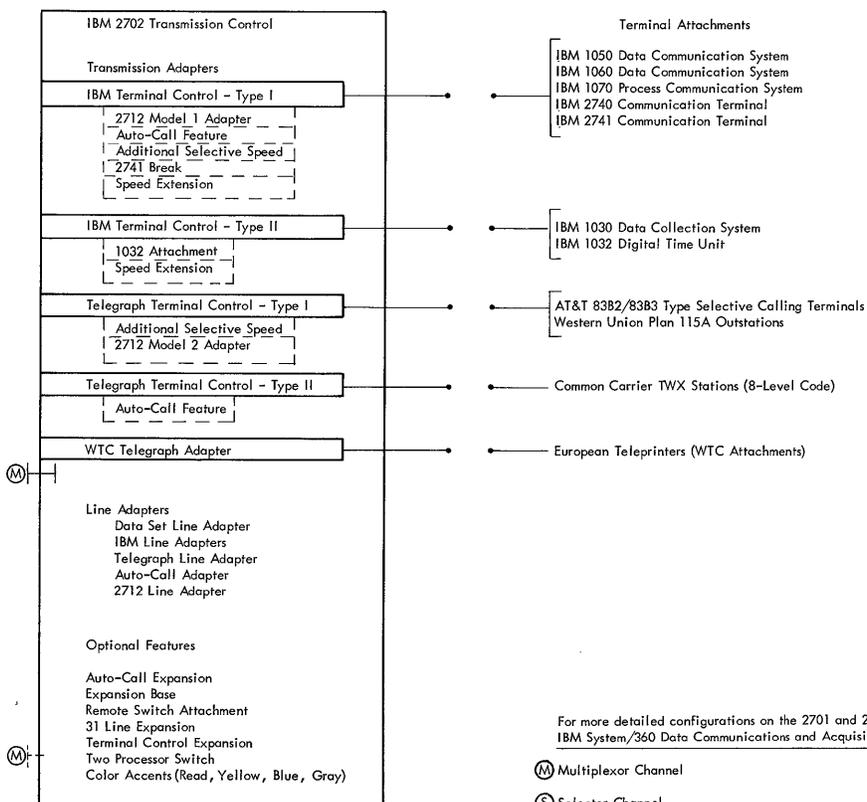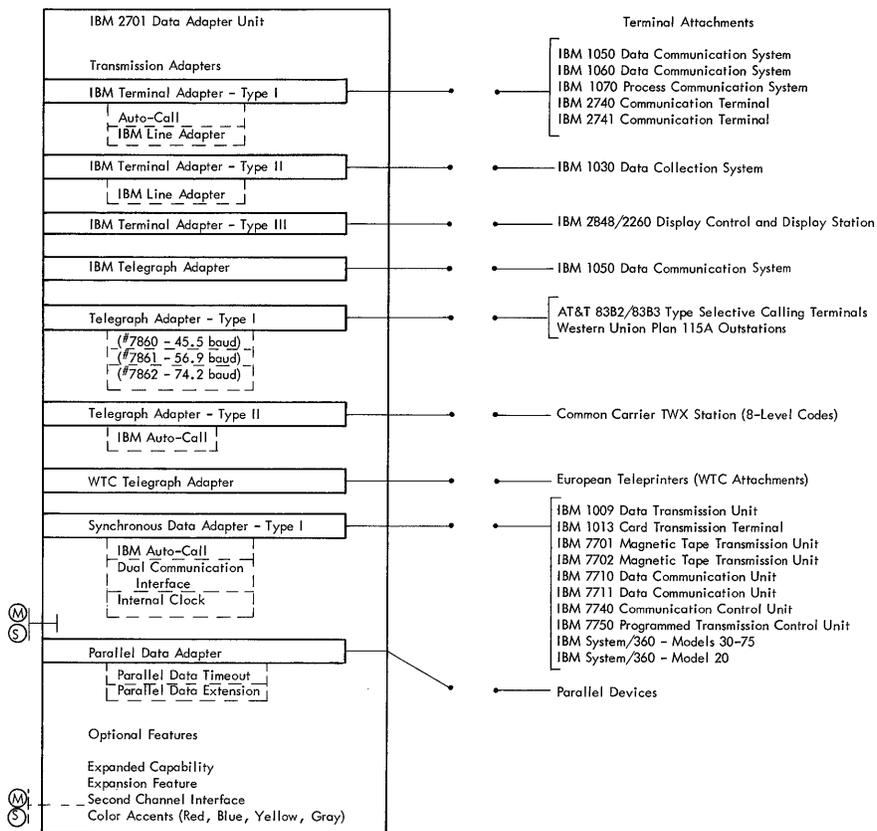▽ Increasing the number of I/O lines beyond a total of 16 lines requires one I/O line frame

Vocabulary -- Number of Words						
32	48	64	80	96	112	128

Ⓜ⊢————⊣

Ⓜ   Multiplexor Channel

Configurator for Data Communications and Acquisition

(Applicable for Models 30-75 unless otherwise specified)

IBM 2701 Data Adapter Unit

Transmission Adapters

IBM Terminal Adapter - Type I
- Auto-Call
- IBM Line Adapter

IBM Terminal Adapter - Type II
- IBM Line Adapter

IBM Terminal Adapter - Type III

IBM Telegraph Adapter

Telegraph Adapter - Type I
- (#7860 - 45.5 baud)
- (#7861 - 56.9 baud)
- (#7862 - 74.2 baud)

Telegraph Adapter - Type II
- IBM Auto-Call

WTC Telegraph Adapter

Synchronous Data Adapter - Type I
- IBM Auto-Call
- Dual Communication Interface
- Internal Clock

Parallel Data Adapter
- Parallel Data Timeout
- Parallel Data Extension

Optional Features

Expanded Capability
Expansion Feature
Second Channel Interface
Color Accents (Red, Blue, Yellow, Gray)

Terminal Attachments

IBM 1050 Data Communication System
IBM 1060 Data Communication System
IBM 1070 Process Communication System
IBM 2740 Communication Terminal
IBM 2741 Communication Terminal

IBM 1030 Data Collection System

IBM 2848/2260 Display Control and Display Station

IBM 1050 Data Communication System

AT&T 83B2/83B3 Type Selective Calling Terminals
Western Union Plan 115A Outstations

Common Carrier TWX Station (8-Level Codes)

European Teleprinters (WTC Attachments)

IBM 1009 Data Transmission Unit
IBM 1013 Card Transmission Terminal
IBM 7701 Magnetic Tape Transmission Unit
IBM 7702 Magnetic Tape Transmission Unit
IBM 7710 Data Communication Unit
IBM 7711 Data Communication Unit
IBM 7740 Communication Control Unit
IBM 7750 Programmed Transmission Control Unit
IBM System/360 - Models 30-75
IBM System/360 - Model 20

Parallel Devices

IBM 2702 Transmission Control

Transmission Adapters

IBM Terminal Control - Type I
- 2712 Model 1 Adapter
- Auto-Call Feature
- Additional Selective Speed
- 2741 Break
- Speed Extension

IBM Terminal Control - Type II
- 1032 Attachment
- Speed Extension

Telegraph Terminal Control - Type I
- Additional Selective Speed
- 2712 Model 2 Adapter

Telegraph Terminal Control - Type II
- Auto-Call Feature

WTC Telegraph Adapter

Line Adapters
- Data Set Line Adapter
- IBM Line Adapters
- Telegraph Line Adapter
- Auto-Call Adapter
- 2712 Line Adapter

Optional Features

Auto-Call Expansion
Expansion Base
Remote Switch Attachment
31 Line Expansion
Terminal Control Expansion
Two Processor Switch
Color Accents (Read, Yellow, Blue, Gray)

Terminal Attachments

IBM 1050 Data Communication System
IBM 1060 Data Communication System
IBM 1070 Process Communication System
IBM 2740 Communication Terminal
IBM 2741 Communication Terminal

IBM 1030 Data Collection System
IBM 1032 Digital Time Unit

AT&T 83B2/83B3 Type Selective Calling Terminals
Western Union Plan 115A Outstations

Common Carrier TWX Stations (8-Level Code)
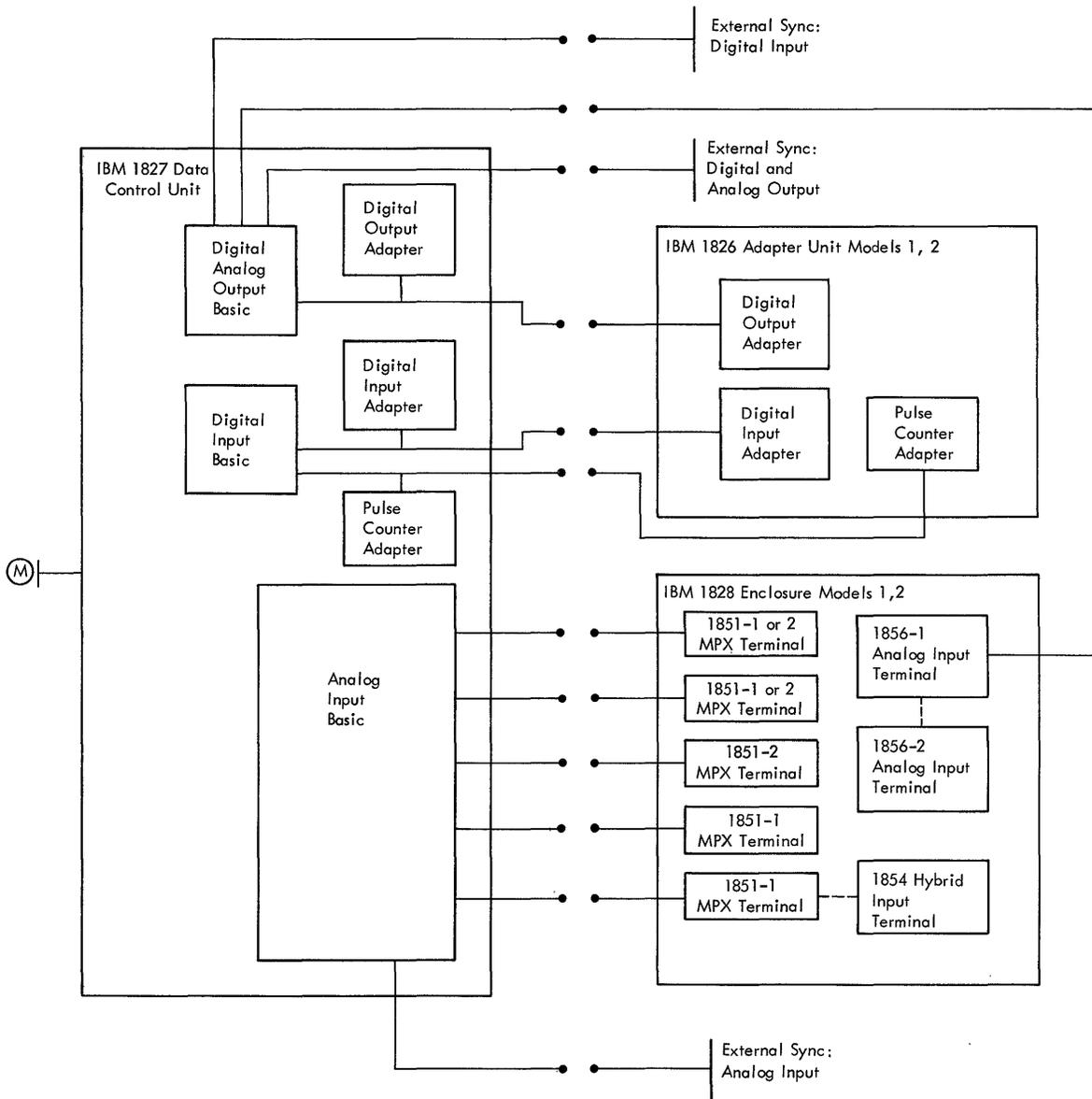
European Teleprinters (WTC Attachments)

For more detailed configurations on the 2701 and 2702, see the
IBM System/360 Data Communications and Acquisition Configurator, Form A22-6824

Ⓜ Multiplexor Channel

Ⓢ Selector Channel

IBM System/360 Input/Output
Configurator for Process Control

(Applicable for Models 30-50 unless otherwise specified)

For more detailed configurators concerning the IBM 1827 with the IBM 1828 and 1826, see the System/360 with the 1827 I/O Configurator, Form A22-6872.

Ⓜ Multiplexor Channel

Form A22-6823-2