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6702:01

RCA 70/752

RCA 70/752 VIDEO DATA TERMINAL

.1 **GENERAL**

.11 **Identity:** . . . . 70/752 Video Data Terminal.

.12 **Manufacturer:** . . . . Radio Corporation of America
Electronic Data Processing Division
Camden, New Jersey 08101

.13 **Basic Function:** . . . . displays, via cathode ray tube, data received
from a remote computer or entered via key-
board; transmits data to a remote computer
over a leased voice-band line.

.15 **Description**

The RCA 70/752 Video Data Terminal is a visual communications terminal designed to permit
rapid exchange of data between an RCA Spectra 70 Model 35, 45, 46, or 55 computer and a
remote operator. The basic 70/752 Terminal is designed to operate as a single station in a
non-polling environment. Multi-station operation in a polling environment can be obtained with
optional components. An adapter is also available for connecting a Teletypewriter if hard copy
is desired.

Configuration

The 70/752 Video Data Terminal contains a cathode ray tube (CRT) display, a separate key-
board, a 1080-character magnetostrictive delay-line buffer, and character generation and
control logic.

The 70/755 Video Data Switch allows multiple 70/752 Terminals at one location to share one
communications line in a non-polling environment. The Video Data Switch can accommodate
up to eight 70/752 Terminals. In this configuration, the Video Data Switch scans each of the
70/752 Terminals until it finds a Terminal in the Transmit mode. The scanning is then inter-
rupted and that Terminal is connected to the line. A timer in the Data Switch monitors the
time required for the computer to respond. The Terminal is disconnected and the scanning
continues when the timed interval has elapsed. The timer can be manually set for an interval
of 15 or 30 seconds, or it can be locked out. Each 70/752 Terminal can accommodate a Tele-
type Model 33 or 35 Receive-Only Teletypewriter when the Printer Adapter feature is incor-
porated.

Transmission Characteristics

The 70/752 Video Data Terminal operates asynchronously in the half-duplex mode over the
public telephone network or a leased voice-band line at up to 120 characters per second (1200
bits per second). The Bell System Data-Phone Data Set 202C or Data Set 202D is compatible
with the 70/752 Terminal for use over the public telephone network or leased voice-band line,
respectively.

The transmission code used by the 70/752 Terminal is a modified 7-level USASCII code with
an even parity bit, a start bit, and a stop bit added. A total of 10 bits are transmitted per
character. The low-order bit of each character is transmitted first.

Display Unit

The display portion of the 70/752 Video Data Terminal is a 12-inch rectangular CRT with a
5.6-inch-high by 8-inch-wide viewing area. The characteristics of the display unit are shown
in Table I. The monoscope technique is used to generate each character of a 64-symbol char-
acter set consisting of upper-case alphabetics, numerics, punctuation marks, and special
symbols.

Keyboard

The keyboard included with the 70/752 Video Data Terminal contains 62 keys, including cursor,
editing, and control keys arranged in conventional typewriter style. The keyboard is not per-
manently attached to the display unit and can be positioned up to 20 cable-feet from the dis-
play.

Figure 1. RCA 70/752 Video Data Terminal.

.15 Description (Contd.)

Cursor controls allow the operator to position the cursor (an underscore) to:

- The first character position of the next line (or to the first character position of the first line when the cursor is positioned on the last line),

- The next position to the right (which can be the first position of the next line or the first position of the first line), or

- The adjacent position to the left (this function is terminated when the first position of the line is reached).

Editing Facilities

Editing facilities available for the 70/752 Video Data Terminal include the Data Insert function, which allows data to be inserted in a line of text; existing data is displaced to the right with each character inserted. Data displacement propagates from line to line, except that control characters are not displaced beyond the end of a line. This function is deleted when the Data Format feature is installed.

The Data Format feature provides for receiving display format messages. The format message is displayed with reduced brightness. After receipt of a format message, the cursor is positioned to the beginning of the first data field. As data is entered from the keyboard, the cursor is advanced to the next position until the end of the data field is reached. At this point, the cursor is positioned to the beginning of the next data field and data entry continues until the last data field is completed. When data entry is completed and the transmit control is depressed, only the data that has been entered in the data fields within the format is transmitted.

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TABLE I: 70/752 DISPLAY CHARACTERISTICS

Characteristic	Description
Output medium	Cathode ray tube; displays white characters against black background.
Character set	64 characters, including upper-case alphabetics, numerics, punctuation marks, and special symbols.
Character size	Nominally 0.10 inch wide and 0.14 inch high.
Display size	8 inches wide by 5.6 inches high.
Characters per line	54 characters.
Lines per display	20 lines.
Characters per display	1080 characters.
Buffer capacity	1080 characters.
Format control	Return characters, Data Insert function or Data Format feature; split-screen capability; flexible cursor movement controls.
Rated output speed	Up to 120 char/sec (1200 bps).
Effective output speed	Limited by message length and communications facility.

Other editing facilities include: Screen Erase, which erases the entire contents of the buffer memory and positions the cursor to the beginning of the display area; Line Erase, which erases the character in the cursor position and all following characters on that line; Character Erase, which erases the character in the cursor position; and Format Data Erase, which erases the data entered from the keyboard in conjunction with the Data Format feature.

Erase functions are controlled by the Master Erase key and require simultaneous depression of two keys. The Line Erase function will erase only non-format data when the Data Format feature is incorporated.

Operating Procedure

Message composition is performed when the terminal is in the Write mode. Data can be entered at any location on the display by positioning the cursor and keying the data. The cursor is advanced one character position for each character entered. The cursor returns to the beginning of the next line when the end of a line is reached. The Return function erases the characters to the right of the cursor in the current line when the Return key is depressed and, unconditionally, returns the cursor to the beginning of the next line.

After the message is composed and the End-of-Text (ETX) character is entered, the message can be visually verified; if in error, the message can be altered by means of the editing controls in conjunction with the cursor controls. When the message is found to be correct, the communications link is established and the Transmit mode enabled. The message is transmitted; the contents of the display memory remain unchanged. Following the transmission of ETX, the Terminal is automatically switched to the Receive mode, and the cursor returns to the start of the message. If a computer response is not received within a reasonable period of time, the operator can switch to the Write mode and retransmit the message.

The received computer message is preceded by start-of-text (STX) and is displayed beginning at the first character position of the first line. Existing data (the inquiry) is overwritten by the message. The balance of the screen is erased; the Terminal is automatically switched to the Write mode; and the cursor is returned to the beginning of the screen when ETX is received. Further input from the communications line is inhibited, and the displayed computer message remains on the screen until erased.

The Transmit and Receive modes are modified when the Message Segment Address (MSA) function is used. With MSA, each message transmitted begins at the cursor position and ends with ETX. The cursor advances with each character transmitted as in the normal Transmit mode,

.15 Description (Contd.)

but the cursor does not return to the start of the message; it remains at the location following the ETX character. A received computer message is displayed starting at that cursor location. With the MSA function, both inquiry and response messages can be displayed simultaneously and can be separated by the use of Line Return, Null, or Space characters at the beginning of the computer-response message.

Message Configuration

The message configuration for the 70/752 Video Data Terminal includes a Start-of-Text (STX) character (automatically inserted), the text, and an End-of-Text (ETX) character. When the Station Selection feature is used, the Terminal is under the control of the computer. The terminal is polled by a Transmit Start Code (TSC), a two-character sequence including EOT and a customer-assigned terminal address character. (Up to 26 address codes can be specified). The received EOT character places all terminals on the multistation line in the Select mode. The addressed Terminal responds to a TSC with a text message or a no-text message (identified by an EOT), or the Terminal does not respond. The remote computer must be programmed to handle a no-response condition.

Multistation Operation

The Station Selection Feature allows up to 26 70/752 Video Data Terminals, each incorporating this feature, to communicate in a multistation arrangement over a single leased line with a remote computer. All communications are initiated by the computer by polling or addressing the Terminals. The polling operation is described in the paragraph under Message Configuration.

Error Detection and Correction

Character parity is checked on all data received by the 70/752 Terminal; a parity bit is generated and transferred with each character transmitted from the Terminal. If a parity error is detected by the Terminal, that character is displayed as a brightened area. The Terminal does not generate or recognize any acknowledgement messages for automatic retransmission.

Software

RCA provides two software packages for implementing communications-oriented programs: Primary Communications Oriented System (PCOS) and Multichannel Communications System (MCS). PCOS provides an independent, though limited, operating environment. It permits concurrent operation of a single user's communication program with up to six data transcription programs. MCS operates under the Tape/Disc Operating System (TDOS) and provides extensive data communication support. Although message-switching applications can be accommodated, MCS is primarily intended for use in either remote batch-processing or inquiry/response data communications applications. Provisions are made to accommodate the RCA 70/752 Video Data Terminal in both the PCOS and the MCS environment.

.16 First Delivery: . . . . April 1967.

.17 Availability: . . . . 9 months.

.9 PRICE DATA

Component or Feature	Monthly Rental, $	Purchase Price, $	Monthly Maintenance, $
70/752 Video Data Terminal	190	8325	23.50
70/755 Video Data Switch	125	5900	13.75
Options			
Station Selection	20	850	2.50
Data Format	20	850	2.50
Printer Adapter	40	1700	5.00
Keyboard Cable Extension (1)	—	75*	—
Data Set Cable Extension (2)	—	75*	—

* One-time charge.

(1) Allows keyboard to be located up to 20 cable-feet away from display.

(2) Allows 70/752 Terminal to be located up to 100 cable-feet away from 70/755 Video Data Switch.