

Section ATLC-107-895-100

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Operator's Guide

INTERVIEW[®] 3500

and 3000

ATLANTIC RESEARCH CORPORATION

FOREWORD

The INTERVIEW 3500, as well as the INTERVIEW 3000, is for all practical purposes operable without printed instruction. Its self-teaching, prompting features give a knowledgeable operator the immediate capability to monitor and analyze data communication signals.

This Guide is intended as a handy summary of INTERVIEW 3500 (or 3000) capabilities. Stored in the accessories compartment of the portable equipment, it will always be available for immediate on-site reference.

For detailed explanations of INTERVIEW 3000 series operation, consult the Technical Manual and any of the Training Manuals.

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WARNINGS

Removal of the top cover of the INTERVIEW 3500 or 3000 with or without the power cord connected may expose personnel to dangerous high voltages and high vacuum hazard. Under no circumstances should anyone but qualified service personnel remove the top cover or attempt any kind of repair.

INTERVIEW 3500 users: Never turn off the power or eject the tape cartridge while the tape is in motion. Always operate the red PROGRAM key or MANUAL STOP first to stop tape motion.

INTRODUCTION

The CRT displays in this guide represent video copies made during operation of the INTERVIEW 3500 with various training tapes inserted. Each tape contains prerecorded data as well as a saved program for monitoring either this data or live signals.

The training tapes provided with delivery of the 3500 unit, namely, Async (ASCII), Sync (BISYNC, EBCDIC) and Bit-Oriented Protocol (SDLC, X.25), provide most of the CRT display examples discussed in this Operator's Guide.

Initial Familiarization. INTERVIEW 3500 users should insert one of the training tapes provided and follow this Operator's Guide in sequence.

INTERVIEW 3000 users or INTERVIEW 3500 users without saved program tapes should proceed to page 27 for programming guidance. Subsequently, use monitor displays and discussion as samples. INTERVIEW 3000 users should disregard references to tape operation.

Subsequent Reference. Refer directly to the topic in question through the table of Contents.

GENERAL DESCRIPTION

The INTERVIEW 3500 (or 3000) is a programmable data communications monitor. It operates in two modes:

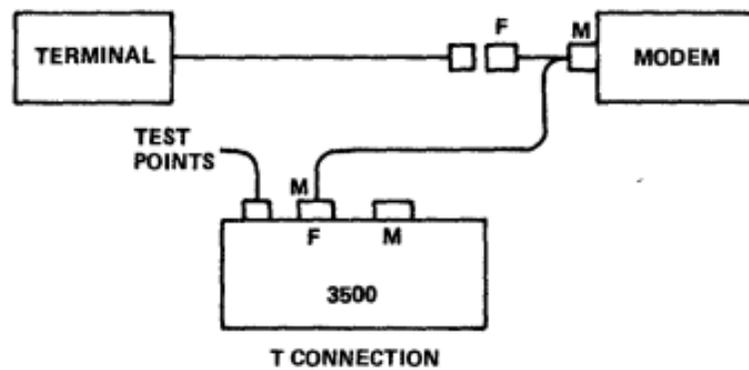
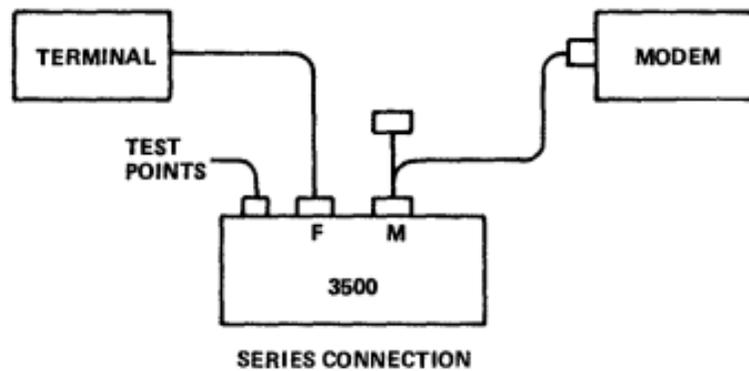
MONITOR, to display and analyze data;

PROGRAM, to enter and edit the data-monitoring program.

The Monitor Mode not only allows the operator real-time access to view data, summary of program characteristics, and results of counters and timers, but it also permits a great range of manual intervention.

In the Program Mode, the operator interacts with the INTERVIEW with the guidance of its fill-in-the-blank menu format and other prompting features.

The INTERVIEW 3500 is self-documenting: the TAPE saves the program parameters as well as the recorded data.



CONNECTING TO THE DATA CIRCUIT

The INTERVIEW 3500 is a passive bridging monitor for digital signals.

One standard RS-232/V.24 male and one female DB-25 connector are provided on the rear of the unit. These connectors are wired through to enable the INTERVIEW unit to access a circuit when connected in series between the modem and the terminal. This also allows connection through a single 8-ft.cable supplied with the unit.

RS-232/V.24 Specifications*:

Input impedance $> 30 \text{ k}\Omega$

Input voltage $\pm 25 \text{ V max}$

Input threshold $\sim +3 \text{ V}$

Program access — RTS, CTS, DSR, RLSD,
DTR, RI, STRAP

*Other interfaces: X.21, V.35, RS.449, and Bell 303.

** INTERVIEW 3500 **

RS-232 / V.24 INTERFACE

TAPE:

SELF TEST: IN PROCESS

10

POWER-UP AND SELF- DIAGNOSTICS

Press the *red* alternate action power switch. The switch lamp will illuminate immediately. After several seconds the CRT will display information as shown above.

After each of the internal logic modules and the internal firmware has been verified, the CRT will display

SELF TEST: GOOD

If an error has been detected, the faulty module is indicated.

(Power-up continued.)

** INTERVIEW 3500 **

RS-232 / V.24 INTERFACE

TAPE: ~~APE DT STP LED 01~~

SELF TEST: GOOD

PRESS ~~PROGRAM~~ KEY FOR MENU PAGE

PRESS ~~MONITOR~~ KEY TO START PROGRAM

SOFTWARE VERSION: 03.00

**POWER-UP
(continued)**

If a tape with a saved monitor program has been inserted before power-up, the saved program is loaded into the unit automatically and the program name is displayed on the screen.

If a saved tape is inserted after power-up, the PROGRAM and LOAD PROGRAM keys must be operated in sequence to load the program.

If no tape has been inserted, the program defaults to BISYNC parameters and TAPE NOT INSTALLED is displayed.

(Power-up continued.)

** INTERVIEW 3500 **

RS-232 / V.24 INTERFACE

TAPE: BSC Training Tape #102-1.4

SELF TEST: GOOD

PRESS **PROGRAM** KEY FOR MENU PAGE

PRESS **MONITOR** KEY TO START PROGRAM

SOFTWARE VERSION: 03.00

**POWER-UP
(continued)**

Two “next-step” choices are presented at the bottom of the screen. The operator can either:

- (1) Press the green **MONITOR** key to start monitoring with the saved program or default program which is now ready in the unit. (See page 17.)
- (2) Press the red **PROGRAM** key to allow editing or entering the saved or default program or constructing a new program. (See page 27.)

If an invalid key (other than **MONITOR** or **PROGRAM** in this case) is pressed, an audible signal is heard and the words **KEY ERROR** flash on the screen for several seconds.

If there is no saved tape (e.g., **INTERVIEW 3000**) proceed to the programming section. (See page 27.)

** PROGRAM MODE -- BASIC MONITOR **

TEST ID: █
 SOURCE : █ TAPE DTM TAPE/DTM EDIT/DTM
 MONITOR: █ DTE DCE
 CODE : █ ASCII EBCD XS-3
 IPARS REV EBCD BAUDOT HEX
 FORMAT : █ BOP BOP/NRZI ASYNC
 SYNC CHARS: █
 OUT SYNC : OFF █ CHAR: █ #: █
 AUTOSYNC : █ ON
 CLOCK : █ INT

MONITOR MODE

Saved program. If the tape contains a saved program setup, this information is automatically entered.

Default program. Without a saved program, the program setup automatically defaults to the basic set of BISYNC parameters shown above.

If the parameters of the saved or default program need editing or a new program must be entered, use the programming operation described starting on page 27. Otherwise, press the green MONITOR key and proceed to the next page.

MON TAPE BLOCK=007

BOTH/EBCDIC/SYNC/33

E0SSESS E0SSESS E0SSESS
 E0SSESS E0SSESS E0SSESS
 SS E0SSESS E0SSESS E0SSESS
 SESS E0SS 1 < 111111111111E²_AA⁹SSSE12S
 / AID⁵Z1 S⁵/E⁰_DW⁰SSSR/⁰SSSS E0SSESS
 E0SSESS E0SSESS E0SSESS
 S E0SS 2 M⁰ (AID⁰ K1 S N111111111
 11E⁴₄⁵SSSE12S/ AID⁵Z2 S⁵/E⁰_DN⁰SSSR/⁰SSSS
 E0SSESS E0SSESS E0SSESS
 E0SSS

SESS E0SSESS E0SSESS
 SESS E0SSESS E0SSESS E0SS
 E⁰SSSS E0SSESS E0SSESS E0
 S⁰SSSESS E0SSESS E0SSESS
 E0SSSESS E0SSESS E0SSSESS

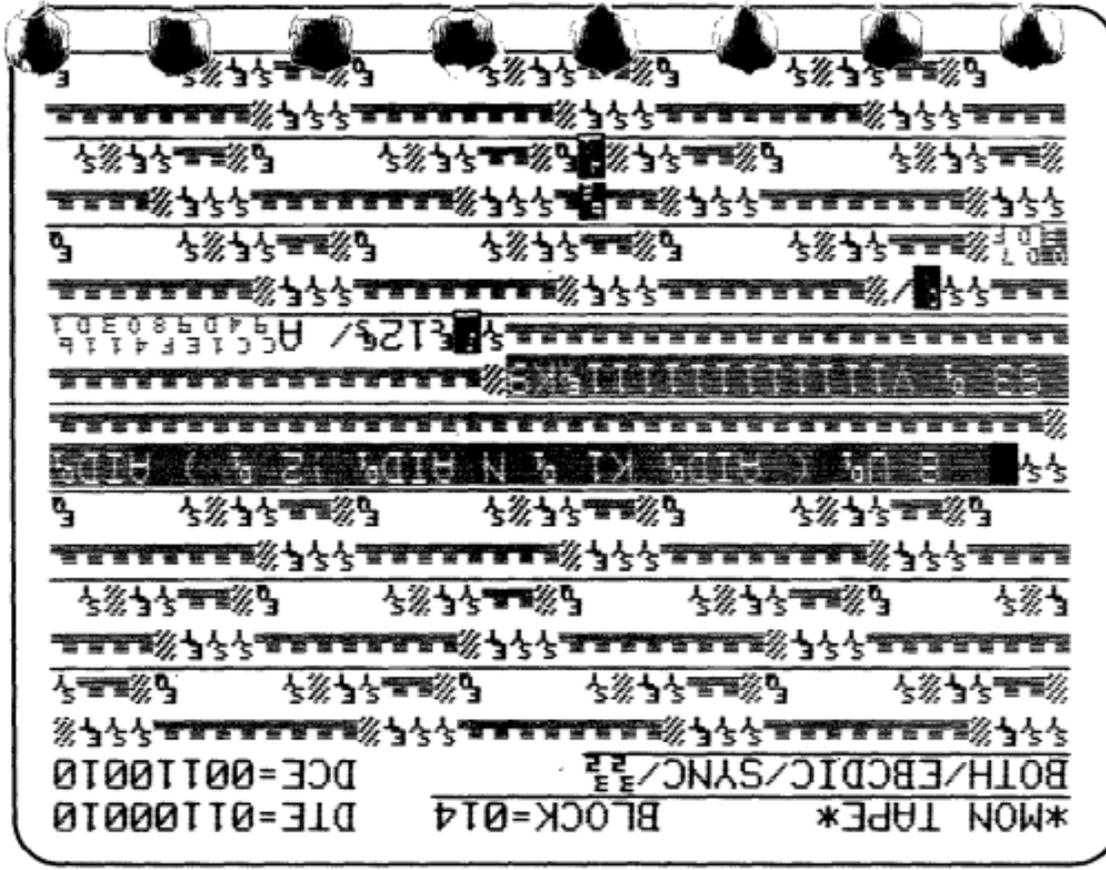
Green Monitor Key

Line 1 displays the *mode* (MONITOR) and *source* (LINE, TAPE, etc.).

Line 2 displays significant Basic Monitor parameters (BOTH refers to DCE and DTE).

Data may be displayed with many highlight possibilities:

- Underline always defines the DCE data
- Hex total screen
- Hex control characters only
- Hex transparent blocks only
- Reverse image
- Low intensity
- Blink
- Suppression of characters
- Freeze and unfreeze to selectively display traffic channel group of interest.



Green Manual Freeze Key

The character(s) highlighted by the blinking cursor is decoded into a binary (1,0) pattern on the right end of Line 1 (or 1 and 2). With the cursor keys, any character on the CRT can be selected for binary (1,0) decoding.

The CRT displays 640 characters of the 1920-character buffer. Operating the B key will move the CRT window to the Beginning of the buffer (oldest data). Operating the E key will move the CRT window to the End of the buffer (most recent data). When the cursor is at the top (bottom) of the screen, the UP (DOWN) cursor key will scroll the CRT window through the buffer one line at a time.

All characters (or only control characters) can be displayed alternately in HEX and alphanumerically by repeatedly depressing the HEX (or CONTROL plus HEX) key.

Pressing the green MANUAL UNFREEZE key restarts the data flow on the screen.

MON TAPE BLOCK=008

BOTH/EBCDIC/SYNC/^{3 3}_{2 2}

COUNTERS:

#1 Term msgs.. 3

#2 Host msgs.. 3

#3 POLLS.....5 118

#4 Term NAK..4 0

TIMERS: MSEC SEC

#1 Host Reply. 236

#2 Term Reply. 16

Green Results Key

Counters and timers are displayed in real time, but accumulation can be stopped by pressing the HALT key or, if the data source is tape, the green MANUAL FREEZE key. Provisions are made for entering meaningful counter and timer names in Program Mode.

The operator may *reset* all counters and timers by using the R key.

An individual counter may be reset by the C key followed by a 1, 2, 3, or 4 key.

An individual timer may be reset by the T key followed by a 1 or 2 key.

The maximum for counts or time = 65,535. OVFLOW is displayed to the right of a counter or timer that has overflowed.

** PROGRAM MODE -- TRIGGER # █ **

#1 DTE STRG: QUICK

CTR1I

#2 DCE 1 OF: ~~XXXXXX~~

TMR2R

#3

I/F: ~~LXXXXXXXX~~

TMR1R

#4

I/F: ~~X1XXXXXXXX~~

TMR1S

#5 DCE STRG: ~~LE~~

CRT: ~~XX1XXXX~~

#6 DCE STRG: ~~LE~~

CRT: ~~XX0XXXX~~

#7

#8

Green Program Summary Key

An *abbreviated* list of all 8 triggers included in the program is presented. All character strings, counters, timers, etc. can be reviewed easily while the program is running. For each trigger, the trigger source is on the upper line, and the trigger action (or actions) is on the lower line.

TRIGGER 1: A character string, QUICK, on the DTE sets counter 1 to increment.

TRIGGER 2: Any one of ACK, NAK, STX, SOH, ETX, or ETB on the DCE sets timer 2 to RESTART.

TRIGGER 3: RTS lead ON sets timer 1 to RESTART.

TRIGGER 4: CTS lead ON sets timer 1 to STOP.

TRIGGER 5: DCE character string DLE STX sets the CRT to hex ON.

TRIGGER 6: DCE character string DLE ETX sets the CRT to hex OFF.

Refer to pages 43-47 for more details of trigger operation and trigger menu displays.

PROGRAM MODE

The Program Mode is used to modify predefined program parameters, either those that have been saved and read into the unit from a tape or the built-in default parameters in the unit. Thus, a new set of parameters and (or) controls for a different diagnostic test is easily compiled.

The parameter changes can be nonsequential, i.e., modifications can be made in any order on any menu without regard to sequence. Any number of parameter changes may be made.

Press the red PROGRAM key and proceed.

**** PROGRAM SELECTIONS ****

PRESS **PARAMETERS** THEN **1**
TO DISPLAY THE BASIC MONITOR MENU

PRESS **PARAMETERS** THEN **2**
TO DISPLAY THE CRT & TAPE MENU

PRESS **TRIGGER** THEN TRIGGER NUMBER **1-8**
TO DISPLAY THE TRIGGER MENU

PRESS **STATISTICS**
TO DISPLAY THE COUNTER/TIMER MENU

PRESS **LOAD PROG** TO READ PRGM FROM TAPE

PRESS **SAVE PROG** TO STORE PRGM ON TAPE

Program Menu

The Program Selections display is obtained by operating the red PROGRAM key. This key also reinitializes the unit's electronic circuits and software. The choices include—

BASIC MONITOR: The minimum selections necessary to monitor data on any circuit.

CRT & TAPE: CRT display enhancements and control of the tape for recording purposes.

TRIGGER: A Summary of all 8 triggers is displayed first. Then when one of digit keys 1-8 is operated, that trigger menu is fully displayed.

STATISTICS: Permits the user to select time base and to descriptively name the counters and timers to aid in interpreting the real time results.

This menu offers the choice of loading a taped program or storing a program on tape.

** PROGRAM MODE -- BASIC MONITOR **

TEST ID:
 SOURCE : TAPE DTM TAPE/DTM EDIT/DTM
 MONITOR: DTE DCE
 CODE : ASCII EBCD XS-3
 IPARS REV EBCD BAUDOT HEX
 FORMAT : BOP BOP/NRZI ASYNC
 SYNC CHARS:
 OUT SYNC : OFF CHAR: #:
 AUTOSYNC : ON
 CLOCK : INT

Making Selections

(Power-up default BISOINC program is shown.)

The reversed words indicate the current selections for each field.

Any of the cursor keys can be used to move the bright reverse blinking cursor within a field or to another field; *the ENTER key always moves the cursor to the next field.*

Moving the cursor from one field to another automatically enters the selection at the prior cursor position.

Illegal keys are annunciated audibly and with an error message for several seconds. Operation of a correct key cancels the error message.

** PROGRAM MODE -- BASIC MONITOR **

TEST ID: BSC Training Tape #102-1.4
 SOURCE : LINE TAPE DTM TAPE/DTM EDIT/DTM
 START: BLOCK 000 CONTINUE
 MONITOR: RTN DTE DCE
 CODE : EBCDIC ASCII EBCD XS-3
 IPARS REV EBCD BAUDOT HEX

FORMAT : SYNC BOP BOP/NRZI ASYNC
 SYNC CHARS: 55
 OUT SYNC : OFF ON CHAR: 7 #: 1
 AUTOSYNC : OFF ON

SPEED: 2400

Basic Monitor Menu

This simple menu enables an operator quickly to display any type of signal.

Only three parameters need be selected for synchronous operation:

SOURCE—LINE, TAPE, etc.

MONITOR—BOTH, DTE, DCE

CODE—EBCDIC, etc.

All unnecessary or conflicting entry choices are automatically eliminated. For example, EBCDIC is an 8-level code. Therefore, the selections for information bits and parity disappear when EBCDIC is selected. When SYNC is selected, the sync character is automatically derived from the code selection. Refer to the technical manual for a full listing of interrelated selections.

(Basic Monitor continued.)

** PROGRAM MODE -- BASIC MONITOR **

TEST ID:

SOURCE : LINE TAPE DTM TAPE/DTM EDIT/DTM

MONITOR: BOTH DTE DCE

CODE : EBCDIC ASCII EBCD XS-3

IPARS REV EBCD BAUDOT HEX

BITS : 8

PARITY: EVEN ODD MRK SPACE NONE

FORMAT : SYNC BOP/NRZI ASYNC

CLOCK : INT

Basic Monitor Menu (continued)

MONITOR: Enables the DTE, DCE, or BOTH receivers in the unit.

CODE: Specific code translations to available fonts are described in the technical manual.

- **BITS:** Total number of information bits (plus Parity, if applicable) is automatically selected for each code unless variable bit length selections are permitted by the operator.
- **PARITY:** Selection is automatic depending on the code, SYNC or ASYNC. Where parity is permitted, the operator may select EVEN, ODD, MARK, SPACE, NONE.

FORMAT (see page 36): SYNC requires 1 or 2 sync characters. BOP refers to any bit-oriented protocol using 7E flags. NRZI (nonreturn to zero inverted) data is used by IBM for selected nonclocked SDLC circuits.

(Basic Monitor continued.)

```

** PROGRAM MODE -- BASIC MONITOR **

TEST ID: BSC Training Tape #102-1.4
SOURCE : LINE TAPE DTM TAPE/DTM EDIT/DTM

MONITOR: BOTH DTE DCE
CODE    : EBCDIC  ASCII  EBCD  XS-3
          IPARS  REV EBCD  BAUDOT HEX

FORMAT  : SYNC BOP BOP/NRZI ASYNC
          SYNC CHARS: 8 3
          OUT SYNC   : OFF ON CHAR: 7 #: 1
          AUTOSYNC   : OFF ON

CLOCK   : EXT INT

```

Basic Monitor Menu (continued)

- ***SYNC CHARS:*** Any two characters may be entered as clear text or in hex. When a code is selected, its related SYN character is automatically selected unless manually edited.
- ***OUT SYNC:*** ON permits assignment of any character (normally PAD) repeated consecutively up to 255 times (normally one) to disable the receiver(s) until a new SYN pattern is found. (Each trigger may also initiate OUT SYNC.)
- ***AUTO SYNC:*** A detector is constantly sliding “bit-by-bit” looking for the SYNC character pattern to enable the receiver(s) to display data.

CLOCK:

- Either EXTERNAL or INTERNAL automatically tracks the SOURCE and FORMAT for standard configurations. Manual Editing permits ISOC (ASYNCR with EXT clock).
- ***SPEED:*** Manually enter any speed up to 19.2 kbps. Standard speeds will be substantially exact. See the technical manual for accuracy of the synthesizer.

** PROGRAM MODE -- CRT & TAPE **

CRT CONTROL

DISPLAY MODE: SINGLE LINE DUAL LINE
 SUPPRESS : ALL
 ENHANCE : CHAR PARITY
 : 1
 REV IMAGE : OFF INTERFACE ON
CTS CTS DSR RLSD DTR RI STRAP MKER

RECORD CONTROL

SPEAKER CONTROL

SPEAKER : OFF ON

CRT Control

SINGLE LINE display is provided for nonsimultaneous transmission and DUAL LINE for time correlation of full-duplex circuits.

Up to 8 characters can be suppressed. Bit Mask can be used as a SUPPRESS character. *Example:* Suppress SYN, SOH, STX, ETX, ENQ, ETB, ACK, DLE. Only data text will be displayed.

Either parity errors or up to 8 characters* can be ENHANCED. *Example:* Enhance specific protocol characters, NAK, addresses, or logical channels.

The display can be highlighted when any one of the selected INTERFACE leads is ON.

In Monitor Mode, manual CRT keys are available for operator selection of CLEAR, FREEZE, UNFREEZE, or RESUME TRIGGER control by the program.

*Characters may be from keyboard or entered in hex.

** PROGRAM MODE -- CRT & TAPE **

CRT CONTROL

DISPLAY MODE: DUAL LINE
 SUPPRESS :
 ENHANCE : PARITY
 :
 REV IMAGE : INTERFACE=ON

RECORD CONTROL

INITIAL COND: RECORD
 START AT : BLOCK 000
 STOP AT : END
 INTERFACE : YES

SPEAKER CONTROL

SPEAKER : ON

Record (Tape) Control

These selections enable the operator to use the tape efficiently for data storage.

INITIAL COND specifies whether the tape will record immediately when the MONITOR key is operated or wait for a trigger or manual command.

START AT specifies whether the tape will continue from its last location, thus saving prior data; begin recording at BLOCK 000, possibly over prior data; or begin recording at an operator-entered block. In the last case, the block number entered cannot be higher than the last block containing prior data.

Note that after PROG LOAD or PROG SAVE the tape is *always repositioned* at BLOCK 000.

STOP AT specifies continuous recording or until tape is full.

INTERFACE specifies recording of interface signals and MARKER with data up to 9.6 kbps.

The manual CAPTURE MEMORY keys are available for operator selection and override via MANUAL START, MANUAL STOP, and RESUME TRIGGER control by the program.

** PROGRAM MODE -- TRIGGER # █ **

#1 DTE STRG: █ I/F: █ FLAG 8
TMR1S

#2
+ CRT: █ CTR1I TMR2R FLAG 7

#3 DTE 1 OF: █
CRT: █ TAPB

#4 DCE STRG: █
CRT: █

#5
I/F: █
CTR2R

#6 DTE GOOD FCS
TAPB

#7
I/F: █ FLAG 3
TAPB

#8 DTE FCS ERROR
TAPB

Trigger Summary

Prior to selection of a specific trigger (from 1 to 8), a *summary* is displayed to enable the operator to quickly review the character strings and actions set for each trigger.

This overview is also made available in the Monitor Mode by use of the PROGRAM SUMMARY key.

In the summary shown here, Triggers 1 and 2 represent the trigger settings on pp. 44 and 46. Triggers 3-8 in the summary are simply illustrative of possible entries.

** PROGRAM MODE -- TRIGGER #1 **

MON DATA ON : NEITHER DCE
 LOOK FOR : 1 OF GOOD FCS ERR

MON I/F LEADS: NO 1=ON 0=OFF X=DC

 RTS CTS DSR RLSD DTR RI STRP MKER

MON FLAG : NO #8 ON

SET CRT : YES

SET TAPE : ON OFF

SET FLAG : YES

SET TIMER: NO #2 RSTRT CONT

SET CNTR : YES

SET ALARM: YES SET OUTSYNC: YES

Trigger Monitor Sources

Three inputs may be combined as a trigger source: DATA, INTERFACE (I/F) lead configuration, and an internal FLAG. For *MON DATA*, a source must be selected; then a sliding STRING of up to 8 contiguous characters or *any 1* of up to 8 characters or, for bit-oriented protocols, an FCS check.

The operator may specify characters from the keyboard or select NOT EQUAL, DON'T CARE, HEX, or BIT MASK.

BIT MASK selection presents the character bits with the first serial bit on the right. Each bit may be independently defined as 1 (mark) or 0 (space) or DON'T CARE (X). Only one bit mask is permitted per string.

MON INTERFACE lead configuration is selected using 1 (on), 0 (off), or DON'T CARE.

MON FLAG permits selection of one of the 8 flags with an ON or OFF condition.

** PROGRAM MODE -- TRIGGER #2 **

MON DATA ON : DTE DCE

MON I/F LEADS: YES

MON FLAG : NO #2 OFF

SET CRT : NO 0=OFF 1=ON X=NO CH

CLR FRZ HEX LO UND BLI REV

SET TAPE : NO ON

SET FLAG : NO #1 OFF

SET TIMER: NO #1 RESTRI CONT STOP

SET CNTR : NO #1 2 3 4 DEC RES

SET ALARM: YES SET OUTSYNC: NO

Trigger Set Actions

The trigger source, when true, will SET any combination of the actions selected.

SET CRT permits the display to be controlled with any combination of enhancements (CLear, FReeZe, HEX, LOw intensity, UNDERline, BLInk, REVERSE image).

SET TAPE selects recording control to start or stop the tape.

SET FLAG selects the flag and sets it to a 1 or 0.

SET TIMER selects one of 2 timers to ReSTaRT, CONTInue, or STOP.

SET COUNTER selects one of 4 counters to INCReament, DECReament, or RESet.

SET ALARM enables an audible beep.

SET OUTSYNC causes the receiver to ignore data until the next SYNC pattern.

```
** PROGRAM MODE -- STATISTICS **
```

```
COUNTERS:
```

```
#1 MSG counts. █████
```

```
#2 NAK's..... █████
```

```
#3 ENQ's..... █████
```

```
#4 $ CHAR/BLOC █████
```

```
TIMERS: MSEC SEC
```

```
#1 MSG length. █████
```

```
#2 reply timer █████
```

Statistics

This menu permits the operator to name the 4 counters and 2 timers according to function with up to 11 characters each.

COUNTERS: Maximum count = 65,535.

TIMERS: Select milliseconds or seconds. Maximum time = 65,535 units.

The operator may select SEC or MSEC for the timebase for both timers.

In the Monitor Mode, the RESULTS key presents this display in real time.

Making a Program Tape

To record the program on tape at any time press the PROGRAM mode key and operate the SAVE PROG key. The tape will automatically position itself to the proper block and record.

The new program will be recorded over an old program.

Data signals cannot be written over the area of the tape that is reserved for the program.

If the RECORD tab on the tape is in the nonrecord position, the program in the 3500 is retained, but the old tape program is protected. The 3500 displays the PROGRAM SELECTION menu and annunciates TAPE PROTECTED on the second line.

IF IN DOUBT

1. In *any* operating condition operate the *red* PROGRAM key to reinitialize the entire system. A list of all Program Selections will be displayed.

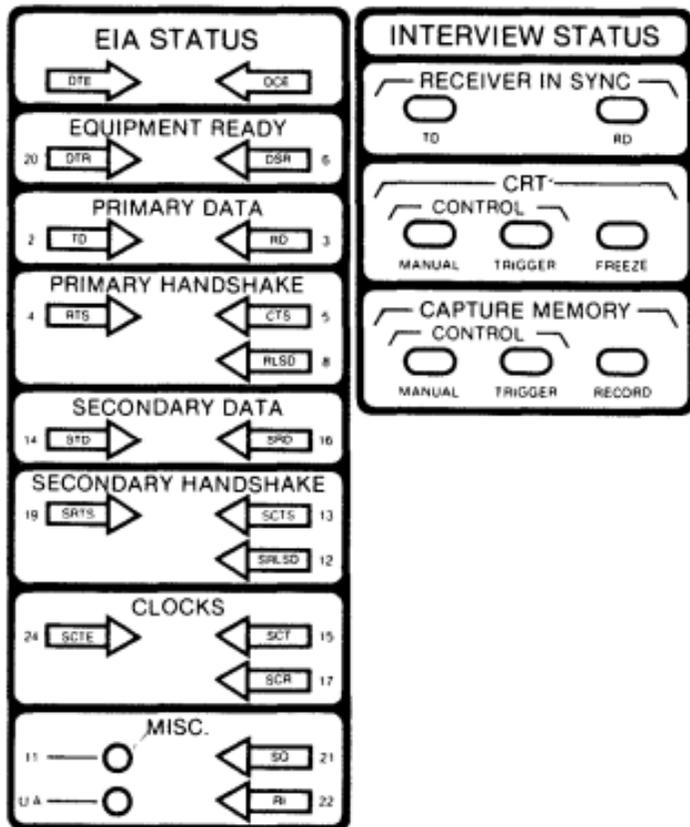
2. In *any program mode* operate the *green* MONITOR key to run the Monitor program.

3. If data is not displayed in Monitor Mode and MON LINE is shown, then, in the following order,

- verify signal presence by TD or RD LEDs;
- verify SYNC characters and IN SYNC LEDs;
- operate MANUAL UNFREEZE if FREEZE LED is ON.

If MON TAPE is shown, then, in the following order,

- verify that tape cartridge is inserted;
- ~~follow the above sequence~~ for MON LINE.



PANEL INDICATORS

EIA Status

All EIA leads are grouped according to function. A LED is ON for a positive voltage (space signal or control leads ON).

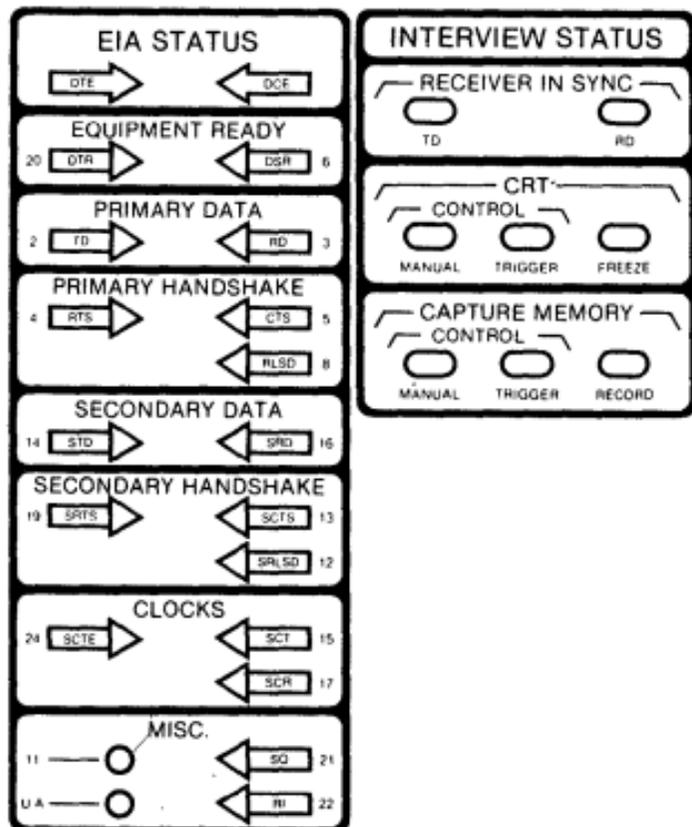
INTERVIEW Status

Each of the two dedicated receivers (DCE, DTE) drives an "in sync" LED to indicate whether data is available for processing by the 3500.

SYNC is on when receiver has acquired SYNC using the programmed (or default) SYN character. If the light is NOT ON, the user should reexamine the SYN character selected by the BASIC MONITOR menu.

For ASYNC, the LEDs are OFF; for BOP, they are ON when 7E Flags are detected.

(Panel Indicators continued.)



PANEL INDICATORS (continued)

CRT and Capture Memory

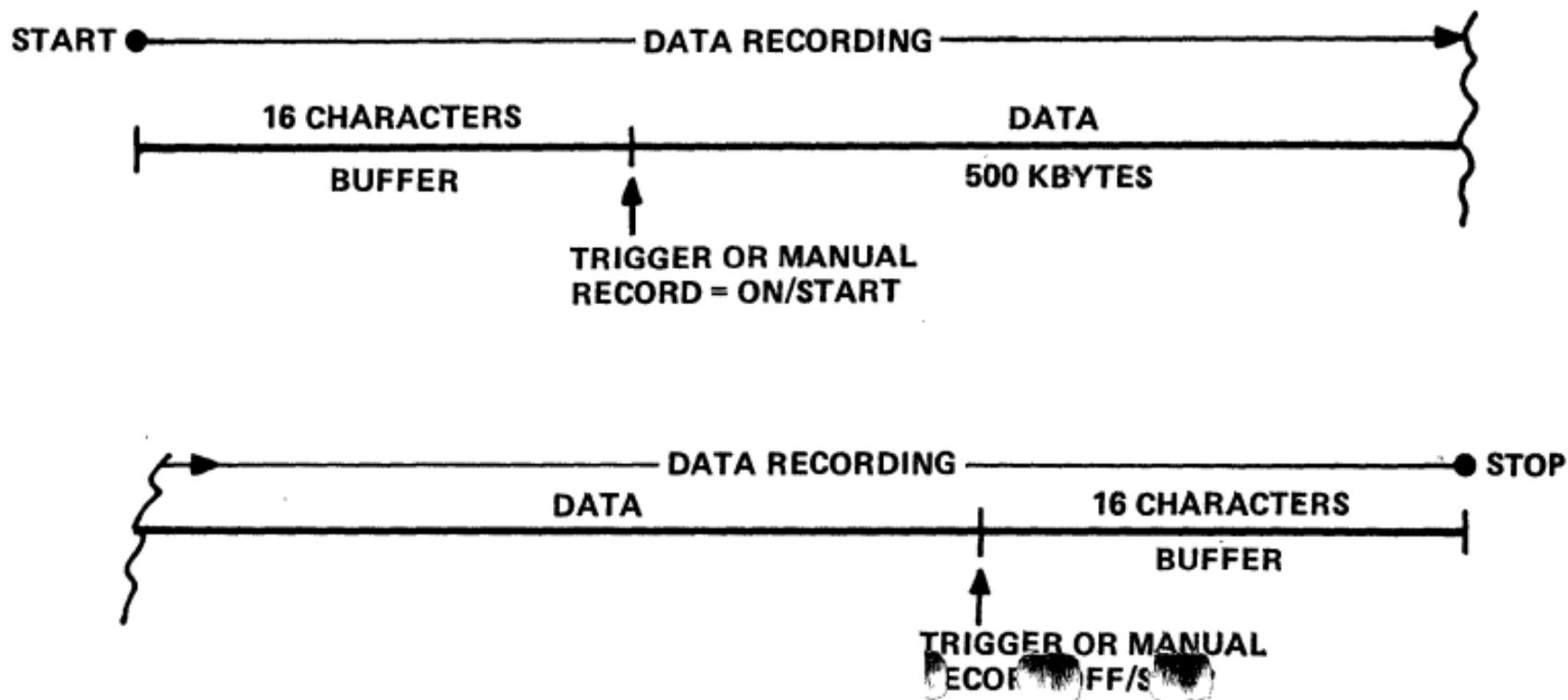
FREEZE: ON indicates that additional data characters received will not be added to the CRT (or the buffer).

RECORD: ON indicates that data signals are being recorded on the tape.

MANUAL: ON indicates the CRT or CAPTURE MEMORY is under MANUAL control of the operator and that any programmed trigger controls are ignored for FREEZE or RECORD.

TRIGGER: ON indicates that FREEZE or RECORD is under program trigger control. Operate the CRT or CAPTURE MEMORY RESUME TRIGGER key to re-enable this mode after MANUAL override.

CAPTURE MEMORY: RECORD



The tape always records FDX (max speed is 19.2 kbps). Each cartridge stores 500 kbytes (250 kbytes DTE and 250 kbytes DCE). When Interface status and markers are recorded (max speed 9.6 kbps), each channel records 166 kbytes.

When the tape is started, the *prior* 16 bytes of data (on each channel) are recorded (to recover leading SYN characters).

When the tape is stopped, the *next* 16 bytes of data are recorded.

When a stop and start command occur within the 32-character overlap zone, the recording is continuous.

If the RECORD tab on the tape cartridge is OFF, a TAPE PROTECT error message appears.

TAPE AS DATA SOURCE

When TAPE SOURCE is selected, data is replayed from the tape instead of derived from the line. The interface cable to a circuit under test *need not* be removed when data is played from the tape.

In Program Mode, the BASIC MONITOR menu will automatically select INTERNAL clock and a speed of 2400 bps.

In the Monitor Mode, the UP (DOWN) cursor key will increase (decrease) the playback speed of the tape.

If Interface signals have been recorded on the tape they will appear on the front panel display. The block number of the tape is shown on the top line of the display.

DTM AS DATA SOURCE

The DTM and 3500 must each be connected to the line via separate RS-232 cables for data and clock. An AUX cable (furnished in INTERSHAKE Adapter Kit) is required between the INTERSHAKE and the 3500 to carry control signals for CRT enhancement and ON-OFF control of the tape.

3500 trigger control of CRT and tape is disabled but the remaining 3500 triggers and trigger actions, SUPPRESS, and ENHANCE still work.

Existing DTM programs will control the INTERVIEW 3500 display in the same manner as they did the INTERVIEW I or II (except that Page selection is ignored and should be edited out of the DTM program).

Control of the TAPE for recording via DTM Function 94 requires only Data 41 for ON and 40 for OFF.

KEYBOARD

For operator convenience, key functions are indicated by grouping and color. Many keys are operable in several modes, but the colors indicate their primary functions.

Program keys are *red* and Monitor keys are *green*. Four functional groupings are labeled:

SET-UP (Program Mode) selects menus.

DISPLAY (Monitor Mode) assigns CRT to display data.

CRT CONTROL (Monitor Mode) selects display or freezing of data.

CAPTURE MEMORY (Monitor Mode) controls recording of data.

Invalid key entries are prevented and announced to the operator.

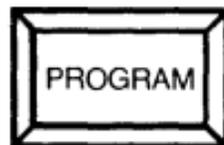
Key

Program Mode

Monitor
(Real-Time)

Monitor
(Freeze)

Red Keys: Program Mode



Places unit in program mode. Enables all red program keys. Displays the basic PROGRAM SELECTIONS menu.



PARAMETERS followed by 1 selects
Basic Monitor menu.

Invalid

Invalid

PARAMETERS followed by 2 selects
CRT & Tape menu.

<u>Key</u>	<u>Program Mode</u>	<u>Monitor (Real-Time)</u>	<u>Monitor (Freeze)</u>
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Red Keys: Program Mode (continued)



Selects Trigger Summary menu.

Invalid

Invalid

Trigger followed by any number from 1 to 8 selects the corresponding specific trigger menu.



Selects Counter and
Timer menu.

Invalid

Invalid



Clears any "typed in"
entries in current data
field.

Invalid

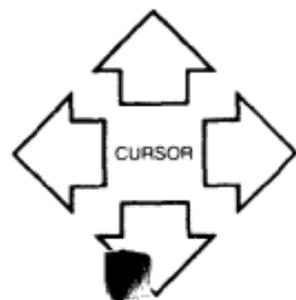
Invalid

To clear an entire
displayed menu,
operate CONTROL
plus CLEAR FIELD
simultaneously.

KeyProgram ModeMonitor
(Real-Time)Monitor
(Freeze)

Red Keys: Program Mode (continued)

To clear a field starting
at the cursor position,
use SHIFT plus
CLEAR FIELD
simultaneously.



When a cursor arrow is held down, after a brief delay the cursor will repeat until the key is released.

Move the cursor up or down to the selection in first field on the next line, or to first position in field, if choices are to be typed in. (See also ENTER key.)

Each operation of UP arrow doubles playback speed to max. 19.6 kbps; each operation of DOWN arrow halves speed to min. 10 bps.

Note: When display is frozen, cursor will be at oldest character of the new data.

Moves the cursor up or down to the next line. At top or bottom of CRT window, displays rest of buffer 1 line at a time.

Red Keys: Program Mode (continued)

Move the cursor right or left to the next permitted selection or to next field. (See also ENTER key.)

Invalid

Moves the cursor right (or left) to the next character or beginning (or end) of next (or preceding) line.

CONTROL plus CURSOR simultaneously

Invalid

Invalid

moves cursor directly to last field in cursor arrow direction.



Moves the cursor to the next field, either to the right or down.

Puts a marker on the CRT and tape (if the tape is recording).

Invalid

From bit mask byte field, returns cursor to next character in string or next character in "1 of" list.

<u>Key</u>	<u>Program Mode</u>	<u>Monitor (Real-Time)</u>	<u>Monitor (Freeze)</u>
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Red Keys: Program Mode (continued)



Enters Don't Care character in a string.

Invalid

Invalid



Latches next two alpha-numeric keys (blue keys) to enter one hexadecimal character.

Successive operation places the CRT alternately in and out of hexadecimal display mode. To display only control characters in hexadecimal, operate CONTROL plus HEX.



NOT EQUAL followed by a character or

Invalid

Invalid

BIT MASK selects all characters not equal to the character. Used to select a string not equal to X.



Used to select all characters having same bit(s) at selected bit position(s). Applicable to **SUPPRESS**, **ENHANCE**, trigger settings.

Invalid

Invalid

KeyProgram ModeMonitor
(Real-Time)Monitor
(Freeze)**Red Keys: Program Mode (continued)**

Moves tape to program storage area and stores the current program on tape. An error message is displayed if no tape is inserted or if the RECORD tab is in the "protect" position.

Invalid

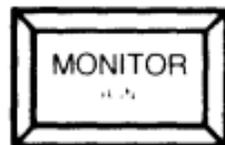


Moves tape to program storage area and loads a program from tape.

Invalid

Invalid

Green Keys: Monitor Mode

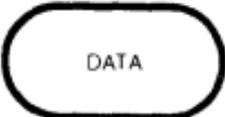
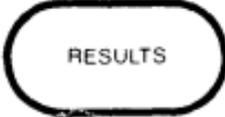


Sets the unit in Monitor Mode from any Program Mode display.

Resets all measurements and restarts the test. Does not initialize tape.

After HALT, the MONITOR key continues the test.

Enables all green keys

<u>Key</u>	<u>Program Mode</u>	<u>Monitor (Real-Time)</u>	<u>Monitor (Freeze)</u>
Green Keys: Monitor Mode (continued)			
	Invalid		Forces screen to display real-time data from the selected source. Restores data display after Program Summary or Results.
	Invalid		Forces screen to display Trigger Summary.
	Invalid		Forces screen to display real-time counters and timers.



Invalid

Suspends Monitor operation, including counters and timers. Stops tape.

Does not fill in the two blank lines in display where the new data has been overwriting the old.

To resume monitoring operation without resetting, press MONITOR.

<u>Key</u>	<u>Program Mode</u>	<u>Monitor (Real-Time)</u>	<u>Monitor (Freeze)</u>
Green Keys: CRT Control			
	Invalid	Starts real-time data display; overrides trigger control of CRT freeze.	
		Turns off the FREEZE status LED.	
	Invalid	Stops real-time display; overrides trigger control.	

Displays binary pattern of the character (or characters, in dual line display) at the current cursor position.

Fills in the two blank lines in the running display where the new data was overwriting the old.

Turns on the FREEZE and MANUAL status LEDs. Turns off the TRIGGER status LED.

Stops tape playback.

<u>Key</u>	<u>Program Mode</u>	<u>Monitor (Real-Time)</u>	<u>Monitor (Freeze)</u>
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Green Keys: CRT Control (continued)



Invalid

Returns the display to trigger control after MANUAL FREEZE or MANUAL UNFREEZE.

Turns off MANUAL status LED; turns on TRIGGER status LED. If FREEZE LED comes on, trigger has frozen display.



Invalid

Clears the CRT screen (and entire 1920-character buffer) of old data.

An oval-shaped button with the text "SELF TEST" inside.

SELF
TEST

Invalid

Forces self test display from any Monitor display. Operate SELF TEST again to restore previous display mode.

Green Keys: Capture Memory

An oval-shaped button with the text "MANUAL START" inside.

MANUAL
START

Invalid

Causes the tape to start recording; overrides program control.

Turns on RECORD status LED.

<u>Key</u>	<u>Program Mode</u>	<u>Monitor (Real-Time)</u>	<u>Monitor (Freeze)</u>
Green Keys: Capture Memory (continued)			
	Invalid	Causes the tape to stop recording; overrides program control. Turns off RECORD status LED; turns on MANUAL status LED.	
	Invalid	Returns tape to program control after MANUAL START or MANUAL STOP. Turns off MANUAL status LED.	

Blue and Gray Keys: Typewriter Area

Gray and
Blue

Alphanumeric characters, control characters, special symbols

Blue keys are hexadecimal entry keys (when used in conjunction with red HEX key).

When Results are displayed, C followed by 1, 2, 3, or 4 resets the corresponding counter.

When Results are displayed, T followed by 1 or 2 resets the corresponding timer.

When Results are displayed, R resets all counters and timers.

<u>Key</u>	<u>Program Mode</u>	<u>Monitor (Real-Time)</u>	<u>Monitor (Freeze)</u>
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Blue and Gray Keys: Typewriter Area (continued)

			B moves the CRT window to the beginning of the buffer.
			E. moves the CRT window to the end of the buffer.
F, P	—	—	F automatically tabs the cursor to the <u>next frame</u>

control byte and displays the mnemonic expansion on line 2 (INFO, RNR, NR, etc.).

P automatically tabs the cursor to the next packet-type byte and displays the mnemonic expansion on line 2 (LCN, INFO, RNR, PR, Q, D, M, etc.).

KeyProgram ModeMonitor
(Real-Time)Monitor
(Freeze)**Blue and Gray Keys: Typewriter Area (continued)**Control plus F —
or P

—

Permits the operator to select any character for mnemonic expansion by positioning the cursor manually.

NOTE: On dual line display, T selects TD, and R selects RD, for all following uses of



Operate in the same way as on a typewriter keyboard to give upper-case or special characters

SHIFT plus CLEAR FIELD clears current data field from cursor to end of field.

Invalid

CONTROL plus F or CONTROL PLUS P. κ cancels preceding T and vice versa.

Invalid

<u>Key</u>	<u>Program Mode</u>	<u>Monitor (Real-Time)</u>	<u>Monitor (Freeze)</u>
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Blue and Gray Keys: Typewriter Area (continued)



Must be held down like SHIFT while accompanying key is operated.

Invalid

Invalid

Used with an alphanumeric key, gives control character or other "third-level" special symbol.

With red CLEAR
FIELD key clears the
entire displayed menu
of selections.

Invalid

Invalid

With CURSOR, moves
cursor directly to last
position in direction of
arrow.



CONTROL plus Flag
enters flag character
for HDLC, X.25,
SDLC.

Invalid

Invalid

OUTPUT SIGNALS

VIDEO: A large screen or Remote Video Monitor can be connected to the rear BNC connector for RS-170 signals.

TAPE: When tape is played, all recorded signals are presented at the AUX connector as RS-232/V.24 signals. An adapter cable OPT-895-09-L provides these signals at a DB-25 connector for interconnection into a standard data environment.

AUX: Other output signals are described in the technical manual.

SELF-TEST ERROR MESSAGES

In the Program Mode, the 2nd line on the display is reserved for comments to the operator.

The following error codes are among those that may be displayed upon failure of the internal diagnostics and self-tests performed at power-up; they include subassembly, module, and component malfunctions:

3X ASSY C

6X ASSY F

4X ASSY D

7X ASSY G

5X ASSY E

Refer to the technical manual for a complete listing.

MAINTENANCE

CLEANING: The surfaces of the CRT, keyboard, and case may be cleaned with a damp cloth. Excessive accumulations may be removed with a mild detergent. *Do not use abrasives or solvent.*

VIDEO: Select MONITOR and SELF TEST. Adjust brightness with a small shaft on the rear.

AUDIO: Volume of the audible beeper is adjusted via a small knob on the rear of the I/O module.

TAPE: Cleaning of the tape head is routinely required after every 100 hours of operation. This is approximately equivalent to every month in normal use. Refer to the technical manual for detailed instructions.

OPTIONS AND ACCESSORIES

<i>Description</i>	<i>Model</i>
Yellow Transportation Bag	ARC-37408
Upgrade Kit* — adds tape to INTERVIEW 3000	OPT-895-01-1
Rack Mount Shelf	OPT-895-02-1
Blank Tapes	ARC-37784
Spare V.24 Access Male-Female T Cable	CA-18-1-5

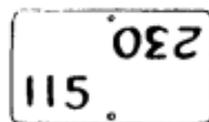
Extender Board Set (maintenance)
Tape Output Cable
INTERSHAKE Adapter Kit
(See technical manual for a full listing.)

OPT-895-03-1
OPT-895-09-L
OPT-895-08-5 (for DTM Series J)
OPT-895-08-1 (for DTM pre-Series J)

*May be field installed under ARC supervision.

AC POWER SOURCE

Select 115 or 230 V AC via the selector card behind the plastic window adjacent to the power cord entry. Insert the selector PC card with the desired voltage readable by the operator.



GROUNDING

The power cord supplied with the 3500 contains a third-wire chassis ground. The equipment should be connected only to outlets having third-wire grounds.

FREQUENCY

50-60 Hz selection is via an internal labeled bit switch. Loosen the 4 screws retaining the rear I/O panel and remove the panel and its attached PC card. The bit switch is located near the center of the board and is marked.



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