TVC-2100

AUTOMATED TELLER MACHINE VIDEO TEXT INSERTER

OPERATION & INSTALLATION MANUAL

TRANSACTION VERIFICATION SYSTEMS, INC.

Corporate Offices: 150 South Washington St., Suite 301 • Falls Church, VA 22046

PHONE (703) 237-8686 • FAX (703) 237-2649

E-MAIL service@tvs-inc.com • WEB SITE http://www.tvs-inc.com

Telephone support is available for installation and service assistance from 9 a.m. to 5 p.m. Eastern Time, Monday thru Friday. If a return is required for repair/credit, please call TVS for a return authorization number. Returns without a R.A. # will be refused.

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SECTION 1 FEATURES

The TVC-2100 ATM Video Text Inserter captures ATM transaction information and combines it with the video imagery in real time to protect against credit/bank card fraud, false claims and disputed transactions.

- **ALARMS:** The TVC-2100 comes equipped with an alarm output port for switching video equipment.

- **VIDEO COMPATIBILITY:** The TVC-2100 works with standard color or black and white monitors, standard video recorders (time lapse or home recorders) and color or black and white video cameras sold by most major manufacturers; however, be sure that the camera produces a 2:1 interlace signal. Random interlace cameras will not work with the TVC-2100 Video Text Inserter.

- **PROTOCOL:** The TVC-2100 supports and automatically determines most ATM message formats and protocols. Once the protocol has been determined during the initial installation, the setup is stored in battery backed-up memory. In the event of a power failure, the protocol and display formats are preserved. The TVC-2100 does not automatically recognize two protocols: SDLC NRZI and IBM 3600 message format (support SDLC only). These two protocols must be set up using the power-on menu. For the IBM 4730 protocol (SDLC NRZI and SDLC NRZ), a special program is required and must be requested when placing the TVC-2100 order. Because of protocol limitations imposed by the message format, only the following information is displayed, respectively:

IBM 4730 DISPLAYS

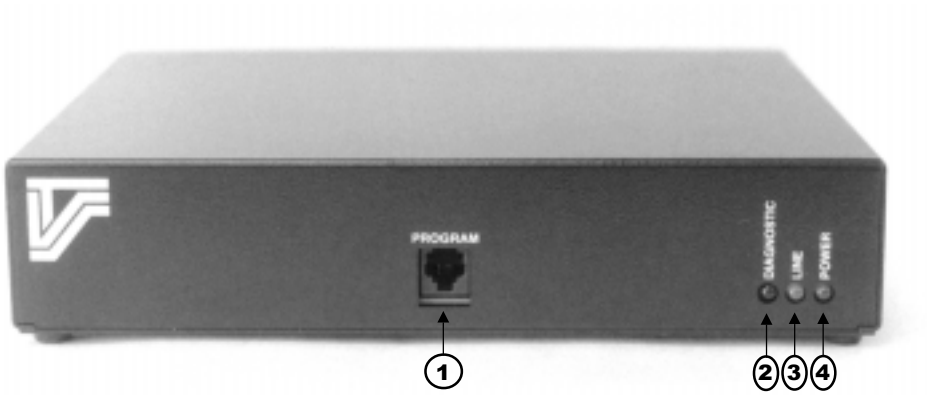
1. date and time from the ATM (not the network)
2. message sequence number
3. amount dispensed or non-dispensed
4. card number
5. machine location

IBM 3600 DISPLAYS

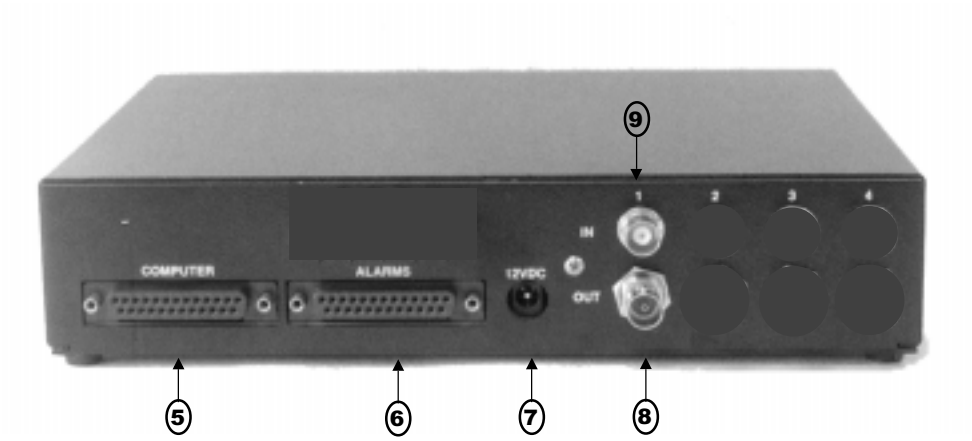
1. bill dispenser count (high and low)
2. approved or disapproved by network
3. print data in “as is” form

SECTION 2

LOCATION OF CONTROLLERS AND INDICATORS



1. **PROGRAM connector -** for local programming using a touch-tone telephone
2. **DIAGNOSTIC indicator -** illuminates when a transaction for the local ATM is detected
3. **LINE indicator -** always OFF
4. **POWER indicator -** indicates unit is properly connected to electrical power



5. COMPUTER connector - for communication with the local ATM modem

6. ALARMS connector - Outputs are open-collector outputs that simulate a normally open dry contact relay (see pinout diagram on page 9)

7. 12VDC connector - 12VDC, 1.5A input

8. VIDEO OUT connector - NTSC video output

9. VIDEO IN connector - NTSC video input

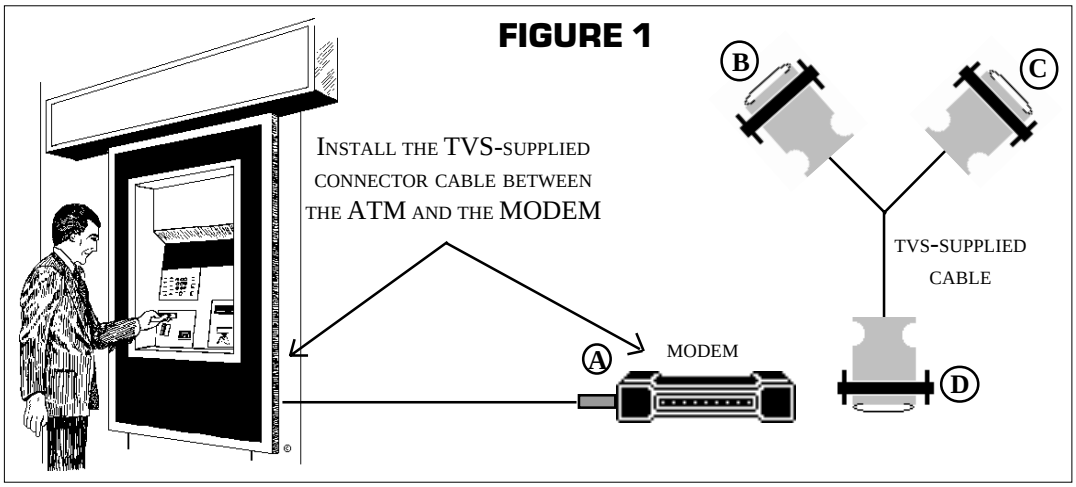
SECTION 3 INSTALLATION

The TVC-2100 is connected to the system between the ATM and the modem via a cable supplied with the TVC-2100. Connect the TVC-2100 to the ATM when transactions are not in process. If the connection is made promptly, operation of the ATM will not be disrupted.

CONNECT AS FOLLOWS:

STEP #1: Locate the cable leading from the ATM to the modem and remove the end connected to the MODEM **(A)**. If a modem-sharing device (multiplexer) is used, the proper connection point for the TVC-2100 is between the modem-sharing device and the output of the ATM.

FIGURE 1



STEP #2: Plug the female DB25 connector **(C)** from the "Y" cable into the mating DB25 receptacle on the MODEM.

STEP #3: Plug the male DB25 connector **(B)** on the other branch of the "Y" cable into the DB25 connector on the end of the cable that was removed from the MODEM in step 1.

STEP #4: Plug the DB25 connector **(D)** on the other end of the cable supplied with your system into the mating DB25 socket on the TVC-2100 labeled COMPUTER.

** For best results, use a coax cable that employs a braided, copper shield rather than a foil shield. Two sources that meet these specifications are Alpha 9059C and Belden 8241 (check local ordinances for wire regulations/standards).*

STEP #5: Insert the BNC connector from the ATM camera's RG59 cable into the receptacle on theTVC-2100 marked VIDEO IN. Insert the BNC connector from the opposite end of the RG59 cable leading to the monitor or other video processing equipment into the mating receptacle on the TVC-2100 marked VIDEO OUT.

NOTE: *When setting up the system, it is desirable to temporarily connect the VIDEO OUT receptacle from the TVC-2100 to a monitor for observation and display adjustment.*

STEP #6: CONFIRM SYSTEM SETUP

After completing the hardware installation, power up the TVC-2100 by inserting the power connector into the power receptacle and use one of the two available setup methods:

A. Connect a standard touch-tone telephone after the TVC-2100 is powered up and enter **79#** from the keypad. After the TVC-2100 re-initializes, the Automatic Protocol Search Mode will start.

B. For special setup situations, connect a standard touch-tone telephone after the TVC-2100 is powered up and press **00#**. This will display a setup menu on the video screen **(FIGURE 1)**. From the menu, select a specific protocol or select Automatic Protocol Search.

1. Find Mode - Leave Settings
2. Find Mode - Default Settings
3. Bisynch EBCDIC NRZ mode
4. Bisynch ASCII7 NRZ mode
5. SDLC EBCDIC NRZ mode
6. SDLC EBCDIC NRZI mode
7. Asynch TC500/700 mode
8. NCR TC500/700 Synch mode
9. IBM 3600 SDLC EBCDIC mode

Select Choice by Number or # to abort

FIGURE 1

NOTE: *Unless using the SDLC NRZI protocol or IBM 3600 protocol (which require manual setup), Automatic Protocol Search is recommended.*

To use the Automatic Protocol Search, enter 1 to leave parameter settings "as is" or 2 to also set default parameter settings.

As each protocol test begins, a series of messages appear on the monitor to indicate the particular process that is underway. Typically, these messages appear as shown in **FIGURE 2**.

Trying **EBCDIC BISYNC** Protocol

Trying **ASCII7 BISYNC** Protocol

Trying **SDLC EBCDIC** Protocol

Trying **ASCII7 ASYNC** Protocol

FIGURE 2

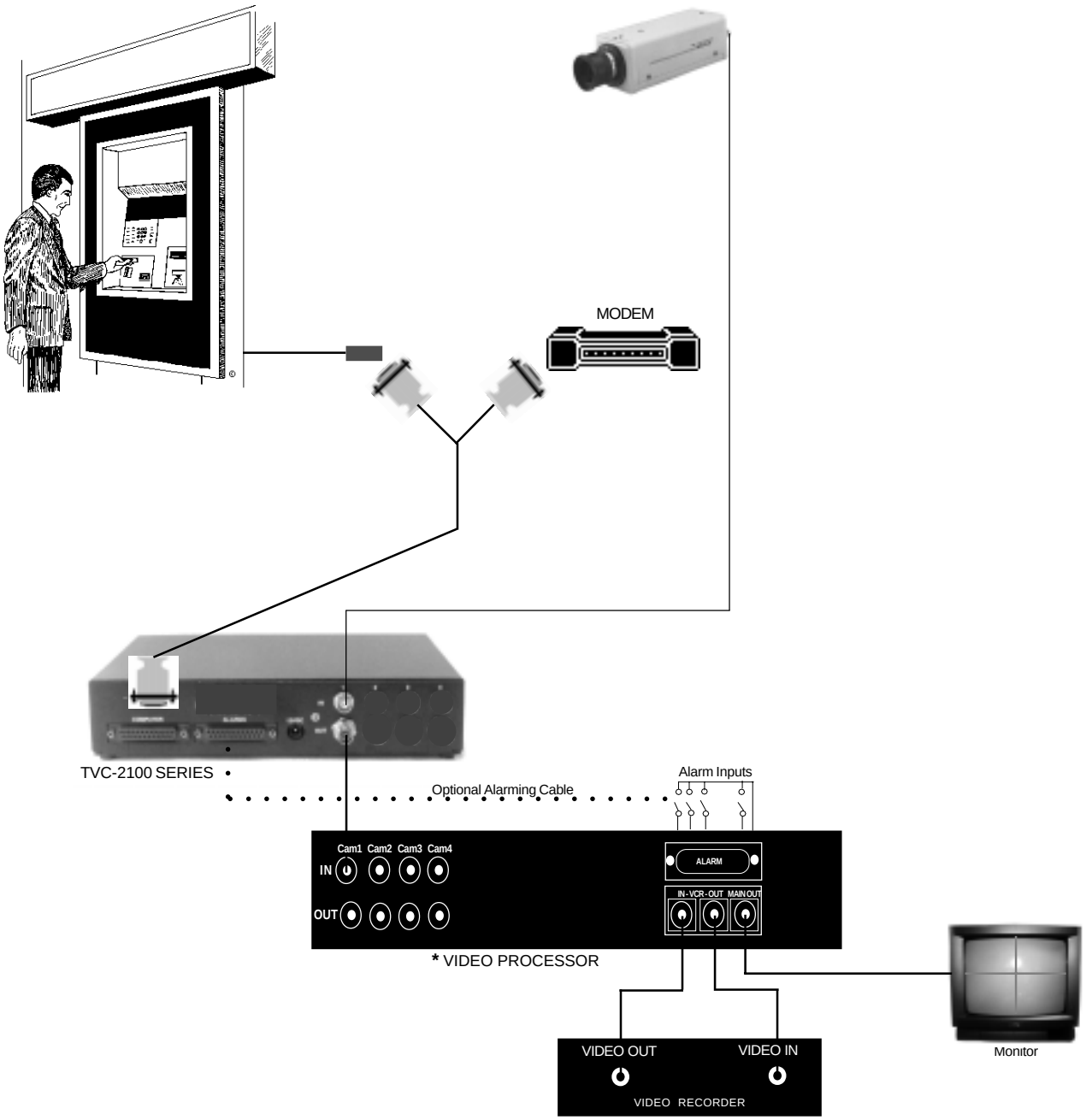
Once the TVC-2100 has analyzed the data and selected the proper mode, it displays the parameters on the screen. These parameters include: protocol and baud rate.

TVC 2101 is fully initialized
Copyright 2000 by TVS Inc.
ATM Ver. 001, 11 OCT 00
Baud Rate is 4800 BPS
Mode is ASCII7 Async Protocol
Screen Blanking (seconds) 30
Alarm-on Time (seconds) 15

FIGURE 3

When the protocol has been determined, the TVC-2100 displays the information on the video screen **(FIGURE 3)**, places the information in non-volatile memory, and begins displaying ATM transactions as they occur. The TVC-2100 stores all settings despite power loss. The TVC-2100 will restart with the previous stored protocol, baud rate and address for the ATM to which it is connected. When protocol selection is complete, run several ATM test transactions to insure that the system is operating properly and to set the TVC-2100 clock.

SECTION 4 INSTALLATION DIAGRAM



* Switcher, Quad, Multiplexer, etc.

SECTION 5 ON-SCREEN MENUS

To program the TVC-2100 text inserter with a standard touch-tone telephone, insert the plug of the telephone into the front panel socket labeled PROGRAM. Press the asterisk (*) on the telephone keypad. The main menu screen **(page 7)** will appear. Select a menu option by entering the number via the telephone keypad.

1. Character Intensity: There are eight intensity levels from black to white. The currently selected character intensity name displays against the current background mode. If the background mode is one of the black background modes, the black character intensity level is not available. To select a new character intensity, press '7' to scroll down or '9' to scroll up through the list of intensity levels. Press the asterisk (*) to save the new character intensity setting.

2. Background Mode: There are three background modes:

- Window Black Background - black background behind all text lines displayed within the text window including white spaces
- Character Black Background – black background behind visible characters exclusive of white spaces
- Video Background – no black background behind any characters

The three mode selections demonstrate the background properties with the current character intensity. The line describing the currently selected background mode will flash. To select a different background mode, enter the number of the desired mode followed by the asterisk (*) to save the new mode. If the character intensity is black and one of the black background modes is selected, the character intensity will change automatically to the first gray level which is slightly lighter than black.

3. Character Size: Using a touch-tone telephone, select one of the two available font sizes, by entering '1' or '2'. After highlighting the desired character size, select it by pressing the asterisk (*).

4. Transaction Display Format: The TVC-2100 permits two display formats: a four-line display (for large or small font) or a two-line display (for small font only). To select either the four or two line display, enter the number using the touch-tone telephone followed by the asterisk (*).

5. Text Window Position: The Text Window Position screen displays a black background text window of the size selected in the Transaction Display Format menu. Press '4' (left), '6' (right), '2' (up), or '8' (down) to move the simulated text window to the desired position on the screen and press the asterisk (*) to save the new position.

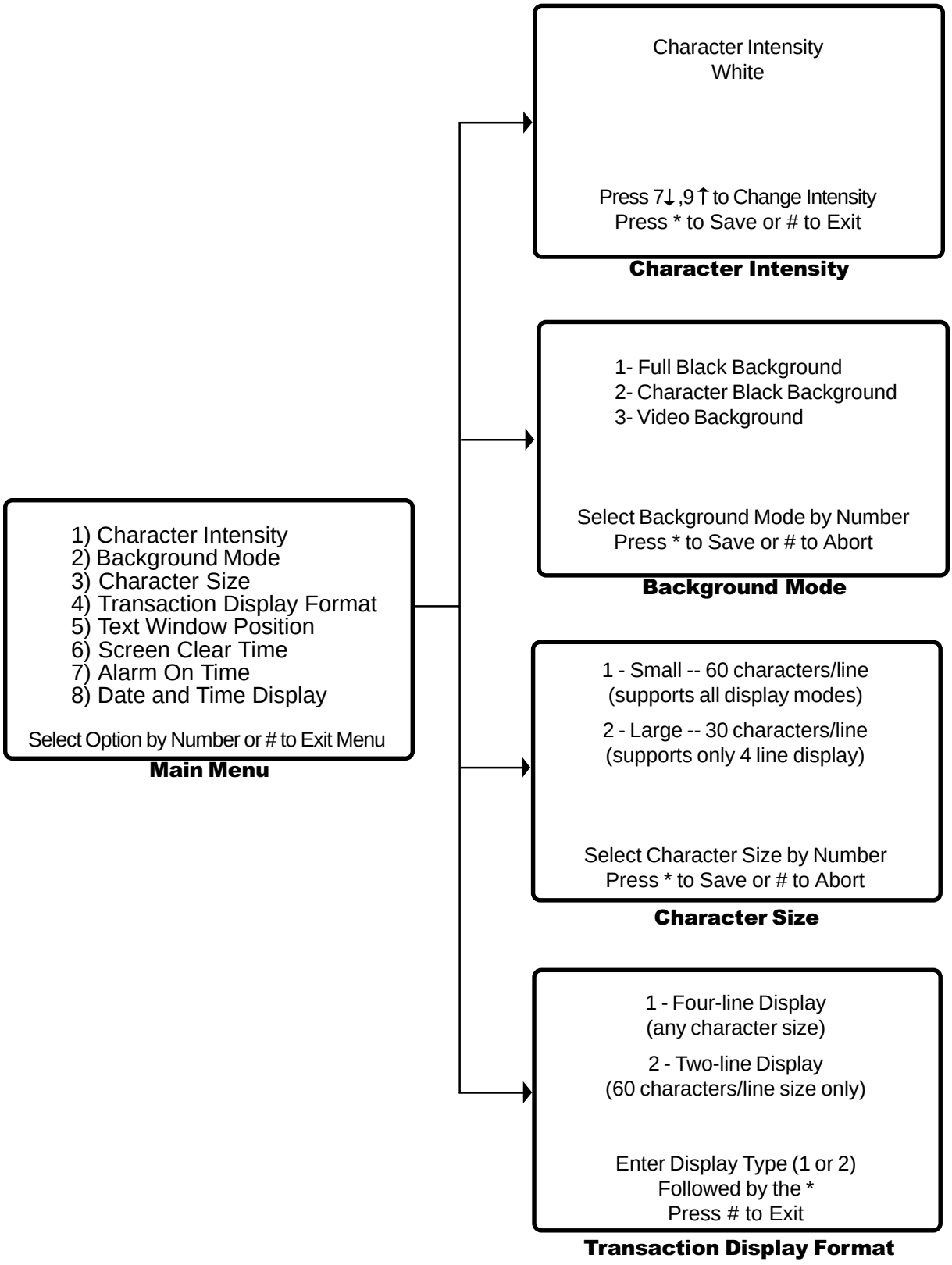
6. Screen Clear Time: This menu item allows selection of the duration of time the text display will remain on the screen before it is cleared. Enter the desired time (seconds) using the touch-tone number keys. When the desired seconds are displayed, press the asterisk (*) to save the value. **NOTE:** *setting the seconds to zero will keep the text displayed on the screen until the next transaction occurs.*

7. Alarm On Time: This menu item allows specification of the length of time that the activity alarm will remain on. Enter the alarm clear time on the touch-tone telephone followed by the asterisk (*).

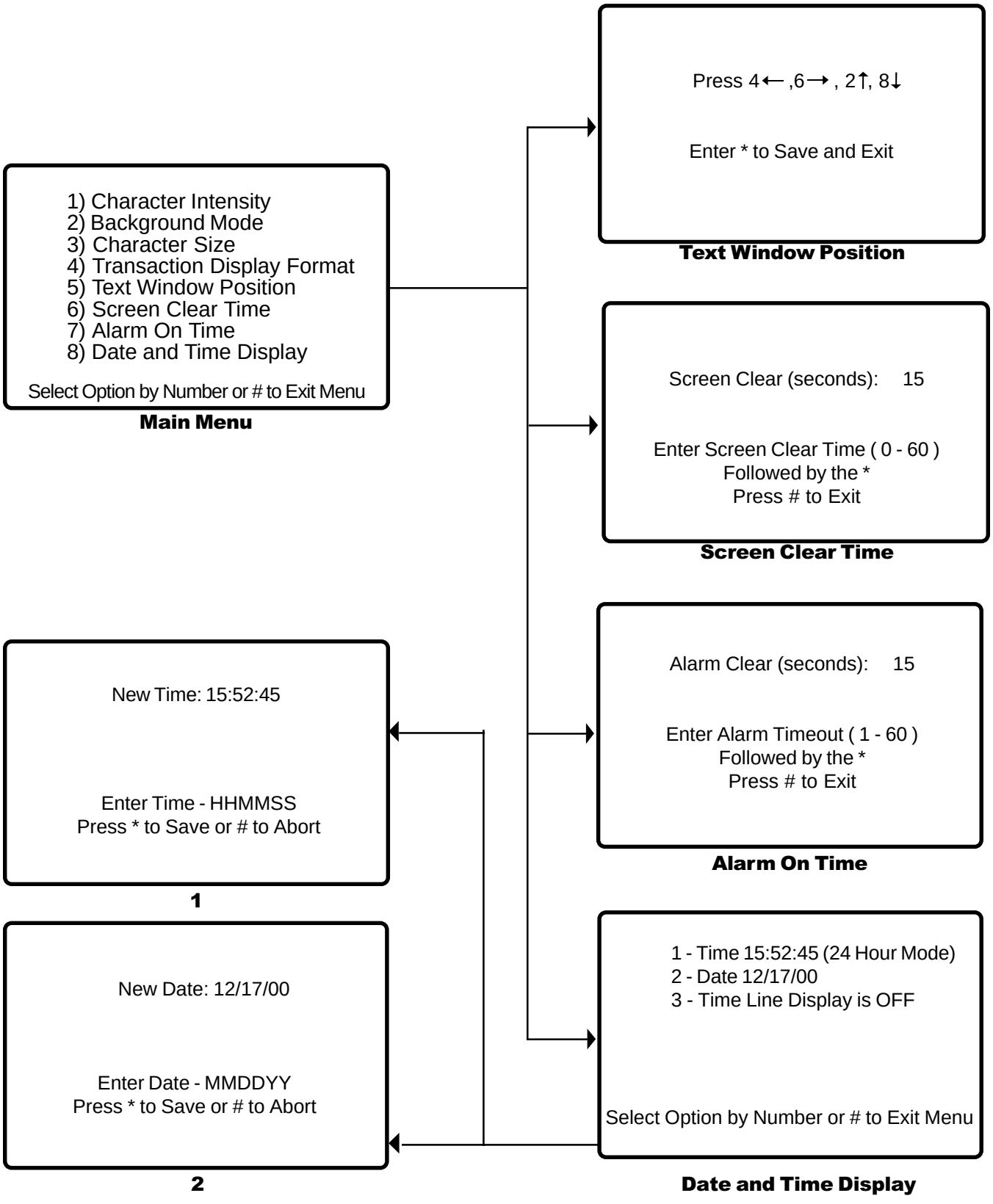
8. Date and Time Display: The TVC-2100 can display date and time in one of two ways--at the top of the screen (if timeline display is on) or in the normal date and time location in the transaction display area (if timeline display is off).

SECTION 6

ON-SCREEN MENUS DIAGRAM



ON-SCREEN MENUS DIAGRAM



SECTION 7 ALARMS

Each TVC-2100 comes equipped with an alarm port. To use this feature, a connector cable (TVC-AE21ATM) which may be obtained from TVS is necessary. The TVC-2100 provides open collector alarms.

ALARM 1: Alarm activates when an ATM transaction receipt starts printing and remains active for a period of time (one to 60 seconds) that is settable from the on-screen menu. *Generally used in conjunction with a sequential switcher to select the ATM camera during an ATM transaction and to force camera to remain on the ATM for a set period of time.*

ALARM 2: Alarm activates when an ATM transaction receipt starts printing and remains active for one second. *Used most frequently in conjunction with the alarm input of a VCR. The alarm search feature of the VCR allows high speed search from one alarm to the next on the video tape.*

An input for a master alarm clear signal is also available. When this input is active (low), any active alarms are de-activated. Other alarms are inhibited as long as the input remains low. This input allows an external signal to prevent switching to the ATM camera if a higher priority activity (such as a hold up) is in progress.

Install the alarm feature accordingly: Install the TVC-2100. Insert the male DB25 connector on one end of the connector cable into the mating receptacle on the TVC-2100 unit. The alarming feature is now activated and ready for use. To use the alarming capability, use either the orange wire or the blue wire for alarm purposes. Alarms are activated at the beginning of each ATM transaction. The alarm from the orange wire provides a closure for a fixed period of time (one second) at the beginning of each ATM transaction. This alarm is frequently used to mark a VCR tape so that the alarm search mode present on most VCRs can quickly move from one transaction to another. The alarm from the blue wire is a variable time alarm. Its duration may be set from one to 60 seconds from the on screen setup menu. This alarm is frequently used as an input to a switcher or quad. It enables the unit to switch to the ATM camera when it is active.

The red wire is an input for a master alarm clear signal which resets any active alarms and prevents any others from occurring while the input remains low. This input disables the TVC-2100 alarm outputs if a higher priority event (such as a hold up) is taking place.

PIN POSITION AND COLOR CODE FOR THE TVC-2100 ALARMING CABLE

PIN LOCATION	COLOR	FUNCTION
1	BLUE	VARIABLE ALARM
2	ORANGE	FIXED ALARM
17	RED	ALARM CLEAR
22	BLACK	GROUND

SECTION 8 TROUBLESHOOTING

PROBLEM: No video or poor video picture.

1. Make sure that VIDEO IN and VIDEO OUT connections to the TVC-2100 have been properly made.
2. Check the video picture when the camera is connected directly to the TVC-2100 and the monitor is connected directly to the TVC-2100 VIDEO OUT.
3. Check all video connectors, especially the shield/drain wire, to ensure that there are no loose connections.
4. Check monitor/VCR for proper terminations (75 OHM).

PROBLEM: Video display is OK but no text appears.

1. Power down the TVC-2100 by disconnecting the power connector. Next, power up the TVC-2100 after five seconds. Check to see if the initialization message appears.
2. Using a touch-tone telephone, press the asterisk (*) after the power up is complete and check each of the display settings. Reset any that are not proper.
3. Check the 12volt power supply to ensure it is supplying proper voltage under load (when connected to the TVC-2100).

PROBLEM: Video and text are normal but protocol cannot be determined (search continues for one to two minutes).

1. Check the "Y' cable connections.
2. Check the points to which the "Y" cable is connected. Make sure it is in-line between the ATM data cable and the modem-sharing device.
3. If possible, check the bank's protocol. If it is NRZI protocol, use the power-up setup menu to activate.

PROBLEM: Protocol is found but no transaction data is displayed.

1. Check to see that the "Y" cable is connected to the ATM data line and not to a teller terminal, alarm terminal, etc.
2. If possible, check to see if the bank's protocol is IBM 4763, IBM 3600 or NRZI SDLC. These protocols require manual setup.
3. Research for protocol to make certain that the factory test protocol is not still in the TVC-2100.

PROBLEM: Some transaction display items are missing.

1. Normal message format contains only:
    a) Transaction serial number
    b) Function code
    c) Bill dispenser data

Other data is contained within the receipt print field

    a) Date and time
    b) Machine location
    c) User card number
    d) Transaction dollar amount

If any of these latter items are missing or display incorrectly, obtain copies of several receipts (withdrawal, deposit, balance inquiry) and fax to TVS.

PROBLEM: Intermittent, bad or missing data.

1. If the standard "Y" cable is used, make certain that it is securely connected.
2. Check the power supply and replace if necessary.
3. If a longer cable has been substituted for the standard "Y" cable, replace the cable with a low capacitance, high quality data cable.
4. Check with the bank to determine if they have been experiencing telephone line or modem problems.

SECTION 9 WARRANTY

Transaction Verification Systems warrants to purchaser that the TVC-2100 is free from defects in materials and workmanship under normal use and service.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL TRANSACTION VERIFICATION SYSTEMS, INC. BE LIABLE FOR CONSEQUENTIAL DAMAGES EVEN IF TRANSACTION VERIFICATION SYSTEMS, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Transaction Verification Systems's sole obligation under this warranty is limited to replacing or repairing any part(s) which prove to be defective within five(5) years from the original invoice/purchase date. This warranty is void if, in the sole opinion of Transaction Verification Systems, the product has been subject to abuse or misuse.

Transaction Verification Systems, Inc. makes no representations or warranties whatsoever with respect to software or firmware associated with its product and specifically disclaims any implied or express warranty of fitness for any particular purpose. Transaction Verification Systems reserves the right to alter or update any program, publication or manual without obligation to notify any person of such changes.

No other person is authorized to assume for Transaction Verification Systems any other liability in connection with the sale of the TVS Video Text Inserter product line.