ADDENDUM

Addendum No.: C1577M-A

Date: August 4, 2004

Manuals Affected: CM9760 Series Manuals – **C538M, C539M-A, C540M-B, C541M-C, C542M-B, C543M-A, C544M, C549M-A, C572M, C573M-D, C578M, C579M, C1501M, C1503M, C1510M-QS, C1510M-A, C1520M-B, C1528M-C, C1940M, C1941M, C1942M,** and **C1943M**

Manual Update: The CM9760-CC1 has been replaced with the CM9700-CC1 and the CM9760-MGR management software has been replaced with the CM9700-MGR management software.

Keep the following in mind when referring to the instructions contained in these manuals:

- The CM9700-CC1 contains the latest CC1 software (version 9.01 or higher), and is programmed with the new CM9700-MGR management software.

- Despite the difference in model numbers, the CM9700-CC1 functions the same as the CM9760-CC1 and most of the information in these manuals applies to version 9.01 (or higher) CPU.

- You can add the CM9700-CC1 to an existing CM9760 system if you upgrade the existing CM9760-CC1 units with the current software (version level 9.01 or higher).

  Software version 9.01 requires a minimum of 16 MB of RAM in the CPU. If required, you can upgrade the RAM in older CM9760-CC1 units using the software upgrade kit appropriate for your CPU.
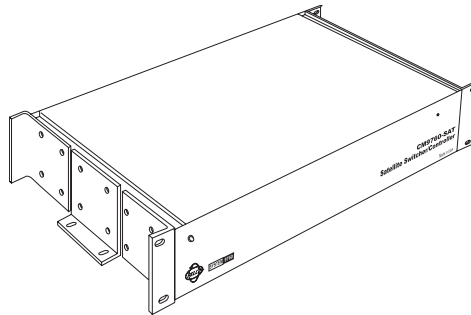
- Do not use the CM9760-MGR instructions contained in these manuals. Refer to the CM9700-MGR Getting Started Software Guide, on-screen help, or Online Help for instructions.

**CM9760-SAT
Satellite Switcher/
Controller**

**Installation/
Operation Manual**

C1510M-A (2/03)

9760 SAT OPERATIONAL PARAMETERS

CC1 Interface:	Required Software:
(Comm Parameters) Equipment # 31 Baud Rate 9600 Parity ODD	CM9760-MGR (System MGR) @ ver 7.80.003 or greater (external PC) CM9760.EXE @ ver 7.80.003 or greater (9760 HD) CM9760-KBD @ ver 7.80 or greater (For software upgrade information, contact Technical Support at 1-800-289-9100.)

The CM9760-SAT is a sequential video switcher for use as a Satellite Control System of the CM9760 system. Below are shown the front and rear views, the mounting geometry and, for reference, the pinout designations for all connectors on the unit. The four, 12-pin and one, 6-pin wiring plugs (shown in Figure 2) are supplied with the unit. Especially note the COM 2 connector designations. Required software version levels and other Comm parameters are given in the information box to the left.
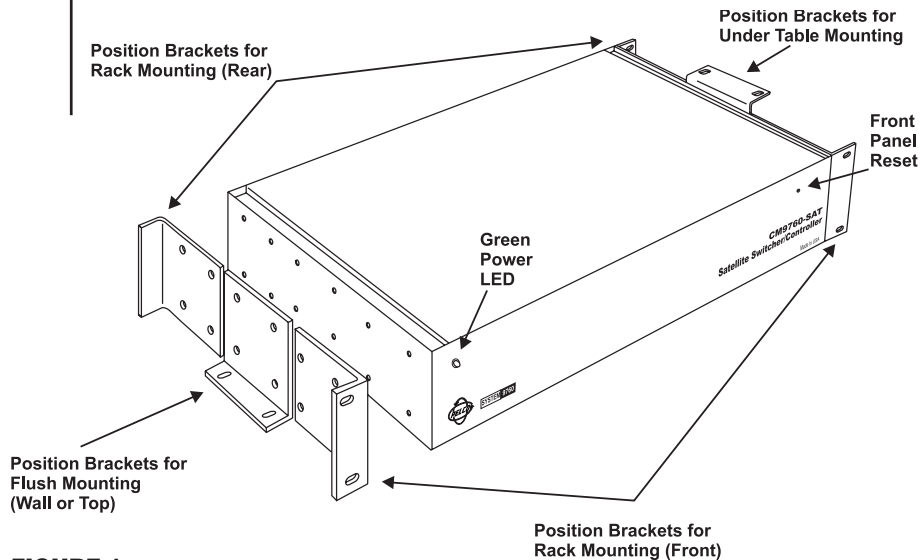
- **Observe the precaution outlined in the NOTE below.**

- **Orient unit as required.**

- **Mount as deemed appropriate to your installation.**

NOTE: *Factory default, video input termination is 75-ohm, non-looping. If you want the loop-thru option active for any video input, the top cover of the unit must be removed to make the change (see* **Section 1**, *3.2.1, Looping Video Inputs). You may want to do this before rack-mounting the unit.*

FRONT

FIGURE 1
CM9760-SAT Front View, Including Mounting Geometry
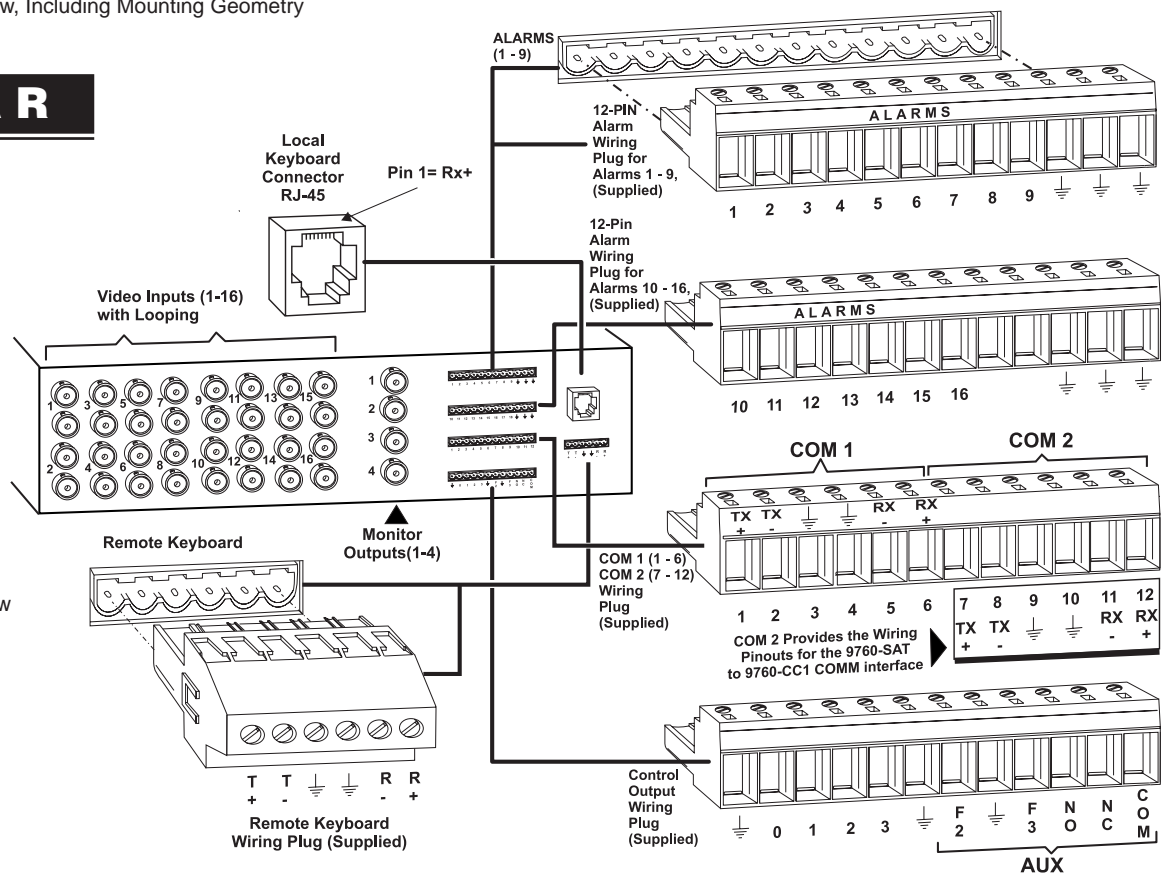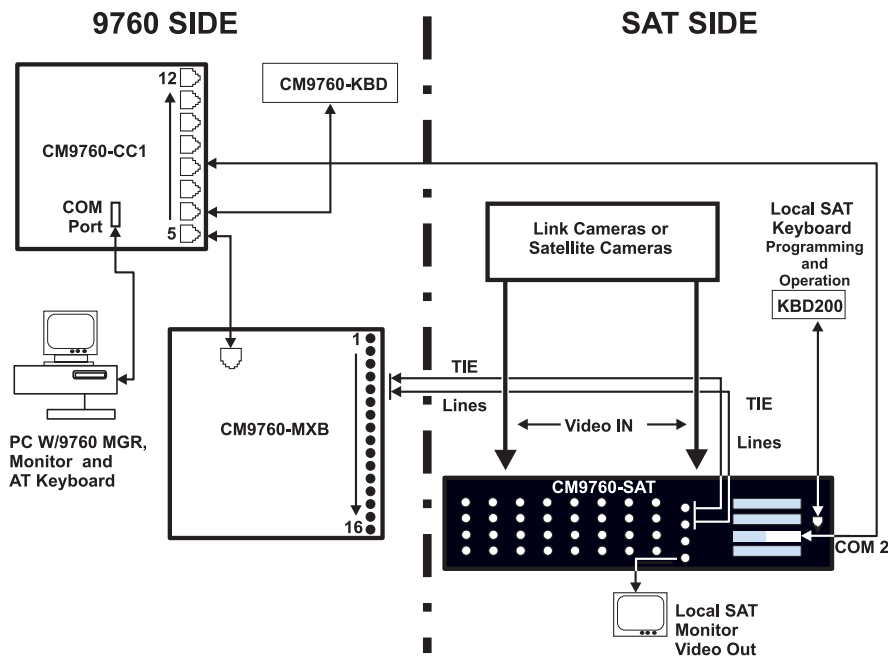
REAR

FIGURE 2
CM9760-SAT Rear View

MANUAL NOTES

1. The approach used in this manual is predicated on the installation and operation of the CM9760-SAT in a 9760 System environment. Figure 3 is a block diagram that represents such an environment.

2. Figure 3 is our reference or "jumping-off" point for most discussions in this manual. Note that the block diagram is divided in half: one side is labeled the "**9760 SIDE**" and the other is labeled the "**SAT SIDE**". For each, we discuss installation, programming, configuration, and operation, in the order listed in the **MANUAL DIRECTORY** on the next page.

3. The KBD200, KBD300, and KBD300V are keypads that connect to the **SAT SIDE** in our sample system environment where they are used for local operation and programming of the CM9760-SAT. A section on keypad operations, separate from their actual use in a programming or operational situation, is not included in the main body of the manual. This is done to minimize the interruption that would be involved in flipping back and forth between a section on the mechanics of keypad operation and the discussion at hand. Every effort is made to include all data needed to carry out a proposed operation or programming function at the point where it is discussed or used in the manual. However, we do provide, in Appendix III, *Keypad Definitions and Templates,* an abbreviated KBD200/KBD300/KBD300V keypad layout and button description.

4. Extensive discussions of keyboard and keypad connections (other than local **SAT** keypad hookup) are not included in the main body of the manual. For example, although multiple keypads can be connected to the **SAT**, you will not find a two-page digression in the middle of the manual on how to do it. Multiple keypad hookup is covered in Appendix II, *Remote Keypad Connections*. Similarly, we attempt to minimize blanket statements like "connect a straight-wired cable at one point", or "connect a reverse-wired cable at another", and, instead, encourage you to determine the parameters of cable hookup to your own satisfaction. Overt statements like those just mentioned are based on assumptions that may not be true for your on-site situation. When installing a supplied cable yourself, you should not blindly attach the cable (supplied or on-site) without knowing that the connection you make should work. In fact, you should be surprised if it does not work. Specific instructions and suggestions on matters related to keypad hookup and communication wiring are found in **Appendix I**, *Communication and Connection Tutorial* and **Appendix II**, *Remote Keypad Connections*. You need just a few pertinent facts at your disposal in order to connect 9760 communication devices together correctly.

FIGURE 3
9760-SAT System Environment

MANUAL DIRECTORY

INTRODUCTION

Physical
Description

The CM9760-SAT is a 16 X 4 (16 camera input by 4 monitor output) cross-point video matrix, sequential switcher.

The physical appearance of the 16 X 4 **SAT** is dominated by the 16 video inputs (and corresponding loop-thru BNCs) on the rear of the unit. Four BNC monitor-outs (for local or tie line use), four 12-pin wiring plugs for other functions and, finally, local and remote keypad ports round out the device connection list. Aside from confirming whether or not loop-thru operation is part of your configuration, the unit is ready to be rack-mounted. Remember: there is no "ON/OFF" switch and therefore the unit should not be plugged in until all connections to it have been made.

The SAT-9760
Relationship

Although the **SAT** is a peripheral device of the 9760 system, it is unique in that a considerable amount of local programming and control freedom can exist at the downstream or **SAT SIDE** of the configuration. You can think of the **SAT** as capable of performing many of the functions normally associated with a single node of the 9760 system. This analogy extends to include programmed **SAT** alarm-event notifications to the 9760 system. In some configurations, you might want to ignore local **SAT** functions altogether and use all monitor-out lines as tie lines back to the main system.

Setup
Overview

To enable operation of these functions, the following tasks must be performed:

1. Physically, the **SAT** and the 9760 system communicate in full duplex mode via an RS-422 Com link between the CM9760-CC1 and the port provided on the **SAT**. Those **SAT** monitor-out lines (configured as tie lines), must be run back to the **9760 SIDE** and connected as video inputs to the matrix bay and those monitor-outs **not** configured as tie lines must be configured for **LOCAL** use.

2. In addition to physical hookup, configuration files must be programmed on the **9760 SIDE** to make the 9760 aware of the **SAT's** existence and to condition tie line connect points. The information box found at the beginning of this manual lists the minimum version levels of software needed by equipment on both sides of the configuration to operate the 9760-SAT system interface.

3. By far, the majority of programming occurs on the **SAT SIDE** and serves a dual purpose. The first is to condition the SAT-9760 interface, in particular, the tie line link(s) between the 9760-MXB and the associated monitor outputs on the **SAT**. This is accomplished through programming the applicable entries in the **SAT's** Monitor menu. Other menus (for example, those that set up communication port attributes) are affected as well. The second purpose involves programming all associated link cameras, monitors, alarms and other connections for PTZ functions and other **SAT** sequential switcher operations for use at the local level. Local programming and operation of the **SAT** and associated link cameras are controlled by desktop keypads (the KBD200, KBD300 or KBD300V).

1.0 COM CONNECTION

The COM connection between the CM9760-CC1 and the CM9760-SAT runs from an available sercom port** on the rear of the CC1 to appropriate pinouts located on the wiring plug for COM 2 on the **SAT**. A physical disparity exists between the RJ-45 connector on the CC1 SIDE and the 12-PIN wiring plug on the **SAT SIDE**. An intervening wall block can be used (normally placed at the **SAT SIDE**) to facilitate the connection.***

Figure 1-1
CC1 to SAT Interface
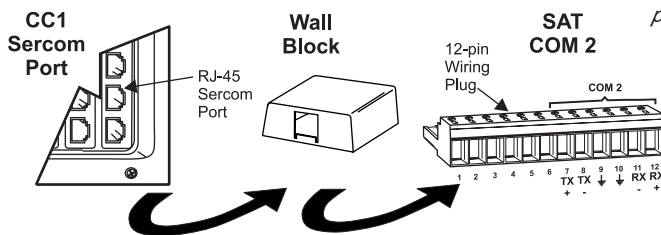
NOTE: *The RJ-45 wall block, represented in Figure 1-1, can be obtained by ordering a Pelco "KBDKIT". In many cases, however, an **SAT** system order will include several keypads in order to accommodate more than one operator on the **SAT SIDE**. Multiple keypads are wired via the remote- keyboard, wiring plug. In order to provide power to the keyboard, a KBDKIT, which includes a transformer, is required, as power is not provided at the remote port itself. The kit, however, contains two wall blocks. Only one wall block is needed to wire the keypad. The "spare" could be used here.*

*** SATs* *received in a system order are assigned connection locations that are found on your included port assignment sheet(s). These indicate the CC1 Sercom port to connect your **SAT** to.*

*If you are adding the **SAT** to an existing system, you must **FIRST** do an across-the-board check of your system software to ensure it is compatible with the version levels required for satellite operation. The information box on the first page of this manual (**9760 Operational Parameters**) indicates the minimum version levels of software required for satellite operations. If necessary, upgrade your associated system and peripheral software.*

9760 CC1 to SAT, COM 2
Wiring Examples
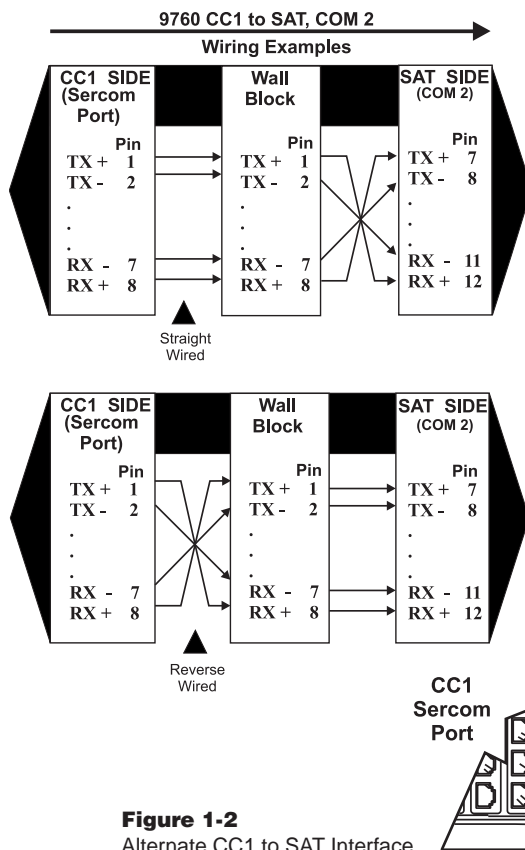
*** An alternate method is to strip the 8-conductor, flat communication cable to expose the necessary communication wires and then wire directly to the wall plug, eliminating the need for the wall block (see below).*

Figure 1-2
Alternate CC1 to SAT Interface
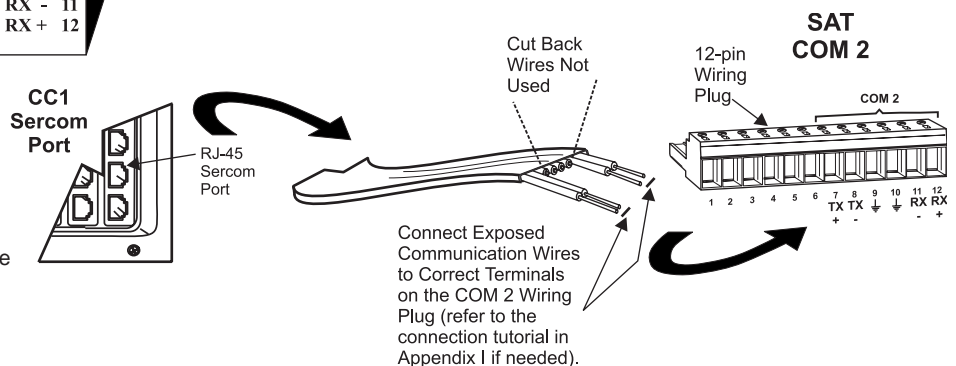
1.1 9760 SIDE – CC1 TO WALL BLOCK

1. Determine the cable type (straight or reverse)***** that is provided or exists on-site that you want to use between the RJ-45 Sercom connector on the CC1 and the wall block.

    * see Figure 5-1 in Appendix I

2. Make the connection using Figure 1-3 as a guide.

1.2 SAT SIDE – WALL BLOCK TO SAT

1. Depending on the cable type used, wire the wall block-to-**SAT** connection based on Figure 1-3 and the included pin designation table. The 12-position wiring plug can be removed from the unit for easy wiring access.

2. Strip and insert each wire to be connected in the provided slot. Tighten firmly with a straight-slotted screwdriver as shown.

Figure 1-3
Wall Block Connections

Sercom Port 7

Sercom Port Pin Designations
Pin 1   TX+
Pin 2   TX-
    ⋮
Pin 7   RX-
Pin 8   RX+

Pin 1 = TX +
Pin 8 = RX +

CC1 Sercom Ports

NOTE: The Comms configuration file in the MGR program is used to set communication parameters for the **SAT** connected to the Sercom port (see **SECTION 2**, *3.1 COMMS Files*).

COM 2

7   8   9   10   11   12
TX TX   RX RX
+   -   -   +

SAT COM 2 Side of the Wiring Plug

COM 1

TX TX   RX RX
1   2   3   4   5   6   7   8   9   10 11 12

Pin 2   Wall Block   Pin 7
Pin 1
Pin 8

Pin 1 ⟶ Pin 8
Direction of Pin Run for Plug and Connector

NOTE: Communication parameters for the COM 2 port on the **SAT SIDE** are set up in the PORTS menu during local **SAT** programming

This wiring example shows an 8-conductor, reverse-wired cable, run between CC1 Sercom port 7 and the RJ-45 connector located on the wall block. Pin 1 on the wall block (designated as TX +) is now functionally RX + because of the reverse wired input. This wire is run to TX + on the COM 2 wiring plug, fulfilling the basic wiring requirement that TX + goes to RX +. Remaining wires are run in a similar manner (as shown) to satisfy RS-422 communication requirements. Had a "straight-" rather than a "reverse-wired" cable been used, the wiring from the wall block would be opposite that shown (see **Appendix I** if you need further clarification).

Wall Block Pin Designations

Pin 1	TX+	Pin 5	GND
Pin 2	TX-	Pin 6	Not Used
Pin 3	12VAC/DC	Pin 7	RX-
Pin 4	Non-Polar	Pin 8	RX+

NOTE: The terminal connections on the wall block are passive and functionally become whatever you connect to them. The wall block cap sometimes contains a pasted label which ascribes specific communication functions to each terminal. For a specific application, this might be alright but it can become confusing if you are using the wall block to do reverse-wiring and the functional description on the label doesn't match what you connect there.

2.0 VIDEO TIE LINES

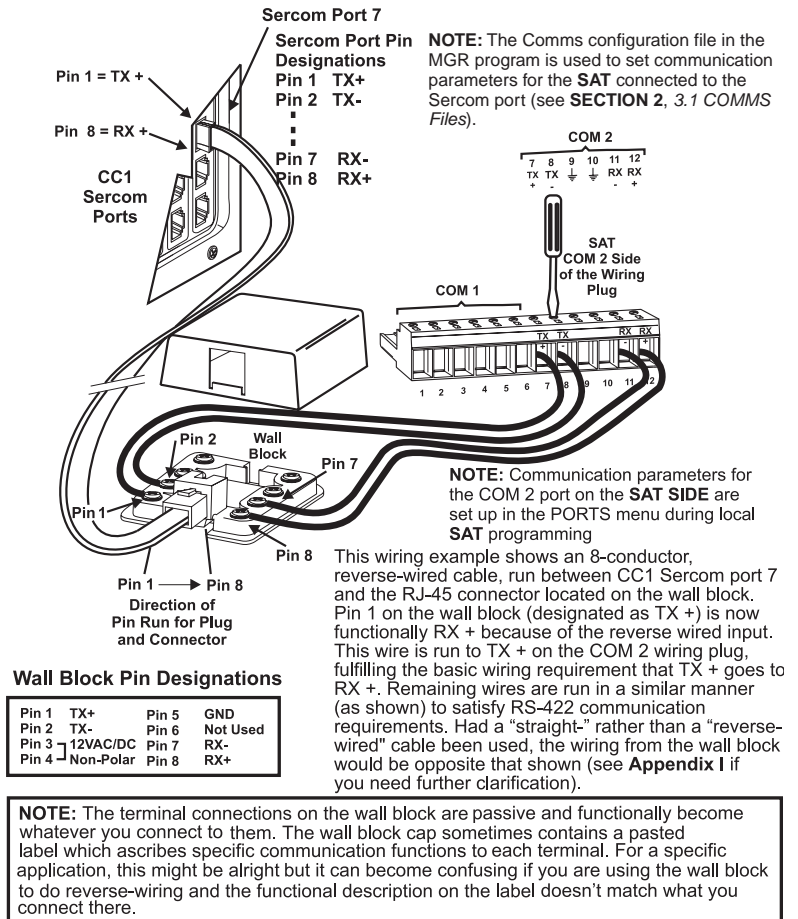In order for the **SAT** to fulfill its function as a Satellite of the 9760 system, video interconnects, in the form of tie lines, must be run between the **SAT** and the CM9760-MXB. The tie line–there must be at least one–has several uses. One function is to serve as a pathway for 9760 operators who want to call up satellite camera displays via their 9760 system keyboards. The other is to provide a pathway for the programmed display (on 9760-system monitors) of alarm-activated link cameras located on the **SAT SIDE** of the configuration.

2.1 9760 SIDE

The video tie lines coming from the **SAT** are connected to available, video input BNCs on the CM9760-MXB unit (see the NOTE in Figure 1-4). Specifically note the physical port to which each tie line is connected. You need this information later, when the Cameras and Link Cameras configuration files (flat files) are programmed on the **9760 SIDE** of the configuration. These inputs are treated differently so that they are recognized as tie lines and not just regular video inputs.

2.2 SAT SIDE

You must also allocate at least one monitor-out on the **SAT SIDE** of the configuration to tie line use. In most instances, you also need one monitor-out for local **SAT** operation and programming.

⚠ **IMPORTANT NOTE:** *The ratio of tie line to local monitor-out use is under user control, subject to the condition that at least one tie line exists and that the following rule for multiple tie line hookup is obeyed: If you use* **one** *tie line, it must be connected to the* **MON 1** *BNC. If you use* **two** *tie lines, they must be connected to the* **MON 1 and MON 2** *BNC monitor-outs, and so on.* **Tie lines must be connected in sequential, ascending order to the monitor-outs on the SAT. You may not "skip" around.** *Never configure a monitor-out for* **LOCAL** *use until all tie lines are configured first.*

CM9760-MXB

Proper tie line configuration also includes programming. On the **SAT SIDE**, the monitor menu is affected. On the **9760 SIDE**, flat files (COMMS, LINK CAMERAS, and CAMERAS) must be configured using the 9760 System Manager program.

Video Input Ports

Illustrated here, are two monitor-out connections (Mon 1 and Mon 2), run as tie lines to Matrix bay video inputs four and five, respectively.

CM9760-SAT

Monitor Out (Video Out)

NOTE: Tie line assignments begin with the Mon 1 output. It should be connected to the lowest numbered available video input on the MXB. The next tie line is connected to the next highest available video input, and so on. This is shown in the illustration.
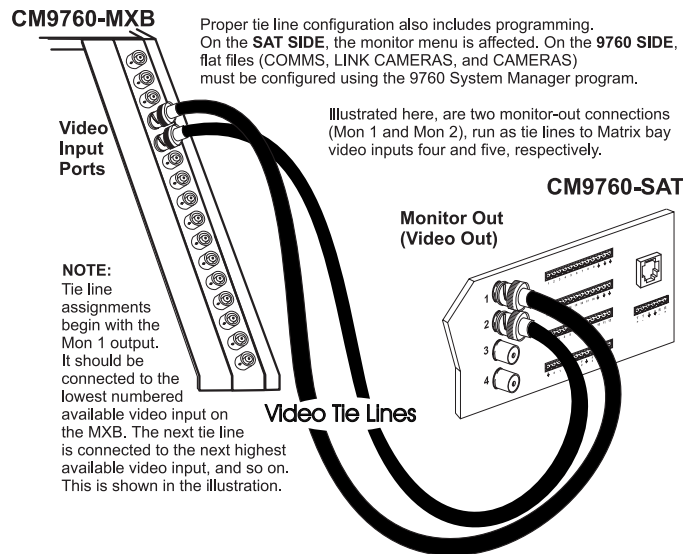
Video Tie Lines

Figure 1-4
Video Tie Line Hookup

3.0 ADDITIONAL SAT CONNECTIONS

If you want to operate and program from the local **SAT SIDE** of a system configuration, a number of additional devices and connections remain to be made. In order to view the results of local operations and program **SAT** menus, a local monitor is needed.
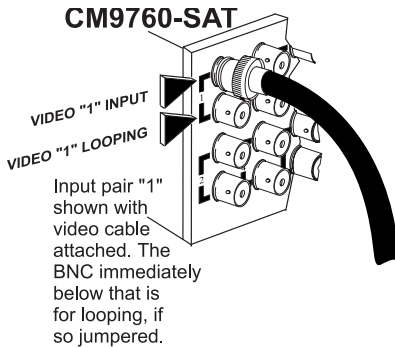
3.1 LOCAL MONITOR

The local Monitor is used to display link camera call-ups and switcher functions for local **SAT** operations. It is also used to display the main program menu and its sub-menus during **SAT** programming and setup. To install the local monitor:

1. Install the monitor.
2. Run a video output from the **SAT** to the installed monitor.

3.2 LINK OR SATELLITE CAMERAS (VIDEO INPUTS)

The CM9760-SAT can accommodate 16 video inputs that are individually jumper-selectable for terminated or looping operation. All video inputs are set to 75-ohm termination at the factory. See Table A for typical coaxial video cable and recommended distances. Use only coaxial cable specified for CCTV systems. Run the video cables from the cameras or camera receivers to the selected video inputs on the rear of the CM9760-SAT (the top connector for each input pair).

Figure 1-5
Local SAT Monitor

Local **SAT** operation and control functions are displayed here, including the menus for **SAT** programming. You should have at least one local display available to monitor local operations. Depending on your application, you can have up to three monitor-outs configured for local use. Monitor functions are chosen during programming (see **Section 2**, *Monitor Programming Menu–page 2 of 3*).

NOTE: If all monitor-outs are set up as tie lines, **SAT** menu programming is done from the 9760-KBD.

Figure 1-6
Link (Satellite) Camera Inputs

Input pair "1" shown with video cable attached. The BNC immediately below that is for looping, if so jumpered.

3.2.1 Looping Video Inputs

As stated at the beginning of this manual, the loop-thru option is available for each video input. If you want this option for any input, remove the top cover of the unit and reposition the jumpers according to the information provided in Figure 1-7.

Figure 1-7
Loop-through Configuration

Table A
Video Coaxial Cable Requirements

Cable Type	Maximum Distance
RG-59U	750 ft. (228.6 m)
RG-6/U	1,000 ft. (304.8 m)
RG-11/U	1,500 ft. (457.2 m)
Consult factory	Above 1,500 ft (457.2 m)

JP1 is associated with video input 1, **JP2** with video input 2, and so on.

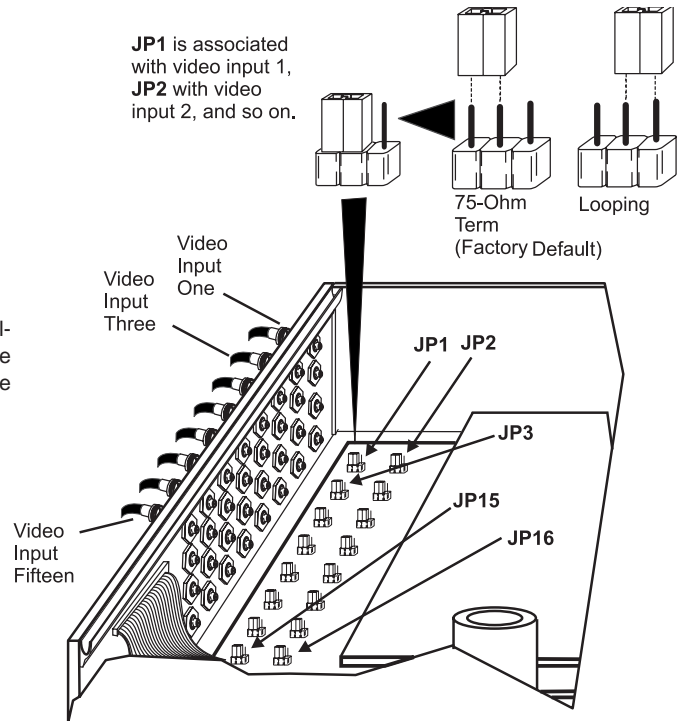75-Ohm Term (Factory Default)

Looping

Figure 1-8
Receiver Wiring and Control

3.3 RECEIVERS

If any camera you want to install is PTZ capable, then the receiver for that camera must be individually wired for power and control (dependent on type). The CM9760-**SAT** has built-in software that is individually selectable for each camera control type. The correct protocol is selected via menu choices when programming the Cameras menu for each individual input (see **Section 2**, *Camera Programming Menu-Page 2 of 2*). Allowed camera control types must be able to utilize one of two communication protocols for connection to the **SAT**. One control type is Coaxitron®. Coaxitron (standard or extended) receivers utilize the input video line as a path for sending control commands to the receiver. The other control type is RS-422 "P" protocol receivers that are wired independent of the video path. RS-422 command control connections originate at COM 1 on the rear of the **SAT** (see Figures 1 and 1-8).
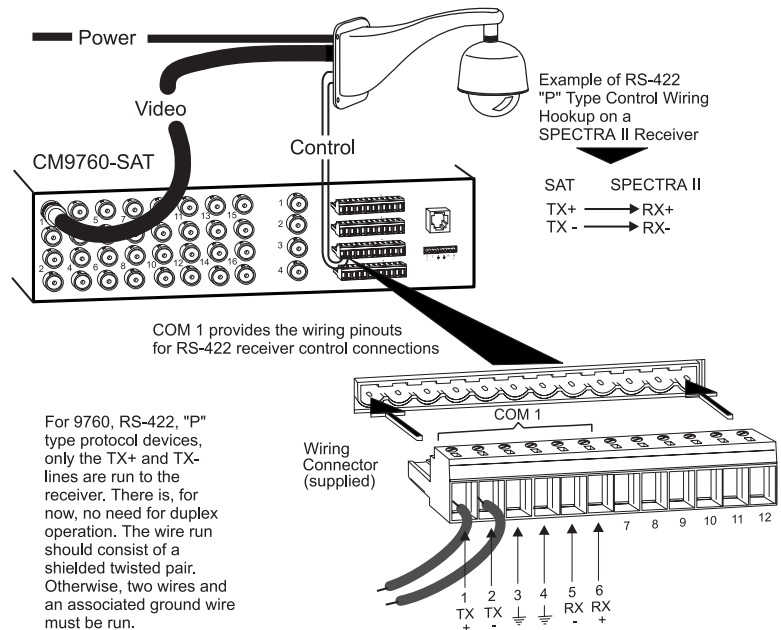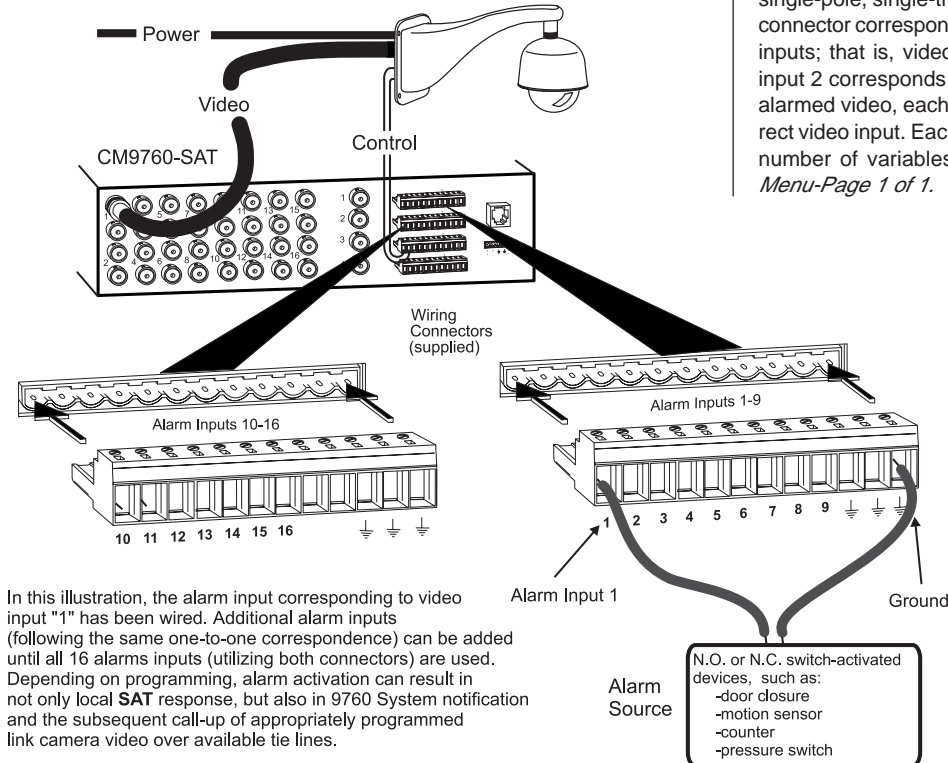
Power

Video

Control

CM9760-SAT

Example of RS-422 "P" Type Control Wiring Hookup on a SPECTRA II Receiver

SAT	SPECTRA II
TX+	→ RX+
TX -	→ RX-

COM 1 provides the wiring pinouts for RS-422 receiver control connections

For 9760, RS-422, "P" type protocol devices, only the TX+ and TX- lines are run to the receiver. There is, for now, no need for duplex operation. The wire run should consist of a shielded twisted pair. Otherwise, two wires and an associated ground wire must be run.

COM 1

Wiring Connector (supplied)

1 TX+ 2 TX- 3 4 5 RX- 6 RX+ 7 8 9 10 11 12

Figure 1-9
Alarm Wiring

Power

Video

Control

CM9760-SAT

Wiring Connectors (supplied)

Alarm Inputs 10-16

10 11 12 13 14 15 16

Alarm Inputs 1-9

1 2 3 4 5 6 7 8 9

Alarm Input 1

Ground

Alarm Source

N.O. or N.C. switch-activated devices, such as:
 -door closure
 -motion sensor
 -counter
 -pressure switch

In this illustration, the alarm input corresponding to video input "1" has been wired. Additional alarm inputs (following the same one-to-one correspondence) can be added until all 16 alarms inputs (utilizing both connectors) are used. Depending on programming, alarm activation can result in not only local **SAT** response, but also in 9760 System notification and the subsequent call-up of appropriately programmed link camera video over available tie lines.

3.4 ALARMS

The **SAT** has 16 alarm inputs, each designed for use with standard single-pole, single-throw (SPST) switches. The alarm inputs on the connector correspond, on a one-to-one basis, to the **SAT's** 16 video inputs; that is, video input 1 corresponds to alarm input 1, video input 2 corresponds to alarm input 2, and so on. To properly recall alarmed video, each alarm connection must correspond to the correct video input. Each must also be appropriately programmed for a number of variables. Refer to **Section 2**, *Alarm Programming Menu-Page 1 of 1.*

Connect the alarm inputs as illustrated in Figure 1-9. Alarms 1-9 use the indicated 12-pin connector (provided). For each alarm-video pair installed and accounted for, wire a return ground path. Utilize a ground connection located on the same connector on which your alarm input is wired. Proceed on a pair-by-pair basis until all video-associated alarm pairs are wired. Utilize both alarm wiring connectors, if necessary.

3.5 AUXS

There are three AUX outputs available through the control output wiring terminals located on the rear of the **SAT**. Aux operation and control are for local **SAT SIDE** use only. Aux ouputs cannot be controlled from the 9760-KBD. These outputs are used to operate external devices. Each output corresponds to a function key (F1-F3) on the KBD200/300/300V keyboard. The outputs can also be programmed to respond automatically to alarms. F1 is a Form C relay wired with a common (COM) and a normally open (N.O.) or normally closed (N.C.) contact. The other two outputs (F2 and F3) are open collector transistor drivers that drive TTL circuits or low-current relays. If you use an external relay, make sure that voltage and current requirements are well below maximum ratings. Exceeding specified values can permanently damage the transistors. During programming, configure the auxiliary outputs to agree with the type of equipment you are using. Refer to **Section 2**, *Auxiliaries Programming Menu-Page 1 of 1.*

Follow the examples illustrated in Figure 1-10 for wiring up the F1, F2 and F3 relay contacts. The instructions for wiring the F3 relay are the same as those illustrated for F2, if you substitute pins 8 and 9 for pins 6 and 7. When you finish wiring the auxiliary outputs, plug the wiring connector into the control outputs terminal strip.
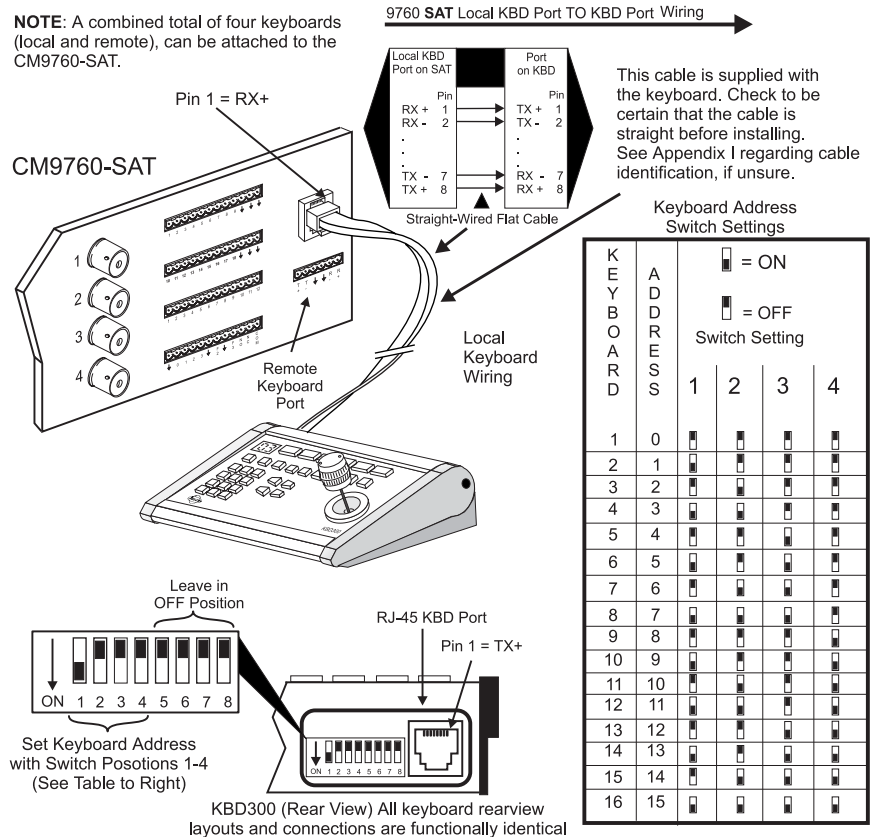

Figure 1-10
Aux Connections
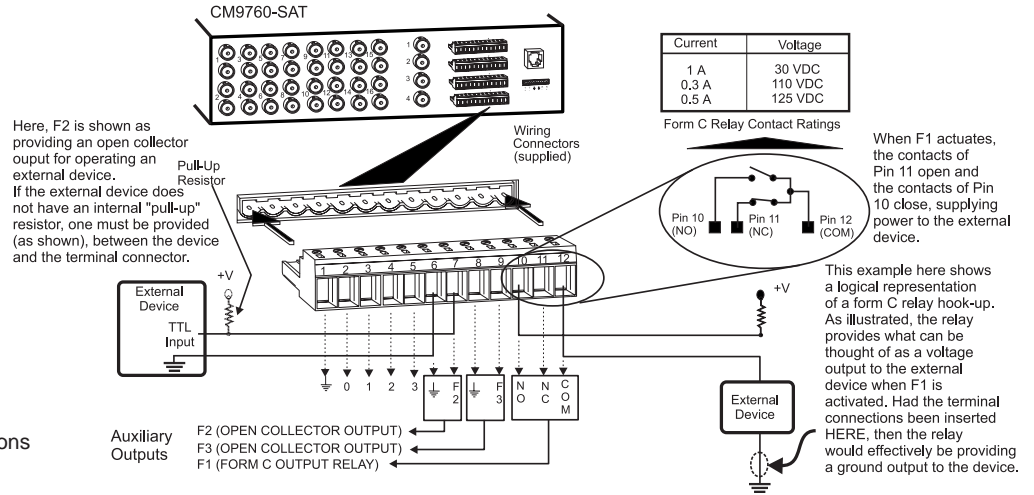
3.6 LOCAL KEYPADS

The KBD200/300 may be connected to the local keyboard port on the **SAT** and used (in conjunction with the local monitor) for local **SAT** operations and programming. The KBD300V cannot be used with the local keyboard port as the matrix display is not compatible with the voltages supplied there. Connect the keyboard to the local **SAT** keyboard port as indicated in Figure 1-11. Additional keyboards may be connected to the **SAT** unit using the remote keyboard port (see Figure 1 and reference **Appendix II** for information on wiring the remote port).

Figure 1-11
Wiring the Local Keypad Port

(This page intentionally left blank.)

You can program the CM9760-SAT from the **SAT SIDE**, using a local keyboard and monitor, or you can program the **SAT** from the **9760 SIDE**, using a 9760-KBD and a system monitor assigned to that operator. These two basic programming methodologies are not, however, mutually exclusive. By that, we mean, choosing to program from one location does not necessarily exclude programming from the other. Intermediate variations to programming on just one side or the other are possible.

Interspersed with these programming setups is the need to integrate what is going to be programmed where, and by whom, given the various configurations of equipment possible. In the illustrations and explanations below, we discuss some of these variations and indicate advantages, disadvantages and/or tradeoffs, if they exist, of each. We also describe how to reach the main **SAT** programming menu from the given programming location.

There are essentially three basic programming configurations. After we look at those, we discuss a program variation.

NOTE: *The illustrations in this section represent the functional relationships of the equipment mix needed to accommodate each programming choice that is discussed in the associated text.*

NOTE: *In those instances where we discuss procedures or actions yet to be covered in the manual, we either give a sufficiently adequate (but abbreviated) discussion, or refer you to the appropriate manual reference.*

1. **Programming Configuration I** – Program the **SAT** from the **SAT SIDE** only.

    This choice implies that at least one monitor-out line on the **SAT SIDE** is utilized as a local monitor and that you have a keyboard connected to the **SAT** for programming purposes (see Figure 2-1).

    (a) Initialize the keyboard to your local monitor (see **Section 2**, *1.0 SAT MENU PROGRAMMING)*
    (b) Press the PGM key on the KBD200 or 300.*
    (c) Enter the password (default **2899100**) and press the ACK key. This activates the main **SAT** programming menu.

Advantages: Local control and alarm notification operations are accessible on the **SAT SIDE** of the configuration. The system user can call up link cameras. Local **SAT** alarms can be viewed locally and/or automatically reported to the system user. Associated **SAT** alarm camera displays can be placed on tie lines for viewing on system alarm monitors (this is the primary configuration that we use when discussing **SAT** configuration, operation and programming). It encompasses all the elements that the **SAT** is designed to use and avoids programming from the system side, which is less efficient.

Disadvantages: From a system user viewpoint, local **SAT** operation and programming means someone must be stationed at the satellite location to fully utilize its functions. If you are interested only in alarm notification back to the system, you have, at most, only three tie lines available, instead of four.

*Although the KBD300V can be used for programming, we don't mention it here because (1) it can only be hooked up using the **SAT** *keyboard remote port and (2) it requires a dedicated local monitor-out line for its LCD display. The KBD300V is discussed in APPENDICES II and III.*

Figure 2-1
Programming Diagram One
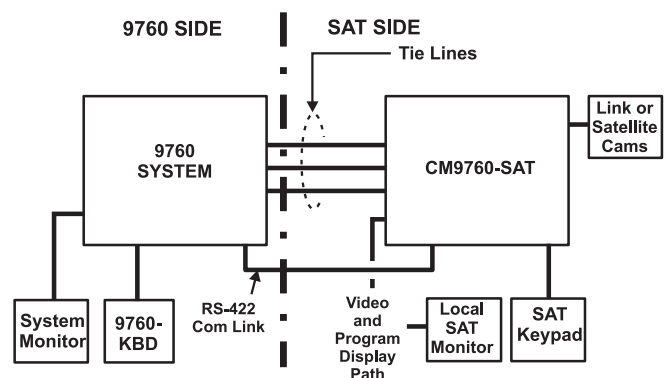
2. **Programming Configuration II –** Use the same configuration and program the **SAT** from the **9760 SIDE**.

The same equipment diagram used above is applicable here. Here, a conscious choice is made to the program from the **9760 SIDE** rather than the **SAT SIDE**. If you want, programming chores can be split between either side, although that is not recommended.

(a) Ensure no one else on the **9760 SIDE** is using an **SAT** tie line.

(b) Ensure that the following items are in place:

   1. The Link camera you plan to call** should already be included in the programmed Link Cameras file of the System Manager (see **Section 2**, *3.3 Link Cameras File*).

   2. The tie lines coming from the **SAT** to the MXB on the **9760 SIDE** should be identified and programmed into the System Manager's Cameras file (see **Section 2**, *3.2 Cameras File*).

(c) From the 9760 KBD, call up any link camera programmed in the Link Camera file (see **Section 3**, *2.1 Selecting Link [Satallite] Cameras*).

(d) Proceed to the DEF (define) sub-menu. (You may need to press the ESC key first, then press the DEF key). If this is the first time accessing that menu, enter the PIN (default **1234**).See Figures 3-20 and 3-22 in **Section 3**, *3.2 9760 System-SAT Alarm Response.*

(e) Next, enter **89** into the 9760 keypad and then press the PRST key (while still within the DEF menu). The main programming menu of the **SAT** appears on the monitor in front of you.

Advantages: You can program from the system side without losing the benefits of local **SAT** operation; therefore, someone not able to program the **SAT** could, at least, operate **SAT SIDE** functions.

Disadvantages: Before initiating programming from the **9760 SIDE**, you must ensure that no one, other than the programmer, is calling up any link cameras or otherwise utilizing any tie lines connected to the **SAT**. It's possible for the **SAT** programming menu to inadvertently appear on their monitor instead of the programmer's monitor.

*** A link camera must be called as part of the programming process here. It is not necessary that the camera called be connected to the **SAT**.*

---

3. **Programming Configuration III –**
   Programming from the **9760 SIDE** only.

The programming setup for this configuration is illustrated in Figure 2-2. Note that all monitor-outs on the **SAT SIDE** are used as tie lines that go to the **9760 SIDE**.

With this configuration, the minimum hardware requirements before programming can begin are as follows:

a. Monitor-outs from the **SAT** (tie lines) are connected to available video inputs on the matrix bay on the **9760 SIDE** (see the "NOTE" about tie line connection in **Section 1**, *2.0 Video Tie Lines*).

b. The COM line between the two pieces of equipment is in place.

c. You have a list of camera attributes for those cameras/receivers that are or will be attached to the **SAT**. It is not necessary for them to be physically attached to the **SAT** for programming to be possible. When attached, however, the programmed attribute for that input must correspond to the equipment connected.

d. The **SAT** is powered ON (plugged in).

e. The items listed in step 2b of the previous programming configuration (the Comms, the Cameras and the Link Cameras configuration files) are programmed and integrated into the 9760 System.
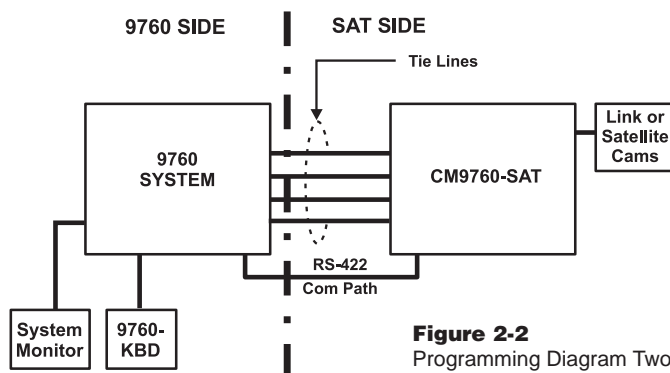

Figure 2-2
Programming Diagram Two

Once the 9760 System is initialized using the configuration files just mentioned, you can proceed to program the **SAT**.

f. Repeat steps 2c, 2d, and 2e of Programming Configuration II.

Advantages: No operator is required on the **SAT SIDE** of the system. All programming is done from the **9760 SIDE**. The number of tie lines available for operator access from the **9760 SIDE** of the configuration is at a maximum.

Disadvantages: You only use the **SAT** for its alarm reporting capabilities back to the head-end. Local satellite **SAT SIDE** operations are not possible.

4. **Unconventional Programming Configurations**

Here we want to make some comments and put forth some suggestion about how you might use variations to the previous programming configurations based upon how the 9760-SAT interface works. The following observations and general statements can be made:

1. As long as there is one tie line and a Com line in place between the **SAT** and the 9760 System, all attributes of **SAT** configuration can be programmed from the **9760 SIDE** via a preset call.

2. Normally, you should not initialize a keyboard (**SAT SIDE**) using a monitor-out line that has been configured as a tie line. However, under certain circumstances, you might want to do this. The result of this action (from the **SAT SIDE's** point of view) is that a monitor on the **9760 SIDE** is used as a "substitute" local monitor for programming the **SAT**. The programming itself, however, is done from the **9760 SIDE.** Doing this allows one to program from the **9760 SIDE** without using a preset call. Unfortunately, this can only be done if the operators on both sides of the configuration can physically talk to each other during the programming process because the **SAT SIDE** must initiate and exit the programming mode based on queues received from the **9760 SIDE**.

3. Each side of the 9760-SAT configuration can be programmed independent of the other. Neither has to be physically connected to the other for programming to be done as long as the programmed parameters of each match the physical parameters of the final equipment configuration. System 9760-SAT related files (Comms, Link Cameras and Cameras) are programmed only from the **9760 SIDE** of the configuration. **SAT** menu software, however, can be programmed from either side of a configuration.

4a. Programming Variation Example: 9760-SAT Programming Minus Preset Call

This scenario illustrates the situation referenced in point 2, above.

The rationale for using this variation might be:

◆ The local **SAT** programmer is not sure of the correct parameters to enter; or,

◆ The local **SAT** programmer wants certain aspects of an operational or reprogrammed **SAT** to be checked by supervisory personnel located on the **9760 SIDE** of the configuration; or,

◆ The programmer on the **SAT SIDE** might be unavailable; no one on the **9760 SIDE** remembers the preset call function or remembers how to use it, and so on.

Proceed as follows:

1   From the **9760 SIDE**, ensure that no one, other than the person doing the programming, is using a tie line for any purpose.

2.   Call up a satellite camera to a viewable system monitor. Use the logical number for the referenced camera.

> **NOTE:** *The operator on the* **9760 SIDE** *and on the* **SAT SIDE** *must have some independent means of communicating with each other.*
>
> **NOTE:** *It is not necessary for the called camera to actually be attached on the* **SAT SIDE**. *All you are doing here is tying up a tie line to your reference monitor so that anything put on the tie line can be viewed from that display.*

a.   **Initialize or reinitialize (as the case may be) the KBD on the SAT SIDE**; use a monitor-out number that has been allocated as a tie line.

> **NOTE:** *More than likely, you would use MON 1, as the object here is to match the monitor-out line initialized on the* **SAT SIDE** *with the video tie line secured or referenced on the system side in step 2. The 9760 system normally grabs the first tie line available. Since no tie lines are allocated for use but the one we called, it should be the one connected to the MON 1 output from the SAT. This tie line should correspond to the first video input configured in the Cameras file as a tie line for the SAT.*

b.   On the **SAT SIDE**, enter program mode as usual:

1)   Press the PGM key

A "P" appears on the KBD LED display.

2)   Enter the password (default **2899100**) and ACK it.

c.   The program menu should appear on the system-side monitor selected in step 2. The operator on the **9760 SIDE** can now check, correct, add, subtract or otherwise change all attributes of the **SAT** menu system. When all changes are made and the operator attempts to exit the menu using choice (9) in the menu, the display reverts to the **SAT's** program PASSWORD menu, which flashes intermittently on the monitor display. At this time, the only way to exit the program is for the operator on the **SAT SIDE** to press the ACK key. Once this is done the **SAT** operator should immediately reinitialize the **SAT** keyboard to the local **SAT** monitor display.

**Figure 2-3**
Programming Diagram Three

INFORMATION BOX

The coordination issue in this example could be avoided if you ran a KBD200/KBD300 from the remote keyboard port located on the rear of 9760-SAT back to the head-end, or **9760 SIDE** of the configuration. Then program entry and exit could also be handled by the 9760 operator. In essence, this would amount to doing local **SAT SIDE** programming from the **9760 SIDE** of the configuration. Program entry and exit would use the KBD300 and **SAT** programming would use the 9760KBD. See Figure 2-3.

COMMENTS

With reference to **Figure 2-3** and the **Information Box** above, we can make the following observation:

To persist in programming the **SAT** from a 9760 keyboard when a KBD300 is available on the **9760 SIDE** is just a convoluted version of **Programming Configuration I**. Even so, there are some advantages to consider for this configuration:

1.   You can program the **SAT** from the **9760 SIDE** without using a preset call function.

2.   You can use the KBD300, rather than the 9760 keyboard for **SAT** programming. The KBD300 is more efficient for programming **SAT** menus.

3.   You can still control local **SAT** functions from the **9760 SIDE** and eliminate the need for a downstream operator.
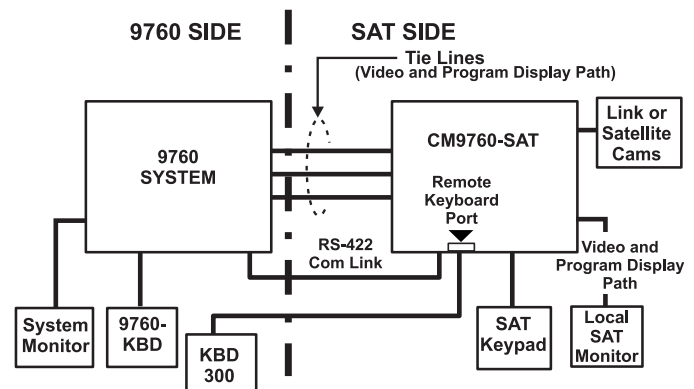
1.0 SAT MENU PROGRAMMING

Prior to programming the **SAT**, check to ensure that the bulleted items in the two lists below are either taken care of or that the required information is readily at hand**. All items in the first list are required.

> **The checklist below is based on "*Programming Configuration I*" located in **Section 2's** preliminary discussion.

- The SAT-9760 communication interface is in place and correctly wired (see **Section 1**, *Physical Installation, 1.0 Com Connection*).

- Identify and make a list of the monitor-out connections on the **SAT** that are going to be used as tie lines to the CM9760-CC1.

- Make sure you have a monitor attached to the **SAT** that you can use as your local programming monitor.

- Ensure that a KBD200 or KBD300 (with satellite software) is attached to the local keyboard port on the **SAT**.

It is important to have the information for the following items before programming the attributes of the item in question. Programming menus for devices that connect to the **SAT** can take place before the device is attached, but all devices configured and referenced in the menus should be connected prior to system operation. Once the system is operational, programming menus for the **SAT** can be accessed and edited for currently attached equipment. Care must be taken, however, when making these changes or when attaching additional equipment. If you make menu choices or device additions that affect the **9760 SIDE** of the 9760-SAT interface, remember that you may also have to change existing configuration files because of these changes. These, in turn, might require interruption of the 9760-SAT communication link and anything else connected to the 9760 system while new configuration files are loaded.

- Ensure that video inputs to the **SAT** (link or satellite cameras) are identified as to type (fixed or PTZ). If the receiver is PTZ capable, the receiver control type should be known (coaxitron or "P" type [RS-422]).

- Hard-wired alarm and aux configurations.

Figure 2-4
Initialization Screen

LOCAL KEYBOARD INITIALIZATION

Initialization is necessary after power is first applied to the keyboard (**SAT SIDE**), or if power is cycled on the unit or if an operator-induced reset is invoked (see **Section 5**, Appendix V, *Default Reset Assignment*). When power is applied, the LCD display flashes momentarily, and then goes blank. Initialization consists of entering the # of the local monitor in the keypad and pressing the MON key. You can do this immediately after power is applied or you can wait five seconds and then enter the # and press the MON key. In either case, the result is a 5 second delay before the display of camera input 1 (by default) appears on the monitor along with other character display information (see Figure 2-4).

The 01 is the camera number. CAM1 is the default camera title. Other information that might appear (time/date information, for example) does not appear now (the first time through) because of program menu defaults.

If you have a local monitor attached, but do not yet have any cameras attached, this will not prevent you from programming the unit. Your programming screens will appear on the local monitor as soon as the PGM key is pressed, as you will soon see. Programming **SAT** menus can now proceed.

A WORD ABOUT THE MENU DISCUSSION LAYOUT

The menu discussion is split into three columns. At the top, far right side of each page, the **SAT** main menu is displayed and the sub-menu under discussion is highlighted. Tagged, drop-down arrows below that, indicate approximately where, within the sub-menu being programmed, that the referenced sub-menu is discussed. These comments appear in the middle column. The far left column displays a KBD300 template, whose keyboard movements are highlighted, to indicate the keyboard movements necessary to invoke the program operation(s) being discussed in the adjacent columns. These conventions are illustrated below.

Figure 2-5
Menu Discussion Conventions

Numbered and text referenced keys mentioned in the discussion are highlighted on the KBD template.

Arrows are a visual que to indicate direction of joystick movement

Main menu displayed at the top right-hand side of each page. You can use this fact to quickly locate a specific programming menu.

Menu tags highlight location and content of center column discussion.

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
      1. CAMERAS
      2. MONITORS
      3. TIME/DATE
      4. ALARMS
      5. PORTS
      6. AUXILIARIES
      7. PASSWORD
      8. ACCESS
      9. EXIT
```

Up
Left   Right
Down

ACK
4

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.01
   SELECT:
      1. CAMERAS
      2. MONITORS
      3. TIME/DATE
      4. ALARMS
      5. PORTS
      6. AUXILIARIES
      7. PASSWORD
      8. ACCESS
      9. EXIT
```

SUB-MENU

Move up and down the menu tree by moving the joystick in the desired direction of travel--"**UP**" or "**DOWN**".

Activate a menu selection by pressing the "**ACK**" key or moving the joystick to the right.

Alternately, you may go directly to a menu by entering its numeric value in the keypad.

Cursor Location (# is flashing)

Center column discusses content of menu screen located (for the most part) to its immediate left.


INFORMATION BOX

Programming **SAT** menus from the CM9760-KBD.

All columns in the menu discussion layout except the far left one, where keypad movement on a KBD300 is illustrated, are applicable to anyone programming direct from the 9760 keyboard.

The information contained in the sub-sections entitled *Programming Configuration II* and *Programming Configuration III*, located in **SECTION 2**, *PRELIMINARIES,* instructs the 9760-KBD user on the steps to follow in order to arrive at the **SAT** main programming menu (see the Camera Progamming Menu – Page 1 of 2).

The joystick affects cursor movement and some sub-menu selections. Otherwise, the "Iris" Open/Close button effects item choices. Unlike the KBD300 keypad, you cannot revert to the main menu using a **PGM** key and you cannot choose a numbered selection by pressing a "numbered" key, nor can you **ACK** an item: you have no "shortcut" keys. But you can program the menus. Perhaps not as quickly, but you still can get the job done.
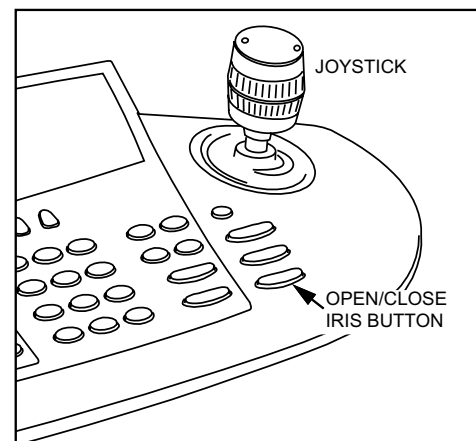
JOYSTICK

OPEN/CLOSE IRIS BUTTON

CAMERAS

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
SELECT:
1. CAMERAS
2. MONITORS
3. TIME/DATE
4. ALARMS
5. PORTS
6. AUXILIARIES
7. PASSWORD
8. ACCESS
9. EXIT
```

```
PELCO VIDEO SWITCHER

MODEL CM9760-SAT V1.03

ENTER PASSWORD: ********
```
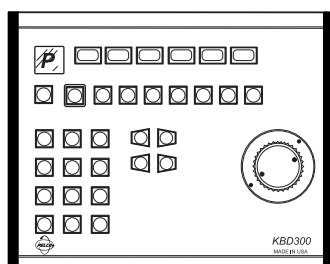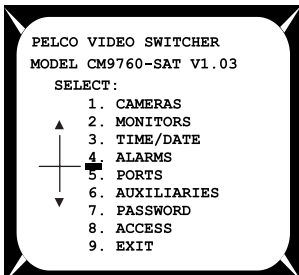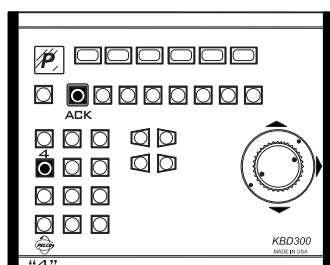
(Cursor Position)
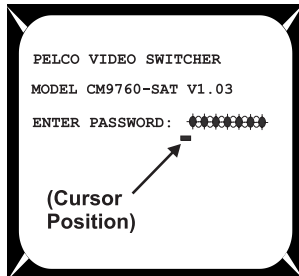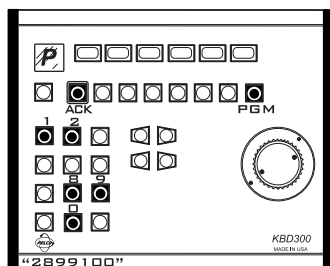
Pressing the **PGM** key on the keypad brings up the program access screen. Enter in the default password **"2899100"** using the indicated keypad numbers, then press the **ACK** key. The default password can be changed later if you want. If the password you enter is incorrect, your original entry screen will appear, along with the line "Password not accepted."

PASS WORD

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
     1. CAMERAS
     2. MONITORS
     3. TIME/DATE
     4. ALARMS
     5. PORTS
     6. AUXILIARIES
     7. PASSWORD
     8. ACCESS
     9. EXIT
```
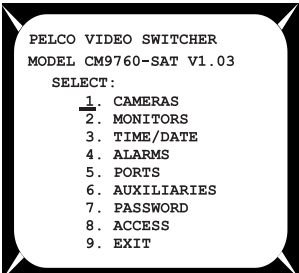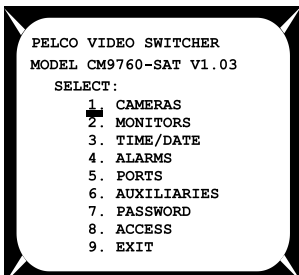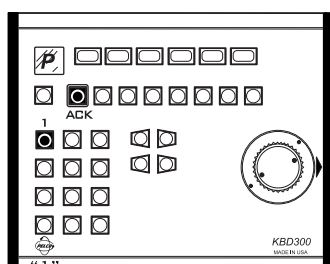
The main menu consists of eight programmable sub-menus and a ninth sub-menu, which "EXITS" the main menu. A flashing number "1", indicated by the bold underline, is the menu item default cursor position. for the opening screen display,

MAIN MENU

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
     1. CAMERAS
     2. MONITORS
     3. TIME/DATE
     4. ALARMS
     5. PORTS
     6. AUXILIARIES
     7. PASSWORD
     8. ACCESS
     9. EXIT
```
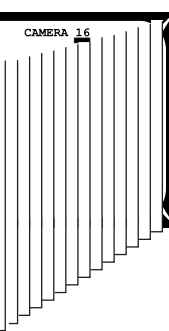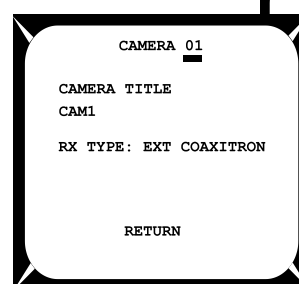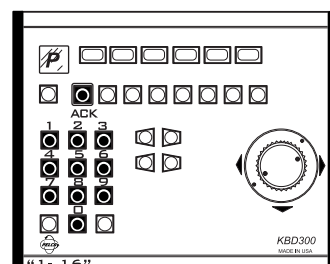
Move up and down the menu tree by moving the joystick in the desired direction of travel--"UP" or "DOWN".

Activate a menu selection by pressing the **ACK** key or moving the joystick to the right.

Alternately, you may go directly to a menu by entering its numeric value in the keypad, for example "**4**", to access the **ALARMS** menu.

SUB-MENU

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
     1. CAMERAS
     2. MONITORS
     3. TIME/DATE
     4. ALARMS
     5. PORTS
     6. AUXILIARIES
     7. PASSWORD
     8. ACCESS
     9. EXIT
```

Since we are discussing program menus in sequential order, we **ACK** or "joystick" the "**1**" selection or press "**1**" on the keypad.

CAMERA

```
                    CAMERA 16
        CAMERA 01

        CAMERA TITLE
        CAM1

        RX TYPE: EXT COAXITRON




               RETURN
```

The program menu for camera 01 appears by default. Scroll forward and backward thru the available camera field (1 - 16), using the joystick or go directly to the camera menu desired by entering its numeric value in the keypad.
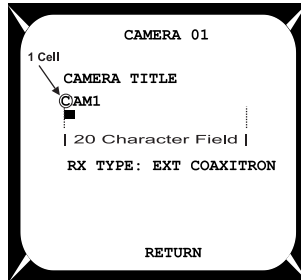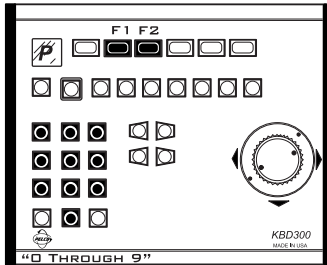
Once the camera to be programmed is selected, move the joystick down to proceed to the camera title field.

CAMERA RANGE

CAMERAS

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
        SELECT:
    1.CAMERAS
    2. MONITORS
    3. TIME/DATE
    4. ALARMS
    5. PORTS
    6. AUXILIARIES
    7. PASSWORD
    8. ACCESS
    9. EXIT
```

CAMERA TITLE

Use **F1** and **F2** to scroll thru the alphanumeric character set for each individual cell you want to program or edit in the 20-character title field.

```
F1  F2
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 5 6 7 8 9
```

To move from one cell to the next or one further down the line, use the joystick. Numeric values can also be selected directly by entering the number desired in the keypad; however, selecting a numeric character in this manner immediately moves the selection cursor to the next cell in the character field. Once the **CAMERA TITLE** is programmed, move to **RX TYPE** field using the joystick.

CAMERA 01

1 Cell

CAMERA TITLE

CAM1

| 20 Character Field |

RX TYPE: EXT COAXITRON

RETURN

"0 THROUGH 9"
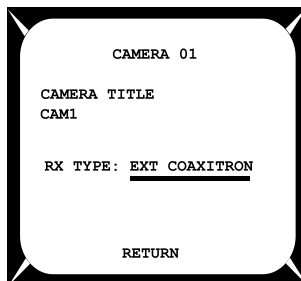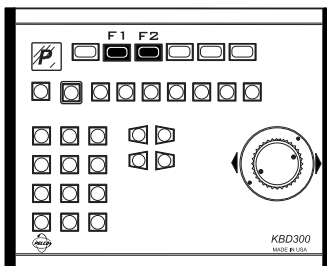
RECEIVER TYPES

Cycle through the receiver types with the joystick or **F1/F2** and choose the one appropriate for the controller being used.

CAMERA 01

CAMERA TITLE
CAM1

RX TYPE: EXT COAXITRON

RETURN

```
EXT COAXITRON
422P
422D
STD COAXITRON
```

RETURN
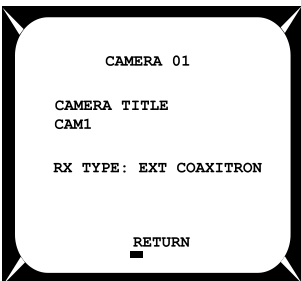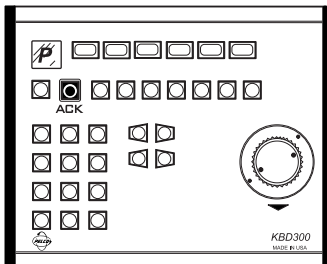
Press the **PGM** key or joystick to the **RETURN** field and press the **ACK** key to return to the main menu if all cameras have been programmed.
Otherwise, joystick to the camera field and select another camera to program until you are finished.

CAMERA 01

CAMERA TITLE
CAM1

RX TYPE: EXT COAXITRON

RETURN

ACK

Monitor Programming Menu-Page 1 of 3

MONITORS

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
         SELECT:
         1. CAMERAS
         2. MONITORS
         3. TIME/DATE
         4. ALARMS
         5. PORTS
         6. AUXILIARIES
         7. PASSWORD
         8. ACCESS
         9. EXIT
```

MONITOR SELECT

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
         SELECT:
         1. CAMERAS
         2. MONITORS
         3. TIME/DATE
         4. ALARMS
         5. PORTS
         6. AUXILIARIES
         7. PASSWORD
         8. ACCESS
         9. EXIT
```
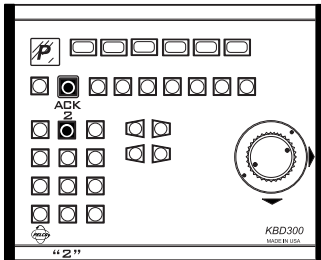
To select the monitor submenu, enter "2" in the keypad or, alternately, navigate to the **MONITORS** menu selection using the joystick, then press the **ACK** key or move the joystick to the right.

MONITOR RANGE

```
MONITOR 04

MONITOR 01

ALARM TYPE: OFF
ALARM DWELL: 02
DISPLAY: --
T/D DISPLAY: --
VIEW: TIE LINE

1. CAMERA SEQUENCE
2. ALARM ENABLE
3. POSITION DISPLAY

   RETURN
```

Scroll thru the available monitors (1 - 4) using the joystick or enter the monitor # you want into the keypad.
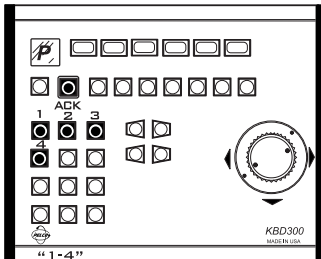
ALARM TYPE

```
MONITOR 01

ALARM TYPE: OFF
ALARM DWELL: 02
DISPLAY: --
T/D DISPLAY: --
VIEW: TIE LINE

1. CAMERA SEQUENCE
2. ALARM ENABLE
3. POSITION DISPLAY

   RETURN
```

Once your monitor is chosen, proceed to program it. Advance to **ALARM TYPE** using the joystick. Cycle through the available alarm types (listed below), using the joystick or the

F1/F2 key and choose the alarm response desired:

OFF- monitor will not respond to any alarm

AUTO- alarm is onscreen for 10 seconds or as long as alarm contact is held plus 10 seconds.

MANUAL- alarm remains onscreen until operator acknowledges alarm with **ACK**.

Proceed to **ALARM DWELL**

ALARM DWELL

```
MONITOR 01

ALARM TYPE: OFF
ALARM DWELL: 02
DISPLAY: --
T/D DISPLAY: --
VIEW: TIE LINE

1. CAMERA SEQUENCE
2. ALARM ENABLE
3. POSITION DISPLAY

   RETURN
```

Enter a number for **ALARM DWELL** between **1** and **99**. This is the period of time (in seconds) that the camera associated with an alarm will remain on the monitor in the event multiple alarms are received.

Proceed to **DISPLAY**:

CHAR DISPLAY

```
MONITOR 01

ALARM TYPE: OFF
ALARM DWELL: 02
DISPLAY: --
T/D DISPLAY: --
VIEW: TIE LINE

1. CAMERA SEQUENCE
2. ALARM ENABLE
3. POSITION DISPLAY

   RETURN
```
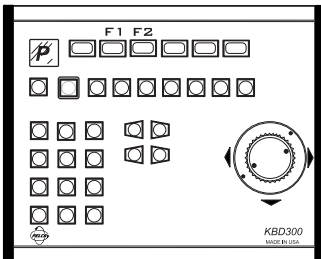
Character **DISPLAY** is either ON or OFF

- - = **OFF**

☀ = **ON**

If cameras are to be viewed from the 9760 system, it is good to turn the **SAT** character display **OFF** so that system-monitor character data is not overlayed with character data from the **SAT** system when a 9760 operator calls a link camera.
Use **F1/F2** or the indicated joystick movement to toggle the choice.
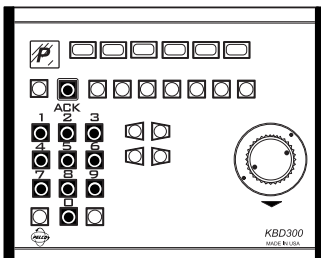
Proceed to **T/D DISPLAY**

TIME/DATE DISPLAY

```
MONITOR 01

ALARM TYPE: OFF
ALARM DWELL: 02
DISPLAY: --
T/D DISPLAY: --
VIEW: TIE LINE

1. CAMERA SEQUENCE
2. ALARM ENABLE
3. POSITION DISPLAY

   RETURN
```

The time/date display is defaulted in the **OFF** position. The **SAT** does not synchronize directly with system time (see the **TIME/DATE** menu for further explanation). If you plan to display **SAT** time and date, use **F1/F2** or the indicated joystick movement to toggle the choice.

- - = OFF

☀ = ON

Proceed to VIEW:

```
         MONITOR 01


  ALARM TYPE: OFF
  ALARM DWELL: 02
  DISPLAY: --
  T/D DISPLAY: --
  VIEW: LOCAL

  1. CAMERA SEQUENCE
  2. ALARM ENABLE
  3. POSITION DISPLAY


        RETURN
```
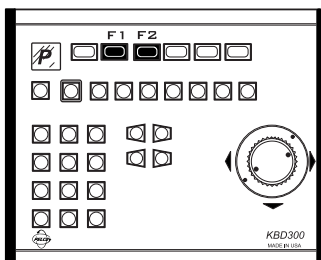


```
         MONITOR 01


  ALARM TYPE: OFF
  ALARM DWELL: 02
  DISPLAY: --
  T/D DISPLAY: --
  VIEW: LOCAL

  1. CAMERA SEQUENCE
  2. ALARM ENABLE
  3. POSITION DISPLAY


        RETURN
```
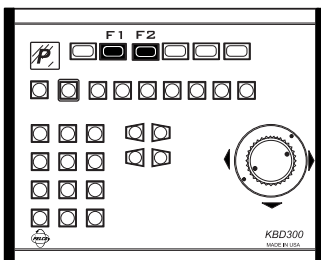


```
MONITOR 01 SEQUENCE MENU
ENTRY 1-8      ENTRY 9-16
CAM DWL PRE   CAM DWL PRE
01  02  00    09  02  00
02  02  00    10  02  00
03  02  00    11  02  00
04  02  00    12  02  00
05  02  00    13  02  00
06  02  00    14  02  00
07  02  00    15  02  00
08  02  00    16  02  00

        RETURN
```



```
MONITOR 01 SEQUENCE MENU
ENTRY 1-8      ENTRY 9-16
CAM DWL PRE   CAM DWL PRE
01  02  00    09  02  00
02  02  00    10  02  00
03  02  00    11  02  00
04  02  00    12  02  00
05  02  00    13  02  00
06  02  00    14  02  00
07  02  00    15  02  00
08  02  00    16  02  00

        RETURN
```



```
MONITOR 01 SEQUENCE MENU
ENTRY 1-8      ENTRY 9-16
CAM DWL PRE   CAM DWL PRE
01  10  01    09  05  --
01  10  02    10  02  --
01  10  03    11  02  --
01  10  04    07  10  02
02  02  --    --  --  --
03  02  --    --  --  --
07  16  10    --  --  --
08  12  --    --  --  --

        RETURN
```

MONITORS

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
   1. CAMERAS
   2. MONITORS
   3. TIME/DATE
   4. ALARMS
   5. PORTS
   6. AUXILIARIES
   7. PASSWORD
   8. ACCESS
   9. EXIT
```
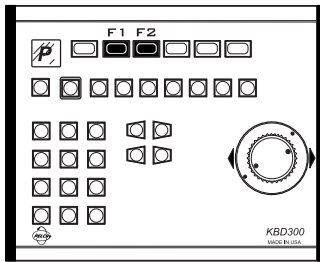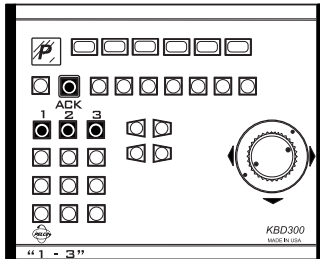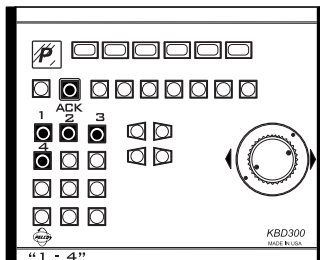
VIEW DISPLAY

The **VIEW** display presents two choices: **LOCAL** or **TIE LINE**. Default is TIE LINE. If you plan to operate **SAT** functions on the **SAT SIDE** of the configuration, you need at least one monitor-out connection configured as **LOCAL**. The remaining line(s) can be configured as desired, but you must also have at least one monitor-out configured and as a tie line line to connect to the CM9760-MXB for **SAT** satellite operation to be complete. The physical order of monitor-out lines in relation to their function is discussed in **Section I**, *Video Tie Lines*. If all monitor-outs are run back to the head-end (the CM9760-MXB), then all monitor-outs are configured as tie lines.
Toggle between the choices as indicated.

Joystick down to the **1**, **2**, or **3** selection entries and joystick-select or press the **ACK** key. Alternately, while in any numerical field, you can enter the desired selection directly by entering its number in the keypad.
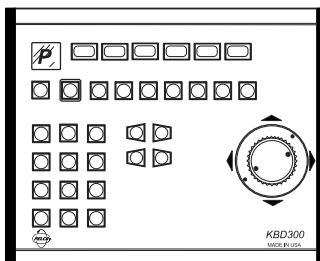We discuss each, in turn, so we select "**1**" first.

CAM SEQUENCE SELECT

MON-CAM SEQUENCE

The values entered here affect sequence commands issued from a local **SAT** keypad to the monitor in question. The camera order and amount of time each is displayed (less the time required to reach preset position if PTZ capable) are programmed here. A camera number can be entered more than once. Sequence through the available monitors to be programmed with the joystick or enter the monitor number in the keypad. There are 16 programmable camera positions in the table available to each monitor being programmed. The camera display available at each position has more choices to program if it is PTZ capable. For any camera, a **DWL** time can be entered. For PTZ capable cameras a **PRE** number can also be entered. (During a sequence operation the preset for the camera will be called as part of the sequence). **DWL** and **PRE** entries are defined as follows:

CAM

DWL-dwell is the amount of time a camera view (for fixed cameras) will appear on the monitor in question, while **DWL**, used in conjuction with a camera for which **PRE** is applicable, is the view time left after subtracting the time for the called camera to reach its preset position. This must be taken into account when entering **DWL** times. The camera must complete the preset and rest before the next **PRE** is called.

DWL

PRE-this is a pre-programmed pan and tilt position for a specific camera, which is recalled by reference to a numerical value set up during preset programming
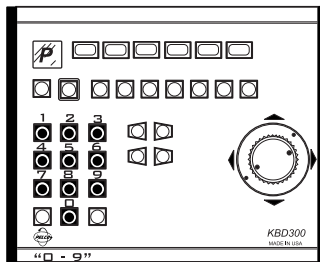
PRE

Navigate to, through and around the **CAM DWL** and **PRE** columns using the joystick. The unit is shipped from the factory with sequence table entries set as shown. The same camera may be entered more then once in a sequence table.

CAMERA SEQUENCE EXAMPLE

In the **CAM** column, enter a camera number, then joystick to the **DWL** column and enter a number (seconds) between **1** and **99**. If the camera is pan and tilt capable and can be called by a preset, go to the **PRE** column and enter a **PRE** number (**1-99**) if you want the preset to be called during a sequence. Continue until all table entries desired are programmed for this monitor. Only program monitors whose **VIEW** setting is set to **LOCAL**. That is, do not program monitor-outs associated with tie line use.

On the left is a sample sequence table for <u>Monitor 01</u>. Highlite and **ACK** the **RETURN** selection and navigate to menu choice 2, **ALARM ENABLE**.

MONITORS

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
   1. CAMERAS
   2. MONITORS
   3. TIME/DATE
   4. ALARMS
   5. PORTS
   6. AUXILIARIES
   7. PASSWORD
   8. ACCESS
   9. EXIT
```

```
MONITOR 01 ALARM ENABLE

ALM SET ALM  SET ALM SET

1   ‑‑   7    *    13  ‑‑
2   ‑‑   8   ‑‑    14  ‑‑
3   ‑‑   9   ‑‑    15  ‑‑
4   ‑‑   10  ‑‑    16  ‑‑
5   ‑‑   11  ‑‑
6   ‑‑   12  ‑‑

        RETURN
```

The **ALARM ENABLE** menu allows you to choose the cameras that this monitor will respond to when an alarm event occurs. The alarm event is signaled by the external contacts on the rear panel of the **SAT**. Use the joystick to move around just as you did in the sequence menu. To activate a response display to this monitor for an alarm event, use the **F1/F2** keys to toggle between "*", to activate and "--", to deactivate. Remember that only global alarm dwell times can be set for alarms. These entries are at the beginning of the monitor menu (see Page 1 of 3); individual settings for each contact or alarm are not available. To return to the monitor menu, joystick-select or **ACK** the **RETURN** entry. Proceed to choice 3, **POSITION DISPLAY**.

ALARM
ENABLE

CAM-MON
RESPONSE

NOTE: The alarm settings in the monitor menu (including alarm enable) for monitor 04 (LOCAL MODE ONLY) are the Aux "alarm follow" sources referenced when configuring alarm activation of AUXs (see Aux Programming Menu Page 1 of 1).

```
    Use keys or joystick
     01/01/00  12:00:00PM
```

This item selects the display position on the monitor where camera displays, if enabled for this monitor, will appear. Camera-monitor selection is digitally controlled by the keyboard. Use the appropriate keys or the joystick to position the display where you would like it to appear on the monitor. When finished, press the **ACK** key to return to the monitor menu. This completes the menu selections available for Monitor 1. Repeat the process to program menu selections for any remaining monitors.

POSITION
DISPLAY

TIME/DATE

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
        SELECT:
        1. CAMERAS
        2. MONITORS
        3. TIME/DATE
        4. ALARMS
        5. PORTS
        6. AUXILIARIES
        7. PASSWORD
        8. ACCESS
        9. EXIT
```
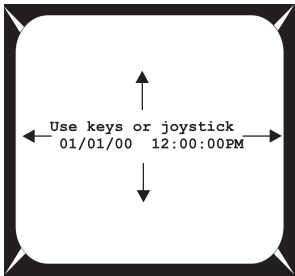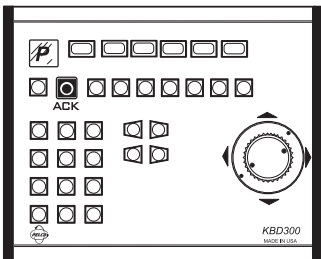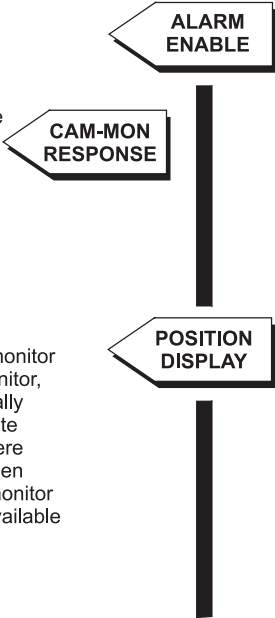
TIME-DATE MENU SELECT

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
        SELECT:

        1. CAMERAS
        2. MONITORS
        3. TIME/DATE
        4. ALARMS
        5. PORTS
        6. AUXILIARIES
        7. PASSWORD
        8. ACCESS
        9. EXIT
```
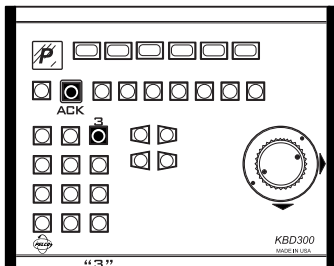
To select the **TIME/DATE** submenu, enter the number 3 in the keypad or, alternately, navigate to the **TIME/DATE** selection using the joystick, press the **ACK** key or toggle the joystick to the right.

NOTE: As stated on page 1 at the bottom of the Monitor Programming menu, the T/D display is turned off by default for the reasons stated there. If you activate the T/D display for any monitor, adjust the time/date values against a main, system monitor display.

DATE-STYLE ENTRIES
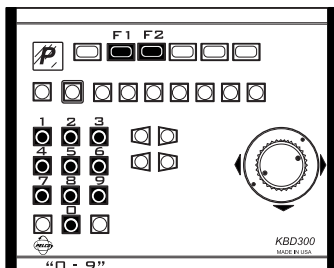
```
   SET TIME / DATE


DATE:   APR-06-00
TIME:   12:06:00 PM
STYLE:  MMM-DD-YY
TYPE:   12 HOUR


        SET CLOCK
```

Navigate to the months,days or years column and use the **F1/F2** keys in the date column to cycle thru your choices; use the keypad to punch in the number desired for day and year.

```
MMM-DD-YY
JAN ▲    1   00
FEB
MAR  F1
APR
JUN  F2
JUL
AUG
SEP
OCT
NOV  │    ▼    ▼
DEC ▼    31   99
```

The order in which entries are made is based on the **STYLE** setting chosen in the menu; the month entry, which is **MMM** in this example, can also be of the form **MM**, (using #'s 01-12).

No matter how or in what order information is entered here, the date information will automatically change to reflect the **STYLE** setting chosen.

TIME-STYLE ENTRIES
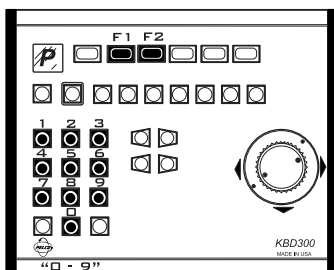
```
   SET TIME / DATE


DATE:   APR-06-00
TIME:   12:06:00 PM
STYLE:  MMM-DD-YY
TYPE:   12 HOUR


        SET CLOCK
```

Date information is entered based on a 12 or 24 hour time clock.The appropriate **AM** or **PM** designation appears in the 12 hour clock and not in the 24 hour clock based on **TYPE** entered in the next menu item. Use the **F1/F2** keys to toggle the **AM/PM** designation when using the 12 hour clock. Joystick from one column to the next. Enter your choices using the keypad or the **F1/F2** keys, where appropriate.

PARAMETERS

HOUR	MINUTES	SECONDS	MORNING/EVENING
12 (1-12)	00-59	00-59	AM/PM
24 (1-24)			
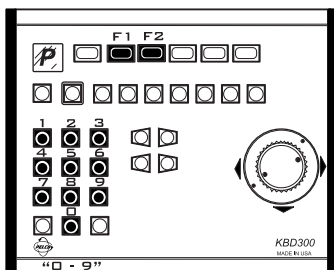
DATE-STYLE CHOICE

```
   SET TIME / DATE


DATE:   APR-06-00
TIME:   12:06:00 PM
STYLE:  MMM-DD-YY
TYPE:   12 HOUR


        SET CLOCK
```

Toggle thru the style menu choices using the **F1/F2** keys or joystick. Style parameters are of the formats shown below:

```
MMM-DD-YY
DD-MMM-YY
MM-DD-YY
DD-MM-YY
```

TIME-STYLE CHOICE

```
   SET TIME / DATE


DATE:   APR-06-00
TIME:   12:06:00 PM
STYLE:  MMM-DD-YY
TYPE:   12 HOUR


        SET CLOCK
```

Toggle between the **TYPE** menu choices using the **F1/F2** keys.

TYPES: 12 HOUR
          24 HOUR

Navigate to the **SET CLOCK** entry and right-toggle the joystick or press the **ACK** key to return to the main menu.

ALARMS

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
     SELECT:
     1. CAMERAS
     2. MONITORS
     3. TIME/DATE
     4. ALARMS
     5. PORTS
     6. AUXILIARIES
     7. PASSWORD
     8. ACCESS
     9. EXIT
```
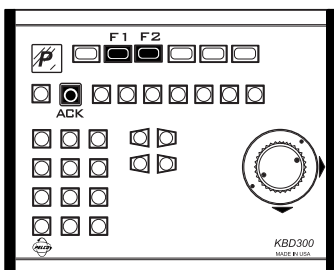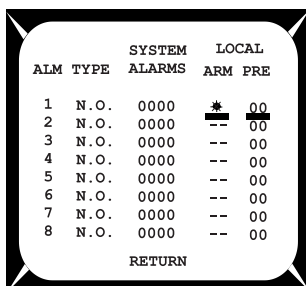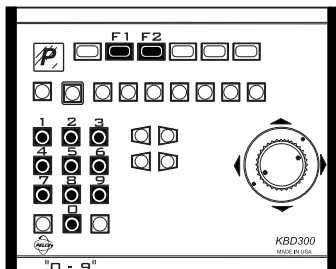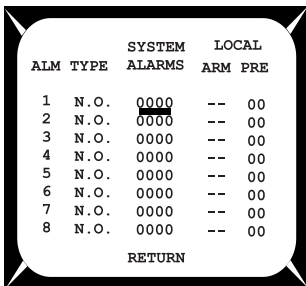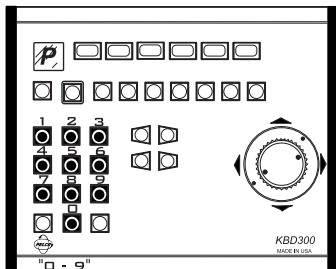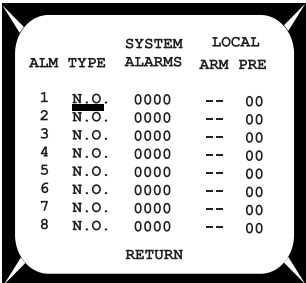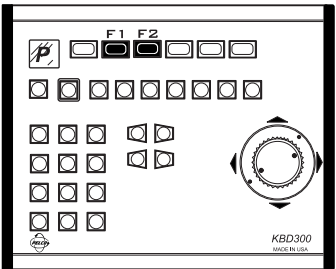
```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
     SELECT:
     1. CAMERAS
     2. MONITORS
     3. TIME/DATE
     4. ALARMS
     5. PORTS
     6. AUXILIARIES
     7. PASSWORD
     8. ACCESS
     9. EXIT
```

To select the **ALARM** submenu, enter the number 4 in the keypad or, alternately, navigate to the **ALARM** selection using the joystick and press the **ACK** key or right-toggle the joystick.

This will open the **SET ALARM INPUT** menu.

ALARM MENU SELECT

```
        SET ALARM INPUT


        1. CONTACT 1-8
        2. CONTACT 9-16



             RETURN
```

Choose selection **1** or **2** by entering the number directly into the keypad. Navigate to the desired selection and **ACK** or right-joystick that choice.

Choosing **1** will open up the menu for the first **8** of **16** alarm contacts to program.

SELECT CONTACT GROUP

```
                 SYSTEM    LOCAL
    ALM  TYPE   ALARMS   ARM PRE

     1   N.O.    0000     --   00
     2   N.O.    0000     --   00
     3   N.O.    0000     --   00
     4   N.O.    0000     --   00
     5   N.O.    0000     --   00
     6   N.O.    0000     --   00
     7   N.O.    0000     --   00
     8   N.O.    0000     --   00

             RETURN
```

Navigate the alarm field by toggling the joystick in the direction you want to go. The first column is the **TYPE** field. Choose whether the alarm is to be Normally Open (**N.O.**) or Normally Closed (**N.C.**) by toggling the **F1/F2** keys. The physical location for all alarm contact wiring is on the rear of the **SAT** unit. This was first pointed out in Figure 2 and later discussed in **Section I**, *3.4 Alarms*.

ALARM TYPE NO/NC

```
                 SYSTEM    LOCAL
    ALM  TYPE   ALARMS   ARM PRE

     1   N.O.    0000     --   00
     2   N.O.    0000     --   00
     3   N.O.    0000     --   00
     4   N.O.    0000     --   00
     5   N.O.    0000     --   00
     6   N.O.    0000     --   00
     7   N.O.    0000     --   00
     8   N.O.    0000     --   00

             RETURN
```

Assign a number (between **1** and **5000**) in the **SYSTEM ALARMS** column for each alarm contact position that you wish the 9760 system to respond to. This is the physical alarm number the CM9760 system will respond to when the associated local contact on the CM9760-SAT is activated. Parameters associated with this physical alarm number are entered in the **ALARMS** configuration file of the system manager on the **9760 SIDE** of the c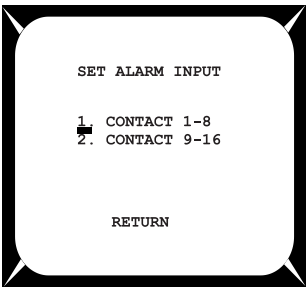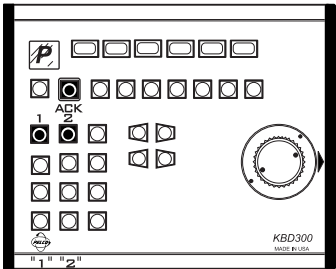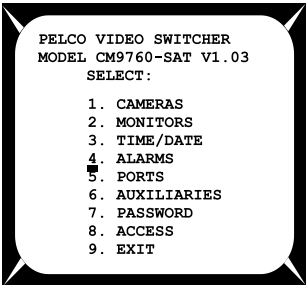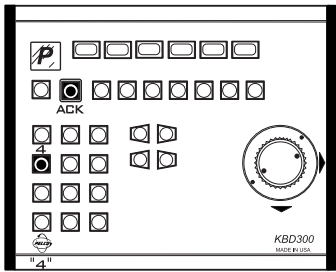onfiguration. The camera(s) that will be called up when this one (or several) armed alarm contact(s) is/are activated is set up in the 9760, where they can easily be integrated into 9760 alarm mode functions. In response to an alarm contact closure on the **SAT**, the CM9760 informs the CM9760-SAT to place the alarm-associated camera video on a tie line (see the system example in **SECTION 4**).

SAT-SYSTEM ALARM

```
                 SYSTEM    LOCAL
    ALM  TYPE   ALARMS   ARM PRE

     1   N.O.    0000     *    00
     2   N.O.    0000     --   00
     3   N.O.    0000     --   00
     4   N.O.    0000     --   00
     5   N.O.    0000     --   00
     6   N.O.    0000     --   00
     7   N.O.    0000     --   00
     8   N.O.    0000     --   00

             RETURN
```

Local alarm inputs are disabled [--],when shipped. SYSTEM activation was discussed above. For LOCAL alarm activation only, first pick the **TYPE** per previous instructions; then, joystick to the **ARM** and **PRE** columns. The **ARM** positions physically correspond, on a one-to-one basis,(for the listed **ALM** column groups 1-8 and 9-16) to the 16 video inputs on the **SAT**. That is, LOCAL "ARMed" **ALM 1** corresponds to camera input 1; **ALM 2** to input 2, an so on. While in the **ARM** column, toggle between activate and deactivate using **F1/F2**. If the camera is preset capable and a preset applies, enter a preset number in the **PRE** column.

SAT-LOCAL ALARM

PORTS

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
   1. CAMERAS
   2. MONITORS
   3. TIME/DATE
   4. ALARMS
   5. PORTS
   6. AUXILIARIES
   7. PASSWORD
   8. ACCESS
   9. EXIT
```
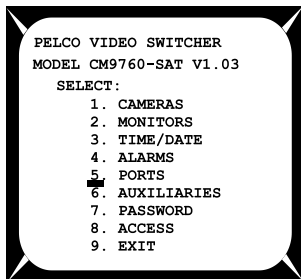
PORTS-MENU
SELECT

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
   1. CAMERAS
   2. MONITORS
   3. TIME/DATE
   4. ALARMS
   5. PORTS
   6. AUXILIARIES
   7. PASSWORD
   8. ACCESS
   9. EXIT
```

To select the **PORTS** submenu, enter the number 5 in the keypad or, alternately, navigate to the **PORTS** selection using the joystick, then press the **ACK** key or right-toggle the joystick.

```
           PORTS


   1.  COM1 PORT
   2.  COM2 PORT



           RETURN
```
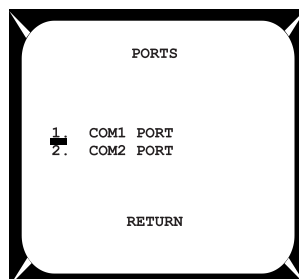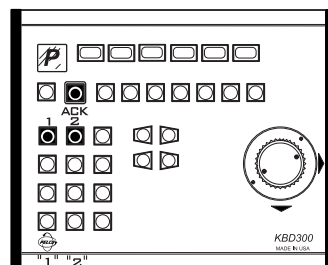
The **PORTS** selection sub-menu displays two choices. Make your selection by enterning the desired keypad number or navigate to the selection and **ACK** it or right-toggle the joystick.

PORT
SELECT

```
          COM 1
        SET PORT


   PROTOCOL   422P
   BAUD RATE 2400



          RETURN
```
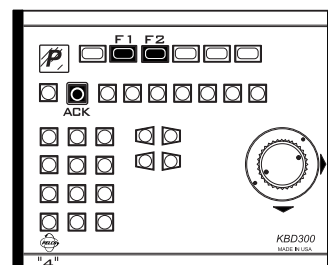
COM 1 port selection is displayed to the left. Advance to **PROTOCOL** and cycle through the available types (listed below). Use the joystick or the **F1/F2** keys to choose the protocol desired:

PROTOCOL: 422D
422P

Next, proceed to the **BAUD RATE** sub-menu and cycle through the available selections using your joystick or the **F1/F2** keys.
The following selections are available:

BAUD RATE: 9600
1200
2400
4800

ACK the **RETURN** selection, which takes you back to the **PORT SELECTION** menu.

COM-PORT
ONE

```
          COM 2
        SET PORT


   BAUD RATE 9600
   PARITY     ODD
   STOP BITS 1



          RETURN
```
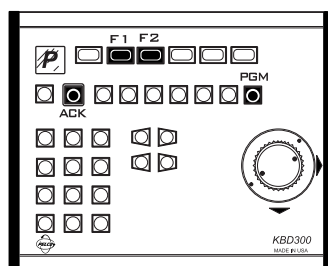
Choose the **COM 2** port selection. The **COM 2** port for the **SAT** is dedicated to the communication settings necessary for connection to the 9760 system. Protocol is already set for RS-422. The communication attributes for that protocol setting are highlighted below. Default settings are highlighted. Use the joystick or the **F1/F2** keys to make your selections:

BAUD RATE: 9600   PARITY: ODD
1200   EVEN
2400   NONE
4800

STOP BITS: 1
2

Joystick to the **RETURN** selection. **ACK** it, right-toggle with the joystick or press the **PGM** button to return to the main menu.

COM-PORT
TWO

Auxiliaries Programming Menu-Page 1 of 1


```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
     1. CAMERAS
     2. MONITORS
     3. TIME/DATE
     4. ALARMS
     5. PORTS
     6. AUXILIARIES
     7. PASSWORD
     8. ACCESS
     9. EXIT
```

AUXILIARIES

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
     1. CAMERAS
     2. MONITORS
     3. TIME/DATE
     4. ALARMS
     5. PORTS
     6.AUXILIARIES
     7. PASSWORD
     8. ACCESS
     9. EXIT
```
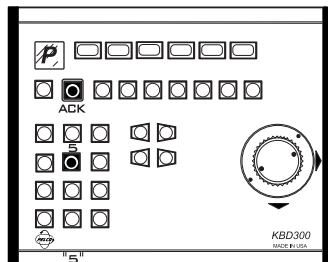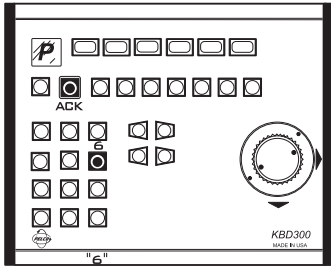
To select the **AUXILIARIES** sub-menu, enter the number **6** in the keypad or, alternately, joystick to the **AUXILIARIES** selection and press the **ACK** button or right-toggle the joystick.

NOTE: Programmed Aux functions are under local, **SAT SIDE** control only.

AUX-MENU SELECT


```
      SET AUXILIARY MENU


   AUX      SOURCE      MODE

   F1        ALM        ---
   F2        KBD        KEY
   F3        KBD        LAT


             RETURN
```

Auxiliaries **F1**, **F2** and **F3** program the actuation of external relays. The relays can be activated manually (KBD keys F1, F2 or F3) or they can be alarm activated. F1 is a form C relay and F2 and F3 are open collector outputs.
Use the **F1/F2** keys to toggle the source for each **AUX** and select **ALM** or **KBD**.
For all programmed **AUX** sources, joystick to the **MODE** column and cycle through the **MODE** activation choices using the **F1/F2** keys. Those choices are:

MOM momentary (300 micorsecond pulse)
KEY contact held closed as long as function key (**F1**,**F2**, or **F3**) is held down.
LAT acts like a toggle switch
- - - None

NOTE: Alarm activated **AUXs** can still be operated manually.

AUX SOURCE

AUX MODE

NOTE: The ALM "source" for Aux activated functions follow the alarm settings for **MONITOR 04** made in the Monitor Programming Menu for that monitor (see Monitor Programming Menu-Page 1 and 3).
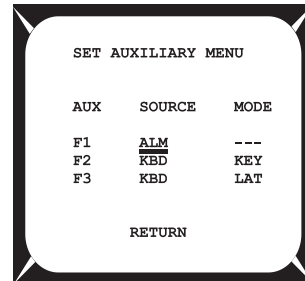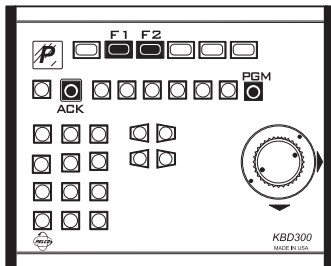
Press the **PGM** button or joystick to the **RETURN** entry and **ACK** or right-toggle it to return to the main menu.

Password Programming Menu-Page 1 of 1


```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
     1. CAMERAS
     2. MONITORS
     3. TIME/DATE
     4. ALARMS
     5. PORTS
     6. AUXILIARIES
     7. PASSWORD
     8. ACCESS
     9. EXIT
```

PASSWORD

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
     1. CAMERAS
     2. MONITORS
     3. TIME/DATE
     4. ALARMS
     5. PORTS
     6. AUXILIARIES
     7. PASSWORD
     8. ACCESS
     9. EXIT
```
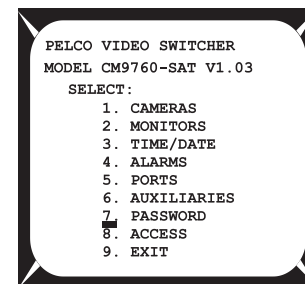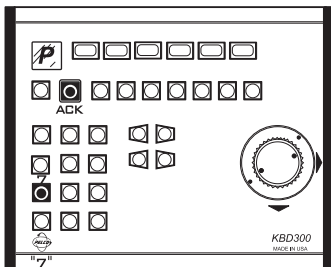
To select the **PASSWORD** sub-menu, enter the number **7** in the keypad or, alternately, joystick to the **PASSWORD** selection, then press the **ACK** key or right-toggle the joystick.

PASSWORD MENU SELECT

Before you can change the password, you must enter the current or old password. If the seven-digit code you enter is incorrect, this message appears:

Old password entered incorrectly. Try again.


```
      SET PASSWORD


   OLD PASSWORD  *******
   NEW PASSWORD  *******
   VERIFICATION  *******


             RETURN
```

If, however, the old password is entered correctly, the cursor moves to the first position for the new password after the ACK button is pressed.
The position flashes. Enter a new password and press the **ACK** button. When the cursor moves to the first position (flashing) on the verification line, enter it again. Press **ACK.** If your verification proves faulty, the following message appears:

CHANGING PASSWORD

New password does not match verification password or is incomplete

VERIFYING PASSWORD

You are returned to the old password line to repeat the process. When successful, the message "New password accepted", appears and you automatically return to the main menu.

ACCESS

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
      SELECT:
      1. CAMERAS
      2. MONITORS
      3. TIME/DATE
      4. ALARMS
      5. PORTS
      6. AUXILIARIES
      7. PASSWORD
      8. ACCESS
      9. EXIT
```

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
     SELECT:
     1. CAMERAS
     2. MONITORS
     3. TIME/DATE
     4. ALARMS
     5. PORTS
     6. AUXILIARIES
     7. PASSWORD
     8. ACCESS
     9. EXIT
```

The **ACCESS** menu partitions access for local **SAT** system resources for all keyboard locations. Those resources include preset programming and control, monitor access, and camera access and control.

To select the **ACCESS** submenu, enter the number **8** in the keypad or, alternately, joystick to the **ACCESS** selection and press the **ACK** key or right-toggle the joystick.

ACCESS-MENU SELECT

```
           ACCESS


     1. KEYBOARD TO MONITOR
     2. MON TO CAMERA 1-10
     3. MON TO CAMERA 11-16
     OVERRIDE: LOCAL

           RETURN
```

This brings up a list of three partitioning sub-menus and the OVERRIDE option. We discuss it first. If the override flag is set to LOCAL and a remote user (9760 operator) is controlling a link camera, the local user can grab control of the camera. If a local user is controlling a camera, the remote user can't grab the camera until 5 seconds after the local user releases control. The opposite occurs if OVERRIDE is set to REMOTE. Navigate to OVERRIDE and make your selection. Access the sub-menu you want by entering the number that precedes it into the keypad, or alternately, joystick to the desired selection and **ACK** it or right toggle the joystick.

ACCESS SUB-MENUS

The **KBD TO MONITOR ACCESS** menu, partitions local monitors (video-outs) among keyboard users. For each monitor that you want a keyboard location to "see", enter a Y; otherwise an N, using the **F1/F2** keys to toggle between the two choices.

KBD TO MONITOR

```
   KBD TO MONITOR ACCESS

   KBD  MONITOR    PRESET
        1 2 3 4    ENABLE
    1   Y Y Y Y      Y
    2   Y Y Y Y      Y
    4   Y Y Y Y      Y
    5   Y Y Y Y      Y
    6   Y Y Y Y      Y
    7   Y Y Y Y      Y
    8   Y Y Y Y      Y

         RETURN
```

> **IMPORTANT NOTE: For normal operation it is important that you do not partition keyboard access for monitor-outs configured as tie lines.**

For each keyboard location defined with access to a monitor, proceed to the **PRESET ENABLE** column and define whether or not that keyboard location can be used to program presets. Again, use the **F1/F2** keys to toggle between **Y** or **N**.

> **NOTE:** Even though a keyboard location is denied the choice of programming presets, that keyboard may still call presets.

ACK the **RETURN** selection to return to the **ACCESS** menu.

Press **2** on the keypad and **ACK** or joystick that choice to proceed to the **MONITOR TO CAMERA ACCESS** menu.

The **MONITOR TO CAMERA ACCESS** menu defines which cameras can be viewed on which monitors and controlled by a keyboard.

MON TO CAMERA 1 - 10

```
  MONITOR TO CAMERA ACCESS

  MON  CAMERA
       1 2 3 4 5 6 7 8 9 10
   1   Y Y Y Y Y Y Y Y Y Y
   2   Y Y Y Y Y Y Y Y Y Y
   3   Y Y Y Y Y Y Y Y Y Y
   4   Y Y Y Y Y Y Y Y Y Y

         RETURN
```

> **NOTE:** Unlike the previous menu, this one can be used to deny or grant 9760 operator access to specific **SAT** cameras by not allowing the display to be placed on monitor-outs configured as tie lines. To prevent a specific camera from being displayed requires that access for that camera be denied to all monitor-outs configured as tie lines on the **SAT** in question. Normally, you would not want to do this, so you must be careful when filling out access menus.

Again, use the **F1/F2** keys to enter your choices for the first ten cameras.

MON TO CAMERA 11 - 16

```
  MONITOR TO CAMERA ACCESS


  MON  CAMERA
       11 12 13 14 15 16
   1   Y  Y  Y  Y  Y  Y
   2   Y  Y  Y  Y  Y  Y
   3   Y  Y  Y  Y  Y  Y
   4   Y  Y  Y  Y  Y  Y

         RETURN
```

ACK or joystick the **RETURN** entry to return to the **ACCESS** menus and repeat the necessary steps to complete your choices for cameras 11- 16.

This completes the programming of the **SAT** menus. Press the **PGM** button to return to the main menu, select **9** or navigate to the **EXIT** choice and **ACK** or right-toggle the joystick.
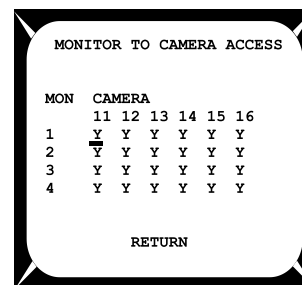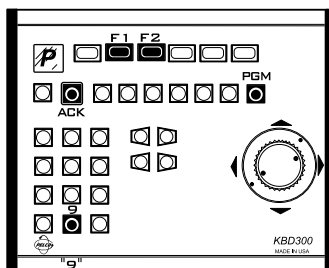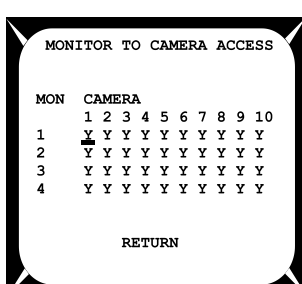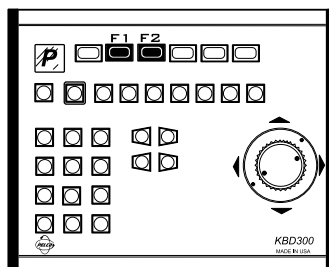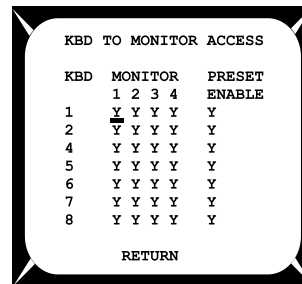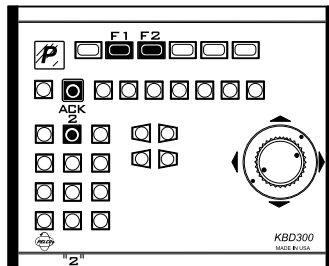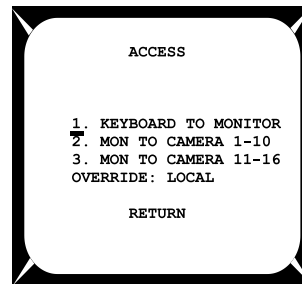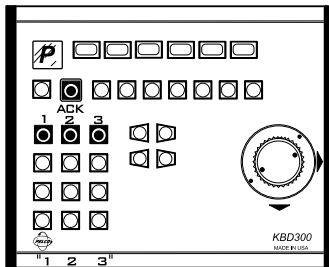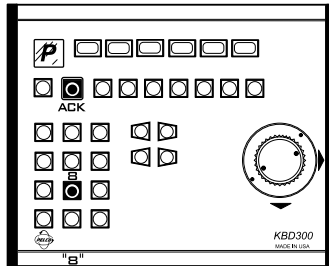
2.0 OTHER SAT PROGRAMMING

NOTE: *Although the following programming operations are performed while in* **SAT** *operational mode, we include them here as part of the programming process.*

2.1 PROGRAMMING PRESETS

NOTE: *All menus programming should be be completed prior to programming presets, patterns, or zones. In addition, control wiring for receivers should be completed (see* **SECTION 1**, *3.3 Receivers).*

The receiver you wish to program presets for should be capable of presets. You should be aware of restrictions, if any exist, for preset creation with the receiver in question. Your keypad must be initialized and it must have been granted access to the receiver being programmed, in additon to having permission to program presets (see **Section 2**, *Access Programming Menu*).

To program a preset:

1. Select your camera-receiver combination. Enter the camera number into the keypad and press the **CAM** button.

2. Use your control buttons (KBD200) or a joystick (KBD300/300V) to position the camera display (in our example, camera 1) at a location you want associated with this preset .

```
01 CAM 1
0 JAN-01-00 10:57:42AM
```

> **PRESETS**

> **PTZ TO PRESET LOCATION**

3. Next, enter a number for the preset into the keypad. This preset number will be associated with the camera display that was chosen in Step 2.

4. Now, press and hold the **PRESET** key for two seconds. Let's assume you chose **21** as your preset number. The display appears as illustrated. The cursor position (indicated by the underlined **A**), marks the first character position of the 20 available for the character label. This label will appear on the display when preset 21 is called. The LED display changes from **04** (our local **SAT** monitor number), to **P** (to indicate that preset programming is taking place).

```
EDIT PRESET 21 LABEL
A
PRESS PGM TO EXIT
SET

01 CAM 1
0 JAN-01-00 10:57:42AM
```

> **ENTER PRESET NUMBER**

5. To edit the preset label, use the **F1** and **F2** keys to scroll through the wrap-around alphanumeric character set for each individual cell you want to program or edit in the 20-character preset label field.

```
F1   F2
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 5 6 7 8 9
```

6. To move from one cell to the next or one further down the line, use the joystick.

```
EDIT PRESET 21 LABEL
CAMERA TITLE_
PRESS PGM TO EXIT
SET

01 CAM 1
0 JAN-01-00 10:57:42AM
```

> **EDIT PRESET LABEL**

7. Once the preset title is programmed, move the cursor to the **SET** display line and **ACK** it to record the preset. (The **PGM** key is used to exit the preset menu if you entered by mistake or if you decided not to program a preset label).

ACKing **SET** returns you to your starting point. Repeat the above steps to program another preset.

```
EDIT PRESET 21 LABEL
CAMERA TITLE
PRESS PGM TO EXIT
SET
_
01 CAM 1
0 JAN-01-00 10:57:42AM
```

> **RECORD PRESET**
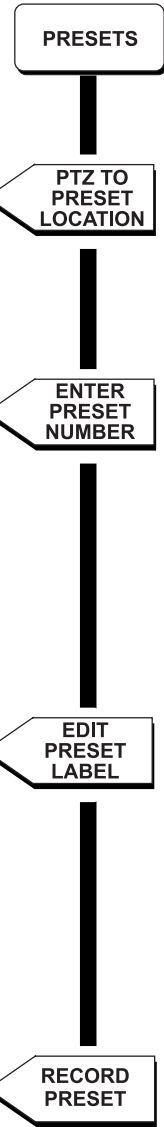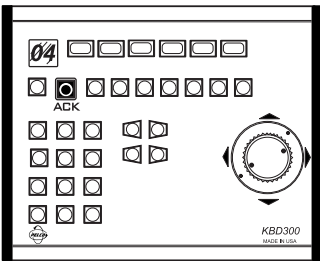
2.2 PROGRAMMING PATTERNS

DEFINITION: A pattern is a user-defined, viewable camera path created via PTZ control under the constraints of a timeout clock. That camera path (having a definite beginning and end) can be activated as a repeatable "pattern" at the touch of a button.

Pattern creation from the keyboard connected to the **SAT** varies depending on the type of camera-receiver combination you are connected to. Where the pattern begins and ends is a PTZ function of the keyboard. Whether you are defining one long pattern or two short patterns is a function of the receiver type you are connected to. Some are built in and "fixed". You can only program one long pattern for Intercept domes, for example, and the old Specra type (pre-version 3), can be programmed for fixed values of either one long or two short patterns. On later receiver types, the base time values for long patterns are programmable at the receiver end. These include Spectra (version 3.0 or later) Spectra II domes, and Esprit units. Consult the specific receiver manual for establishing base time values for long patterns (half-patterns or short patterns are equal to each other and half that of the base time value programmed for the long pattern).

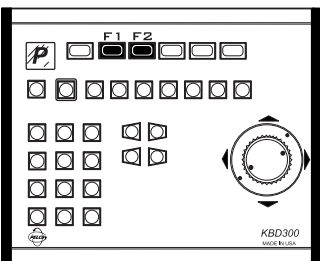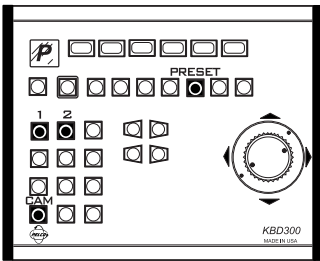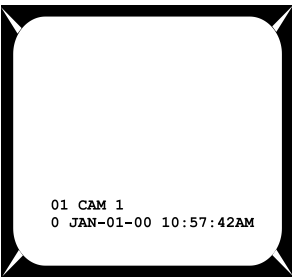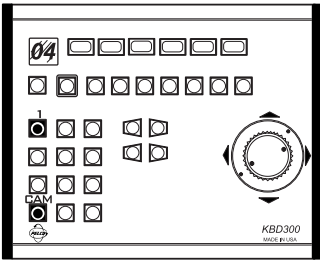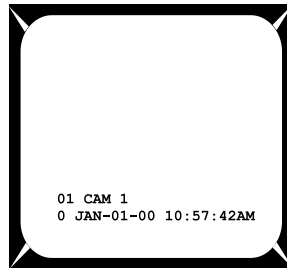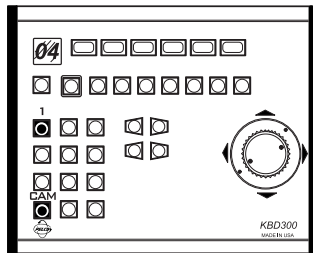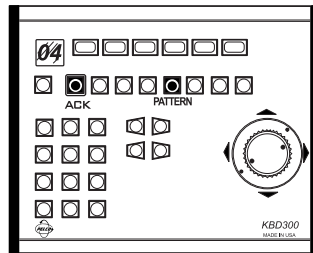### Intercept Domes


```
01 CAM 1
0 JAN-01-00 10:57:42AM
```

To program a pattern:

1. Select your camera; enter the camera number into the keypad and press the **CAM** button.

2. Use your control buttons (KBD200) or a joystick (KBD300/300V) to position the camera display (in our example, camera 1) at the location you want pattern definition to begin.


```
PROGRAMMING PATTERN
DO PAN TILT ZOOM
FUNCTIONS
PRESS ACK TO EXIT

01 CAM 1
 JAN-01-00 10:57:42AM
```

3. Press and hold the **PATTERN** key for two seconds. The display shown appears.

4. Perform the indicated functions to define a pattern path. Continue until the pattern you want is created or until 60 seconds (for original Spectra receivers) have elapsed.

5. In either case, **ACK** to end pattern definition and exit pattern creation.

INTERCEPT

PTZ TO PATTERN START POINT

DEFINE PATTERN

EXIT

Spectra and Esprit Domes

NOTE: The base "long-pattern" time period is set in Spectra's and Esprit's camera menu program, which can be accessed from the keyboard attached to the **SAT** as follows:
1. Enter 95 into the keypad and then hold the **PRESET** key for two seconds. The Edit Preset 95 Label appears.
2. Navigate to **SET** and **ACK** it. The spectra programming menu appears. Use control buttons or joystick to navigate and the **IRIS OPEN** or the lens control **OPEN** button to select items.

LENS CONTROL BUTTONS
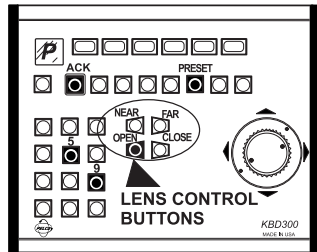
Spectra domes and Esprit units can be programmed for one long or two short patterns. For original Spectra (pre-version 3.0), a long pattern is 60 seconds and half-patterns are 30 seconds. For later, version II Spectra and for Esprit, three basic time values (1.5 minutes, 3 or 6 minutes) for the long pattern are programmed at the receiver end. Corresponding half-pattern times are based on the long-pattern time chosen.

To program one long pattern:

1. Repeat steps one through four listed above for Intercept domes. All you must keep in mind is the length of time allowed (programmed in the receiver's menu) for pattern creation.

SPECTRA & ESPRIT

LONG PATTERNS
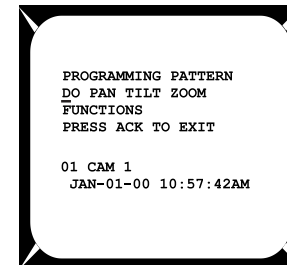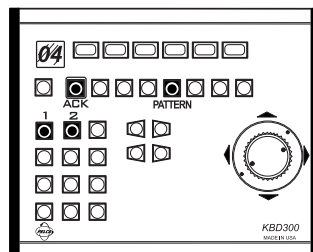
To program half-patterns:

1. Repeat steps one and two listed above for Intercept domes.

2. Press number **1** on the keypad and, at the same time, press the **PATTERN** key.

3. Perform the suggested PTZ functions based on the half-pattern time allowed.

4. Press the **ACK** button to end pattern definition and exit.

5. Repeat steps 1-4, except use the number "2" to create your second half-pattern. Time constraints still apply.

HALF-PATTERNS


```
PROGRAMMING PATTERN
DO PAN TILT ZOOM
FUNCTIONS
PRESS ACK TO EXIT

01 CAM 1
 JAN-01-00 10:57:42AM
```
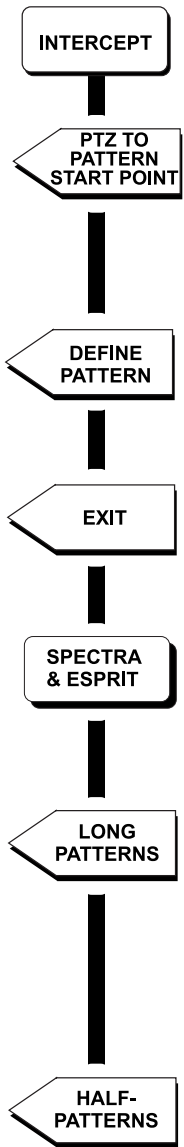
2.3 PROGRAMMING ZONES

DEFINITION: A zone is a user-defined, physical locus of space to which a label is attached and a camera is associated. The camera used at the time that the boundaries of the zone are defined is associated with the zone. When the associated camera is panned through or remains within this defined zone any time after zone definition, then the label associated with the zone will appear on the currently selected monitor.

NOTE: Up to eight zones may be defined and associated with the same camera. A priority level (**1-8**, with **8** being the highest) is assigned to each zone just before the zone is defined

```
01 CAM 1
0 JAN-01-00 10:57:42AM
```
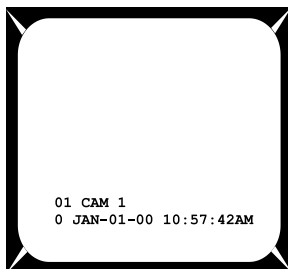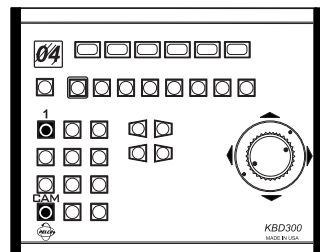
To program zones:

ZONES

1. Select the camera you wish associated with the zone and zone label you want to produce. Enter the camera number into the keypad and press the **CAM** button.

2. Use your control buttons (KBD200) or a joystick (KBD300/300V) to position the camera display (in our example, camera 1) at the location you want zone definition to begin.

SELECT A PTZ-CAPABLE CAMERA

Access the programming menu:

3. Enter the number **8** in the keypad.

4. Enter a number for a priority level into the keypad (here, for example, we choose the number **4**).

5. Press the **F4** button. The system displays the zone menu as shown.

ACCESS ZONE MENU

```
Edit label, Ack SET for
left edge. Pan CW, press
84 F5 for right edge.
A
SET

01 CAM 1
 JAN-01-00 10:57:42AM
```

Note that the numbers entered above are reflected in the menu display.
The **8** indicates zone programming.and the **4** represents the priority level chosen.
The cursor is located at the first cell position for creation of the **ZONE** label.

CREATE A ZONE LABEL

```
Edit label, Ack SET for
left edge. Pan CW, press
84 F5 for right edge.
A
SET

01 CAM 1
0 JAN-01-00 10:57:42AM
```
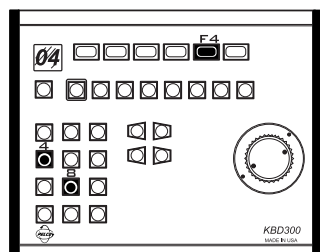
6. To edit the **ZONE** label, use the **F1** and **F2** keys to scroll through the wraparound alphanumeric character set for each individual cell you want to program or edit in the 20-character **ZONE** label field.

```
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 5 6 7 8 9
```

7. To move from one cell to the next or one further down the line, use the joystick.
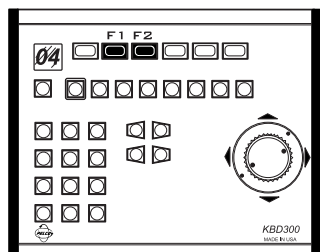
8. After creating the **ZONE** label, navigate to the **SET** line. The **S** is blinking.

CREATE THE ZONE

```
Edit label, Ack SET for
left edge. Pan CW, press
84 F5 for right edge.
ZONE LABEL
SET

01 CAM 1
0 JAN-01-00 10:57:42AM
```

9. **ACK** the **S**. This defines the left edge of the **ZONE**. At this point, pan from the left edge of the zone to the right (clockwise) until you reach the point where you want the right edge or end of the zone to be.
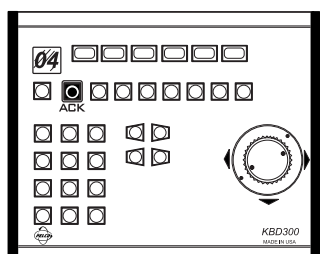
10. Next, press the number **8** on the keypad, then enter the number of the **ZONE** (in this example, **4**) from those possible (**1-8**) that you are programming and then press the **F5** button to end zone programming.

END ZONE PROGRAMMING
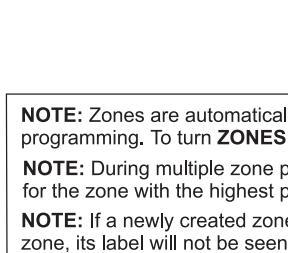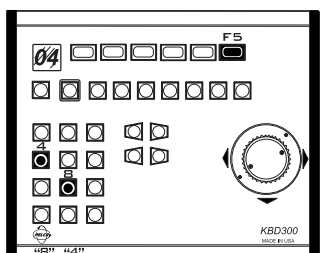
NOTE: Zones are automatically turned off during programming and must be turned on after programming. To turn **ZONES** on: press **8**, **8**, and then press the **PRESET** button.

NOTE: During multiple zone programming, two zones may overlap. If that happens, the label for the zone with the highest priority will appear in the display for the overlapped areas.

NOTE: If a newly created zone is superimposed within the boundaries of a previously defined zone, its label will not be seen unless its zone priority is higher.

3.0 9760 MGR-SAT PROGRAMMING

Before implementing joint 9760-SAT operation, the following configuration files (flat files) must be configured.

1. The **COMMS** file.
2. The **CAMERAS** file.
3. The **LINK CAMERAS** file

    and if alarm reporting is invoked

4. The **ALARMS** file.

The 9760 System Manager program, installed on a PC hard drive connected to the CM9760-CC1 is used to program these files.**
If you received your **SAT** unit as part of a system shipment, these files may have already been configured to the extent that it was practical or that information for your system was available. In any case, you can use the information in the sections that follow to:

1. Check existing configuration files against requirements, and
2. To update existing configuration files with the data required to enable 9760-SAT operations.

The following information will be needed to successfully program the flat files associated with **SAT** operation:

1. You should know the MXB <u>physical</u> port destinations of all tie lines that originate as **SAT** monitor-out lines and terminate as matrix bay video inputs.

2. You should know to which physical Sercom port on the controller that the CM9760-SAT is attached.

3. You should know the link camera assignments for the **SAT** and you should be aware of the receiver types for each connection (PTZ or fixed).

4. You should also know the communication parameters for the **SAT**.

** Additional information about the construction and use of configuration files can be found in the CM9760-MGR manual. Installation and manipulation of configuration files with respect to hardware/software updates and changes is covered in detail in the CC1 controller manual.

3.1 COMMS FILE

Start the **System Manager** program, log in (case-sensitive default: Admin), left-click on the **9760-Setup** icon, click on the **Configuration File's** rectangular **Setup Files** selection bar and then select the **Comms** tab from among the **Setup System Configuration** tabs.

Setup the **Comms** file, using the one illustrated in Figure 2-6 as a guide.

NOTE: *For additional material on the "nut and bolt" items to be considered when adding peripheral equipment and/ or software to an existing or new system, consult the appropriate sections of your controller (CM9760-CC1) manual.*
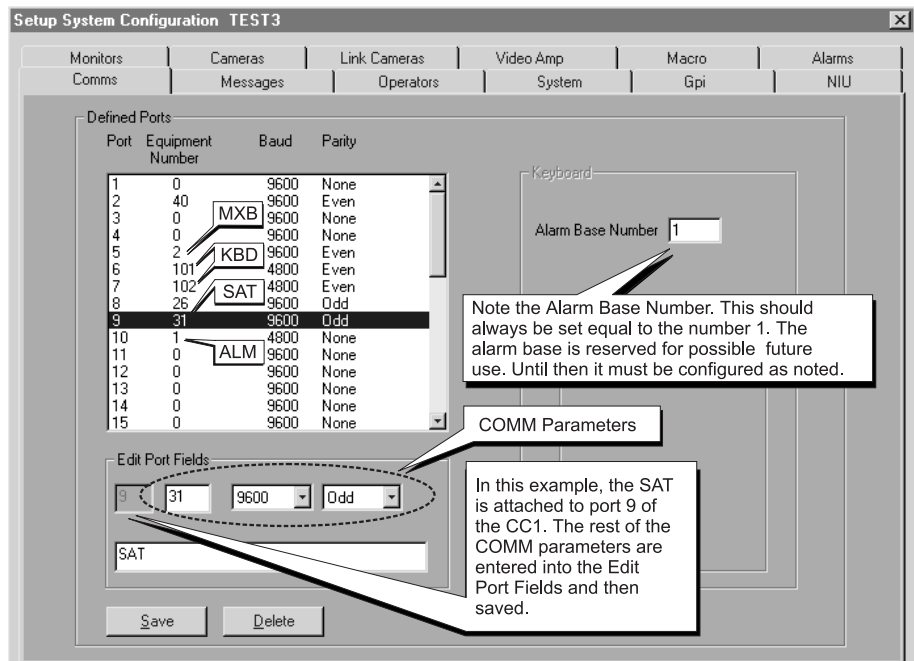
Figure 2-6
Programming the COMMS file

3.2 CAMERAS FILE

Close the **Comms** tab and open the **Cameras** file by clicking on its tab. Identify the ports on the MXB to which monitor-outs from the **SAT** are attached. Configure the **Cameras** file accordingly.
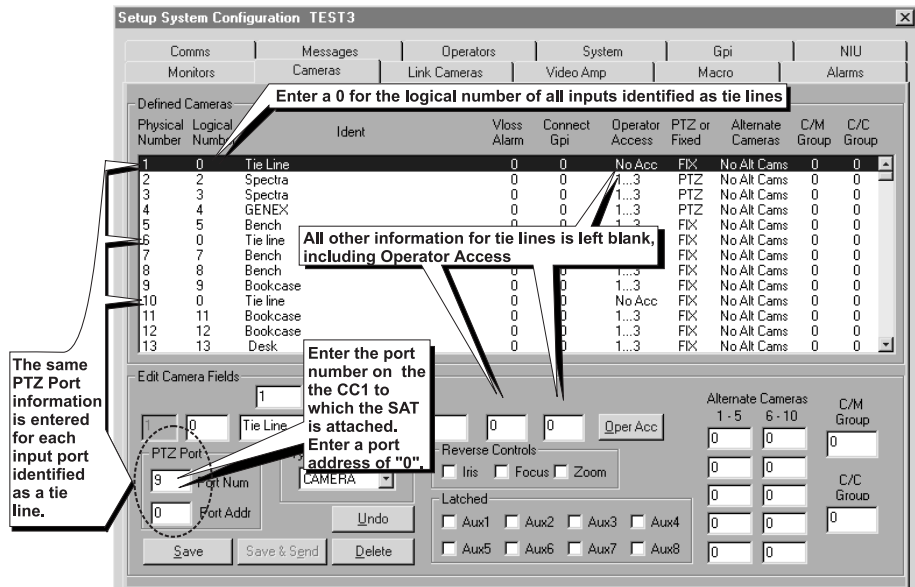
Figure 2-7
Programming the Cameras File

3.3 LINK CAMERAS FILE

Open up the Link Cameras tab next. In the **Link Cameras** file, assign unique logical numbers for the cameras to distinguish them from non-SAT types. Access to link cameras from CM9760-KBDs attached to the system node use the logical numbers just referred to, to call the satellite camera desired. For each line entry that that defines a link camera, enter the PTZ port number to which the **SAT** for that camera is attached and also enter the port address (1-16, on the **SAT**), to which the Link Camera is attached. An example Link Camera file is shown to the right.
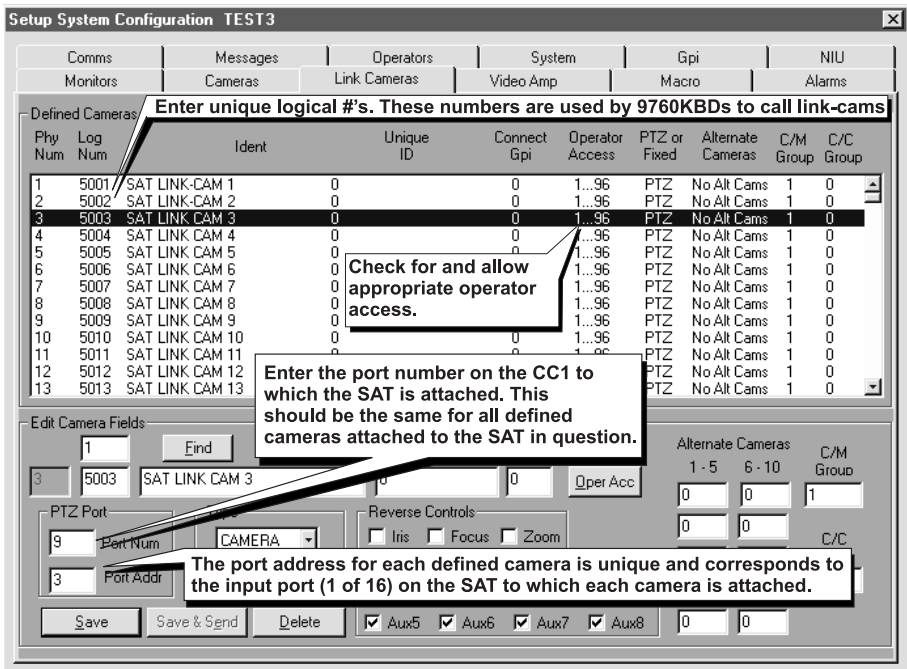
Figure 2-8
Programming the Link Cameras File

3.4 ALARMS FILE

In addition to the previous files, it may also be necessary to configure an alarm file if you want to set up the system for head-end alarm notification. Triggered alarms on the **SAT SIDE** result in a series of events, controlled, in part, by the programming of the **ALARM** file on the **9760 SIDE** of the configuration. Figure 3-9 is an example **ALARM** file configured for just one alarm. All 16 **SAT** alarms can be configured if you want. Additional configuration files may have to be edited to set up your system to meet other specific operational needs. Suggestions and additional considerations, as well as alarm operations, are discussed in **Section 3**, *3.2 9760-SAT Alarm Response*. Note Figure 3-18. Each keyboard operator must be assigned alarm monitors on which to view any activated alarms.

Figure 2-9
Alarm File

(This page intentionally left blank.)

⚠️ ***IMPORTANT: Initializing keyboards.*** *For **SAT SIDE**, local operation, keyboards must be initialized (1) after any power cycle or (2), after the first time power is applied to a keyboard or (3), after an operator initiated reset (see **Appendix 5**, Default Menu reset Assignments). To initialize a keyboard, enter the number (1-4) of the monitor from which you are going to view displays, then press the **MON** key. You must wait five seconds (before or after you enter the number and press the **MON** key) to allow for power up configuration to take place, after which the number of the selected monitor appears on the keyboard's **LED** display.*

Up to 16 cameras and four monitors (minus those used as tie-lines) are available for user access and control via keyboards connected to the **SAT**. Access is limited by the following constraints:

1. **Physical:** a monitor must be available at your location.

2. **Software:** programmed access (local **SAT** programming menus) for monitor/camera use must have been partitioned for access by the user in question.

1.0 LOCAL SAT OPERATIONS

Figure 3-1
Monitor Selection
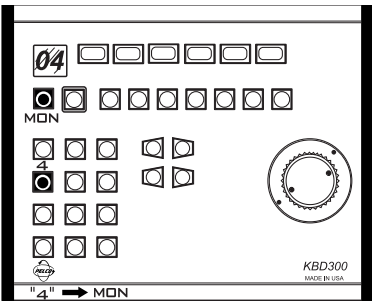
Figure 3-2
Camera Selection
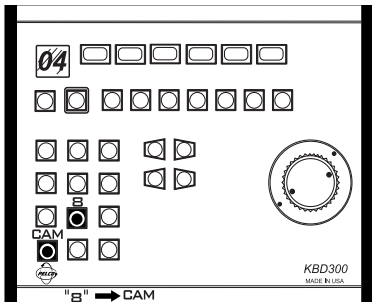
Figure 3-3
Camera Step-Through
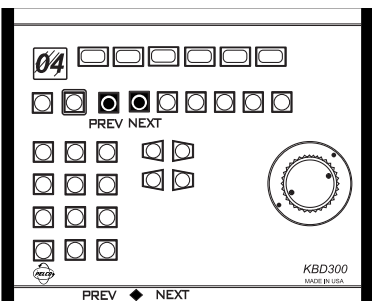
1.1 SELECTING MONITORS

1. Enter the monitor number (**1-4**) you want to view.
2. Press the **MON** button. The monitor number entered should match that appearing in the keyboard **LED** display

1.2 SELECTING CAMERAS

1. Enter the camera number (1-16) you want to view.
2. Press the **CAM** button. The camera view appears on the selected monitor.

1.3 CONTROLLING CAMERAS

1.3.1 Multi-Speed PAN and TILT Control, KBD200

Use the KBD200's "Touch Speed" feature to operate pan and tilts equipped with variable-speed.

Enter a number between 1 (slowest) and 9 (fastest) followed by one of the pan and tilt buttons. The selected speed remains in the switcher's memory until it is changed. Entering zero resets the pan and tilt speed to about 20 degrees per second.

1.3.2 Variable-Speed PAN and TILT Control, KBD300/KBD300V

Use the joystick to operate variable-speed pan and tilt control from the KBD300/KBD300V.

Pan and tilt response increases as the joystick is deflected from its normal position. Slight deflection causes slow pan and tilt response while full deflection causes rapid response.

1.3.3 Step Through System Camera

Use the **PREV** (backward) and **NEXT** (forward) buttons to step through the system cameras, or those cameras partitioned for your keyboard location. The displayed camera order does ***NOT*** follow that set up in the **CAMERA SEQUENCE** sub-menu of the monitor programming menu (see the **Monitor Programming Menu-Page 2 of 3**).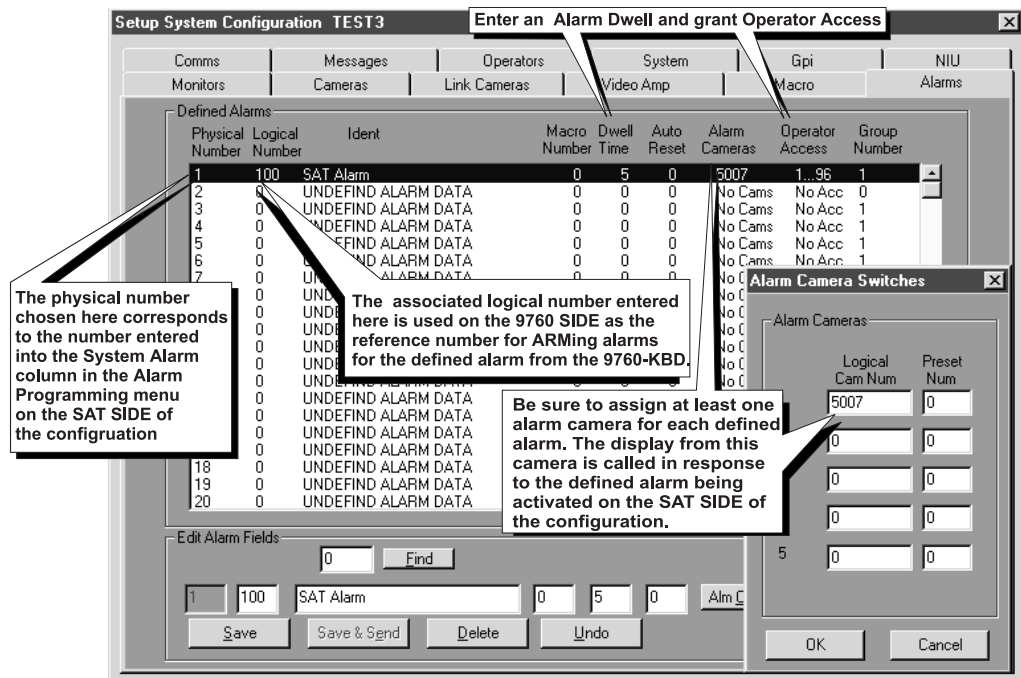 Those settings effect sequence operations only. Instead, at each press of the button, the **SAT** will stop, in turn, at each video input on the unit. What you see displayed is influenced by the following items:

1. If any **SAT** input lacks a display source, you will only see a blank screen. For example, if the unit is supplied with input video on 1 and 16 only and no other inputs, then pressing **NEXT** or **PREV** while between these end-points will result in a blank screen display. Moreover, you will have to press the key 14 times to navigate from either end to the other.

2. The situation in (1) can be avoided if the **MON to CAMERA** sub-menu, located in **Section 2's**, *Access Programming Menu*, is configured to bypass those unused (or perhaps, unallocated) video inputs. Now, when the **NEXT** or **PREV** button is pressed, you navigate directly from input 1 to 16, if the **NEXT** button is pressed and from input 16 to 1 if the **PREV** button is pressed.

NOTE: *There is no indication on the keyboard display that you are actually viewing the camera you chose. This can be rectified by entering appropriate camera titles for each camera view when programming local **SAT** menus.*

1.3.4 View a Camera Preset

(for preset programming, see **Section 2**, *2.1 Programming Presets*):

To manually view any programmed preset

1. Select the camera for which you want to view a preset by entering the camera number and pressing the **CAM** key.

2. Enter the preset number and press the **PRESET** key.
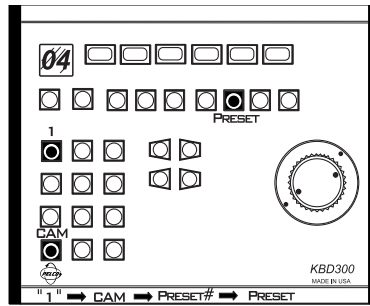
Figure 3-4
Viewing Presets

1.3.5 Operate a Camera Pattern

1. Select a camera with a programmed pattern (see **Section 2**, *2.2 Programming Patterns*).

2. Do one of the following:
   - If you have just one pattern, press the **PATTERN** button to start it.
   - If you have two patterns, press either **1** or **2** and then the **PATTERN** button to start the desired pattern. (Be careful not to hold down the **PATTERN** button or you will enter programming mode and erase the existing pattern.)

3. Perform a PTZ function to stop the pattern.
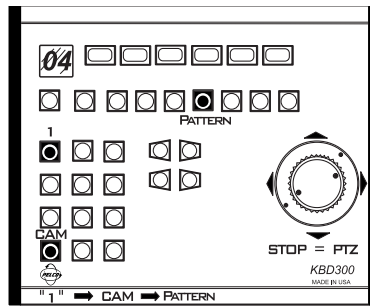
Figure 3-5
Operating a Single Pattern
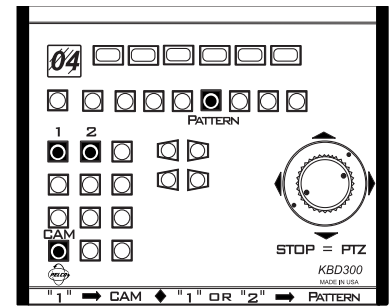
Figure 3-6
Operating Dual or Half Patterns

1.3.6 Change Speeds

1.3.6.1 Focus

Do the following to change the focus speed of cameras with remote control focus:
1. Press a number between **1** (slowest) and **4** (fastest) for the focus speed.
2. Press the FOCUS **FAR** button. The camera now focuses at the speed you entered until it is changed.

1.3.6.2 Zoom

Do the following to change the zoom speed of cameras with remote zoom control:
- KBD200–Press a number between **1** (slowest) and **4** (fastest) for the zoom speed, then press the ZOOM WIDE key.
- KBD300/KBD300V–Press a number between **1** (slowest) and **4** (fastest) for the zoom speed, then twist the joystick zoom knob counterclockwise (zoom wide). The camera now zooms at the speed you entered until it is changed.

1.3.6.3 Pan

To change the pan speed of cameras with variable speed hooked to a keyboard without a joystick, enter a number between **1** (slowest) and **9** (fastest) followed by a left or right pan command. The camera pans at the speed you entered until it is changed.
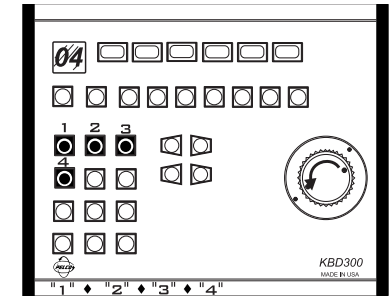
Figure 3-7
Zoom Operation

1.3.7 Turning ZONES ON/OFF

- To turn zones on: press **8**, **8**, **PRESET**.
- To turn zones off: press **8**, **9**, **PRESET**.
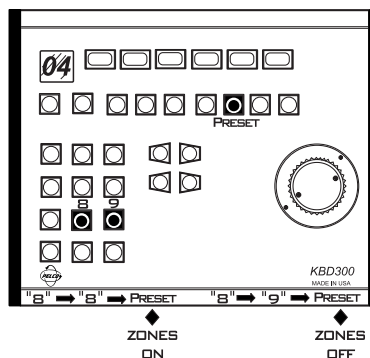
Figure 3-8
Turning Zones Off and On

1.4 OPERATING SEQUENCES

Each monitor (video output) has one 16-step sequence that can be run forward or backward, stopped (by placing the sequence on hold), or stepped through by pressing either **PREV** or **NEXT** while the sequence is on hold. The sequence status indicator (see Figure 3-9) displays the current state of a monitor sequence.

1.4.1 Run a Sequence Forward or Backward

Hold down either the **NEXT** (forward) or the **PREV** (backward) key for two seconds to begin running a sequence. The sequence status indicator under the camera number displays an **F** (for forward) or **B** (for backward) when the sequence begins.
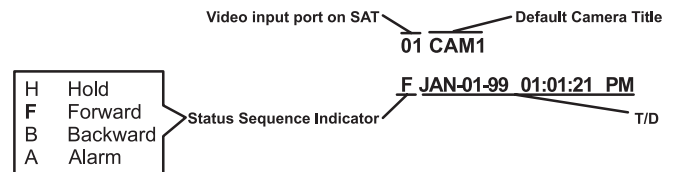
Figure 3-9
Sequence Status and Sequence Display Characteristics
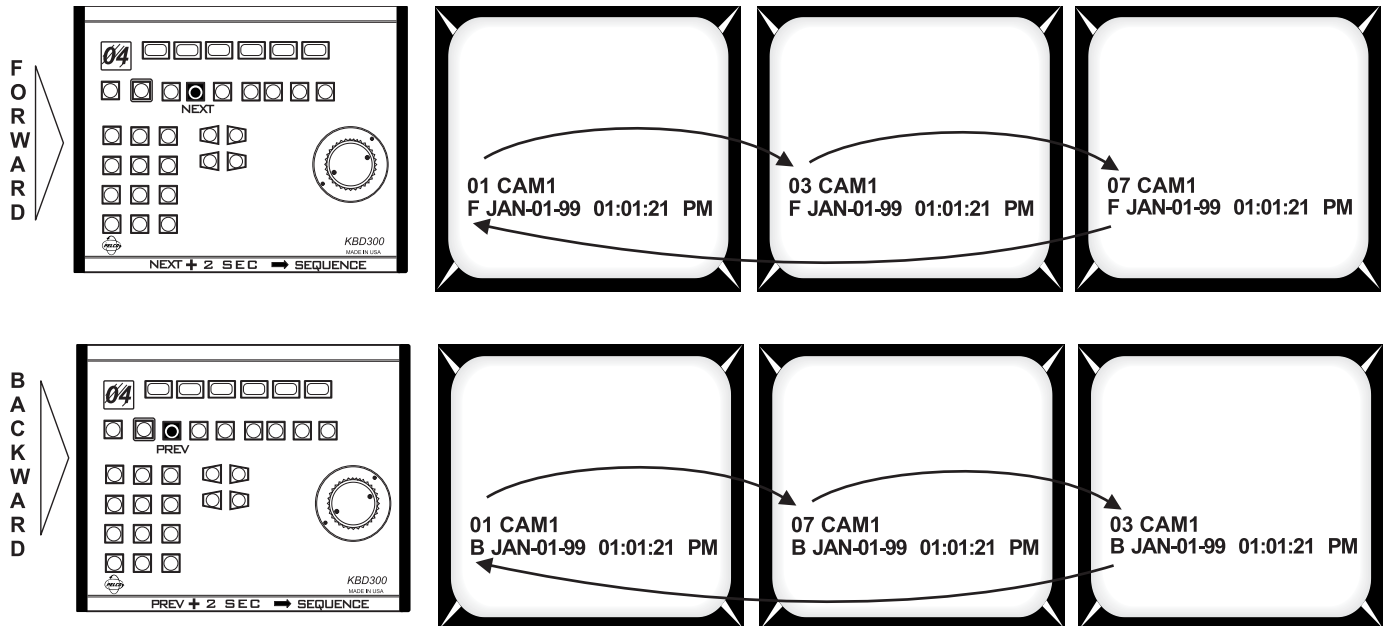
Figure 3-10
Forward and Backward Sequence Operation

1.4.2 Change the Direction of a Sequence

The direction of any currently operating sequence can be reversed. If, in the examples of Figure 3-10, you press the **PREV** button while the sequence is running forward, the sequence will run backward. The sequence status indicator will reflect this change by changing from **F** to **B**. Similarly, pressing the **NEXT** button while the sequence is running backward starts it running forward.

1.4.3 Step Through a Sequence

You can step through a camera sequence in the order the sequence is running (forward or backward) or when a sequence is on hold.
* When the Sequence Status Indicator displays **B** (sequence is running backward), press the **PREV** key to step through the sequence.
* When the Sequence Status Indicator displays **F** (sequence is running forward), press the **NEXT** key to step through the sequence.
* When the Sequence Status Indicator displays **H** (sequence is on hold), press the **PREV** button to step backward through the sequence or the **NEXT** button to step forward through the sequence.

Figure 3-11
Sequence Hold

1.4.4 Stop a Sequence

The two ways to stop a sequence are as follows:
* Press the **HOLD** button. The indicator under the camera number displays an **H** (for hold).
* Select a camera.

1.4.5 Turn OFF a Sequence

Manually select a camera or press the **CAM** button.
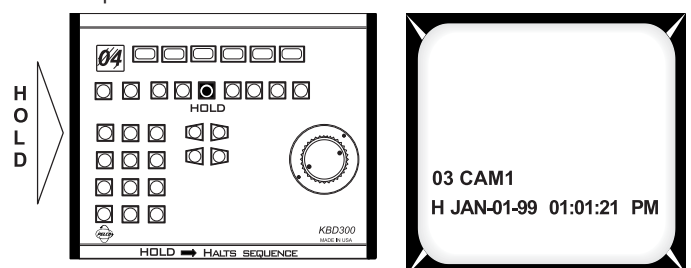
NOTE: *Whether or not a camera is available at your monitor viewing location is determined in the access menu (see **Section 2**, Access Programming Menu). Of those available, which **CAM** is used and the order of its appearance is determined by the monitor **CAMERA SE-QUENCE** sub-menu (see **Section 2**, Monitor Programming Menu-Page 2 of 3).*

1.5 CONTROLLING AUXILIARIES

1.5.1 Activating Switcher Auxiliaries, F1-F3

Three function keys (**F1-F3**) manually control the three auxiliaries that can be connected to the CM9760-SAT. To operate an auxiliary, press an **F1-F3** button. Know how your system is configured and programmed before operating auxiliaries.
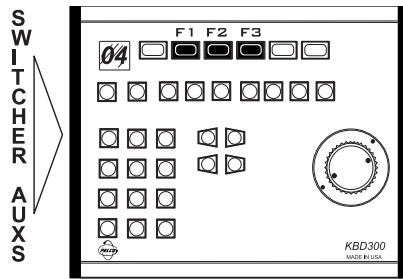
Figure 3-12
Activating Switcher Aux's

- For momentary operation, pressing a key sends a micropulse to the equipment connected to the auxiliary output.

- For latching operation, pressing a function key is similar to an on/off switch.

- For keyed operation, the auxiliary operates as long as the key is held down.

Even though an auxiliary is programmed to operate when there is an alarm, it can also be operated manually by pressing the function key.

1.5.2 Activating Receiver Auxiliaries, F4 AND F5

With properly equipped and correctly wired receiver auxiliaries, you can activate as many auxiliaries as allowed by the receiver from a KBD200 or KBD300/KBD300V keyboard. The **F4** key acts as ON and **F5** as OFF for each receiver auxiliary. If a receiver has multiple auxiliaries, precede the **F4** or **F5** key with the appropriate auxiliary number from the number pad.
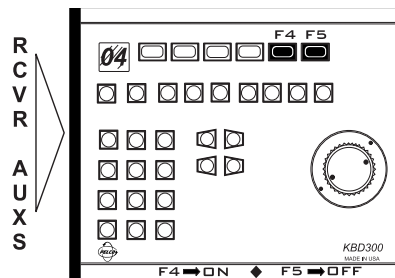
Figure 3-13
Activating Receiver Aux's

2.0 9760-SAT OPERATIONS

2.1 SELECTING LINK (SATELLITE) CAMERAS

Link cameras connected to a CM9760-SAT are available for viewing by any 9760 operator for which access to the camera has been partitioned. Link camera identification and availability is realized through the configuration of the Link Camera flat file (see **Section 2**, *3.3 LINK CAMERAS FILE*). Cameras listed in the Link Cameras file are accessed just as those listed in the Cameras configuration file; namely, by using the associated logical number entered for each listed camera. The **logical number** is the call-reference used for keyboard command and control operations by 9760 keyboard operators to call-up satellite (link cameras).

2.1.1 Calling Link Cameras

To call a specific link camera to a 9760 system monitor from a 9760 keyboard, do the following:

a.   Be sure the monitor you wish to use to view the display is available and selected.

b.   Enter the logical number of the link camera that you wish to call into the keypad of the 9760-KBD and press the **CAM** button. The referenced camera display should appear on the monitor.

NOTE: *You can call up all link cameras attached to all SATs within a node from the same operator position, one at a time, if you want. Access to the camera called must have been granted beforehand (see **Section 2**, 3.3 Link Cameras File).*

2.1.2 Cycling Through Link Cameras

Link camera entries can also be accessed by cycling through the available camera field from the 9760 keyboard by pressing the FWD or BWD buttons.

⚠ **IMPORTANT:** *Any time another link camera is called by the same operator to a different monitor on the **9760 SIDE** of a configuration without releasing control of a previously called camera, the next available tie line is utilized. Conceivably, a single operator could quickly lock up all available tie lines.*

2.1.3 Link Camera Availability

If a called link camera is not immediately available, the following reasons may apply:

a. A tie line may not be available. If all tie lines are in use when you try to access a link camera, the message "No Tie Lines" will appear on your keyboard LCD display.

b. If the **LOCAL/REMOTE** option in the **ACCESS** menu on the **SAT SIDE** of the configuration is set to LOCAL (see **Section 2**, *Access Programming Menu*), and an **SAT** operator is using the camera you are trying to call, you will not be able to grab control of that camera until 5 seconds after the local **SAT** user releases control. Of course, the opposite is true if the **ACCESS** menu entry is set to **REMOTE**.

2.2 CONTROLLING LINK CAMERAS

Fixed cameras can be viewed, but not controlled. Of camera-receiver types (RS-422 "P" and Coaxitron) for which control is possible, the physical geometry of the configuration chosen (based on user choice), is the most important.

- Control from the **9760 SIDE** when all monitor-outs are configured as tie lines

  1. In this situation, receiver control for **SAT** video inputs using RS-422 type controls is possible only if the control wiring is run back to the head-end. Coaxitron control, on the other hand, is exercised through the video link, which exist as tie lines.

  2. Moreover, **SAT** menu options that affect **SAT** video input connections as well as those that affect the 9760-SAT interface with respect to control and operation must still be programmed. Programming is done from the **9760 SIDE** of the configuration (see **Section Two**, *PRELIMINARIES*).

  3. Once programming and control considerations have been taken care of you can select satellite cameras (discussed above) and perform almost all other 9760 keyboard related camera operations as described in the CM9760-KBD manual. These operations include patterns, zones, presets, and so on, subject to the normal constraints of receiver capability.

- **Control from the 9760 SIDE** when concurrent control exists on the **SAT SIDE** and a mixture of local and tie line-configured monitor-outs exists.

> **NOTE:** *Total, head-end, **9760-SIDE** control, eliminates **SAT SIDE** control operations. **SAT** control is discussed in detail in the previous section (see **Section 3**, 1.0 LOCAL SAT OPERATIONS). Control, for **9760 SIDE** users, is an issue only to the extent that it lessens or increases the useful integration of the **SAT's** alarm reporting capabilities with those that already exist in the 9760 system itself.*

> ⚠ **IMPORTANT:** *The following control problem might occur when an operator is controlling a satellite CAM under PTZ control on a local system (9760) monitor. Care must be taken before issuing a command that overrides and replaces a currently controlled **SAT** camera with a **NON-SAT** camera via a MACRO type COPY (**COM, COC**, **CCO** step commands) command. The CM9760-SAT may not issue a stop command to the previously controlled PTZ camera, as it does not know that the switch took place. The result is that the PTZ camera will continue to move. A possible work around might involve using the **?SW** step command to avoid inadvertent use of COPY type commands for monitors displaying **SAT** cameras. For information about the ?SW step command, see the* "Macro Step Commands and Setup Details" *section in the 9760-MGR manual.*

Control operations viewed from the **9760 SIDE** under concurrent control differs little from single-side control as discussed above. However, there are two obvious differences:

1. Fewer available tie lines limit the maximum number of **SAT** cameras available for operator use on the **9760 SIDE** at any one time.

2. Competition with **SAT** operators for camera control and an increased chance of inadvertent anomalies.

2.3 OPERATING SUGGESTIONS

You may have no choice in the use of single-side versus concurrent control of **SAT** functions because of on-site considerations other than those discussed here. Yet, based on the foregoing discussions, as well as other considerations, the following suggestions and comments are offered when using either of the two control options we have outlined:

1. If local **SAT** operation and control is enabled or desired, then we suggest that you use the **9760 SIDE** primarily for alarm reporting functions and minimize **9760 SIDE** generation of control operations directed at **SAT** cameras. Let **SAT SIDE** operators have primary control of **SAT** cameras.

2. If no local **SAT SIDE** operations are entertained and all monitor-outs are configured as tie lines, then **SAT** programming and all control and alarm reporting functions are controlled by **9760 SIDE** operators.

3.0 ALARM OPERATIONS

3.1 LOCAL SAT ALARM RESPONSE

Whenever an input alarm condition occurs on the **SAT**, the local **SAT** operator (if previously programmed for alarm access notification) will see a display similar to the following on the local monitor screen:

The **A** is the sequence status indicator's shorthand for a current alarm condition.

The alarm notification occurs because:

1. The Alarm menu input condition (N.O., N.C.) has been met and the alarm is armed for local **SAT** response, and

2. The local **SAT** user's monitor has been programmed (in the Monitor Programming menu) to see alarms, in general, and to see the armed camera in question, in particular.

    User response to the alarm condition is also based on Monitor menu entries for the monitor.

Figure 3-14
Activated Alarm

```
01 CAM1
A JAN-01-99  01:01:21  PM
```

NOTE: *Alarms will interrupt sequence operations in progress on local SAT monitors. Once the alarm is acknowledged, the sequence will return to where it left off*

NO ACKNOWLEDGMENT

```
       MONITOR O4

ALARM TYPE: OFF
ALARM DWELL: 02
DISPLAY: ☀
T/D DISPLAY: --
VIEW: LOCAL

1. CAMERA SEQUENCE
2. ALARM ENABLE
3. POSITION DISPLAY

       RETURN
```
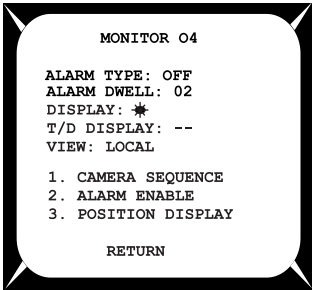
Figure 3-15
Alarm Acknowledgment Response Settings

- If an alarm is programmed for **automatic** acknowledgment, the alarm will remain on the screen for 10 seconds or as long as the alarm contact is held plus 10 seconds.

- If an alarm requires **manual** acknowledgment, the alarm will remain on the screen until it is acknowledged. Multiple alarms sequence according to the alarm dwell setting in the Monitor menu.

AUTOMATIC

```
       MONITOR O4

ALARM TYPE: AUTO
ALARM DWELL: 02
DISPLAY: ☀
T/D DISPLAY: --
VIEW: LOCAL

1. CAMERA SEQUENCE
2. ALARM ENABLE
3. POSITION DISPLAY

       RETURN
```

MANUAL

```
       MONITOR O4

ALARM TYPE: MANUAL
ALARM DWELL: 02
DISPLAY: ☀
T/D DISPLAY: --
VIEW: LOCAL

1. CAMERA SEQUENCE
2. ALARM ENABLE
3. POSITION DISPLAY

       RETURN
```
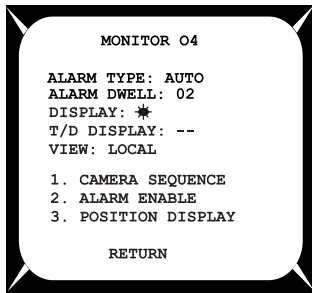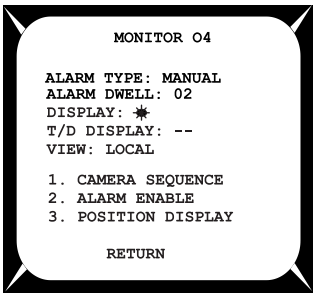
For alarms requiring manual acknowledgment (this also applies to automatic alarms before their programmed timeout), releasing or acknowledging the alarm can be accomplished in one of two ways:

- By pressing the ACK key while the alarm is currently displayed.

- By entering the number of the alarm before pressing the ACK key regardless of whether the alarm is displayed.

Figure 3-16
SAT Alarm Clearing
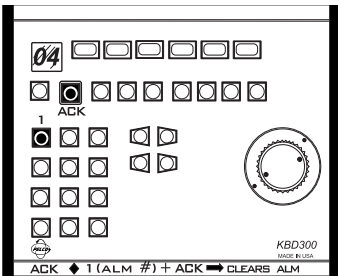
NOTE: *If a programmed alarm elicits a response on both the **9760 SIDE** and the **SAT SIDE** of a configuration, clearing or acknowledgment of the alarm on either side of the configuration has no effect on the other side of the configuration. Alarm acknowledgment influences are mutually exclusive.*

3.2 9760 SYSTEM-SAT ALARM RESPONSE

The response to an alarm that is pro-grammed and armed at the local, **SAT** level, can also be configured for a corresponding **9760 SIDE** alarm notification and response. For this to occur, the System Alarm column for the alarm in question must be edited. This occurs in the local **SAT** Alarm menu.

A System Alarm column entry completes **SAT SIDE** programming menu require-ments for a CM9760-KBD keyboard user to be notified of the corresponding local alarm if proper programming for alarm response functions have been configured on the **9760 SIDE** of the system.

Consider, for a moment, that the **SAT** alarm sub-menu for alarm contacts 1-8 is config-ured as shown in Figure 3-17.

As shown, Alarm #1 activation is not only set for **SAT SIDE** alarm notification but will also send a System Alarm notifi-cation number of **0001** to the CM9760-CC1 when the local **SAT** alarm occurs.

The alarm functions in the following configuration files (housed in the 9760-CC1 but programmed using the 9760-MGR program) must be configured before the 9760 key-board user can be notified of and view the alarm:

In the **Comms** file:

1. Each keyboard must be assigned Alarm monitors if a visual display of the alarm camera (in addition to key-board notification) is desired. For example, note that in Figure 3-18, keyboard number 2 is assigned alarm monitors 1 through 5.

NOTE: *Local and System alarm notifications are mutu-ally exclusive: both, or one, or neither can occur based on programming.*

This corresponds to the number located in the Physical Alarm column of the 9760 Alarm Configuration file.

Figure 3-17
Alarm Contact Menu

Figure 3-18
Assigning Alarm Monitors

Keyboard

Alarm Monitors assigned to the keyboard

In the **Alarms** file:

2. The number entered in the System Alarms column of the ALARMS menu on the **SAT SIDE** corresponds to the number found in the Physical Number column of the ALARM configuration file on the **9760 SIDE**. The number in the associated Logical Number column of the ALARM file is used to ARM the alarm from the 9760 keyboard. The camera to be called in response to Alarm 1 being activated is entered into the Alarm Camera Switch sub-menu of the ALARM file.

NOTE: *To enable* **9760-SIDE**, **automatic** *acknowlegment of alarms, fill in the Auto Reset (see Figure 3-19) column for the associated alarm with a time (in seconds) that you want the alarm to remain active before it is reset.*

This number is used to ARM the alarm from the 9760 keyboard

This is the satellite camera that will be requested by the 9760 System when alarm notification occurs.

This number corresponds to the number in the System Alarm column of the SAT ALARMS menu

Figure 3-19
Configuring 9760 SIDE Alarm Response Numbers

In the **9760 keyboard**:

3. Finally, the programmed logical number (100) associated with the System Alarm number (in our example, 1) is used to ARM the alarm on the 9760 SIDE. This is done from the 9760 keyboard via its program menus or, if desired, it can be accomplished through automatic configuration via macro execution when the keyboard user logs onto the system.

   To accomplish this task direct from the 9760 keyboard, perform the following steps:

   a. After logging onto the system from the keyboard, press the [ESC] key to proceed to the DEFAULT MENU (see Figure 3-20).

   b. Enter the logical number of the alarm you want to ARM in the keypad and press the blue button below the ALARM icon as indicated in Figure 3-20.

   c. The ALARM SUB-MENU appears. Activate the indicated icon in Figure 3-21 to ARM the alarm. If you have not previously entered a PIN number for the DEF menu, the display in Figure 3-22 appears. Enter the default PIN of **1234**. The display will revert back to Figure 3-21. Press the blue button to activate the ARM function. The ARM DIS' icon turns opaque as in Figure 3-23. This completes ARMing the alarm for Physical Alarm 1.

Additional alarms may be armed from this menu by entering the associated logical number in the keypad and pressing the ALARM (bell) icon. This takes you back to Figure 3-21, which now displays the new number in the menu; the ARM DIS' icon is clear and can now be activated to ARM the next alarm. The result is again Figure 3-23, except that now, the new numbers for the ARMed alarm appear.

Once the above equipment menus are configured and an alarm is received from the CM9760-SAT, the alarm display in Figure 3-24 is activated and appears on the LCD display of the 9760 keyboard (if you happen to be in the ALARM menu). If not, the alarm bell icon still appears no matter what menu you are in. The bell icon flashes, going from clear to opaque and back again. The logical number associated with the alarm appears on the display and the alarm camera number called in response to the alarm, also appears.

If, as referenced in step 2's "NOTE" (automatic acknowledgment is not enabled), then you can navigate to the Alarm menu shown in Figure 3-24, and can then reset the alarm shown, pause the alarm or reset all alarms (if there are multiple alarms).

Resetting the alarm does not disarm the alarm. That must be done separately, if that's what you want. Otherwise, resetting the alarm allows the system to be ready for the next activation of this alarm, which will not occur until the source of this alarm activation is corrected first.

More extensive alarm programming functions associated with the system are possible but are not discussed here. Consult the appropriate sections of the 9760-MGR and 9760-KBD manuals.
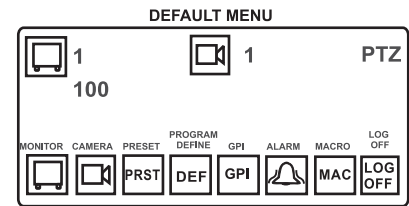
Figure 3-20
Default Menu
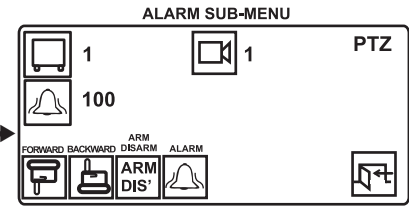
Figure 3-21
Alarm Sub-Menu
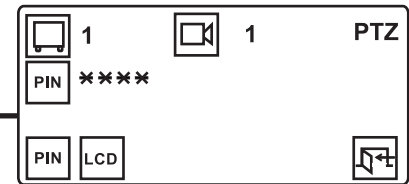
Figure 3-22
DEF PIN Menu
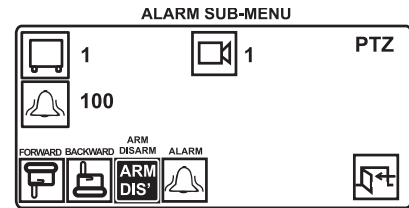
Figure 3-23
Armed Alarm
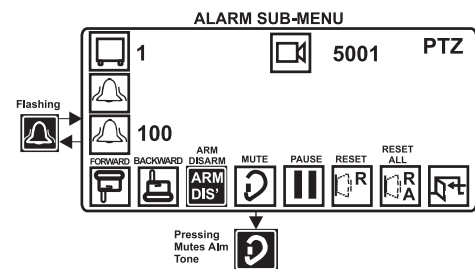
Figure 3-24
Operator Alarm Notification

3.3 SAT AND SAT-ALARM UNIT CONFIGURATIONS

Two SAT Units on the Same NODE

One **SAT** unit can generate 16 possible alarms. Each alarm results in a 9760 system alarm if the **SAT** alarm is assigned a System Alarm number in the **SAT** ALARMS file (see **Section 2**, *Alarm Programming Menu-Page 1 of 1*).
Moreover, each System Alarm number (on the **SAT SIDE**) corresponds to the same number in the Physical Number column of the ALARM configuration file (on the **9760 SIDE**).

If two **SAT** units are connected to the 9760 system, 32 possible alarms notifications can be generated by the **SAT SIDE** and passed on to the 9760 system. Theoretically, it doesn't matter which numbers (of those available) you pick to use as System Alarm numbers as long as you do not repeat any number among the total used by all **SAT** units **and** ALARM units combined. We shall discuss 9760-ALM units mixed with **SATs** shortly, but first consider two **SAT** units on the same node.

The portions of the **SAT** Alarms menu and the 9760 ALARM configuration file that relate to our discussion are shown below in Figure 3-25. Even here, you can see that there are different ways of configuring the menus involved. Usually, the simplest is the best. Here, the simplest is to associate the first 16 (1-16) System Alarm numbers with **SAT** 1 and the second 16 numbers (17 to 32) with **SAT** 2. The associated Physical Number column's range in the 9760 ALARM configuration file runs from 1 to 32 (1-16 for **SAT** 1 and 17-32 for **SAT** 2).
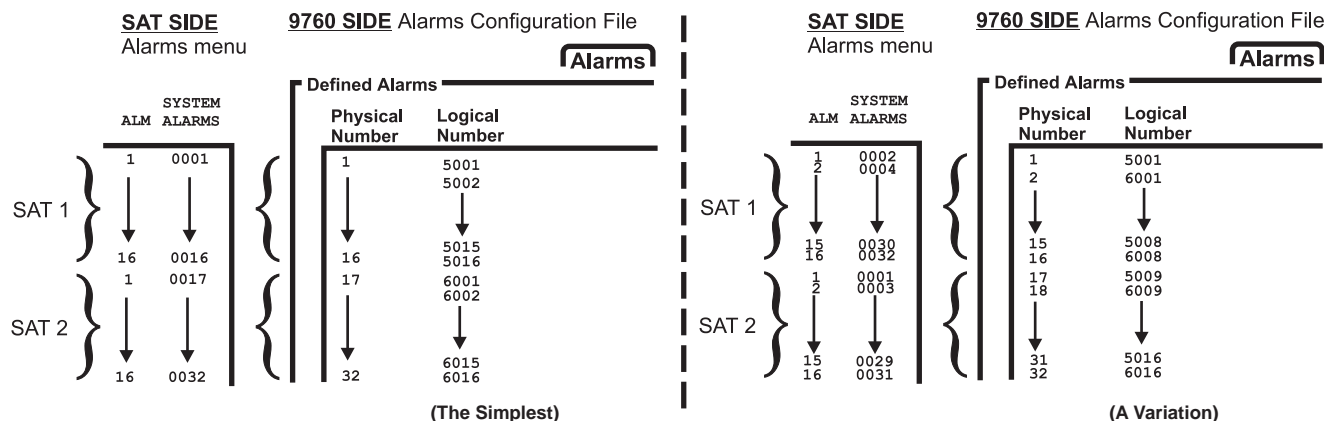
Figure 3-25
SAT Alarm Configuration – Two SATs

For each 9760 Physical Number (1-32) in the configuration file, an associated Logical number is assigned. The Logical number is used to ARM the alarm from the 9760 keyboard. Each Physical Number (or defined alarm) is also associated with a Logical camera number in the Alarm Camera Switcher sub-window of the 9760 Alarm configuration file (see **Section 3**, *3.2 9760 System-SAT Alarm Response*). The camera referenced there will be called by the 9760 when the associated alarm is triggered. The logical camera numbers, which in this case are **SAT** satellite cameras, are port specific with respect to the **SAT** unit that they belong to. That relationship, in turn, is determined by the configuration of the Link Cameras configuration file (see **Section 2**, *3.3 Link Cameras File*).

Once configured, alarm response for each alarm occurring on any unit is the same as that already described in the previous section.

SATs and ALARM Units on the Same Node

Alarm units and **SAT** units both utilize the same 9760 Alarm Configuration File. The following statements compare and contrast similarities and differences between the two units:

One Alarm unit can handle 64 alarm inputs per unit.
One **SAT** unit can handle 16 alarm inputs per unit.

Alarm units (up to four) may be daisy-chained on a single port.
SAT units cannot be daisy-chained.

Alarm units can interface 256 alarms per port.
SAT units can interface 16 alarms per port.

Up to 10 ports may utilize Alarm units, for a total of 10 X 256 or 2560 hard-wired alarms/system.
SAT units may attach to as many ports as are available, however, the combined ALARM-SAT mix cannot exceed 2560 hard-wired alarms.

Alarm units utilize alarm base addressing.*
SAT units do not.

Alarm units are added to the system on a 4 per port basis.
SAT units are added on a 1 per port basis.

The important thing to consider between ALARM and **SAT** units is what they share or have in common, which is the ALARM file. Several ALARM file configurations, based on various equipment configurations, are illustrated in Figure 3-26.

---

* INFORMATION BOX – Alarm Base Addressing

■ Fact 1: Alarm base addressing is used with alarm units only.

■ Fact 2: The number entered in the Alarm Base Number box (for alarm units) corresponds to a number in the physical alarm input column of the Alarm configuration file (See Figure 2-9, *Alarm File.* Ignore its mentioned use there for **SAT SIDE** menu programming).

Definition: The Alarm Base Number defines the **starting** point from which alarm "counting" begins for alarm base addressing as applied to alarm units. Alarm units utilize alarm base addressing in "bite-size" increments (per port) of 256, spanning a range whose count starts at the value entered into the Alarm Base Number box.

Working Rules:

■ Rule 1: The Alarm Base Number for the first alarm unit attached to a CC1 port is set to 1. Subsequent alarm units (up to four) are daisy-chained off the first unit on the same port.

■ Rule 2: If you add another alarm unit (say, number five), you must attach it to a different port. You must also enter a new number to count from in the Alarm Base Number box for the port to which this alarm unit is attached. In this case, that number would be 257. Subsequent alarm units (up to four, total, for this port) would utilize alarm addresses 257-512 (accommodating 8 Alarm units on 2 ports).

■ Rule 3: The combined total of hardwired SAT-Alarm unit inputs or addresses cannot exceed 2560 per system. The number (2560) was originally derived from the use of four alarm units per port (256 total) within a 10 port limit (256 x 10). At present the number of hardwired inputs allowed is still 2560.

■ Rule 4: It is best to define alarms for Alarm units before those for SATs, as is done in the first two configuration examples below.

One SAT unit and one ALARM unit on the same node:
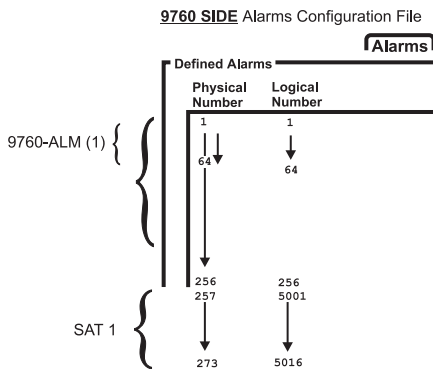
One SAT unit and two ALARM units on the same node:
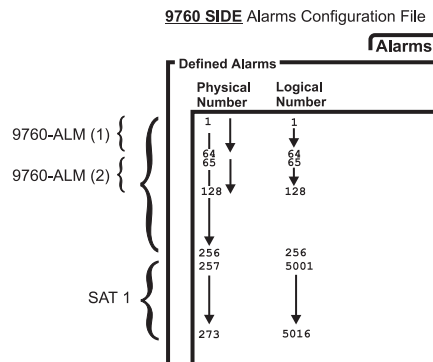
Two SAT units and one ALARM unit on the same node:
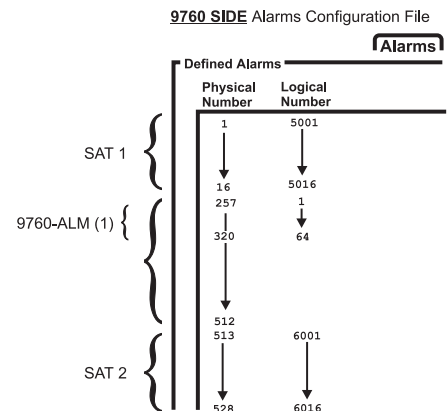
Figure 3-26
Various SAT-ALARM Configurations

As stated earlier, **SAT** alarm definitions do not use nor depend upon alarm base addressing. So the following question might arise: If you had one ALARM unit that used only the first 48 inputs of the Alarm file, could you take unused inputs 49 through 64 and use them as **SAT** alarm inputs?

The short answer: Yes, you can use any alarm input for the **SAT** as long as it is not actually configured for use by any other piece of equipment.

The long answer: If you are not pressed for port space, it is not a good thing to do. The obvious problem is that (1) you create an alarm assignment overlap from the 9760-ALM's point of view. To the 9760 ALARM configuration file, an alarm is an alarm. It doesn't really care where it originates. For the 9760-ALM unit,

however, that is a different story. That leads to problem (2), which is that there now is one more item of information to track. If more alarm units are daisy-chained to the original port, will anyone remember the **SAT** unit? If the front panel switches of the single alarm unit are changed to take advantage of those last 16 unused inputs, is anyone going to remember that the **SAT** unit is using those numbers? If possible, **do not use alarm-input numbers already allocated to ALARM unit use, whether they are used or not.**

1.0 SYSTEM EXAMPLE

We shall use Figure 4-1 to highlight the processes involved in integrating a CM9760-SAT into a 9760 environment.

Figure 4-1
System Example

** For link-camera inputs 1, 3, 5, and 7 (**SAT SIDE**), we assign (for 9760 purposes) corresponding logical numbers of 5001, 5003, 5005 and 5007. We limit our discussion to these specific inputs as we discuss the system illustrated above.
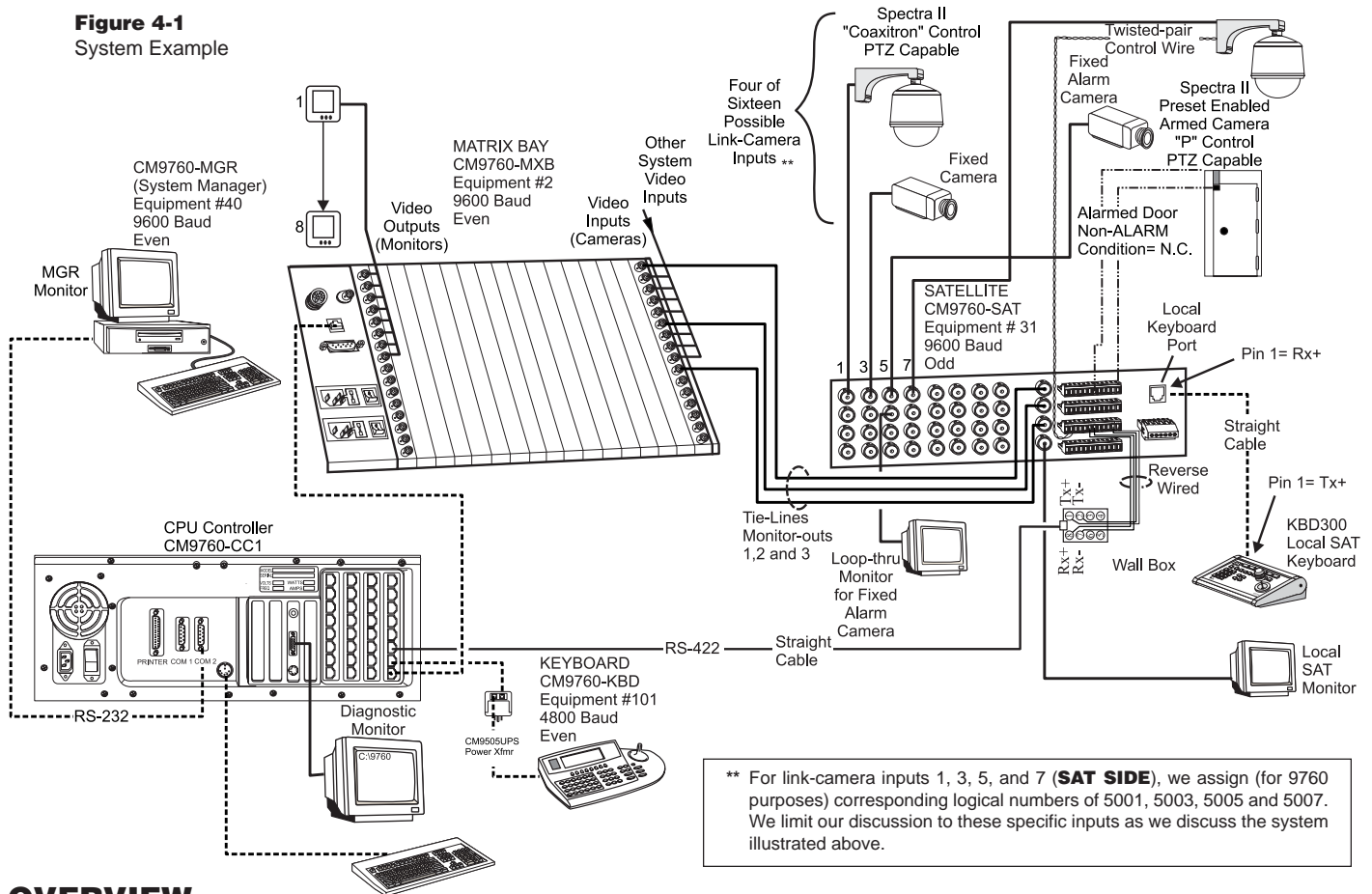
OVERVIEW

Integrating an **SAT** into a 9760 system occurs in two stages: (1) hooking it up (items 1-6 below), and (2) programming it (items 7 and 8). The list below is based on the diagram above. It is as follows:

1. Attach a keyboard to the local **SAT** keyboard port.

2. Attach a local monitor to the monitor-out port on the **SAT**.

3. Establish a communication link between the CM9760-CC1 and the CM9760-SAT.

4. Run link-cameras (satellites) to the video input BNCs on the rear of the **SAT**.

5. Run tie lines from the appropriate monitor-out BNCs on the **SAT** to available video input BNCs on the rear of the CM9760-MXB (matrix bay).

6. Attach and configure alarm inputs and wiring.

7. Program the local **SAT** menus to correspond to your physical hook-up.

8. Program the 9760 System to incorporate the **SAT** unit into the system environment.

We shall not engage in detailed discussions of non-**SAT** related matters. We will discuss, in turn, each of the above numbered items. For each, we shall (1) isolate that portion of Figure 4-1 under discussion (2) discuss any and all applicable programming menus associated with that item, and (3) add other pertinent remarks and/or give appropriate manual references where applicable. Please note that items 7 and 8 (software) are not discussed as individual items, separate from other items in the installation process, but are considered at the time each physical item (1 through 6) is discussed. In actual practice, programming is not necessarily performed concurrent with physical setup. We do so here because our purpose is to inform, to illustrate the close relationship between the device and the program that controls it and, in the process, perhaps point out how best this manual can be put to use.

Before we begin, note that link-camera video input # 5 in Figure 4-1 is shown as a loop-through input. This requires **SAT** top-cover removal. This is done first if the SAT unit is to be rack-mounted. To configure this input for loop-through operation, move the JP5 jumper from 75-ohm term (factory default) to looping (refer to **Section 1**, 3.2.1 Looping Video Inputs). Now we can begin.

NOTE: *Figure numbers are not allocated for the remainder of this section, as the features under discussion are subsets of the system example, which does have a number.*

1. Attach a keyboard to the local SAT keyboard port.

NOTE: RJ-45 cable run between the keyboard and the 9760-SAT local keyboard port (shown in the illustration) is normally supplied. be sure to check that the cable supplied ("straight") is correct before installing (see **Section 1**, *3.6 Local Keypad* and **Appendix I**, *Communication and the Connection Tutorial*, if necessary).

NOTE: You may not install a KBD300V on the SAT local keyboard port. It has power requirements for the LCD display not supplied at the local keyboard port. Refer to multiple keyboard hookup in **Appendix 2**, *Remote Keypad Connections*.

Pin 8

Local Keyboard Port

Pin 1= Rx+
Pin 2= Rx-
Pin 7= Tx-
Pin 8= Tx+

9760 SAT

Straight Cable

KBD300 Local SAT Keyboard

Pin 1= Tx+
Pin 2= Tx-
Pin 7= Rx-
Pin 8= Rx+

Pin 8

ACCESS Programming Menu

Use the Access menu to program keyboard access to the local SAT monitor. In our example, the monitor is attached to the MON 4 output. Also program the menu to allow the keyboard to program presets (see **Section II**, *Access Programming Menu-Page 1 of 1*).

```
   KBD TO MONITOR ACCESS

KBD   MONITOR    PRESET
      1 2 3 4    ENABLE
1     Y Y Y Y      Y
2     Y Y Y Y      Y
4     Y Y Y Y      Y
5     Y Y Y Y      Y
6     Y Y Y Y      Y
7     Y Y Y Y      Y
8     Y Y Y Y      Y

        RETURN
```

KEYBOARD ADDRESS
SWITCH SETTINGS

K E Y B O A R D	A D D R E S S	▮ = ON ▮ = OFF SWITCH SETTING			
		1	2	3	4
1	0	▮	▮	▮	▮

Keyboard 1
Keyboard Address 0

Refer to **Section I**, *3.6 Local Keypads* for additonal information
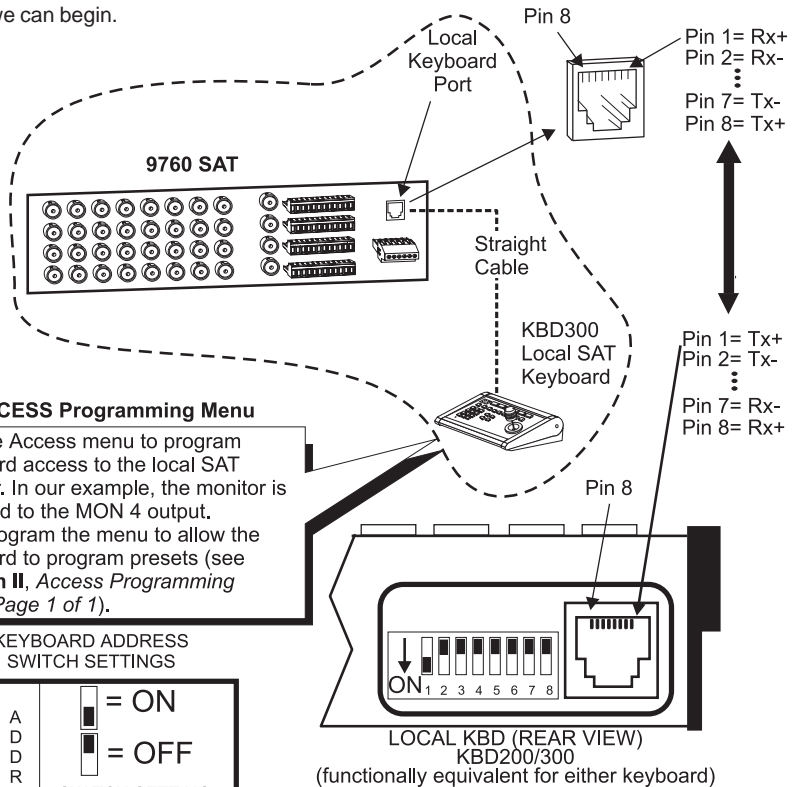
LOCAL KBD (REAR VIEW)
KBD200/300
(functionally equivalent for either keyboard)

ON 1 2 3 4 5 6 7 8

2. Attach a local monitor to the monitor-out port on the SAT. **

** **IMPORTANT NOTE**: Since we are going to configure the use of 3 TIE LINES in this configuration, we option the MON 4 output VIEW selections as LOCAL. Monitor-outs configured as tie lines on the **SAT** require sequential, ascending connections that must start with the MON 1 output. All local monitor-outs are attached after tie lines (see also **Section I**, *2.0 VIDEO TIE LINES*).

```
       MONITOR O4

ALARM TYPE: OFF
ALARM DWELL: 02
DISPLAY: ☀
T/D DISPLAY: --
VIEW: LOCAL

  1. CAMERA SEQUENCE
  2. ALARM ENABLE
  3. POSITION DISPLAY

       RETURN
```

The **VIEW** selection presents two choices: **LOCAL** or **TIE LINE**. You always need at least one monitor out connection configured as **LOCAL** for programming local **SAT** functions, which is the choice we make here for our system example. **DISPLAY** should be toggled as shown for the local monitor. **T/D DISPLAY** is OFF by default. *** Item 3 (**POSITION DISPLAY**) should be checked and adjusted.

***If it is not important for time (in the local environment) to be synchronized with system time, then you might want the T/D selection to be ON for the local monitor. If that is done, it would be advisable to adjust the time against a system monitor that shows system time.

Local SAT Video Monitor

```
MONITOR 01 ALARM ENABLE

ALM SET ALM  SET ALM SET

1   --  7    *   13  --
2   --  8    --  14  --
3   --  9    --  15  --
4   --  10   --  16  --
5   --  11   --
6   --  12   --

        RETURN
```

Local **SAT** Monitor

Port Programming Menu

COM2

TX+ TX- RX- RX+

Check the **SAT PORTS** menu settings for **COM 2.** Make sure they correspond to those required for connection to the CM9760-CC1 (refer to **Section 2**, *Ports Programming Menu-Page 1 of 1* for further details).

```
        COM 2
      SET PORT


BAUD RATE 9600
PARITY     ODD
STOP BITS 1



      RETURN
```

* Reverse Wired

RJ-45 8-Wire Flat Cable
* (Straight)

Pin 1

Tx+ Tx-

From CM9760-CC1,
Port 7 Sercom port

① ② ③ ④

⑧ ⑦ ⑥ ⑤

Pin 8

Rx+ Rx-

Wall Box

Pin 1 Wiring Post

Pin 1   Pin 8

9760-SAT

COM2

Tx+ Tx-

Reverse Wired

Rx+ Rx- WALL BOX

9760-CC1

PORT 7
Pin 1= TX +

RS-422   Straight Cable

* In this example, a "straight cable" (connected between the CC1 and the wall box) and a "reverse wired" data line (between the wall box and COM2 on the **SAT**) is used. One could just as easily have installed a "reverse" (rather than a "straight") cable between the CC1 and the wall box and then wired a "straight" (rather than "reverse wired") data line between the the wall box and the COM2 connection. Refer to Appendix I for discussions on 9760 device connections.

System Manager Comms FILE

Program the Comms file for:
    SAT port attachment to the CC1: **Port 7**
    Equipment # **31**
    Baud rate: **9600**
    Parity: **Odd**

NOTE: Set the alarm base number equal to "**1**" and leave it at that value. Alarm base numbering is not presently used with the **SAT**. (Refer to **Section 3**, *3.0 Alarm Operations*).

See **Section 2**, *3.1 Comms File*, for additonal information on programming the Comms file.

Comms File

Setup System Configuration TEST3

| Mon | Cameras | Link Cameras | Video Amp | Macro | Alarms |
| Comms | Messages | Operators | System | Gpi | NIU |

Defined Ports

Port	Equipment Number		Baud	Parity
1	0		9600	None
2	40	MXB	9600	Even
3	0		9600	None
4	0		9600	None
5	2		9600	Even
6	101		4800	Even
7	31		9600	Odd
8	0	KBD	9600	None
9	0		9600	None
10	1		4800	None
11	0	SAT	9600	None
12	0		9600	None
13	0		9600	None
14	0		9600	None
15	0		9600	None

SAT Port 7

Keyboard

Alarm Base Number 1

Note the Alarm Base Number. This should always be set equal to the number 1. The alarm base is reserved for possible future use. Until then it must be configured as noted.

Edit Port Fields

7 | 31 | 9600 | Odd

COMM Parameters

SAT Port Connection

4. Run link-cameras (satellites) to the video input BNCs on the rear of the SAT.

Four of
Sixteen
Possible
Link-Camera
Inputs
**

Spectra II
"Coaxitron" Control
PTZ Capable

Twisted-pair
Shielded Cable
Control Wire

Spectra II
Preset Enabled
Armed Camera
"P" Control
PTZ Capable

Fixed
Alarm
Camera

Fixed
Camera

SATELLITE
CM9760-SAT
Equipment # 31
9600 Baud
Odd

1 3 5 7

Loop-thru
Monitor
for Fixed
Alarm
Camera

The SAT menu programming files referenced below must be edited for our system example to work.

COM 1 Control Wiring Detail for Input #7

Tx+ Tx-   Rx- Rx+

NOTE: COM 1 port protocol must be set for the receiver in quesiton using the PORTS menu.

Twisted-pair Shielded Wiring

(Tx+ and Tx- are run from here to Rx+ and Rx-, respectively, on the Spectra receiver).

The following SAT menu programming files should be configured for the system example:

CAMERAS

CAMERA 01

CAMERA TITLE
SAT LINK-CAM 1

RX TYPE: EXT COAXITRON

RETURN

Available RX TYPE
Parameters

EXT COAXITRON
422P
422D
STD COAXITRON

CAMERAS Programming Menu

For each camera-receiver input, create a camera title and (if PTZ capable) choose a receiver type for the associated camera. Be sure you are programming the correct camera input (1-16) before you edit the associated menu. For our system example, we program camera menus 1, 3, 5 and 7 and choose a camera title for each. For inputs 1 and 7, we also choose receiver types. We configure input 1 as EXT COAXITRON (as shown). For input 7, the receiver is configured for "P" protocol, so its camera menu will reflect that with a selection of "422P" for RX TYPE. Since this is not coaxitron, independant control wiring (consisting of a twisted shielded pair) is run from the "receiver control" wiring plug (COM 1) on the **SAT** to the respective receiver (see the expanded inset above).

MONITORS

MONITOR O4

ALARM TYPE: OFF
ALARM DWELL: 02
DISPLAY: --
T/D DISPLAY: --
VIEW: LOCAL

1. CAMERA SEQUENCE
2. ALARM ENABLE
3. POSITION DISPLAY

RETURN

MONITOR 04 SEQUENCE MENU					
ENTRY 1-8			ENTRY 9-16		
CAM	DWL	PRE	CAM	DWL	PRE
01	02	00	01	02	00
03	02	00	03	02	00
05	02	00	05	02	00
07	07	21	07	07	21
01	02	00	01	02	00
03	02	00	03	02	00
05	02	00	05	02	00
07	07	21	07	07	21
		RETURN			

MONITORS Programming Menu

To partition camera availability for sequencing at our local monitor (MON 4), we open the MONITORS menu and select item (1) CAMERA SEQUENCE. Here, we partition our 4-camera input example. We can set up the order (in the CAM column) and time duration (up to 99 seconds) for each camera. A camera can appear more than once, if you want. These choices direct keyboard activated sequence command displays. (We bypass alarm related issues here. These will be discussed and programmed when we discuss alarm inputs for our example).

However,it is important to mention that if a preset number** is entered in the PRE column (for those cameras that are PTZ capable) then you must enter a dwell number that allows enough time for the camera to reach its preset position (to view its display) before the next preset is called. In our example, we have entered a dwell of 7 seconds in conjunction with preset 21 for camera input 7. When a sequence command is issued from the keyboard, the cameras listed in the CAM column will sequence as listed and the preset will automatically be called as part of that sequence.

ACCESS

ACCESS

1. KEYBOARD TO MONITOR
2. MON TO CAMERA 1-10
3. MON TO CAMERA 11-16
*** OVERRIDE: LOCAL

RETURN

***We recommend that OVERRIDE be set to LOCAL for our example (see **SECTION 2**, *ACCESS Programming Menu-Page 1 of 1*).

MONITOR TO CAMERA ACCESS

MON CAMERA
     1 2 3 4 5 6 7 8 9 10
1   Y Y Y Y Y Y Y Y Y Y
2   Y Y Y Y Y Y Y Y Y Y
3   Y Y Y Y Y Y Y Y Y Y
4   Y Y Y Y Y Y Y Y Y Y

A called preset number results in nothing if the preset associated with that number has not been programmed. This is done from the keyboard while in operational mode (see **SECTION 2, *2.1 Programming Presets*). We should also mention that a programmed preset can be activated in several ways: (1) it can be called as part of a sequence (as we discussed above) or (2) it can be called directly from the keyboard or (3) it can be alarm activated. Alarm activated presets take precedence and temporarily halt any running sequence. Once the alarm is ACKed (manual mode) or timeout occurs (AUTO mode), the interrupted sequence continues.

ACCESS Programming Menu

For the above sequences to occur (as well as any other items that require camera access to the local monitor or any other monitor on the system), monitor to camera access must be programmed. Here we make sure that MON 4 is granted access to cameras 1, 3 ,5 and 7.

The link-camera configuration file on the **9760 SIDE**, mirrors the choices for the link-camera inputs selected in the camera menu on the **SAT SIDE**. The input numbers associated with the 16 inputs on the **SAT** correspond to the fixed numbers located in the **Phy Num** column of the Link Cameras file. The items to consider in the Link camera file for our system example are pointed out below:

The defined cameras in the Phy Num (physical number) column, correspond to the actual physical input ports on the **SAT**. Of the 16 possible, we single-out 4 to use in our system example. For each camera input, we assign a logical number. It is the logical number that keyboard operators use to manipulate link (satellite) cameras.

The cameras in our system example.

Assign operator access

This is the port on the CC1 to which the **SAT** is connected. It is the same for all defined cameras attached to this **SAT**.

The port address for each camera field changes and corresponds to the physical port on the **SAT** to which the camera is attached

Setup System Configuration TEST3

Com	Messages	Operators	System	Gpi	NIU
Monitors	Cameras	Link Cameras	Video Amp	Macro	Alarms

Defined Cameras

Phy Num	Log Num	Ident	Unique ID	Connect Gpi	Operator Access	PTZ or Fixed	Alternate Cameras	C/M Group	C/C Group
1	5001	SAT LINK-CAM 1	0	0	1...96	PTZ	No Alt Cams	1	0
2	5002	SAT LINK-CAM 2	0	0	1...96	PTZ	No Alt Cams	1	0
3	5003	SAT LINK CAM 3	0	0	1...96	PTZ	No Alt Cams	1	0
4	5004	SAT LINK CAM 4	0	0	1...96	PTZ	No Alt Cams	1	0
5	5005	SAT LINK CAM 5	0	0	1...96	PTZ	No Alt Cams	1	0
6	5006	SAT LINK CAM 6	0	0	1...96	PTZ	No Alt Cams	1	0
7	5007	SAT LINK CAM 7	0	0	1...96	PTZ	No Alt Cams	1	0
8	5008	SAT LINK CAM 8	0	0	1...96	PTZ	No Alt Cams	1	0
9	5009	SAT LINK CAM 9	0	0	1...96	PTZ	No Alt Cams	1	0
10	5010	SAT LINK CAM 10	0	0	1...96	PTZ	No Alt Cams	1	0
11	5011	SAT LINK CAM 11	0	0	1...96	PTZ	No Alt Cams	1	0
12	5012	SAT LINK CAM 12	0	0	1...96	PTZ	No Alt Cams	1	0
13	5013	SAT LINK CAM 13	0	0	1...96	PTZ	No Alt Cams	1	0

Edit Camera Fields

1   Find

3   5003   SAT LINK CAM 3   0   0   Oper Acc

PTZ Port
7   Port Num
3   Port Addr

Type
CAMERA

Reverse Controls
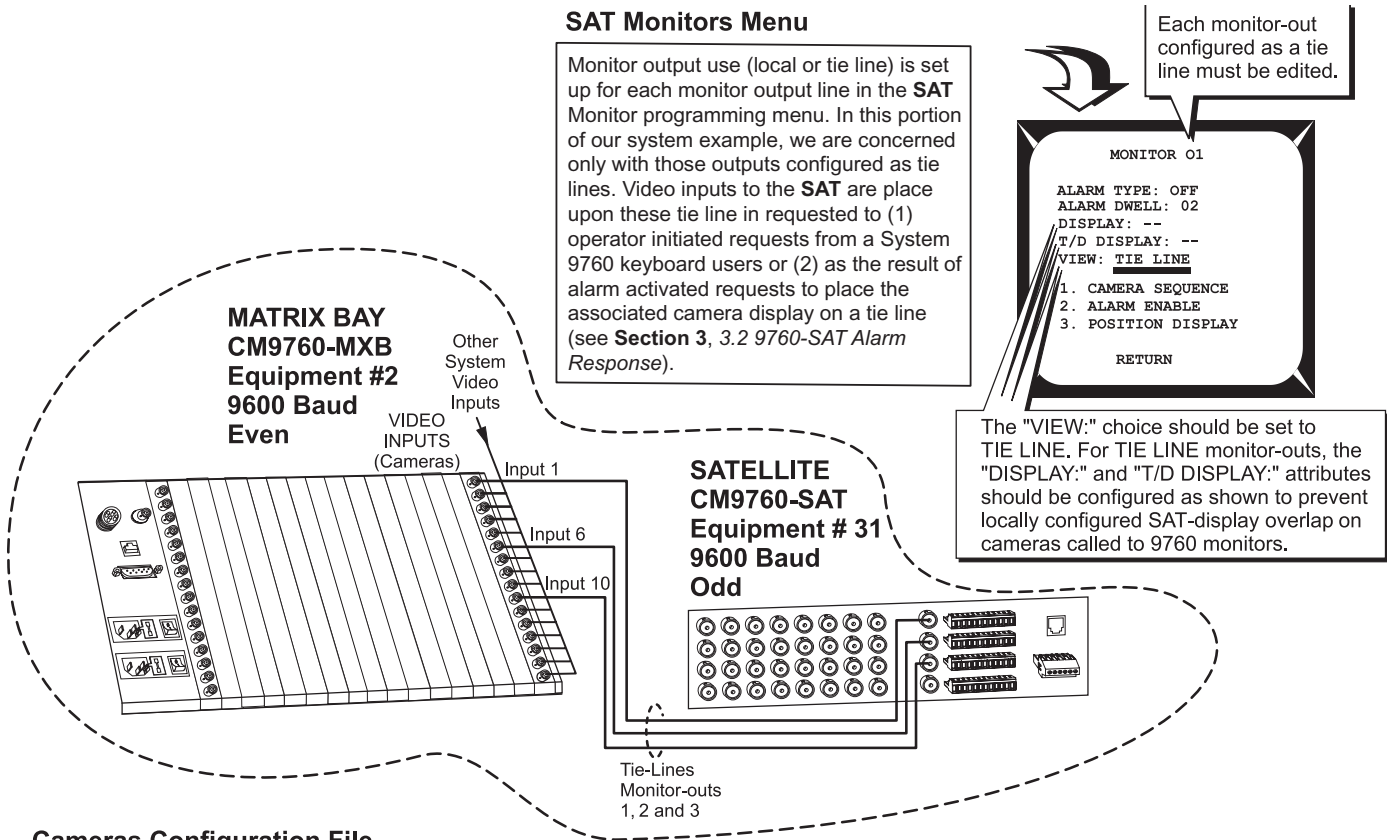☐ Iris ☐ Focus ☐ Zoom

Latched
☑ Aux1 ☑ Aux2 ☑ Aux3 ☑ Aux4
☑ Aux5 ☑ Aux6 ☑ Aux7 ☑ Aux8

Undo

Save   Save & Send   Delete

Alternate Cameras
1 - 5   6 - 10
0   0
0   0
0   0
0   0
0   0

C/M Group
1

C/C Group
0

Close

5. Run tie lines from the chosen monitor-out BNCs on the SAT to available input video BNCs on the rear of the CM9760-MXB (matrix bay).

Note the physical inputs (the actual physical port number) to which these tie lines are run and then configure the appropriate files and menus (as shown below).

SAT Monitors Menu

Monitor output use (local or tie line) is set up for each monitor output line in the **SAT** Monitor programming menu. In this portion of our system example, we are concerned only with those outputs configured as tie lines. Video inputs to the **SAT** are place upon these tie line in requested to (1) operator initiated requests from a System 9760 keyboard users or (2) as the result of alarm activated requests to place the associated camera display on a tie line (see **Section 3**, *3.2 9760-SAT Alarm Response*).

Each monitor-out configured as a tie line must be edited.

```
        MONITOR 01

ALARM TYPE: OFF
ALARM DWELL: 02
DISPLAY: --
T/D DISPLAY: --
VIEW: TIE LINE

1. CAMERA SEQUENCE
2. ALARM ENABLE
3. POSITION DISPLAY


        RETURN
```

MATRIX BAY CM9760-MXB Equipment #2 9600 Baud Even

Other System Video Inputs

VIDEO INPUTS (Cameras)

Input 1

Input 6

Input 10

SATELLITE CM9760-SAT Equipment # 31 9600 Baud Odd

The "VIEW:" choice should be set to TIE LINE. For TIE LINE monitor-outs, the "DISPLAY:" and "T/D DISPLAY:" attributes should be configured as shown to prevent locally configured SAT-display overlap on cameras called to 9760 monitors.

Tie-Lines Monitor-outs 1, 2 and 3

Cameras Configuration File

For the example shown above, the Cameras configuration file on the **9760 SIDE** must be edited to reflect the fact that the monitor output lines from the **SAT** that are connected to available MXB video inputs, are tie lines.

Setup System Configuration TEST3

| Comms | Messages | Operators |
| Monitors | Cameras | Link Cameras | Video |

Make sure everthing else is zeroed out also. For example: no Operator Access, and so on.

Defined Cameras

Physical Number	Logical Number			Connect Gpi	Operator Access	PTZ or Fixed	Alternate Cameras	C/M Group	C/C Group
1	0	Tie Line	0	0	No Acc	FIX	No Alt Cams	0	0
2	2	Spectra	0	0	1...3	PTZ	No Alt Cams	0	0
3	3	Spe	0	0	1...3	PTZ	No Alt Cams	0	0
4	4	EX	0	0	1...3	PTZ	No Alt Cams	0	0
5	5	Bench	0	0	1...3	FIX	No Alt Cams	0	0
6	0	Tie line	0	0	No Acc	FIX	No Alt Cams	0	0
7	7	Bench	0	0	1...3	FIX	No Alt Cams	0	0
8	8	Be	0	0	1...3	FIX	No Alt Cams	0	0
9	9	Bookcase	0	0	1...3	FIX	No Alt Cams	0	0
10	0	Tie line	0	0	No Acc	FIX	No Alt Cams	0	0
11	11	Bookcase	0	0	1...3	FIX	No Alt Cams	0	0
12	12	Bookcase	0	0	1...3	FIX	No Alt Cams	0	0
13	13	Desk			FIX	No Alt Cams	0	0

Note that the logical numbers for **SAT** monitor outputs (1, 2 and 3), which are connected to physical inputs 1, 6 and 10, respectively, are all set to "0".

The port number on the CC1 to which the **SAT** (for these tie lines) is connected, is entered here. The port address is set to "0". The same information is entered for each input configured as a tie line.

Edit Camera Fields

| 1 |

| 1 | 0 | Tie Line |

PTZ Port

| 7 | Port Num | CAMERA | Type
| 0 | Port Addr |

Reverse Controls
- Iris ☐ Focus ☐ Zoom ☐

Latched
- ☐ Aux1 ☐ Aux2 ☐ Aux3 ☐ Aux4
- ☐ Aux5 ☐ Aux6 ☐ Aux7 ☐ Aux8

Undo

Save   Save & Send   Delete

Alternate Cameras

1 - 5	6 - 10	C/M Group
0	0	0
0	0	
0	0	C/C Group
0	0	0
0	0	

Close

6. Attach and configure alarm inputs and wiring.

In our system example, we show a door that triggers an alarm if it is opened.
A number of conditions must be met to enable alarm activation and response. These are illustrated below.

A number of menus must be programmed in order to integrate the illustrated alarm function into our system configuration.
On the **SAT SIDE**, the Monitors file, the Alarm file and the Access files are affected.
On the **9760 SIDE**, the System File, the Alarm file, and the Comms file are affected.

SAT SIDE

MONITORS MENU

We edit the MON 4 menu (local **SAT** monitor) for MANUAL mode Alarm Type. We set a dwell of 05 seconds, since we want to allow camera input 7 enough time to reach its preset position. We also activate the display setting, but we elect not to activate local T/D Display as we want the option available for the alarm view to be recorded locally. For that, we would want to use system time and not "locally-set" **SAT** time. To do that we could option a downstream MDA unit with looped input from the **SAT**. The MDA can be synchronized with system time.
On the other hand, if we wanted local **SAT** time displayed and still wanted to record alarm events using system time, that could be arranged by recording the the display on the system side using the alarm video placed on the associated tie line in response to alarm activation.

```
            MONITOR O4

ALARM TYPE: MANUAL
ALARM DWELL: 07
DISPLAY: ✳
T/D DISPLAY:--
VIEW: LOCAL

1. CAMERA SEQUENCE
2. ALARM ENABLE
3. POSITION DISPLAY

        RETURN
```

```
  MONITOR 04 ALARM ENABLE
            ▬
ALM SET ALM  SET ALM SET

 1   --   7   ✳   13  --
 2   --   8   -   14  --
 3   --   9   --  15  --
 4   --  10   --  16  --
 5   --  11   --
 6   --  12   --

        RETURN
```

ALARMS MENU

Input ALM **7** in the ALARM file menu is set for N.C. operation. We enter a system alarm number of 0001 for notification on the system side. For local **SAT** viewing of the alarm, we activate the ARM column for input **7** and enter **21** as the alarm activated preset for the camera to go to.

```
          SYSTEM    LOCAL
ALM TYPE  ALARMS   ARM PRE

 1  N.O.   0000     --  00
 2  N.O.   0000     --  00
 3  N.O.   0000     --  00
 4  N.O.   0000     --  00
 5  N.O.   0000     --  00
 6  N.O.   0000     --  00
 7  N.C.   0001     ✳  21
 8  N.O.   0000     --  00

        RETURN
```

ACCESS MENU

We check to make sure that the local monitor (4) has access to camera 7 input

```
         ACCESS


1. KEYBOARD TO MONITOR
2. MON TO CAMERA 1-10
3. MON TO CAMERA 11-16


        RETURN
```

```
   MONITOR TO CAMERA ACCESS

MON  CAMERA
       1 2 3 4 5 6 7 8 9 10
 1     Y Y Y Y Y Y Y Y Y Y
 2     Y Y Y Y Y Y Y Y Y Y
 3     Y Y Y Y Y Y Y Y Y Y
 4     Y Y Y Y Y Y Y Y Y Y

        RETURN
```

ALARMS

ALARMS

1 2 3 4 5 6 7 8 9 ⏚ ⏚

Alarm Contact 7

Video Input #7

Shielded
Twisted-pair
Control Wiring

Spectra II
Preset Enabled
Armed Camera
"P" Control
PTZ Capable

PRESET 21
Camera View
Logical Cam #5007

Alarmed Door
NON-ALARM
Condition = N.C.

**SATELLITE
CM9760-SAT
Equipment # 31
9600 Baud
Odd**

7

GND

Control Wiring

Tx+ Tx-

Local
SAT
Monitor
(Mon 4)

Item 6 (continued)

Alarms Configuration File

In the Alarms menu of the **SAT** on the previous page, we entered the number 0001 into the SYSTEMS ALARM column opposite the ALM 7 row. In the Defined Alarms attributes of the Alarms menu of the System manager, we locate Physical Alarm Number 1, which corresponds to **SAT** System Alarm 0001. In the adjacent Logical Number column, we enter Logical Number 100 for the defined alarm. This is also the number we use later to ARM the alarm from the 9760 keyboard.

Setup System Configuration TEST3

Comms | Messages
Monitors | Cameras

Defined Alarms

Physical Number	Logical Number	Ident	Macro Number	Dwell Time	Auto Reset	Alarm Cameras	Operator Access	Group Number
1	100	SAT Alarm	0	5	0	5007	1...96	1
2	0	UNDEFIND ALARM DATA	0	0	0	No Cams	No Acc	0
3	0	UNDEFIND ALARM DATA	0	0	0	No Cams	No Acc	1
4	0	UNDEFIND ALARM DATA	0			No Cams	No Acc	1
5	0	UNDEFIND ALARM DATA	0					
6	0	UNDEFIND ALARM DATA	0					
7	0	UNDEFIND ALARM DATA	0					
8	0	UNDEFIND ALARM DATA	0					
9	0	UNDEFIND ALARM DATA	0					
10	0		0					
11	0		0					
12	0		0					
13	0		0					
14	0		0					
15	0		0	0	0	No Cams	No Acc	1
16	0		0	0	0	No Cams	No Acc	1
17	0		0	0	0	No Cams	No Acc	1
18	0		0	0	0			
19	0		0	0	0			
20	0		0	0	0			

Associated with the defined system alarm, we associate the Link camera that we want called for that alarm. This camera display will be put on the video tie-line and displayed on the system monitor designated in the Comms file, illustrated below.

Alarm Camera Switches

Alarm Cameras

	Logical Cam Num	Preset
1	5007	0
2	0	0
3	0	0
4	0	0
5	0	0

This is an **SAT** controlled camera so a Preset Num is not entered here.

Edit Alarm Fields

| 1 | 100 | | | 5 | 0 | Alm Cam | Oper Acc | 1 |

Save   Undo

OK   Cancel

We enter a dwell time and ensure that operator access is granted

System Configuration File

Setup System Configuration TEST3

| Monitors | Cameras | Link Cameras | Video Amp | Macro | Alarms |
| Comms | Messages | Operators | System | Gpi | NIU |

System Wide Options

Printer Options
☐ Enable

System Screen Options
☑ Show System Errors
☑ Update Graphics

9760-GPC Card
◉ None
○ 9760-REL/IRC
○ 9750-REL16

GPI

◉ Print Oper Pin
○ Print Oper Num

Alarm Control
◉ Mode 1   ○ Mode 2
○ Mode 3   ○ Mode 4
○ Mode 5   ○ Mode 6

Miscellaneous
☐ Cam Auto Override

On Screen Attributes

Time & Date
Mon ID
Cam ID
Cam Number
Alarm ID

Alarm Attributes
☐ Show
☑ Blinking
X 4
Y 4
Size Large
Color B<--|---------->W

Time & Date Format

For alarm display on the **9760 SIDE**, we specify an alarm mode. Here, we select alarm mode 1

Comms Configuration File

Setup System Configuration TEST3

| Monitors | Cameras | Link Cameras | Video Amp | Macro | Alarms |
| Comms | Messages | Operat... | |

Defined Ports

Port	Equipment Number	Baud	Parity
1	0	9600	None
2	40	9600	Even
3	0	9600	None
4	0	9600	None
5	0	9600	Even
6	101	4800	Even
7	31	4800	Odd
8	0	9600	None
9	0	9600	None
10	0	9600	None
11	0	9600	None
12	0	9600	None
13	0	9600	None
14	0	9600	None
15	0	9600	None

Edit Port Fields

| 6 | 101 | 4800 | Even |

9760KBD

KBD Num [1]   Start Macro [0]   End Macro [0]

Alarm Monitors

1		6	
2		7	
3		0	
4		0	
5		0	

<   1   >

Alarm monitors, which the operator connected to port 6 can see, are assigned in the Comms file. Monitor display attributes are under control of the operation mode chosen in the System configuration file

1.1 OPERATION OF THE SYSTEM EXAMPLE

That concludes the hook-up and programming of our system example. Once the system to which the **SAT** is attached is operational, the following items remain to be configured (in operational mode) before alarm operation is totally enabled:

1. On the **SAT SIDE**, we must still define preset 21. If an alarm triggered before we created the preset, the designated camera input display (#7) would appear on the local monitor, but the display might be something other than the preset position view that we want.

2. On the **9760 SIDE**, we must ARM all defined alarms that we want to see from our keyboard position. ARMing is done from the 9760 keyboard position. In the real world, this would more than likely be taken care of with a Macro that executed whenever the operator logged onto the system. If an alarm occurred on the **SAT SIDE** before the alarm was ARMed on the **9760 SIDE**, the **9760 SIDE** would have no idea that an alarm occurred.

To accomplish (1), follow the instructions in **Section 2**, *2.1 Programming Presets* and program preset **21** for the alarm-input camera (input 7) for the system example. A preset label can also be created, if you want.

To accomplish (2), the 9760 keyboard is used to ARM the alarm. The logical number (100) for defined alarm (0001) is used to ARM the alarm. Follow the instructions in **Section 3**, *3.2 9760-SAT Alarm Response* on how to ARM an alarm from the 9760 keyboard.

NOTE: *Alarm response by operators on the* **9760 SIDE** *and the* **SAT SIDE** *are independent of each other, once an alarm condition is sensed. That is, clearing a triggered alarm on one side of the configuration has no effect on the other side.*

The following is a relatively straightforward time-line of the events that unfold when the alarm-wired door is opened on the **SAT SIDE** of the configuration, triggering an alarm event.

1. The door opens, causing the N.C. contacts to open, which signals an alarm condition on the **SAT SIDE** of the configuration.

2. The alarm overrides any local operator actions in progress and, because of the **SAT** Alarms file settings, the local monitor display (MON 4) switches to the display input from video input # 7. That display appears on the local monitor. The status sequence indicator on the local monitor shows an "A" to indicate the alarm condition.

3. In conjunction with (2), the camera for this video input is already at or is in the process of traveling toward alarm preset position 21.

4. The system alarm notification number (0001), entered in the local Alarm menu is sent to the **9760 SIDE** of the configuration. Even if the local **SAT** operator were to **ACK** and clear the alarm at this time, it would not affect alarm notification to the system. Once an alarm occurs, that alarm information is immediately passed on to the **9760 SIDE** of the configuration and nothing the local **SAT** operator can do will prevent system notification if the menus are so configured.

5. In response to alarm notification from the **SAT** unit, the system (per instructions in the Alarm configuration file) asks the **SAT** to place the video from logical link camera 5007 on the first available tie line.

6. The **SAT's** response is to place video input 7 (logical 5007) on an available tie-line.

7. On the **9760 SIDE**, the received video is placed on an available alarm monitor (previously assigned) for the operator on that keyboard position via the Comms file. The alarm display parameters are governed by the alarm mode chosen In the System configuration file.

8. On the **9760 SIDE**, the System Window (in the 9760-MGR, or System Manager program) indicates the triggering of the alarm on the **SAT SIDE** by displaying a line similar to the following:

> **09:05:38 16/08/00 Nd:01 ALARM 0001 TRIGGER SAT Alarm   Op:01 Pr:09**

Shortly thereafter (during the time that steps 4 through 7 occur, which are almost concurrent from a user viewpoint) the System manager's System window will indicate that the video from logical camera **5007** has switched to an alarm monitor. It might look something like this:

9:05:38 16/08/00 Nd:01 SWITCAMMON Camera: 5007 Monitor: 001 Op: 1

9.   At the same time, the AT diagnostic screen's Monitor box shows that camera display 5007, which utilizes a tie line, is displayed on Mon 1. The system box (or system error line) is illustrated in Figure 4-2.
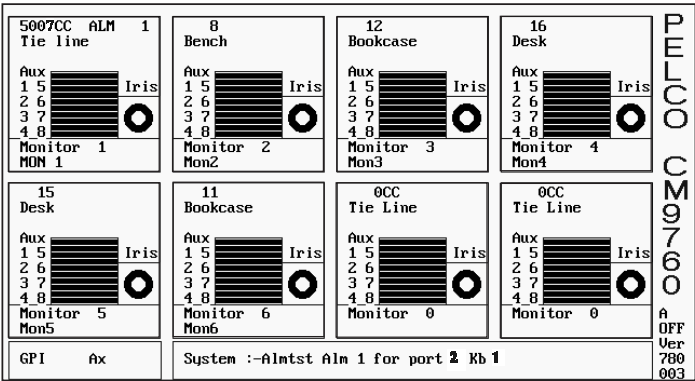
Figure 4-2
Sample System Diagnostic Screen

10.   The keyboard on the CM9760-KBD for the operator viewing this alarm will show the following:
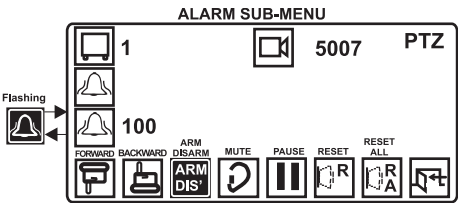
Figure 4-3
System Example 9760 LCD Alarm Event

If more than one alarm happened (with none being reset) the alarm numbers on the 9760KBD LCD screen sequence and cycle among all alarms triggered. As each alarm number appears on the LCD screen, the corresponding logical number of the associated alarm camera appears next to the camera icon.

This concludes the system example, which gives you a hint of the processes involved in integrating an **SAT** into a 9760 System configuration and highlights how information affecting such a setup can be located in this manual.

2.0 MULTIPLEXER EXAMPLES

EXAMPLE OVERVIEW

Example One: Software version 7.80.003 and greater supports **control** of PTZ capable cameras through the Genex multiplexer. The first example briefly addresses this in relationship to a 9760-SAT system environment. Programmed, Genex related, 9760 configuration files are used in Example 1, but are discussed and illustrated in Example Two, Part I.

Example Two: The second example discusses, in greater detail than is used in Example 1, the connections and programming requirements necessary for the operation of **multiplexer functions** from either the **9760 SIDE** and/or the **SAT SIDE** within a 9760-SAT system environment. These functions are keyboard activated, using icon-labeled references to call up multiple screen displays generated by the Genex. The **SAT** operator uses the KBD200,300,or 300Vs. The 9760 operator uses the 9760-KBD.

EXAMPLE ONE: CAMERA CONTROL THROUGH THE GENEX IN A 9760-SAT SYSTEM ENVIRONMENT

Consider the illustration in Figure 4-4

Figure 4-4.
Camera Control Through the Genex
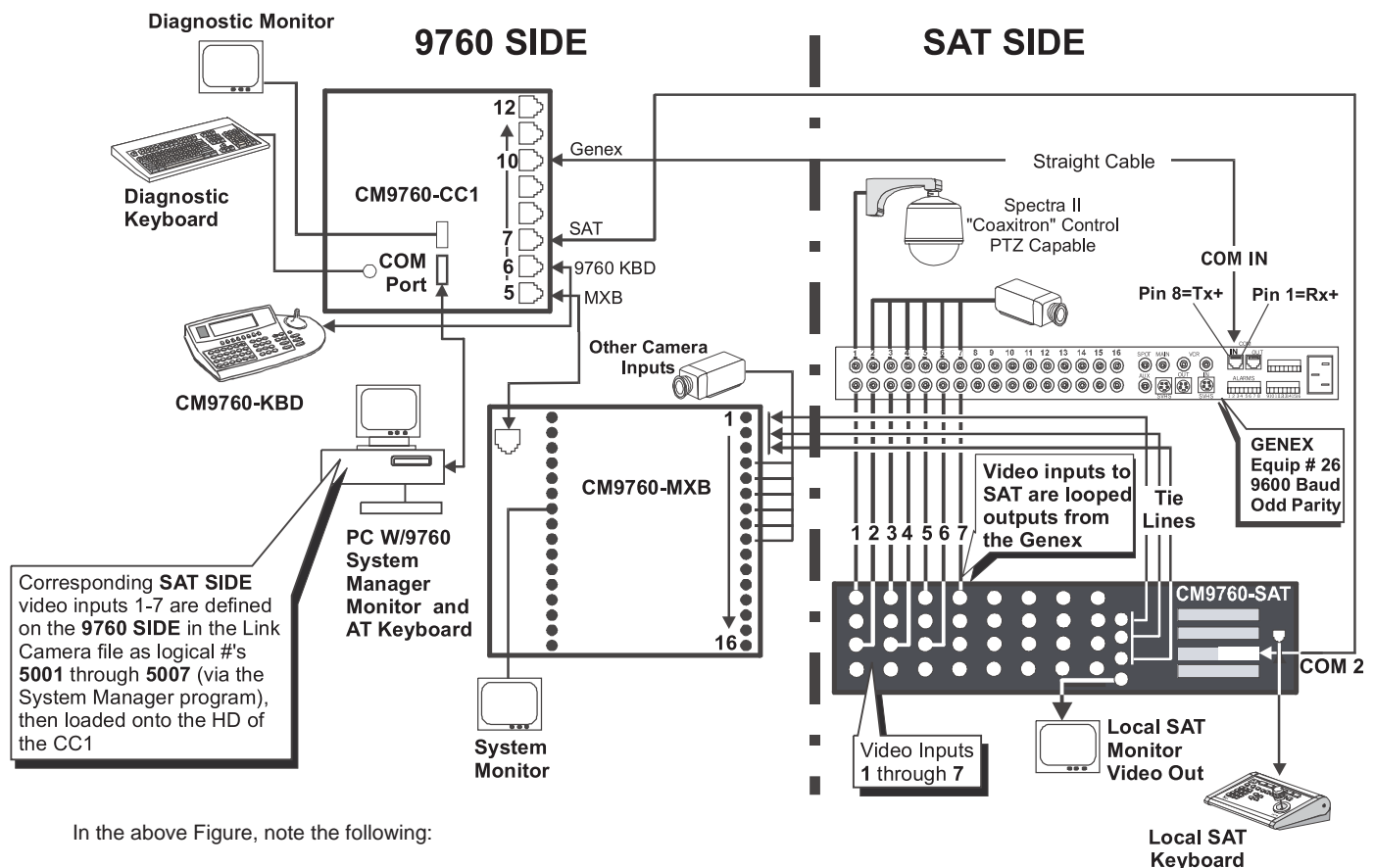
In the above Figure, note the following:

1. Camera inputs to the Genex are looped and serve as corresponding inputs to the CM9760-SAT.

2. A video path is available to any operator on either side of the configuration to all Genex attached cameras, including Spectra input 1. For the **SAT** operator, access exists through the looped input from the Genex; for the 9760 operation, it exists through the same path via the tie line connections between the **SAT** and the MXB.

3. You must also (as a minimum), configure the Genex for the following (consult the Genex manual for further details):

   a. Set video termination. This can be done globally in the System Setup menu (hold the VIEW button down for two seconds) or it can be done on a per-camera basis in the Camera menu (hold the associated CAM button down for two seconds). In our example, the inputs for all cameras to the Genex should be set for **LOOP HI-Z**.

   b. Camera protocol should be set to **Coaxitron** format via the Camera menu.

   c. The Unit ID should be set to **1** and the COMM TYPE setting (both accessed through the Advanced Menu selection) should be set to **MASTER (KBD-T/D)**.

Figure 4-4 illustrates the minimum physical connections using the pieces of equipment required for camera control through the **Genex**. Specifically illustrated are the coaxitron, camera-related connections necessary for operators on both sides of the configuration to have control-access to Genex camera input 1. The **SAT SIDE** operator has access by entering **1** on his keypad and pressing the **CAM** button; the **9760 SIDE** operator has equal access and control by calling camera **5001** to his available monitor. Other than Genex-looped inputs, the **SAT** operator can also control direct "SAT-connected" cameras that use Pelco "P" type protocol (not run through the Genex, but connected directly to other **SAT** video inputs; control wiring must also be run). At the same time, operators on the **9760 SIDE** can view and control all **SAT** connected cameras that are properly configured.

EXAMPLE TWO: MUX CONTROL IN A 9760-SAT SYSTEM ENVIRONMENT

Part I - Mux Control from the 9760 SIDE

Note that the Genex control line in Figure 4-4 connected to the COM "IN" port is connected to Sercom input port 10 on the CC1. That's one requirement for enabling MUX control from the **9760 SIDE**.

To fully enable MUX control, Figure 4-4 needs to be altered slightly. That change is reflected in Figure 4-5. It involves the connection of a video cable between the MUX main output on the Genex and an available BNC video input on the CM9760-MXB. We choose BNC input 11.

Figure 4-5.
9760-SIDE Mux Control
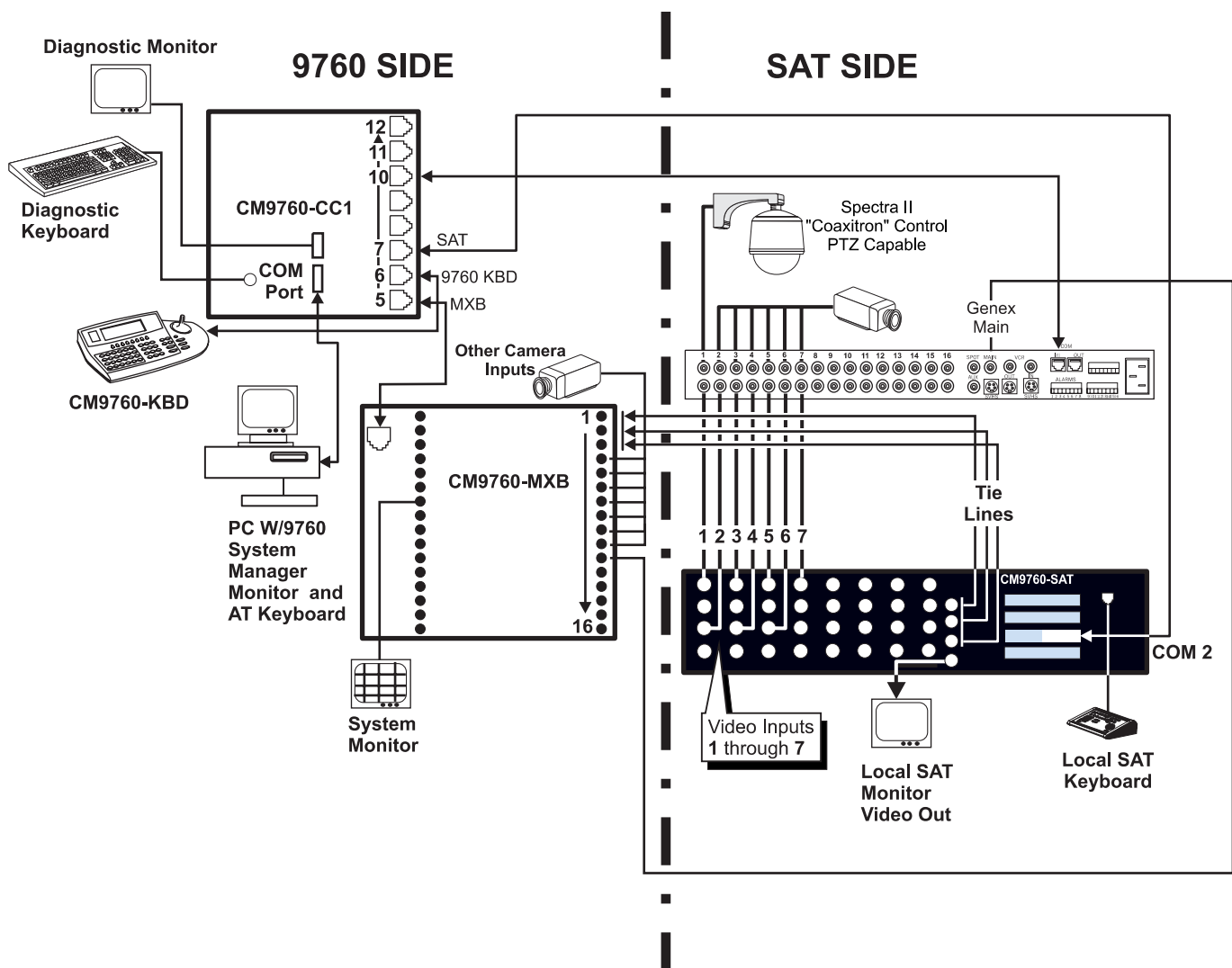
Associated with this and the previous example are two **9760 SIDE** configuration files that affect Genex integration into the system. The first (Comms file) is applicable to both examples. The second (the Camera file) is applicable to both except that the Genex configured camera field for "10" is not applicable to example one. Both of these files have to be configured for both examples. The COMMS configuration file is illustrated in Figure 4-6.

In this file (Comms), the Genex parameters are entered in the Edit Port Fields for the port that it is connected to, (port 10).
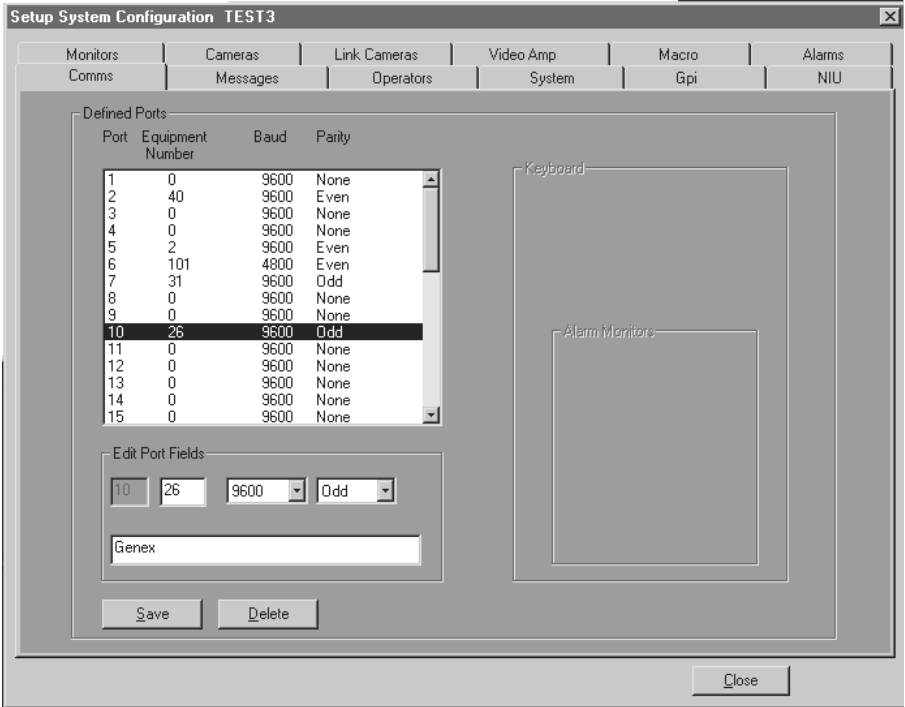
Figure 4-6.
Comms File and the Genex

The next configuration file is just as important. This is the Camera file. Here the Genex input for the Mux Main input to the MXB is configured as a multipexer input in the Type field. When this input is called by the 9760 SIDE operator (input 11, logical), the multiplexer control icons appear on the 9760 keyboard LCD screen. From there, the operator can change the number of cameras displayed on the assigned monitor simply by pressing the control icon desired.

When the 9760 operator calls up this camera input, mux control icons will appear on the 9760 keyboard LCD screen

Port # on the CC1 the Multiplexer is connected to

Mux Unit ID
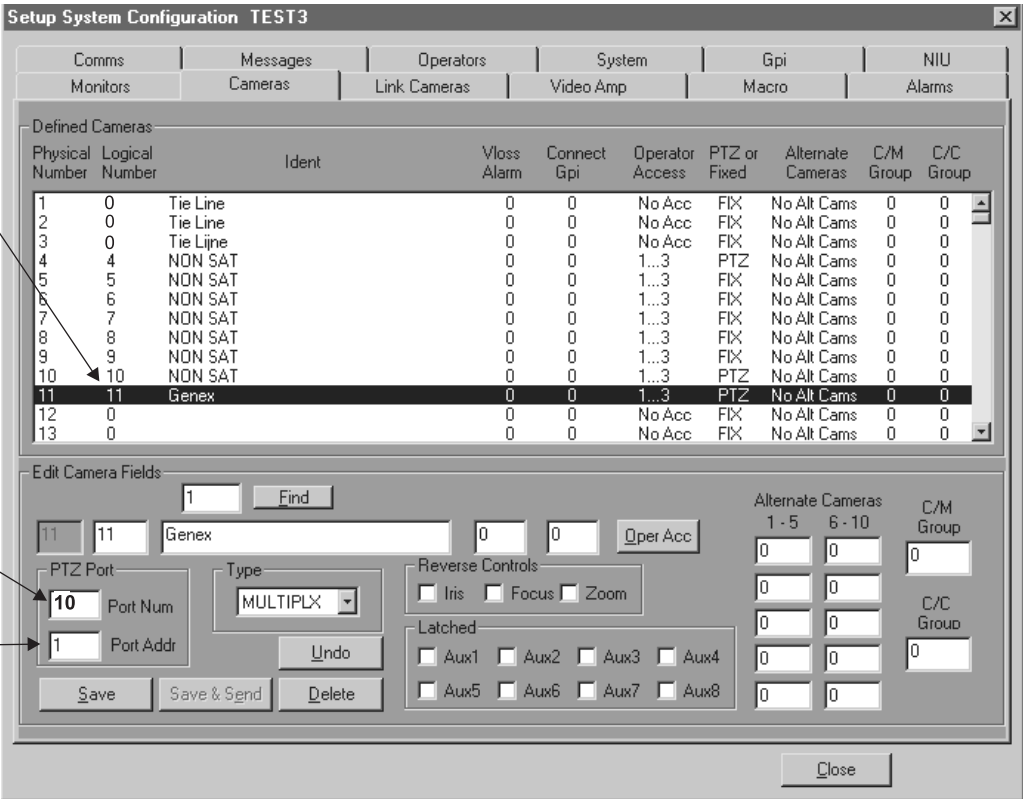
Figure 4-7.
Camera File and the Genex

Part II - Mux Control from the SAT SIDE

Mux control from the SAT side is enabled by reconfiguring the example system we have been using to that shown in Figure 4-8.

Figure 4-8.
SAT SIDE Mux Control

Note the following changes and comments:

1. Mux Main no longer is attached to the MXB on the **9760 SIDE**. There are now 8 video inputs to the **SAT** instead of 7. Mux Main is now the 8th input to the **SAT**.

2. The data "**IN**" port on the Genex is wired to the remote keyboard port on the **SAT**; it is no longer connected to the 9760.

3. Operators on the 9760 can view Mux-activated screens on the **SAT SIDE** (if the additional SAT input [8] is added to the Link Camera file on the **9760 SIDE**). In our example, it would be **5008**. If the operator entered 5008 into his keypad and pressed the CAM button the multiplexed input from the **SAT SIDE** will appear on his assigned monitor.

4. Any **SAT** keyboard operator can initiate multiplexer functions by pressing the **SHIFT** key (the LED lights) and choosing the function display desired. Once initialized, any other operator on the system can effect changes to the multiplexed display. Any changes will be reflected in all local monitors at the same time.

5. If a 9760 operator has called up the **SAT** Mux input (5008), any display activity on the **SAT SIDE** will be reflected on the operator's assigned monitor on the **9760 SIDE** of the configuration.

APPENDIX I – COMMUNICATION AND CONNECTION TUTORIAL

There is only one, really basic set of rules that you must consider when wiring two 9760 communication devices together. Those rules are given in item 3 below.

Frustration arises only if the information you are given does not enable you to identify those elements of the connection you need to know or if the information you need is not readily at hand.

You should not be satisfied to just plug in a cable "type" because you are told to without having the slightest idea what to do if it doesn't work. It's easy enough to check the parameters for your-self so that when you do plug that cable in, you expect it to work. In fact, you should be surprised if it doesn't work.

You will never get in trouble when wiring two 9760 communication devices together, if you know and follow the information contained in the following points. You may not always need all the information in all the points, but you must always have enough information at your disposal to follow the connection rules stated in 3.

1. You should always know or be given the location of Pin 1 on each of the devices input/output, plugs/connectors that you intend to wire together.

2. You should always be given the signal function that can be accessed at the Pin 1 location.

3. All communication devices in the 9760 System must be wired so that the result, if checked against the following table, is true.

Device A →	Device B
TX +	RX +
TX –	RX –
RX +	TX +
RX –	TX –

Given 1 and 2 and knowing 3, you can successfully connect any two communication devices together to make them work. In many cases, a cable is provided. That's OK. Just check it before you use it.

Depending on the physical geometry of the cable itself, you may also need to know how to determine cable "type" before you can apply the rules above. Most devices in the 9760 family use RJ-45, 8-wire, flat cable to connect to each other.

This is rigid cable so, in effect, it has a cable "color" run across its width. This fact is used to determine the cable type as either "straight" (parallel) or "reverse" (flipped).

If a cable is "straight", then pin 1 at one end of the cable goes to pin 1 at the opposite end of the cable. If the connecting plugs on this cable interfaced separate devices, then pin 1 on device 1

would physically be connected to pin 1 on device 2. Straight cable is used in devices where the signal pin run on the first device is opposite that of the second device.

If a cable is "reverse", then pin 1 on one end of the cable goes to pin 8 at the opposite end of the cable. If the connecting plugs on this cable interfaced separate devices, then pin 1 on device 1 would physically be connected to pin 8 on device 2. Reverse cable is used in devices where the signal pin run on the first device is the same as that of the second device.

The physical wiring differences for "straight" versus "flipped" come about because of the relationship of the physical orientation of the attached plugs when the cable is created.

Almost all pieces of equipment connected to the CM9760-CC1 utilize "flipped" cables because there is a concerted effort to make the signal available at Pin 1 on all devices to be TX+. Thus, use of a "flipped" cable fulfills the requirement of Point 3, that TX+ (CC1) ends up at RX+ (Pin 8) on the connected device, because the signal run from Pin 1 to Pin 8 on each device is the same. Since some devices predate this effort or are simply wired differently, then either a straight cable or a non-standard wiring interface is used.
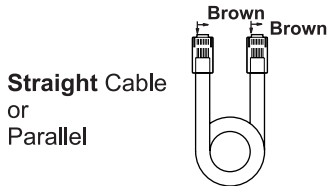
How to identify a "straight" cable apart from a "flipped" one is illustrated in Figure 5-1.

Figure 5-1
Identifying Cables

Compared "Color Run" is in Opposite Direction

Brown   Brown

Flipped Cable
or
Reverse Cable
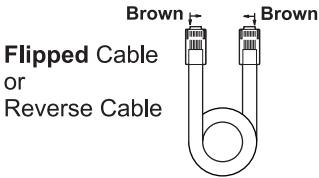
Compared "Color Run" is in Same Direction

Brown
Brown

Straight Cable
or
Parallel

To identify a cable type, physically orient the RJ-45 cable as depicted in the illustrations. Orient the cable side-by-side, tab side down. Use the "color-run" of the wire to determine cable type and use the cable type appropriate to the situation.

Sometimes, a physical disparity exists between two connecting devices such that the wiring geometry you start with at one end is different from that at the other end. Nevertheless, the wiring relationships stated in point 3 must be satisfied. An example of this occurs in the manual when connecting a CC1 sercom port to a COM 2 port on the CM9760-SAT (see **Section 1**, 1.1 and 1.2).

The wiring scenario utilized a wall block, which is part of a "wiring kit", that can be obtained from Pelco

NOTE: *You should not get confused by the pasted-in wiring label in the cap of the wiring block that you sometimes see. Although it has named signal functions for each terminal pin, you must remember that this is a passive device and the actual signal that appears on any terminal is the one that you put there.*

You should keep the following in mind:

1. Plan the wiring for each run ahead of time. Be surprised if it doesn't work.

2. Verify any manual instructions that specify attachment of a certain cable "type". Check to be sure the right cable is packed and that the instructions given don't run contrary to the previously stated connection rules for signal interfaces.

APPENDIX II – REMOTE KEYPAD CONNECTION

Four keyboards, total, may be attached to the CM9760-SAT. This includes concurrent connection to the local and the remote keyboard ports. The local keyboard port was discussed previously. The remote keyboard port is illustrated and discussed here.

Any of the keyboard models used with the CM9760-SAT may be wired to the remote port. All keyboards, except the KBD300V, may be attached to the local port. This is because power requirements for the LCD screen on the KBD300V are not available at the local port. The keyboard requires a separate transformer for this purpose. In fact, any keyboard attached to the remote port requires an external power source, as no power is provided at that port.

On the next two pages are examples of wiring keyboards to the remote port. The first shows two KBD300s wired to the remote port. The second shows a KBD300 and a KBD300V attached to the remote port.

NOTE: *You can connect only one keyboard (KBD200 and KBD300) at time to the Local Keyboard port. You cannot daisy-chain from that port. Additional keyboards may be added by parallel wiring from existing wall blocks or by using the com out port on the KBD300V interface (see Figure 5-3). If you use more than one keyboard, each must have a different address (see Figure 1-11).*

Figure 5-2
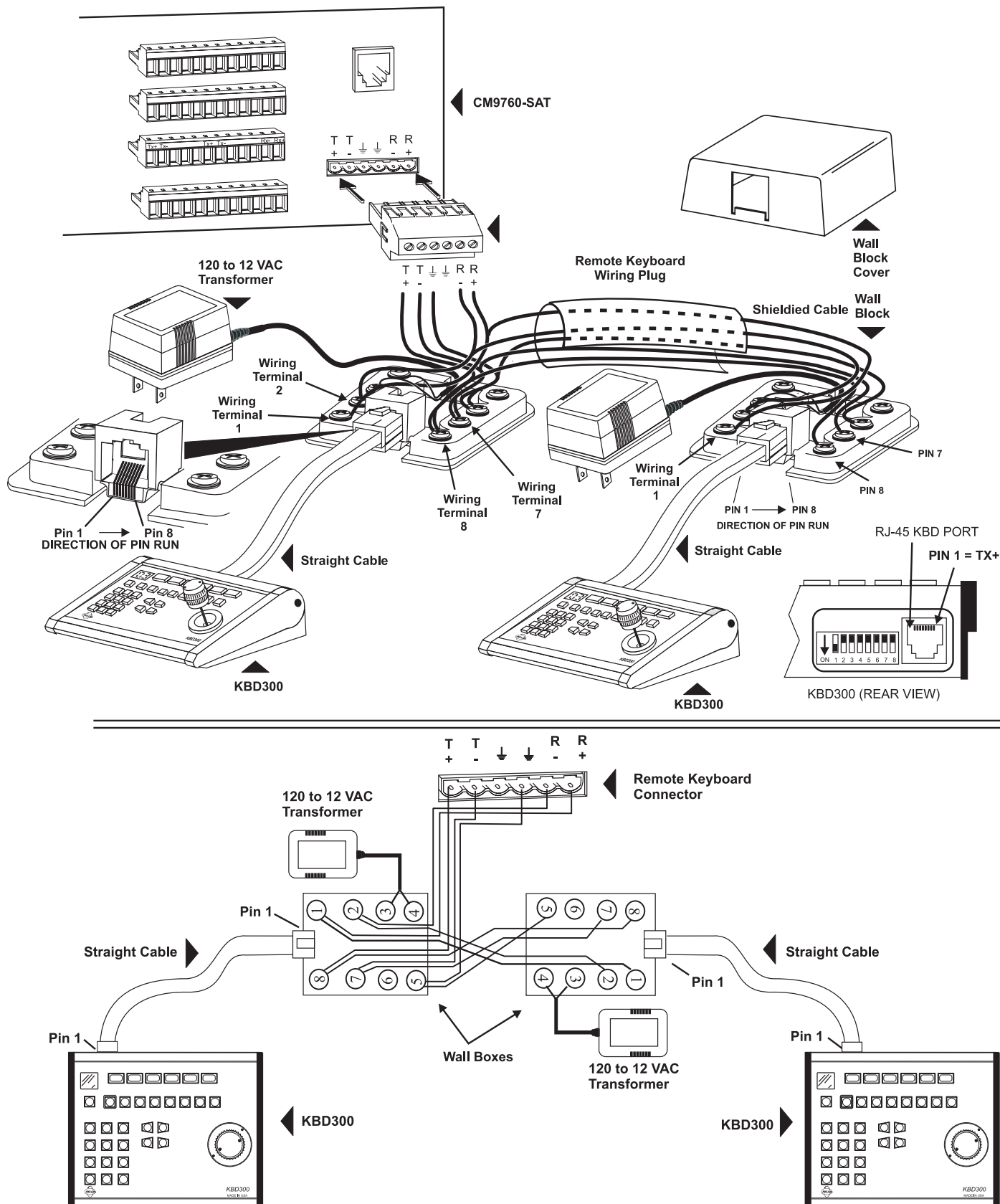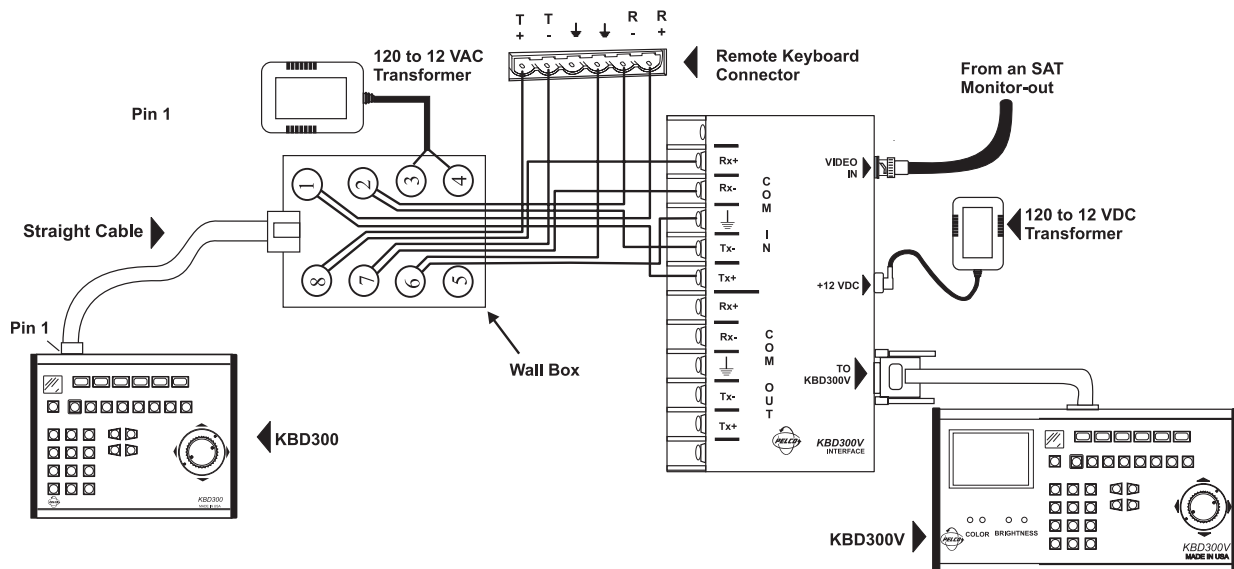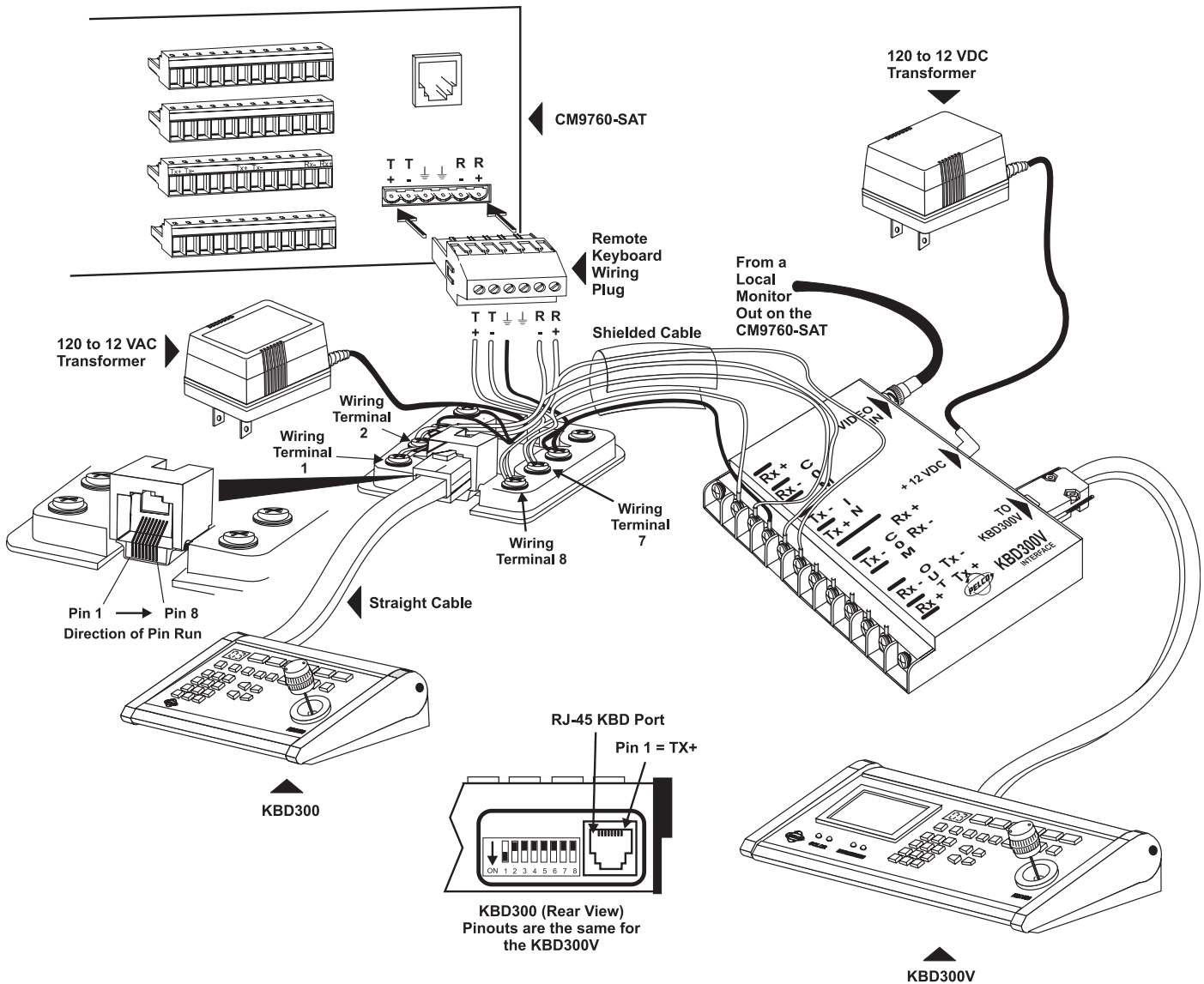KBD300s Wired to the Remote Port

Figure 5-3
KBD300 and KBD300V Attached to Remote Port

120 to 12 VDC
Transformer

CM9760-SAT

T T ⊥ ⊥ R R
+ - - +

Remote
Keyboard
Wiring
Plug

T T ⊥ ⊥ R R
+ - - +

From a
Local
Monitor
Out on the
CM9760-SAT

120 to 12 VAC
Transformer

Shielded Cable

Wiring
Terminal
2

Wiring
Terminal
1

Wiring
Terminal
7

Wiring
Terminal 8

Pin 1 → Pin 8
Direction of Pin Run

Straight Cable

KBD300

RJ-45 KBD Port

Pin 1 = TX+

ON 1 2 3 4 5 6 7 8

KBD300 (Rear View)
Pinouts are the same for
the KBD300V

Rx + C
Rx - O
Tx - N
Tx + I
N
Rx +
C
O Rx -
M
Tx -
Rx - O
U Tx -
T
Rx + T Tx +

VIDEO IN

+12 VDC

TO
KBD300V

KBD300V
INTERFACE

KBD300V

T T ⊥ ⊥ R R
+ - - +

120 to 12 VAC
Transformer

Remote Keyboard
Connector

Pin 1

From an SAT
Monitor-out

VIDEO
IN

Straight Cable

1 2 3 4
8 7 6 5

Rx+
Rx-
⊥
Tx-
Tx+

C
O
M

I
N

120 to 12 VDC
Transformer

+12 VDC

Rx+
Rx-
⊥
Tx-
Tx+

C
O
M

O
U
T

TO
KBD300V

Pin 1

Wall Box

KBD300

KBD300V
INTERFACE

COLOR BRIGHTNESS

KBD300V

KBD300V
MADE IN USA

APPENDIX III – KEYPAD DEFINITIONS AND TEMPLATES

Figure 5-4
KBD200 Keyboard Functions
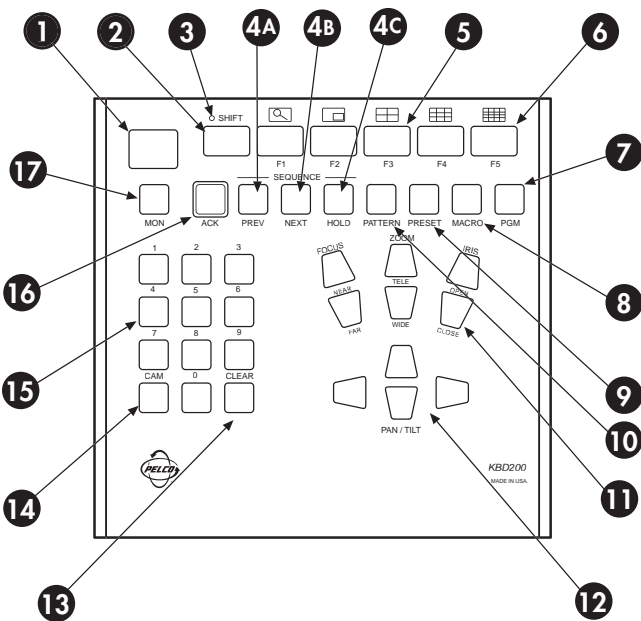
Table 5-A
KBD200 Button Functions

Reference Number	Description
1	LED display
2	Shift key
3	Shift key LED
4A-C	Sequence keys: Previous, Next, Hold
5	Function keys F1, F2, F3 control auxiliaries. With Shift on they control multiplexer display.
6	Functions keys F4, F5 control receiver auxiliaries. With Shift on they control multiplexer display.
7	Program key
8	Macro sequence key (not used)
9	Preset key
10	Pattern key
11	Focus, zoom, iris keys
12	Pan and tilt keys
13	Clear key
14	Camera selection key
15	Keypad (numbers 1 through 0)
16	Acknowledge key
17	Monitor selection key

Figure 5-5
KBD300 Keyboard Functions
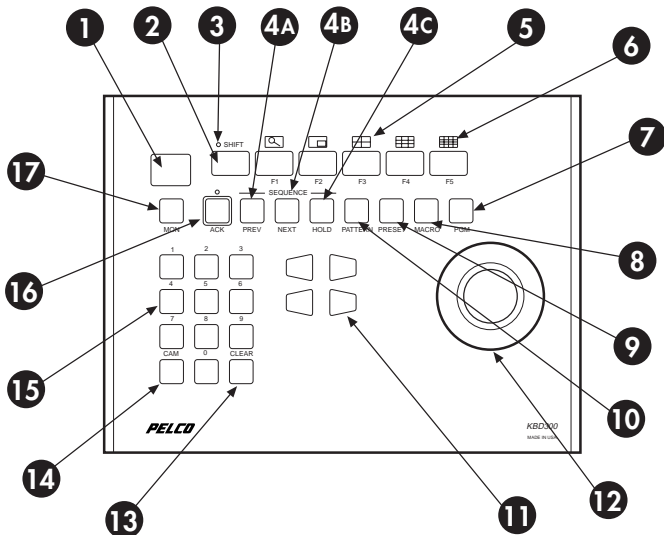
Table 5-B
KBD300 Button Functions

Reference Number	Description
1	LED display
2	Shift key
3	Shift key LED
4A-C	Sequence keys: Previous, Next, Hold
5	Function keys F1, F2, F3 control auxiliaries. With Shift on they control multiplexer display.
6	Functions keys F4, F5 control receiver auxiliaries. With Shift on they control multiplexer display.
7	Program key
8	Macro sequence key (not used)
9	Preset key
10	Pattern key
11	Focus and iris keys
12	Joystick (Zoom, PTZ functions)
13	Clear key
14	Camera selection key
15	Keypad (numbers 1 through 0)
16	Acknowledge key
17	Monitor selection key

Figure 5-6
KBD300V Keyboard Functions
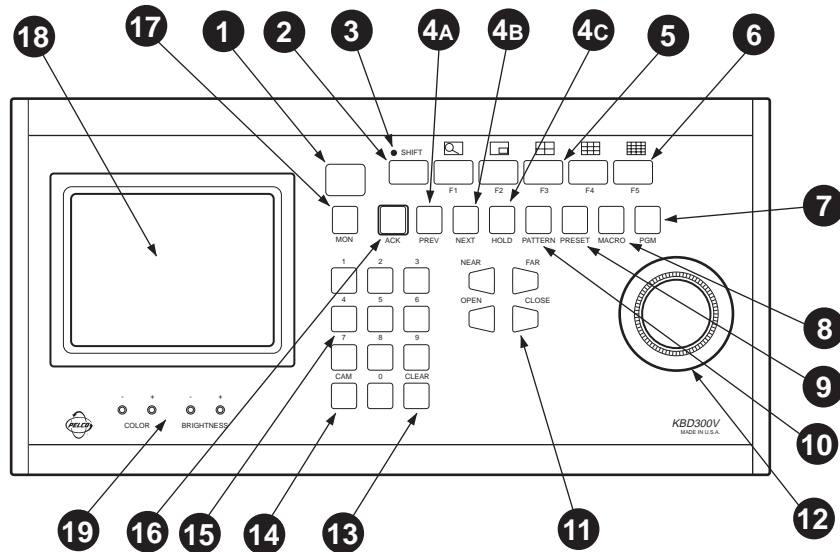
Table 5-C
KBD300V Button Functions

Reference Number	Description
1	LED display
2	Shift key
3	Shift key LED
4A-C	Sequence keys: Previous, Next, Hold
5	Function keys F1, F2, F3 control auxiliaries. With Shift on they control multiplexer display.
6	Functions keys F4, F5 control receiver auxiliaries. With Shift on they control multiplexer display.
7	Program key
8	Macro sequence key (not used)
9	Preset key
10	Pattern key
11	Focus and iris keys
12	Joystick (Zoom, PTZ functions)
13	Clear key
14	Camera selection key
15	Keypad (numbers 1 through 0)
16	Acknowledge key
17	Monitor selection key
18	Monitor screen
19	Screen controls for color and brightness

APPENDIX IV – MODELS AND ASSOCIATED EQUIPMENT

IV-1 MODELS

■ CM9760-SAT – 9760 matrix satellite switcher with 16 video inputs and four monitor outputs, 120 VAC, 50/60 Hz.

■ CM9760-SAT-X – Same as the CM9760-SAT, except 230 VAC

IV-2 ASSOCIATED EQUIPMENT

■ KBD200 – Desktop keyboard with full switching and programming capabilities, plus push-button control of PTZ functions

■ KBD300 – Desktop keyboard with full switching and programming capabilities, plus joystick control of PTZ functions

■ KBD300V – Desktop keyboard with full switching and programming capabilities as well as joystick control of PTZ functions; includes five-inch diagonal monitor screen and interface cable

■ KBDKIT – Wiring kit for connecting keyboards to remote keyboard port; includes two RJ-45 wall blocks and a transformer to convert 120 VAC to 12 VAC for keyboard power

■ KBDKIT-X – Wiring kit for connecting keyboards to remote keyboard port; includes two RJ-45 wall blocks and a transformer to convert 230 VAC to 12 VAC for keyboard power

APPENDIX V – DEFAULT MENU RESET ASSIGNMENTS

The following page contains default menu reset assignments for the CM9760-SAT. If the unit "hangs" or an errant menu entry shows up for no reason, you may be forced or may decide at some point to reset the menu entries to their factory default settings.

There are two methods available for resetting the **SAT**. We caution you against resetting the unit as a casual exercise. Do so only if it is necessary, especially if you have already programmed your unit. Once reset, you will have to reprogram from scratch. For this reason, you might want to keep a separate list of what your current settings are before resetting becomes the only option left.

Method I   Press the recessed, front-panel reset button, located on the top right of the unit.

Method II   Method II, which uses a program code entry, is illustrated below:
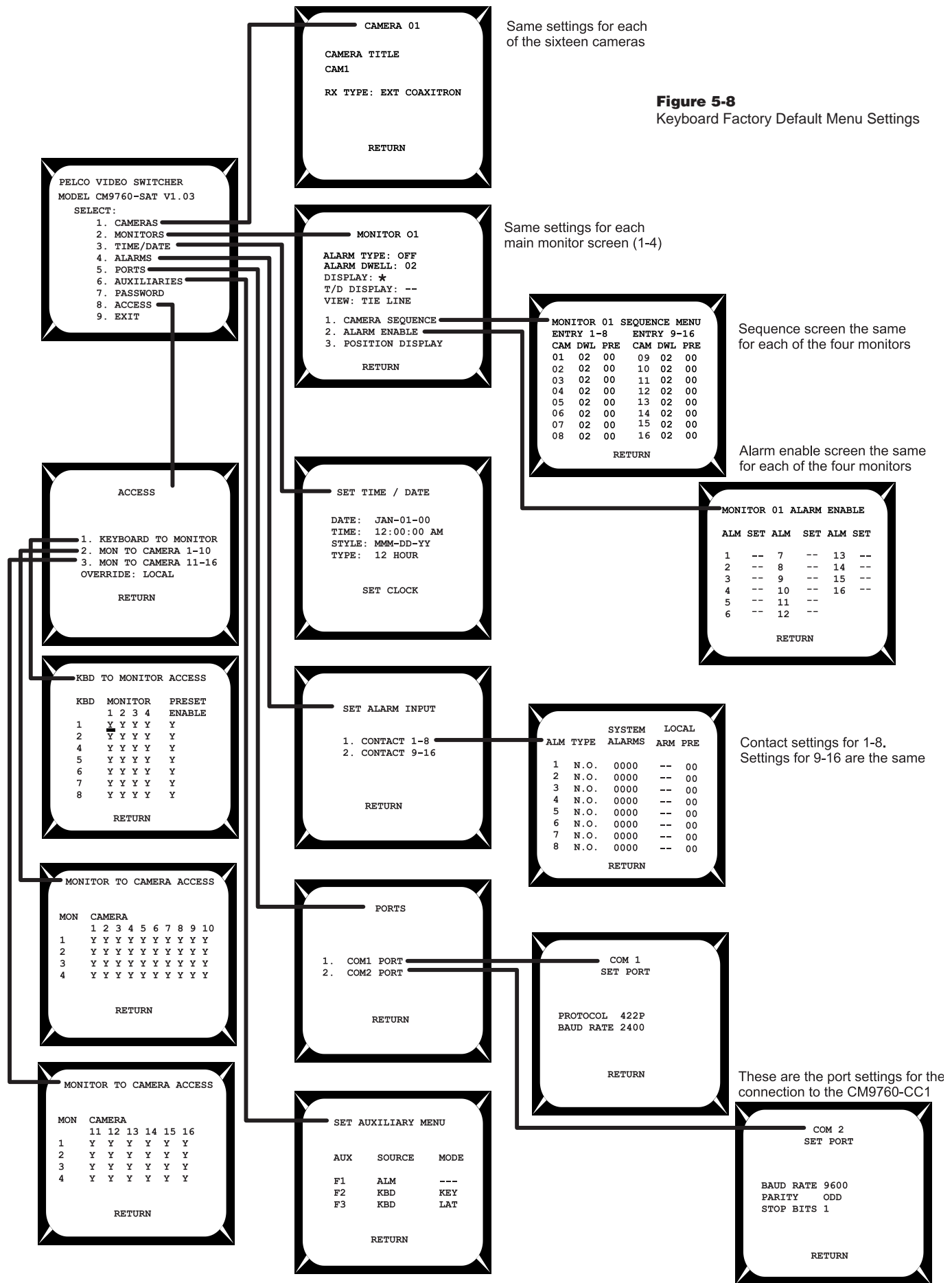
Figure 5-7
Program Code Entry Reset
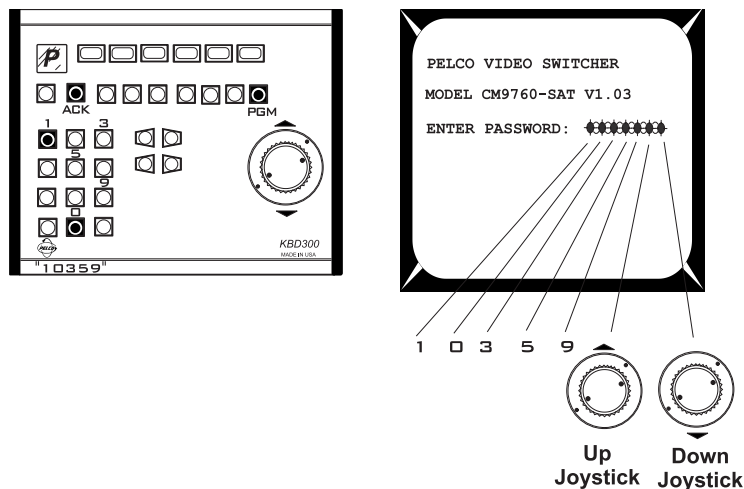
1. Press the **PGM** key to enter programming mode.
2. Enter **10359** into the keypad.
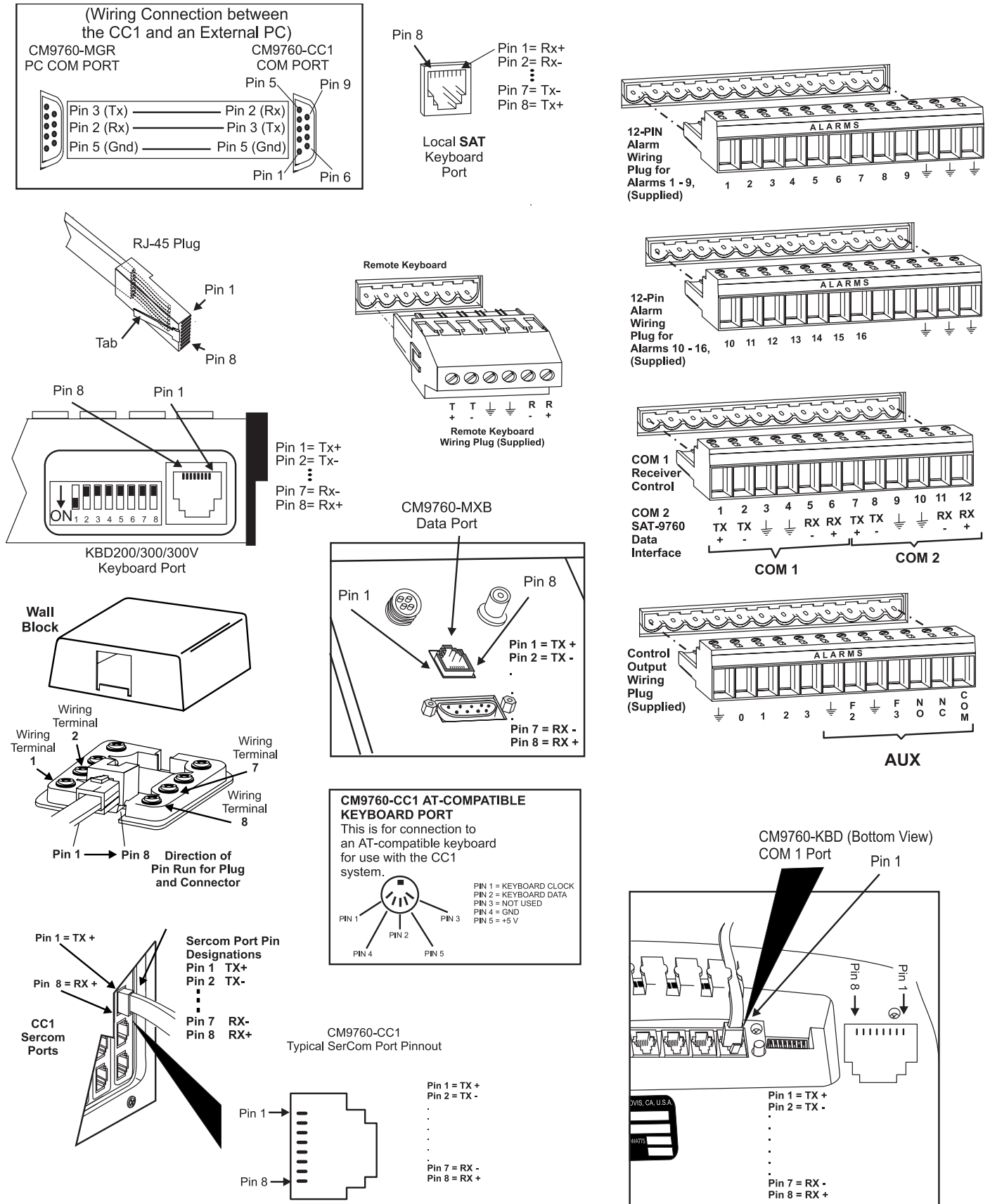3. Move the joystick Up and then Down.
4. Next, press the **ACK** key.

When you press **ACK**, you will be returned to your display monitor. Before you can do anything more, you will have to reinitialize your keyboard. Your menu settings are now those illustrated in Figure 5-8.

```
                CAMERA 01


        CAMERA TITLE
        CAM1

        RX TYPE: EXT COAXITRON


                RETURN
```

Same settings for each of the sixteen cameras

Figure 5-8
Keyboard Factory Default Menu Settings

```
PELCO VIDEO SWITCHER
MODEL CM9760-SAT V1.03
   SELECT:
      1. CAMERAS
      2. MONITORS
      3. TIME/DATE
      4. ALARMS
      5. PORTS
      6. AUXILIARIES
      7. PASSWORD
      8. ACCESS
      9. EXIT
```

```
                MONITOR O1

        ALARM TYPE: OFF
        ALARM DWELL: 02
        DISPLAY: ★
        T/D DISPLAY: --
        VIEW: TIE LINE

           1. CAMERA SEQUENCE
           2. ALARM ENABLE
           3. POSITION DISPLAY

                RETURN
```

Same settings for each main monitor screen (1-4)

```
MONITOR 01 SEQUENCE MENU
 ENTRY 1-8      ENTRY 9-16
CAM DWL PRE    CAM DWL PRE
01  02  00     09  02  00
02  02  00     10  02  00
03  02  00     11  02  00
04  02  00     12  02  00
05  02  00     13  02  00
06  02  00     14  02  00
07  02  00     15  02  00
08  02  00     16  02  00

        RETURN
```

Sequence screen the same for each of the four monitors

Alarm enable screen the same for each of the four monitors

```
        ACCESS



     1. KEYBOARD TO MONITOR
     2. MON TO CAMERA 1-10
     3. MON TO CAMERA 11-16
     OVERRIDE: LOCAL

        RETURN
```

```
        SET TIME / DATE


        DATE:  JAN-01-00
        TIME:  12:00:00 AM
        STYLE: MMM-DD-YY
        TYPE:  12 HOUR


           SET CLOCK
```

```
MONITOR 01 ALARM ENABLE

ALM SET  ALM  SET ALM SET

1   --   7    --   13  --
2   --   8    --   14  --
3   --   9    --   15  --
4   --   10   --   16  --
5   --   11   --
6   --   12   --

        RETURN
```

```
KBD TO MONITOR ACCESS

KBD  MONITOR    PRESET
     1 2 3 4    ENABLE
1    Y Y Y Y      Y
2    Y Y Y Y      Y
4    Y Y Y Y      Y
5    Y Y Y Y      Y
6    Y Y Y Y      Y
7    Y Y Y Y      Y
8    Y Y Y Y      Y

        RETURN
```

```
        SET ALARM INPUT


        1. CONTACT 1-8
        2. CONTACT 9-16


           RETURN
```

```
                SYSTEM    LOCAL
        ALM TYPE ALARMS  ARM PRE

        1  N.O.  0000    --  00
        2  N.O.  0000    --  00
        3  N.O.  0000    --  00
        4  N.O.  0000    --  00
        5  N.O.  0000    --  00
        6  N.O.  0000    --  00
        7  N.O.  0000    --  00
        8  N.O.  0000    --  00

             RETURN
```

Contact settings for 1-8. Settings for 9-16 are the same

```
MONITOR TO CAMERA ACCESS

MON  CAMERA
     1 2 3 4 5 6 7 8 9 10
1    Y Y Y Y Y Y Y Y Y Y
2    Y Y Y Y Y Y Y Y Y Y
3    Y Y Y Y Y Y Y Y Y Y
4    Y Y Y Y Y Y Y Y Y Y

        RETURN
```

```
        PORTS


        1. COM1 PORT
        2. COM2 PORT


           RETURN
```

```
            COM 1
            SET PORT


        PROTOCOL  422P
        BAUD RATE 2400



           RETURN
```

These are the port settings for the connection to the CM9760-CC1

```
MONITOR TO CAMERA ACCESS

MON  CAMERA
     11 12 13 14 15 16
1    Y  Y  Y  Y  Y  Y
2    Y  Y  Y  Y  Y  Y
3    Y  Y  Y  Y  Y  Y
4    Y  Y  Y  Y  Y  Y

        RETURN
```

```
        SET AUXILIARY MENU


        AUX   SOURCE    MODE

        F1    ALM       ---
        F2    KBD       KEY
        F3    KBD       LAT

           RETURN
```

```
            COM 2
            SET PORT


        BAUD RATE 9600
        PARITY    ODD
        STOP BITS 1



           RETURN
```

Figure 5-9
Connector Pinouts

(Wiring Connection between the CC1 and an External PC)

CM9760-MGR
PC COM PORT

CM9760-CC1
COM PORT

Pin 3 (Tx) —————— Pin 2 (Rx)
Pin 2 (Rx) —————— Pin 3 (Tx)
Pin 5 (Gnd) —————— Pin 5 (Gnd)

Pin 5   Pin 9
Pin 1   Pin 6

Pin 8

Pin 1= Rx+
Pin 2= Rx-
Pin 7= Tx-
Pin 8= Tx+

Local **SAT**
Keyboard
Port

12-PIN Alarm Wiring Plug for Alarms 1 - 9, (Supplied)

ALARMS
1 2 3 4 5 6 7 8 9

12-Pin Alarm Wiring Plug for Alarms 10 - 16, (Supplied)

ALARMS
10 11 12 13 14 15 16

RJ-45 Plug

Pin 1

Tab

Pin 8

Remote Keyboard

T+ T- ⏚ ⏚ R- R+

Remote Keyboard
Wiring Plug (Supplied)

Pin 8   Pin 1

ON 1 2 3 4 5 6 7 8

Pin 1= Tx+
Pin 2= Tx-
Pin 7= Rx-
Pin 8= Rx+

KBD200/300/300V
Keyboard Port

CM9760-MXB
Data Port

Pin 1   Pin 8

Pin 1 = TX +
Pin 2 = TX -

Pin 7 = RX -
Pin 8 = RX +

COM 1 Receiver Control

COM 2 SAT-9760 Data Interface

1   2   3   4   5   6   7   8   9   10 11 12
TX+ TX- ⏚   ⏚   RX- RX+ TX+ TX- ⏚   ⏚   RX- RX+

COM 1   COM 2

ALARMS

Control Output Wiring Plug (Supplied)

⏚   0   1   2   3   ⏚   F2 ⏚   F3 N O   N C   C O M

AUX

Wall Block

Wiring Terminal 2
Wiring Terminal 1
Wiring Terminal 7
Wiring Terminal 8

Pin 1 ——► Pin 8   Direction of Pin Run for Plug and Connector

CM9760-CC1 AT-COMPATIBLE KEYBOARD PORT
This is for connection to an AT-compatible keyboard for use with the CC1 system.

PIN 1
PIN 2
PIN 3
PIN 4
PIN 5

PIN 1 = KEYBOARD CLOCK
PIN 2 = KEYBOARD DATA
PIN 3 = NOT USED
PIN 4 = GND
PIN 5 = +5 V

CM9760-KBD (Bottom View)
COM 1 Port   Pin 1

Pin 8   Pin 1

Pin 1 = TX +
Pin 2 = TX -

Pin 7 = RX -
Pin 8 = RX +

Pin 1 = TX +

Pin 8 = RX +

CC1 Sercom Ports

Sercom Port Pin Designations
Pin 1   TX+
Pin 2   TX-
Pin 7   RX-
Pin 8   RX+

CM9760-CC1
Typical SerCom Port Pinnout

Pin 1
Pin 8

Pin 1 = TX +
Pin 2 = TX -
Pin 7 = RX -
Pin 8 = RX +

(This page intentionally left blank.)

1.0 IMPORTANT SAFEGUARDS AND WARNINGS

Prior to installation and use of this product, the following WARNINGS should be observed.

1. Installation and servicing should only be done by qualified service personnel and conform to all local codes.

2. Unless the unit is specifically marked as a NEMA Type 3, 3R, 3S, 4, 4X ,6 or 6P enclosure, it is designed for indoor use only and it must not be installed where exposed to rain and moisture.

3. Only use replacement parts recommended by Pelco.

4. After replacement/repair of this unit's electrical components, conduct a resistance measurement between line and exposed parts to verify the exposed parts have not been connected to line circuitry.

The product and/or manual may bear the following marks:

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

C A U T I O N :
RISK OF ELECTRIC SHOCK. DO NOT OPEN.

Please thoroughly familiarize yourself with the information in this manual prior to installation and operation.

2.0 SPECIFICATIONS

SWITCHING

Programmable Switching
Duration: | User-defined between 1 and 99 seconds

Programmable Number of
Steps per Sequence: | 16

VIDEO INPUTS

Number of inputs: | 16
Type: | 75-ohm, unbalanced terminating, or looping; jumper-selectable
Level: | 1 Vp-p
Connector Type: | Panel-mount BNC

VIDEO OUTPUTS

Number: | 4 (maximum)
Type: | 75-ohm, unbalanced
Level: | 1 Vp-p
Video Fail Detection
Type: | Vertical sync detector
Action: | Switch to back-up sync generator
Connector Type: | Panel-mount BNC

VIDEO SPECIFICATIONS

Bandwidth: | 17 Mhz
Frequency Response: | Flat to 8 Mhz, ±1.0 dB to 15 Mhz
Gain: | Unity (±1 dB)
Differential Gain: | 2% typical
Differential Phase: | 0.2° typical
Tilt: 0.5% typical
Signal-to-Noise: | -55 dB (peak-to-peak vs. RMS noise)
DC Output: | Zero volts
Cross Talk: | -50 dB typical at 3.58 Mhz

CHARACTER GENERATOR

Display: | White with black border
Program Menus: | Raster background with white characters

SAT COM CONNECTIONS

Connector Type: | One 12-pin header with mating plug (supplied)
Data Ports
COM 1 (Receiver Control): | RS-422 "P" protocol; program selectable baud rate
COM 2 (Comm Interface): | RS-422, 9600 baud, odd parity, one stop

KEYBOARD INTERFACE

Protocol: | Keyboard
Number of Ports: | 2
One Local: | RJ-45, 8-pin modular
One Remote: | 6-pin header with mating plug
Number of Independent
Keyboard: | 4 (combined total)
Data Rate: | 9600 baud

ALARM INTERFACE INPUTS

Number of Inputs: | 16
Connector Type: | Two, 12-pin screw terminal
Sensing: | Programmable, N.O./N.C.

AUXILIARY OUTPUTS

Number of Outputs: | 3
Connector Type: | One, 12-pin screw terminal
Contact Configuration
F1: | Form C, 0.5 A at 125 VAC maximum
F2 and F3: | Open collector, 32 VDC at 25 mA maximum

POWER SUPPLY

Input Voltage: | 120 VAC, 50/60 Hz or 230 VAC, 50 Hz
Power Consumption: | 10 watts
Ambient Operating
Temperature: | 20° to 120°F (-7° to 49°C)
Humidity: | 10-90% non-condensing

PHYSICAL SPECIFICATIONS

Dimensions: | 17.0 (W) x 10.5 (D) x 3.5 (H) inches (43.18 x 26.67 x 8.89 cm)
Weight
CM9760-SAT: | 10.15 lb (4.61 kg)
CM9760-SAT-X: | 10.06 lb (4.56 kg)

Rating: | NEMA Type 1

(Design and product specifications subject to change without notice.)

3.0 INDEX

4.0 REGULATORY NOTICES

This equipment has been tested and found to comply with the limits of a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

5.0 WARRANTY AND RETURN INFORMATION

WARRANTY
Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship for a period of one year after the date of shipment. Exceptions to this warranty are as noted below:

- Five years on Pelco manufactured cameras (CC3500/CC3600/CC3700 and MC3500/MC3600 Series); two years on all other cameras.
- Three years on Genex® Series (multiplexers, server, and keyboard) and 090 Series Camclosure® Camera System.
- Two years on 100/150, 200, and 300 Series Camclosure Camera Systems.
- Two years on all standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM6800E/CM8500/CM9500/CM9740/CM9760 Matrix, DF5 and DF8 Series Fixed Dome products.
- Two years on Spectra®, Esprit®, and PS20 Scanners, including when used in continuous motion applications.
- Two years on Esprit and WW5700 series window wiper (excluding wiper blades).
- Eighteen months on DX Series digital video recorders.
- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.
- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, preset scan, tour and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to Pelco, Clovis, California. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS
In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair).

All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. Ship to the appropriate address below.

If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico:
Service Department
Pelco
3500 Pelco Way
Clovis, CA 93612-5699

If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico:

Intermediate Consignee	**Ultimate Consignee**
American Overseas Air Freight	Pelco
320 Beach Road	3500 Pelco Way
Burlingame, CA 94010	Clovis, CA 93612-5699
USA	USA

REVISION HISTORY

Manual #	Date	Comments
C1510M	10/00	Original version.
	12/00	Updated Section 4 by including multiplexer integration and clarified other miscellaneous items.
C1510M-A	2/03	Revised Figure 4-5 and other miscellaneous items.

⊠Green   The materials used in the manufacture of this document and its components are compliant to the requirements of Directive 2002/95/EC.

World Headquarters
3500 Pelco Way
Clovis, California 93612 USA

USA & Canada
Tel: 800/289-9100
Fax: 800/289-9150

International
Tel: 1-559/292-1981
Fax: 1-559/348-1120

www.pelco.com

ISO**9001**

Orangeburg, New York | Las Vegas, Nevada | Eindhoven, The Netherlands | Wokingham, United Kingdom | Montreal, Canada