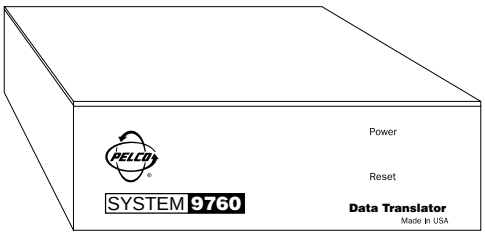


CM9760-DT
CM9760-DT4
Data Translator

Installation/
Operation Manual

C542M-B (8/00)

CE

Pelco • 3500 Pelco Way • Clovis, CA 93612-5699 USA • Pelco Online @ www.pelco.com
In North America and Canada: Tel (800) 289-9100 • FAX (800) 289-9150 • DataFAX (800) 289-9108
International Customers: Tel +1(559) 292-1981 • FAX +1(559) 348-1120 • DataFAX +1(559) 292-0435
PelcoEurope BV • Dillenburg Center, Dillenburgstraat 5F • 5652 AM Eindhoven • The Netherlands
Tel +31(40) 251-9870 • FAX +31(40) 251-9835

CONTENTS

LIST OF ILLUSTRATIONS

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.

CAUTION:
RISK OF ELECTRIC SHOCK. DO NOT OPEN.

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

REGULATORY NOTICES

Note: 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.

2.0 DESCRIPTION

The Pelco CM9760-DT and CM9760-DT4 units (Data Translator) are protocol translation devices that interface the CM9760 Matrix System with any device capable of communication in ASCII. Refer to Figure 1.

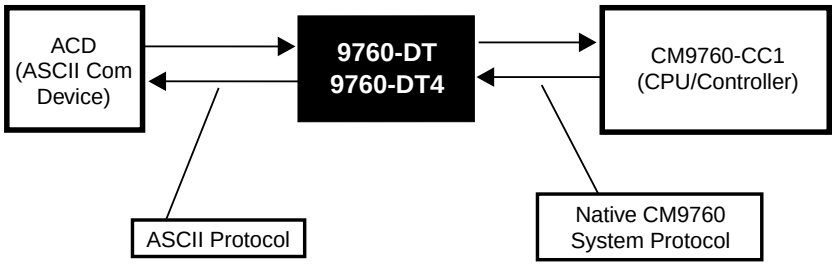


Figure 1. Simplified Block Diagram

One side of the Pelco CM9760-DT/DT4 is connected to the ASCII communicating device (hereafter referred to as an ACD), such as a PC or Access Control System. This data path uses the Pelco ASCII Interface Protocol for communication. The second communication path of the CM9760-DT/DT4 is connected to the CM9760 Matrix System. This data path uses the native CM9760 System Protocol for communication.

The communication protocol on the ACD side of the CM9760-DT/DT4 consists of a basic ASCII protocol character set used to transmit and receive commands that control pan and tilt mechanisms (both fixed and variable speed), and camera functions, routed via an RS-232 COM port connector (using the CM9760-DT) or via an RS-422 SerCom port connector (using the CM9760-DT4) on the rear of the CM9760-CC1 (CPU/Controller).

2.1 MODELS

CM9760-DT	Data Translator used to interface ASCII communication devices with Pelco's CM9760-CC1 using 120 VAC to 12 VAC input power pack. This model exists as a stand-alone desktop unit; however, it can easily be rack mounted (see Section 5.0, *Specifications: Optional equipment*).
CM9760-DT-X	Same as CM9760-DT except uses the 230 VAC to 12 VAC input power pack. (CE)
CM9760-DT4	Same as CM9760-DT except used for interfacing ACD devices to the RS-422 SerCom ports on the CM9760-CC1.
C9760-DT4-X	Same as CM9760-DT4 except uses the 230 VAC to 12 VAC input power pack.

2.2 OPTIONS

R300	Rack Mount used to mount up to three units side by side in a standard 19-inch rack using one RU of vertical space (blank filler plates provided for unused spaces).

3.0 INSTALLATION

3.1 PRELIMINARY REMARKS AND CHECKS

******NOTE:*** *In the interest of brevity, the term "9760-DT" (when used in the manual) collectively refers to the CM9760-DT and CM9760-DT4.*

Installation consists of the completion of two separate yet interrelated tasks: the first is the physical installation of the 9760-DT** (if not already installed); the second is the configuration of the CM9760 system software to (1) allow access to CM9760's matrix switching capabilities and (2) to partition the available system hardware for access by the ACD via the 9760-DT.

Configuring the system for use with the 97760-DT can be accomplished using the SET9750 or the 9760-MGR program software. We describe setup using both programs.

3.2 COMMUNICATION PARAMETER CHECK

J4 parallel port pin jumpers are used to set communication parameters for the 9760-DT.

The factory default communication settings for the 9760-DT are as follows:
- Odd Parity
- 9600 BAUD
- PIN 7777

If you are planning to rack mount your DT's, check your communication settings first, since removal of the top cover of the unit is required if you need to do either of the following:
- The communication parameters you require differ from the factory default.
- You plan to use two or more DT's on a single node, which requires that each has its own unique PIN.

Use Figure 2 to effect any changes required before proceeding with your installation.

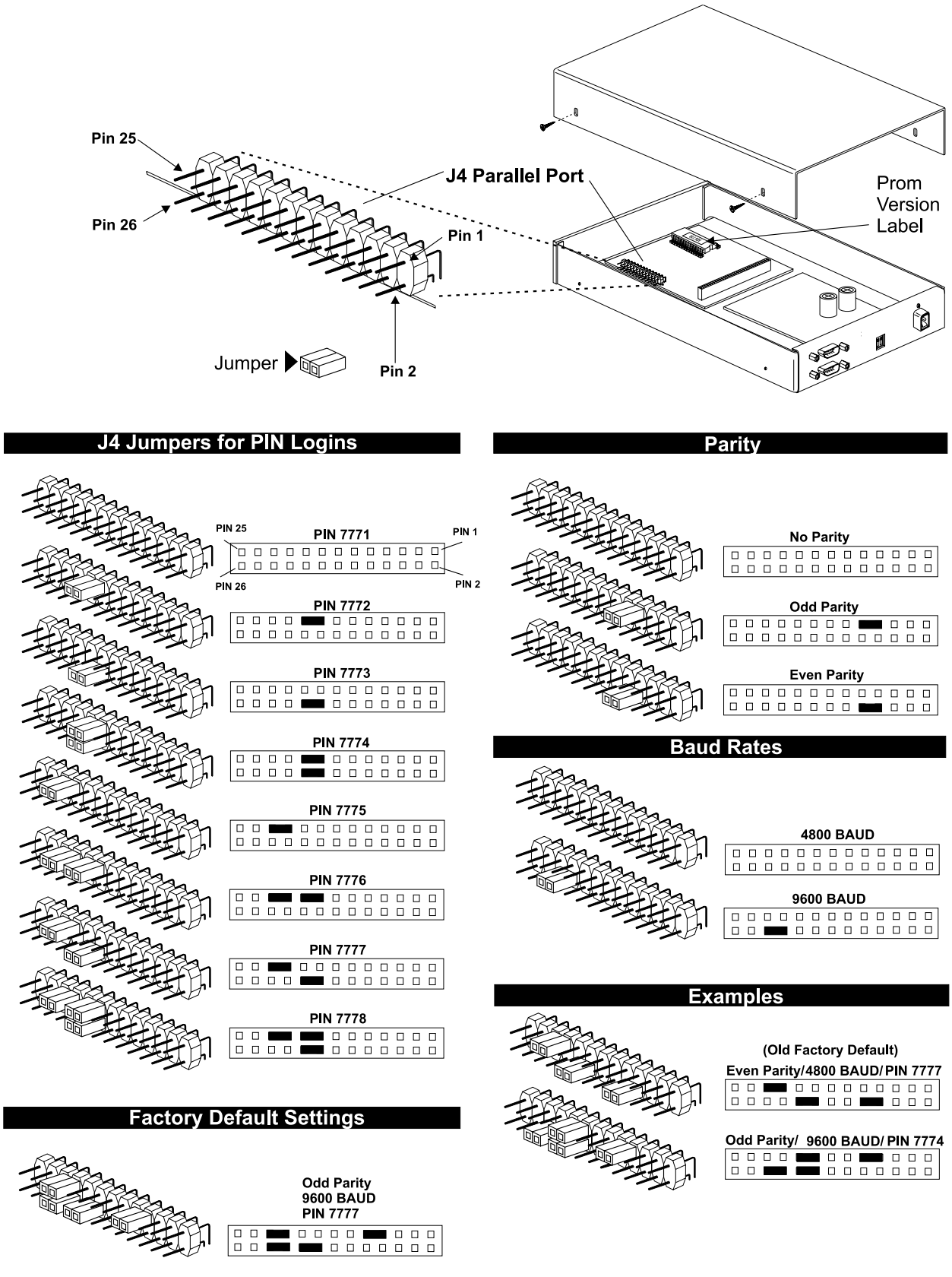


Figure 2. Communications Parameters

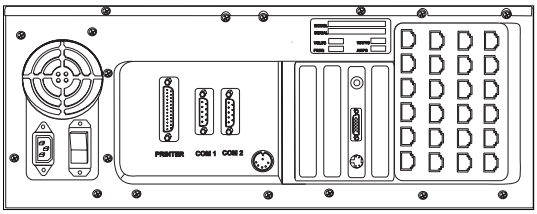
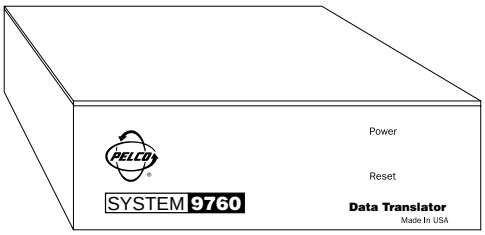
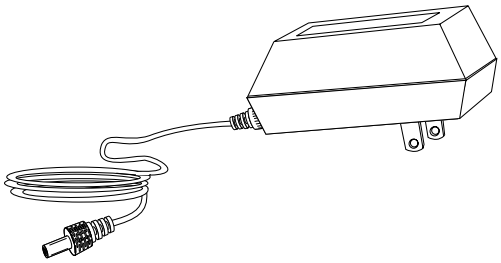
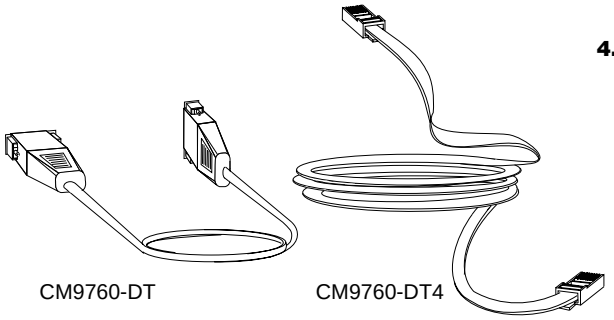
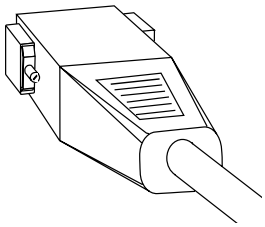
Item and Description	Qty Supplied
 **1. CM9760 MATRIX SYSTEM** The system interface with which the CM9760-DT is used (assumed to be in place or part of a system order; the CM9760-DT can also be used with the CM9750 Matrix System).	0
 **2. 9760-DT** The data translator unit (desktop) or, if desired, the unit can be rack mounted.	1
 **3. POWER PACK** Provides 12 VAC input to the 9760-DT via its rear power input connector (see Figure 4)	1
 CM9760-DT CM9760-DT4 **4. CABLE (Provided)** **CM9760-DT** One DB9 to DB9 (female to female) cable for connection between COM B on the rear of the CM9760-DT and COM 1 (port 1) or COM 2 (port 2) on the rear of the CM9760-CC1 or COM 2 (port 2) on the rear of the CM9740-CC1 chassis. **CM9760-DT4** CM9760-DT4 to CM9740/60-CC1, RJ-45 to RJ-45 6-inch (1.83 cm) cable (flipped or reverse wired) that provides the data path between the CM9760-DT4 and available Sercom ports on the rear of the CC1.	1 each
 **5. SHIELDED CABLE (User Supplied)** User supplied shielded cable for ASCII input via the DB9 male connector (COM A) on the rear of CM9760-DT or for DB9 Data In connector on the rear of the CM9760-DT4.	0

Figure 3. CM9760-DT Installation Components

3.3 PHYSICAL INSTALLATION

NOTE: *The AC power pack converts either 120 or 230 VAC (model dependent) to 12 VAC. The 9760-DT, in turn, receives the 12 VAC at its power input jack located on the rear of the unit and converts the 12 VAC to the +12 VDC and +5 VDC voltages needed for translator operation.* ***The 120 VAC power pack is used with the 9760-DT; the 230 VAC power pack is used with the 9760-DT-X***

INSTALLATION COMPONENTS

Refer to Figure 3 for a preview of the components needed to physically install the 9760-DT.

Note that the cable used to connect the ACD to the 9760-DT is user supplied and not provided by Pelco (refer to item 5 in Figure 3 and the "User Supplied Shielded Cable " callout in Figure 5).

INSTALLING THE CM9760-DT (refer to Figure 5)

1. If you are using the R300 Rack mount kit, assemble the hardware needed to mount and install the unit in the rack.

2. Verify that both rear panel DIP switches (if using the CM9760-DT) are in the ON position–this is the normal run position preset by the factory.

3. From the CM9760-DT
   Install one end of the female-to-female DB9 shielded interface cable from the COM B connector on the rear panel of the CM9760-DT and route the opposite end of the cable to either port 1 (COM 1) or port 2 (COM 2) on the rear panel of the CM9760-CC1 chassis.

   From the CM9760-DT4
   Install one end of the RJ-45 plug to the DATA OUT connector on the rear of the CM9760-DT4 and connect the other end of the cable to an available Sercom port on the rear of the CC1 chassis.

4. Connect the user supplied shielded cable (wired per the pinouts in Figure 4) to COM A (male DB9 connector) located on the rear of the CM9760-DT (refer to Figure 5) or the DATA IN if you're wiring up the CM9760-DT4.

5. Plug the AC power pack into an appropriate power source and insert the adaptor plug into the mating power connector provided on the rear of the 9760-DT.

6. The power LED on the units front panel will lite.

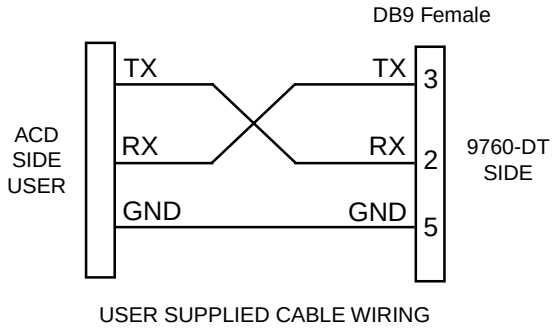


Figure 4. ACD to 9760-DT Cable Wiring

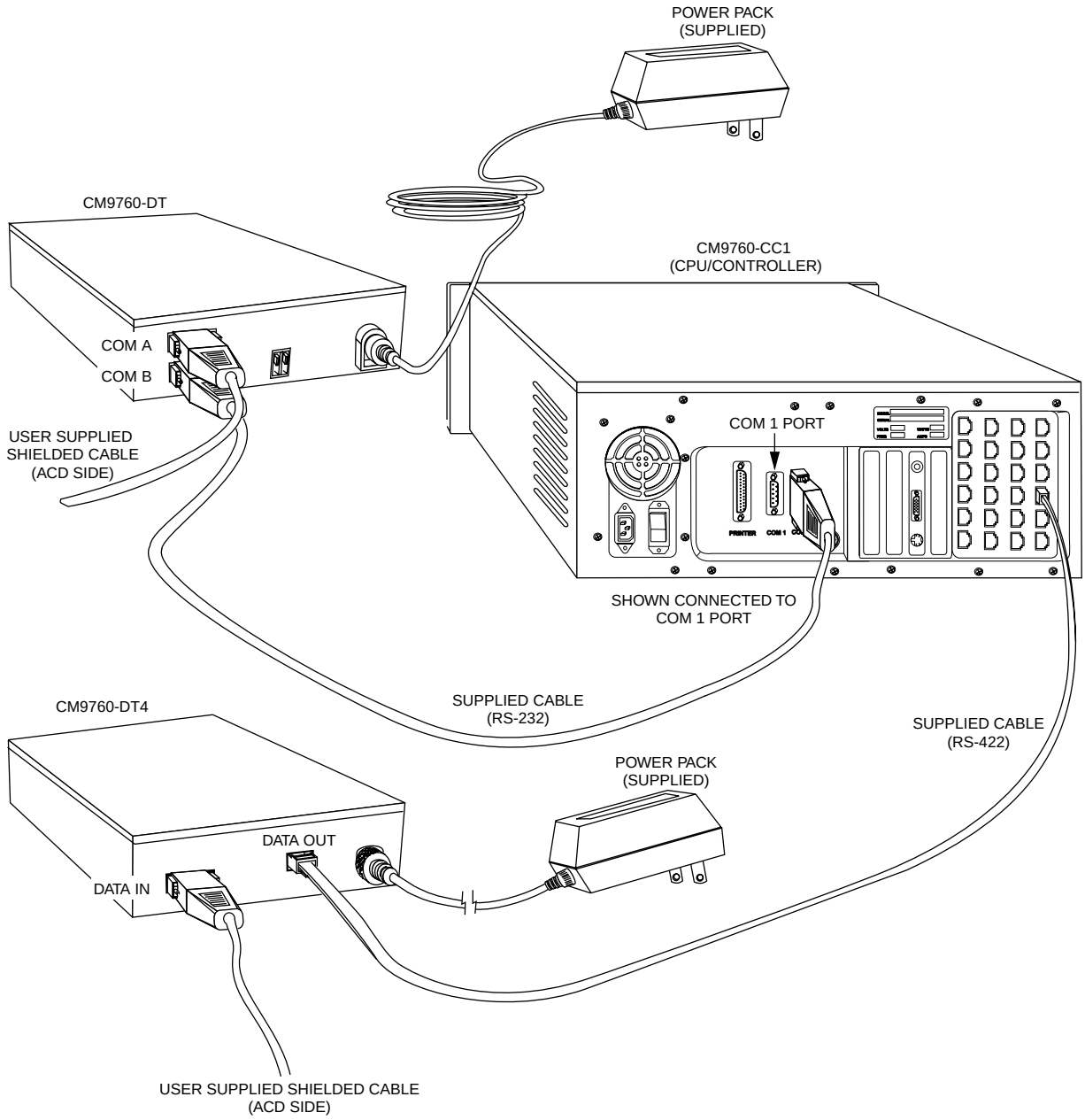


Figure 5. CM9760-DT System Installations

3.4 SOFTWARE CONFIGURATION

This manual assumes you are either using version 3.72 or later of the 9750 Set program (referred to as version 5.XX in the C942M-B SET programming manual), or you are using a 7.5 or earlier version of the CM9760-MGR software. Configuring the system for 9760-DT use can be accomplished using either program. Although setup procedures are functionally equivalent within either program, there are enough differences to warrant a discussion describing the use of both programs to configure the system for 9760-DT use.

The tasks listed below must be completed to configure the operating system for 9760-DT use. They are as follows:

1. Configure the 9760-DT as a keyboard.
2. Establish the ACD device as a user.
3. Partition user access to system resources.

CONFIGURING THE 9760-DT AS A KEYBOARD

On this side of the page, we highlight the use of the SET9750 program to establish the first of the three items just enumerated. On the opposite page, we perform the same tasks using CM9760-MGR software.

SET9750

1. Initialize the SET9750 executable program at your system prompt by typing the following (shown in **bold**):

   C:\9760> **SET9750**

The default Monitor File Format (.MON) screen appears, as illustrated in Figure 6.

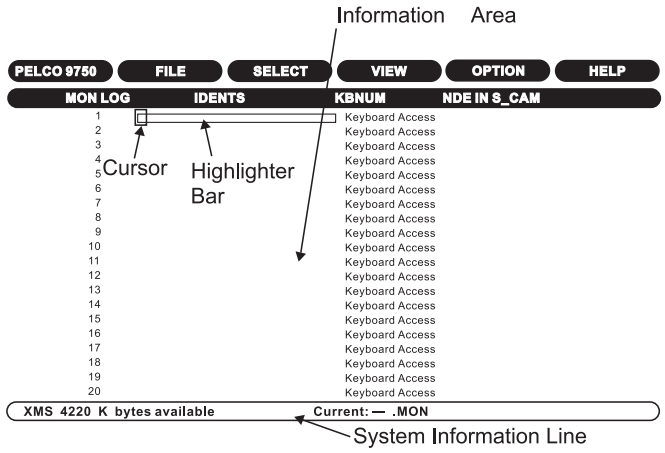


Figure 6. Monitor File

2. Simultaneously, press the **ALT + S** keys to activate the SELECT pull-down menu; arrow to the Comms (.SCP) selection, highlight it and press the **ENTER** key. The Comms file appears, as shown in Figure 7.

3. Edit the Comms file based on the explanatory remarks found in the menu illustrated in Figure 7.

NOTE: *Up to eight ACD type devices may be connected and configured on a single node. Each device is connected to a single port on the CC1 via a DT. Comms file entries are where port configuration takes place for the connected DTs, as well as all other devices attached to the CC1.*

Completing and saving this file configures the DT as a keyboard.

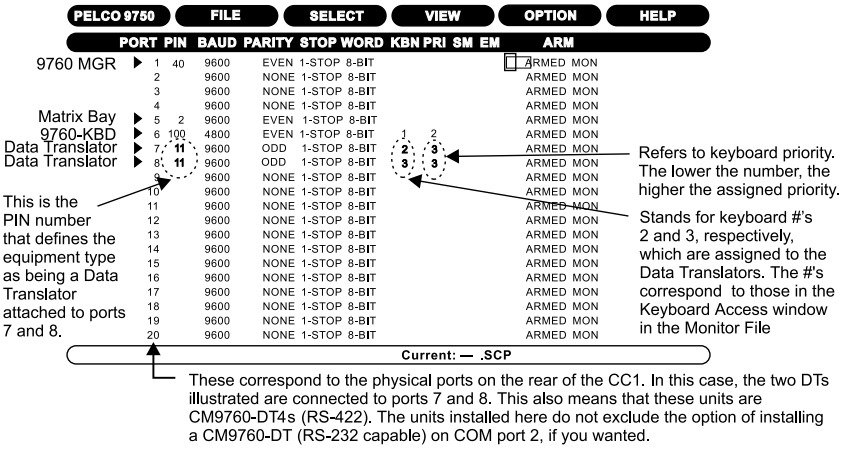


Figure 7. Comms File

CONFIGURING THE 9760-DT AS A KEYBOARD

On this side of the page, we highlight the use of the CM9760-MGR program to establish the same software goals that we executed on the opposite page using the SET9750 program.

CM9760-MGR

1. Invoke the CM9760-MGR program and logon (default = **Admin** and is case sensitive). Click the 9760 Setup icon or, alternately, select 9760 Setup in the Admin pull-down menu. This brings up the Configuration Files dialog box. Click on the rectangular Setup Files bar. The Setup Configuration menu shown in Figure 8 should appear:

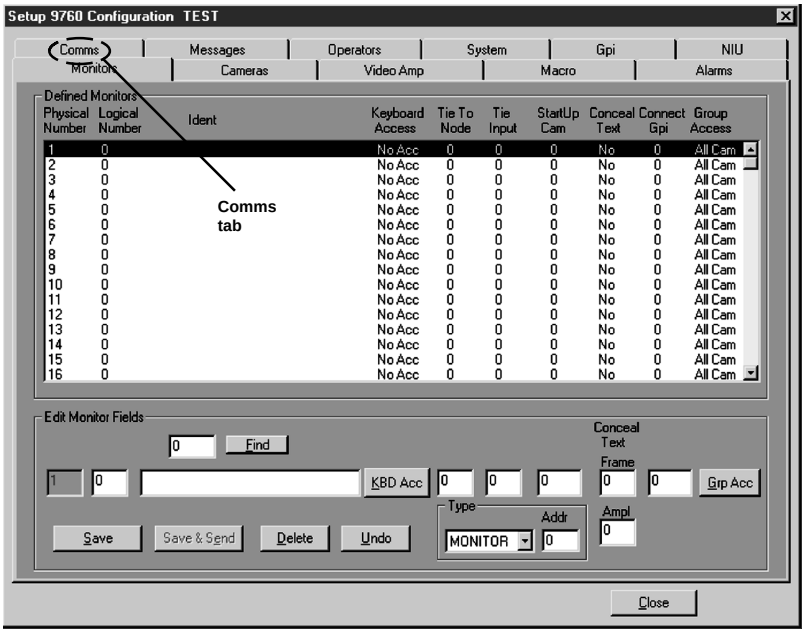


Figure 8. Setup 9760 Configuration

2. Click on the Comms tab, referenced in Figure 8 to bring up the Comms file shown in Figure 9.

We carry through with our example by using the same information here as was entered previously in the corresponding 9750 .SCP file. Enter the information using the blank fields in the Edit Port Field entries and then save each line of information by pressing the rectangular Save bar tab for each port to which devices are attached that you wish to define. An Equipment # of 11 entered for a DT to be configured automatically brings up the KBD Num dialog on the right side of the menu. Individual keyboard numbers are entered for each DT. Notice that we use the same keyboard numbers that we used in the 9750SET program.

This configures the DT as a keyboard.

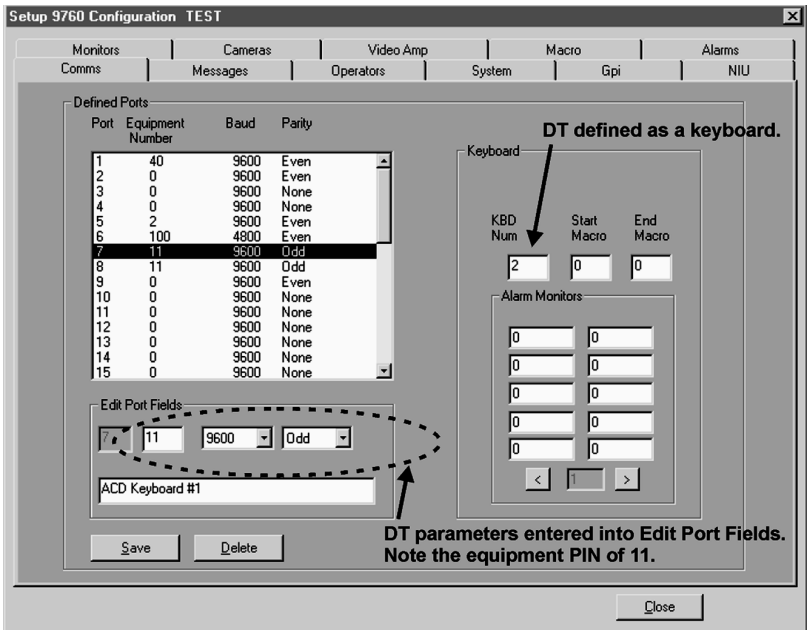


Figure 9. Comms File

ESTABLISHING THE ACD DEVICE AS A USER

On this side of the page, we highlight the use of the SET9750 program to establish the second of the three items listed at the beginning of Section 3.4, *Software Configuration*, and reiterated in the box to the left. On the opposite page, we perform the same tasks using CM9760-MGR software.

SET9750

1. To navigate to the PIN file, press the **ALT + S** key combination to bring down the SELECT pull-down menu as shown in Figure 10.

2. Arrow down to the PIN (.SCP) selection and press the **ENTER** key. The PIN file appears as illustrated in Figure 11.

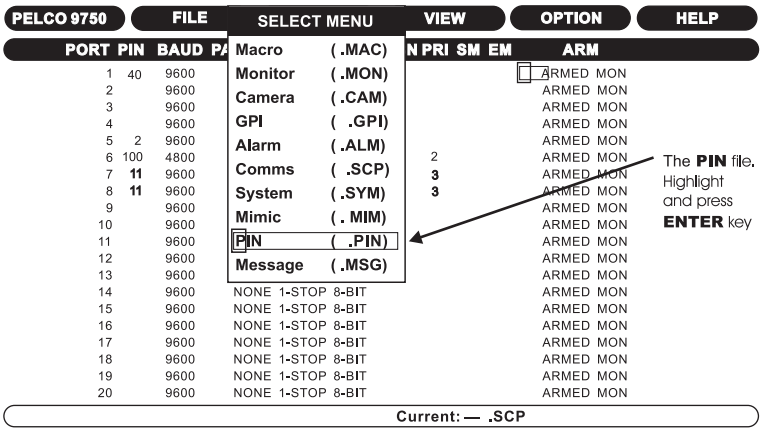


Figure 10. Navigating to the PIN File: Establishing the ACD as a User

3. Follow the explanatory references in Figure 11 to successfully configure your ACDs with a user ID code and to pick an OPR # for the later partitioning of system resources.

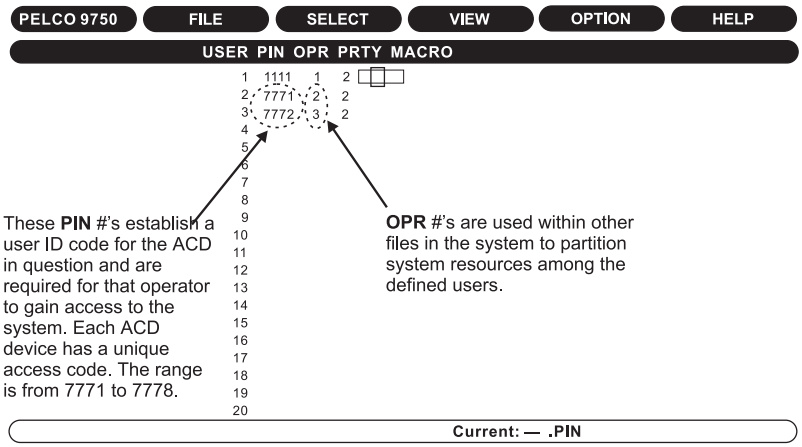


Figure 11. PIN File: Establishing the ACD as a User

Performing these steps configures the ACD as a user.

ESTABLISHING THE ACD DEVICE AS A USER

On this side of the page, we highlight the use of the CM9760-MGR program to establish the same software goals that we executed on the opposite page using the SET9750 program.

CM9760-MGR

1. Press the Operator tab to load the Operator file as illustrated in Figure 12.

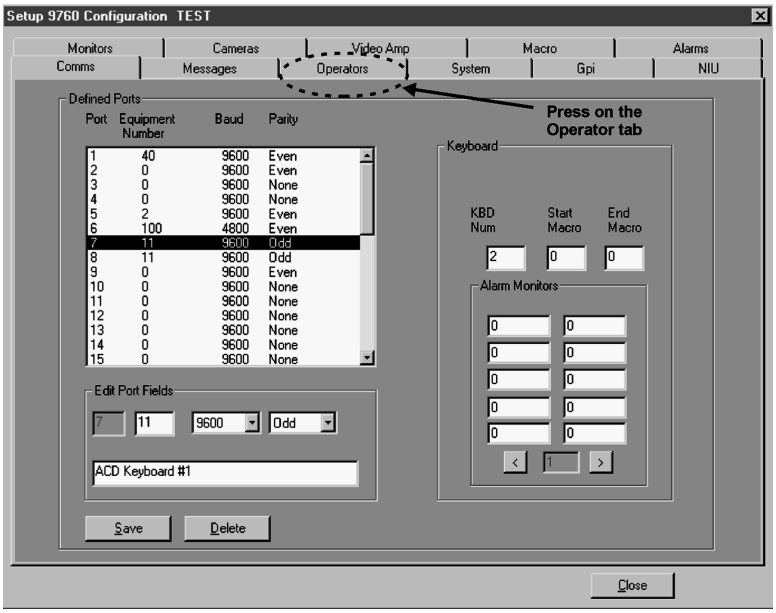


Figure 12. Navigating to the Operator File: Establishing the ACD as a User

2. Edit the Operator file by highlighting the line in which you wish to enter information.

3. Use the Edit Pin Field entry boxes to enter your information. For each line of information entered, press the rectangular SAVE bar tab for the information to be entered on the Operator Number line previously highlighted.

4. Continue until all desired entries are made. When finished, save the file.

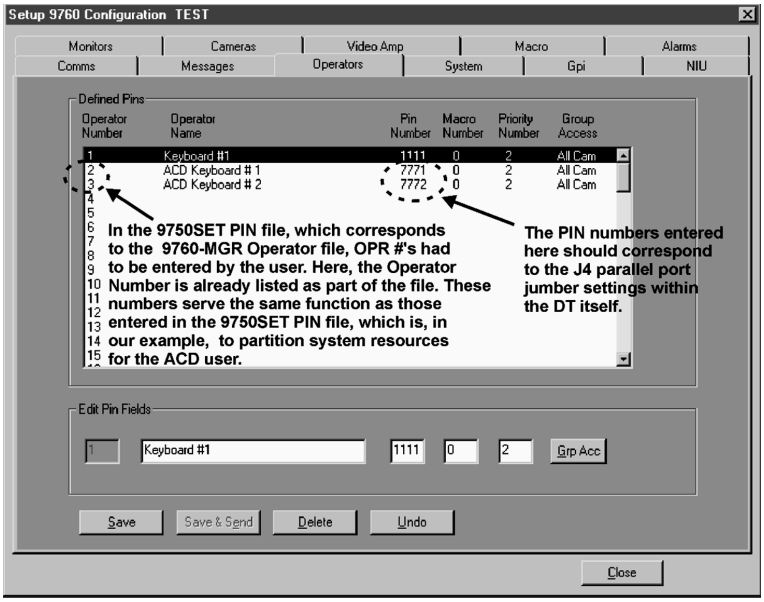


Figure 13. Operator File: Establishing the ACD as a User

Performing these steps configures the ACD as a user.

PARTITIONING USER ACCESS TO SYSTEM RESOURCES

On this side of the page, we highlight the use of the SET9750 program to establish the last of the three items listed at the beginning of Section 3.4, *Software Configuration*, and reiterated in the title box above. On the opposite page, we perform the same tasks using CM9760-MGR software.

SET9750

When allocating system resources, you will have occasion to access the Monitor, Alarm, Macro, GPI and Camera files within their respective Select pull-down menus.

In each of these files, with the exception of the Monitor file, is a column labeled Operator in which OPRs (operator access numbers) are entered; likewise, within the Monitor file is a column labeled KBNUM in which KBNs (keyboard access numbers) are entered. The operator and keyboard numbers serve the same function. If you wish to gain access to a device or allocate a software function (as in the case of Macro files), you must enter values within the appropriate column that are numerically equal to the OPR number or the KBN number, respectively, that you chose when setting up their respective PINS during initial system configuration. Take the keyboard, for example, where we used the COMMS file to enter PINS of 11 for each ACD device to be used and at the same time chose KBNs of 2 and 3, respectively, for each ACD; while, for user access, the PIN file was used to enter access PINs of 7771 and 7772 and OPRs of 2 and 3.
As an example, reference Figure 14 which shows the Alarm, Macro, Camera and GPI files all displayed with the Operator Access window open. Note that within each window, Operator Access numbers 1, 2, and 3 have been activated (activation is indicated by a happy face which is accomplished by moving the highlighter bar to the Operator Access number desired and pressing the space bar).

In particular, if you look at the Camera file, this means that operator 1, 2, and 3 are allowed access to camera one. You must activate your operator number within each Operator Access window for each camera you wish to access. Access to additional system resources is accomplished by following a similar scenario within other files that contain Operator Access windows.

Configuring all operator and KBN access windows, partitions the system for ACD user access for the devices specified.

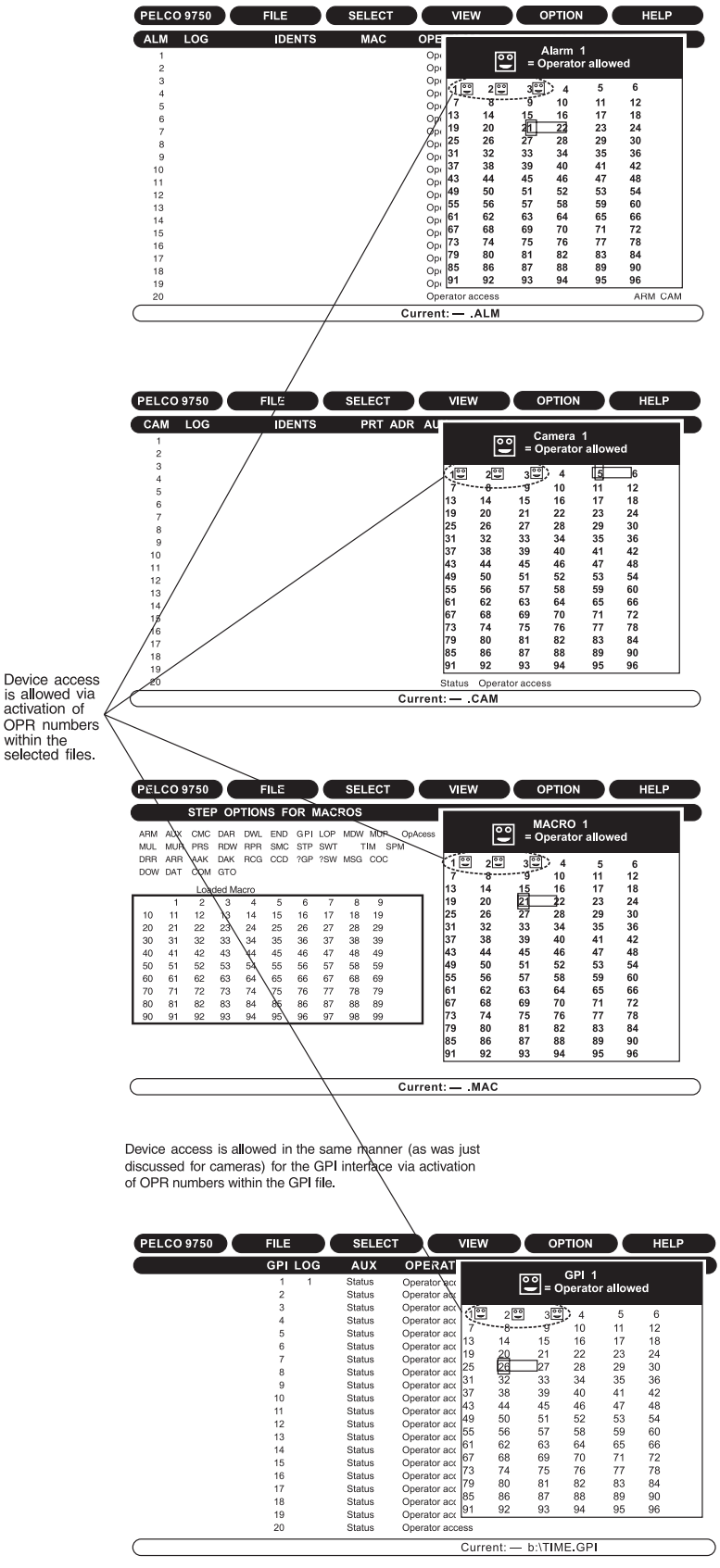


Figure 14. Partitioning System Resources

PARTITIONING USER ACCESS TO SYSTEM RESOURCES

On this side of the page, we highlight the use of the 9760 MGR program to establish the last of the three items listed at the beginning of Section 3.4, *Software Configuration*, and reiterated in the title box above. On the opposite page, we perform the same tasks using the 9750 SET program.

CM9760 MGR

When allocating system resources, you will have occasion to access the Monitor, Alarm, Macro, GPI and Camera files within their respective tabbed menu files.

In each of these files, with the exception of the Monitor file, is a rectangular tab labeled Oper Acc, which activates an access window for check-marking Operator Numbers.

The operator and keyboard numbers serve the same function. If you wish to gain access to a device or allocate a software function (as in the case of Macro files), you must enter numerical values that correspond to those chosen during initial system configuration. Take the keyboard, for example: the COMMS file was used to enter PINS of 11 for each ACD device to be used. At the same time, KBNs of 2 and 3, respectively, were chosen for each ACD; while, for user access, the Operator file was used to enter access PINs of 7771 and 7772 for Operator Numbers 2 and 3, respectively.

As an example, reference Figure 15 which shows the Alarm, Macro, Camera and GPI files all displayed with the Access window for Operator Number entry open. Note that within each window, Operator Numbers 1, 2, and 3 have been activated with a check-mark.

In particular, if you look at the Camera file, this means that operators 1, 2, and 3 are allowed access to camera one. You must activate your Operator Number within each Access window for each camera you wish to access. Access to additional system resources is accomplished by following a similar scenario within other files that contain the Oper Acc bar tab.

Configuring all operator and KBD access windows, partitions the system for ACD user access to all specified devices.

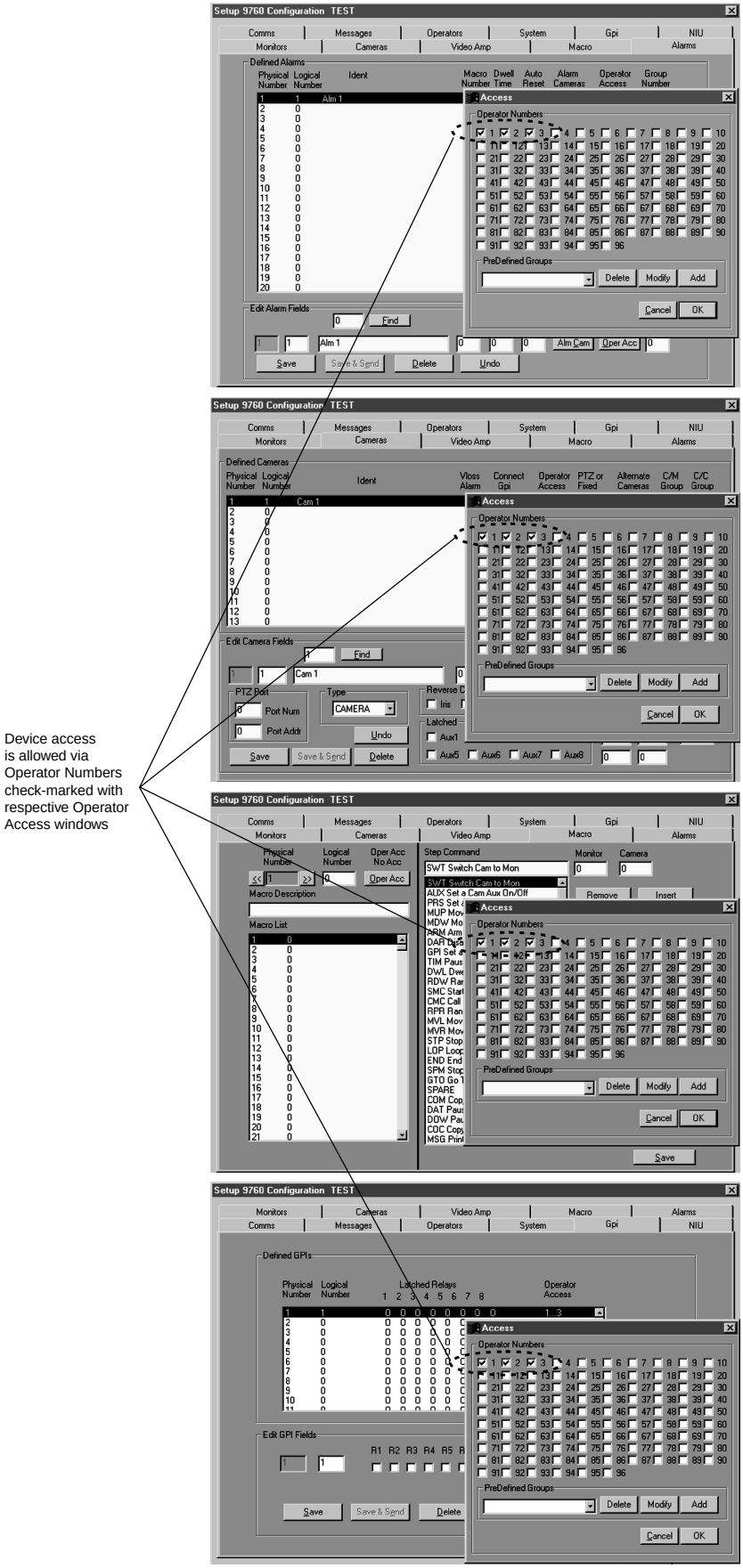


Figure 15. Partitioning System Resources

4.0 OPERATION

After the 9760-DT has been installed and configured, devices attached to the Matrix System can be controlled by the ACD.

The 9760-DT will automatically Log On to the system on power-up of the CC1 CPU/Controller. If power to the system is interrupted, the 9760-DT will automatically become operational once power is restored. Even if a user reconfigures the System Matrix and then performs a Soft Reboot of the system (a keyboard CTRL-ALT-DEL), or power is cycled or the System is halted and restarted, the 9760-DT will automatically revert to logon mode. A reset is not necessary to restore 9760-DT operation.

The CM9760-DT communicates in a standard asynchronous, byte-oriented protocol that includes 1 start bit, 8 data bits, 1 parity bit (odd parity), and 1 stop bit. The default communications rate is 9600 Baud.

The ACD itself must also be configured with the same communication parameters.

4.1 COMMAND STRUCTURE

In lieu of user initiated commands, the 9760-DT sends a monitor status command every 10 seconds to the system to determine if the CC1 is still operating. If there is no response from the CC1, the 9760-DT returns to logon mode. Similarly, the system CC1 sends T-D (time-date) commands to the 9760-DT, which the DT automatically acknowledges.

When commands are sent by a user, the structure of each command that is received by the ACD consists of an ASCII character that may require a preceding numeric value (also represented in ASCII). Each command is followed by a lower case “a” (also in ASCII). For example, the command 27La indicates that the currently selected pan and tilt mechanism should pan left at a speed of 27. The command is sent to the system by the 9760-DT which will also send an acknowledgment back to the ACD. If a command is not recognized by the 9760-DT, it will respond with a different negative acknowledgment.

The commands available to the ACD are listed in Section 4.2, *The Command Set*. Included with the commands (in the far right-hand column is a brief description of what each command does. Notice that the range of legal numeric values preceding some commands differ. Additional variances can be caused by system operation itself and may narrow the range of legal numeric values from those listed.

4.2 COMMAND SET

The following command set is subject to change with no advance warning from Pelco. If you encounter trouble using the command set, you may obtain an official protocol manual by contacting the factory.

Pan and Tilt Commands		Command Descriptions
Pan Left	[1-64]La	Causes the currently selected pan and tilt device to move horizontally to the viewer's left or right at the speed indicated. If the speed is omitted, some devices will operate at a default speed, others will move at the slowest speed possible for the device. The speed information has no effect on fixed speed devices.
Pan Right	[1-64]Ra	
Stop Pan Left	~La	
Stop Pan Right	~Ra	
Tilt Up	[1-63]Ua	Causes the currently selected pan and tilt device to move vertically in the direction indicated at the speed indicated. If the speed is omitted, some devices will operate at a default speed, others will move at the slowest speed possible for the device. The speed information has no effect on fixed speed devices.
Tilt Down	[1-63]Da	
Stop Tilt Up	~Ua	
Stop Tilt Down	~Da	
Stop ALL PTZ Motion	sa	Stops all image motion… stops pan, tilt, zoom, focus and iris.

Camera Control Commands		
Zoom Telephoto	Ta	Causes the currently selected camera to either zoom telephoto (narrow the field of view or make objects appear larger) or zoom wide (widen the field of view or make objects appear smaller).
Zoom Wide	Wa	
Stop Zoom Telephoto	~Ta	
Stop Zoom Wide	~Wa	
Focus Near	Na	Causes the currently selected camera to change the good focus range nearer to or further from the camera.
Focus Far	Fa	
Stop Focus Near	~Na	
Stop Focus Far	~Fa	
Iris Open	Oa	Causes the currently selected camera to either open (brighten the image), or close (make the image darker) the iris.
Iris Close	Ca	
Stop Iris Open	~Oa	
Stop Iris Close	~Ca	

Advanced Commands		
Start Record Pattern	[1-99]/a**	On receivers that do patterns, these commands allow you to record whatever a user does, for a limited time, and play those motions and operations back. Please consult the receiver manual for specific information regarding implementation. (See the "**" note in the left margin.)
Stop Record Pattern	[1-99]/a	
Start Pattern	[1-99]/pa	

**The Record Pattern command functions as a toggle. Issuing the command starts the programming of a pattern. To stop recording the pattern, the same command is issued a second time.

In some instance, the **[1-99]** portion of the **[1-99]/a** command can be considered optional. For example, Spectra II and the ES3000 Series Esprit™ units are capable of recording one full or two half-patterns. Issuing the **[1-99]/a** command without the number starts full pattern programming. Issuing the **/a** command again, stops the full pattern record mode. Half-pattern programming follows the same sequence, except that the number is included in the command to start and stop pattern recording.

Start a Sequence	[1-99]qa	Some systems have the ability to execute programmed behaviors. These commands start and stop these programmed behaviors.
Begin a Tour	[1-99]ta	
Start Macro	[1-9999]Sa	The result of issuing a [1-99]qa or a [1-99]ta command is the same as issuing a Start Macro command.
End a Tour	[1-99]ra	The result of issuing a [1-99]ra or a [1-99]ea command is the same as issuing a Stop Macro command.
End a Sequence	[1-99]ea	
Stop Macro	[1-999]Ha	
Trigger Alarm	[1-9999]Ea	Generate an alarm through protocol, and acknowledge an existing alarm. The effects of these commands are system dependent.
Acknowledge Alarm	[1-9999]Ia	

(Continued on next page)

Advanced Commands (Continued)

Command Descriptions

Set Preset with Label	la[string]a[1-9999]^a	Sets a Preset location with an embedded label, where the **ASCII** string **MUST BE UPPERCASE CHARACTERS**. To set a preset with a label, the Set Preset with Label command should be sent immediately preceding the Set Preset command. For example, to set preset 1 with the label "FRONT DOOR" the command is: laFRONT DOORal^a. Where [**string**] is an alphanumeric label limited to 20 characters and [**1-9999**] is the associated Preset number. **NOTE:** All transmitted characters **MUST BE ASCII**.
Set Preset Go to Preset Position	[1-9999]^a [1-9999]\a	Remember a position (includes pan, tilt, zoom, focus, and iris positioning) and recall that setting.
Camera Auxiliary ON Camera Auxiliary OFF	[1-8]Aa [1-8]Ba	Camera auxiliaries are camera relay outputs that can be controlled through the protocol.
GPI		
Auxiliary ON Auxiliary OFF or	[9-2ØØØ8]Aa [9-2ØØØ8]Ba [9-2ØØØ8]~Aa	Auxiliaries are relay outputs that can be controlled through the protocol. Please make sure to consult your system manual(s) to find out how the system involved implements relays. These, as opposed to camera auxiliaries, are essentially GPI auxiliary commands. Since the camera auxiliary commands use the first eight numbers [1-8] of the Aa, Ba root command, the starting range for turning GPI Aux's ON and OFF is shifted upward as shown (9-2ØØØ8). For example, the command 9Aa turns ON Aux 1 and the command 2ØØØ8Aa turns Aux 2ØØØ8 ON. Ba command use follows suit.
Query Device	[1-9999]Qa	Generalized poll command. This gives the polled device an opportunity to transmit pending information to the system master or to take control of the bus for a limited time.
Video Loss Detect	[cam #]Va	Reports a video loss condition from the specified camera in response to a Query command from the system master.
Report Revision	va	Asks a device to report its version information.
Set Time and Date	ZaMM/DD/YY/HH:MM:SSa	This command is a "mode" of operation. Since the time and date string might be confused with other commands, the command string "Za" comes first. This puts the receiving device into a mode that can accept the specialized string. MM is month. DD is day. YY is year. Time is in military style with hours going from Ø to 23 and seconds "SS", going from ØØ to 59.

Matrix Control Commands

Select Monitor	[1-9999]Ma	Selects the camera/monitor association.
Select Camera Next Camera Previous Camera	[1-9999]#a +a –a	Select a camera to be displayed on the current operating monitor. The advance "+" and previous "-" commands go to the next numbered camera in the system.

(Continued on next page)

Multiplexer Commands

		Command Descriptions
		The following describes MUX control commands for a properly configured MUX attached to a System Matrix. The source of the screen display referenced in the descriptions below is the MUX MAIN port on the MUX itself.
Digital Zoom	ym	Issuing this command results in the full screen display of the camera selected with the [1-16]#m command. Issuing the command itself again results in a 2X display and, again, in a 4X display. You can toggle through all 16 screens, one at a time, by issuing the "camera select" command followed by the "ym" command.
Picture-in-Picture	im	Issuing this command displays a picture-in-picture insert on the MUX MAIN monitor. You can cycle through all 16 cameras in the picture insert by calling each via the "camera select" command.
Quad	um	Brings up 4 of the available 16 screens. Reissuing this command brings up the next 4, and so on.
Nano	om	Brings up 9 of 16 screens. Reissuing the command again brings up the remaining 7 of the 16 screens and wraps around until 9 screens are shown.
Hex	xm	Bring into view all 16 screens at once.
Camera Select	[1-16]#m	Selects a specific camera to be displayed on MUX MAIN.
Scene Movement Using Joystick or Cursor Keys	LEFT: dLm, ~dLm RIGHT: dRm, ~dRm UP: dUm, ~dUm DOWN: dDm, ~dDm	

VCR Commands

Eject	<m	These are the common control functions for VCR equipment that is interfaced to the 9760 System controller.
Record	rm	
Pause	em	
Fast Forward	>>m	
Rewind	<<m	
Stop	sm	
Play	>m	

Other Commands

Acknowledgement	AKa
Negative acknowledgement	NAa

Example Commands

1 1Ma3#a	Switch camera 3 to monitor
5Ma2#a3\a	Go to camera 2, preset 3, on monitor 5
47Ra33Da	Pan Right at Speed 47, Tilt down at speed 33
~Da	Stop Tilt down only
1Ma10Sa	Run macro 10
1Ma10Ha	Stop macro 10
945Ea	Trigger alarm 945
	Stop alarm 945

5.0 SPECIFICATIONS

ELECTRICAL

Operating Voltages:	+5V, +12V derived from the AC wall-mount power-pack (120 VAC to 12 VAC input)
Wall-Mount Power Pack	
120 VAC	
INPUT:	120 VAC @ 60 Hz at 60mA MAX
OUTPUT:	12 VAC +/- 5% at 1 Amp
230 VAC	
INPUT:	230 VAC @ 50 Hz at 90mA MAX
OUTPUT:	12 VAC +/- 5% at 1 Amp

COMMUNICATIONS

Serial Communication Ports	
CM9760-DT:	One input port, RS-232 One output port, RS-232
CM9760-DT4:	One input port, RS-232 One output port, RS-422
Serial Communication Setup (Default)	
Baud Rate:	9600
Data Bits:	8
Stop Bits:	1
Start Bits:	1
Parity Bit:	1, odd
PIN:	7777

MECHANICAL

Input Port Connectors	
CM9760-DT:	Two 9-pin, DB9 male
CM9760-DT4:	One 9-pin, DB9 male
Unit weight:	3 lb (29.42 kg)
Dimensions:	1.75 (H) x 5.50 (W) x 8.8 (D) inches (4.44 cm x 13.97 cm x 22.35 cm)
Construction	
Chassis:	Galvanized sheet metal
Front Panel:	Aluminum sheet metal

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

REVISION HISTORY

Manual #	Date	Comments
C542M	10/97	Original version.
C542M-A	7/00	Revised manual to correspond with revision 3.0 release of Data Translator software. Updated command set description, included 9760-MGR software setup and added the CM9760-DT4 to the translator family.
C542M-B	8/00	Added compliance issue data.

6.0 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:

- Three years on Genex® Series (multiplexers, server, and keyboard).
- Two years on cameras and all standard motorized or fixed focal length lenses.
- Two years on Legacy®, Camclosure™ Camera Systems, CM6700/CM8500/CM9500/CM9750/CM9760 Matrix, PelcoVision®, DF5 Series and DF8 Fixed Dome products.
- Two years on Spectra® and Esprit™, including when used in continuous motion applications.
- Two years on WW5700 series window wiper (excluding wiper blades).
- 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). Goods returned for repair or credit should be clearly identified with the assigned CA/RA number and freight should be prepaid. All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Ship freight prepaid to: Pelco
3500 Pelco Way
Clovis, CA 93612-5699