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.
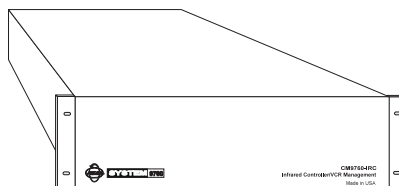
- Do not use the CM9760-MGR instructions contained in these manuals. Refer to the CM9700-MGR Getting Started Software Guide, on-screen help, or Online Help for instructions.

CM9760-IRC
Infrared VCR
Controller

Installation/
Operation Manual

C544M (2/98)

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LIST OF TABLES

REVISION HISTORY

Manual #	Date	Comments
C544M	2/98	Original version.

1.1 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.   Only use replacement parts recommended by Pelco.

3.   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.

CAUTION:
TO REDUCE THE RISK OF ELECTRICAL SHOCK,
DO NOT REMOVE COVER. NO USER-
SERVICEABLE PARTS INSIDE. REFER SERVICING
TO QUALIFIED SERVICE PERSONNEL.
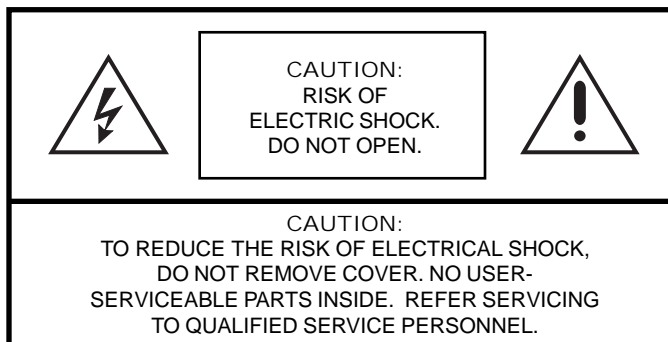
**Please thoroughly familiarize yourself with the information
in this manual prior to installation and operation.**

2.0 DESCRIPTION

The Pelco 9760-IRC VCR Controller provides remote control of most VCRs equipped with an infrared receiver for controlling standard functions: play, record, stop, fast-forward, rewind, and pause. Eject control depends on the VCR model. This reduces the need for modifications to VCRs.

Figure 1. CM9760-IRC (Rear View)

2.1 GENERAL FEATURES

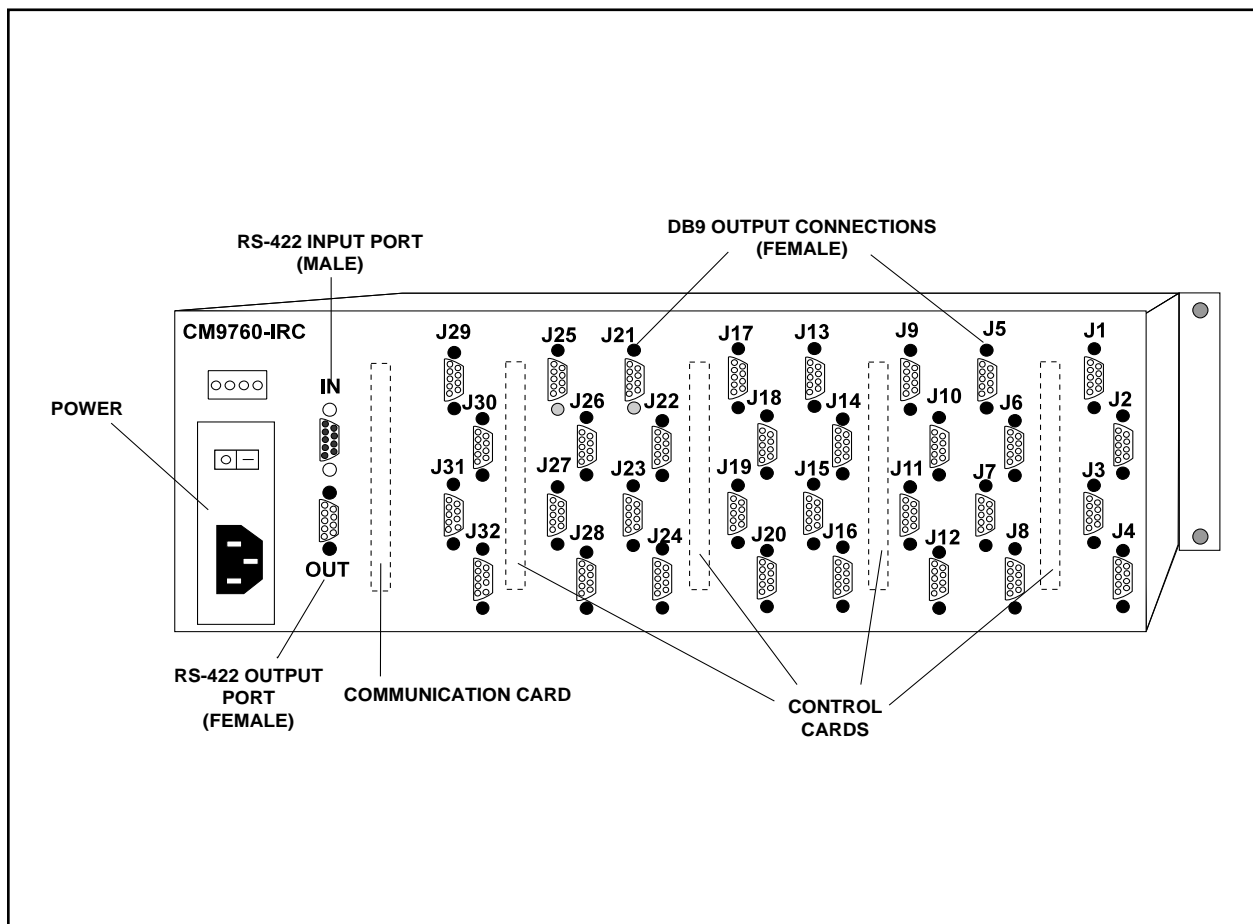The Pelco 9760-IRC is housed in a rack frame and connects to one Sercom port on the rear of the CM9760-CC1.

*   A fully populated Pelco 9760-IRC unit consists of the following:

    a.   One communication card (interfaces with CM9760-CC1)

    b.   Four VCR control cards

*   Each control card controls:

    a.   Up to 32 VCRs

    b.   Up to four different VCR brands and/or models

*   Up to 128 VCRs can be controlled by one unit.

*   Up to 16 IRC units can be linked in sequence (that is, daisy-chained) giving control of up to 2,048 VCRs (refer to Figure 2)

The control cards accept messages from the CM9760-CC1 in the same manner as a normal GPI (General Purpose Interface) relay card.

VCR control signals are transmitted by infrared control cable (IR control cable) attached to the VCR.
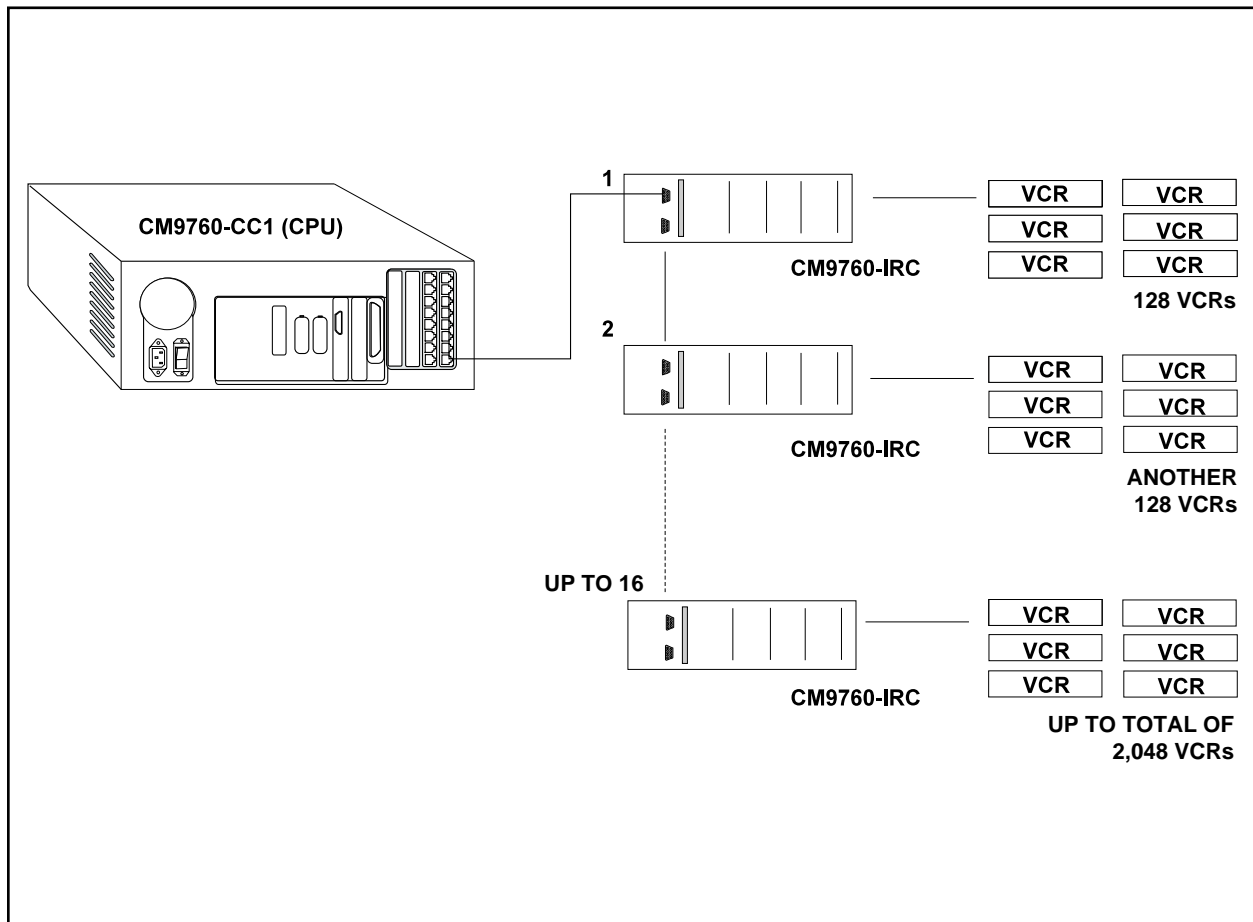
Figure 2. VCR Hook-up Parameters

2.2 SAMPLE SYSTEM

A typical system installation involving the CM9760-IRC might include:

a. CM9760-CC1   e. Monitors

b. CM9760-IRC   f. Cameras

c. CM9760-KBD   g. CM9760-MXBs

d. VCRs

Other Pelco products can be added according to system requirements.
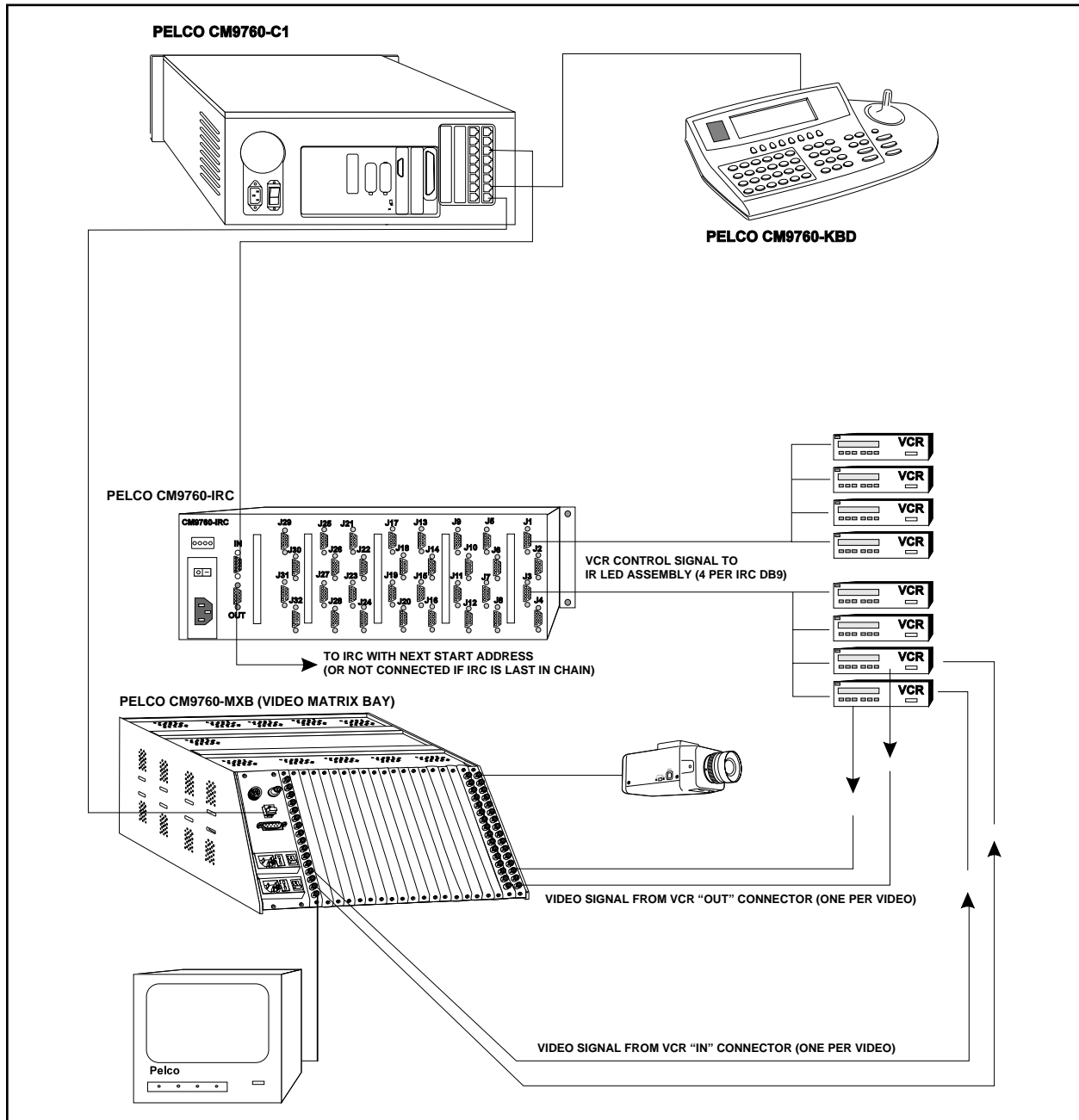
Figure 3. Sample System Hook-up

To install the Pelco Infrared VCR Controller, proceed as follows:

1. Set the baud.

2. Set the start address.

3. Connect the CM9760-IRC to the CM9760-CC1 host.

4. Connect additional IRC units in daisy-chain fashion.

5. Connect VCRs to the Video Matrix Bay (CM9760-MXB).

6. Connect the IR control cables to the VCRs.

Each step listed above is detailed below:

3.1 COMMUNICATION CARD

The communication card (refer to Figure 4) has a bank of eight DIP switches used to do the following:

1. Set the operating baud of the unit

2. Set the start address

In Figure 5, DIP switch number 2 is **ON**.

Figure 4. Communication Card
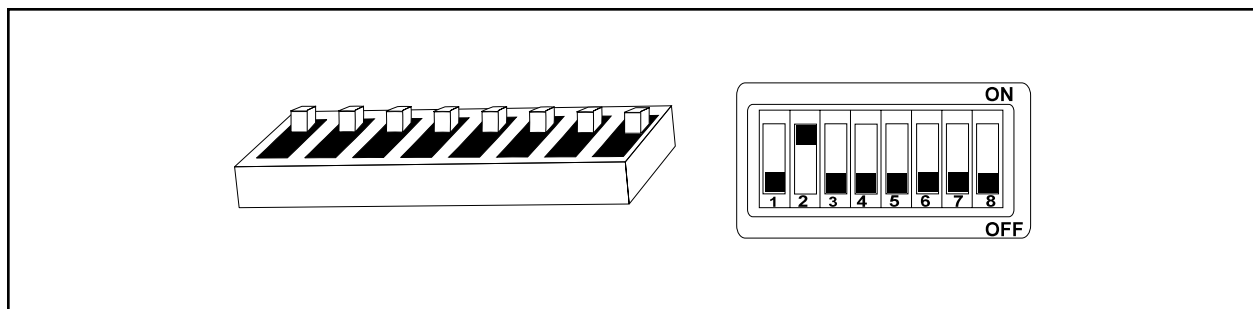
Figure 5. DIP Switches

3.1.1 Setting the Baud

Bauds of 2400, 4800, 9600, and 19200 are available. The communication protocol uses eight data bits, one stop bit, and even parity.

The baud is set using DIP switches 1 and 2 according to Table A.

Table A. Baud Settings
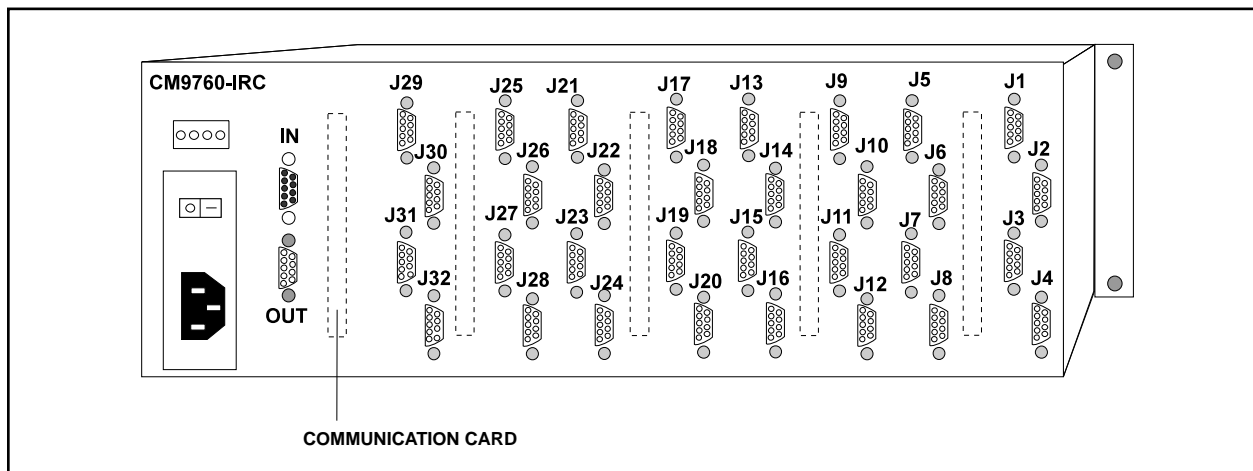
DIP Switch 2	DIP Switch 1	Baud
ON	ON	2400
ON	OFF	4800
OFF	ON	9600
OFF	OFF	19200

3.2 CONTROL CARD

The CM9760-IRC can have up to four control cards installed.

Each control card has four microprocessors.

Each microprocessor controls two DB9 output connections.

Each DB9 output controls up to four VCRs (refer to Figure 6).

This enables one Pelco CM9760-IRC to have infrared control of 128 VCRs (that is, four control cards multiplied by four microprocessors per card multiplied by two DB9 outputs per microprocessor multiplied by four VCRs per DB9 output equals 128 VCRs).
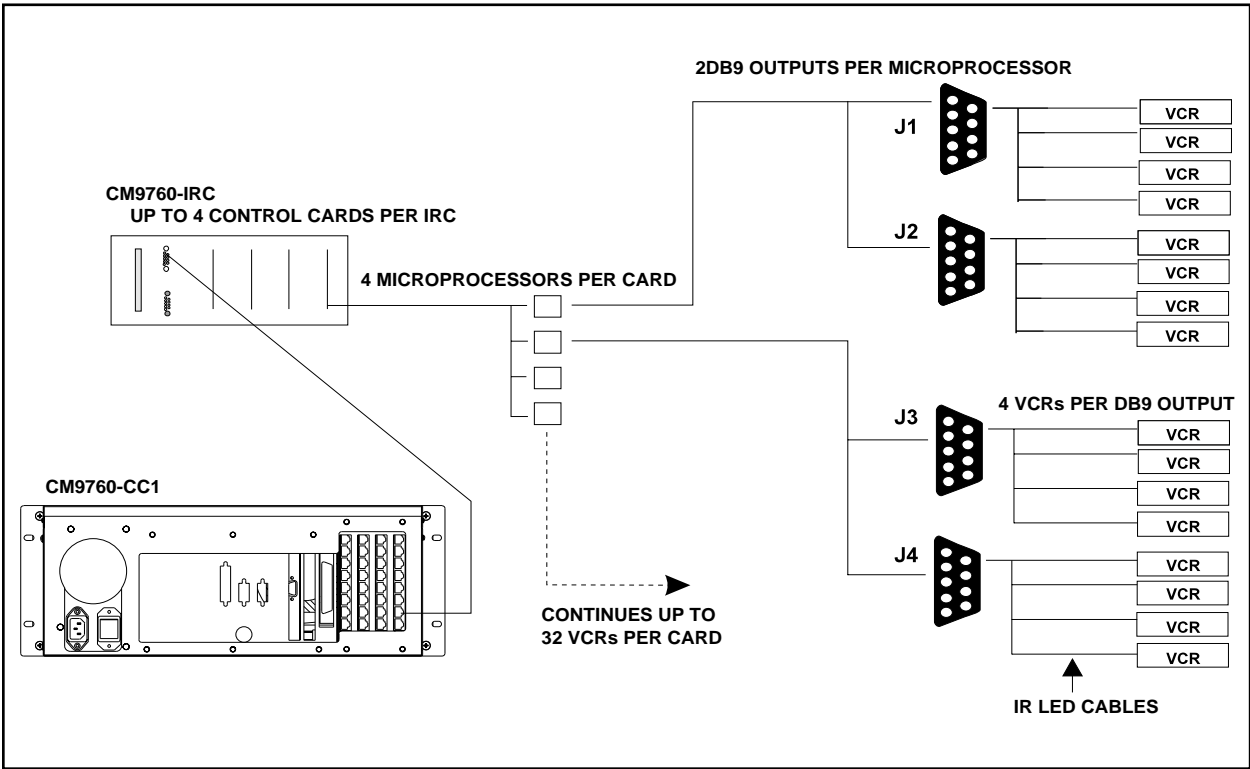
Figure 6. The Number of VCRs Controlled by One Control Card

3.2.1 Setting the Start Address

Each Pelco CM9760-IRC unit requires a six-bit start address. The start address is configured using the DIP switches on the communication card (see Figure 5: DIP switches). Each control card occupies one address space. An IRC unit occupies four address spaces (if there are only two control cards in the unit, it still occupies four address spaces).

The start address of an IRC unit is set with the DIP switches on the communication card per Table B.

Table B. Start Addresses

DIP Switch 8	DIP Switch 7	DIP Switch 6	DIP Switch 5	DIP Switch 4	DIP Switch 3	Start Address (Binary)	Start Address (Decimal)
ON	ON	ON	ON	ON	ON	000000	0
ON	ON	ON	ON	ON	OFF	000001	1
ON	OFF	ON	ON	ON	ON	010000	16
ON	OFF	ON	ON	OFF	ON	010010	18
OFF	OFF	ON	ON	OFF	ON	110010	50
OFF	OFF	OFF	OFF	OFF	ON	111110	62

NOTE: *It is necessary only to set the start address of the IRC as a whole. The start address of each control card in the unit is set by internal default.*

Unlike an IRC unit, a serial GPI occupies one address space. In the sample system outlined in Figure 3, the start addresses would set up according to Table C.

Table C. Start Addresses

Device	Address (Decimal)	Address (Binary)	
Serial GPI	0	000000	Set via serial GPI communication card DIP switches
IRC unit 1/control card 1	1	000001	Set via IRC unit 1 communication card DIP switches
Control card 2	2	000010	Automatic internal default
Control card 3	3	000011	Automatic internal default
Control card 4	4	000100	Automatic internal default

3.3 CONNECTING THE CM9760-IRC TO
THE CM9760-CC1 HOST

Each CM9760-IRC has two RS-422 ports; one labeled IN (male) and the other OUT (female).

To connect a CM9760-IRC to the CM9760-CC1 host, connect a SerCom port on the host to the IN RS-422 port on the IRC. The data pin connections are shown below in Figure 7.

CM9760-CC1
SERCOM
(FEMALE)

CONNECT
VIA CABLE

CM9760-IRC
RS-422 DB9 PORT
(MALE)
IN

1
2
3
4
5
6
7
8

PIN 1= (TX+) ——————— PIN 5= (RX+)
PIN 2= (TX–) ——————— PIN 9= (RX–)

PIN 7= (RX–) ——————— PIN 8= (TX–)
PIN 8= (RX+) ——————— PIN 4= (TX+)

1   6
2   7
3   8
4   9
5
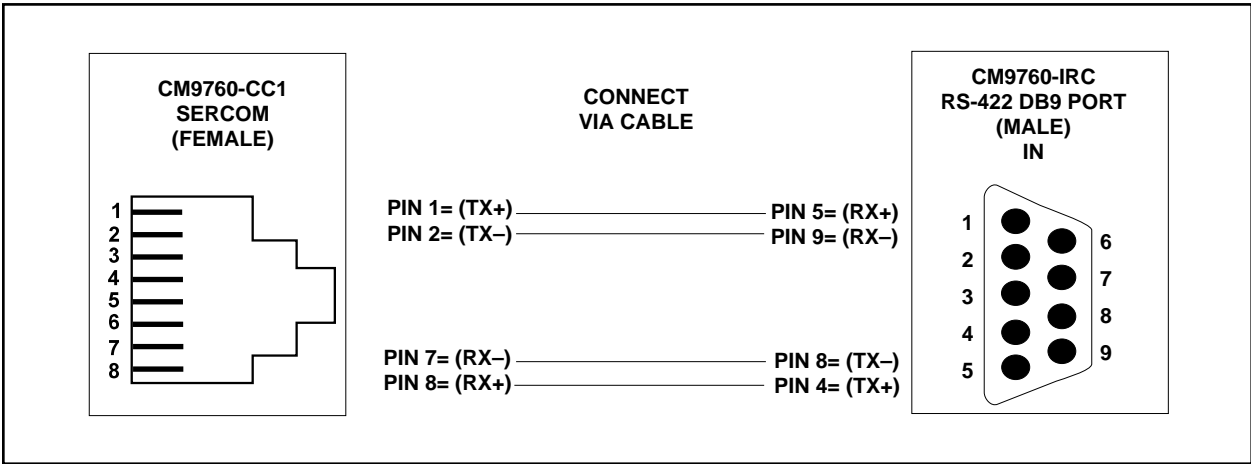
Figure 7. Pinouts for Connecting an IRC to a CPU (9760-CC1) Host

3.3.1 Connecting the CM9760-IRC to a CM9760-CC1 Host via Serial GPI

A CM9760-IRC can be daisy-chained from a serial GPI already connected to a SerCom port of a CM9760-CC1 (CPU). The wiring is the same as for Section 3.3.

Connect the RS-422 OUT port of the serial GPI to the RS-422 IN port of the IRC (refer to Figure 8).
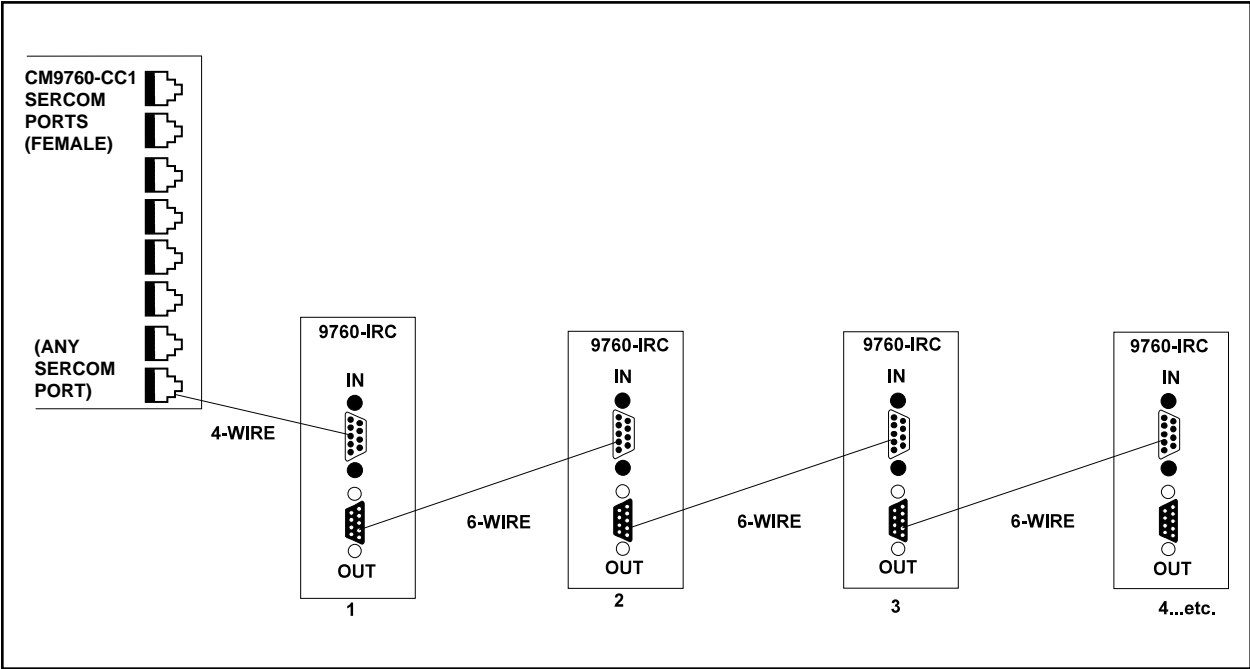
Figure 8. Connecting IRCs in Sequence

3.4 CONNECTING ADDITIONAL IRCs IN SEQUENCE

NOTE: *Sixteen is the maximum number of racks that can be daisy-chained from one port of the host CPU.*

Up to 16 IRC units can be daisy-chained from one port of the CM9760-CC1 host.

The RS-422 OUT port of the first IRC must be connected to the RS-422 IN port of the next IRC in the chain (refer to Figure 8).

The data pin connections are shown below in Figure 9.
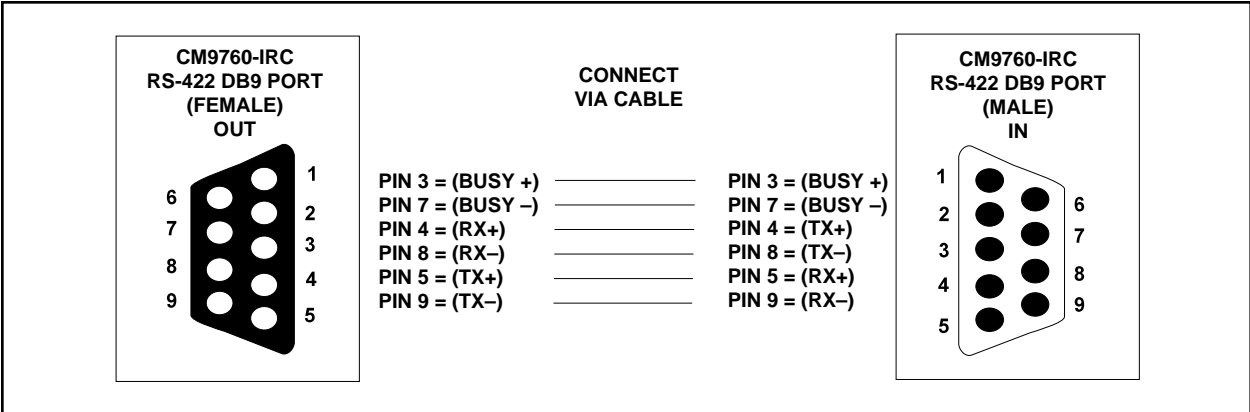
Figure 9. Data Pin Connections for IRC's in Sequence

3.5 CONNECTING VCRs TO THE VIDEO MATRIX BAY (CM9760-MXB)

VCRs must be connected to the CM9760-MXB (Video Matrix Bay). Two standard coaxial cables are needed:

(1) One to run from the VIDEO OUT port on the back of the VCR to the desired IN port on the VMB.

(2) The other to run from the VIDEO IN port on the VCR to the desired OUT port on the Video Matrix Bay.
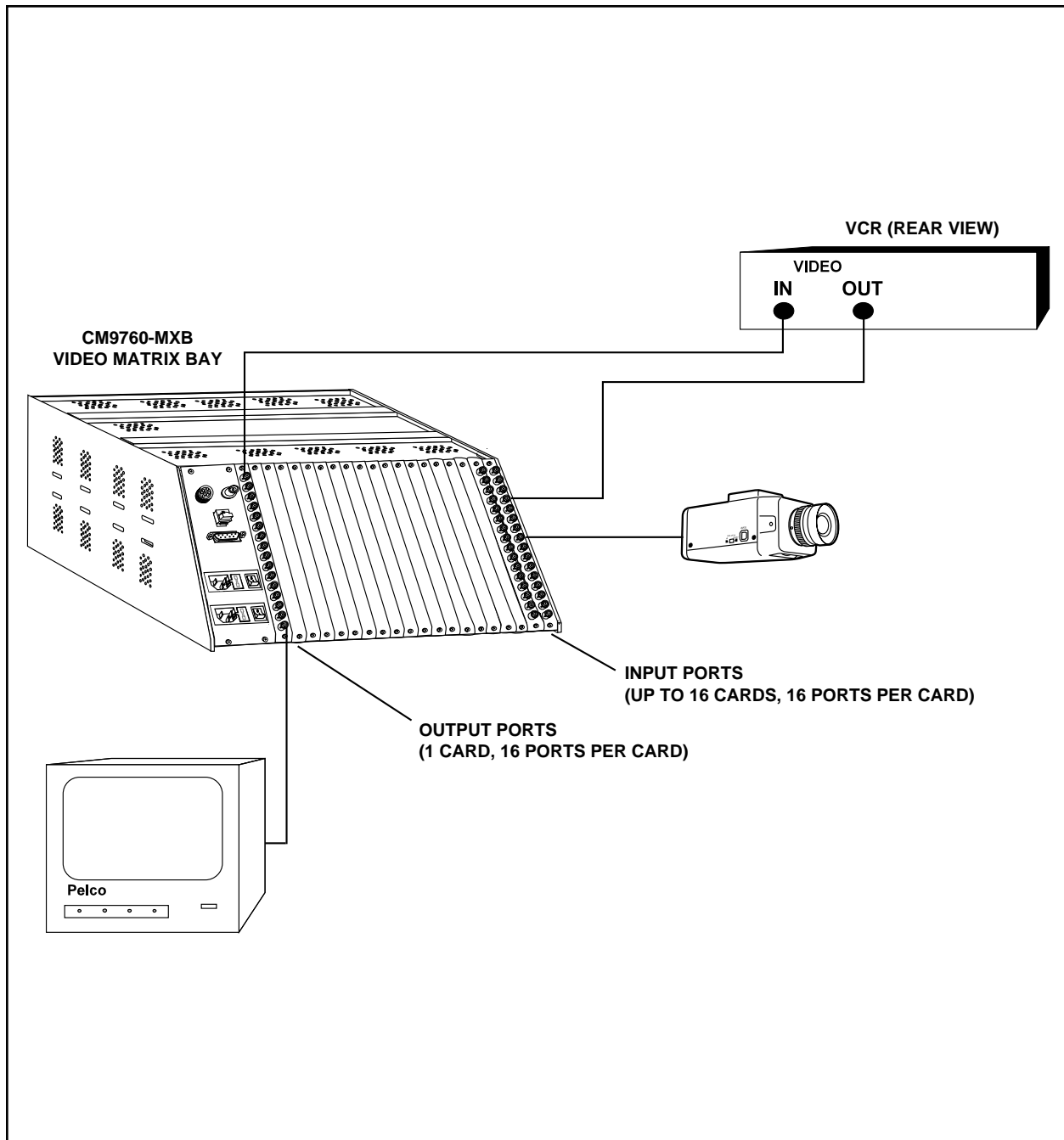
Figure 10. Connecting VCRs to the CM9760-MXB (Video Matrix Bay)

3.6 VCR CONTROL SIGNAL OUTPUTS

An IRC has up to 32 D9 female output connections numbered J1 to J32, each able to control four VCRs (refer to Figure 6). Every DB9 output supports four IR control cables. Each IR control cable controls the functions of a single VCR.

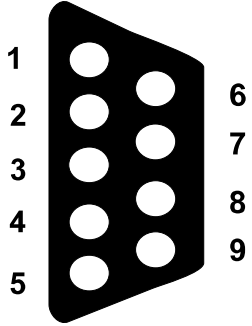The wiring for each DB9 output is shown below in Table D.

Table D. IR Control Cable Wiring

Pin	IR Control Cable	VCR
1	Cable 1+	VCR #1
6	Cable 1-	VCR #1
2	Cable 2+	VCR #2
7	Cable 2-	VCR #2
3	Cable 3+	VCR #3
8	Cable 3-	VCR #3
4	Cable 4+	VCR #4
9	Cable 4-	VCR #4
5		

3.6.1 Transmitting VCR Commands

NOTE: *Once installation has been completed, the appropriate programming must be made in the 9760 Configuration files (ie: SCP/.GPI/.CAM).*

Connect an IR control cable to one of the DB9 infrared output connections on the IRC. Run the cable to the target VCR.

For best results in transmitting the VCR commands (play, record, stop, fast forward, rewind, pause), the IR LED at the end of the IR control cable must be placed directly over the receiving port on the front of the VCR.

4.0 SPECIFICATIONS

Electrical Specifications

Operating
Voltages: 120 or 230 VAC 50/60 Hz.
                     ±10%, selectable

Power
Consumption: 15 vA per control card and communication card

Operating
Temperature
Range: 32° to 122°F (0° to 50°C)

Communications

Serial
Communication
Ports: One input port, balanced RS-422
                     One output port, balanced RS-422

Serial
Communication
Setup
   Baud rate: 2400, 4800, 9600 or 19200
   Data bits: 8
   Stop bits: 1
   Parity bit: Even

Mechanical

Connectors: One 9-pin, DB9 input connector (male)

                     One 9-pin, DB9 output connector (female)

                     Thirty-two 9-pin, DB9 output control connectors (female)

Unit Weight: 6.61 lbs (3 kg)

Dimensions: 5.24" H x 19.02" W x 9.45" D (13.3 cm x 48.3 cm x 24.0 cm)

Type of Mounting: 19" (48.26 cm) rack mount (3 RUs)

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

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 (1) year after the date of shipment. Exceptions to this warranty are as noted below:

• Two (2) years on all standard motorized and fixed focal length lenses.
• Two (2) years on Legacy®, Intercept®, PV1000 Series, CM6700/CM8500/CM9500/CM9750/CM9760 Matrix, Spectra™, DF5 Series and DF8 Fixed Dome products.
• Two (2) years on WW5700 series window wiper (excluding wiper blades).
• Two (2) years on cameras.
• Six (6) months on all pan and tilts, scanners or preset lenses used in continuous motion applications (e.g., preset scan, tour and auto scan modes).

Pelco will warranty 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.

Ship freight prepaid to: Pelco
300 West Pontiac Way
Clovis, CA 93612-5699

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
300 West Pontiac Way
Clovis, CA 93612-5699