

**CM9760-IRC
Infrared VCR
Controller**

**Installation/
Operation Manual**

C544M (2/98)

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REVISION HISTORY

Manual #	Date	Comments
C544M	2/98	Original version.

1.0 GENERAL

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.

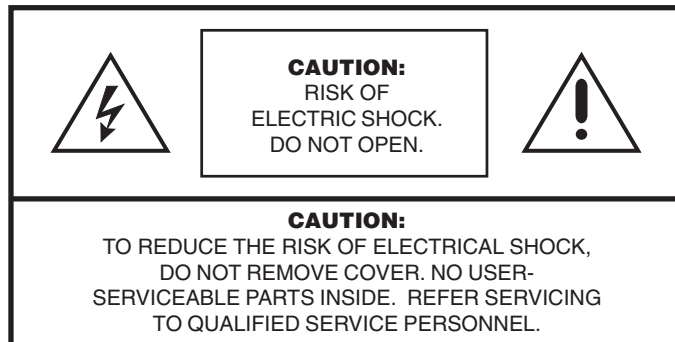
The product and/or manual may bear the following marks:



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.



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.

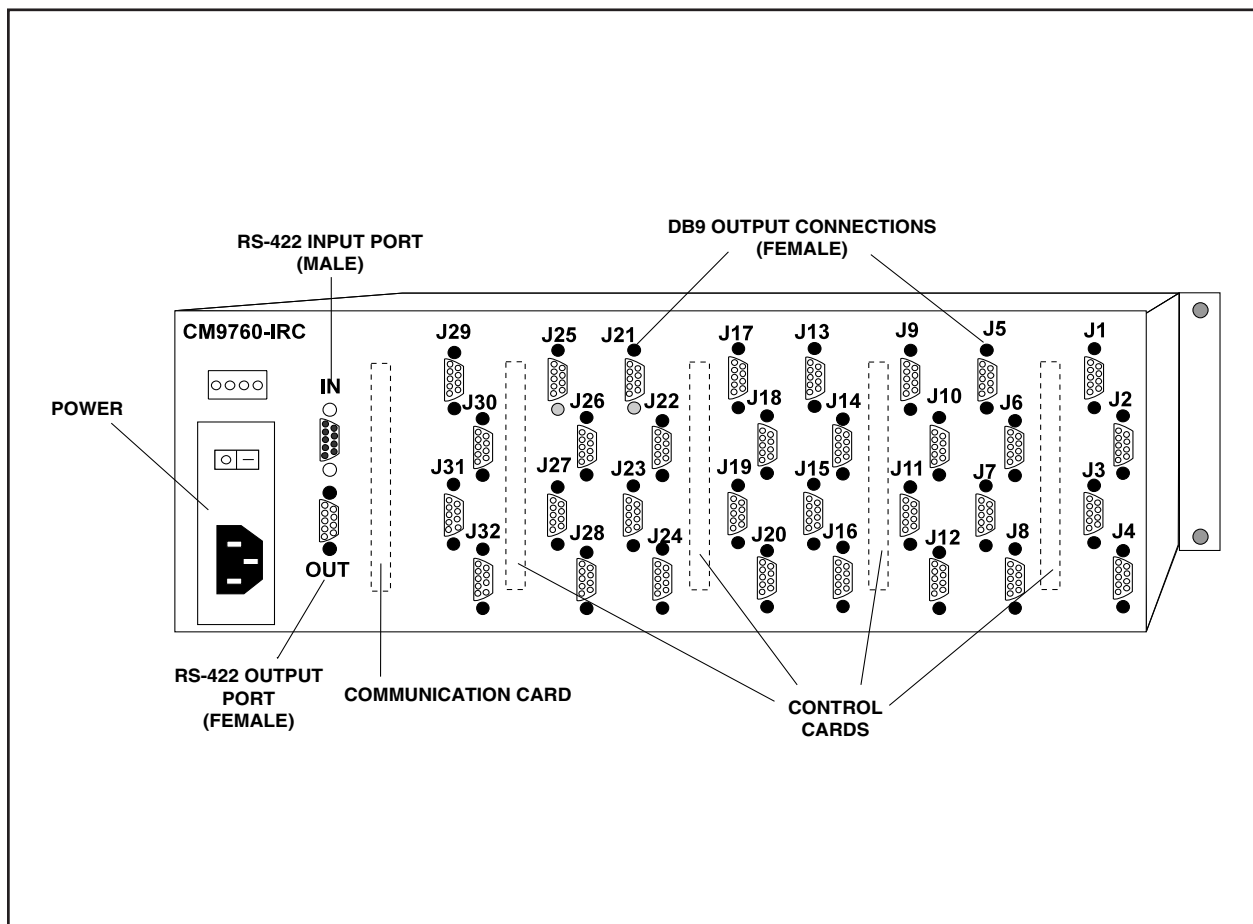


Figure 1. CM9760-IRC (Rear View)

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.

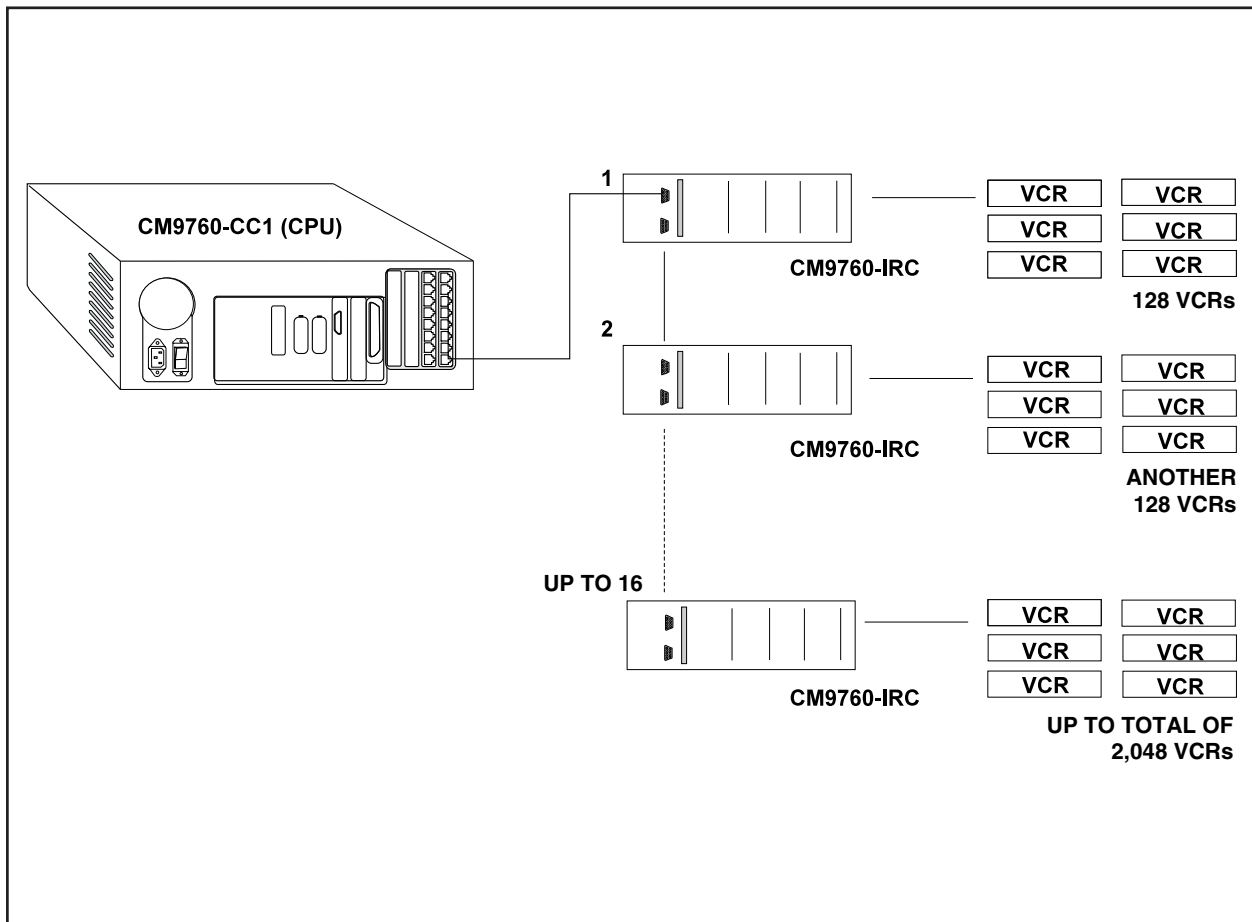


Figure 2. VCR Hook-up Parameters

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.

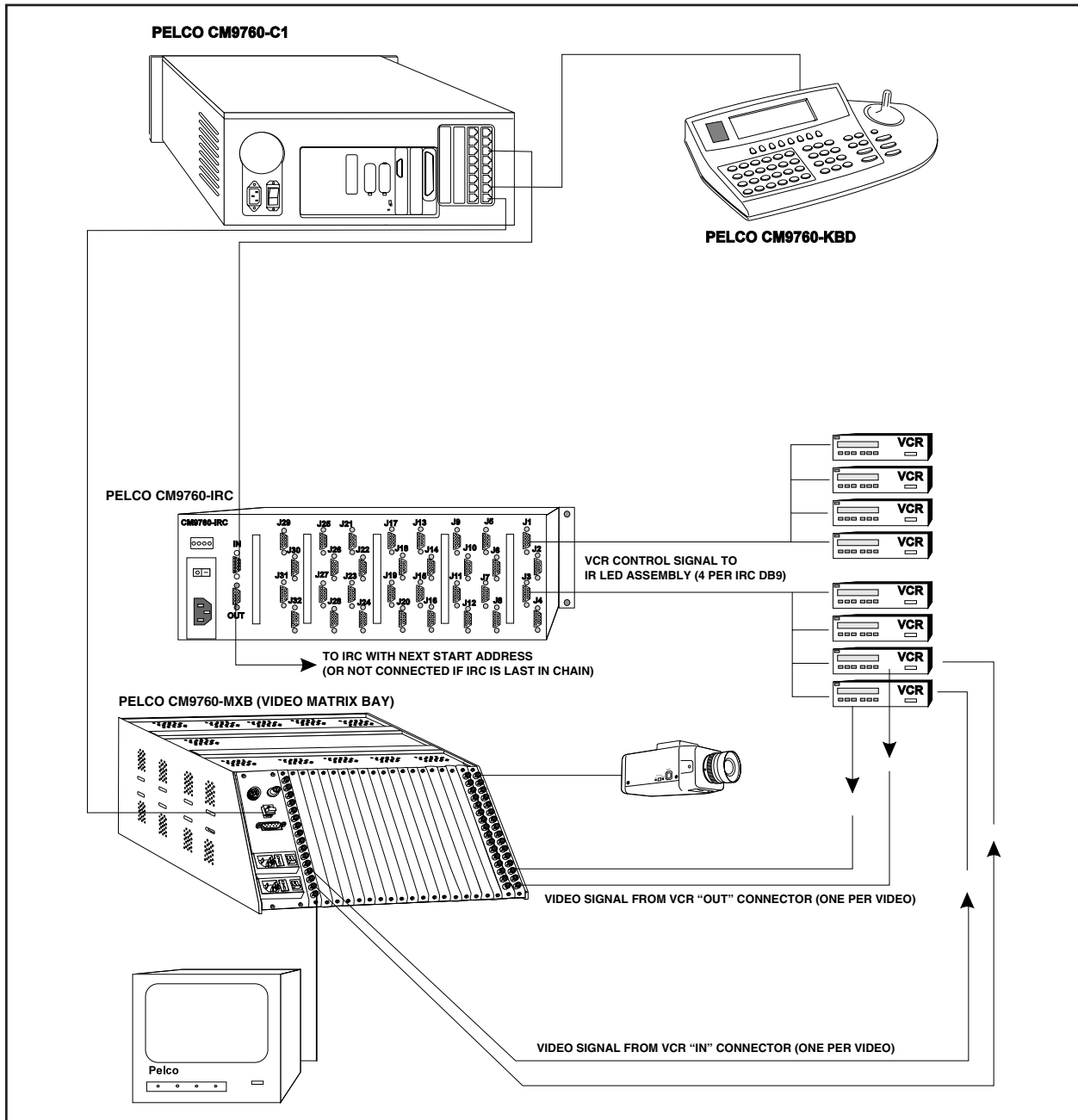


Figure 3. Sample System Hook-up

3.0 INSTALLATION

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**.

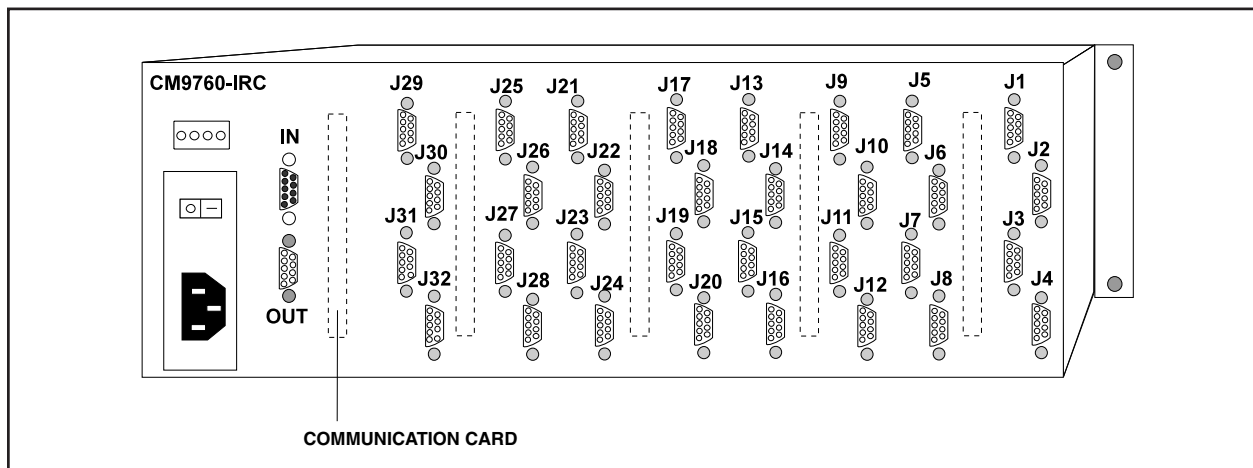


Figure 4. Communication Card

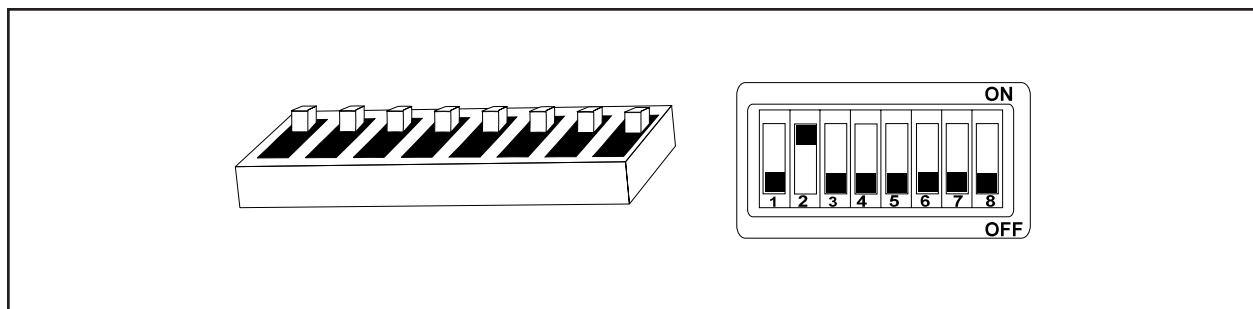


Figure 5. DIP Switches

3.1.1 Setting the Baud

NOTE: The operating baud must match the baud rate set in the .SCP Communications File for the CM9760-CC1.

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).

NOTE: The VCRs connected to a single microprocessor must be in the same brand and model. Brands and models required should be specified at the time of order.

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).

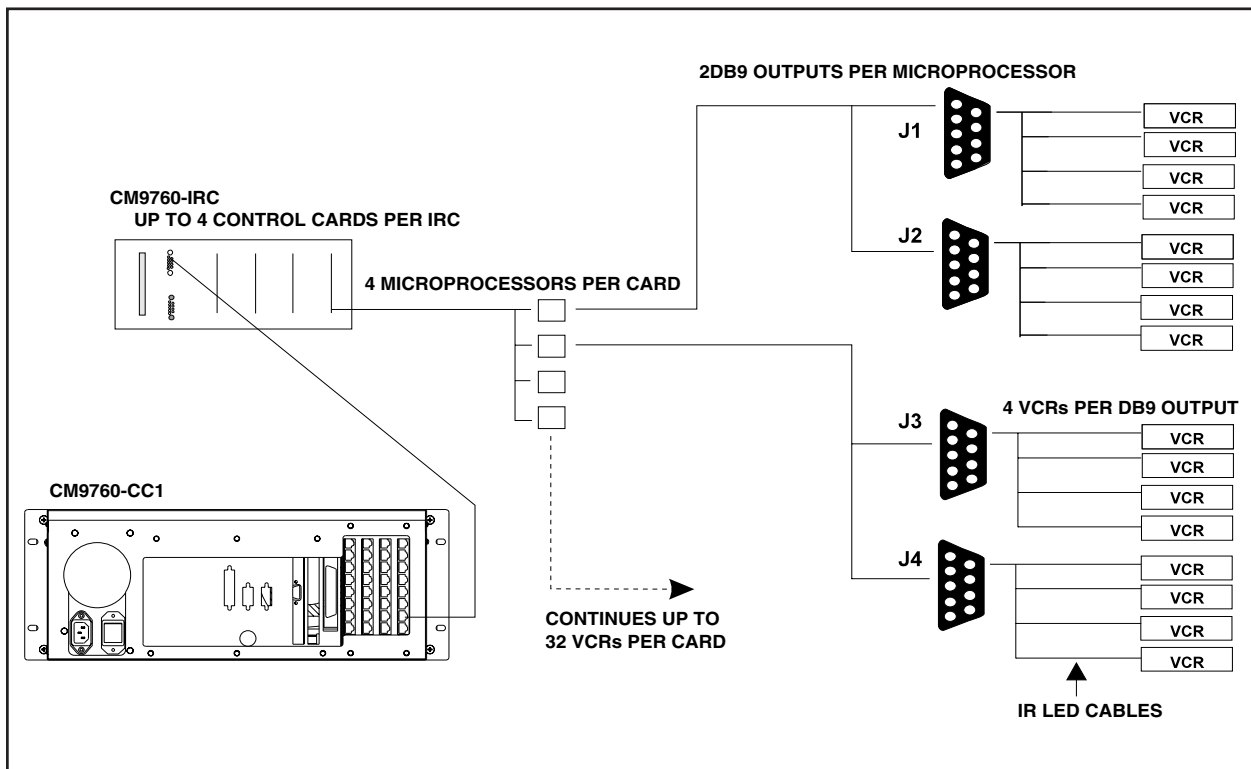


Figure 6. The Number of VCRs Controlled by One Control Card

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.

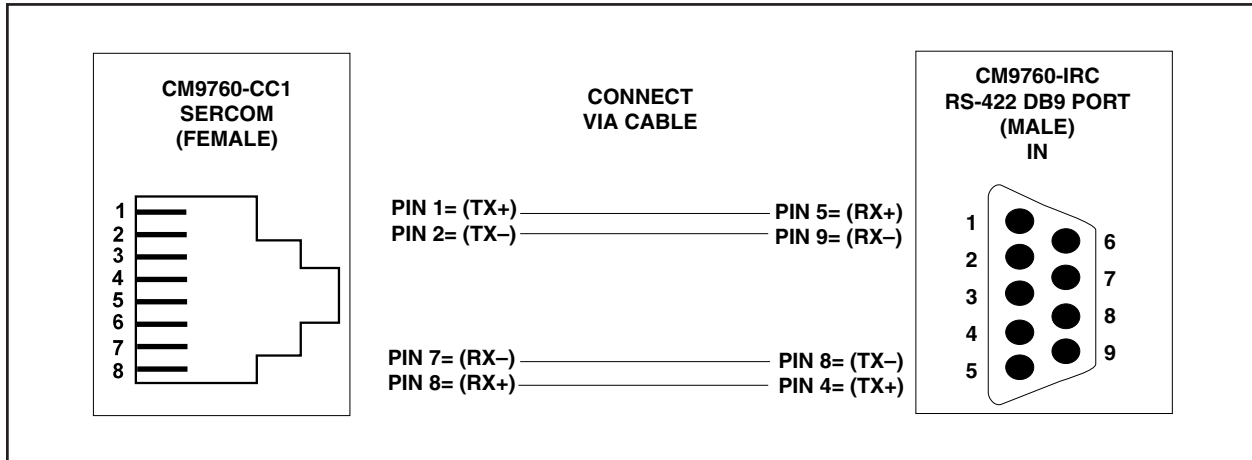


Figure 7. Pinouts for Connecting an IRC to a CPU (9760-CC1) Host

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).

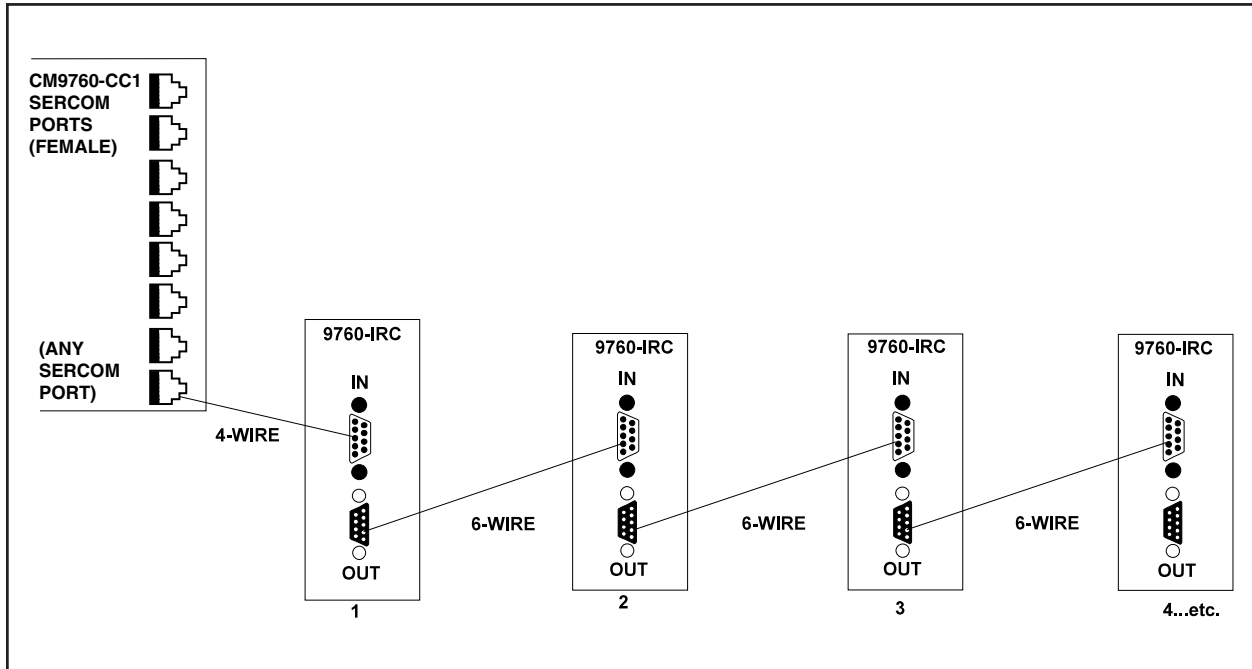


Figure 8. Connecting IRCs in Sequence

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.

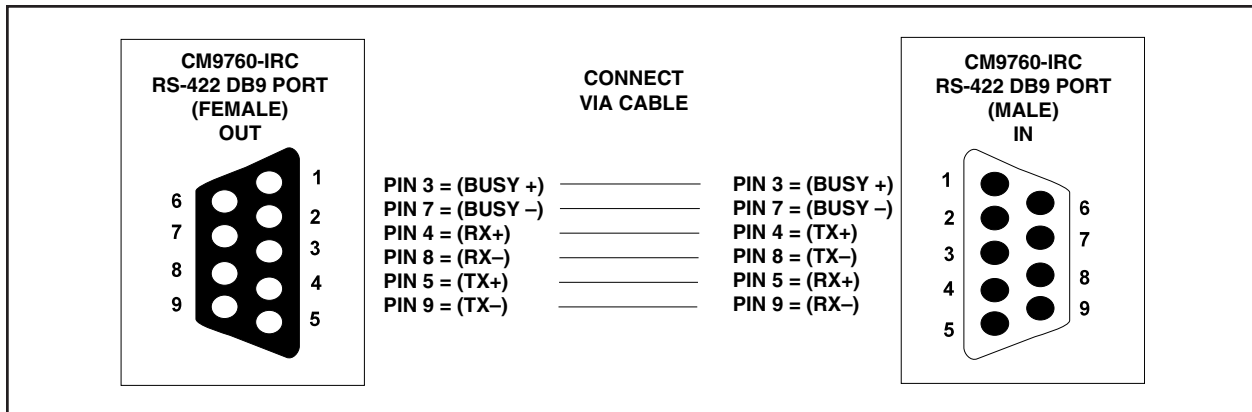


Figure 9. Data Pin Connections for IRC's in Sequence

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.

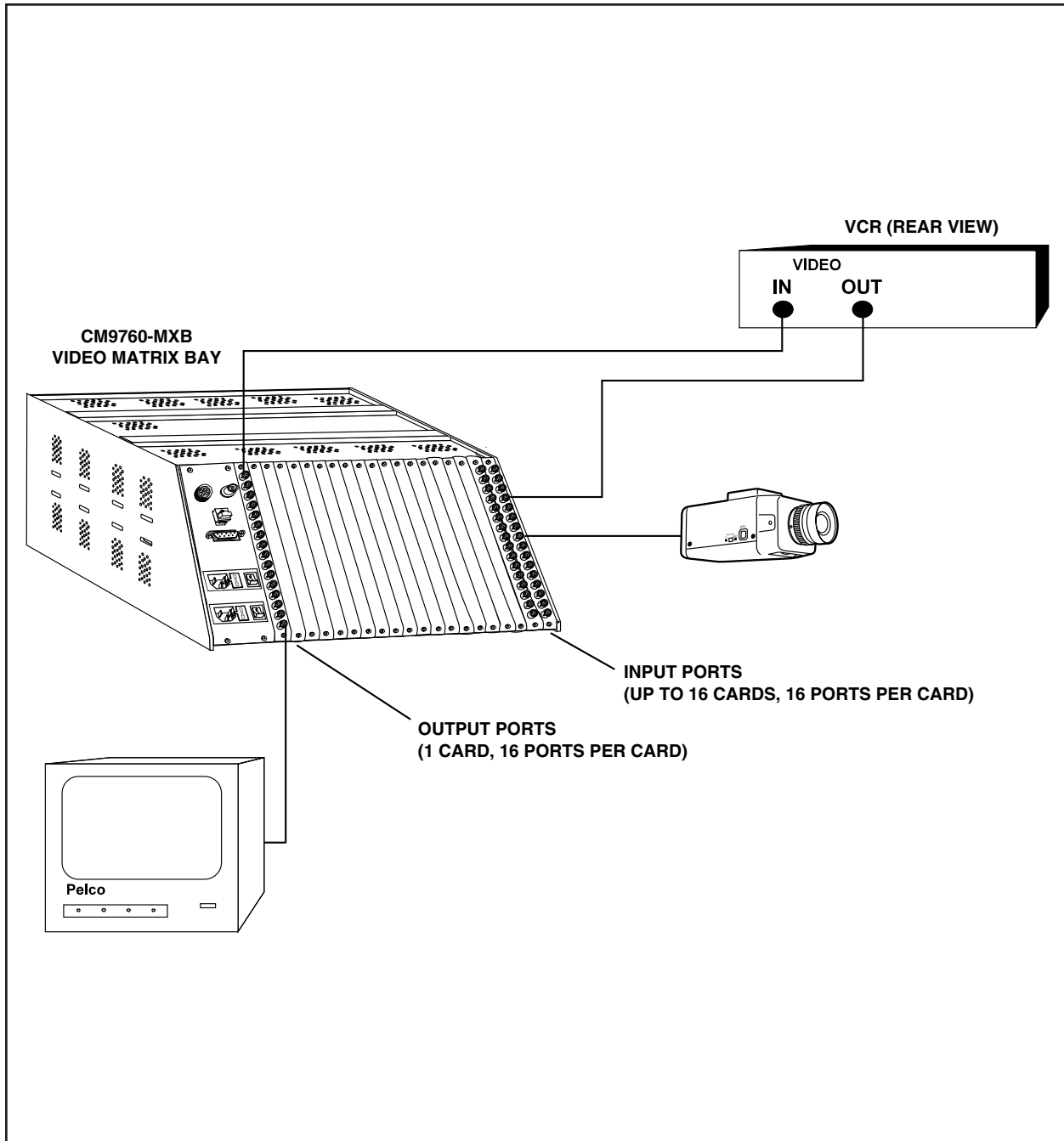


Figure 10. Connecting VCRs to the CM9760-MXB (Video Matrix Bay)

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.

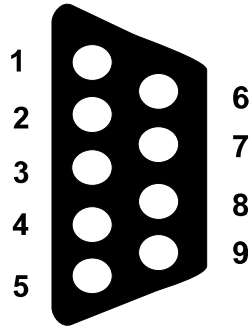


Table D. IR Control Cable Wiring

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.)



This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

NOTES

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 FT/FR8000 Series fiber optic products.
- Three years on Genex® Series products (multiplexers, server, and keyboard).
- Three years on Camclosure® and fixed camera models, except the CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models, which have a five-year warranty.
- Two years on standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM9700 Series matrix, and DF5/DF8 Series fixed dome products.
- Two years on Spectra®, Esprit®, ExSite™, 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, NVR300 Series network video recorders, and Endura™ Series distributed network-based video products.
- 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, send goods to:

Service Department
Pelco
3500 Pelco Way
Clovis, CA 93612-5699

If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico and are instructed to return goods to the USA, you may do one of the following:

If the goods are to be sent by a COURIER SERVICE, send the goods to:

Pelco
3500 Pelco Way
Clovis, CA 93612-5699 USA

If the goods are to be sent by a FREIGHT FORWARDER, send the goods to:

Pelco c/o Expeditors
473 Eccles Avenue
South San Francisco, CA 94080 USA
Phone: 650-737-1700
Fax: 650-737-0933

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