User

Manual

KTD-405 and KTD-405A

Controller Keypads

GE Interlogix

© 2003 GE Interlogix, Video Systems Group

All Rights Reserved.

Any GE Interlogix, Video Systems Group, software supplied with GE Interlogix, Video Systems Group, products is proprietary and furnished under license and can be used or copied only in accordance with the terms of such license.

This document contains proprietary information that is protected by copyright. No part of this document may be reproduced or transmitted in any form or by any means without the prior written permission of GE Interlogix, Video Systems Group.

The information contained in this document is subject to change without notice. GE Interlogix, Video Systems Group, in keeping pace with technological advances, is a company of product innovation. Therefore, it is difficult to ensure that all information provided is entirely accurate and up-to-date. GE Interlogix, Video Systems Group, accepts no responsibility for inaccuracies or omissions and specifically disclaims any liabilities, losses, or risks, personal or otherwise, incurred as a consequence, directly or indirectly, of the use or application of any of the contents of this document.

For the latest product specifications, visit GE Interlogix, Video Systems Group, online at www.GE-Interlogix.com or contact your GE Interlogix, Video Systems Group, sales representative.

This equipment has been tested and found to comply with the limits for 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.

You are cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For technical support before and after installation, call 800-469-1676.

Technical support is available 24 hours a day, 7 days a week.

Call:	**Tech Support**	800-469-1676 (6 A.M. – 5 P.M. PST Monday through Friday)
	Tech Support	541-740-3589 (all other times)
	Main	800-343-3358 or 541-754-9133
Fax:	**Tech Support**	541-752-9096 (available 24 hours a day)
	Main	541-754-7162
Web:	www.GE-Interlogix.com	

1036547C / December 2003

Table of Contents

BEFORE YOU BEGIN

Read these instructions before installing or operating this product.

Note: This installation should be made by a qualified service person and should conform to local codes.

This manual provides installation and operation information. To use this document, you must have the following minimum qualifications:

- A basic knowledge of CCTV systems and components
- A basic knowledge of electrical wiring and low-voltage electrical hookups

Intended use

Use this product only for the purpose for which it was designed; refer to the product specification and user documentation.

Customer Support

For assistance in installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided. If you still have questions, please contact GE Interlogix Technical Support and Sales:

GE Interlogix, Video Systems Group
Call: 800-469-1676
Fax: 541-752-9096

Note: You should be at the equipment and ready with details before calling Technical Support.

Conventions Used in this Manual

Boldface or button icons highlight command entries. The following **WARNING, CAUTION,** and **Note** statements identify potential hazards that can occur if the equipment is handled improperly:

* **WARNING:**
Improper use of this equipment can cause severe bodily injury or equipment damage.

** **CAUTION:**
Improper use of this equipment can cause equipment damage.

Note: Notes contain important information about a product or procedure.

* This symbol indicates electrical warnings and cautions.
** This symbol indicates general warnings and cautions.

1 PACKAGE CONTENTS

The KTD-405 and KTD-405A packages include a user manual (1036547) and a quick reference guide (1047307) in addition to the items shown in Figures 1 and 2. Read the manual before beginning installation and programming so that you can plan your system's configuration.

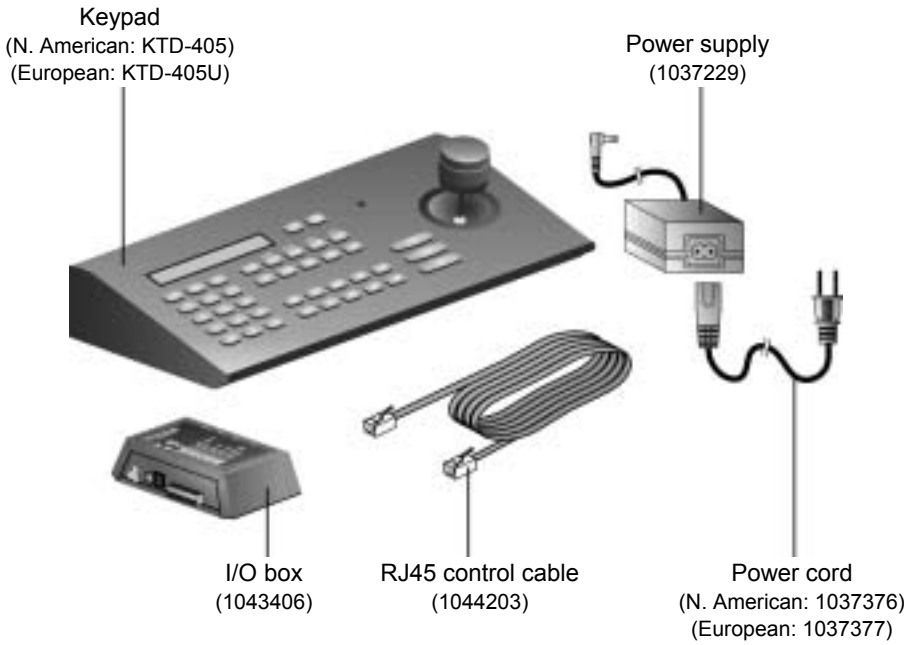


Figure 1. KTD-405 package contents

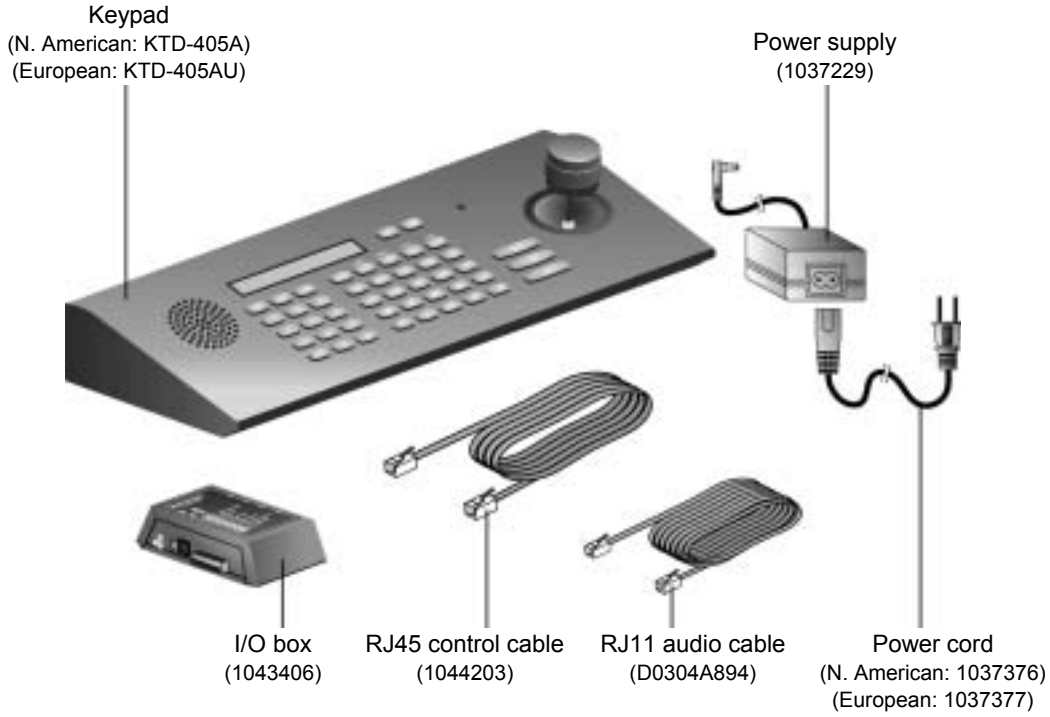


Figure 2. KTD-405A package contents

2 OPERATING MODES

The KTD-405 can be programmed to operate in either of two modes: standard Digiplex® or zone (DVMRe/multiplexer/PTZ control). See *Appendix C. Sample System Configurations*.

Be aware that the addressing between domes and multiplexers is offset. When setting up and controlling your cameras in zone mode, refer to Appendix A (*Zone Receiver Site Addressing*).

2.1 DIGIPLEX MODE

In *standard Digiplex mode*, the system's main switching device is a standard matrix switcher. The keypad can address and control 512 PTZ receiver sites, operate a matrix switcher with 64 monitor outputs, address and select views from 32 multiplexers, operate up to 32 recorders, and manage access control points.

You can also operate a DVMRe/multiplexer when operating in a *hybrid Digiplex mode*. This enables the DVMRe or multiplexer to provide multi-screen views by connecting the output of the unit to an input on the matrix switcher. Digiplex mode (standard or hybrid) does not require that the DVMRe's have dedicated monitors. If you are using Calibur™ units, they must be connected to the keypad's RS485 control signal; other brands must be connected to the keypad's RS422 control signal using a KTD-93 interface. When you press the zone key, the keypad switches to the zone-mode style of operation (hybrid Digiplex mode), which enables it to control the DVMRe/multiplexer. See Figure 4. If the zone is assigned to a camera input on the matrix switcher (done in programming), when you select the zone, the keypad sends a command to the matrix switcher to call up the assigned input on the active monitor. While in the hybrid Digiplex mode, key functions are the same as those used during normal zone mode operation, except the ***esc*** key, which returns the keypad to the standard Digiplex mode of operation.

Note: Camera control (PTZ) is disabled while in the hybrid zone mode.

```
CAMERA 0
MONITOR 1
```

Figure 3. LCD display of standard Digiplex mode

```
ZONE 01      DVMRE TRI
CAM  --      MON A ESC=EXIT
```

Figure 4. LDC display of hybrid Digiplex mode

2.2 ZONE MODE

A zone is a remote switching device (multiplexer or DVMRe) that serves a group of cameras. A system can be divided into as many as 32 zones, and each zone can have from 1 to 32 cameras.

The outputs from the zone's switching device connect to dedicated monitors directly. Each zone is assigned a device type (multiplexer or DVMRe) and a size (1 to 32 cameras) and can be assigned a 15-character name.

To call up a camera in a zone you must know the zone number (or name) and the camera number. See Figure 5 and refer to Appendix A (*Zone Receiver Site Addressing*).

```
ZONE --   ZONE TITLE
CAMERA -- MONITOR -
```

Figure 5. LCD display of zone mode

3 INSTALLATION

CAUTION:
Plan your system's camera and device assignments before installing the system. To help plan your system, refer to *Appendix E. System Planning Guide*.

Note: The keypads now ship with an updated I/O box that provides RJ45 ports for the RS485 data line and an RJ11 port for audio. See section *3.3.6 Connecting New and Old I/O Boxes* for connections between the new and old I/O boxes. For connection details about the old I/O boxes, see *Appendix D. Old I/O Box Connections*.

3.1 INSTALLATION GUIDELINES

Installation Guidelines

- Recommended cable types:

Signal	Cable	Minimum Size
RS485	STP (shielded twisted-pair)	22 AWG
RS422	UTP (unshielded twisted-pair)	22 AWG
Audio	STP (shielded twisted-pair)	18 AWG

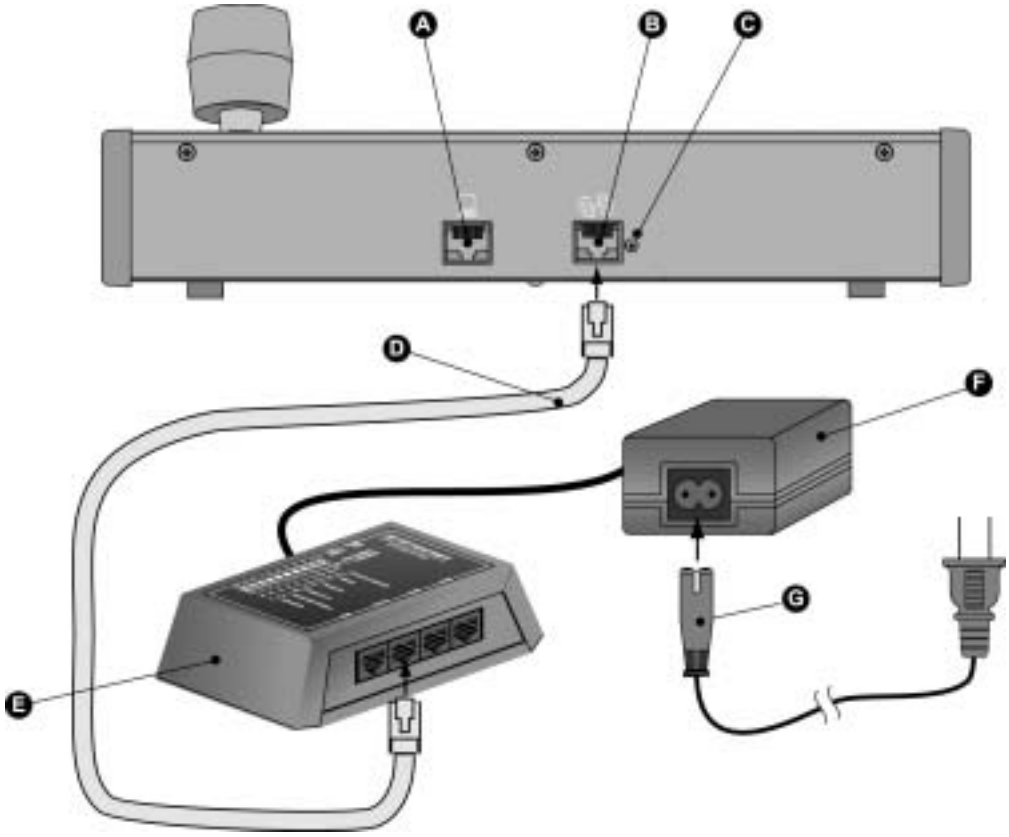
  Note: Refer to device manuals for specific cabling requirements.

- Each keypad requires its own I/O box. You can connect multiple I/O boxes to each other to establish multiple keypads for controlling one system. For systems that are more complicated than are diagrammed in these instructions, contact GE Interlogix Technical Support for assistance.
- The audio and speaker connections are used only with a KTD-405A.
- Observe polarity when installing the RS422, RS485, and 12 VDC (if not using the provided transformer with positive polarity center plug) cables.
- The earth grounds for the I/O boxes are separate from the earth grounds for the RS485 shield.
- The keypad itself is not grounded.
- Grounding the I/O box is optional, but it does provide some additional protection against equipment damage due to electrical storm induced power surges.
- There must be no current flowing in the shield of shielded cables. Maintain an open circuit (non-continuous path) for the shield and hold it at the earth ground potential by grounding it at only one location.
- You can connect the RS485 shield of individual cable segments to each other, but to nothing else. You will still ground the resulting shield circuit at one location only, despite the number of shield junctions.
- Each electrical circuit (RS485 segment) must be biased. If keypads reside on separate electrical circuits (i.e., separated by fiber or Ethernet bridges), then more than one keypad might have the bias switch set to ON (one for each circuit).
- The bias is 12-VDC polarity sensitive. If polarity on the power line is reversed, the keypad will not be damaged but it will not operate correctly.
- Each electrical segment being terminated must be terminated at each end, and at one location for the bias. Termination is generally required for the first and last device on a longer line. The termination switches are located within or on the devices themselves (e.g., keypads and cameras). Refer to device manuals for termination requirements and methods.
- Your system should contain only one RS422 chain of devices. Only one KTD-405 keypad should be in that chain, which can contain any number of other keypads such as KTD-404s.

3.2 BACK PANEL CONNECTIONS

3.2.1 KTD-405 CONNECTIONS

Adhere to all installation guidelines while making connections, including your local codes and those provided in section *3.1 Installation Guidelines*.



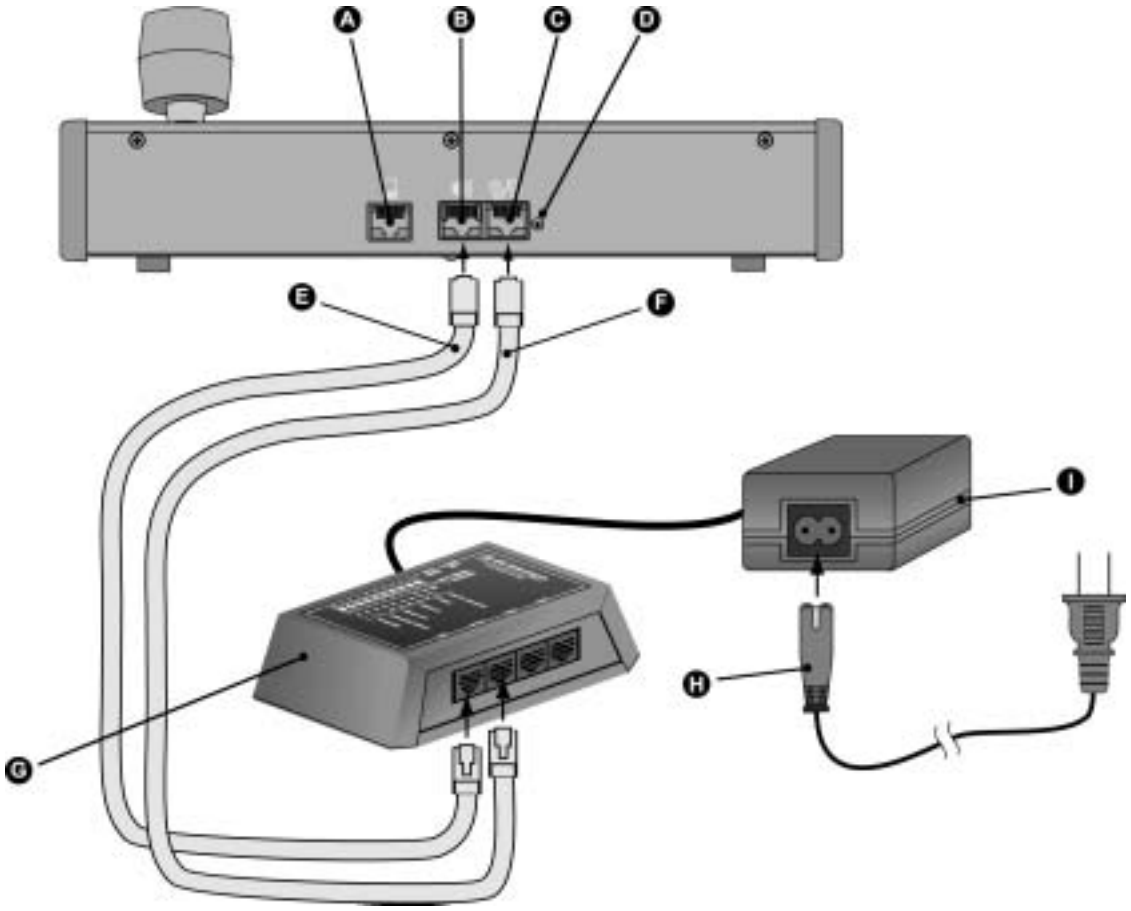
- A RS232 programming port (future use)
- B RS485 and RS422 in/out
- C RS485 termination switch
- D RJ45 control cable*
- E I/O box
- F Power supply
- G Power cord

*GE Interlogix uses two different RJ45 cables. You must use the RJ45 cable provided with the unit.

Figure 6. KTD-405 back panel connections

3.2.2 KTD-405A CONNECTIONS

Adhere to all installation guidelines while making connections, including your local codes and those provided in section *3.1 Installation Guidelines*.



- A RS232 programming port (future use)
- B Audio port
- C RS485 and RS422 in/out
- D RS485 termination switch
- E RJ11 audio cable
- F RJ45 control cable*
- G I/O box
- H Power cord
- I Power supply

*GE Interlogix uses two different RJ45 cables. You must use the RJ45 cable provided with the unit.

Figure 7. KTD-405A back panel connections

3.3 I/O BOX CONNECTIONS

3.3.1 RJ-CABLE CONNECTIONS

The RJ-cable connections make new installations or additional devices easy to connect. If you are replacing an old phone-style I/O box in an existing installation, you can use the existing twisted-pair wires (STP for RS485 and UTP for RS422), if desired. See section *3.3.2 Twisted-Pair Connections*.

Adhere to all installation guidelines while making connections, including your local codes and those provided in section *3.1 Installation Guidelines*.

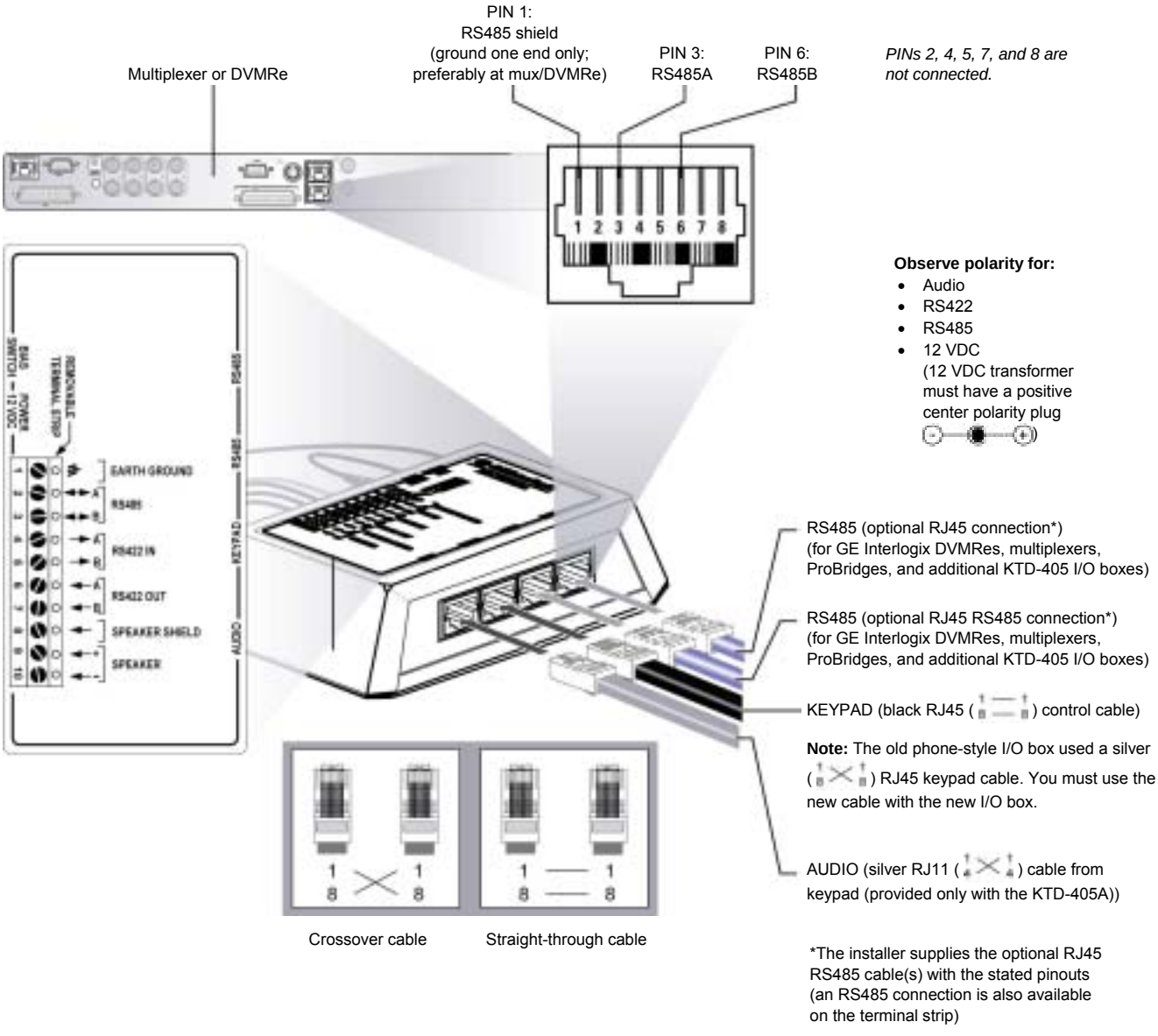


Figure 8. RJ-cable connections to the I/O box

3.3.2 TWISTED-PAIR CONNECTIONS

The twisted-pair connections are available to connect additional devices or for existing installations where individual wires were used to connect to the old phone-style I/O box. Easy-to-use RJ-cable connections are also available on the new I/O box. See section *3.3.1 RJ-Cable Connections*.

Adhere to all installation guidelines while making connections, including your local codes and those provided in section *3.1 Installation Guidelines*.

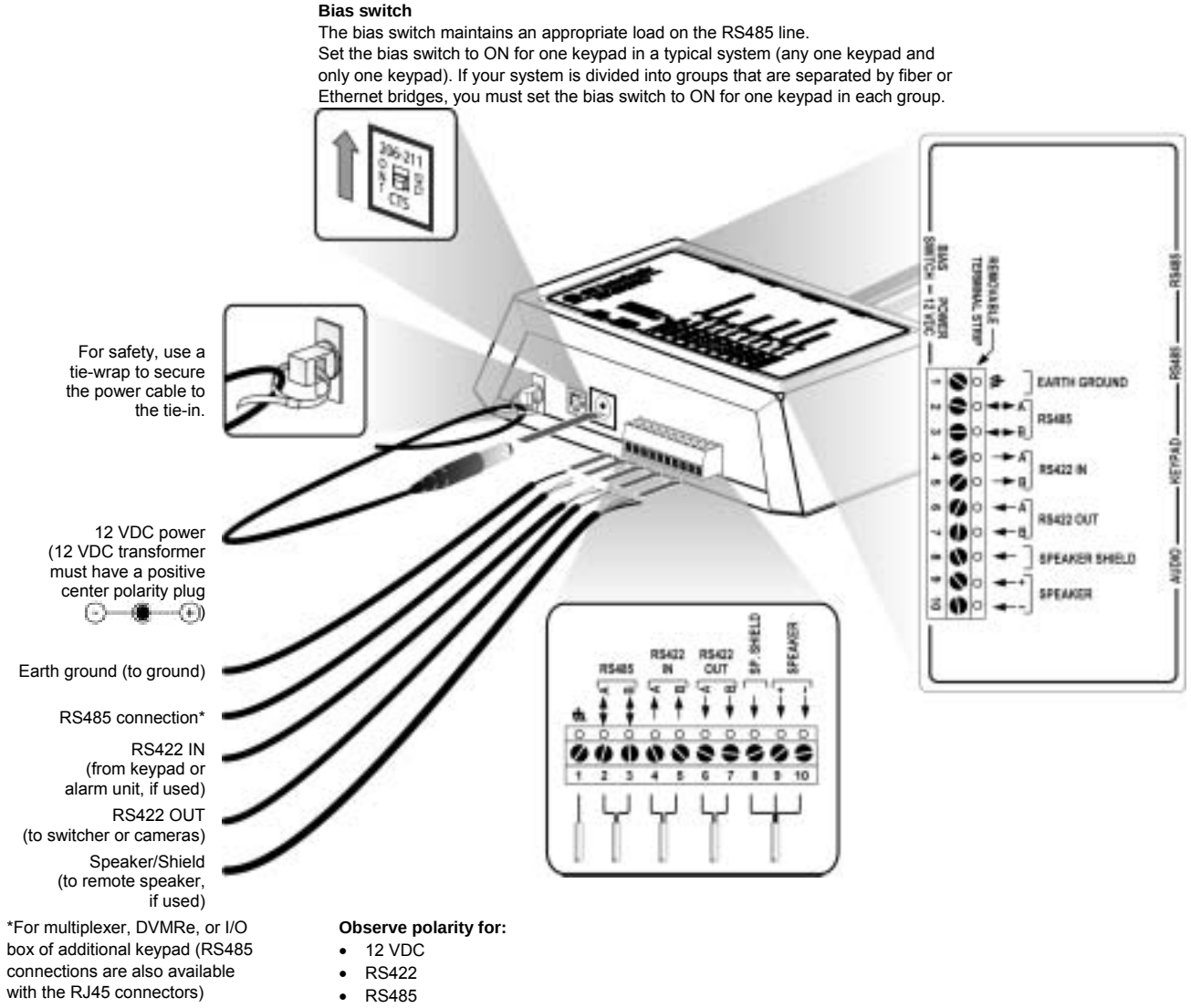
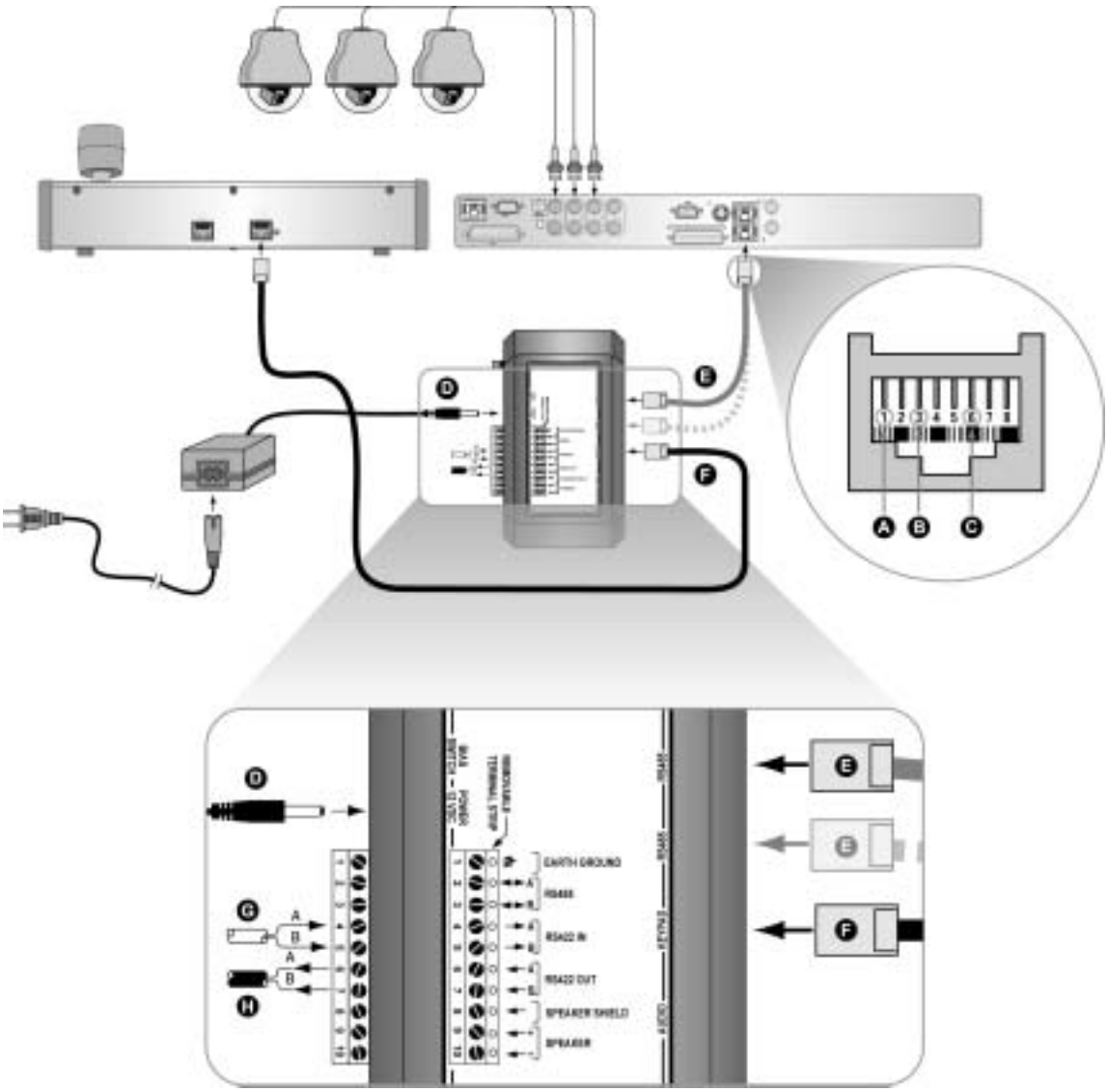


Figure 9. Wire connections to the I/O box

3.3.3 CONNECTING A MULTIPLEXER OR DVMRe AND DOMES

Adhere to all installation guidelines while making connections, including your local codes and those provided in section *3.1 Installation Guidelines*.



Observe polarity for:
- RS422
- RS485
- 12 VDC power (12 VDC transformer must have a positive center polarity plug

A PIN 1 to RS485 shield (ground one end only)

B PIN 3 to RS485 A

C PIN 6 to RS485 B

Note: PINs 2, 4, 5, 7, and 8 are not connected.

D 12 VDC (observe polarity, if provided transformer not used)

E RS485 OUT (data out to devices such as multiplexers or DVMRe's; ground at mux/DVMRe)

F KEYPAD IN (RS422 and RS485 data in from keypad; RS422 data and power out to keypad)

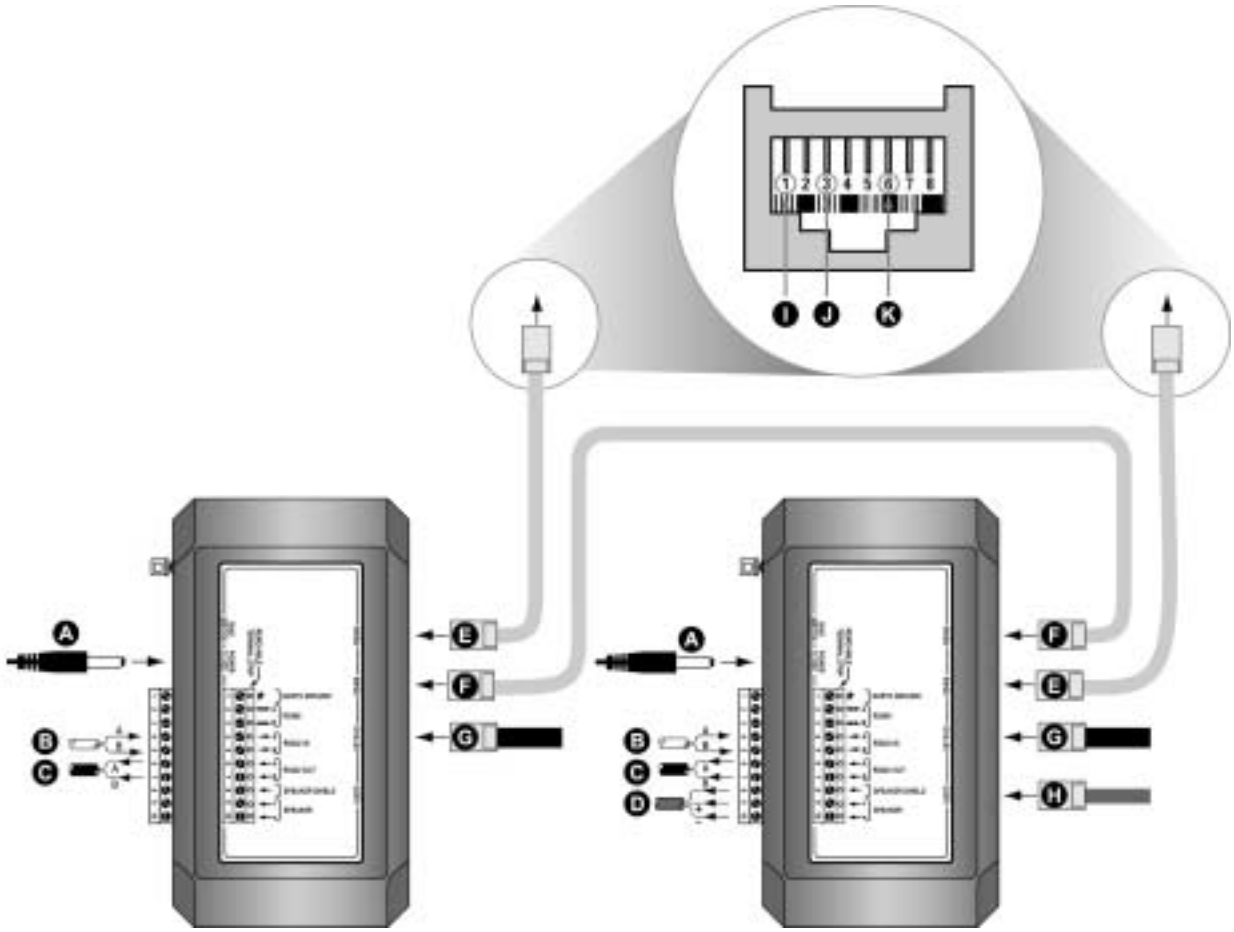
G RS422 IN (data in from devices such as alarm units, ASCII converters, or keypads (see guidelines))

H RS422 OUT (data out to devices such as domes, switchers, or keypads (other than KTD-405s))

Figure 10. Connecting a keypad (KTD-405 shown) to a multiplexer or DVMRe (shown) and domes

3.3.4 CONNECTING MULTIPLE KEYPADS WITH RJ45 CABLES

Adhere to all installation guidelines while making connections, including your local codes and those provided in section *3.1 Installation Guidelines*.



Observe polarity for:
- Audio
- RS422
- RS485
- 12 VDC power (12 VDC transformer must have a positive center polarity plug)

Note: When using multiple keypads, you can connect CyberDomes and other receivers to the RS422 output from any keypad.

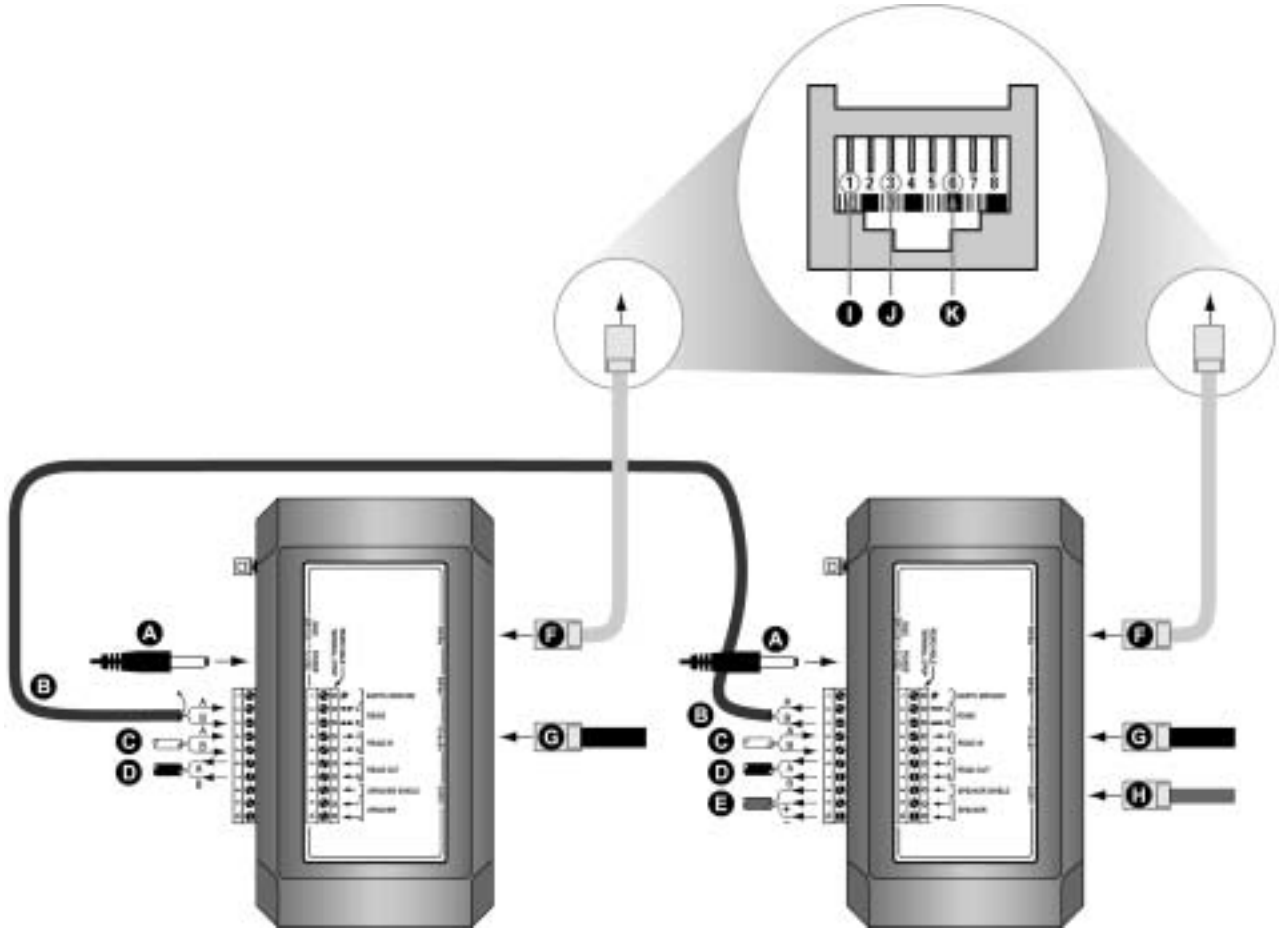
- **A** 12 VDC (observe polarity, if provided transformer and plug not used)
- **B** RS422 IN (data in from devices such as alarm units, ASCII converters, or keypads (see guidelines))
- **C** RS422 OUT (data out to devices such as domes, switchers, or keypads (other than KTD-405s))
- **D** AUDIO OUT (to speaker and speaker shield)
- **E** RS485 OUT (data out to devices such as multiplexers or DVMRe's; ground at mux/DVMRe)
- **F** RS485 to I/O box of additional keypad via RJ45 cable
- **G** KEYPAD IN (RS422 and RS485 data in from keypad; RS422 data and power out to keypad)
- **H** AUDIO IN (from keypad)
- **I** PIN 1 to RS485 shield (ground one end only)
- **J** PIN 3 to RS485 A
- **K** PIN 6 to RS485 B

  Note: PINs 2, 4, 5, 7, and 8 are not connected.

Figure 11. KTD-405 and KTD-405A connections via RJ45 cables

3.3.5 CONNECTING MULTIPLE KEYPADS WITH STP CABLE

Adhere to all installation guidelines while making connections, including your local codes and those provided in section *3.1 Installation Guidelines*.



Observe polarity for:
- Audio
- RS422
- RS485
- 12 VDC power (12 VDC transformer must have a positive center polarity plug

Note: When using multiple keypads, you can connect CyberDomes and other receivers to the RS422 output from any keypad.

- **A** 12 VDC (observe polarity, if provided transformer and plug not used)
- **B** RS485 to I/O box of additional keypad via STP cable (with floating shield)
- **C** RS422 IN (data in from devices such as alarm units, ASCII converters, or keypads (see guidelines))
- **D** RS422 OUT (data out to devices such as domes, switchers, or keypads (other than KTD-405s))
- **E** AUDIO OUT (to speaker and speaker shield)
- **F** RS485 OUT (data out to devices such as multiplexers or DVMRe's; ground at mux/DVMRe)

  Note: When using STP for the RS485 connection between I/O boxes, you can use only one of the two RJ45 RS485 OUT connections to a multiplexer or DVMRe. This ensures proper termination.
- **G** KEYPAD IN (RS422 and RS485 data in from keypad; RS422 data and power out to keypad)
- **H** AUDIO IN (from keypad)
- **I** PIN 1 to RS485 shield (ground one end only)
- **J** PIN 3 to RS485 A
- **K** PIN 6 to RS485 B

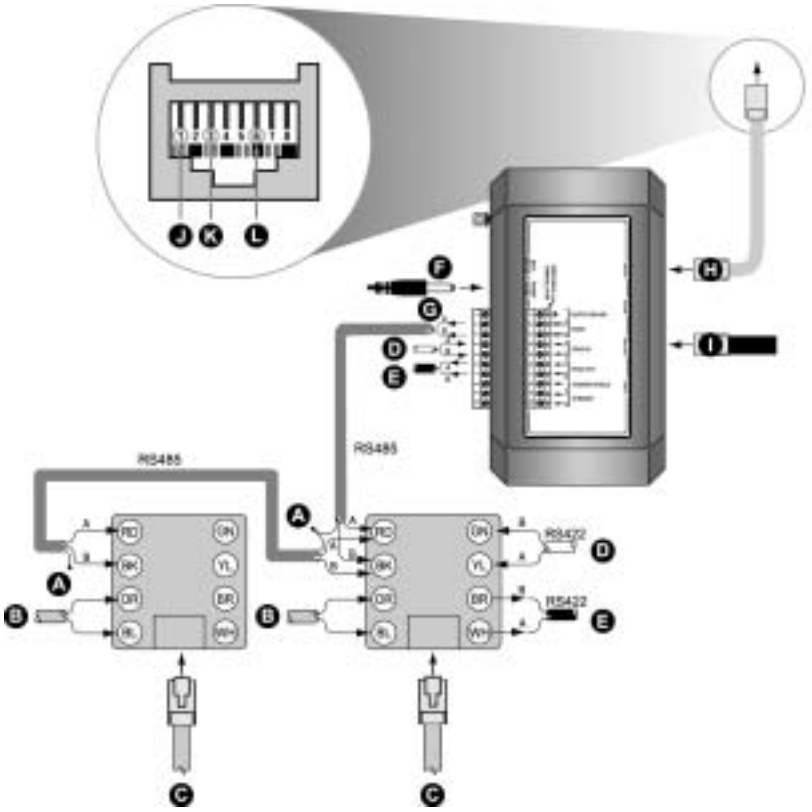
  Note: PINs 2, 4, 5, 7, and 8 are not connected.

Figure 12. KTD-405 and KTD-405A connections via STP cable

3.3.6 CONNECTING NEW AND OLD I/O BOXES

Adhere to all installation guidelines while making connections, including your local codes and those provided in section *3.1 Installation Guidelines*.

Note: For additional connection details about the old I/O boxes, see *Appendix D. Old I/O Box Connections*.



Observe polarity for:
- Audio
- RS422
- RS485
- 12 VDC power (12 VDC transformer must have a positive center polarity plug

Note: When using multiple keypads, you can connect CyberDomes and other receivers to the RS422 output from any keypad.

- **A** RS485 shield (float)
- **B** 12 VDC (no polarity on old I/O box)
- **C** RJ45 from keypad (RS422 data in from keypad; silver crossover cable for old I/O box)
- **D** RS422 IN (data in from devices such as alarm units, ASCII converters, or keypads (see guidelines))
- **E** RS422 OUT (data out to devices such as domes, switchers, or keypads (other than KTD-405s))
- **F** 12 VDC (observe polarity on new I/O box)
- **G** RS485 to I/O box of additional keypad
- **H** RS485 OUT (data out to devices such as multiplexers or DVMRe's; ground at mux/DVMRe)

  Note: When using STP for the RS485 connection between I/O boxes, you can use only one of the two RJ45 RS485 OUT connections to a multiplexer or DVMRe. This ensures proper termination.
- **I** KEYPAD IN (RS422 and RS485 data in from keypad; black straight-through cable for new I/O box)
- **J** PIN 1 to RS485 shield (ground one end only)
- **K** PIN 3 to RS485 A
- **L** PIN 6 to RS485 B

  Note: PINs 2, 4, 5, 7, and 8 are not connected.

Figure 13. New to old I/O box connections

4 PROGRAMMING

There are three programming modes for the keypad:

- **Supervisor Programming Mode**: Establishes such essentials as the keypad's nonvolatile memory, title, and PTZ-to-KB3 command communication.
- **User Programming Mode**: Establishes the keypad's system architecture for operations.
- **Remote Device Programming Mode**: Enables you to program system devices such as cameras and VCRs.

Refer to the menu keys in Figure 14 and the navigation keys in Table 1 while moving through the programming menus.

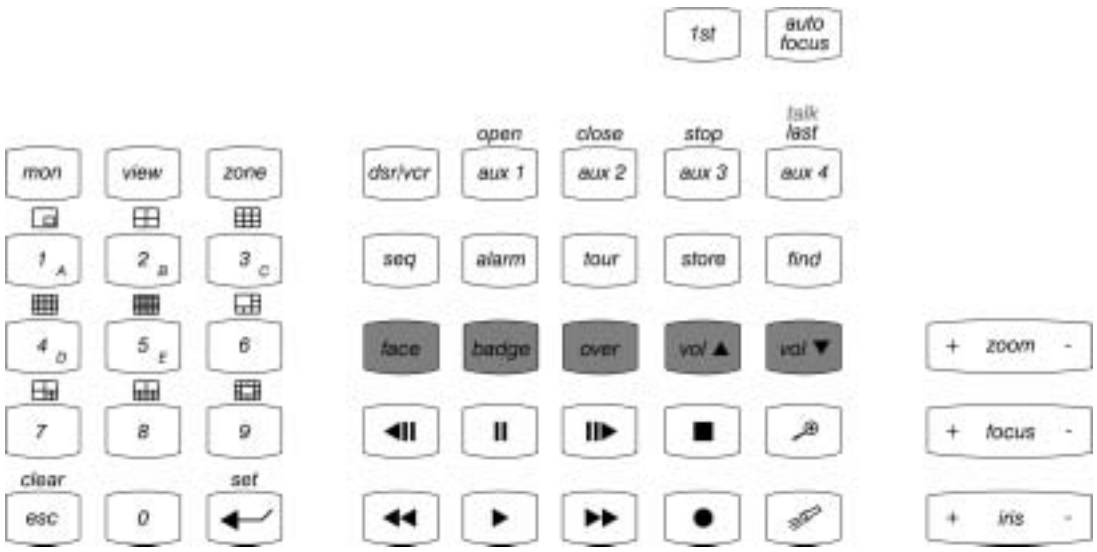


Figure 14. Menu keys (gray keys are available on the KTD-405A only)

Table 1. Navigating the programming menus

Key	Function
▶▶	displays the next menu
◀◀	displays the previous menu
▮▮	scrolls up when indicated by ↑ in the menus
▶	scrolls down when indicated by ↓ in the menus
▮▮▶	scrolls right when indicated by → in the menus
◀▮▮	scrolls left when indicated by ← in the menus
Joystick	scrolls up, down, left, or right when indicated by ↑, ↓, ←, → in menus
seq	advances menus; or exits menus if held for 3 sec
1st	displays the previous menu

4.1 ENTERING THE PROGRAMMING MODES

When you provide power to the unit, the following menu appears:

```
CAMERA 0
MONITOR 1
```

1) To access the programming mode, press and hold the ← key until you hear a tone and the following menu appears:

```
ENTER PROGRAMMING
CODE:
```

Note: The ENTER PROGRAMMING CODE menu times out after 5 seconds.

2) Enter your programming code.

- To enter supervisor menus, press ***1-4-7-6-seq*** and proceed to section *4.2 Supervisor Programming*.
- To enter user menus, press ***5-7-9-seq*** and proceed to section *4.3 User Programming*.
- To enter remote device programming, press ***9-5-1-seq*** and proceed to section *4.4 Remote Programming*.

Note: Menus time out after 4 minutes.

Note: Menus that were not implemented in this release are indicated by two beeps and the following menu:

```
NOT IMPLEMENTED
```

4.2 SUPERVISOR PROGRAMMING

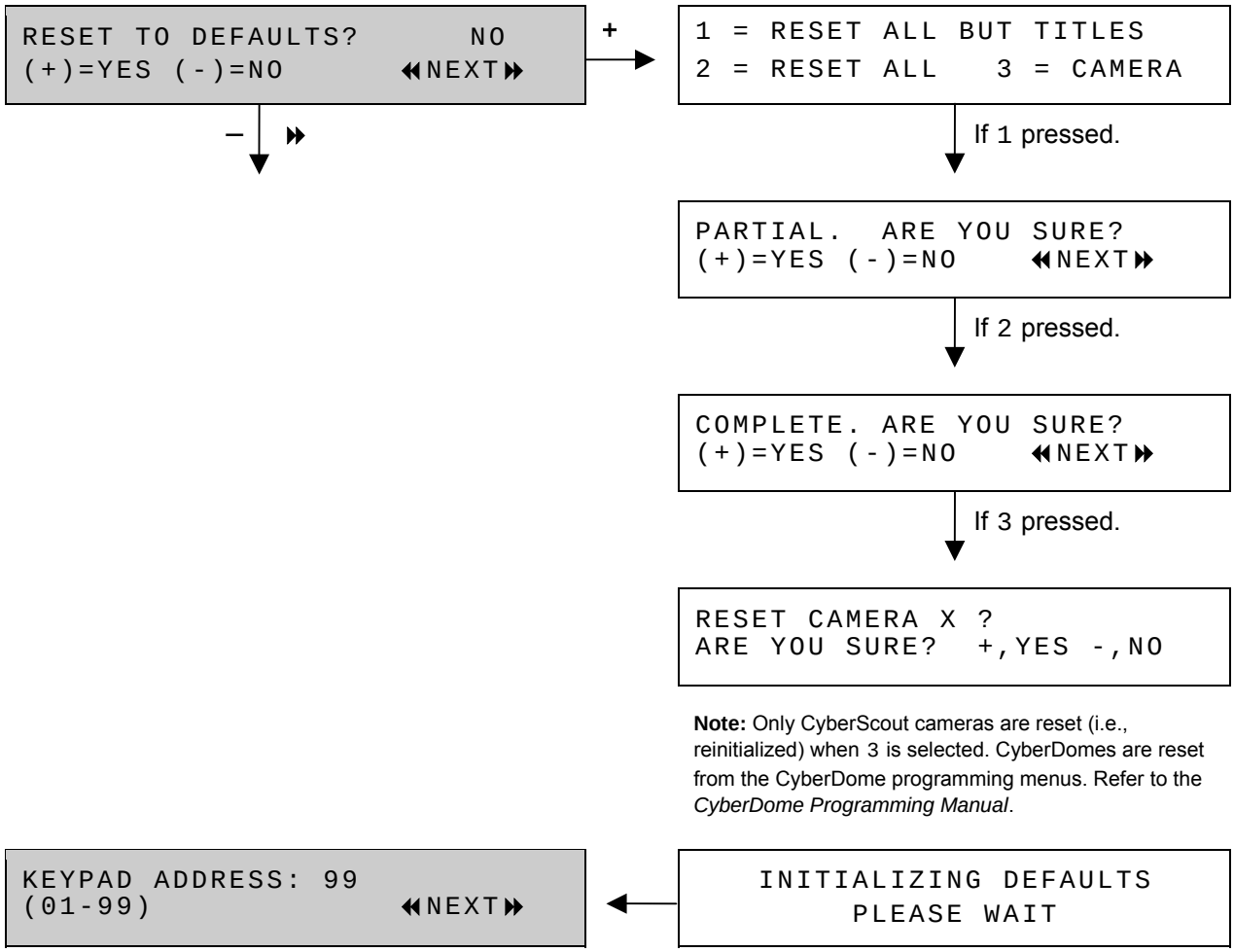
From the ENTER PROGRAMMING CODE menu, pressing ***1-4-7-6-seq*** enters the supervisor menus.

The RESET T0 DEFAULTS option erases data in the KTD-405's nonvolatile memory and reloads factory values. RESET ALL clears programmed keypad and zone titles; RESET ALL BUT TITLES retains the zone titles; and RESET CAMERA reinitializes CyberScout cameras so that they find all of their orientation points.

Note: Access the CyberScout that you want to reset before you enter supervisor programming.

Note: CyberDomes are reset from the CyberDome programming menus. Refer to the *CyberDome Programming Manual*.

Note: Pressing ⏩ forwards you through programming without changing set parameters.



Note: Only CyberScout cameras are reset (i.e., reinitialized) when 3 is selected. CyberDomes are reset from the CyberDome programming menus. Refer to the *CyberDome Programming Manual*.

A keypad address is a two-digit number (01 – 99) that distinguishes a keypad from other devices. This address is automatically assigned when the keypad is first connected into the RS485 communication line. The address doesn't change unless you assign a new address or the system configuration changes.

Note: Entering an address that is already assigned displays a menu that reads ADDRESS ALREADY IN USE.

Entering a keypad address or pressing ⏩ displays the following menu:

```
KB3 PTZ PROTOCOL?       NO
(+)=YES (-)=NO      ⏪NEXT⏩
```

If the KTD-405 is being used in a system that needs to communicate PTZ commands to a Calibur CBR-KB3/J keypad or ProBridge, you must select **YES** so that the KTD-405 communicates properly with these devices.

```
ENABLE REMOTE PRGMG?    YES
(+)=YES (-)=NO      ⏪NEXT⏩
```

Enabling remote programming allows the keypad's user to enter the ***9-5-1-seq*** code for programming remote devices in the system. If disabled, a tone sounds when the ***9-5-1-seq*** code is entered.

```
KEYPAD TITLE:      (↑,↓,→,←)
                    ◀◀NEXT▶▶
```

Use ⏸ , ▶ ,⏸▶, or ◀⏸ or the joystick to title the keypad. Titles can include A through Z, 0 through 9, and spaces:

- ⏸ or ↑ Moves from a space to A through Z, to 9 through 0.
- ▶ or ↓ Moves from a space, to 0 through 9, to Z through A.
- ⏸▶ or → Moves the cursor right.
- ◀⏸ or ← Moves the cursor left.

A keyboard title can be up to 14 characters. If a keypad is programmed with a title, it can be programmed with a user-defined four-digit seize control code, which enables a supervisor to seize control of the keypad's addressed site. An addressed site is a device such as a camera, DVMRe, or VCR, or an entire zone if the keypad is programmed in a zone mode.

Note: The next two seize control menus are for future use.

```
SEIZE CONTROL CODE: 8624
USE NUMBER KEYS     ◀◀NEXT▶▶
```

Entering a four-digit code or ▶▶ displays the following menu:

```
SEIZE CONTROL TIME: 5
(1-10) MINUTES      ◀◀NEXT▶▶
```

The seize control time is the minutes of user inactivity that must elapse before the keypad automatically exits the seize control state.

```
LOWEST USER PRGMD PRESET
(01-64)  58         ◀◀NEXT▶▶
```

PTZ presets (0 – 63) are normally stored in the programming menus to protect them from being changed by the keypad user. The lowest user programmed preset defines which presets are protected. Any number greater than or equal to the lowest programmed preset can be user-stored during normal operation by pressing the ***store*** key and entering a two-digit preset number, then pressing ***store*** again.

If presets 58 through 61 are not protected (default), they work in combination with the ***aux*** keys to quickly store presets — ***aux 1*** is 58, ***aux 2*** is 59, ***aux 3*** is 60, and ***aux 4*** is 61. Presets 62 and 63 are used to store autopan left and right limits using the ◀⏸ and ⏸▶ keys. Preset 0 (home position) can be stored only in the programming menus.

Note: Pressing the ***store*** button and then ***aux 1,2,3,*** or ***4*** prompts you to press ***store*** again, which sets the quick store position. Pressing the ***find*** button and then ***aux 1,2,3,*** or ***4*** recalls the quick store position.

4.2.1 SOFT KEY REPROGRAMMING

From the supervisor programming mode you can reprogram any of the soft keys with any of the available commands. See *Appendix B. Reprogrammable Keys and Commands* for a list of the keys and commands.

Note: Pressing and holding the ***seq*** key returns you to the normal operating display, except on displays where ***esc*** is required to exit.

1) Beginning at the normal operating display, enter the supervisor programming mode by pressing and holding the ↵ key. Quickly move to the next step after the keypad beeps and the code entry display appears.

```
CAMERA 0
MONITOR 1
```

Normal operating display

2) At the code entry display, enter the access code for the supervisor menus by pressing the ***1***, ***4***, ***7***, ***6***, and ***seq*** keys. The display will automatically advance to the next display.

```
ENTER PROGRAMMING
CODE:
```

Code entry display

3) Press the ⏩ key (for NEXT) until the PROGRAM SOFT KEYS display appears.

4) At the PROGRAM SOFT KEYS display, press the **+** side of the *zoom*, *focus*, or *iris* key.

```
PROGRAM SOFT KEYS?          _
(+)=YES (-)=NO          ⏪NEXT⏩
```

PROGRAM SOFT KEYS display

5) At the PRESS KEY TO PROGRAM display, press any of the available reprogrammable keys (see *Appendix B. Reprogrammable Keys and Commands*).

```
PRESS KEY TO PROGRAM:
                      ESC=EXIT
```

PRESS KEY TO PROGRAM display

6) At the command selection display, use the joystick (or the ▶ and ⏸ keys) to scroll up and down through the list of commands until the desired command appears. The commands are listed in alphabetical order. Then press the ↵ key (◀— on the display) to save the selected command for the reprogrammed soft key.

Note: Pressing the ◀◀ key returns you to the PRESS KEY TO PROGRAM display.

```
SLW/STOP      -→      STABILIZ
(↑↓)     (◀-)=SAVE     ◀◀BACK
```

Command selection display

7) At the confirm command selection display, press the **+** side of the *zoom*, *focus*, or *iris* key to confirm the assignment of the command for the key or press ◀◀ to return to the PRESS KEY TO PROGRAM display.

```
SLW/STOP      -→    STABILIZ?
(+)=CONFIRM          ◀◀BACK
```

Confirm command selection display

8) The KEY HAS BEEN PROGRAMMED display flashes briefly, then you are returned to the PRESS KEY TO PROGRAM display. If you have no further soft keys to reprogram, press ***esc*** to exit to the PROGRAM SOFT KEYS display. To reprogram additional keys, go to step 5.

```
KEY HAS BEEN PROGRAMMED
```

KEY HAS BEEN PROGRAMMED display

```
PRESS KEY TO PROGRAM:
                    ESC=EXIT
```

PRESS KEY TO PROGRAM display

9) At the PROGRAM SOFT KEYS display, press and hold the ***seq*** key to return to the normal operating display.

```
PROGRAM SOFT KEYS?        _
(+)=YES (-)=NO       ◀◀NEXT▶▶
```

PROGRAM SOFT KEYS display

```
CAMERA 0
MONITOR 1
```

Normal operating display

Pressing the **+** side of the *zoom*, *focus*, or *iris* key returns you to the PRESS KEY TO PROGRAM menu.

```
PRESS KEY TO PROGRAM:
                    ESC=EXIT
```

PRESS KEY TO PROGRAM display

Pressing ▶▶ or the **–** side of the *zoom*, *focus*, or *iris* key takes you to the CHANGE ACCESS CODES menu.

Note: The following menu is for future use.

```
CHANGE ACCESS CODES?
(+)=YES (-)=NO       ◀◀NEXT▶▶
```

CHANGE ACCESS CODES display

Pressing **–** or ▶▶ takes you to the OPERATING MODE menu. See section *4.3 User Programming*.

4.3 USER PROGRAMMING

From the ENTER PROGRAMMING CODE menu, pressing ***5-7-9-seq*** enters the user menus:

```
OPERATING MODE:    DIGIPLEX
(↑,↓)=SELECT        ◄◄NEXT►►
```

The operating mode defines the keypad's system architecture. The choices are DIGIPLEX, which is conventional system operation, and ZONE, which divides the system into 32 zones.

Selecting DIGIPLEX takes you to the standard Digiplex menus, section *4.3.1 Standard Digiplex Menus*.

Selecting ZONE takes you to the zone menus, section *4.3.2 Zone Menus*. Refer to Appendix A (*Zone Receiver Site Addressing*).

4.3.1 STANDARD DIGIPLEX MENUS

The next five menus are used to set the system's size to restrict the user from calling up unused addresses. They also define the maximum number of keystrokes used to automatically select an address. For example, if there are fewer than 10 cameras in the system, the keypad user can select each camera site with only one key press.

```
SYSTEM SIZE:
(CAMERAS) 511       ◄◄NEXT►►
```

Enter the highest camera number in your system.

```
SYSTEM SIZE:
(MONITORS) 64       ◄◄NEXT►►
```

Enter the highest monitor number in your system.

```
SYSTEM SIZE:
(MPLXS)   32        ◄◄NEXT►►
```

Enter the highest multiplexer number in your system.

```
SYSTEM SIZE:
(DSR/VCR) 32        ◄◄NEXT►►
```

Enter the highest VCR number in your system.

```
SYSTEM SIZE:
(PRESETS) 63        ◄◄NEXT►►
```

Enter the highest preset number.

The following access menus are used to restrict the keypad from addressing specified sites in the system.

Note: The access menus enable you to allow access for each camera, monitor, DSR/VCR, and multiplexer. To move from one type of access menu to another, press ⏩ or ⏪.

```
CAMERA 000 ACCESS?      YES
(+)=YES (-)=NO      ⏪NEXT⏩
```

```
MONITOR 01 ACCESS?      YES
(+)=YES (-)=NO      ⏪NEXT⏩
```

Note: If you do not want to interrupt viewing at another keypad, program the keypad to address only the monitors within its view.

```
DSR/VCR 01 ACCESS?      YES
(+)=YES (-)=NO      ⏪NEXT⏩
```

Pressing **+** displays the following menu:

```
VCR 01 MATRIX INPUT:
000 (0=NONE)        ⏪NEXT⏩
```

The VCR output can be assigned an input number on the matrix switcher. When a VCR is called, the matrix switcher switches to the assigned input.

Enter a number from 1 through 511, or enter 0 for NONE.

```
MPLX 01 ACCESS?         YES
(+)=YES (-)=NO      ⏪NEXT⏩
```

+ →

```
MPLX01  BRAND     DVMRe DUP
(↑,↓)=SELECT        ⏪NEXT⏩
```

– ⏩

Use ⏸ or ▶ or the joystick to scroll through multiplexer manufacturers. ⏩

```
MONITOR OFFSET
NUMBER: 0           ⏪NEXT⏩
```

By default, the selected monitor number corresponds to the number of the matrix switcher output to which it is connected. For example, if monitor 12 appears in the keypad's display window and a camera selection is made, the monitor that is connected to output 12 of the matrix switcher switches to that camera.

In some applications, you might prefer to have the monitors numbered as 1, 2, 3, etc., instead of using the matrix switcher output number. To do this, subtract the desired monitor number from the matrix switcher output number and enter the difference as the monitor offset.

```
MPLX 01 MATRIX INPUT?
000 (0=NONE)        ⏪NEXT⏩
```

If the DVMRe/multiplexer's output(s) is connected to an input on a matrix switcher, enter the input number (1 – 511, or 0 for none).

```
SELECT MAX OUTPUTS:    02
(↑,↓)=SELECT        ⏪NEXT⏩
```

Enter the number of outputs (1 – 5) connected to the matrix switcher. This returns you to the MPLX XX ACCESS menu.

Note: Outputs must be connected in sequential order to inputs if more than one output from a single DVMRe/mux is used.

For example, a keypad has a monitor that is connected to matrix switcher output 12. To enable the monitor to be addressed as monitor 1, subtract 1 from 12 and enter the difference (11) as the monitor offset.

In this example, if more than one monitor were to be controlled from the keypad, additional monitors would be connected to matrix switcher outputs 13, 14, 15, etc., and would be controlled as monitor 2, monitor 3, monitor 4, etc.

Note: The keypad will deny any monitor offset number that conflicts with the monitor system size and the monitor access programming choices that have been made.

```
ANNUNCIATION?          NO
(+)=YES (-)=NO      ◀◀NEXT▶▶
```

When annunciation is enabled, the keypad displays the 1st, 2nd, and 3rd call-in queue on the LCD and can store up to 32 call-in requests.

Pressing **+** and then ▶▶ displays the following menu:

```
CALL TONE TYPE? MULTIPLE
(↑,↓)=SELECT        ◀◀NEXT▶▶
```

In the annunciation mode, the keypad produces a tone on a call-in request or alarm. This sound can be set to one frequency (single) or to warble between two frequencies (multiple).

```
SPOT MONITOR NUMBER:     0
(0=UNASSIGNED)      ◀◀NEXT▶▶
```

When a spot monitor number is assigned, pressing the ***1st*** key displays the first site number in the annunciation queue on the spot monitor, and the keypad automatically addresses control to that monitor.

4.3.2 ZONE MENUS

Remember that the addressing between domes and multiplexers is offset. When setting up and controlling your cameras in zone mode, refer to Appendix A (*Zone Receiver Site Addressing*).

```
OPERATING MODE:        ZONE
(↑,↓)=SELECT        ◀◀NEXT▶▶
```

Selecting ZONE in the OPERATING MODE menu displays the following menu:

```
LCD DISPLAY LABEL:    ZONE
(↑,↓)=SELECT        ◀◀NEXT▶▶
```

This menu enables you to change the hub device label displayed on the LCD during normal operation. Label choices are ZONE, MPLX, DVMR, TERR, BLDG, FLR, DEPT, STA, SITE, or AREA. ZONE is the default label.

```
ENTER ZONE ADDRESS:   01
(01-32)              ⏪NEXT⏩
```

Pressing ⏩ takes you to the ZONE XX ACCESS menu, page 27.

Entering a two-digit zone address displays the following menu:

```
ZONE 01 TITLE:      (↑,↓,→,←)
                     ⏪NEXT⏩
```

Use ⏸, ⏵, ⏭, or ⏮ or the joystick to title the zone. Titles can include A through Z, 0 through 9, and spaces:

- ⏸ or ↑ Moves from a space to A through Z, to 9 through 0.
- ⏵ or ↓ Moves from a space, to 0 through 9, to Z through A.
- ⏭ or → Moves the cursor right.
- ⏮ or ← Moves the cursor left.

Zone titles enable you to identify which zone is being addressed (e.g., Building 248, Headquarters). A zone title can be up to 15 characters.

Note: When you enter or change a zone title from the ***1-4-7-6-seq*** code, you have the option of sending the title to all keypads in the system:

```
SEND TO ALL KEYPADS?
(+)=YES (-)=NO       ⏪NEXT⏩
```

```
ZONE 01 HUB:    DVMRe DUP
(↑,↓)=SELECT         ⏪NEXT⏩
```

A hub is the main recording device in a zone. Hub choices are DVMRe DUP, CALIBUR MMX, TRIPLEX MUX, DUPLEX MUX, SIMPLEX MUX, MATRIX SWCH, and DVMRe TRI.

The next two menus are used to set the system's size to restrict the user from calling up unused addresses. They also define the maximum number of keystrokes used to automatically select an address. For example, if there are fewer than 10 monitors in the system, the keypad user can select each monitor site with only one key press.

Note: Zone outputs and inputs depend on the hub you selected in the previous menu.

```
ZONE 01 MON. OUTPUTS:
01 TO 02             ⏪NEXT⏩
```

Enter the number of monitor outputs you have for this zone (1 – 32).

```
ZONE 01 CAM. INPUTS:    16
(↑,↓)=SELECT         ⏪NEXT⏩
```

Zone size choices are 4, 9, 10, 16, 32, and 64, depending on the hub (up to 64 for matrix switchers, up to 32 for multiplexers, and up to 16 for all others).

The following system access menus are used to restrict the keypad from addressing specified sites in the system:

```
ZONE 1 CAM 01 ACC?    YES
(+)=YES (-)=NO      ⏪NEXT⏩
```

```
ZONE 1 MON 1 ACC?     YES
(+)=YES (-)=NO      ⏪NEXT⏩
```

```
ZONE 01 RECORDER ACC? YES
(+)=YES (-)=NO      ⏪NEXT⏩
```

Note: If you are using MMX or Triplex without a VCR attached through submacros, deny zone recorder access.

This menu returns you to the ENTER ZONE ADDRESS menu. From the ENTER ZONE ADDRESS menu, you can program all zones. When you have finished programming all zones, pressing ⏩ from the ENTER ZONE ADDRESS menu displays the following menu:

```
ZONE 01 ACCESS:       YES
(+)=YES (-)=NO      ⏪NEXT⏩
```

Pressing **+** or **–** enables you to allow or deny access for each zone.

Pressing ⏩ displays the following menu:

Note: The following menu is for future use.

```
ANNUNCIATION?           NO
(+)=YES (-)=NO      ⏪NEXT⏩
```

When annunciation is enabled, the keypad displays the 1st, 2nd, and 3rd call-in/alarm on the LCD and stores up to 32 call-in requests.

Pressing **+** and then ⏩ displays the following menu:

```
CALL TONE TYPE? MULTIPLE
(↑,↓)=SELECT        ⏪NEXT⏩
```

In the annunciation mode, the keypad produces a tone on a call-in request or alarm. This sound can be set to one frequency (single) or to warble between two frequencies (multiple).

```
SPOT MONITOR NUMBER:     0
(0=UNASSIGNED)      ⏪NEXT⏩
```

When a spot monitor number is assigned, pressing the ***1st*** key displays the first site number in the annunciation queue on the spot monitor, and the keypad automatically addresses control to that monitor.

4.4 REMOTE PROGRAMMING

From the ENTER PROGRAMMING CODE menu, pressing ***9-5-1-seq*** enables you to program system devices such as cameras and VCRs.

Note: Remote programming can be denied by a supervisor.

```
1=SWITCHER/MPLX      2=ALARMS
3=CAMERA/RCVR         EXIT⏩
```

Note: To program an auxiliary device, refer to the relevant manual.

4.4.1 SWITCHER/MPLX

```
1=440      2=CALIBUR
3=340/348            ⏪BACK
```

4.4.1.1 440 (PRESS *1*)

```
ENTER MONITOR NUMBER:
(1-64)               ⏪BACK
```

→

```
  SEE MONITOR FOR MENUS
HOLD SEQ <3 SEC> TO EXIT
```

4.4.1.2 CALIBUR (PRESS *2*)

```
ENTER CALIBUR ADDRESS:
(1-32)               ⏪BACK
```

→

```
  SEE MONITOR FOR MENUS
HOLD SEQ <3 SEC> TO EXIT
```

4.4.1.3 340/348 (PRESS *3*)

```
ENTER MONITOR NUMBER:
(1-64)               ⏪BACK
```

→

```
  SEE MONITOR FOR MENUS
HOLD SEQ <3 SEC> TO EXIT
```

4.4.2 ALARMS

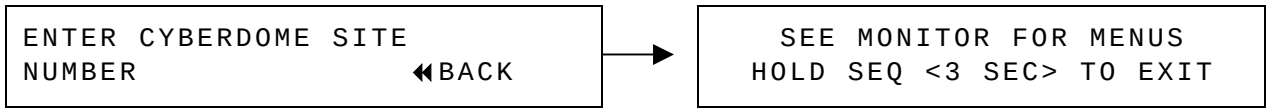
```
  SEE MONITOR FOR MENUS
HOLD SEQ <3 SEC> TO EXIT
```

4.4.3 CAMERA/RCVR

```
1=CYBERDOME    2=PTZ
3=AUXILIARY          ⏪BACK
```

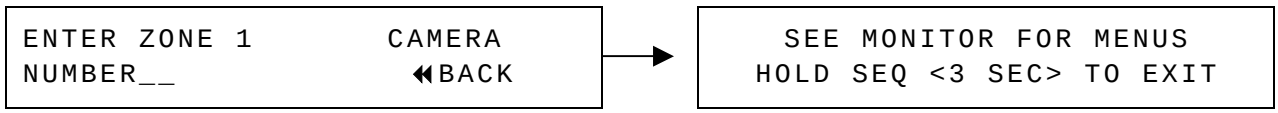
Note: Auxiliary (*3*) is for future use.

If you are in standard Digiplex mode, pressing ***1*** prompts you to enter a CyberDome site number:



If you are in a zone mode, pressing ***1*** prompts you to enter a CyberDome camera number within the current zone:

Note: You must select the zone before entering programming mode.



4.4.4 CYBERSCOUT SHADOWTOUR

Note: Refer to the *CyberDome Programming Manual* for the programming of CyberDome tours.

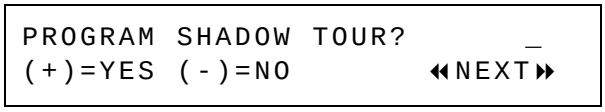
To program a CyberScout ShadowTour™:

1) Beginning at the normal operating display, enter the ShadowTour programming mode by pressing and holding the ***esc*** key, then pressing the ***tour*** key.

Normal operating display

2) At the PROGRAM SHADOW TOUR display, press the **+** side of the *zoom*, *focus*, or *iris* key to start recording a ShadowTour. Quickly move to the next step after the keypad beeps and the end Shadow Tour programming display appears.

Note: Pressing the ◀◀, ▶▶, or **–** keys will return you to the normal operating display.



PROGRAM SHADOW TOUR display

3) Begin the manual operation sequence you want to record as your ShadowTour.

4) At the END SHADOW TOUR PROGRAMMING display, press the ***esc*** key to stop recording the ShadowTour.

Note: The keypad is still recording your manual operation even though the END SHADOW TOUR PROGRAMMING display returns to the normal operating display after a few seconds. Continue your sequence and press ***esc*** to stop recording.

END SHADOW TOUR PROGRAMMING display

Your ShadowTour is now available for use. Follow the keypad's instructions for activating the ShadowTour. See Table 2.

5 OPERATION

Remember that the addressing between domes and multiplexers is offset. When setting up and controlling your cameras in zone mode, refer to Appendix A (*Zone Receiver Site Addressing*).

Table 2. Normal key functions

Key	Normal Function
mon	with number keys, selects active monitor from matrix switcher or multiplexer
view	works in two ways, depending on the type of multiplexer or DVMRe you are addressing: for duplex DVMRe's and most multiplexers, pressing ***view*** steps selected monitor through programmed multiscreen views (if ***view*** is pressed and held for 5 sec, the keypad will broadcast a command to all CyberDomes to display their site address and zone mode; Calibur devices will display their address; status disappears when the key is released) for triplex DVMRe's and some brands of multiplexers, pressing ***view*** with number keys selects multiscreen views (e.g., ***view***, ***2*** calls up 2 x 2 view, and ***view***, ***4*** calls up 4 x 4 view)
zone	with number keys, selects a zone
aux 1	default assignment sends "open" command to selected camera address
aux 2	close
aux 3	stop
aux 4	last for KTD-405; talk for KTD-405A
seq	activates a sequence tour on the active monitor (Calibur multiplexers only)
alarm	toggles active monitor between the alarm on and alarm off modes; calls up help menus when remotely programming matrix switcher and CyberDome
tour	with number keys 1 – 4 (1 only, for CyberScout), places PTZ receiver in tour mode; or, if pressed and held for 3 sec, keypad beeps and sends an autopan command to PTZ receiver
store	with number keys, sets presets and autopan limits for selected camera; accesses sequence programming for Calibur multiplexers
find	with number keys, selects PTZ position saved by the previous ***store*** command for selected camera site
+zoom -	controls the zoom function on selected receiver site's motorized zoom lens
+focus -	controls the focus function on selected receiver site's motorized zoom lens; disables the auto focus feature on CyberDome
+iris -	controls the iris function on selected receiver site's motorized zoom lens
esc	with number keys, clears alarms and clears number entry
1st	selects earliest of pending annunciations
auto focus	places selected CyberDome camera in auto focus mode

Key	Normal Function
0 – 9	selects camera (selects any numeric entry following other keys)
▶▶	places selected DSR, DVMRe, or VCR in fast forward mode
	toggles selected multiplexer's full-screen picture between normal and 2X magnification
	locates video on selected DVMRe
❚❚	places selected DSR, VCR, or DVMRe in pause mode
▶	places selected DSR, VCR, or DVMRe in play mode
●	places selected DSR, VCR, or DVMRe in record mode
◀◀	places selected monitor's DSR, VCR, or DVMRe in fast reverse mode
❚▶	advances selected DSR or DVMRe one frame forward in pause mode
◀❚	steps selected DVMRe one frame backward in pause mode; selects reverse play in play mode
■	places selected monitor's DSR, VCR, or DVMRe in stop mode; ***esc*** plus ■ exits play mode in multiplexers
(dsr/vcr)	with number keys, addresses remote recording device

5.1 STANDARD DIGIPLEX MODE

5.1.1 LCD NORMAL SCREEN

The LCD displays the current camera number and the current monitor number:

```
CAMERA 0
MONITOR 1
```

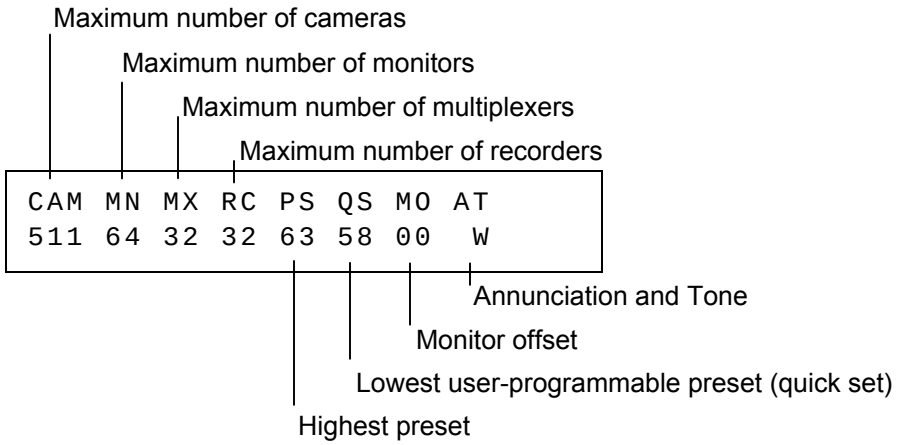
5.1.1.1 SYSTEM INFORMATION MENUS

In the LCD normal screen, pressing and holding ***mon*** displays the system information menus. The menus display the keypad's address, version, and system size setting.

To navigate through the three menus, use ◀◀ and ▶▶. To exit the system information menus, press ◀◀ from the first menu or press ***esc.***

```
KEYPAD ADDRESS:   99
    KEYPAD 99        ◀◀NEXT▶▶
```

```
VERSION 1.0.14
AUG 6 2002 10:54:13
```



5.1.1.2 HELP MENU

To display the HELP menu:

At the normal operating display, consecutively press, briefly hold, and release the ***esc*** and ***mon*** keys.

Note: The help menu times out in 10 seconds.

```
HELP MODE:          ENTER=EXIT
PRESS KEY    ->   SEE FUNCTION
```

To display a key's default function:

At the HELP menu, press a key. See Table 2 for a list of keys and their functions.

To display a key's shifted (secondary) function:

At the HELP menu, press ***esc*** and a key. See Table 3 for a list of keys and their shifted functions.

To exit the HELP menu, press ↵.

Table 3. Shifted key functions

Key	Shifted Function	Key	Shifted Function
mon	help	***vol*** ▲	slow
zone	group	***vol*** ▼	fast
1st	macro	◀II	joystick left
auto focus	autopan	II	joystick up
dsr/vcr	alt	II▶	joystick right
aux 1	unlock	■	live

aux 2	lock		light
aux 3	flip	◀◀	site down
aux 4	stabilize	▶	joystick down
seq	function	▶▶	site up
store	group	●	home
find	step		0 lux
face	card	***+ zoom -***	volume up/down
badge	door 1	***+ iris -***	backlight bright/dim
over	door 2		

5.1.2 SELECTING A CAMERA

When a camera is selected, a command is sent to the switching device to call that camera to the active monitor. There are two camera-selection methods:

- Enter the camera number including preceding zeroes (e.g., if you have tens of cameras, enter 01 for camera 1; if you have hundreds of cameras, enter 001 for camera 1).
- Enter the camera number directly (omitting preceding zeroes), and then press ↵.

5.1.3 CONTROLLING A CAMERA

5.1.3.1 PTZ

Pan, tilt, and zoom are controlled by the joystick. Zoom is also controlled by the ***+ zoom -*** key.

To pan, move the joystick left or right. To tilt, move the joystick up or down. To zoom, twist the joystick knob clockwise or counterclockwise.

5.1.3.2 FOCUS

For auto focus, press the ***auto focus*** key. To focus manually, use the ***+ focus -*** key.

5.1.3.3 IRIS

The iris is controlled by the ***+ iris -***key; **+** opens the iris and **-** closes the iris.

5.1.3.4 SETTING A PRESET

1) Position the camera.
2) Press ***store.***
3) Enter the preset number using the number keys, or ***aux 1***, ***2***, ***3***, or ***4*** for presets 58 through 61.

Note: Presets 62 and 63 cannot be set using the number keys; they can be set by using the and keys only.

4) Press ***store.***

5.1.3.5 SETTING AUTOPAN LIMITS

Left Autopan Limit

To set the limit for the left turn-around point of the camera's back and forth motion, as wells as the tilt and zoom positions for the autopan, perform the following:

1) Position the camera at the desired left limit.
2) Tilt and zoom the camera into the desired position.
3) Press ***store***.

   Note: Do not attempt to enter a preset number. The preset number 62 is reserved for the left autopan limit and is automatically entered when you perform step 5.

4) Press .
5) Press ***store*** again. The Store Preset Number displays on the keypad.

Right Autopan Limit

To set the limit for the right turn-around point of the camera's back and forth motion, perform the following:

1) Position the camera at the desired right limit and press ***store***.

   Note: Do not attempt to enter a preset number. The preset number 63 is reserved for the right autopan limit and is automatically entered when you perform step 3.

2) Press .
3) Press ***store*** again. The Store Preset Number displays on the keypad.

5.1.4 SELECTING A MONITOR

The monitor selection is internal to the keypad; no command is sent to the switcher. There are two monitor-selection methods:

1) Press the ***mon*** key.
2) Enter the monitor number including any preceding zeroes, or
   Enter the monitor number directly, then press .

5.1.5 OPERATING GROUP SWITCHING ON DIGIPLEX IV SWITCHERS

In Digiplex mode, while pressing ***esc***, pressing ***zone*** displays the following menu:

```
ENTER MONITOR GROUP
(1-64)__          OR <TOUR>
```

TOUR →

```
ENTER GROUP SEQUENCE
(1-12)__
```

Entering a number from 1 through 64 calls up that group of cameras, or press tour to enter a group sequence tour.

Entering a number from 1 through 12 initiates that group sequence.

5.1.6 CONTROLLING A DVMRe/MULTIPLEXER

When you press the zone key, the keypad switches to the hybrid zone mode. In this mode, the keypad can control a DVMRe/multiplexer. Key functions are the same as those used during normal zone mode operation, except the ***esc*** key, which returns the keypad to the standard Digiplex mode. See Table 4.

Note: Camera control (PTZ) is disabled while in the hybrid zone mode.

5.1.7 CONTROLLING A RECORDING DEVICE

When a recording device is selected, it can be controlled by the keypad (see Table 4 and *Appendix A. Zone Receiver Site Addressing*).

Table 4. Controlling a recording device

Control	Function for DSR/VCR	Function for DVMRe
●	starts record mode	starts record mode
▶	starts playback mode	starts playback mode
■	stops record or playback mode	stops record or playback mode
❚❚	pauses playback	pauses playback or live view
▶▶	fast forwards playback	fast forwards playback
◀◀	rewinds playback	rewinds playback
❚▶	forwards playback by frame (action depends on DSR/VCR)	**in reverse:** shifts play direction to forward **in pause mode:** steps playback forward one frame
◀❚	reverse playback (action depends on DSR/VCR)	**playing forward:** shifts play direction to reverse **in pause mode:** steps playback in reverse one frame
🔍		zooms image to 2X magnification (toggle)
🔭		calls up screen to search for specific recording puts DVMRe in playback mode

Control	Function for DSR/VCR	Function for DVMRe
Joystick	**twisting right:** steps forward at a variable rate **twisting left:** steps in reverse at a variable rate	**in play or pause mode** **right:** fast forwards **left:** rewinds **up:** skips forward approximately 15 sec **down:** skips backward approximately 15 sec **twisting right:** steps forward at a variable rate **twisting left:** steps in reverse at a variable rate **return to center:** resumes pause mode **with 2X magnification on** **right:** pans right **left:** pans left **up:** pans up **down:** pans down

5.2 ZONE MODE

5.2.1 LCD NORMAL SCREEN

The LCD displays the zone number and title on the top line and the current camera and monitor numbers on the bottom line:

```
ZONE --   ZONE TITLE
CAMERA -- MONITOR -
```

5.2.2 SELECTING A ZONE

1) Press ***zone***

2) Enter a zone number.

The LCD displays the zone number and title, which is created during programming.

5.2.3 SELECTING A CAMERA

- Enter the camera number including any preceding zeroes (e.g., if you have tens of cameras, enter 01 for camera 1; if you have hundreds of cameras, enter 001 for camera 1), or
- Enter the camera number directly (omitting preceding zeroes), then press ↵.

5.2.4 CONTROLLING A CAMERA

5.2.4.1 PTZ

Pan, tilt, and zoom are controlled by the joystick. Zoom is also controlled by the ***+ zoom -*** key.

To pan, move the joystick left or right. To tilt, move the joystick up or down. To zoom, twist the joystick knob clockwise or counterclockwise.

5.2.4.2 FOCUS

For auto focus, press the ***auto focus*** key. To focus manually, use the ***+ focus -*** key.

5.2.4.3 IRIS

The iris is controlled by the ***+ iris -*** key; **+** opens the iris, **-** closes the iris.

Note: Refer to the CyberDome manual for additional operation on some CyberDome models.

5.2.5 SELECTING A MONITOR

1) Press the ***mon*** key.

2) Enter the monitor number including any preceding zeroes, or

Enter the monitor number directly, and then press ↵.

5.2.6 SELECTING AND CONTROLLING A DVMRe/MULTIPLEXER

When a zone is active, the corresponding DVMRe/multiplexer can be controlled by the keypad. See Table 5.

Table 5. Controlling a multiplexer

Control	Function for Multiplexer	Function for DVMRe
●	starts record mode	starts record mode
▶	starts playback mode (if multiplexer has an attached DSR/VCR, a play command is sent to the multiplexer and the VCR)	starts playback mode
■	stops playback or record mode	stops playback or record mode
❚❚	pauses live picture; pauses playback	pauses playback or live view
🔍	toggles image between normal and 2X magnification (joystick moves view)	zooms image to 2X magnification (toggle)
		calls up screen to search for specific recording puts DVMRe in playback mode

Control	Function for Multiplexer	Function for DVMRe
Joystick	**when attached to a DSR/VCR in pause mode** **twisting right:** steps forward at a variable rate **twisting left:** steps in reverse at a variable rate **in any mode with 2X magnification** **right:** pans right **left:** pans left **up:** pans up **down:** pans down	**in play or pause mode** **right:** fast forwards **left:** rewinds **up:** skips forward approximately 15 sec **down:** skips backward approximately 15 sec **twisting right:** steps forward at a variable rate **twisting left:** steps in reverse at a variable rate **return to center:** resumes pause mode **with 2X magnification on** **right:** pans right **left:** pans left **up:** pans up **down:** pans down
When multiplexer is attached to a VCR		
⏩	fast forwards playback	fast forwards playback
⏪	rewinds playback	rewinds playback
⏯	in pause mode, steps forward one frame	**in reverse:** shifts play direction to forward **in pause mode:** steps playback forward one frame
⏮	in pause mode, steps in reverse one frame	**playing forward:** shifts play direction to reverse **in pause mode:** steps playback in reverse one frame

To enter a Calibur DVMRe's/multiplexer's programming menus, perform the following steps:

1) Enter the remote programming mode:

a) Press and hold ↵.

b) Press ***9-5-1-seq.***

2) Select ***1***, switcher/multiplexer.

3) Select ***2***, Calibur.

4) Enter the Calibur address.

5) Press ↵.

6) Enter the Calibur password.

To navigate the DVMRe/multiplexer programming menus, see Table 6.

Table 6. Navigating Calibur menus

Control	Function
Joystick	moves left and right within menu options; can be used to move up and down within the menu options
⏩	makes selections
⏪	backspaces out of selections; exits the programming menus if pressed in the main menu
⏸	moves up within menu options
▶	moves down within menu options
⏭	moves right within menu options
⏮	moves left within menu options
↩	interchangeable with ⏩
esc	interchangeable with ⏪

5.2.7 CONTROLLING A RECORDING DEVICE

When a zone is active, the corresponding recording device can be controlled by the keypad. See Table 7.

Table 7. Controlling a recording device

Control	Function
●	starts record mode
▶	starts playback mode
■	stops record or playback mode
⏸	pauses playback
⏩	fast forwards playback
⏪	rewinds playback
⏭	in pause mode, steps recording forward frame by frame
⏮	in pause mode, steps recording in reverse frame by frame
Joystick	**in pause mode** **twisting right:** steps forward by frame **twisting left:** steps in reverse by frame

5.2.8 PROGRAMMING A DVMRe/MULTIPLEXER CAMERA SEQUENCE

If you are using a Calibur DVMRe/multiplexer, you can set a camera sequence:

1) Press ***store***.

2) Press ***seq***.

The following menu appears:

```
ENTER SEQUENCE CAMERA
◀◀ CANCEL              DONE ▶▶
```

3) Enter the number of the first camera in the sequence.

4) Wait the amount of time you want between cameras, then press the next camera in the sequence.

5) Repeat step 4 until all cameras in the sequence have been entered.

6) Press ▶▶.

Note: Pressing ***seq*** toggles between sequencing and not sequencing.

5.3 AUDIO

5.3.1 ANNUNCIATION

When a keypad is programmed for site annunciation, it stacks as many as 32 call-in requests in the order in which they are received. The numbers of the first three sites appear in the keypad's display window.

```
CAM 000    1ST   2ND   3RD
MON 01     001   123   345
```

Normal operating display with annunciation

To call up the first site:

Press the ***1st*** key. The site will be removed from the queue and the waiting requests will move up in order.

To call up any site in the queue:

Press ***0*** through ***9*** to enter a site number. The site will be removed from the queue and the waiting requests will move up on order.

Note: When an annunciation call is received, a tone sounds every 15 seconds until the call is cleared by an operator. In multiplexer mode, the tone sounds every 5 seconds.

5.3.2 TWO-WAY AUDIO

To establish two-way audio communication with a site:

1) Press ***0*** through ***9*** to enter a site number.

2) Use the ***vol*** (volume) keys to adjust the audio level.

3) Press ***aux 4*** to talk to the site. The *aux 4* key on the audio-version of the keypad automatically defaults to talk mode.

Note: When using a KTD-336 audio converter, set the attenuation jumpers to the ON position. See Figure 15. The attenuation jumpers are located on the audio/IO card, which is attached to the keypad's base plate. When not using an audio converter, leave the attenuation jumpers in their default OFF position.

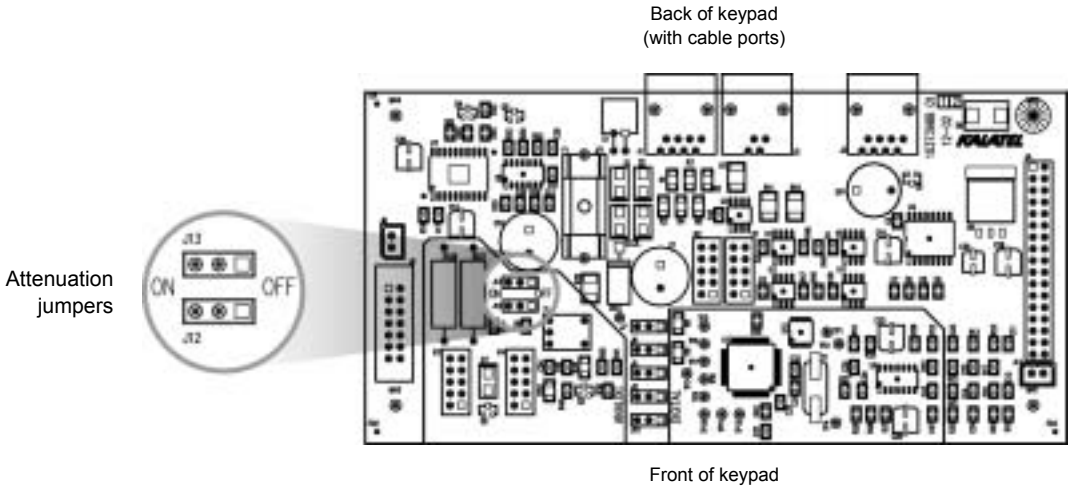


Figure 15. Audio/IO card with attenuation jumpers

6 TROUBLESHOOTING

Adhere to all installation guidelines while making connections, including those provided in section *3.1 Installation Guidelines*.

Problem	Probable Cause	Solution
No control of cameras or DMVRe	Incorrect usage	Make sure that you are in zone mode while trying to control cameras through a DVMRe.
	Incorrect wiring	Verify that: • The correct type of wiring (STP or UTP) is being used for the different signals. • All wires are in good condition. • All cabling and pinout connections are made according to directions (observing polarity, when necessary). • Equipment is properly terminated. • Cables are properly grounded. See installation guidelines and diagrams in section *3 Installation*.
	Incorrect wiring of dome inputs or incorrect zone addressing (camera addressing starts at 0 in zone mode)	The address of the camera has to be one less than the input on the DVMRe. Readdress the cameras or move the coaxial connections up one input on the DVMRe. See *Appendix A. Zone Receiver Site Addressing*.
	DVMRe and/or keypad readiness	Cycle the power on the DVMRe and keypad.
Not connecting to DVMRe	Incorrect programming	If the DMVRe is a triplex, ensure that the hubs are set to triplex in the zone programming.
Loss of control between keypads	Keypad positioned incorrectly on the RS422 control line with a switcher and data merger	Refer to the keypad, switcher, and data merger installation instructions and correct wiring along RS422 control line. With the KTD-405 keypad, the units should be in line in the following order: keypad, data merger, and switcher.
Unclear audio on audio keypads	Incorrectly set jumpers or faulty KTD-336	Ensure that the attenuation jumpers are set according to section *5.3.2 Two-Way Audio*. If a KTD-336 is present, ensure that its relays are not clicking. If they are, contact Technical Support.

No or poor control of dome	Poor voltage or resistance on the data line	If the wiring, addressing, and termination of the camera and keypad are all correct: • Verify that the voltage along the RS422 data line reads approximately 1.5 VDC and that it drops when a command is sent. If it isn't, check the power line. • Verify that the resistance across the RS422 data line is between 95 and 125 ohms. If it isn't, contact GE Interlogix Technical Support.

APPENDIX A. ZONE RECEIVER SITE ADDRESSING

Each receiver has a DIP switch used to assign its site address. In zone operation, to determine the receiver site address, see Table A1, Table A2, and Figure A1 and perform the following:

1) Determine which position values must be added together to equal the site number.

2) Place the switches that correspond to those values in the ON position.

Table A1. Dip switch positions and equivalent values

DIP switch position number	1	2	3	4	5	6	7	8	9
Equivalent value	1	2	4	8	16	32	64	128	256

Table A2. Receiver site addressing values by zone

Camera Input	**Zone Number**															
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
1	0	32	64	96	128	160	192	224	256	288	320	352	384	416	448	480
2	1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481
3	2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482
4	3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483
5	4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484
6	5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485
7	6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486
8	7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487
9	8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488
10	9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489
11	10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490
12	11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491
13	12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492
14	13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493
15	14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494
16	15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495
17	16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496
18	17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497
19	18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498
20	19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499
21	20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500
22	21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501
23	22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502
24	23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503
25	24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504
26	25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505
27	26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506
28	27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507
29	28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508
30	29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509
31	30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510
32	31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511

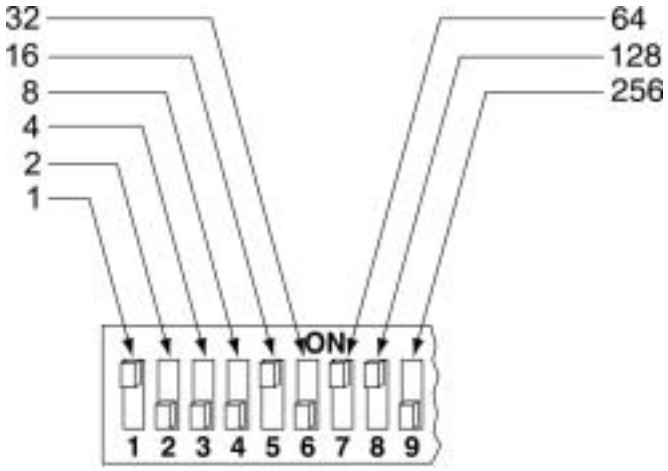


Figure A1. Zone address 209 (128 + 64 + 16 + 1)

One way to determine which switches to use is to subtract the highest possible switch value from the address you want, then subtract the highest possible switch value from that difference. Continue to subtract the highest possible switch value from the difference until you have zero. For example, if you want address 209:

		Switch value		**Difference**
209	–	128	=	81
81	–	64	=	17
17	–	16	=	1
1	–	1	=	0

Therefore, for address 209, you would use switches 8 (128), 7 (64), 5 (16), and 1 (1). See Figure A1.

APPENDIX B. REPROGRAMMABLE KEYS AND COMMANDS

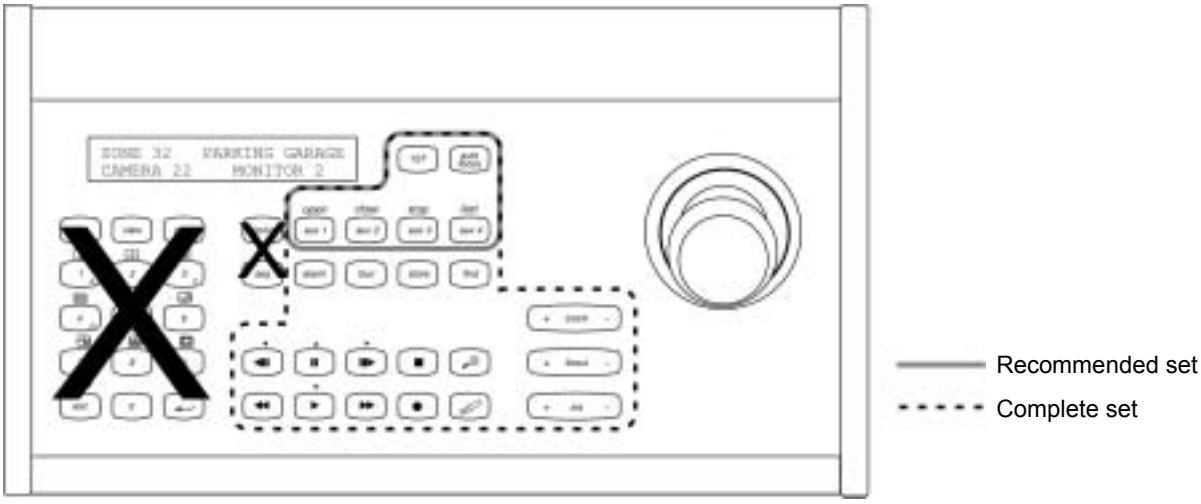


Figure B1. Keys that can be reprogrammed

Table B1. Commands that can be assigned to reprogrammed keys

Name	Name	Name
ALARM	JOY RGT	STABILIZ
ALT	JOY UP	STEP
AUTO PAN	JOY DOWN	STEP FWD
AUTO FCS	JOY CW	STEP REV
BADGE	JOY CCW	STOP RCD
BKLT BRT	LAST	STORE (For future use.)
BKLT DIM	LENS RST	TALK
BLNK/AUX	LIGHT	TOUR
CARD	LIVE	UNLOCK
CLOSE	LOCK	VIEW
DOOR 1	MACRO (For future use.)	VOL DOWN
DOOR 2	MAGNIFY	VOL UP
FACE	OPEN	ZONE
FAST/AUX	OPEN 1	ZOOM IN
FAST FWD	OPEN 2	ZOOM OUT
FIND	OVER	0 LUX
FIRST	PAUSE	NOTHING
FCS FAR	PLAY	
FCS NEAR	RECORD	
FLIP	REWIND	
GROUP	SEARCH	
HOME	SHADOW	
IRIS CLS	SITE DWN	
IRIS OPN	SITE UP	
JOY LEFT	SLOW/STOP	

APPENDIX C. SAMPLE SYSTEM CONFIGURATIONS

KTD-450 DIGIPLEX CONFIGURATION

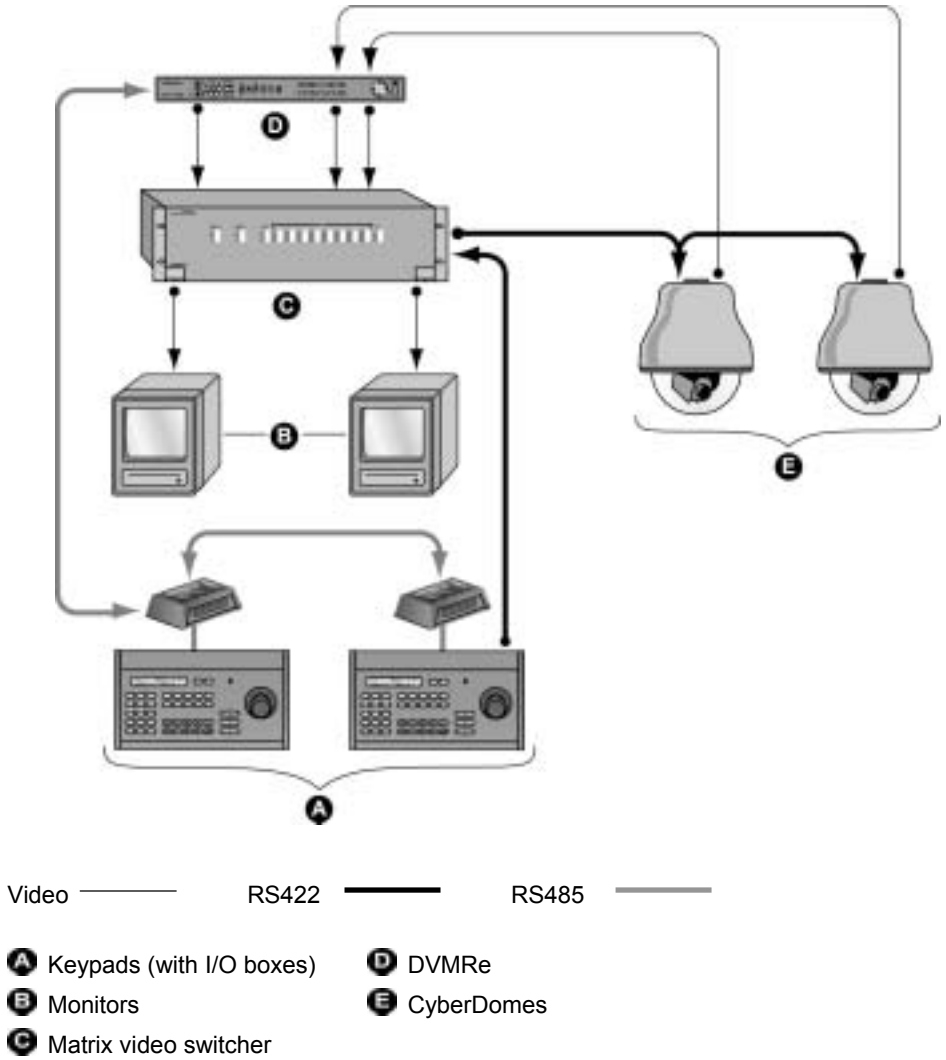


Figure C1. Sample KTD-405 Digiplex mode configuration

KTD-405A DIGIPLEX CONFIGURATION

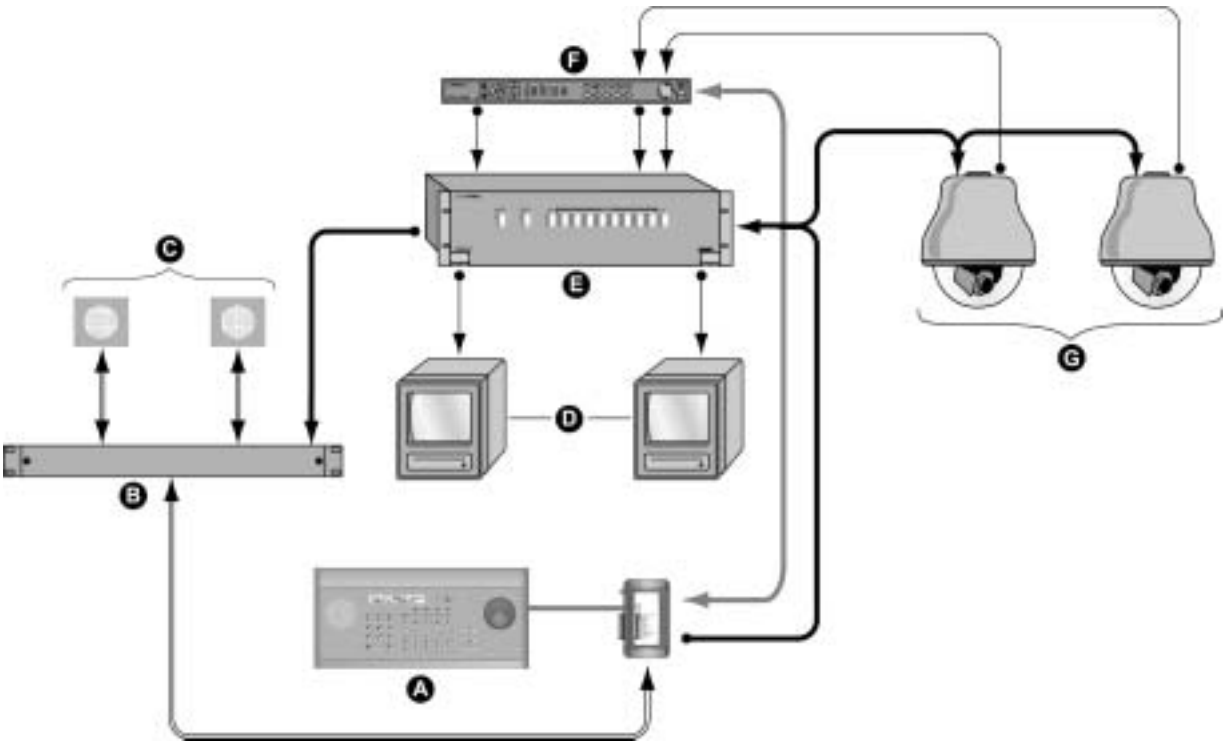


Figure C2. Sample KTD-405A Digiplex mode configuration

DIGIPLEX HYBRID CONFIGURATION

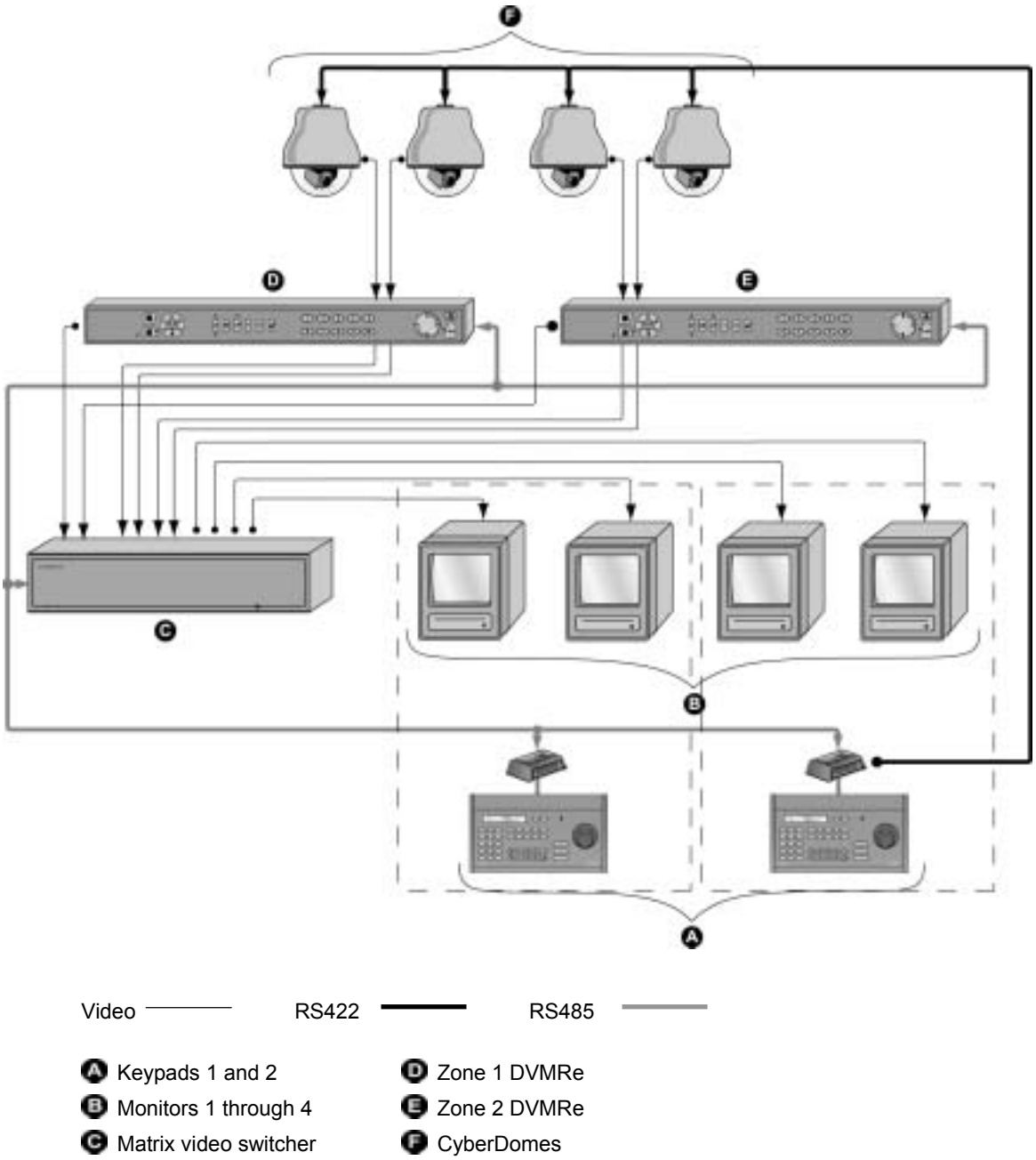


Figure C3. Sample Digiplex hybrid configuration

ZONE CONFIGURATION

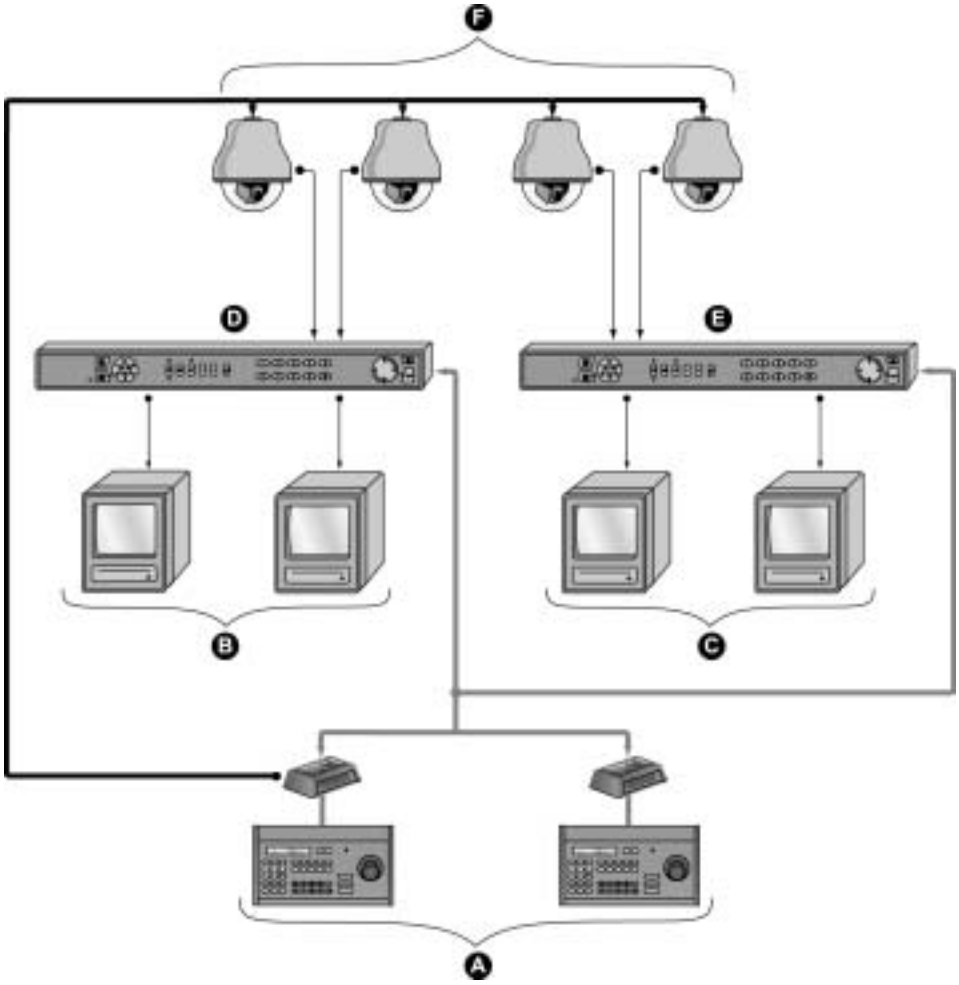
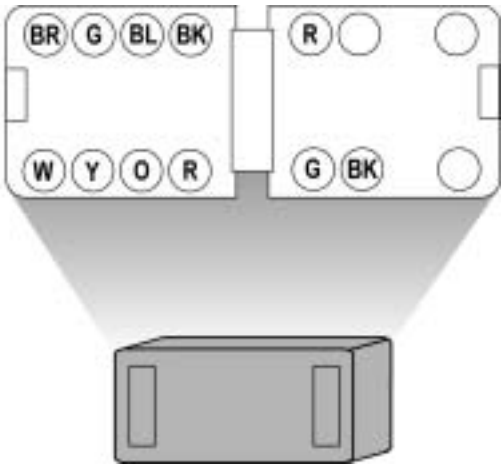


Figure C4. Zone with dedicated monitors

APPENDIX D. OLD I/O BOX CONNECTIONS

OLD I/O BOX CONNECTIONS FOR NONAUDIO- AND AUDIO-VERSION KEYPADS

Nonaudio-version I/O box



Audio-version I/O box

RD RS485 A

BK RS485 B

OR 12 VDC in (no polarity)

BL 12 VDC in (no polarity)

GN RS422 in B

YL RS422 in A

BR RS422 out B

WH RS422 out A

Data Connections

BR RS422 out B

W RS422 out A

G RS422 in B

Y RS422 in A

BL 12 VDC in (no polarity)

O 12 VDC in (no polarity)

BK RS485 B

R RS485 A

Audio Connections

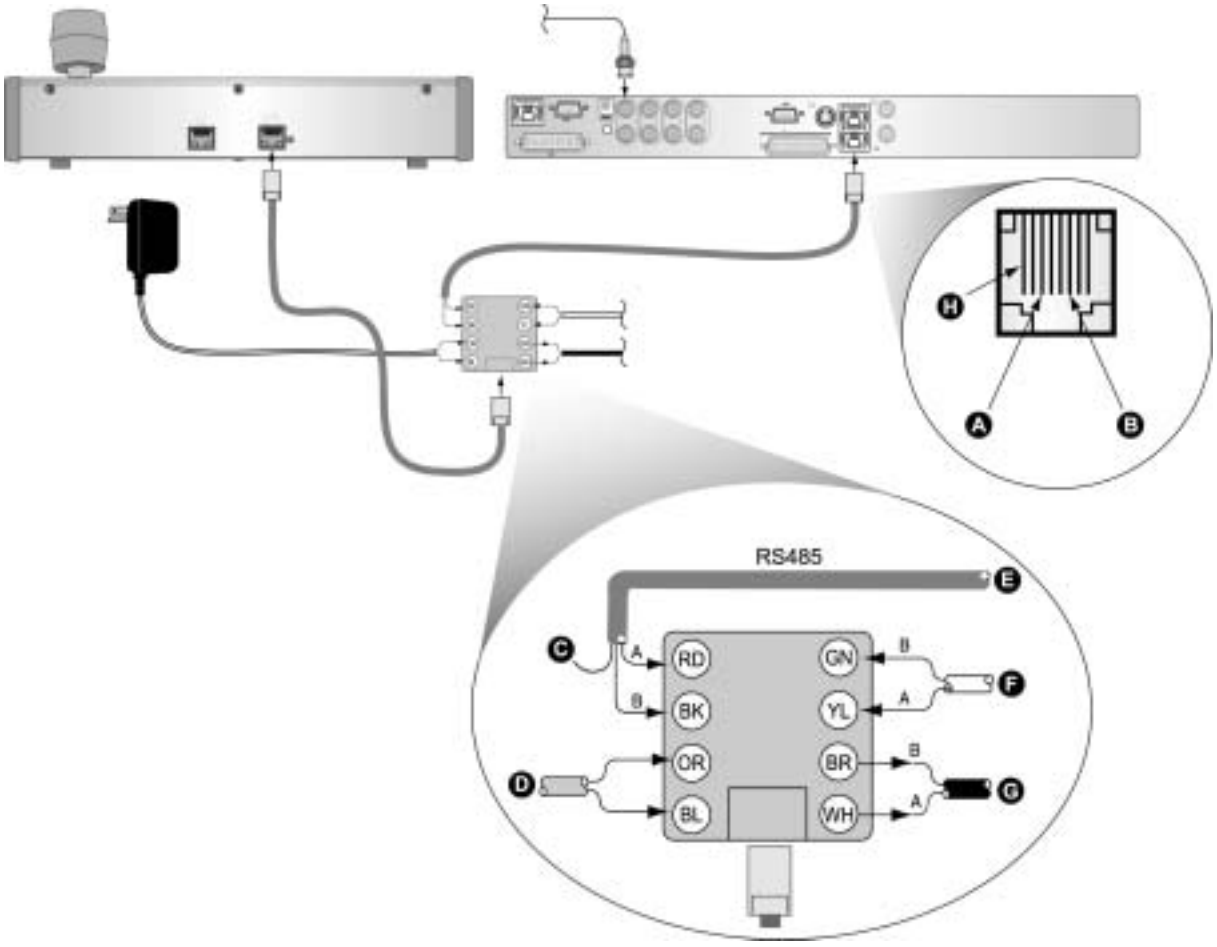
R Audio A

G Shield (float in field)

BK Audio B

Figure D1. Old nonaudio-version and audio-version I/O box connections

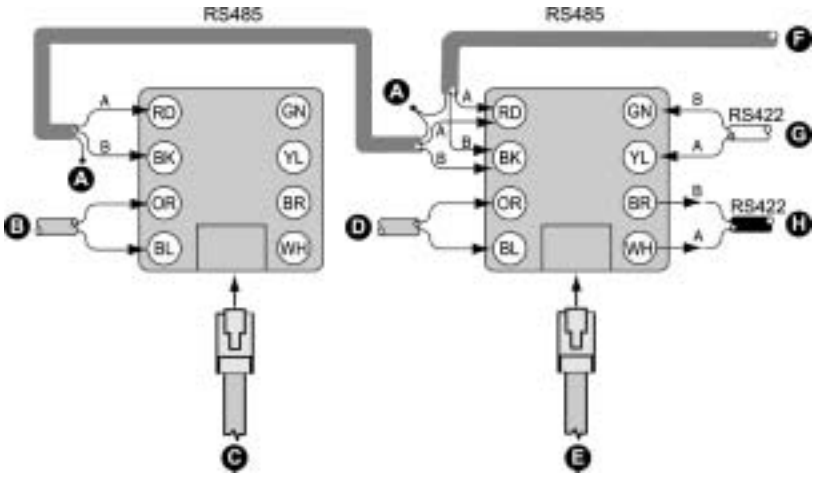
CONNECTING A MULTIPLEXER OR DVMRE TO THE OLD I/O BOX



- **A** Connect PIN 3 to RS485 A (RD)
- **B** Connect PIN 6 to RS485 B (BK)
- **C** Floating shield
- **D** 12 VDC in (no polarity)
- **E** To Multiplexer or DVMRe (ground at mux/DVMRe)
- **F** RS422 input (if used)
- **G** RS422 output (to CyberDomes/PTZ receivers
- **H** Connect PIN 1 to RS485 shield

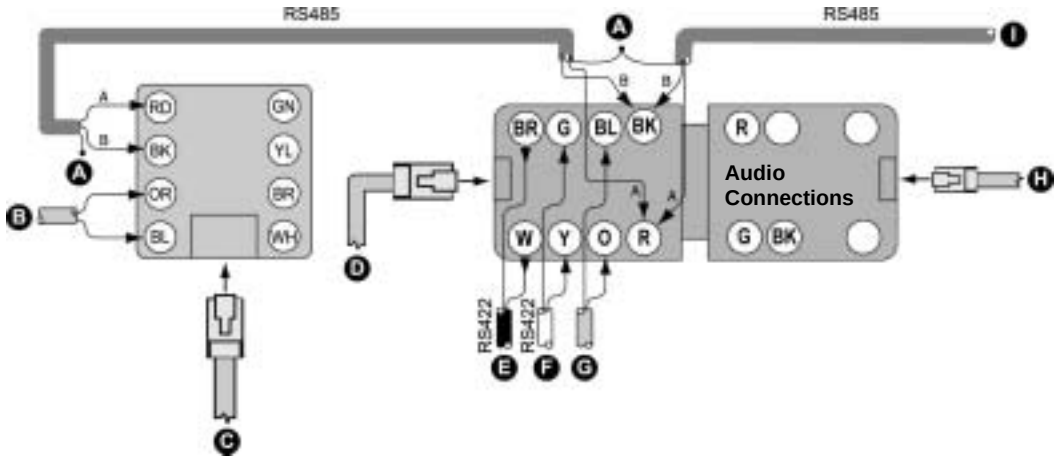
Figure D2. Connecting a keypad (KTD-405 shown) to a multiplexer or DVMRe (shown) and domes

CONNECTING MULTIPLE KEYPADS TO THE OLD I/O BOX



- A Shield (float)
- B 12 VDC in (no polarity)
- C To/from KTD-405
- D 12 VDC in (no polarity)
- E To/from KTD-405
- F To additional keypads or multiplexer/DVMRe (ground at mux/DVMRe)
- G RS422 input (if used)
- H RS422 output (to CyberDomes)

Figure D3. Multiple KTD-405 connections



- A Shield (float)
- B 12 VDC in (no polarity)
- C RJ45 to/from KTD-405
- D RJ45 to/from KTD-405A
- E RS422 output (to CyberDomes)
- F RS422 input (from alarm chassis)
- G 12 VDC in (no polarity)
- H RJ11 to/from KTD-405A
- I To additional keypads or multiplexer/DVMRe (ground at mux/DVMRe)

Audio Connections: (R) Audio A (G) Float shield in field (BK) Audio B

Figure D4. KTD-405 to KTD-405A connections

APPENDIX E. SYSTEM PLANNING GUIDE

Device Details

Switcher Input	Type	Title	Description	IP Address (if applicable)

Device Details (continued)

Switcher Input	Type	Title	Description	IP Address (if applicable)

Device Details (continued)

Switcher Input	Type	Title	Description	IP Address (if applicable)

Device Details (continued)

Switcher Input	Type	Title	Description	IP Address (if applicable)

Device Details (continued)

Switcher Input	Type	Title	Description	IP Address (if applicable)

Device Details (continued)

Switcher Input	Type	Title	Description	IP Address (if applicable)