RTI

KX7
In-Wall Controller
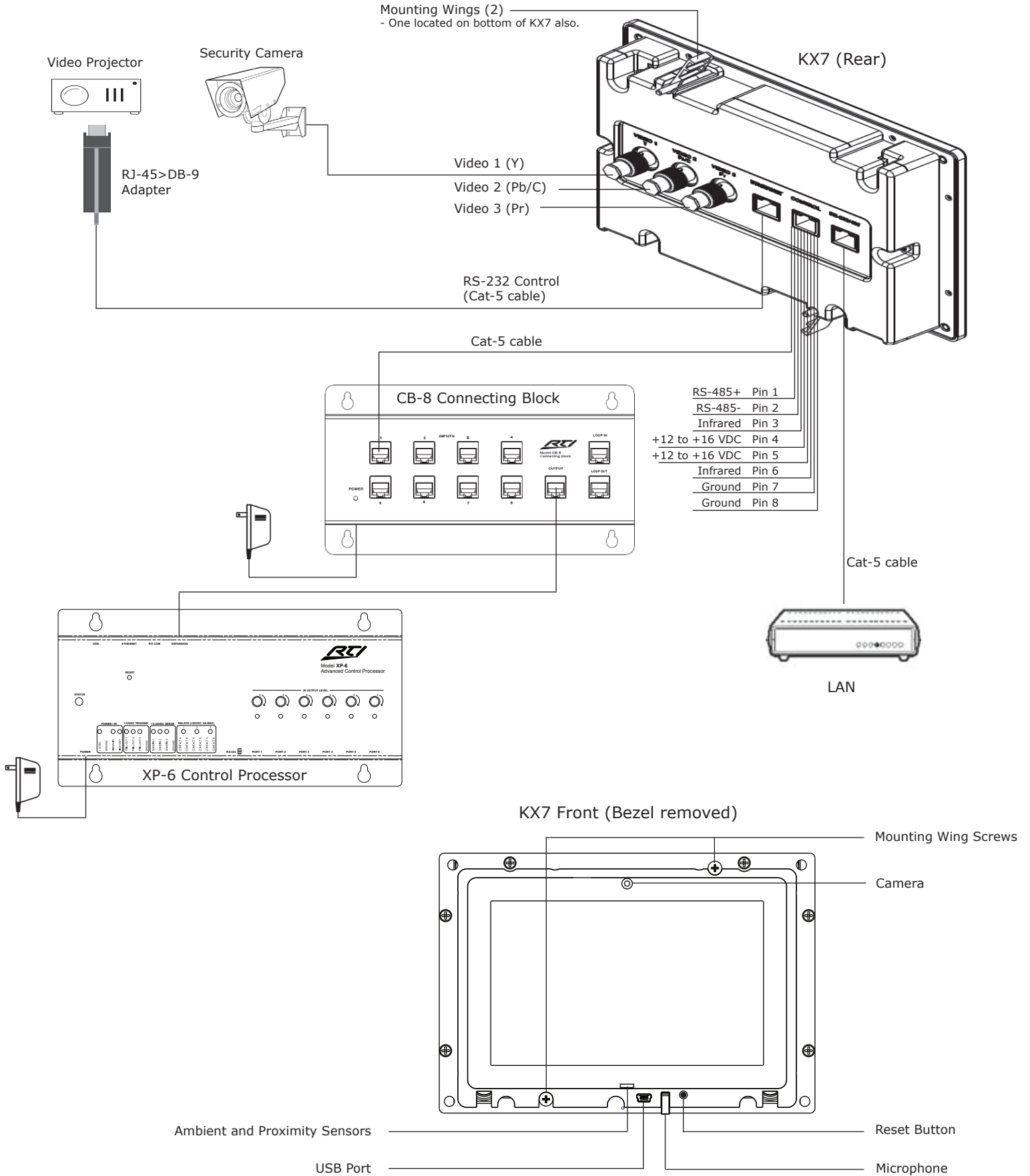### Quick Reference Guide

The KX7 is designed for sophisticated installations that require a touchpanel with the size and power to take command of a room's environmental and media technology. With advanced features like a multi-touch capacitive touchscreen, direct IR/RS-232 control and analog video inputs, the KX7 possesses the style and user-friendliness required to fit any type of setting.

The KX7 provides superior quality and reliability as well as these features:

- Stylish low-profile faceplate with a gloss finish (standard is white, however other faceplate options are available).
- 800x480 WVGA LCD with integrated multi-touch capacitive touch screen.
- Composite, S-Video or component video inputs allow viewing at 480i, 576i, 480p, or 576p.
- RS-232 port for direct control of devices via RS-232 communication.
- High output IR port for direct control.
- Network connectivity via an integrated 10/100 Base-T Ethernet port and 802.11b/g wireless LAN module.
- Completely customizable and programmable.
- Powered using RTI Control Port or PoE (Power over Ethernet).
- Integrated microphone and camera.
- Built-in ambient light and proximity sensors.
- Field upgradable firmware.
- USB and Ethernet programming.

Connection Options

The following diagram shows a "control system operation" of the KX7, which utilizes an RTI control processor (RTI XP-6 shown) and an RTI connecting block (RTI CB-8 shown).

Mounting Wings (2)
- One located on bottom of KX7 also.

KX7 (Rear)

Video Projector

Security Camera

RJ-45>DB-9 Adapter

Video 1 (Y)
Video 2 (Pb/C)
Video 3 (Pr)

RS-232 Control
(Cat-5 cable)

Cat-5 cable

CB-8 Connecting Block

INPUTS

LOOP IN

Model CB-8
Connecting Block

POWER

OUTPUT

LOOP OUT

RS-485+   Pin 1
RS-485-   Pin 2
Infrared   Pin 3
+12 to +16 VDC   Pin 4
+12 to +16 VDC   Pin 5
Infrared   Pin 6
Ground   Pin 7
Ground   Pin 8

Cat-5 cable

LAN

USB   ETHERNET   RTI COM   EXPANSION

RESET

STATUS

Model XP-6
Advanced Control Processor

POWER IN   +12VDC TRIGGER   +12VDC SENSOR   RELAY (+30VDC, 5A MAX)

IR OUTPUT LEVEL

POWER   RS-232   PORT 1   PORT 2   PORT 3   PORT 4   PORT 5   PORT 6

XP-6 Control Processor

KX7 Front (Bezel removed)

Mounting Wing Screws

Camera

Ambient and Proximity Sensors

USB Port

Reset Button

Microphone

Installation & Operation

MOUNTING

The KX7 is designed for flush-mount, in-wall installations. It requires an available mounting depth of 2 inches (52.5mm) from the surface of the wall.

IMPORTANT NOTE: There is little margin for error when fitting the KX7 into the wall opening.

Make sure to use the included cardboard cut-out template to create the correct size opening in the wall. Additionally, carefully double-check that all measurements taken using the cardboard cut-out template are accurate.

MOUNTING HEIGHT

The recommended mounting height for the KX7 is between 54 inches (1.37m) and 60 inches (1.52m) from the bottom of the faceplate.

MOUNTING WINGS

Two mounting wings are located on the top and bottom of the KX7, which can be used to secure the KX7 to drywall in retrofit installations. Place KX7 in the opening in the wall and tighten the mounting wing screws located on the front of the KX7 (bezel removed).

CONDUIT BOX

For new construction installations a conduit box may be purchased separately from an RTI distributor. For mounting instructions, refer to the conduit box installation guide

CONNECTIONS

VIDEO INPUTS

The KX7 supports 1 Component video source, up to 2 S-Video sources, or up to 3 Composite video sources.

- **VIDEO 1**

  This BNC jack functions as an S-Video (Y), Component (Y), or Composite video input.

- **VIDEO 2**

  This BNC jack functions as an S-Video (C), Component, or Composite video input.

- **VIDEO 3**

  This BNC jack functions as a Component (PR) or Composite input video input.

CONTROL PORT

The Control Port on the KX7 uses a Cat-5 cable with RJ-45 termination. When used in conjunction with an RTI control processor (e.g. RTI XP-6) and an RTI connecting block (e.g. RTI CB-8), this port serves as the power source for the KX7 in addition to infrared and RS-485 communication.

ETHERNET PORT

The KX7 is designed for connection to a LAN via Cat-5 cabling with RJ-45 termination. Additionally, the KX7 can be optionally powered using Power-Over-Ethernet, allowing the power to be extended to the KX7 over the same Cat-5 cable that carries Ethernet communication. When powering the KX7 using PoE, a class 3 PoE router or PoE injector must be used.
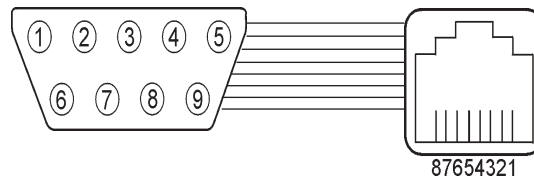
RS-232

The KX7 is capable of direct RS-232 communication using a Cat-5 cable with RJ-45 termination. A DB9 - RJ45 adaptor is included with the KX7.

NOTE: RS-232 communication should be limited to 50 feet (16m) depending on baud rate.

DB9 - RJ45 ADAPTOR PINOUT

DB-9

Pin	Signal Name	Signal Description
1	DCD	Carrier Detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground/Common
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	NC	Not Connected

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RJ-45 (KX7 RS-232 Output)

Pin	Signal Name	Signal Description
1	DSR	Data Set Ready
2	DCD	Carrier Detect
3	DTR	Data Terminal Ready
4	GND	Signal Ground/Common
5	RXD	Receive Data
6	TXD	Transmit Data
7	CTS	Clear To Send
8	RTS	Request To Send

FERRITE RING INSTALLATION

In order to comply with regulatory agency standards for EMI emissions, the included ferrite ring must be installed on any cable attached to the KX7 Ethernet Port, Control Port, RS232 Port or Video Input.

- To open the ferrite ring enclosure pry open the plastic latch.
- Insert cables into the ferrite ring at the end of the cables as close to the KX7 enclosure as possible.
- Close ferrite ring enclosure until the latch snaps in place.

Ferrite ring open

Ferrite ring closed - with cables
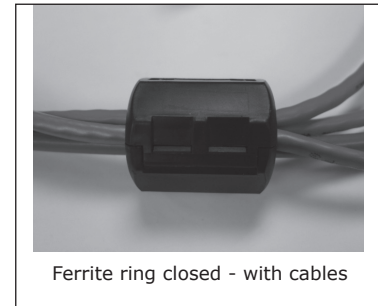
PROGRAMMING

THE TOUCHSCREEN DISPLAY

The KX7 touchscreen display is programmed using the RTI Integration Designer Programming Software. Normally it is organized into a series of pages containing objects (buttons, text, graphics, etc.) that are related to each other. For example, they may all display information necessary for controlling a particular music server.

UPDATING FIRMWARE

It is highly recommended that this and all RTI products have the latest firmware installed. The firmware can be found in the Dealer section of the RTI website (www.rticorp.com). Install the firmware using a USB cable (USB A to Mini B).

UPDATING SOFTWARE

RTI's Integration Designer data files can be downloaded to the KX7 using a USB cable (USB A to Mini B), or via hard-wired or wireless Ethernet. If the KX7 is hard-wired to a LAN and the router has DHCP enabled, the initial data file can be made over Ethernet.

Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

■ Reorient or relocate the receiving antenna.

■ Increase the separation between the equipment and the receiver.

■ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

■ Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received including interference that may cause undesired operation.

FC **Contains FCC ID: MMURTI1600**

Contains IC (Canada): 3166A-RTI1600

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DECLARATION OF CONFORMITY (DOC)
The Declaration of Conformity for this product can be found on the RTI website at: www.rticorp.com/declaration

Safety Suggestions

Read and Follow Instructions. Read all safety and operating instructions before operating the unit.

Retain Instructions. Keep the safety and operating instructions for future reference.

Heed Warnings. Adhere to all warnings on the unit and in the operating instructions.

Heat. Keep the unit away from heat sources such as radiators, heat registers, stoves, etc., including amplifiers that produce heat.

Power Sources. Connect the unit only to a power supply of the type described in the operating instructions, or as marked on the unit.

Power Cord Protection. Route power supply cords so that they are not likely to be walked on or pinched by items placed on or against them, paying particular attention to the cord plugs at power receptacles and at the point at which they exit from the unit.

Water and Moisture. Do not use the unit near water—for example, near a sink, in a wet basement, near a swimming pool, near an open window, etc.

Object and Liquid Entry. Do not allow objects to fall or liquids to be spilled into the enclosure through openings.

Servicing. Do not attempt any service beyond that described in the operating instructions. Refer all other service needs to qualified service personnel.

Damage Requiring Service. The unit should be serviced by qualified service personnel when:

■ The power supply cord or the plug has been damaged.

■ Objects have fallen or liquid has been spilled into the unit.

■ The unit has been exposed to rain.

■ The unit does not appear to operate normally or exhibits a marked change in performance.

■ The unit has been dropped or the enclosure has been damaged.

Limited Warranty

RTI warrants its products for a period of one (1) year (90 days only for included battery packs); or for a period of time compliant with local laws when applicable from the date of purchase from RTI or an authorized RTI distributor.

This warranty may be enforced by the original purchaser and subsequent owners during the warranty period, so long as the original dated sales receipt or other proof of warranty coverage is presented when warranty service is required.

Except as specified below, this warranty covers all defects in material and workmanship in this product. The following are not covered by the warranty:

Damage resulting from:

1. Accident, misuse, abuse, or neglect.
2. Failure to follow instructions contained in this Guide.
3. Repair or attempted repair by anyone other than Remote Technologies Incorporated.
4. Failure to perform recommended periodic maintenance.
5. Causes other than product defects, including lack of skill, competence or experience of user.
6. Shipment of this product (claims must be made to the carrier).
7. Being altered or which the serial number has been defaced, modified or removed.

Contacting RTI

For news about the latest updates, new product information, and new accessories, please visit our web site at:
www.rticorp.com

For general information, you can contact RTI at:
Remote Technologies Incorporated
5775 12th Ave. E Suite 180
Shakopee, MN 55379
Tel. (952) 253-3100
Fax (952) 253-3131
info@rticorp.com

Service & Support

If you are encountering any problems or have a question about your RTI product, please contact RTI Technical Support for assistance (see the Contacting RTI section of this guide for contact details). RTI provides technical support by telephone, fax or e-mail. For the highest quality service, please have the following information ready, or provide it in your fax or e-mail.

• Your Name
• Company Name
• Telephone Number
• E-mail Address
• Product model and serial number (if applicable)

If you are having a problem with hardware, please note the equipment in your system, a description of the problem, and any troubleshooting you have already tried.

Please do not return products to RTI without a return authorization.