



RP-6

Operation & Installation Guide

v1.0



RP-6

Remote Control Processor



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.

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 and (2) this device must accept any interference received, including interference that may cause undesired operation.

SAFETY SUGGESTIONS

Read 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.

Follow Instructions. Follow operating instructions and instructions for use.

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 cords at plugs, at convenient 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 damaged.

WARNING !

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE.

LIMITED WARRANTY AND DISCLAIMER

Remote Technologies Incorporated warrants its products for a period of one (1) year from the date of purchase from Remote Technologies Incorporated or an authorized Remote Technologies Incorporated 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.

Remote Technologies Incorporated is not liable for any damages caused by its products or for its failure of its products to perform, including any lost profits, lost savings, incidental damages, or consequential damages.

Remote Technologies Incorporated is not liable for damages based upon inconvenience, loss of use of the product, loss of time, interrupted operation, commercial loss, any claim made by a third party or made by you for a third party.

Remote Technologies Incorporated's liability for any defective product is limited to repair or replacement of the product, at our option.

If your *RP-6* Processor needs service, please contact Remote Technologies Incorporated by telephone, fax or E-mail for return information. ***Please do not return products to Remote Technologies Incorporated without return authorization.***

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Chapter 1. Welcome

Thank you for using the *RP-6* Remote Control Processor. The *RP-6* is an advanced programmable control system that is designed to automate the operation of audio and video systems such as home theaters. It interfaces with a system's A/V, lighting, and other equipment by using addressable IR and RS-232 output ports. In addition, the *RP-6* provides relay contact closures and power sensing capabilities. All of the system's control commands and sequences of commands (macros) are stored in non-volatile Flash memory within the *RP-6*. These commands are executed by IR or RF trigger codes using one of RTI's remote control interface products. It is also possible to trigger the stored commands by using third-party remote controls.

The *RP-6* is flexible enough to be the perfect control system in a small room with just a few connected devices, or in a much larger system with dozens of devices integrated into an affordable, easy to use system.

The *RP-6* requires the *TheaterTouch Designer™* programming software. This software is free and can be downloaded from the RTI website (www.rticorp.com).

Before using the *RP-6*, please read and follow all of the instructions in this guide.

IMPORTANT NOTES

Please read these important notes about the *RP-6*:

- The *RP-6* should be placed in an area where it is around normal room temperature (between 50°F to 90°F).
- Do not let the *RP-6* get wet. It should not be handled with wet hands or placed in an area where it could get wet.
- Do not subject the *RP-6* to smoke, dust, or vibrations.
- Use only the power supply that is provided with the *RP-6*. Using the wrong type of power supply may result in permanent damage.
- Do not disassemble the unit. Service and repair should be performed by an authorized technician only.

PRODUCT CONTENTS

Contents within the box include the following items:

- One (1) *RP-6* Remote Control Processor
- One (1) Installation Guide
- One (1) Universal Power Supply
- One (1) Pocket Screwdriver
- Six (6) IR Emitter Adapter Cables
- Four (4) Rubber feet

UNPACKING AND INSPECTION

After unpacking your new *RP-6* Remote Control Processor, save all of the packing materials in case you ever have to ship the unit.

Thoroughly inspect the *RP-6* and packing materials for signs of damage. Report any damage to the carrier immediately. Report any equipment malfunctions to RTI or an authorized RTI distributor.

Chapter 2. Introduction

FEATURES

The *RP-6* provides superior quality and reliability as well as these specific features:

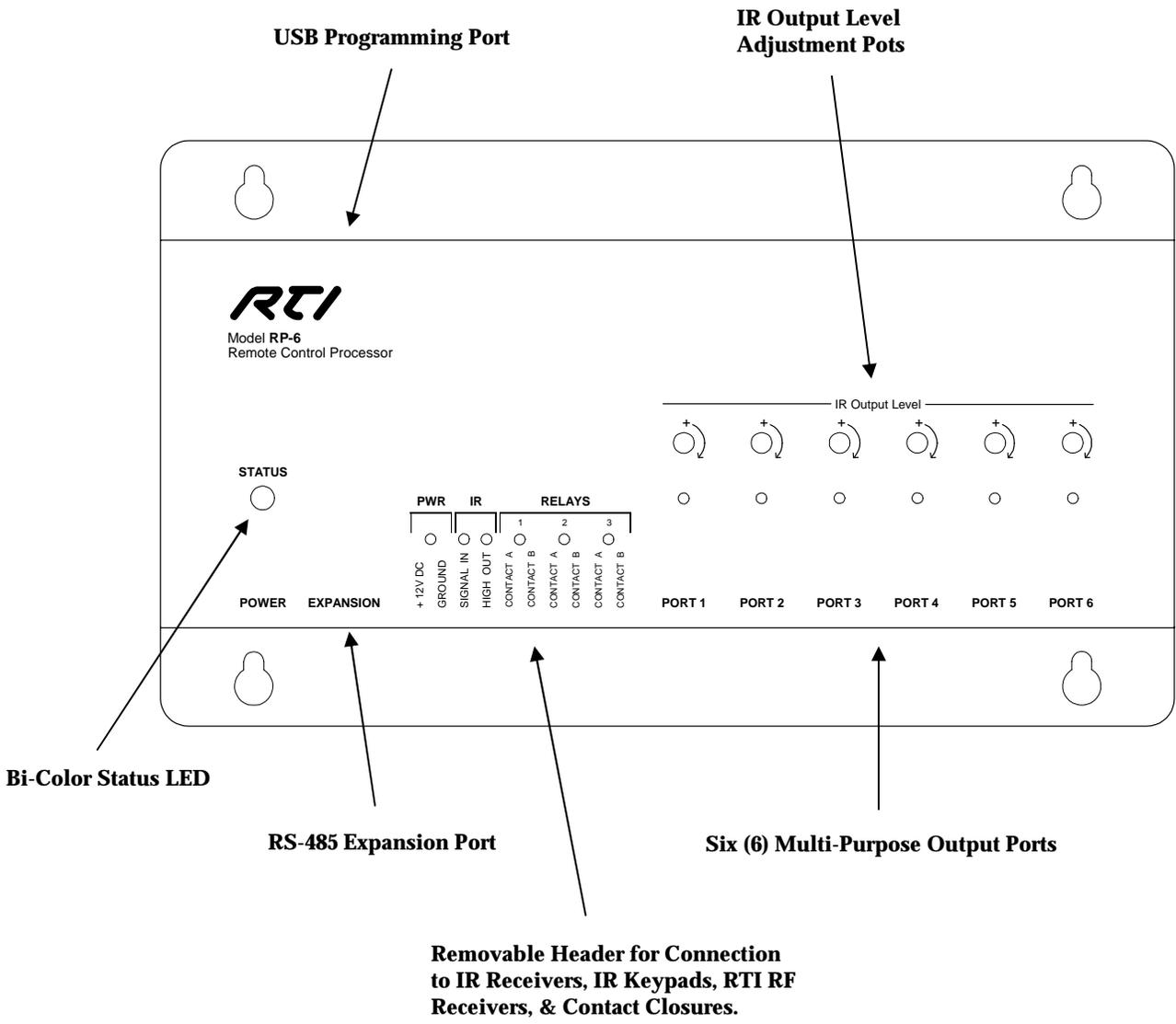
- Six multi-purpose output ports.
- Variable IR output power on all ports.
- Output ports support the optional RTI Modules (Power Sensing Modules, RS-232 Communication Modules, etc.). One Module can be plugged into each output port.
- Output ports are compatible with industry standard IR emitters and repeater systems. All output ports incorporate both short-circuit and overload protection.
- One high output IR port for control up to 1000 feet away.
- One IR input port for passing IR codes through the output ports. Additionally, the IR input can be used by RTI RF Receiver Modules and third-party universal remotes or keypads to trigger the commands and macros stored in the *RP-6*.
- Three relay outputs for contact closure or low-voltage switching applications.
- Non-volatile Flash memory for program storage.
- One USB programming port.
- One expansion port.

NOTE

The *RP-6* output ports are compatible with infrared (IR) commands that have carrier frequencies between 15kHz and 460kHz, as well as those commands that do not use a carrier. This covers virtually all of the remotes that exist to date.

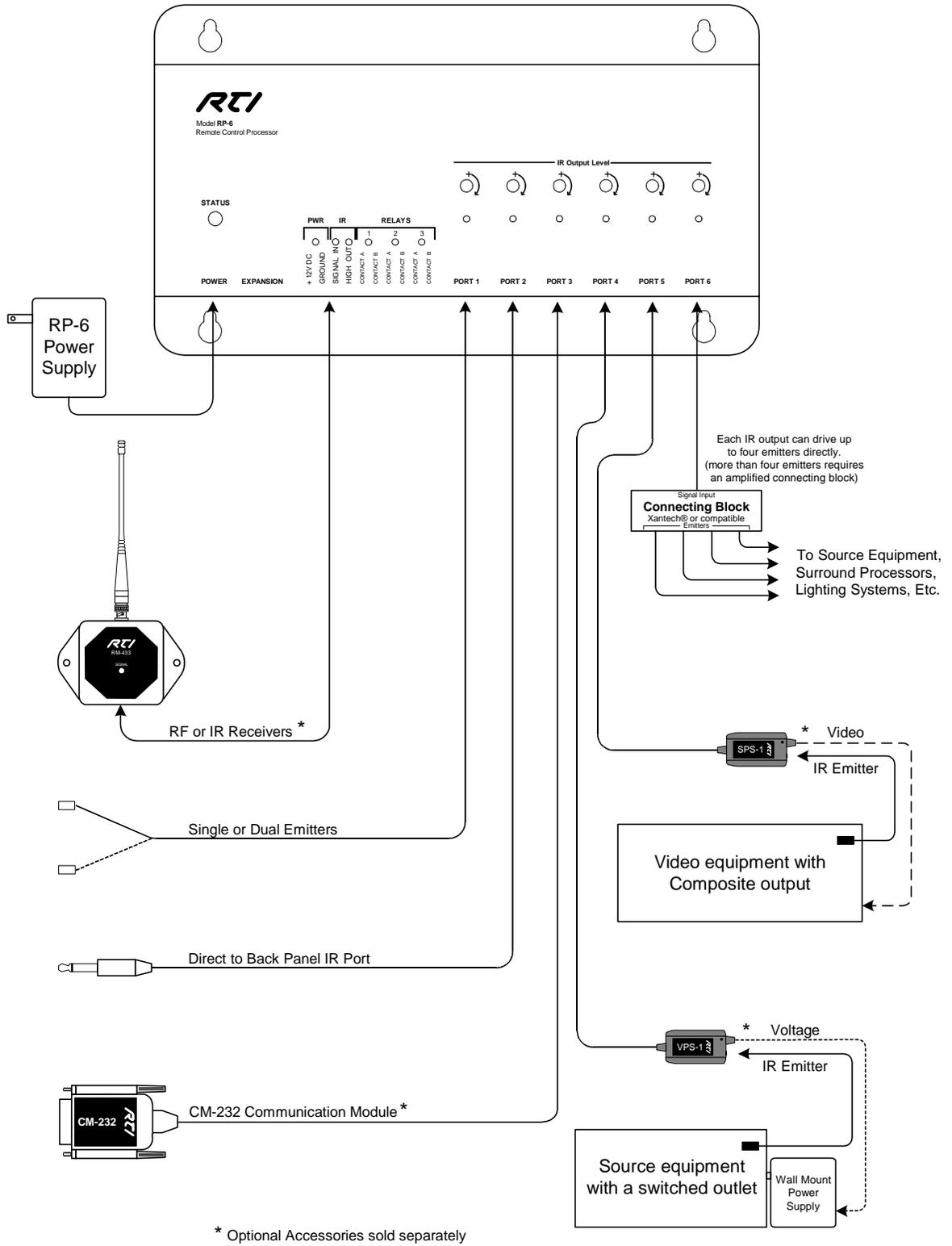
In addition, when combined with a CM-232 communication module, the *RP-6* output ports are compatible with RS-232 ports that operate at baud rates between 110 and 115.2K. This covers virtually all devices that exist to date.

RP-6 REFERENCE



RP-6 CONNECTION OPTIONS

The following diagram shows just some of the common connection scenarios. There is a virtually unlimited number of connection possibilities and devices that can be controlled.



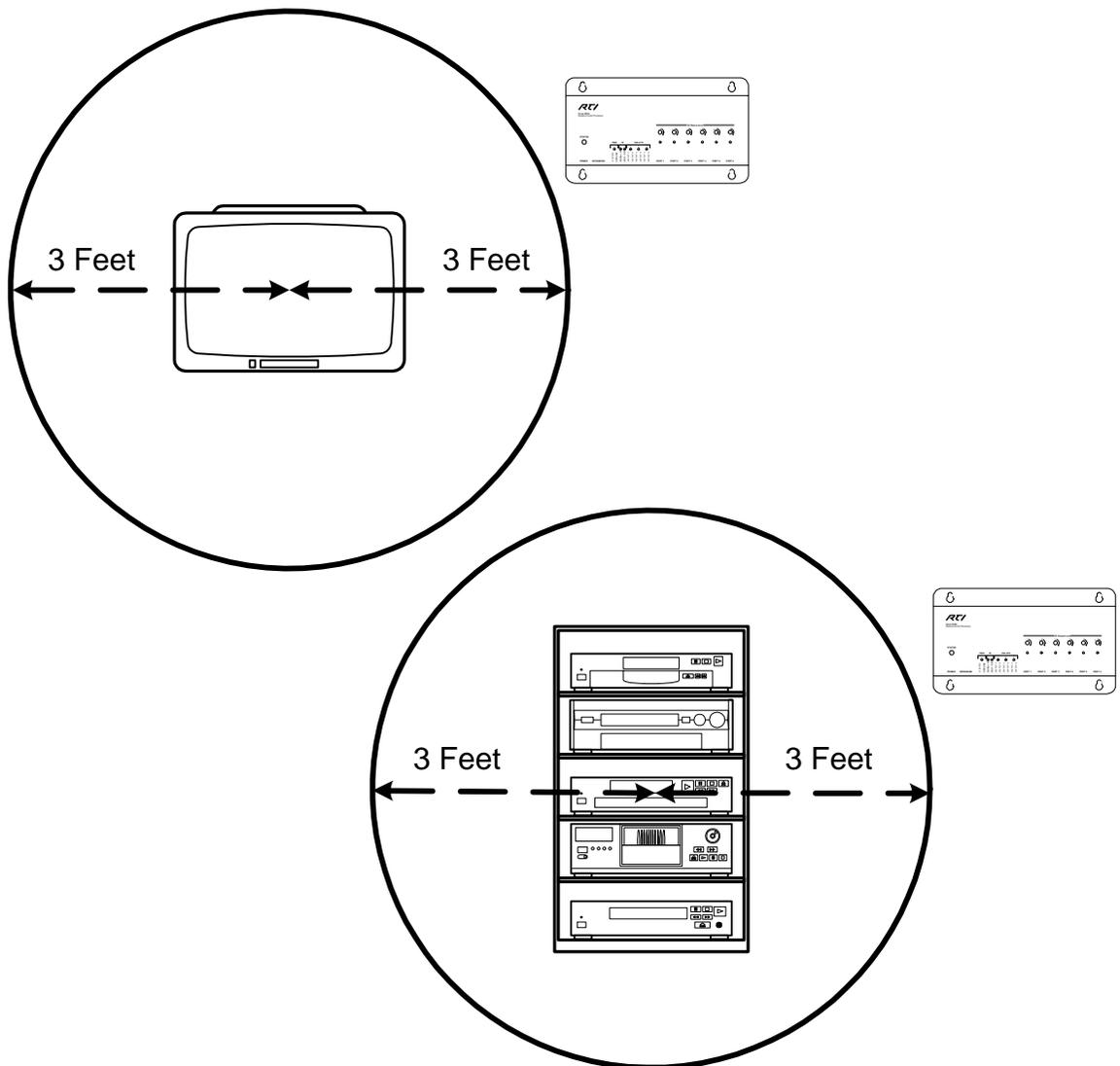
RP-6 REMOVABLE HEADER TERMINAL DESCRIPTION

TERMINAL NAME	DESCRIPTION
+12VDC	Positive power supply connection. It is internally tied to the Power jack. This can be used to power external IR or RF receivers, or fed into one side of a relay to create a trigger voltage output.
GROUND	Common ground connection. Use this ground reference for any device that is connected to the +12VDC, GROUND, SIGNAL IN, OR HIGH OUT terminals.
SIGNAL IN	Input connection for system trigger codes. This should be connected to a RTI RF receiver or industry standard IR repeater system. The signal voltage can be from 3VDC – 12VDC.
HIGH OUT	High current (200mA) IR output connection. This can be used to power up to 10 infrared mini-emitters, an IR blaster, or extending IR control over a long distance (1000 ft. max).
CONTACT A	Relay contact connection. Each of the three relays has two contact terminals (A & B). The relays can each switch loads up to 3A/30VDC and are software selectable to be either normally open or normally closed.
CONTACT B	Relay contact connection. Each of the three relays has two contact terminals (A & B). The relays can each switch loads up to 3A/30VDC and are software selectable to be either normally open or normally closed.

Chapter 3. Installation

INSTALLATION LOCATION

For best results install the *RP-6* at least three (3) feet away from video monitors and other sources of strong electro-magnetic energy.



MOUNTING

The *RP-6* can be mounted on either a shelf or a wall (see Appendix A for mounting hole details). Since the IR output ports can drive up to 1000 feet of wire, and the optional Power Sensor and Communication Modules can be extended, the *RP-6* does not need to be mounted near the equipment being controlled.

CONNECTING THE AC ADAPTER

The included AC adapter should be connected to the POWER jack on the *RP-6*. The power LED will turn-on and the output LEDs will toggle on and off in sequence to confirm that the unit is running properly.

Use only the supplied AC adapter to power the *RP-6*. Using a different power supply could result in damage to the *RP-6* or poor performance.

CONNECTING IR EMITTERS TO OUTPUT PORTS

The multi-purpose output ports on the *RP-6* are compatible with industry standard infrared emitters and infrared repeating systems. Each output port is capable of driving up to four infrared emitters directly. More than four infrared emitters requires an amplified connecting block. A connecting block can be wired up to 1000 feet away from the *RP-6* using #22 AWG (minimum) wire.

For the most reliable connection to the *RP-6* output ports, **make sure to use the included IR emitter adapter cables.**

CONNECTING POWER SENSOR MODULES

The multi-purpose output ports on the *RP-6* are compatible with RTI power sensing modules (e.g. VPS-1 and SPS-1). Follow the guide included with the modules for installation instructions, and follow the instructions in the *TheaterTouch Designer™* software guide for programming details.

CONNECTING COMMUNICATION MODULES

The multi-purpose output ports on the *RP-6* are compatible with RTI communication modules (e.g. CM-232). Follow the guide included with the modules for installation instructions, and follow the instructions in the *TheaterTouch Designer™* software guide for programming details.

CONNECTING INFRARED RECEIVERS

The *RP-6* is compatible with industry standard IR receivers, repeater systems, and keypads. Connect the SIGNAL IN, GROUND, and +12VDC (if power is needed) terminals to the signal out, ground, and power (if needed) terminals of the desired

device. The RP-6 provides a 1K ohm load between SIGNAL IN and GROUND. In some cases this load may need to be increased by attaching a smaller value resistor across the two terminals.

If the *RP-6* sees an incoming system trigger code with a matching zone ID, it will execute the command or macro associated with that code. The *RP-6* can be programmed to either block or pass miscellaneous IR data through it's output ports.

CONNECTING RF RECEIVERS

The *RP-6* is compatible with RTI RF receiver modules (e.g. RM-433). Follow the guide included with the modules for installation instructions.

CONNECTING THE INFRARED HIGH OUT

The *RP-6* is compatible with industry standard IR connecting blocks. Connect the HIGH OUT and GROUND terminals to the signal input and ground terminals on the connecting block. This is useful if you have many devices to control, or you want to extend control into other rooms.

This output has short circuit protection, but does not provide a series resistor for current limiting. **It should not be connected directly to IR emitters.**

CONNECTING THE RELAYS

The three relays in the *RP-6* can provide contact closure or switching control for loads up to 3A/30VDC each. All three relays are Normally Open when not energized, but they can be programmed to behave Normally Closed as long as power is applied to the *RP-6*.

For contact closure control, simply connect the A and B contact terminals of a relay to the desired device.

To use a relay as a voltage trigger, connect the positive side of a power supply to CONTACT A, and connect CONTACT B and the ground side of the power supply to the desired device. If the desired trigger voltage is +12VDC, it can be sourced directly from the *RP-6*.

Chapter 4. Operation

ADJUSTING IR OUTPUT GAIN

The IR output gain can be separately adjusted for each of the six output ports. The *RP-6* is shipped with the IR gain set to the optimum level for most equipment, and it should only need to be adjusted if the attached equipment is not responding reliably.

If adjustment is needed use the included screwdriver to rotate the IR output POT clockwise for higher output power, or counter-clockwise for lower output power.

STATUS LED

The status LED will illuminate Green if a valid system trigger code is detected. The LED will stay on while the *RP-6* is busy processing the action associated with the trigger code.

The status LED will flicker Green if an invalid system trigger code is detected. A trigger code is invalid if there is no action associated with it (i.e. the *RP-6* programming does not match the programming in the device that is transmitting the trigger code), or if the system zone code does not match.

The status LED will illuminate Red if the *RP-6* does not contain a valid program.

The status LED will also illuminate Green to indicate an active USB connection. A communication problem is indicated if the status LED is illuminated red while the USB cable is attached to a PC.

PROGRAMMING THE RP-6

The *RP-6* must be programmed to operate. All programming is done using RTI's *TheaterTouch Designer™* software and is downloaded using the USB port.

Important Note: The *RP-6* will not respond to trigger codes or execute commands while the USB cable is attached to a PC. You must detach the *RP-6* USB port from your PC for normal operation.

The software allows you to create actions (e.g. commands and macros) that are associated with button presses on one or more RTI remote controls. The software transparently creates all of the system trigger codes, and generates the correct download for every device in the system. Unless you implement some of the software's advanced features, programming a system that uses an *RP-6* is just as easy as programming one that doesn't.

SETTING THE ZONE CODE

If the *RP-6* is installed in close proximity to others, the system Zone Code can be changed in the *TheaterTouch*™ Designer software. This allows up to 256 separate control systems to operate in the same general area such as multi dwelling units or homes with more than one media system.

THE EXPANSION PORT

The expansion port provides two-way serial communication for use with a RF transceiver, Ethernet bridge, etc.

Chapter 5. Troubleshooting

If you are having problems with your *RP-6* Remote Control Processor, please read these troubleshooting tips and frequently asked questions before contacting technical support.

If you continue to have problems, see **Chapter 6** for more information on contacting RTI technical support.

RP-6 DOES NOT FUNCTION PROPERLY

- Verify that the USB cable is removed from either the *RP-6* or the PC. The *RP-6* will not function normally while there is an active USB connection with a PC.
- Verify the *RP-6* is receiving a signal from an attached IR or RF receiver. The Signal In LED should flash when a signal is present.
- Make sure the original factory power supply is plugged into a known good, non-switched outlet and the connector is seated properly on the *RP-6*. The Power LED should be turned on.
- Verify the button on the remote is programmed to output system trigger codes. Also verify that the programmed output method (IR or RF) matches the receiver being used.
- Try re-programming both the *RP-6* and the remote control to make sure the programming is up-to-date (i.e. “in sync”) in each of them.
- Make sure the IR or RF receiver wire is attached to the *RP-6* properly.
- Make sure the IR or RF receiver is mounted away from strong electro-magnetic energy sources.
- Make sure you are using known good IR emitters, and they are attached to the correct location on the device being controlled. Also verify that an IR emitter adapter cable is being used between the *RP-6* and the IR emitter plug.

POWER SENSOR MODULES ARE NOT FUNCTIONING

- Verify that the modules are programmed to use the correct output port and the proper conditional statement is used in the *TheaterTouch Designer™* software.
- Make sure you are using a known good IR emitter, and it is attached to the correct location on the device being controlled.

RP-6 USB PROGRAMMING PORT DOES NOT WORK

- Verify that your PC is using Windows 2000® or higher. The *TheaterTouch Designer™* software requires a USB device driver that may not be installed on earlier versions of Windows®.

Chapter 6. Service and Support

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

www.rticorp.com

CONTACTING RTI

For general info, you can contact RTI at:

Tel. (952) 253-3100

Fax (952) 253-3131

info@rticorp.com

RTI TECHNICAL SUPPORT

At RTI, customer service and satisfaction is an utmost priority. If you are encountering any problems or have a question about your RTI product, please contact RTI Technical Support for assistance.

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.

If you are having a problem with software, please note what version you have installed, the operating system on your PC, a description of the problem, and any troubleshooting you have already tried.

If you are calling about a software or programming question or problem, please be at your computer when you place your call. This will considerably speed up the troubleshooting process.

For technical support or assistance with your *RP-6*, software, or accessories, contact RTI at:

(952) 253-3137

support@rticorp.com

www.rticorp.com/support

For questions regarding service or repair of your *RP-6*, contact RTI at:

(952) 253-3136

service@rticorp.com

www.rticorp.com/service

Please do not return products to RTI without return authorization.

SHIPMENT OF RP-6 FOR SERVICE

RTI will pay all labor and material expenses for all repairs covered by this product's warranty. If necessary repairs are not covered by warranty, or if a unit is examined which is not in need of repair, you may be charged for the repairs or examination.

If it is necessary to ship the *RP-6* Remote Control Processor for service:

- ◆ Please pack it securely (we suggest that it be insured).
- ◆ Do not include accessories such as power cords or manuals unless instructed to do so.

You must pay any shipping charges incurred in getting your *RP-6* Remote Control Processor to RTI. RTI will pay reasonable return shipping charges via a carrier of our choice to any destination within the United States if the repairs are covered under warranty.

A copy of the original dated sales receipt must be provided whenever warranty service is required. You will need this receipt to establish the date of purchase.

Chapter 7. Specifications

Power Supply:	+12V DC , 1Amp
Number of Output Ports:	Six (6) Multi-Purpose ports One (1) High Power IR port
Multi-Purpose Output Ports:	Custom 3.5mm 4-conductor jacks are designed for RTI Modules as well as industry standard IR emitters.
IR Output Drive:	100mA maximum (per port, adjustable) 200mA maximum (high IR output port)
Infrared Transmission Bandwidth:	15kHz - 460kHz
Infrared Input:	Compatible with industry-standard repeaters and receiving systems.
Relays:	Three (3) Relays – 3 Amps @ 30 VDC each
Mounting:	Wall-Mount or Free Standing
Dimensions:	9.3" (236mm) x 5.3" (135mm) x 1.5" (38mm)
Weight:	1 lb. 3 oz. (543g)

All specifications are subject to change without notice.

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It's Under Control®



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