

Installation and Operation Guide

It's Under Control®

PCM-8

Port Control Module



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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.
2. This device must accept any interference received including interference that may cause undesired operation.



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 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 has been 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 PCM-8 Port Control Module 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.**

DISCLAIMER

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CHAPTER 1 | WELCOME

Thank you for using the PCM-8 Port Control Module.

With eight multi-purpose I/O ports and an adjustable device ID, the PCM-8 provides the flexibility and expand ability to increase the I/O capabilities of the RTI XP-8 Control Processor to accommodate larger projects. Each port provides IR output and routing capabilities, one-way RS-232 communication and power sensing (with RTI accessory devices). Control from the XP-8 processor is communicated using the expansion RS-485 port which allows the MPIO ports of the PCM-8 to become a seamless extension of the processors existing ports.

Before using the PCM-8, please read and follow all of the instructions in this guide.

IMPORTANT NOTES

Please read these important notes about the PCM-8:

- The PCM-8 should be placed in an area where it is around normal room temperature (between 50° F to 90° F).
- Do not let the PCM-8 get wet. It should not be handled with wet hands or placed in an area where it could get wet.
- Do not subject the PCM-8 to smoke, dust, or vibrations.
- Use only the power supply that is provided with the PCM-8. 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.

CHAPTER 1 | PRODUCT CONTENTS

Contents within the box include the following items:

- One (1) PCM-8 Port Control Module
- Eight (8) Infrared Emitter Adapter Cables
- One (1) Operation Guide
- One (1) 12VDC 1A Power supply

UNPACKING AND INSPECTION

After unpacking your new PCM-8 Port Control Module, save all of the packing materials in case you ever have to ship the unit.

Thoroughly inspect the PCM-8 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 | FEATURES

The PCM-8 provides superior quality and reliability as well as these specific features:

- Expands output port capabilities of the RTI XP-8 Control Processor.
- I/O ports are compatible with industry standard IR emitters, blasters, and repeater systems.
- All output ports incorporate both short-circuit and overload protection.
- Control port for connection to RS-485 enabled XP-8 Control Processor or a touchpanel connecting block.
- Variable IR output on all ports.
- LED illuminates when ports are active.
- I/O ports support all optional RTI power sensing and communications modules.
- Adjustable device ID allows up to ten PCM-8 units in one system.
- Sturdy steel construction.
- 12VDC power supply included.

CHAPTER 2 | FEATURES

PCM-8 REFERENCE

Status LED

Control Port

Device ID Control

IR Output Level Adjustment



Power Jack

Multi-Purpose Input/Output Ports (MPIO)

CHAPTER 3 | INSTALLATION

MOUNTING

The PCM-8 can be located on a secure, flat surface or mounted horizontally or vertically using the four mounting holes at the corners of the enclosure.

POWERING THE PCM-8

- AC Adapter (recommended method): Connect the included AC adapter to the power jack on the PCM-8.
- Control Port (alternate method): Connect a Cat-5 cable to the PCM-8 Control Port and to the expansion port of an XP-8 Control Processor or an input port on a touchpanel connecting block (ex. CB4/CB8).

(IMPORTANT NOTE: Depending on the number of devices plugged into the XP-8 Control Processor, the alternate powering method may not provide enough power and the use of the PCM-8 AC Adapter will be necessary.)

CONNECTING IR EMITTERS TO OUTPUT PORTS

The multi-purpose I/O ports on the PCM-8 are compatible with industry standard infrared emitters. Each output port is capable of driving up to four infrared emitters directly. The use of more than four infrared emitters requires the addition of an amplified connecting block. A connecting block can be wired up to 1000 feet away from the PCM-8 using #22 AWG (minimum) wire.

NOTE: For the most reliable connection to the PCM-8 MPIO ports, make sure to use the included IR emitter adapter cables.

(See chapter 4 - Operation for adjusting emitter output strength)

CONNECTING POWER SENSOR MODULES (VPS-1 / SPS-1)

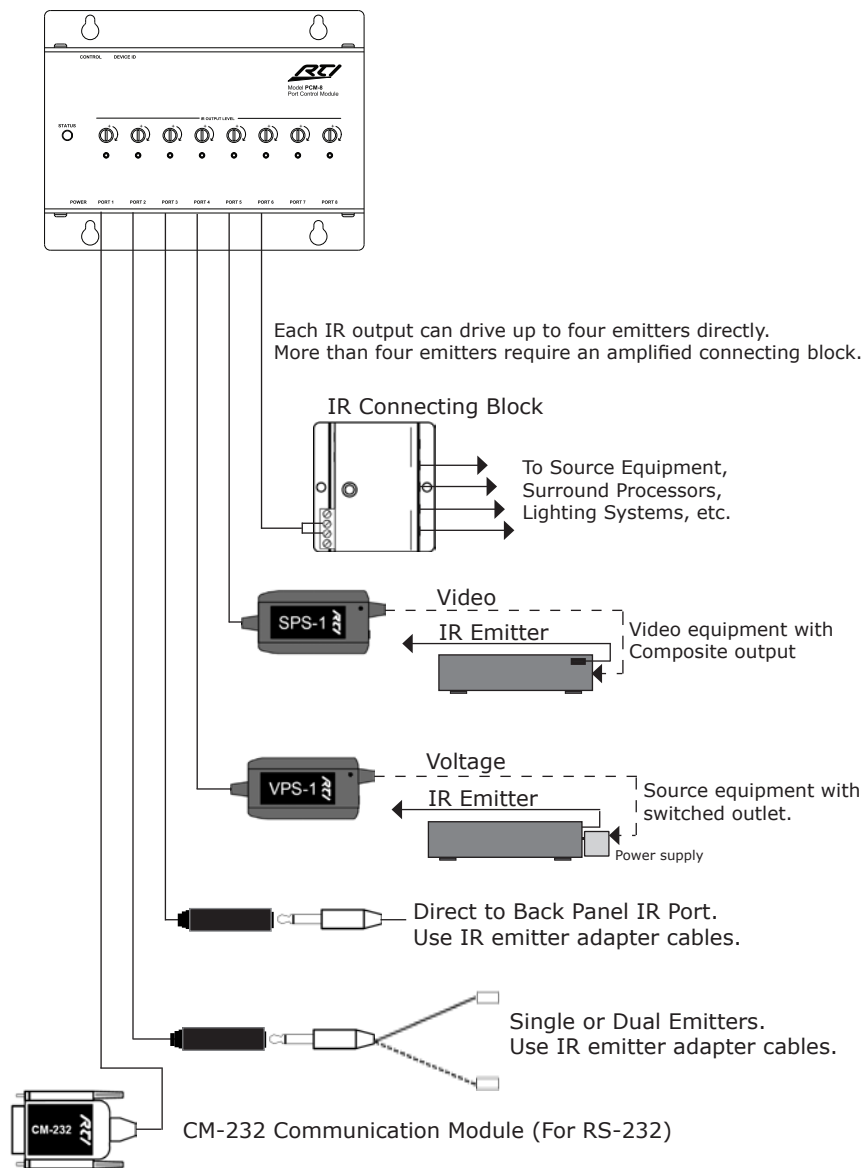
The multi-purpose I/O ports on the PCM-8 are compatible with RTI power sensing modules (e.g. VPS-1 / SPS-1). Follow the guide included with the modules for installation instructions, and follow the instructions in the *Integration Designer*® software guide for programming details. Do not use IR emitter adapter cables with power sensor modules.

CONNECTING RS-232 COMMUNICATION MODULES (CM-232)

The multi-purpose I/O ports on the PCM-8 are compatible with RTI communication modules (e.g. CM-232) for one-way RS-232 communication. Follow the guide included with the module for installation instructions, and follow the instructions in the *Integration Designer*® software guide for programming details. Do not use IR emitter adapter cables with RS-232 communication modules.

CHAPTER 3 | INSTALLATION

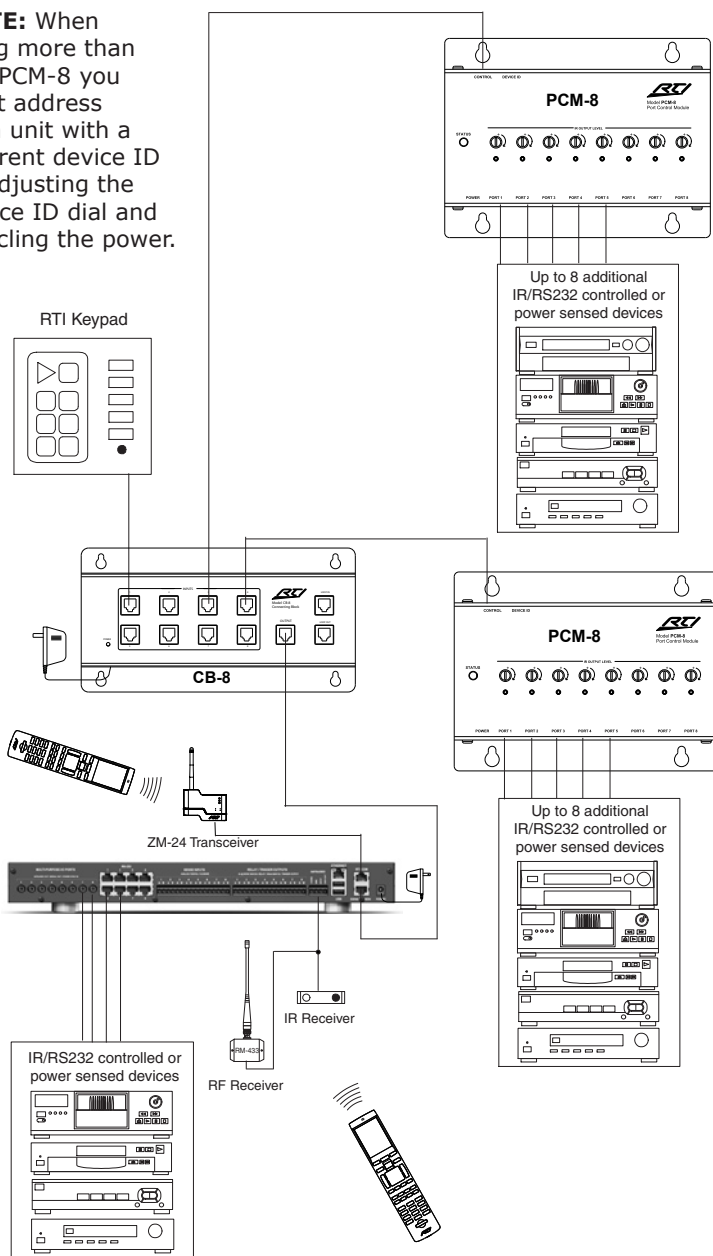
MULTI-PURPOSE INPUT/OUTPUT PORT CONNECTIONS (MPIO)



CHAPTER 3 | INSTALLATION

CONNECTION EXAMPLE 2

NOTE: When using more than one PCM-8 you must address each unit with a different device ID by adjusting the Device ID dial and recycling the power.



CHAPTER 4 | OPERATION

DEVICE ID

The PCM-8 Device ID dial adjusts to allow up to 10 PCM-8 modules to be used in the same system. Use a small flat blade screwdriver to adjust.

IMPORTANT NOTE: The PCM-8 must have the power recycled for device ID changes to take affect. Unplug the Cat5 cable from the Control Port and the power supply also if it is being used, then plug them back in.

ADJUSTING IR OUTPUT GAIN

The IR output gain can be separately adjusted for each of the eight output ports. The PCM-8 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, rotate the IR output controls on the front of the PCM-8 clockwise for higher output power, or counter-clockwise for lower output power.

OUTPUT PORT FEEDBACK LEDs

The Output Port Feedback LEDs will illuminate when an IR or RS-232 command is transmitted out each port.

STATUS LED

The PCM-8 Status LED:

- Will illuminate green if the PCM-8 receives a valid PCM-8 RS-485 command that has the correct device ID. The Status LED will stay green for the duration of the command or macro that is initiated.
- Will illuminate red if the PCM-8 receives a valid PCM-8 RS-485 command that does not have the correct device ID.

UPDATING FIRMWARE

Check the RTI website for the latest firmware for the PCM-8 at www.rticorp.com/dealers. The PCM-8 firmware is updated via the integrated USB port located under the cover.

- Unplug the power to the PCM-8.
- Remove the cover screws (4) located on the sides of the PCM-8 and lift cover off. **IMPORTANT:** Removing the cover will expose electronic circuitry. Follow standard ESD procedures to prevent electro-static discharge damage to the electronics components.
- Plug in power cable into PCM-8.
- Plug in USB cable to USB port of PCM-8.
- Follow the instructions for updating firmware found in the Integration Designer® programming software communications menu.

CHAPTER 5 | SPECIFICATIONS

Power Supply	+12VDC, 1A
Multi-Purpose Output Ports	Eight custom 3.5mm 4-conductor jacks, designed for RTI modules (Sense input/RS-232 output) as well as industry standard IR emitters.
IR Output Drive	100mA maximum (per port, adjustable) 200mA maximum (high IR output port)
IR Frequency Transmission Range	15kHz - 460kHz
Control Port	RS-485/IR/Pwr Device
Device IDs	Ten, via rotary switch
Mounting	Wall-mount or free standing
Dimensions (W x H x D)	7.0 in (178mm) x 1.3 in (33mm) x 5.2 in (132mm)
Weight	1lb 11oz. (764g)
Warranty	One Year (Parts & Labor)

All specifications subject to change without notice.

CHAPTER 6 | TROUBLESHOOTING

If you are having problems with your PCM-8 Port Control Module, please read the information below before contacting technical support.

If you continue to have problems, see Chapter 7 for more information on contacting RTI technical support.

PCM-8 GENERAL FUNCTIONALITY

- Status LED will be green when the PCM-8 is executing a command or macro.
- MPIO LEDs will illuminate when a command is being sent out each port.
- Make sure the device ID is set correctly.
- If the device ID has been changed on the PCM-8, make sure the power has been recycled - remove the power supply and Cat5 cable from the Control Port.
- Make sure the PCM-8 is powered.

IR CODES NOT FUNCTIONING PROPERLY

- Adjust IR output strength.
- Make sure you are using a known good IR emitter, and it is attached to the correct location on the device being controlled.
- Make sure you have the IR emitter adapter cables installed.

RS-232/SENSE NOT WORKING

- Make sure you DO NOT have the IR emitter adapter cables installed.
- Make sure you have the module plugged in all the way.
- Make sure you are not using a module that has been cut or altered in any way.

CHAPTER 7 | 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 PCM-8, software, or accessories, contact RTI at:

(952) 253-3137

support@rticorp.com

www.rticorp.com

For questions regarding service or repair of your PCM-8, contact RTI at:

(952) 253-3136

service@rticorp.com

www.rticorp.com

Please do not return products to RTI without return authorization.

CHAPTER 7 | SERVICE AND SUPPORT

Shipment of PCM-8 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 PCM-8 Port Control Module 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 PCM-8 Port Control Module 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.

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