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.

N27917

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. Use only batteries of the type described in the operating instructions, or as marked on 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:

- 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, 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 or e-mail. For the highest quality service, please have the following information ready, or provide it in your 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.

PCM-4
Port Control Module

Quick Reference Guide

With four multi-purpose I/O ports and a voltage trigger output, the PCM-4 provides the flexibility to increase the I/O capabilities of an RTI XP series control processor to accommodate larger projects. Each MPIO port provides IR output and routing capabilities, one-way RS-232 communication (with CM-232) and power sensing (with RTI accessory devices). Control from the XP series control processor is communicated using the LAN (Ethernet - Local Area Network). This allows the MPIO ports of the PCM-4 to become a seamless extension of the processor's existing ports.

Key Features

The PCM-4 provides superior quality and reliability as well as these specific features:

- Expands I/O port capabilities of an RTI XP series control processor (IR, one-way RS-232, sensing).
- Ethernet port provides control and updating over the LAN (Local Area Network).
- Virtually unlimited number of PCM-4 units in one system.
- I/O ports are compatible with industry standard IR emitters, blasters, and repeater systems.
- Variable IR output on all ports.
- LED illuminates when ports are active.
- I/O ports support all optional RTI power sensing and communications modules.
- One 12VDC/100mA voltage trigger output.
- Powered using included power supply or PoE (Power over Ethernet).
- USB port for on-site firmware updates.
- Sturdy steel construction.

Product Contents

Contents within the box include the following items:

- One (1) PCM-4 Port Control Module
- One (1) 12VDC/1A power supply
- One (1) USB cable: USB-A to Micro-B
- One (1) Quick reference guide
- One (1) Card with Ethernet MAC address and serial number

Installation & Operation

MOUNTING

The PCM-4 can be located on a secure, flat surface or mounted horizontally or vertically using the mounting slots or four mounting holes at the corners of the enclosure or on either end of the PCM-4.

POWERING THE PCM-4

1) AC Adapter: Connect the included power supply (12VDC/1Amp) to the power jack on the PCM-4.
   or
2) Ethernet Port (Power over Ethernet): Connect a Cat-5 cable to a PoE compatible router/switch or a PoE injector.

NOTE: The PCM-4 CANNOT be powered directly from an RTI control processor or connecting block.

USB PORT - UPDATING FIRMWARE

The PCM-4 firmware is updated via the integrated USB port using a USB-A to Micro-B cable (included). Check the RTI website to see if there is a new firmware for the PCM-4 at *www.rticorp.com/dealers*.

ETHERNET NETWORK CONNECTION

The PCM-4 Ethernet port provides communication with a 10/100 Base-T Ethernet network (LAN) for control via an RTI XP series control processor. The port is compatible with Cat-5 cable with an RJ-45 termination (568B). The NET LINK light located on the top of the PCM-4 will be lit red when connected to the LAN and flashes when there is network activity.

1) Connect to the Ethernet network - Connect a Cat-5 cable to the Ethernet network (LAN) and the PCM-4 will receive an IP address from the network router via DHCP.
2) Find the MAC address of the PCM-4 - Located on the unit and on the MAC address card in the box.
3) In Integration Designer, click on the XP processor and add the PCM-4 as an expansion device.
4) Enter the MAC address of the PCM-4 into the configuration fields. This will allow the RTI system to locate the PCM-4 on the network.

NOTE: Setting a static IP address is unnecessary and not recommended. However, you can change IP address settings in *Integration Designer* and download this information into the PCM-4 via the USB port.

PROGRAMMING THE PCM-4

The system configuration that is created in *Integration Designer* is downloaded into the PCM-4 across the Ethernet network automatically. No direct programming of the PCM-4 is required unless the IP address configuration is adjusted (see NOTE above).

NOTE: The port LEDs will continuously cycle until communication has been established with an XP series control processor, at which point they blink twice and stop. Port LEDs then indicate IR/RS-232 activity.

MPIO PORTS - CONNECTING IR EMITTERS

The multi-purpose I/O ports on the PCM-4 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-4 using #22 AWG (minimum) wire.

Adjusting IR Output Gain

The IR output gain can be separately adjusted for each of the four output ports. If adjustment is needed, rotate the IR output controls on the top of the PCM-4 clockwise for higher output power, or counter-clockwise for lower output power.

MPIO PORTS - CONNECTING POWER SENSOR MODULES (VPS-1)

The multi-purpose I/O ports on the PCM-4 are compatible with RTI power sensing modules (e.g. VPS-1). Follow the guide included with the modules for installation instructions.

MPIO PORTS - CONNECTING RS-232 COMMUNICATION MODULES (CM-232)

The multi-purpose I/O ports on the PCM-4 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.

VOLTAGE TRIGGER OUTPUT

The TRIG OUT jack (3.5mm mono plug) allows the PCM-4 to deliver a 12VDC/100mA voltage trigger to devices. The TRIG OUT LED will light when voltage is sent.

Connection Options

The following diagram shows one of the configurations that can be used with the PCM-4.