



# ESC-2+ Ethernet to Serial Converter

## Quick Reference Guide



The ESC-2+ Ethernet to Serial Converter provides a convenient way to add two RS-232 ports with full two-way control capability to a system utilizing an RTI XP series control processor. Two built-in RJ-45 jacks and the included RJ-45 to DB9 adapters allow efficient cabling over standard Cat-5 wire between the ESC-2+ and the device being controlled. This allows full RS-232 control virtually anywhere there is access to an Ethernet network connection.

### Key Features

The ESC-2+ provides superior quality and reliability as well as these specific features:

- Provides two additional serial ports to an RTI XP series control processor.
- Use multiple ESC-2+ modules for virtually unlimited control of serial devices.
- Capable of two-way serial (RS-232) communication.
- Integrates seamlessly into Integration Designer.
- Can be discovered and configured by Integration Designer over Ethernet.
- Easy wiring to devices using cat-5 cable - Includes two RJ-45 to DB9 serial adapters.
- Reset button allows ESC-2+ to be set back to factory defaults.

### FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the Federal Communications Commission (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.

### Industry Canada Compliance Statement

This device complies with Industry Canada license-exempt RSS standard(s). 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.

Cet appareil est conforme avec Industrie Canada exempts de licence standard RSS (s). Son fonctionnement est soumis aux deux conditions suivantes:

1. Ce dispositif ne peut causer des interférences nuisibles.
2. Cet appareil doit accepter toute interférence reçue y compris des interférences qui peuvent provoquer un fonctionnement indésirable.



### DECLARATION OF CONFORMITY (DOC)

The Declaration of Conformity for this product can be found on the RTI website. ([www.rticorp.com/declaration-of-conformity](http://www.rticorp.com/declaration-of-conformity))

### 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.

**Heat 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 power sources 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](http://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](mailto: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.**

## Product Contents

Contents within the box include the following items:

- One (1) ESC-2+ Ethernet to Serial Converter
- One (1) 5VDC/2A power supply
- Two (2) RJ45 to DB9 serial adapter
- One (1) Screw & drywall anchor kit
- One (1) Quick reference guide
- One (1) Ethernet MAC address card

## Installation & Operation

### MOUNTING

The ESC-2+ should be located on a secure, flat surface such as a shelf, cabinet or wall. Anchor the unit by securely fastening two (2) #8 X 5/8" phillips panhead screws through the ESC-2+ mounting ears. Wall mounted installations may require the drywall anchor kit (included).

### POWERING THE ESC-2+

Connect the included power supply (5VDC/2Amp) to the power jack.

**NOTE:** The ESC-2+ CANNOT be powered directly from an RTI control processor or connecting block.

### ETHERNET - NETWORK CONNECTION

The ESC-2+ 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).

- 1) Connect to the Ethernet network:** Connect a Cat-5 cable to the Ethernet network (LAN) and the ESC-2+ will receive an IP address from the network router via DHCP. The RJ-45 port LED lights will be lit indicating a connection to the LAN.
  - Left LED - Solid=Link / Blinking=Activity
  - Right LED - On=100MB/s speed - Off=10MB/s speed
- 2) Add ESC-2+ as an Expansion Device in Integration Designer:** Open the Integration Designer system file, click on the XP processor and add the ESC-2+ as an expansion device under the "Expansion" tab.
- 3) Enter the MAC address of the ESC-2+ in Integration Designer:** Click on the ESC-2+ and select "Edit Expansion Device". Locate the MAC address card in the ESC-2+ shipping box and enter the MAC address into the configuration. This will allow the RTI system to locate the ESC-2+ on the network.

### ETHERNET SETTINGS (IP Address)

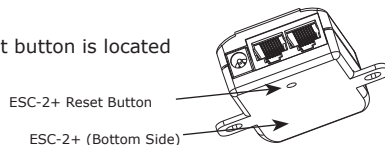
Because the RTI processor will find the ESC-2+ on the LAN using the MAC address, setting a static IP address is unnecessary and not recommended. However, if needed, you can change the IP address settings via a web-interface. For information on setting the IP address settings, visit the ESC-2+ product support webpage located on the RTI dealer website.

**IMPORTANT NOTE:** If the incorrect IP address settings are entered, such as entering the incorrect IP address scheme or subnet, the ESC-2+ will no longer be accessible via the network and will not operate. Follow instructions below to reset the ESC-2+ back to factory default using the "RESET" button.

### RESET ESC-2+ TO FACTORY DEFAULTS

If the ESC-2+ is not functioning or is not accessible via the Ethernet network (LAN), it may be necessary to "Reset" the unit to factory defaults. This process will clear all of the settings that have been adjusted and sets the unit back to use DHCP.

- 1) Power the ESC-2+:** Plug in the included power supply.
- 2) Press and hold the RESET button for 6 seconds:** Reset button is located on the bottom side.
- 3) Re-install the ESC-2+:** Follow the instructions above.



### SERIAL (RS-232) CONNECTIONS (2)

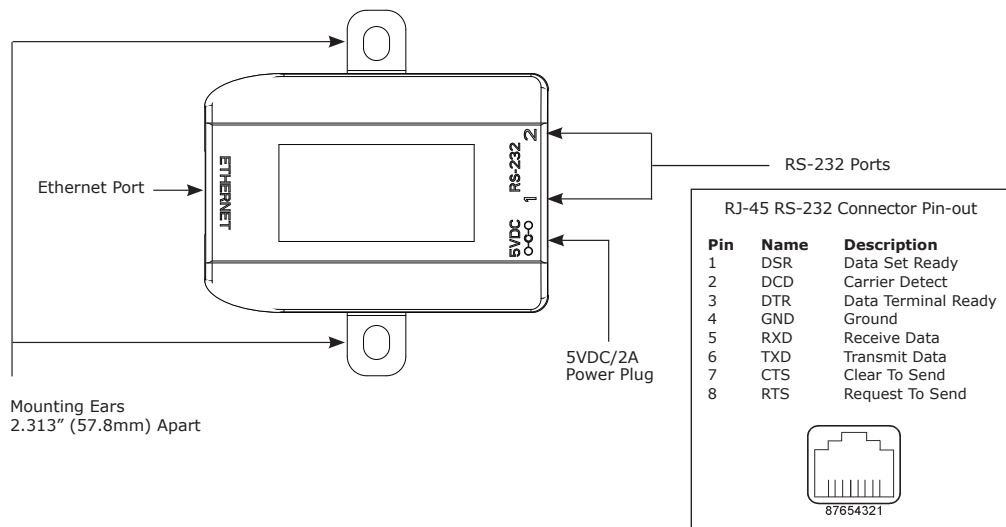
These ports are compatible with Cat-5 cabling with an RJ-45 termination (568B) for control of devices via serial (RS-232) communication. RJ-45 to DB-9 adapters are included for connection to devices with a serial/DB9 connector (See Example Wiring Diagram).

**NOTE:** For best performance, it is recommended that the length of the Cat-5 wiring from the ESC-2+ to the device being controlled be kept as short as possible. The maximum length possible will be determined by the baud rate and the device being controlled.

### PROGRAMMING USING THE ESC-2+

For information on Integration Designer programming visit the ESC-2+ product support webpage located on the RTI dealer website.

## Connections



## Example Wiring Diagram

