

JS100 Quick Reference Guide

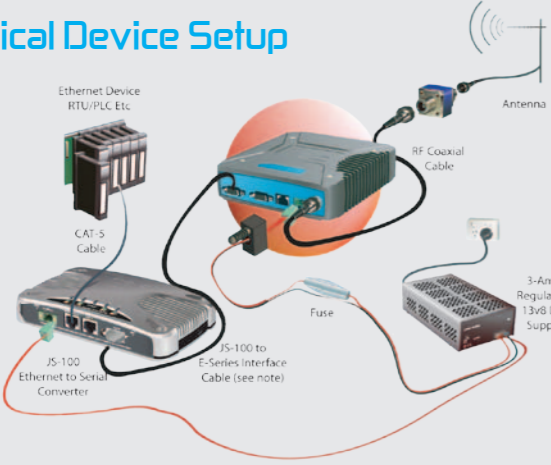


Ethernet to Serial Converter

Introduction

Welcome to the Quick Start Guide for the JS100 Ethernet to Serial Converter. This guide provides you with simple explanations to get you up and running.

Typical Device Setup



Mounting and Installation Instructions

The JS100 should be mounted in a clean and dry location, protected from water, excessive dust, corrosive fumes, extremes of temperature and direct sunlight. To avoid moisture ingress mount the converter with the connectors facing downwards. The JS100 is rated for use in ambient (operating) environments from -40°C to +70°C.

JS-100 Configuration (Web Interface)

Introduction and Warnings:

Please read the following notes carefully. Configuration errors with Ethernet connections can be difficult to find and resolve. It is strongly recommended that you follow these guidelines.

IP Address and Factory Default Reset

Warning: The factory default IP address of the JS-100 is **192.168.2.15**. If you do not know the IP address of the JS-100 you will need to activate a factory reset.

A factory reset will cause all previous configuration settings to be erased and returned to the factory default values. A factory default can be initiated by applying DC power to the converter (wait 45 seconds), depress the factory default switch using a paper clip or similar object and keep the switch depressed for 10 seconds until all five LEDs illuminate solid GREEN indicating the radio will return to the factory default settings. Please wait 30 seconds for the factory default reset process to complete.

Warning: The JS100 does not support the spanning tree protocol. Avoid network loops.

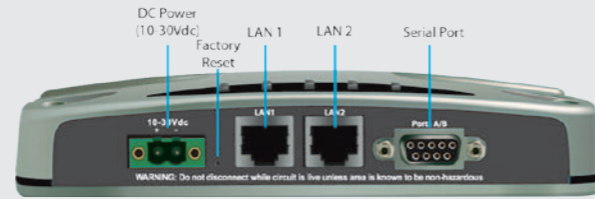
Connection to Embedded Web Server

The JS100 converter contains an embedded Web Server. To change a configuration parameter in the JS100 you will need to connect your PC to one of the Ethernet Ports (LAN1 or LAN2) and direct your browser to the IP address of the JS100. It is strongly recommended that you follow these guidelines for successful connection to the JS100:

- (1) Ensure the JS100 is powered up and has fully booted. This is indicated by a solid green power LED. It takes approximately 45 seconds from applying DC power for the JS100 to fully power up.
- (2) Disconnect your PC from any other Internet/LAN networks. Failure to do so may create a conflict in IP addresses or the JS100 IP address might not meet the subnet mask specified by your network.
- (3) Connect your PC Ethernet Port to one of the Ethernet Ports (LAN1 or LAN2) using an RJ-45 patch cable. Cross over cables will also work. Successful cable connection is indicated by a solid Green "Link" LED on the Ethernet Port. Note: The LAN1/2 LEDs will also flash orange when data is being transferred.

Connectors

The JS100 serial converter requires several connections as noted in the diagram in Section 1. DC power is required for the unit to operate. Either LAN connection can be used for connection the Ethernet device. The Serial port is used for connection to a serial radio modem such as the Trio E-Series.



Power Supply Requirements

Nominal 13.8 Volts DC @ 150 mA
Rated Operating Voltage 10 - 30 Volts DC

The JS100 Serial to Ethernet Converter will operate from a 10 to 30 volt (filtered) DC supply. The converter is designed to self protect from permanent damage if the voltage exceeds 30V dc or if reverse polarity is applied. The replaceable internal fuse has a rating 3 Amp.

Fuse: Trio Part No. SM%FUSSQ3A

Warning: The converter can be damaged if there is any potential difference between the chassis-ground, RS232 signal ground or power (-) input.

Before connecting any wiring, ensure all components are earthed to a common ground point (please pay particular attention to 24V PLC power systems where DC-DC converters are used).

Connect the ethernet and RS 232 plugs BEFORE applying power to the unit. Lastly, before inserting the power plug, please re-check that the polarity and voltage on the DC power plug is correct using a multimeter.

Communication Ports

LAN 1 and LAN 2 Ethernet Ports

The LAN 1 and LAN 2 ports are 10/100 Base-T compliant ports using an RJ-45 connector. These ports support both TIA/EIA-568-A & B wiring as they have Auto MDI/MIDX Auto Sensing. This means you can use both straight-through and cross-over type CAT-5 or better patch cables. All RJ45 connectors must utilize mating plugs that include an integral locking tab.



Pin	Pair	Wire	Color
1	3	tip	white/green
2	3	ring	green
3	2	tip	white/orange
4	1	ring	blue
5	1	tip	white/blue
6	2	ring	orange
7	4	tip	white/brown
8	4	ring	brown

If termination of a cable is required, then the following wiring arrangement should be followed (Compliant with TIA/EIA-568-A).

Note: Maximum differential voltage : 5v, 50mA max through each differential pair.

Note: If 100-BaseT connection speed is required, CAT-6 Shielded cable should be used for installation to comply with ETSI EMC directives.

E Series Serial Port Connection

Refer to the cable diagram in Section 4 regarding pin-out information.

You must ensure the radio packet layer interface is configured as follows:

- Character Layer : 19200 bps N,8,1
- Handshaking : Hardware
- Port Mode : User Port
- Packet Layer : SLIP

E Series User Port Setup Note : Please ensure Tx and Rx SID codes are unique for the JS100 connection and are not shared by another application.

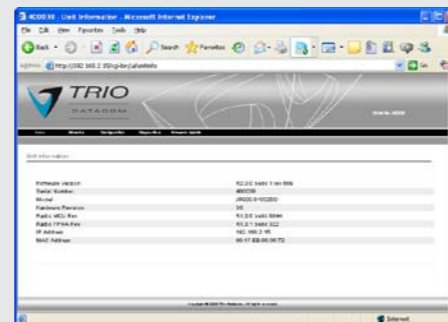
(4) Ensure your PC LAN Port is configured for a suitable IP address. You can do this by configuring the LAN settings via the Control Panel. Navigate to your Windows "Start" button and open Control Panel -> Network Connections -> Local Area Connection -> Properties.

Scroll Down and Select "Internet Protocol (TCP/IP)" and then click on Properties. You will now see the window as shown. Ensure "Obtain IP Address Automatically" is not selected. It is recommended that you manually specify a compatible IP Address. In this example, a factory default radio is being configured. The IP address of that radio is 192.168.2.15 and a compatible IP address for the PC would be 192.168.2.1. Click OK to accept the changes.

Note: Check with your Network Administrator before allocating IP addresses as each LAN/WAN network is different.

(5) You should start your web browser and insert the IP address of the JS-100 into the URL bar. In this case, we type "192.168.2.15" and the home (or Unit Information) page is now displayed in the browser.

Note: You may need to disable web proxy settings (if in use) and disable or modify your local firewall to ensure the security rules allow access to the JS100 IP address.



Resolving Ethernet Configuration Problems

Here are some basic tips to help you along the way with Ethernet configuration problems. The Windows operating system (and others) comes complete with many useful tools. First, you need to open a command window. This can be done by clicking on "Start" then "Run" and entering "CMD" and clicking OK.

Obtaining IP information about your PC

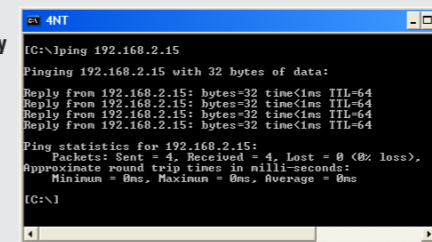
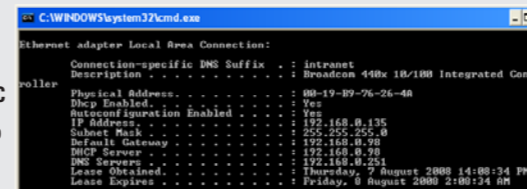
If you need to find out more information about your computers Ethernet IP configuration, network gateways and DNS servers, you can use a tool called "IPConfig". Simply type "IPconfig /all" into your command window.

Checking IP connectivity

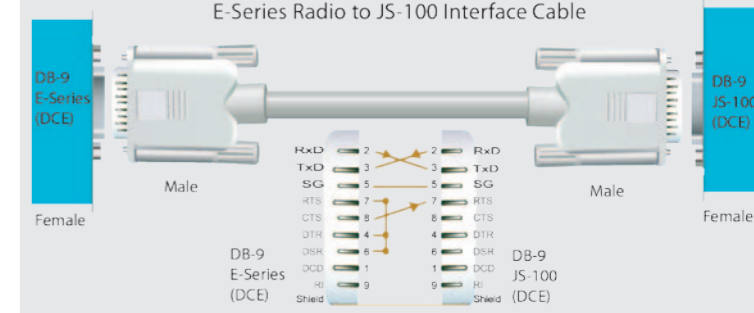
The most reliable way to check IP connectivity to a device is using the "Ping" utility. Type "ping xxx" where xxx is the complete IP address of the destination device you want to check. Ping will either respond with latency results (as shown) or say "timed out" if no connection was possible.

Repeated connections to multiple devices with same IP address

A common problem experienced when attempting to configure multiple radios with the same IP address (such as factory default radios) is stale MAC entries in the ARP table. The problem is due to invalid MAC table entries. If you change your ethernet connection between two devices with the same IP address quickly, you may need to reset the MAC look up table in your PC. You can do this by typing "arp -d *" in the command window.



Interface Cable



Warning: Each Radio to JS100 installation requires a special interface cable. This should be manufactured to comply with the above wiring diagram. Note: When using JS100 converters with EH (Hot Standby) base stations please contact the factory for special cable requirements.

LED Indicators

DC Power (Pwr) :

If all the LEDs are off, no DC power is reaching the JS100 or the internal fuse is open. Successful power-up is indicated by the Pwr/Tx LED showing a continuous GREEN state. Note: The JS-100 converter will take approximately 45 seconds to boot up - during this time, the DC power LED will remain solid green and various LED activity may occur. Please wait at least 45 seconds before attempting to use JS100.

LAN 1/2 :

The Red TxD and Green RxD LEDs indicate ethernet status on the two LAN ports. These LEDs will show solid Green when an Ethernet Link is established and will flash Orange to indicate Ethernet data transmission is occurring.

Port A Data Flow

The RxD/TxD LEDs indicate data flow into/out of the serial data port. Data being received by the port is shown as a RED flash, and data being sent from the port is shown as a GREEN flash.

Compliance Notices

ETSI EMC Notices:

Warning
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC Part 15 Notice:

Warning
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. This device must not be modified in any way or FCC compliance may be void.

Safety Notice:

Warning: When this device is operated above 65 degC ambient, It must be installed in a restricted access location.

Contact

www.triodatacom.com

The Trio DataCom web site has links to e-mail and telephone support, technical notes, manuals, software updates.

Service Department

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