J/RS232-xx-01

Stand-Alone Media Converter

User Guide

Part Number 33285
Revision F October 2024

Intellectual Property

Warranty

For details on the Lantronix warranty policy, go to http://www.lantronix.com/support/warranty.

Contacts

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Technical Support

Online: https://www.lantronix.com/technical-support/

Sales Offices

For a current list of our domestic and international sales offices, go to www.lantronix.com/about/contact.

Disclaimer

Revision History

Rev	Date	Description
A	5/12/04	Initial release.
B	5/11/04	Delete Loop-Back mode and Single mode references, change E-MCR-03 to E-MCR-04, change SPS-1872-PS to SPS-1872-CC.
C	3/18/05	Remove UL and C-UL, update the DoC, correct max data rate, added MTBF and add international power supply information.
D	9/27/18	Updated text and graphics.
E	8/1/24	Initial Lantronix re-brand.
F	10/17/24	Remove SPS-1872-SA and SPS-1872-CC (EoL). Add SPS-2460-PS and SPS-2460-SA. Update Ordering Information. Note that Media Converters and Power Supplies are NDAA Compliant and TAA Compliant. Fix typo.

Contents

Product Description

Lantronix J/RS232-xx-01 series media converters connect RS232 cable to fiber-optic cable at data rates up to 120 kB/s asynchronous.

Ordering Information

Part Number	Description
J/RS232-CF-01(SC)	DB-9 (female) [15 m/49 ft.] to 1300nm multimode (SC) [2 km/1.2 mi.] Link Budget: 11.0 dB
J/RS232-TF-01(SC)	DB-9 (male) [15 m/49 ft.] to 1300nm multimode (SC) [2 km/1.2 mi.] Link Budget: 11.0 dB

Optional Accessories: (sold separately)	
SFPs	See Lantronix full line of SFP transceivers on our SFP webpage.
SPS-2460-PS	Piggy-back PS. Input Voltage: 24-60 VDC; 24-42 VMRS. Output Voltage: 12.25 VDC. Current: 1.0A.
SPS-2460-SA	Stand-alone PS. Input Voltage: 24-60 VDC; 24-42 VMRS. Output Voltage: 12.25 VDC. Current: 1.0A.
E-MCR-05	12-Slot Media Converter Rack (includes universal internal power supply) 17x15x5 in. (432x381x127 mm)
RMS19-SA4-02	4-Slot Media Converter Shelf, includes 4 brackets and 3 slot blanks
WMBS	Optional Wall Mount Brackets; Length: 3.2 in. (81 mm), Fits converter length: 3.9 in. (99 mm)
WMBV	Optional Vertical Mount Bracket; 5.0 in. (127 mm)
WMBD	Optional DIN Rail Mount Bracket; 5.0 in. (127 mm)
WMBD-FS	Optional DIN Rail Mount Bracket (flat, small); 3.1in. (79 mm

For More Information

For Lantronix Documentation, Firmware, App Notes, etc. go to https://www.lantronix.com/technical-support/.
Note that this manual provides links to third party web sites for which Lantronix is not responsible.

Safety Warnings and Cautions

These products are not intended for use in life support products where failure of a product could reasonably be expected to result in death or personal injury. Anyone using this product in such an application without express written consent of an officer of Lantronix does so at their own risk and agrees to fully indemnify Lantronix for any damages that may result from such use or sale.

Attention: This product, like all electronic products, uses semiconductors that can be damaged by ESD (electrostatic discharge). Always observe appropriate precautions when handling.

Note: Emphasizes important information or calls your attention to related features or instructions.

Caution: Alerts you to a potential hazard that could cause loss of data or damage the system or equipment.

Warning: Alerts you to a potential hazard that could cause personal injury.

Installation

DTE and DCE

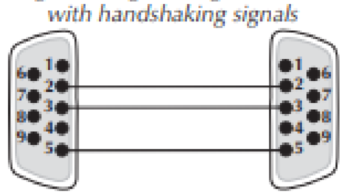
Each J/RS232-xx-01 model is configured as a:

- DTE (Data Terminal Equipment) with a male RS-232 port, or a
- DCE (Data Communication Equipment) with a female RS-232 port.

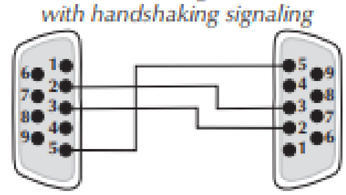
So, the type of media converter and the application in which it is used determines which type of RS-232 cable is needed:

- Straight-through configuration cable, or
- Null-modem configuration cable.

Straight-through configuration cable with handshaking signals



Null-modem configuration cable with handshaking signaling

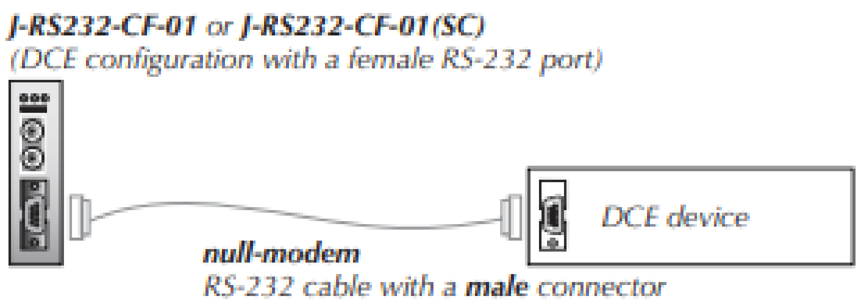


NOTE: The J/RS232-xx-01 only uses pins 2, 3 and 5.

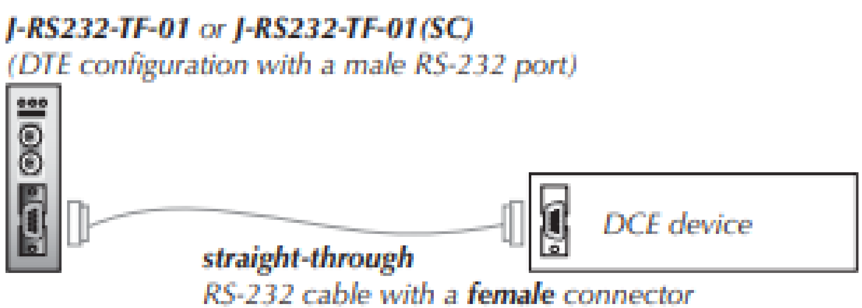
Install the RS-232 Cable

Sections 1-4 (below and on page 7) illustrate which type of RS-232 cable should be used for the various applications:

1. J/RS232-CF-01 Media Converter / DCE Device: Use a null-modem RS-232 cable with a male connector when connecting a J/RS232-CF-01 or J/RS232-CF-01(SC) media converter to a DCE device.

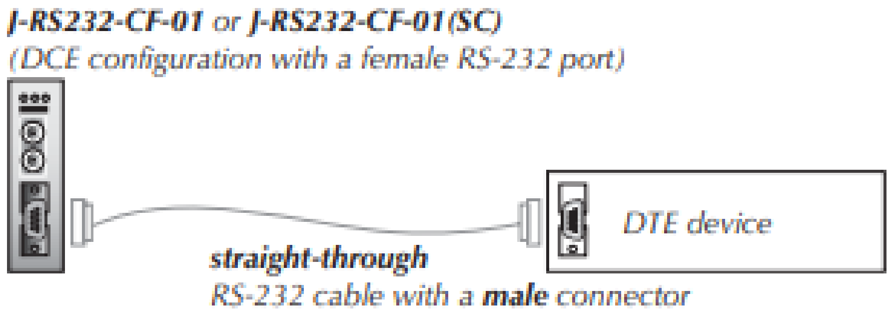


2. J/RS232-TF-01 Media Converter / DCE Device: Use a straight-through RS-232 cable with a female connector when connecting a J/RS232-TF-01 or J/RS232-TF-01(SC) media converter to a DCE device.

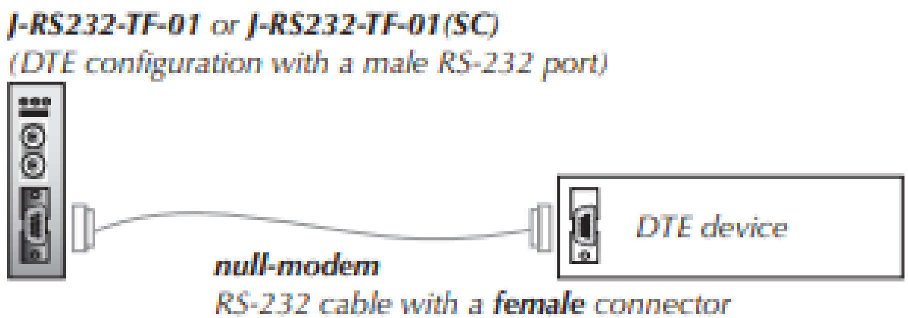


3. J/RS232-CF-01 Media Converter / DTE Device:

Use a straight-through RS-232 cable with a male connector when connecting a J/RS232-CF-01 or J/RS232-CF-01(SC) media converter to a DTE device/

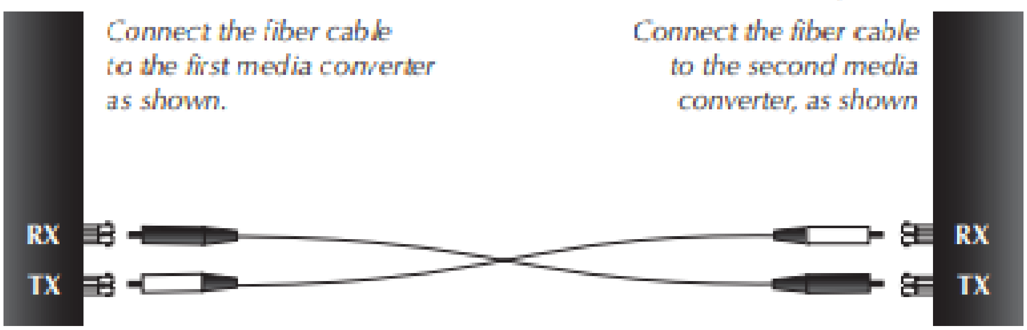


4. J/RS232-TF-01 Media Converter / DTE Device: Use a null-modem RS-232 cable with a female connector when connecting a J/RS232-TF-01 or J/RS232-TF-01(SC) media converter to a DTE device.



Install the Fiber Cable

1. Locate or build fiber cable with male, two-stranded TX to RX connectors installed at both ends.
2. Connect the fiber cables to the first J/RS232-xx-01 media converter as described:
    - Connect the male TX cable connector to the female TX port.
    - Connect the male RX cable connector to the female RX port.
3. Connect the fiber cables to the other J/RS232-xx-01 media converter as described:
    - Connect the male TX cable connector to the female RX port.
    - Connect the male RX cable connector to the female TX port.



Power the Media Converter

NOTE: The external power supply provided with this product is UL listed by the power supply's manufacturer.

- Connect the barrel connector on the power adapter to the media converter's power port (located on the back of the media converter).
- Connect the power adapter plug to AC power. Verify that the media converter is powered by observing the illuminated LED power indicator light. (For DC power see the SPS1872-xx DC external power supply.)

Operation

Use the status LEDs to monitor the media converter operation in the network.

RX On = A link has been established with the RS-232 connector.
RX Flashing = The RS-232 connector is receiving data.

FL On = A link has been established with the fiber connector.

PWR On = The media converter is connected to external power.

Cable Specifications

The physical characteristics must meet or exceed IEEE 802.3™ specifications.

Fiber Cable

Bit Error Rate: <10-9

Multimode fiber (recommended): 62.5/125 µm

Multimode fiber (optional): 100/140, 85/140, 50/125 µm

J/RS232-CF-01 1300 nm multimode

Fiber Optic Transmitter Power: min: -19.0 dBm max: -14.0 dBm

Fiber Optic Receiver Sensitivity: min: -30.0 dBm max: -14.0 dBm

Link Budget: 11.0 dB

J/RS232-CF-01(SC) 1300 nm multimode

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Fiber Optic Receiver Sensitivity: min: -30.0 dBm max: -14.0 dBm

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J/RS232-TF-01(SC) 1300 nm multimode

Fiber Optic Transmitter Power: min: -19.0 dBm max: -14.0 dBm

Fiber Optic Receiver Sensitivity: min: -30.0 dBm max: -14.0 dBm

Link Budget: 11.0 d

The fiber optic transmitters on this device meets Class I Laser safety requirements per IEC-825/CDRH standards and complies with 21 CFR1040.10 and 21CFR1040.11.

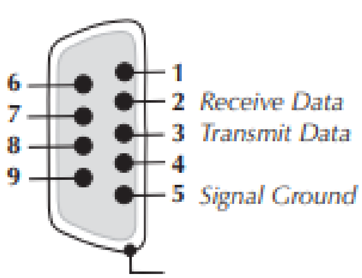
RS-232 Cable

Gauge: 24 to 22 AWG

Maximum data rate: 120 Kb/s, asynchronous

Maximum Cable Distance: 15 m (50 ft)

RS-232 Signals:



NOTE: The J/RS232-xx-01 only uses pins 2, 3 and 5.

Technical Specifications

For use with Transition Networks Model J/RS232-xx-01 or equivalent

Data Rate	120 Kb/s, asynchronous
Dimensions	3.0" x 3.9" x 1.0" (76 mm x 99 mm x 25 mm)
Shipping Weight	6 oz. (181 g) (approximately)
Power Consumption	3 Watts
Power Supply	12 VDC, 0.5 A (North America) 12 VDC, 0.41 A (Europe, Japan, Latin America) 12 VDC, 1.25 A (N. Z., Australia, U.K., South Africa) (The external power supply provided with this product is UL listed by the power supply’s manufacturer.)
MTBF (approximate)	49,000 hours (MIL217F2 V5.0) (MIL-HDBK-217F) 129,000 hours (Bellcore7 V5.0)
Environment	Tmra*: 0 to 50°C (32° to 122°F)
Storage Temp:	-40° to +85°C (-40° to +185°F)
Humidity:	5 to 95%, non-condensing
Altitude:	0 to 10,000 feet
Warranty	Lifetime

*Manufacturer’s rated ambient temperature.

Product is certified by the manufacturer to comply with DHHS Rule 21/CFR, Subchapter J applicable at the date of manufacture.

CAUTION: Visible and invisible laser radiation when open. Do not stare into the beam or view directly with optical instruments.

CAUTION: Use of controls, adjustments or the performance of procedures other than those specified herein may result in hazardous radiation exposure.

Troubleshooting

If the media converter fails, isolate and correct the failure by determining the answers to the following questions and then taking the indicated action:

1. Is the PWR (power) LED on the media converter lit?

NO

- Is the power adapter the proper type of voltage and cycle frequency for the AC outlet? (See "Technical Specifications" on page 9.)
- Is the power adapter properly installed in the media converter and in the AC outlet?
- Does the grounded AC outlet provide power?
- Contact Tech Support.

YES

- Proceed to step 2.

2. Is the RX (RS-232) LED lit?

NO

- Check the RS-232 cable for proper connection.
- Contact Tech Support.

YES

- Proceed to step 3.

3. Is the FL (fiber) LED illuminated?

NO

- Check the fiber cables for proper connection.
- Verify that the TX and RX cables on the media converter are connected to the RX and TX ports, respectively, on the remote media converter.
- Contact Tech Support.

YES

- Contact Tech Support.

Compliance Information

CISPR22/EN55022 Class A + EN55024; CE Mark

FCC Regulations

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio ommunications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

Canadian Regulations

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out on the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

European Regulations

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.

Achtung! Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten. In diesem Fäll ist der Benutzer für Gegenmaßnahmen verantwortlich.

Attention! Ceci est un produit de Classe A. Dans un environment domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilsateur de prende les measures spécifiques appropriées.

Declaration of Conformity

Manufacture's Name: Lantronix, Inc.
Manufacture's Address: 48 Discovery, Suite 250, Irvine, California 92618 USA

Declares that the product(s): J/RS32-xx-01 Series Media Converter
Part Number: J/RS232-CF-01, J/RS232-CF-01(SC), J/RS232-TF-01, and J/RS232-TF-01(SC)

Conforms to the following Product Regulations:
CSIPR 22: 1998, EN 55022:1998 Class A; EN 55024: 1998; FCC Part 15 Subpart B: 21 CFR Subpart J

With the technical construction on file at the above address, this product carries the CE Mark

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).
Place: Irvine, California
Date: April 27, 2022
Signature: *Fathi Hakam*
Full Name: Fathi Hakam
Position: Vice President of Engineering

Note: The Media Converters and Power Supplies are NDAA Compliant and TAA Compliant.

Trade Agreement Act (TAA) Compliant Products: https://www.lantronix.com/legal/rohs/taa-compliant-products/.

NDAA, RoHS, REACH and WEEE Compliance: https://www.lantronix.com/legal/rohs/.

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