User Guide

MS-63U1A-XR

USB Type A Extender Set - up to 100m.
for extending USB 3.2 Gen 1



Revision: 1.0 - Aug 2024

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Notices

- This MSolutions product contains electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection is highly recommended in order to protect and extend the life of your equipment.
- The transmission distances of data over Cat cables are measured using TE CONNECTIVITY 1427071-6 EIA/ TIA-568B termination (T568B) of cables is recommended for optimal performance. To minimise interference of unshielded twisted pairs in the Cat6A (or above) cable, do not run the Cat6A (or above) cabling with or in close parallel proximity to mains power cables.
- Do not substitute or use any other power supply other than the enclosed unit, or an MSolutions approved replacement. Do not disassemble either the Transmitter or Receiver units for any reason. Doing so will void the manufacturer's warranty.
- MSolutions reserves the right to change the specifications of this unit without prior notice. As a result of this, physical representations or graphical elements contained within this user guide may not be accurate.

Introduction

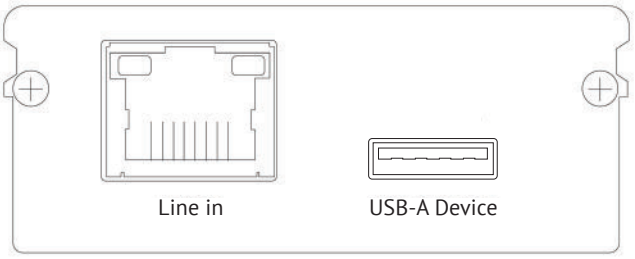
The MSolutions MS-63U1A-XR is a USB 3.2 Gen 1 USB-A extender allowing for a single USB-A data channel to be extended to distances of up to 100m over a single Cat6A (or above) cable infrastructure.

The extender features RS-232 serial pass-through, which expands the capabilities of this extender kit for a variety of commercial uses.

Key Features

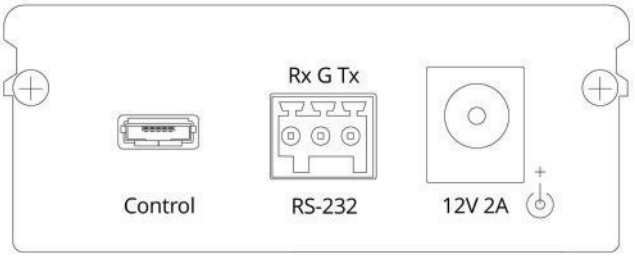
- Uncompressed USB 3.2 Gen 1 extension of USB data up to 100m over single Cat6A (or above)
- 1x USB-A channel for up to 5Gbps data connectivity of USB-A devices across the links
- Flexible USB extension for: USB-A PTZ cameras, hard drives, laptops and other USB-A peripherals
- Bi-directional RS-232 serial pass through

Connectivity Overview - Device



Front panel:

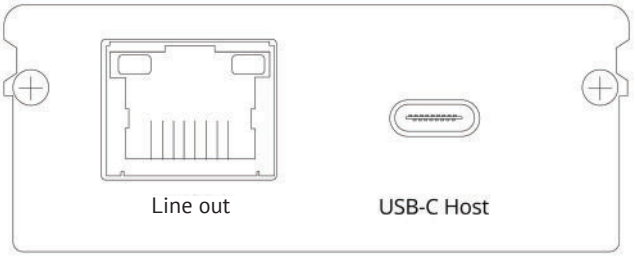
- Cat6A (or above) Link - connect to Cat cable from receiver
- USB-A - connect USB-A peripheral



Back panel:

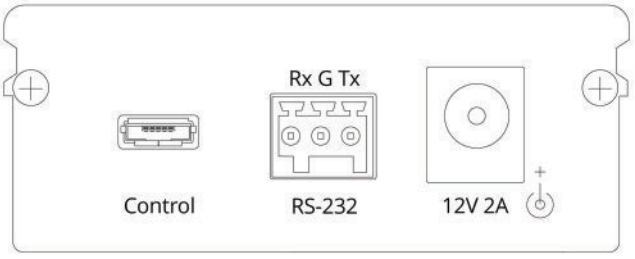
- Control - Micro USB for firmware and control (reserved for future use)
- RS-232 - use supplied 3-pin phoenix connector to connect to serial device
- Power - connect to 12V/2A DC power supply

Connectivity Overview - Host



Front panel:

- Cat6A (or above) Link - connect to Cat cable from device
- USB-C - connect USB-C host



Back panel:

- Control - Micro USB for firmware and control (reserved for future use)
- RS-232 - use supplied 3-pin phoenix connector to connect to serial device
- Power - connect to 12V/2A DC power supply

Understanding the LED's

This MSolutions extender set includes status LED indicators on both the Host and Device products to show active connections and to further help integrators diagnose potential problems with the associated cabling.

The RJ45 Link connections on both the host and device units have orange and green LED's.

- The orange LED indicates that the unit is receiving power. The LED will blink continuously when there is a link to the unit on the opposing side of the cable.
- The green LED indicates that the unit is communicating with the unit attached to the far side of the link over the Cat cable.

Category Cabling for Extenders

It is important that the interconnecting Cat cable between the MSolutions products is terminated using the correct RJ45 pin configuration. The link Cat cable must be a 'straight' (pin-to-pin) Cat cable and it is advised that this is wired to the T568B wiring standard as this format is less prone to EMI (Electro-Magnetic Interference).

When installing Cat cables it is advised that the best possible Cat cable quality possible is used. MSolutions recommends using a Cat6A (or above) cable for installations, especially when running over longer distances, in areas of high EMI, or with high data rate signal distribution.

USB

This USB 3.2 extender allows for USB-A peripherals including cameras, touch screens, smart boards, hard drives, games controllers, USB audio devices, printers, scanners, and HID's (mouse or keyboard) to be distributed over a distance of up to 100m to a USB-A host device on the far side of the link.

The extender supports transparent true plug and play USB pass-through without the requirement of software or driver son the extender kit.

A maximum combined data transfer of 5Gbps can be achieved over the link.

The Micro-USB connections on both Host and Device units are utilised for firmware updating and are reserved for future CloudOS control.

RS-232 Control

The MS-63U1A-XR can distribute bi-directional serial commands between the transmitter and receiver to allow for control commands to be sent alongside USB.

Each unit is fitted with a 3-pin phoenix connector block that will need the serial TX, RX and Ground pins terminating into for serial pass-through. The link has the ability to transparently send any type of serial data as both pieces of equipment are able to communicate using the same baud rate, stop-gap, and parity.

Power

12V 2A DC power connections on both Host and Device. Please only use the supplied 12V/2A DC PSUs supplied with the MSolutions MS-63U1A-XR to power the unit.

Specifications

Device

- USB-A connectivity: 1 x USB-A (female peripheral
- USB control: 1 x Micro USB (female)
- RS-232 connectivity: 1 x 3-pin phoenix connector, block included
- Power supply (PoC): 1x 12V/2A DC
- Individual unit dimensions (W x D x H): 60 x 84 x 25mm
- Individual unit weight: 0.2kg
- Operating temperature: 32°F to 104°F (0°C to 40°C)
- Storage temperature: -4°F to 140°F (-20°C to 60°C)
- Operating humidity: 0-80% non condensing

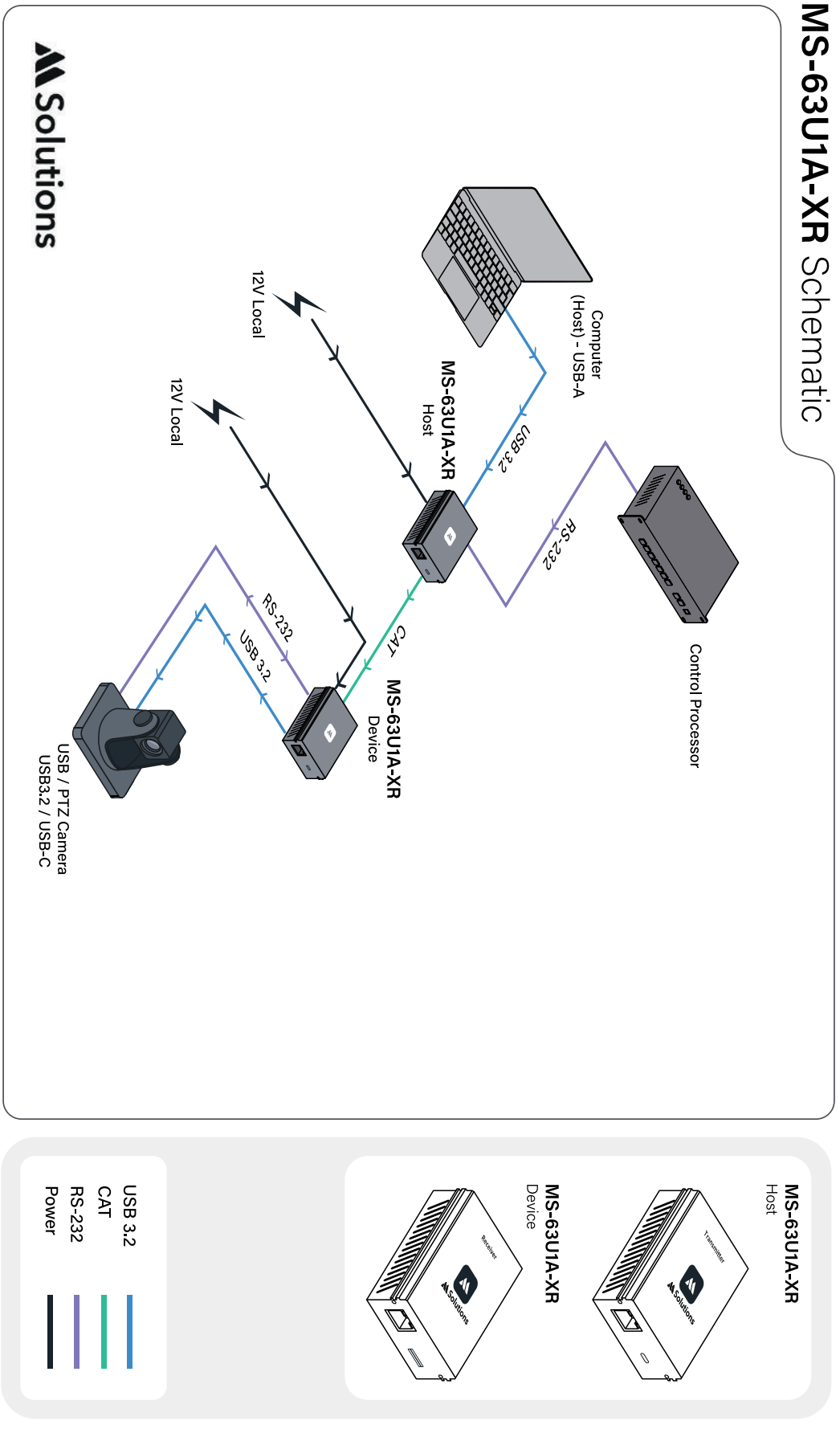
Host

- USB-C connectivity: 1 x USB-C (female) - host
- USB control: 1 x Micro USB (female)
- RS-232 connectivity: 1x 3-pin phoenix connector, block included
- Power supply (PoC): 1x 12V/2A DC
- Individual unit dimensions (W x D x H): 60 x 84 x 25mm
- Individual unit weight: 0.2kg
- Operating temperature: 32°F to 104°F (0°C to 40°C)
- Storage temperature: -4°F to 140°F (-20°C to 60°C)
- Operating humidity: 0-80% non condensing

Package Contents

- 1x MS-63U1A-XR Host
- 1x MS-63U1A-XR Device
- 2 x 12V / 2A DC power supply with US, UK, and EU clips
- 1 x USB-C (male) to USB-A (female) cable
- 2 x 3-pin phoenix connector blocks
- 2 x Surface mounting brackets

Schematic


MS-63U1A-XR Schematic
Solutions
Computer (Host) - USB-A
12V Local
12V Local
MS-63U1A-XR Host
USB 3.2
RS-232
Control Processor
CAT
RS-232
USB 3.2
MS-63U1A-XR Device
USB / PTZ Camera USB3.2 / USB-C
MS-63U1A-XR Host
Transmitter
MS-63U1A-XR Device
Receiver
USB 3.2
CAT
RS-232
Power



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