M Solutions MS-6U1CP USB-C and 12V Power Extender Set User Guide

Contents

MS-6U1CP USB-C and 12V Power Extender Set

User Guide

MS-6U1CP
USB-C & 12V Power Extender Set – up to 100m. PoC, RS-232 pass through

Revision: 1.0 – May 2022

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 minimize interference of unshielded twisted pairs in the CAT5e/6 cable, do not run the Cat5e/6/6a 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.

MS-6U1CP USER GUIDE

Introduction

The MSolutions MS-6U1CP is a professional grade USB-C extender allowing for a single USB-C data channel to be extended to distances of up to 100m over a single CATx cable infrastructure.

The extender features RS-232 serial pass-through, and 12V PoC (Power over Cable) from the Host side to supply 12V 2A DC power for connected VC equipment at the Device side.
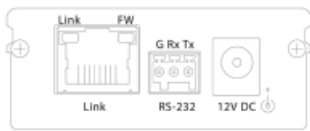
Key Features

- Solves the challenge of extending USB camera data and power over a single category cable up to 100m
- 12V output on Device side for remote powering of connected VC equipment (or PoC to the TX if power to the VC device is not required)
- 1x USB-C channel for up to 320Mbps data connectivity of USB-C devices across the link
- Flexible USB extension for: USB-C PTZ cameras, hard drives, laptops and other USB-C peripherals
- Bi-directional RS-232 serial pass through

Connectivity Overview – Device

Side panel:

• Control – Micro USB for firmware and control (reserved for future use)

• USB-C – connect USB-C peripheral
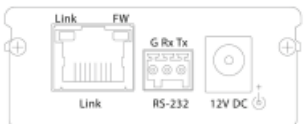
Front panel: (rear panel is blank)

• CATx Link – connect to Cat cable from receiver

• RS-232 – use supplied 3-pin phoenix connector to connect to serial device

• Power – connect to supplied 12V/2A DC power supply for PoC to the Host extender, or connect directly to VC equipment to take 12V 2A power from the Host side

Connectivity Overview – Host

Side panel:

• Control – Micro USB for firmware and control (reserved for future use)

• USB-C – connect USB-C host

Front panel: (rear panel is blank)

• CATx Link – connect to Cat cable from receiver

• RS-232 – use supplied 3-pin phoenix connector to connect to serial device

• Power – connect to supplied 12V/2A DC power supply to provide power to Device extender, and, if required, VC equipment connected to the Device extender

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.

Cat 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 Cat6 (or higher) cable for installations, especially when running over longer distances, in areas of high EMI, or with high data rate signal distribution.

USB

This KVM extender allows for USB-C 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-C 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 320Mbps 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.

Note: the USB-C connectivity does not support high-bandwidth video data from a laptop / tablet to a display due to the limitation of available bandwidth.

RS-232 Control

The MS-6U1CP can distribute bi-directional serial commands between the transmitter and receiver to allow for control commands to be sent alongside USB KVM.

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

The MS-6U1CP uses bi-directional PoC (Power over Cable) to provide power from either the Host or Device unit to the far side of the link over the Cat cable. Please only use the supplied 12V/2A DC PSU supplied with the MSolutions MS-6U1CP to power the unit.

When the (supplied) PSU is connected to the Host extender, the power connector on the Device side can be used to to output up to 12V 2A to the connected camera device to provide remote power without the requirement for the cameras own PSU to be connected.
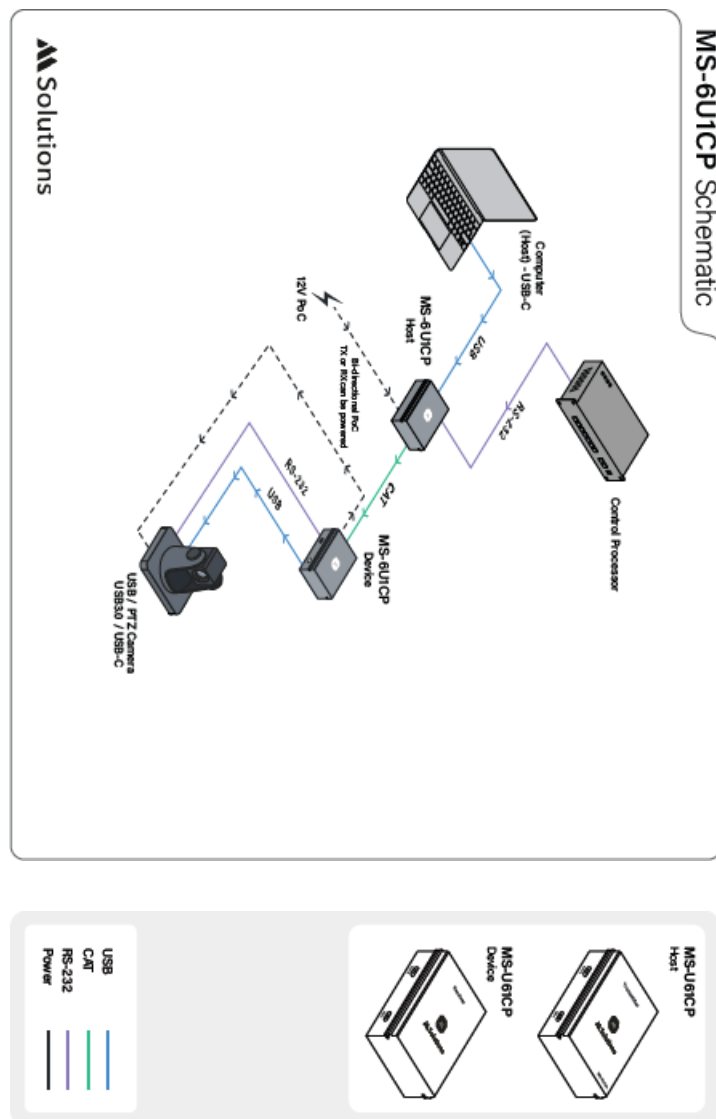
Specifications

• USB connectivity TX: 1x USB-C (female) – data only

• USB connectivity RX: 1x USB-C (female) – data only

• Micro-USB connectivity (TX & RX): for product update, and Cloud control (future) • RS-232 connectivity (TX & RX): 1x 3-pin phoenix connector, block included • Power supply: 1x 12V 2A DC

• Power output (RX): 1x 12V 2A DC – for powering VC equipment on RX (where POC is coming from TX)

• Power consumption: 4.5W

• Individual unit dimensions (W x D x H): 60 x 84 x 25mm

• Individual unit weight: 0.1kg

• Package dimensions (W x D x H): 163 x 147 x 85mm

• Package weight: 0.5kg

• Master carton quantity: 18

• Master carton dimensions (W x D x H): 540 x 270 x 260mm

• Master carton weight: 10kg

• Operating temperature: 32°F to 119°F (0°C to 48°C)

• Storage temperature: -4°F to 140°F (-20°C to 60°C)

• Operating humidity: 0-80% non condensing

Package Contents

• 1x MS-6U1CP Host

• 1x MS-6U1CP Device

• 1x 12V 2A power supply with US, UK & EU territory clips

• 2x Surface mounting brackets

• USB-C to Type A (female) cable

Schematic

MS-6U1CP Schematic

www.m4sol.com

Documents / Resources

M Solutions User Guide MS-6U1CP USB-C & 12V Power Extender Set – up to 100m PoC, RS-232 pass through 	**M Solutions MS-6U1CP USB-C and 12V Power Extender Set** [pdf] User Guide MS-6U1CP USB-C and 12V Power Extender Set, MS-6U1CP, USB-C and 12V Power Extender Set, 12V Power Extender Set, Power Extender Set, Extender Set, Set

References

- **Msolutions - Pro AV Solutions, HDBaseT Products and Tools!**