

# MSolutions MS-63DOC Docking Extender User Guide

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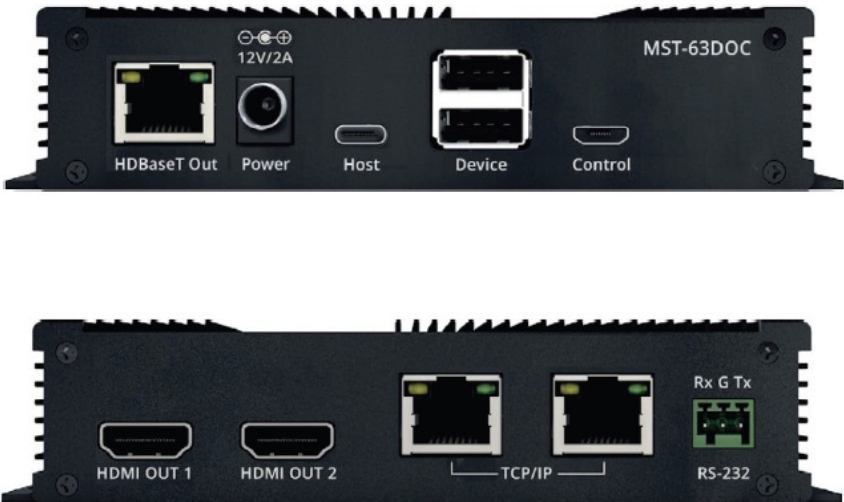
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## MSolutions MS-63DOC Docking Extender



### 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 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.

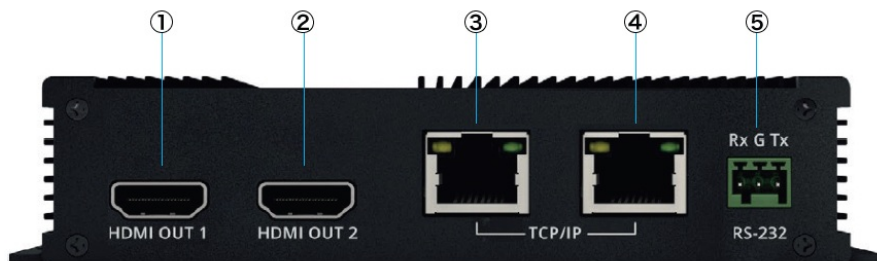
## Introduction

The MSolutions MS-63DOC Docking Extender is a revolutionary solution that simplifies installation and consolidates all video, audio, and data signals through a single USB-C cable and extends it over a single Cat 6A cable up to 100 meters. More than a simple receiver, the MS-63DOC Device has an internal IP control unit that can manage all the third-party IP devices in the meeting room. It is a docking extender capable of feeding up to two 4K displays (via separate HDMI connections), two USB-A 3.0 ports, one USB-C port, one analog audio out port and an RS232 connector.

## Key Features

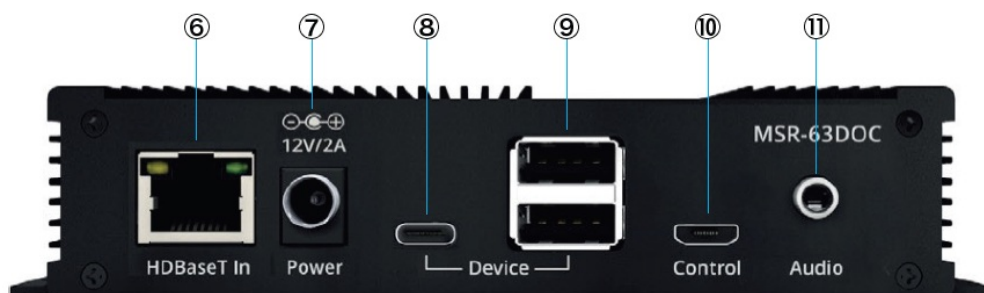
- Solves the challenge of extending USB 3.2 Gen 1 camera data, video and power over a single category 6A cable up to 100m
- Provides a USB channel of up to 5Gbps of data connectivity across the link
- Flexible USB extension for PTZ cameras, hard drives, laptops and other USB peripherals
- Has a built-in IP controller for any 3rd party IP system
- Bi-directional RS-232 serial pass-through
- Bi-directional 12V PoC (Power over Cable)
- 1x USB-C & 2x USB-A on the device
- 1x USB-C & 2x USB-A on host for additional local USB connections
- A Two-port Ethernet hub at the device side
- Extended mode display – two HDMI ports for two individual streams based on Display Link technology. (May require driver installation)
- Has an analog audio (stereo) out port on the device side.

## Connectivity Overview – Device



#### Front panel:

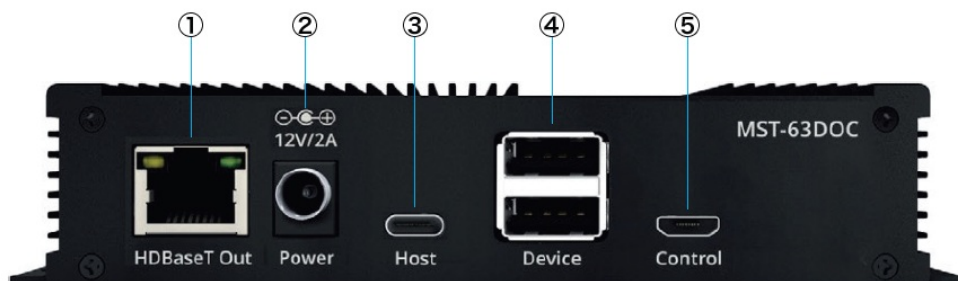
- ①+② – HDMI OUT 1,2 – 4K60FPS
- ③+④ – 1Gbps 2 port TJ45 Ethernet hub
- ⑤ – RS-232, 3-pin Phoenix connector to connect a serial device/controller



#### Back panel:

- ⑥ – HDbaseT in – Link in
- ⑦ – Power jack 12Vdc/2A
- ⑧ – USB-C – USB 3.0 type C for any USB device
- ⑨ – 2 ports of USB type A for any USB device
- ⑩ – Micro USB – Micro USB connector for FW updates and maintenance
- – Audio out – PL3.5m analog Audio out jack. Supports stereo.

#### Connectivity Overview – Host



#### Front panel:

1. HDbaseT out – Link out.
2. Power jack 12Vdc/2A.
3. USB-C – USB type C for the main connection to the Host PC (Full feature USB-C).

4. 2 ports of USB type A for any USB device. For local use by the host.
5. Micro USB – Micro USB connector for FW updates and maintenance.



#### Back panel:

6. RS-232, 3-pin Phoenix connector to connect a serial controller/device.

#### 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

The interconnecting category cable between the MSolutions products must be terminated using the correct RJ45 pin configuration. The link category cable must be a 'straight' (pin-to-pin) category 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). For the MS 63DOC it is recommended that a Category 6A minimum be used to get the best performance.

#### HDMI

The MS-63DOC device has 2 ports of HDMI2.0 that support 4K60FPS resolution. The devices also support extended view for dual display work. Please note that some PCs may require Display Link drivers in order to transmit the video over the single USB-C. For details use the following links:

**Windows:** [www.synaptics.com/products/displaylink-graphics/downloads/windows-11.0-m0-public](http://www.synaptics.com/products/displaylink-graphics/downloads/windows-11.0-m0-public)

**Mac:** [www.synaptics.com/products/displaylink-graphics/downloads/macos](http://www.synaptics.com/products/displaylink-graphics/downloads/macos)

#### USB

This USB 3.2 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 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.

**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.

#### Ethernet Hub

- The MS-63DOC device has 2 X1Gbps Ethernet ports for a simple local hub.

- The hub also allows for a user to connect to the internal network controller.

### **RS-232 Control**

The MS-63DOC can distribute bi-directional serial commands between the device and host to allow for control commands to be sent. Each unit is fitted with a 3-pin Phoenix connector block.

### **Power**

The MS-63DOC 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 Category cable. Please only use the supplied 12V/2A DC PSU supplied with the MSolutions MS-3doc to power the unit.

### **Audio**

The MS-63DOC device has an analog stereo audio out 3.5mm port. The audio that plays is being transmitted over the same USB-C host connection.

### **Built-in Network Controller**

The MS-63DOC system has a built-in network controller. It allows the user to control every thirdparty IP system. The user can access the local IP address of the MS-63DOC and configure the controller to control any IP device with an open API. The user will be able to create and manage buttons for a verity of commands and present them in a graphic form on the main web interface. The MS-63DOC is a docking station extender and an IP controller, all in one set of extenders.

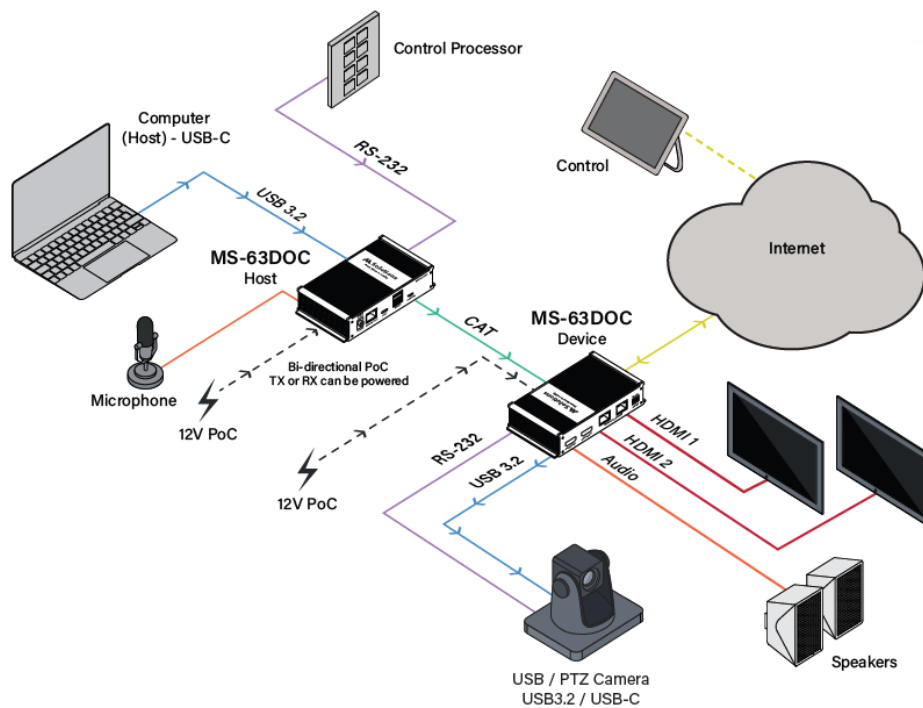
## **Specifications**

- USB connectivity Host: 1x USB-C (female) – data & video, 2x USB-A (female) – data
- USB connectivity Device: 1x USB-C (female) – data, 2x USB-A (female) – data
- Micro-USB connectivity (Host & Device): for product update, and Cloud control (future)
- RS-232 connectivity (Host & Device): 1x 3-pin phoenix connector, block included
- Power supply: 1x 12V 2A DC – connections on either Host or Device
- Power consumption: 7W
- 2x Ethernet ports RJ-45
- Individual unit dimensions (W x D x H): 60 x 84 x 25mm
- Individual unit weight: 300g
- Package dimensions (W x D x H): 163 x 147 x 85mm
- Package weight: 350g
- Master carton quantity: 18
- Master carton dimensions (W x D x H): 540 x 270 x 260mm
- Master carton weight: 7.5kg
- 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

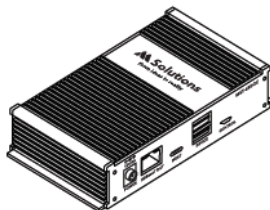
## **Package Contents**

- MS-63DOC Host & Device
- 1 x 12V 2A power supply with US, UK & EU territory clips
- 1 x 3-pin Phoenix connector
- 1 x USB-C cable

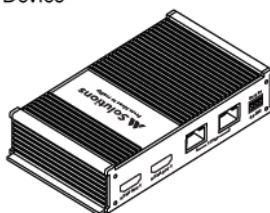
## MS-63DOC Schematic










**MS-63DOC**  
Host




**MS-63DOC**  
Device



USB 3.2	
HDMI	
CAT	
RS-232	
Power	
Audio	
Internet	

## Documents / Resources

	<p><a href="#">MSolutions MS-63DOC Docking Extender</a> [pdf] User Guide MS-63DOC Docking Extender, MS-63DOC, Docking Extender, Extender</p>
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## References

- [MSolutions - Pro AV Solutions, HDBaseT Products and Tools!](#)
- [DisplayLink macOS Software for Downloads Section | Synaptics](#)
- [DisplayLink USB Graphics Software for Windows End User 11.0 M0 | Synaptics](#)
- [User Manual](#)

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