

Overview

Installed at the display device, the UDM-RX02 converts the signal received from the UDM-1604 or UDM-0102 Multi-Format Distribution Hub to standard audio/video signals. With intelligent receiver technology, each UDM-RX02 is powered remotely from the Multi-Format Distribution Hub via Cat 5/5e/6 cable.

The receiver supports an embedded control function to allow detection of a change in signal from the hub and automatic switch of the Plasma or LCD screen to its new video format.

The UDM-RX02 also allows an optional local power supply to be added for long cable runs.



FIG. 1 UDM-RX02

Common Application

Perfect for the receiving end of sources to be displayed in classrooms, conference rooms or other presentation rooms.

Features

- Video Support for 1600 x 1200 (UXGA), 1920 x 1080 (HDTV), Component YPbPr, S-Video, Composite PAL/NTSC
- S/PDIF, Digital and analog stereo audio support
- IR blaster and receiver ports

Compatibility

The UDM-RX02 is compatible for use with the following UDM Hubs:

- UDM-0102 (FG-UDM-0102) - supports Common Synch Mode.
- UDM-0404 (FG-UDM-0404) - supports Common Synch Mode.
- UDM-1604 (FG-UDM-1604C) - supports Common Synch Mode.
- UDM-1604 (FG-UDM-1604) - does not support Common Synch Mode. In this case, the UDM-RX02 will function, but without Common Synch Mode.

Product Specifications

UDM-RX02 Specifications	
Power Requirements:	24VDC @ .75A Note: In most cases the UDM-RX02 is remotely powered by the UDM Multi-Format Distribution Hub (see Powering on the UDM-RX02).
Rear Panel Connectors:	
Power Socket:	2.1mm barrel-style DC power socket (female)
UDM Hub (RJ45) Port:	Provides audio/video transport as well as control via Cat5, Cat5e or Cat6 to an UDM Hub.
Serial (RJ12) port:	Provides serial RS232 control of remote devices. It also allows administrators to control the various functions to the UDM-RX02 from a command line prompt and terminal connection. • See the <i>Serial Port (RJ12)</i> section for more details. • Requires a DB9-to-RJ12 adapter cable (FG-RS01) to connect to a PC.
IR Rx Port:	3.5mm stereo input port, for connection of an IR receiver to allow setup of the UDM-RX02, local compensation controls, and remote control of centrally located IR devices.
IR Tx Port:	3.5mm stereo IR Transmitter output port allows one IR-controlled device (such as a DVD or VCR player) to be controlled via optional wired IR emitter.
Audio Connectors:	<ul style="list-style-type: none"> • Black RCA connector - Digital audio • White / Red RCA connectors - Analog audio L/R
Video Connectors:	<ul style="list-style-type: none"> • Yellow RCA female connector - CVBS (supports composite video) • S-Video - S-video female connector • VGA - HD15 female connector (supports VGA video) • Green RCA female connector - Component output: Y • Blue RCA female connector - Component output: Pb • Red RCA female connector - Component output: Pr
Operating Environment:	<ul style="list-style-type: none"> • 35°F - 95°F (5°C - 35°C) • Max. relative humidity - 85% (non-condensing) • Heat Dissipation (Typical): 30.7 BTU/hr
Dimensions (HWD):	1" x 8 15/16" x 3 3/8" (25 mm x 227 mm x 85 mm)
Weight:	1.45 lb. (658 g)

UDM-RX02 Specifications (Cont.)	
Certifications:	<ul style="list-style-type: none"> • CE • FCC part 15 Class A
Included Accessories:	UDM-PS 24VDC, 30W Power Supply (57-0102-01)
Other AMX Equipment:	<ul style="list-style-type: none"> • RS232 DB9/RJ12 Connection Cable (FG-RS01) • UDM-RC02 Multi-Format IR Remote Control (FG-UDM-RC02) • UDM-RC05 Multi-Format IR Remote Control (FG1402-70) • IR01 IR Emitter Module (FG-IR01) • IR03 External IR Receiver Module (FG-IR03)

Configuration

The UDM-RX02 is configured via the UDM Hub's WebConsole. Refer to the UDM Hub's *Operation/Reference Guide* for details.

Audio & Video Formats/Resolutions/Distance

Audio & Video Formats/Resolutions/Distance			
Class	Format	Name	Distance
Composite	720x480	NTSC	300 m / 1000'
	720x576	PAL	300 m / 1000'
Component	720x480	480p	300 m / 1000'
	720x576	576p	300 m / 1000'
	1280x720	720p	300 m / 1000'
	1920x1080	1080i	300 m / 1000'
VGA	1920x1080	1080p	300 m / 1000'
	640x480	VGA	300 m / 1000' *
	800x600	SVGA	300 m / 1000' *
	1024x768	XGA	300 m / 1000' *
	1280x1024	SXGA	300 m / 1000' *
	1600x1200	UXGA	300 m / 1000' *
* When using VGA modes with audio enabled, the maximum cable distance is approximately 200 m / 650'.			

Note: The maximum distances indicated above are not absolute, but are recommended distances that have been tested to deliver video at the specified resolutions, without significant signal degradation. In particular, lower resolutions (640 x 480, 720 x 480 and 800 x 600) can often be delivered significantly further than what is indicated in the table. Refer to the UDM Hub's *Operation/Reference Guide* for additional details on maximum cable distances.

Wiring and Connections

All of the connectors and ports are located on the rear panel (FIG. 2):

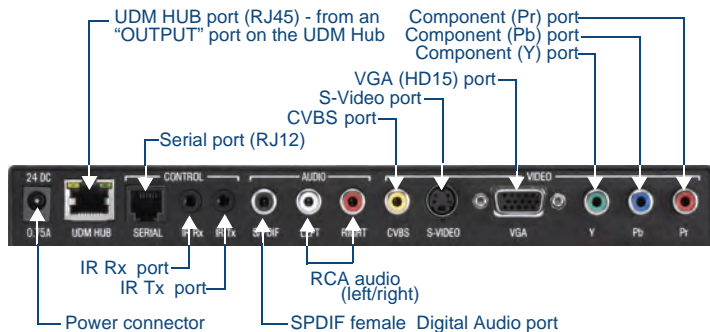


FIG. 2 UDM-RX02 - rear panel components

UDM Hub Port (RJ45)

The UDM-RX02 connects to a UDM Hub through a Cat 5/Cat 6 connection. Refer to the UDM Hub's *Operation/Reference Guide* for details.

Serial Port (RJ12)

The SERIAL (RJ12) port allows administrators to control the various functions to the UDM-RX02 from a command line prompt and terminal connection.

- Requires a DB9-to-RJ12 adapter cable (FG-RS01) to connect to a PC.
- Default settings = 9600, 8 bit, No Parity, 1 Stop Bit.

The Serial port can also be used as a control port for sending serial data to a connected device. In this mode the UDM-RX02N supports baud rates from 1200 - 115200. If a display device is controlled using a serial connection instead of IR, then a serial cable is connected from the UDM-RX02N to the serial port on the display device.

Note: The baud rate on the UDM-RX02N must match the baud rate as the receiver is set up for. For example, if the baud rate has been changed to 115200 for a certain display, then you'll need to change your terminal to the same 115200 baud rate.

Depending on the screen manufacturer, it may be necessary to introduce a cross into this connection by instead using the FG-RS02 cable, or a null modem DB9-DB9 adaptor with the FG-RS01. In some cases the null modem adaptor may need a link between RTS/CTS at the DB9 end.

For example, NEC LCD panels act as DTE equipment and work with standard serial cable, while Fujitsu and Panasonic Plasma screens act as DCE equipment and therefore require cross connections.

Note: Refer to the UDM-0808-SIG / UDM-RX02N Operation/Reference Guide for pinout details on the SERIAL (RJ12) connector.

To connect to a display device using a serial cable:

1. Connect a serial cable to the UDM-RX02N's SERIAL port.
2. Run the serial cable (observing distance limitations) to the display device's serial port and connect.

Note: The serial cable must be pinned out according to the Manufacturer's instructions. Failure to do so will result in serial commands failing.

IR Receiver (IR Rx) Port

The IR Rx port is used to enable user control and the remote compensation of the video link to the UDM, using the FG-UDM-RC10 and the FG-IR03.

Refer to the Protocols and IR Learning section of the UDM Hub's Operation/Reference Guide for details for information on learning a device's IR commands.

IR Transmit (IR Tx) Port

The IR Tx port issues IR commands from the UDM-RX02 to a controlled display device (TV monitor or display). One IR display device can be connected to the RX02 via the IR Tx port, and controlled via the UDM Hub's WebConsole or via remote control.

Connecting an IR Device to the IR Tx Port

1. Connect an IR01 Endaleo IR Emitter Module (FG-IR01) to the IR Tx port on the RX02.

Note: Ensure the position of the device corresponds to the position assigned in the Devices option of the UDM Hub's WebConsole.
2. Run the other end of the IR Emitter cable to the device's IR sensor, and attach the IR Emitter to the device's sensor by removing the cover on the reverse side of the IR Emitter.

IR commands for each device on the system have to be learned by the UDM Hub in order to function properly. Refer to the Protocols and IR Learning section of the UDM Hub's Operation/Reference Guide for information on learning a device's IR commands.

AUDIO Connectors

The UDM-RX02 provides standard Audio RCA output connectors for S/PDIF for digital audio, and LEFT/RIGHT for analog audio output (FIG. 2).

VIDEO Connectors

VGA Input at Display Device

1. Attach one end of the VGA cable to the VGA connector on the UDM-RX02.
2. Run the other end to the VGA connector on the display device. Connect firmly.
3. If appropriate connect audio to the audio connectors on the RX02.

Note: Ensure the UDM Hub port the RX02 is attached to is configured correctly within the Hub's configuration software. Also ensure the correct Audio Type (Analog L/R, S/PDIF, or None) is selected for the relevant input.

Composite Input at Display Device

1. Attach the composite cable to the CVBS connector on the UDM-RX02.
2. Run the other end of the composite cable to the Composite connector on the display device. Connect firmly.
3. If appropriate connect audio to the audio connectors on the RX02.

S-Video Input at Display Device

1. Attach the SVideo cable to the S Video connector on the UDM-RX02.
2. Run the other end of the SVideo cable to the SVideo connector on the display device. Connect firmly.
3. If appropriate connect audio to the audio connectors on the RX02.

Component Input at Display Device

1. Attach the Component cables to the Y (green), Pb (blue) and Pr (red) connectors on the UDM-RX02.
2. Run the other end of the Component cable to the Component connectors on the display device. Connect firmly.
3. If appropriate connect audio to the audio connectors on the RX02.

Video Compensation

Video at the Receive end can be compensated using three main methods;

- Using the UDM Hub's WebConsole
- Using the UDM-RC02 Multi-Format IR Remote Control
- Using a hyper terminal session via the serial connector on the RX02 (especially effective setup method when using long runs)

Connecting an External IR Receiver Module

If passthrough mode (where a device such as a DVD or VCR can be controlled via a UDM-RC02 Multi-Format IR Remote Control) is required then an IR03 External IR Receiver Module will be needed to pick up IR controls from the remote control.

Additionally, if the RX02 is to be compensated via a remote control, then an IR Receiver Module is also needed.

Connecting the UDM-RX02 Receiver to the UDM Hub

The RJ45 port on the front panel of the UDM Hub labelled "UDM" supports the UDM-RX02. The RX02 is then connected to a display device.

1. Connect a standard Cat5/6 Ethernet cable to the RJ45 port labelled UDM on the front panel of the UDM Hub.
2. Connect the other end of the Ethernet cable to the RJ45 port labelled UDM Hub on the rear panel of the RX02.

Note: Ensure the UDM Hub port the RX02 is attached to is configured correctly within the Hub's configuration software. Also ensure the correct Audio Type (Analog L/R, S/PDIF, or None) is selected for the relevant input.

UDM HUB Port LEDs

2 LEDs are visible at the UDM Hub port (on the UDM-RX02) when the UDM Hub is switched on:

- **Green** – Connection to UDM Hub (if Cat 5 removed, LED switches off).
- **Amber** – Power (as well as comms if uploading protocols etc. the Amber LED may flicker).

Powering on the UDM-RX02

Via the UDM-PS External Power Supply (Standard Installation)

The UDM-RX02 is typically powered via the included UDM-PS external 24 VDC power supply power supply (FG-UDM-PS).

- To connect the RX02 to the local power supply, insert the barrel connector of the power supply into the power connector on the RX02.
- To power down the RX02, remove the barrel connector of the power supply from the power connector and then remove the Ethernet cable from the UDM Hub connector.

Via the UDM Hub

In installation scenarios where it is impractical to connect the UDM-PS power supply, the RX02 may be also powered by its Hub device, via a standard CAT5 cable.

- UDM Hubs can provide power to up to 10 (un-powered) RX02s.
- Disconnecting the local power supply will not power down the UDM-RX02 if its Ethernet connection to the UDM Hub is intact.

Note: The UDM-PS Power supply should be used with any RX02 that is exhibiting video noise at it's display.

System Overview

FIG. 3 provides a basic system diagram representing a UDM Hub, UDM-RX02 Receiver, and connected devices:

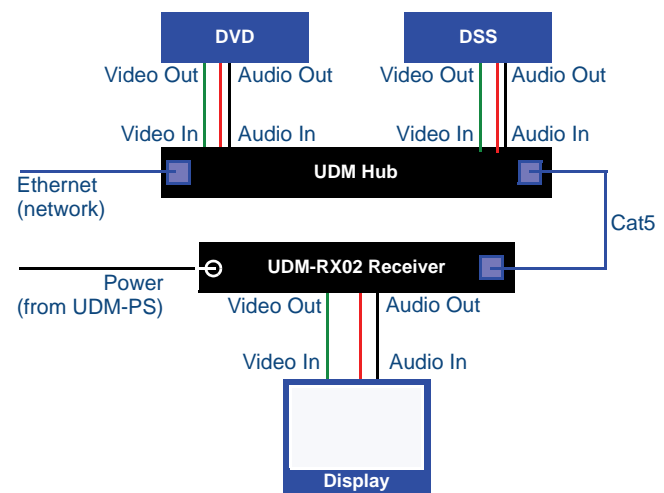


FIG. 3 UDM System Diagram

Additional Documentation

Refer to the UDM-0102 and UDM-RX02 Multi-Format Distribution Hub and Receiver Operation/Reference Guide (available online at www.amx.com) for detailed information on configuring the Hub, UDM receivers and source devices.

