

## *Installation Manual*

### RK-DVS200

Rackable 16-Port DVI-D Extender up to 220 feet



## **Introduction**

The RK-DVS200 is the ideal solution for extending DVI-D signals to remote locations up to 220 feet away. It is the ideal way to extend up to 16 workstation computers from one location to another location or various locations. It is fully compatible with Mac, PC and Linux standards. Up to 16 displays can be extended easily from a rack without the complication or expense of multiple extenders. Rather than buy multiple extenders for rack components, and having to find power strips or numerous power outlets for the adapters, the SmartAVI rack series of extenders allows for up to 16 inputs and 16 outputs from a single rack device. The extender comes in three configurations: four inputs and four outputs, eight inputs and eight outputs, and 16 inputs and 16 outputs. The extender can achieve the full output distance of 220 feet when using a Cat6 23AWG STP cable.

## **Features**

- Supports up to 16 DVI-D single-link sources
- Supports high resolution 1920x1200 60Hz WUXGA
- Supports Mac, PC, and Linux DVI
- Distance: 220 feet using Cat6 23AWG STP cables
- Uses universal DVI Single Link connectors
- Zero pixel loss with TMDS signal correction
- DDC from internal table for Mac/PC
- Compatible with all operating systems
- Compatible with all major KVM switches
- Rack mountable solution
- Data recovery for digital video
- Supports 1.5 and 12Mbps data rates
- Plug-and-play

## **Applications**

- Medical Applications
- Industrial Work Areas
- Home Theater Integration
- Digital Signage Deployment
- Information Kiosks/Displays
- Film/Recording Studios

## What's in the Box?

| PART NO.     | DESCRIPTION                                |
|--------------|--|
| RK-DVS-TX4S  | DVI RACK 4-port Transmitter over STP CAT6  |
| RK-DVS-TX8S  | DVI RACK 8-port Transmitter over STP CAT6  |
| RK-DVS-TX16S | DVI RACK 16-port Transmitter over STP CAT6 |
| RK-DVS-RX4S  | DVI RACK 4-port Receiver over STP CAT6     |
| RK-DVS-RX8S  | DVI RACK 8-port Receiver over STP CAT6     |
| RK-DVS-RX16S | DVI RACK 16-port Receiver over STP CAT6    |

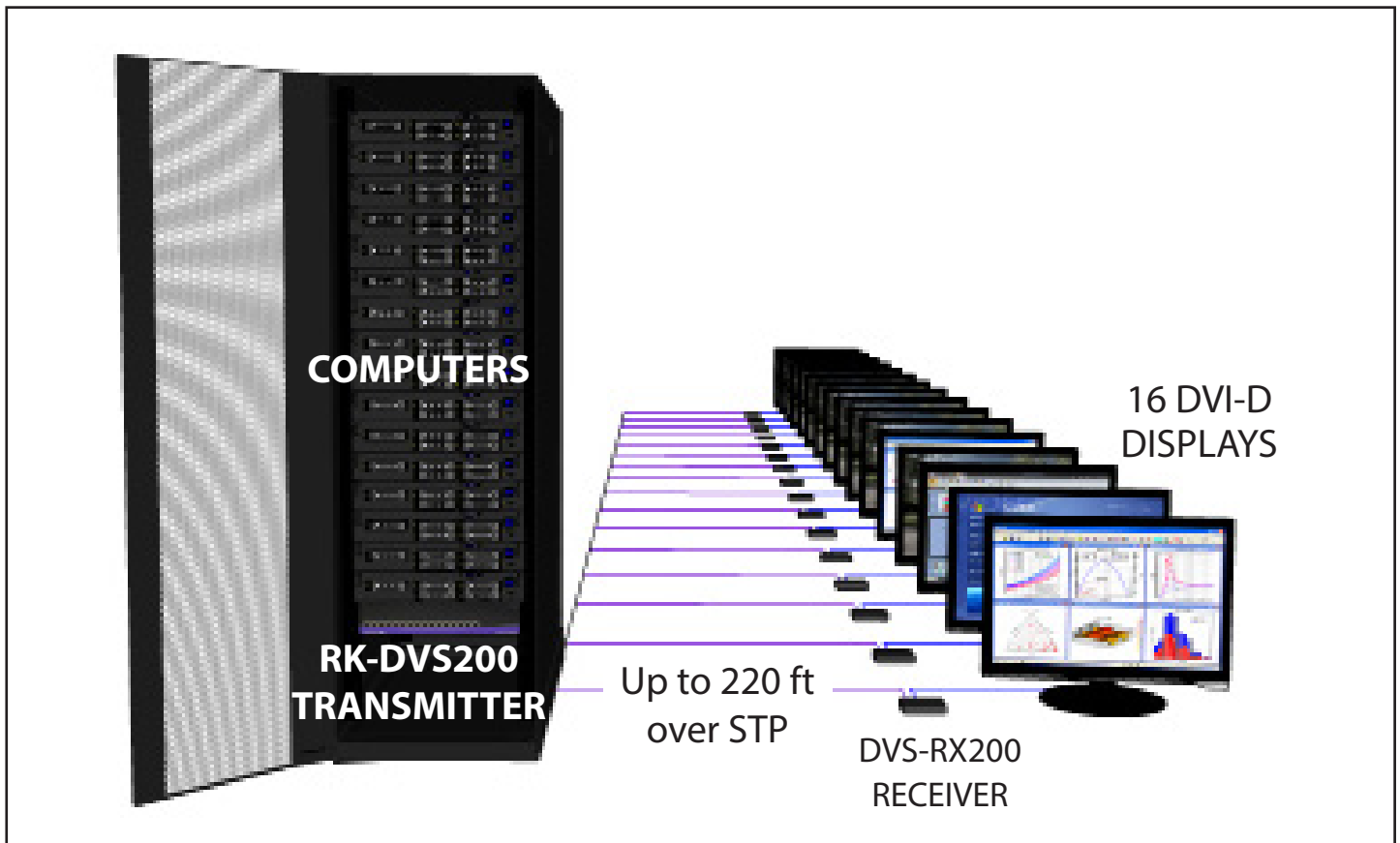
## Technical Specifications\*

| VIDEO                     |                          |
|---------------------------|--------------------------|
| Format                    | DVI-D Single Line        |
| Maximum Pixel Clock       | 165 MHz                  |
| Input Interface (TX)      | (16) DVI-D 29-pin female |
| Output Interface (RX)     | (16) DVI-D 29-pin female |
| Resolution                | Up to 1920 x 1200 @60Hz  |
| DDC                       | 5 volts p-p(TTL)         |
| Input Equalization        | Automatic                |
| Input/Output Cable Length | Up to 20 ft.             |
| Extension over Cat6       | Up to 220 ft.            |

| OTHER           |                                |
|-----------------|--------------------------------|
| Power           | Internal 110-240 VAC           |
| Dimensions      | 17 in W x 3.5 in H x 3.25 in D |
| Weight          | 10 lb                          |
| Operating Temp. | 0-55 °C (32-131°F)             |
| Storage Temp.   | -20-85 °C (-4-185 °F)          |
| Humidity        | Up to 95%                      |

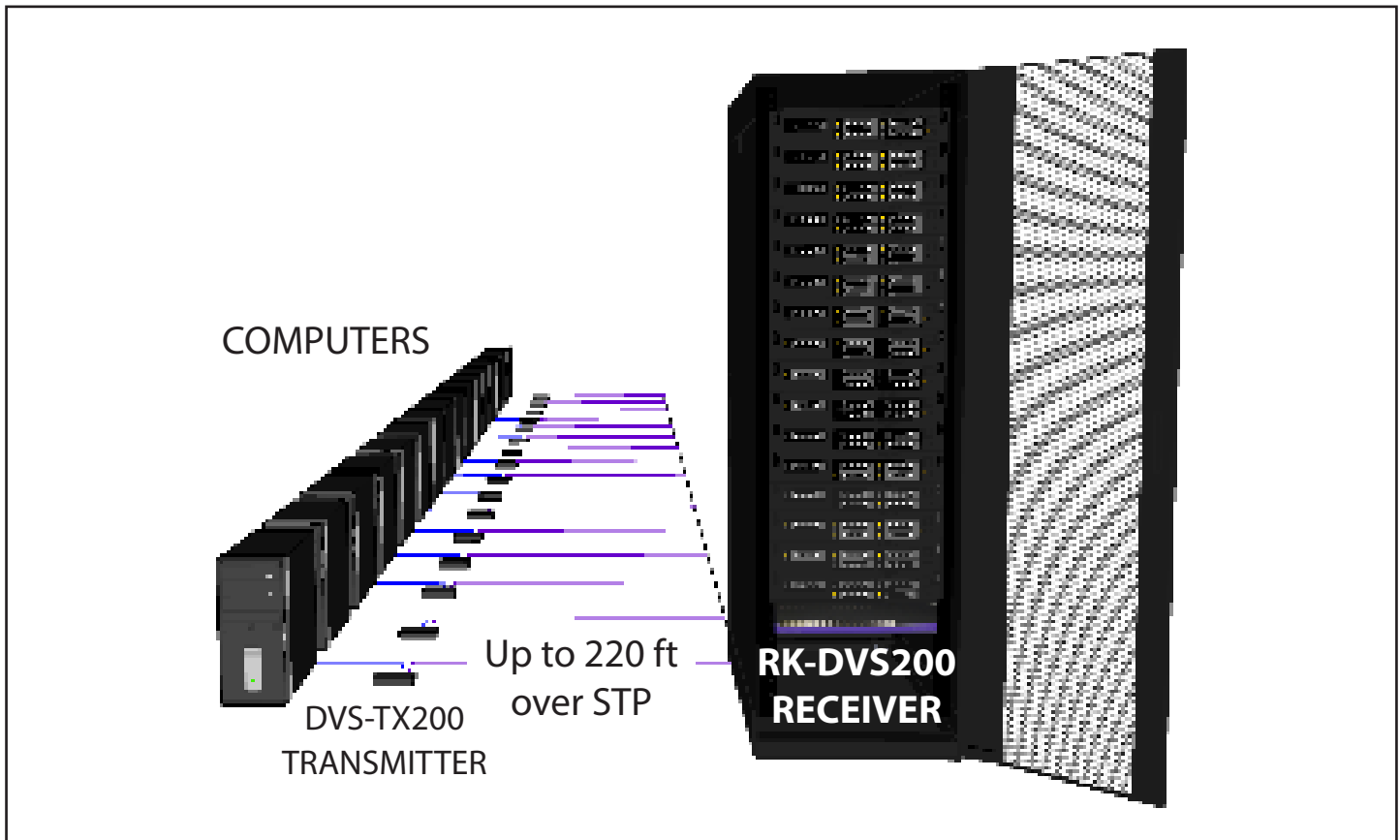
\*specifications shown are for 16-Port option

## Installation Diagram One - Rack to Endpoint



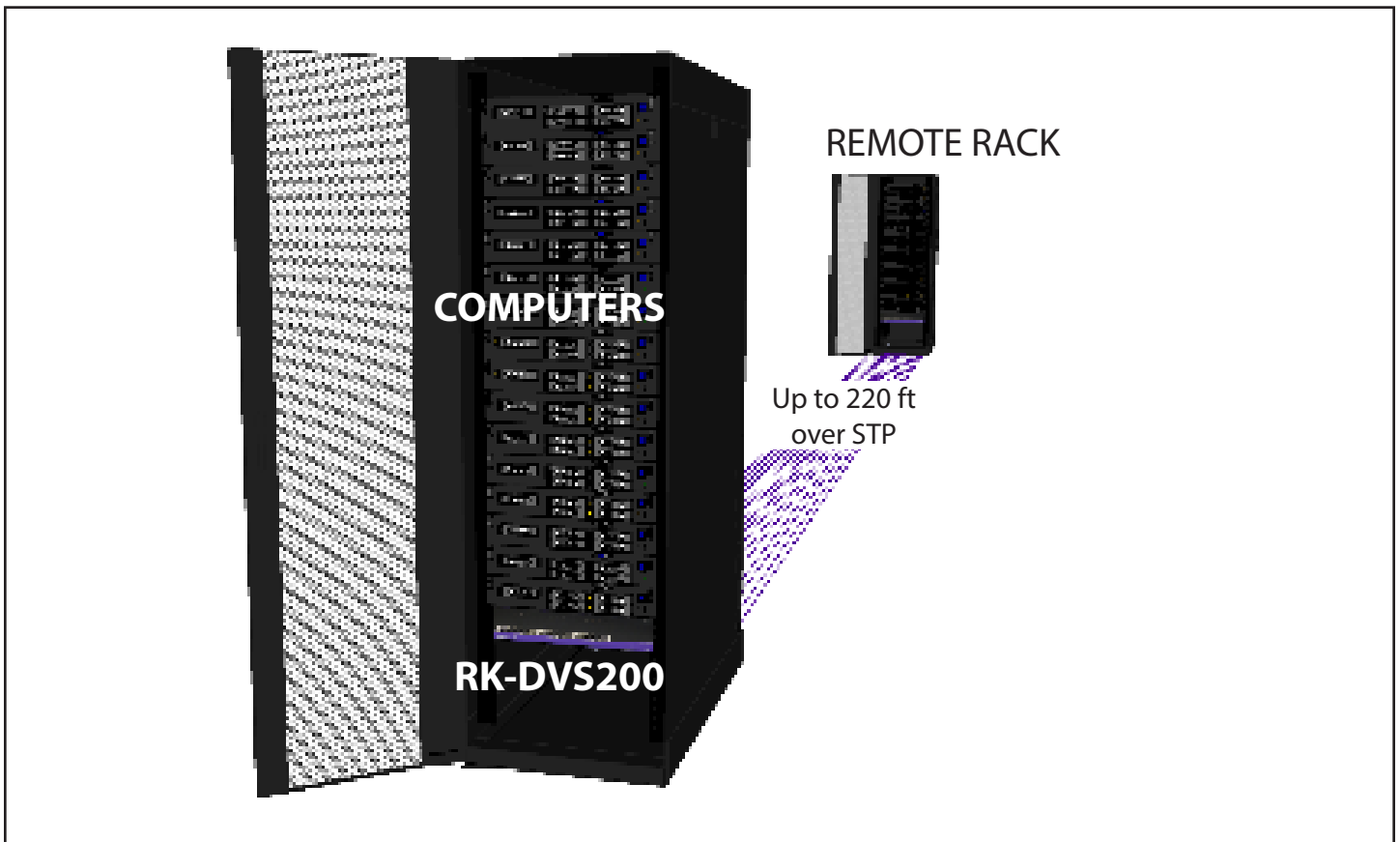
1. Power off all devices.
2. Connect up to 16 DVI-D sources (computers) to each of the 16 DVI-D ports on the rear of the RK-DVS200 transmitter.
3. Connect the RK-DVS200 transmitter to the rear of each of the receivers with one STP (Shielded Twisted Pair) cable per receiver.
4. Connect up to 16 DVI displays to the DVI-D ports on the front of the receivers.
5. Connect the power to the RK-DVS200 transmitter and receiver.
6. Power on the computers and displays.

## Installation Diagram Two - Endpoint to Rack



1. Power off all devices.
2. Connect up to 16 DVI-D sources (computers) to the DVI-D ports of up to 16 transmitters.
3. Connect each of the transmitters to the RK-DVS200 receiver with one STP (Shielded Twisted Pair) cable per transmitter.
4. Connect up to 16 DVI displays (or optional DVI-D outputs) to the ports on the rear of the RK-DVS200 receiver.
5. Connect the power to the RK-DVS200 receiver and the transmitters.
6. Power on the computers and displays.

## Installation Diagram Three - Rack to Rack



1. Power off all devices.
2. Connect DVI-D sources (computers) to the DVI-D ports of the RK-DVS200 transmitter.
3. Connect the RK-DVS200 transmitter to the RK-DVS200 receiver with one STP (Shielded Twisted Pair) cable per channel (up to 16).
4. Connect up to 16 DVI displays (or optional DVI-D outputs) to the ports on the rear of the RK-DVS200 receiver.
5. Connect the power to the RK-DVS200 transmitter and the RK-DVS200 receiver.
6. Power on the computers and displays.



RK-DVS200-TX Front



RK-DVS200-TX Rear

### Supported Resolutions

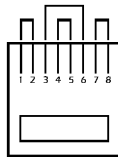
| Resolution  | Refresh Rate |
|-------------|--------------|
| 640 x 480   | 85 Hz        |
| 800 x 600   | 85 Hz        |
| 1024 x 768  | 85 Hz        |
| 1152 x 870  | 75 Hz        |
| 1280 x 768  | 75 Hz        |
| 1280 x 960  | 60 Hz        |
| 1280 x 1024 | 60 Hz        |
| 1600 x 1200 | 60 Hz        |

### STP Cable Configuration

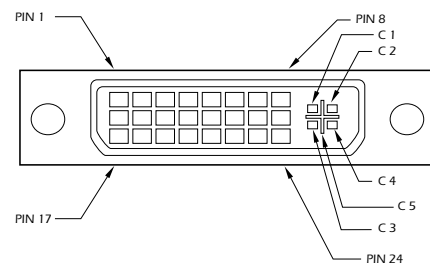
The following is the wiring standard for terminating UTP/STP cable using RJ-45 connector:



- Pair 1 Pins 1 & 2
- Pair 2 Pins 3 & 6
- Pair 3 Pins 4 & 5
- Pair 4 Pins 7 & 8



### DVI-D Configuration



- Connectors: RJ-45
- Capacitance: 14 pf/ft (46.2 pf/m)
- Conductor Gauge: 24 AWG
- Impedance: 100 +/- 15 ohms

| Pin # | Signal                  | Pin # | Signal                  |
|-------|-------------------------|-------|-------------------------|
| 1     | T.M.D.S Data 2-         | 16    | Hot Plug Detect         |
| 2     | T.M.D.S Data 2+         | 17    | T.M.D.S Data 0-         |
| 3     | T.M.D.S Data 2/4 Shield | 18    | T.M.D.S Data 0+         |
| 4     | T.M.D.S Data 4-         | 19    | T.M.D.S Data 0/5 Shield |
| 5     | T.M.D.S Data 4+         | 20    | T.M.D.S Data 5-         |
| 6     | DDC Clock               | 21    | T.M.D.S Data 5+         |
| 7     | DDC Data                | 22    | T.M.D.S Clock Shield    |
| 8     | Analog Vert. Sync       | 23    | T.M.D.S Clock+          |
| 9     | T.M.D.S Data 1-         | 24    | T.M.D.S Clock -         |
| 10    | T.M.D.S Data 1+         |       |                         |
| 11    | T.M.D.S Data 1/3 Shield | C1    | Analog Red              |
| 12    | T.M.D.S Data 3-         | C2    | Analog Green            |
| 13    | T.M.D.S Data 3+         | C3    | Analog Blue             |
| 14    | 5□□□□□                  | C4    | Analog Horz Sync        |
| 15    | GND                     | C5    | Analog Ground           |

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