Avocent® LongView™ 5500/5520

Installer/User Guide

High Performance KVM Extender System

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit https://www.vertiv.com/en-us/support/ for additional assistance.

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1 Product Overview

The Avocent® LongView™ 5500/5520high performance KVM extender system is a DisplayPort KVM extender that enables you to locate your critical computing hardware in a secure and temperature controlled environment away from the user workstation while maintaining the same user desktop experience. Using either one or two CATx cable links you can achieve separation distances of up to 150 meters/492 feet between the transmitters and receivers. At such distances the units can transfer high resolution DisplayPort video, USB 2.0 (low/full and hi-speed), digital and analog audio plus RS-232 serial.

1.1 Features and Benefits

1.1.1 Video support

The LongView 5000 extender system provides the highest possible video bandwidth between the transmitters and receivers. To allow for the differing grades of CATx links, the extender system periodically checks the quality of the link and can accurately determine which of the two video transfer modes can be supported. In low rate mode, the transmitter and receiver extender units may be placed up to 492 feet (150 m) apart.

The following table displays the video bandwidth capabillities.

Table 1.1 Video Bandwidth Capabilities

Item	Fiber	CATx
LV5500	Single head at 4K maximum	Single head at 4K maximum
LV5520	Dual head at 4K maximum	Single had at 4K maximum Dual head at WQXGA maximum
Distances	Up to 4 km	Up to 100 m

1.1.2 EDID management

The extender system intelligently manages the EDID (Extended Display Identification Data) information that each video display provides before reporting to the host computer.

The LongView 5000 extender system supports, but is not limited to, the following video resolutions. All resolutions are displayed at 60 fps.

- 1920 x 1080 (HD)
- 1920 x 1200 (WUXGA)
- 2048 x 1080 (2K)
- 2048 x 2160
- 2560 x 1080
- 2560 x 1440 (WQHD)
- 2560 x 1600 (2.5K)
- 2560 x 1600 (WQXGA)
- 2560 x 2048 (QSXGA)
- 3840 x 2160 (UHD)
- 4096 x 2160 (4K)

1.1.3 USB support

A wide range of USB devices are supported on the receiver via the four ports on the front of the unit.

The LV5500 extender has four low/full speed (version 2.0) USB for keyboards and mice and other HID devices. The LV5520 extender has three low/full speed (version 2.0) USB for keyboards and mice and other HID devices and one hi-speed (version 2.0) transparent USB with transfer rates up to 80 Mbits/sec and supports mass storage and isochronous devices.

1.1.4 Audio support

The LongView 5000 extender system can transfer analog and digital audio signals across the CATx cable link. Standard analog audio is supported through 3.5 mm jacks on the transmitters and receivers. Additionally, the line-in jack on the transmitter and the line-out jack on the receiver are dual purpose. They can accept 3.5 mm analog jacks.

1.1.5 Serial support

The transmitters and receivers each have serial options ports which are used for firmware upgrades. The ports can also be used for transferring high speed serial data across the CATx link.

1.2 Unit Overview

The following figures show the connectors on the transmitters and receivers.

Figure 1.1 LongView™ 5520Transmitter

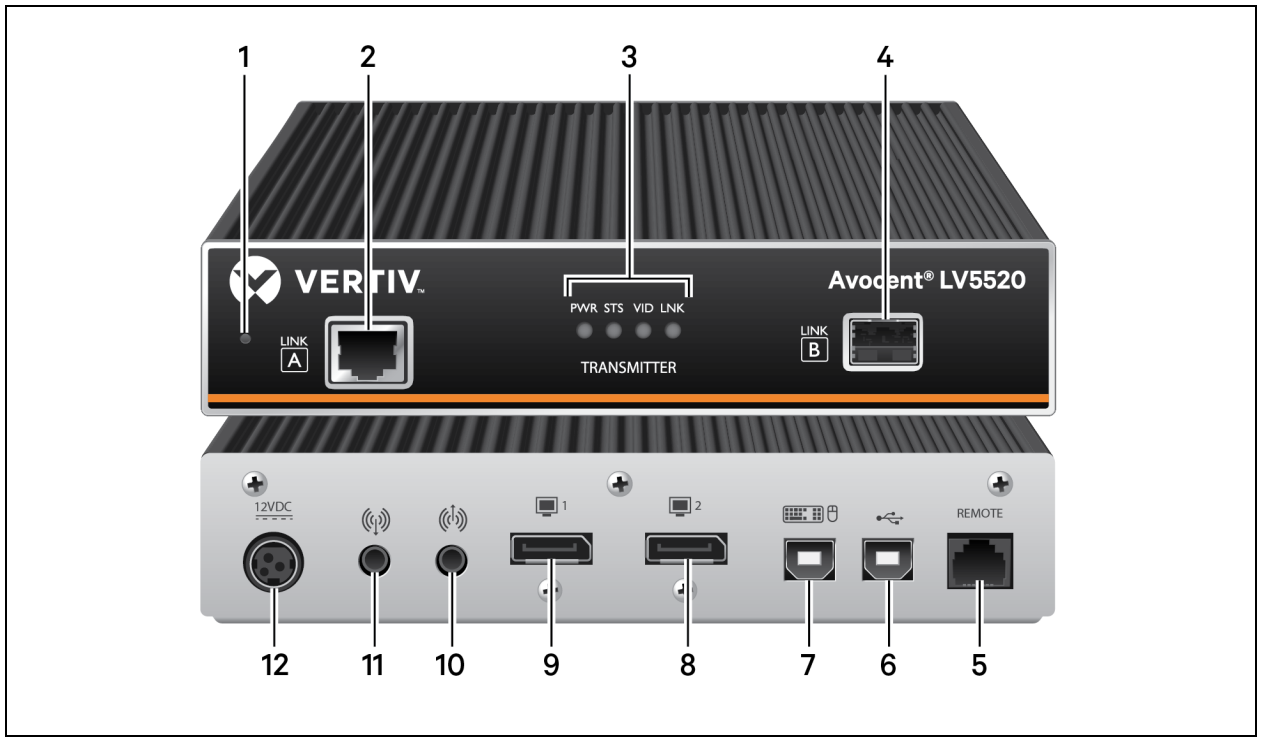

Table 1.2 Transmitter Descriptions

Number	Description	Number	Description
1	Recessed reset button	7	USB port for keyboard and mouse
2	CATx port for alternative link	8	Secondary DisplayPort video input
3	Front panel indicators	9	Primary DisplayPort video input
4	SFP port for fiber optic link	10	Audio line-out
5	Remote port for RS232 serial devices	11	Audio line-in
6	USB port	12	Power input

Figure 1.2 LongView™ 5520 Receiver

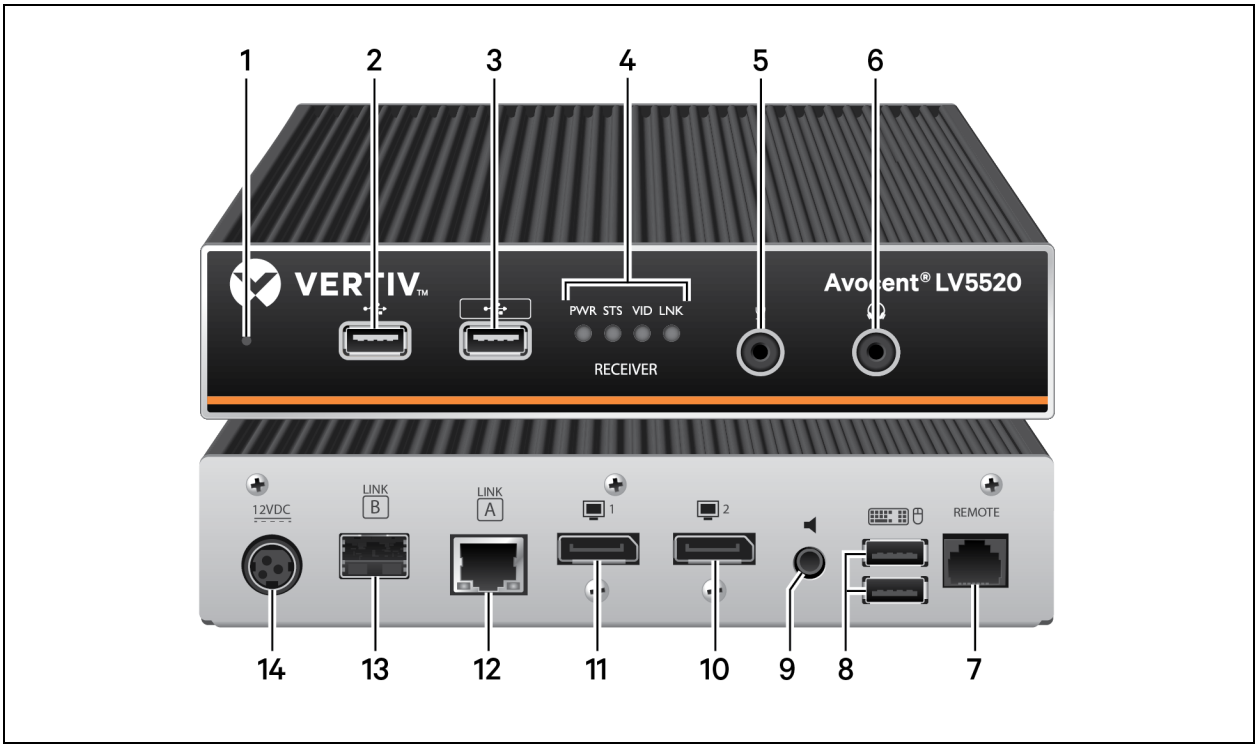

Table 1.3 Receiver Descriptions

Number	Description	Number	Description
1	Recessed reset button	8	USB ports for keyboard and mouse
2	USB port for HID devices	9	Speaker port
3	USB port for transparent USB	10	Secondary DisplayPort video output
4	Front panel indicators	11	Primary DisplayPort video output
5	Microphone input	12	CATx port for alternative link
6	Headphone output	13	SFP port for fiber optic link
7	Remote port for RS232 serial devices	14	Power input

1.2.1 Operating modes

The LongView 5000 extender system maximize the data that is transferred between them. The achievable throughput depends upon the length and quality of the cable links that join the units.

Video signals are most sensitive to link quality and for this reason the extenders have two modes of operation: low rate mode and high rate mode. The extenders periodically check the link quality and determine which video transfer mode can be successfully used. The difference between the two modes is considerable as high rate mode can deliver over twice the video bandwidth. You can also choose which mode to use by using the Hotkey functions. For more information, see Using hotkeys.

When the link mode changes, on-screen icons are displayed, while the indicators on the front panels of both units show which mode is currently being used. If a rate change occurs, the entire data link is reset causing a momentary loss of the video, audio and USB services.

Transmission distances using fiber

Depending on the type of fiber you use, you can dramatically increase the operation distance. For example, with multi-mode fiber and an accompanying SFP module, you can achieve distances up to 400 meters. By comparison, with single-mode fiber, the maximum distance is 4 km.

Table 1.4 Transmission Distances

Distance	Fiber Type	Fiber Color Code	HMX Module
70 m	OM1	Orange	HMX-MM-10G-SFP
150 m	OM2	Orange	HMX-MM-10G-SFP
380 m	OM3	Aqua	HMX-MM-10G-SFP
400 m	OM4	Aqua	HMX-MM-10G-SFP
4 km	OS1	Yellow	HMX-SM-10G-SFP
	OS2		

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2 Configuration

2.1 Accessing the Dashboard

The LongView 5000 extender system typically configures itself automatically, collecting EDID information from attached monitors and passing the details to the host computer. Unless an issue is encountered, the extender system works together as soon as they are connected. The front panel indicators provide the primary source of status information. There is also a dashboard on-screen display (OSD), which provides other details on the primary display.

Figure 2.1 On Screen Dashboard

To access or exit the dashboard:

1. Press and release the Ctrl key three times in quick succession. The three keyboard indicators flash once per second.
2. Press the numeric key 1 located above the main section of the keyboard.

NOTE: The 1 on the numeric keypad will not work.

When the dashboard is enabled, repeat the steps above to exit it.

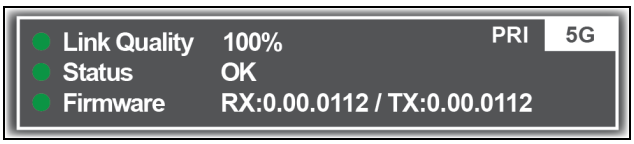
2.1.1 Dual-head mode (LongView 5520 models only)

When the CATx link is used to connect the transmitter and receiver modules, the available bandwidth is reduced. On LongView 5520 models, if dual high-resolution video displays are used, you can determine how the available bandwidth is shared between them. Two modes are available:

- Balanced mode - Shares the available video bandwidth equally between the two video displays, regardless of the EDIDs being reported. For example, 1920 x 1200 each on video displays that would ordinarily request a native mode of 2560 x 1600.
- Priority mode - The primary video port takes priority, allowing it to display resolutions up to 4K, as reported by its EDID. The remaining bandwidth is assigned to the second video head.

Figure 2.2 Balanced Mode Example

Figure 2.3 Priority Mode Example



To choose the dual head mode:

1. Press and release the Ctrl key three times in quick succession. The three keyboard indicators flash once per second.
2. Above the main section of the keyboard press 6 for Balanced mode.

   -or-

   Press 7 for Priority mode.

The dashboard displays either PRI for Priority mode or BAL or Balanced mode next to the link speed.

NOTE: If you don't press a key within five seconds, or if you press a key other than 1, 6 or 7, the keyboard reverts to normal operation.

2.2 Resetting a transmitter or receiver

On the left side of the front panel of each transmitter or receiver is a small reset hole used for special functions.

To reset a transmitter or receiver:

Using a thin tool such as a straightened paper clip, press and release the button concealed in the reset hole. The power indicator displays red. After a few seconds, the power indicator changes from red to green to indicate the reset is complete.

2.3 Upgrading Firmware

Firmware upgrades can be found from the LongView 5000 extender system product page at www.vertiv.com.

To upgrade the firmware:

1. Download the appropriate firmware from the product page.
2. Copy the firmware file to an empty FAT-32 formatted USB memory stick.
3. Ensure both the transmitter and receiver are linked and powered on. Also ensure that no USB drives are inserted in any of the receiver USB ports.
4. Using a thin tool, such as a straightened paper clip, press and hold the reset button on the receiver until the STS indicator flashes red/blue. The receiver is now in upgrade mode.
5. Wait for the STS indicator link to turn green, indicating the link has been established.
6. Insert the USB memory stick with the firmware file into the left USB port on the front panel of the receiver. Each unit's STS indicators flash red/green to indicate the upgrade is in process. When the upgrade is complete, each until will automatically reboot and run the new firmware.

NOTE: If the upgrade is not successful, the STS indicator illuminates red. If necessary, reboot the transmitter and receiver to run the previous firmware.

3 Operation

The LongView 5000 extender system is designed to be transparent in operation. All peripherals should respond as they would when connected to your host computer.

3.1 Status Indicators

The transmitter and receiver contain various indicators to provide you with status information. Each has four multi-color indicators on their front panels.

Table 3.1 Status Indicators Descriptions

Indicator	Description
PWR	Solid Red: Initial boot Green: Ready for use Flashing Red:An issue has been encountered. Power cycle to see if the issue persists
STS	Displays the link type Alternating Red/Blue: Upgrade mode Alternating Red/Green: Upgrade in progress Solid Blue: Fiber 10G link in use Solid Green: CATx 5G link in use Solid Amber: Warning. See the dashboard for details Solid Red: Error. See the dashboard for details
VID	Displays the status of the video connection Off: No displays connected Solid Red: No video on connected displays Solid Amber: Video only on one connected display Solid Green: Video on both connected displays
LNK	Displays the link status between the transmitter and receiver Off: No link Red: 0-25 percent quality Amber: 25-50 percent quality Yellow: 50-75 percent quality Green: 75-100 percent quality

3.2 CATx Indicators

The indicators on the CATx port connector of each transmitter and receiver provides information when a CATx link is in use.

Table 3.2 CATx Indicator Descriptions

Indicator	Descripion
LINK	Illuminates green when there is a CATx link between the transmitter and receiver
SPEED	Displays whether the speed is sufficient Solid Amber: Speed is below the necessary 5 GB/sec. Check the CATx cable link for issues. Solid Green: Link speed is good

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Appendices

Appendix A: Technical Specifications

Category	LongView 5500	LongView 5520
Environmental		
Nominal Operating Power (W)	10W	10W
Peak Power (W)	12W	12W
External Power	12V DC, 1.5A	12V DC, 1.5A
Max operating Altitude (m)	2000 m (6500 ft)	2000 m (6500 ft)
Operating Temp range	0 to 40°C (32 to 104°F)	0 to 40°C (32 to 104°F)
Operating Humidity range (%RH)	0-80%	0-80%
Storage Temp range (°C)	-10 to 50°C (14 to 122°F)	- 10 to 50°C (14 to 122°F)
Storage Humidity range (%RH)	0 to 80%	0 to 80%
Max Thermal Dissipation (BTU)	41.94	41.94
MTBF (Tx / Rx)	530k / 520k hours	510k / 490k hours
MTBF (Pair)	260k hours	250k hours
Local Unit - Transmitter (Tx)		
Tri-color status indicators	4	4
Video	DisplayPort in and local pass-through out	2 x DisplayPort in
USB 2.0 Type B	2	2
Audio	Line in and out analog	Line in and out analog
RJ12 serial port	1	1
RJ45 and SFP+ ports	1	1
Remote unit – Receiver (Rx)		
Tri-color status indicators	4	4
Video	2 x DisplayPort out (second port is a duplicate)	2 x DisplayPort out
USB 2.0 Type A	4	3 full-speed and 1 high-speed (transparent USB)
Audio	Mic in, headset and speaker out	Mic in, headset and speaker out
RJ12 serial port	1	1
RJ45 and SFP+ ports	1	1
Physical Design		
Construction	Robust metal	Robust metal
Transmitter and receiver dimensions	186mm/7.32" (w), 39mm/1.54" (h), 148mm/5.83" (d)	186mm/7.32" (w), 39mm/1.54" (h), 148mm/5.83" (d)
Transmitter weight	1.29kg / 2.84lbs	1.29kg / 2.84lbs

Category	LongView 5500	LongView 5520
Receiver weight	1.24kg / 2.73lbs	1.24kg / 2.73lbs
Power supply	100 to 240VAC, 47 to 63Hz	100 to 240VAC, 47 to 63Hz
	12VDC 18W output from power supply unit.	12VDC 18W output from power supply unit.

Appendix B: Remote Port Pin-out

The REMOTE port uses a 6p6c socket. The pin-out is listed below.

NOTE: Pins 2 and 3 are inactive. However, they are still connected internally. No links should be made to these pins.

Table A.1 Remote Port Pin-out

Pin	Signal
1	Sense/5V
2	Not used (do not use)
3	Not used (do not use)
4	GND
5	RX
6	TX

NOTE: The transmitter detects the presence of an incoming power signal to determine whether 5V should be supplied at the receiver.

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