Connect CATx cables between the Extender devices and the L3 Switch.

Connect the power cord of the supplied adaptor to the DC input first, then...

Optionally for RS-232 serial transmission: connect the desired devices (e.g. a computer).

Connect a computer to the L3 Switch to arrange the necessary settings easily.

Connect an HDMI source device (e.g. a Computer) to the HDMI input port in the Encoder.

The signal transmission works only between these Encoder and Decoder devices including

* HID: USB mouse, keyboard, presenter, etc.

Compatible Devices

The signal transmission works only between these Encoder and Decoder devices including the VINX-AP series, but other Lightweight devices cannot be connected to the USB LAN (AV input/output) ports.

** Please see the Calling Factory Default Settings section for details.
Preparing the Network – The Requirements of the Switch

The recommended type of network device: 1000Base network with Layer 3 switch, Gigabit Ethernet. TCP/IP/Termology Layer 2 is the data link layer that is responsible for splitting up the information coming from higher layers in the TCP/IP stack into Ethernet frames. An Ethernet frame contains labeling information with source and destination physical addresses (called source and destination MAC address). These physical addresses uniquely identify the source and destination physical devices (e.g. a VINX encoder and a VINX decoder). Ethernet frames provide error resilience by incorporating a redundancy check field through which transmission errors can easily be detected. The device that does use only the physical address information found in the Ethernet frame to route the packet from one of its input ports to one or more of its output ports is called an unmanaged switch.

A managed switch, on the other hand, can handle the traffic and forward packets to output ports by utilizing information from higher layers. This gives the managed switch more flexibility and also allows for more sophisticated functions like multiscasting. Since even a simple VINX network where one VINX encoder supplies multiple VINX decoders relies on multiscasting, a multiscapable capable switch (i.e. a managed one) is a must. The managed switch shall offer the following capabilities:

- IGMPv2
- IGMP snooping, IGMP fast leave, IGMP querier
- Multicast Filtering
- Jumbo frames

For more information about the requirements and technologies please see the Application Note at the website of the product.

Arranging the Extenders to Groups

Encoder and Decoder devices have to be assigned to each other in order to transfer the desired video and control signals – by any of the following ways:

1. **HDMI setting:** use the DIP switch at the front panel to set the Video stream ID. Set the DIP switch states to the same value at the desired devices. If you set a DIP switch at a device, the other devices can be configured via the web page. Please note that the value of DIP switch assigned Video Stream ID can range from 1 to 15 inclusive.

2. **SW setting:** set the Video stream ID via the built-in web page. Connect to the device as described in the Software Control section. The Video Stream ID shall be between 1 and 9999 inclusive. In this case make sure that the DIP switches of the affected devices are set to ‘0000’.

**Video Stream ID Rules**

The following rules are defined to avoid Video Stream ID conflicts:

- When the DIP switch is in ‘0000’ position the SW setting will be valid.
- When the DIP switch is not in ‘0000’ position the HW setting will be valid.
- When the DIP switch is set back to ‘0000’ the SW setting will inherit the ID (the previous DIP switch value).

*SW setting and HW setting can be combined within the group but in this case the DIP switch value will determine the common Video Stream ID.*

The DIP switch state can be ignored by an LW3 command, see the User’s Manual.

USB Transmission

The USB data transmission works as shown in the figure below. The USB devices are connected to the Decoder, the host device (computer) is connected to the Encoder by the supplied USB cable.

**USB Transmissions**

1. **Unicast** mode: data is transmitted to the serial port of all connected Decoders.
2. **Multicast** mode: data is transmitted to the serial port of all connected Decoders.

**Supported Devices**

USB HID devices (keyboard, mouse, presenter, etc.) and mass storage devices (Flash drive, external hard drive). USB Mass Storage Drive and USB HID extension are connected to the Encoder's USB interface.

**Typical Application**

- **Catx**
- **HDMI**
- **Analog audio**

**RS-232 Transmission**

The RS-232 serial data transmission is fully transparent between the Encoder and the connected Decoder devices. All data received at the serial port of the Decoders is transmitted to the serial port of the Encoder and vice versa: the data received at the serial port of the Encoder is transmitted to the serial port of all connected Decoders.

The data transmission works only if the serial port parameters set to the same values in all the devices: serial data send/receive and the VINX Encoder and Decoder devices.

**Video Transmission Quality**

When the network bandwidth is less than required.

- Movie mode (Lower image quality): Less bandwidth: The image quality is adjusted to the available bandwidth. If the bandwidth is decreased the image quality will be lower, but the video streaming is continuous.
- Graphics mode (Best image quality): High bandwidth: The image quality is kept at a high level. If the bandwidth is decreased the image quality cannot change, but frame drop may appear.

The setting has an effect when the available bandwidth is less than required.

Software Control – By Using the Built-in Webpage

When the device and a computer are connected to the same network, the VINX can be connected to the computer browser (Google Chrome and Mozilla Firefox are recommended).

1. Arrange the desired extenders with source/sink devices.
2. Connect the extenders to the network switch and/or USB Mass Storage Drive and USB HID extension.

**Arranging the Extenders to Groups**

Encoder and Decoder devices have to be assigned to each other in order to transfer the desired video and control signals – by any of the following ways:

1. **HDMI setting:** use the DIP switch at the front panel to set the Video stream ID. Set the DIP switch states to the same value at the desired devices. If you set a DIP switch at a device, the other devices can be configured via the web page. Please note that the value of DIP switch assigned Video Stream ID can range from 1 to 15 inclusive.

2. **SW setting:** set the Video stream ID via the built-in web page. Connect to the device as described in the Software Control section. The Video Stream ID shall be between 1 and 9999 inclusive. In this case make sure that the DIP switches of the affected devices are set to ‘0000’.

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*SW setting and HW setting can be combined within the group but in this case the DIP switch value will determine the common Video Stream ID.*

The DIP switch state can be ignored by an LW3 command, see the User’s Manual.

**Understanding the 2D Video Wall Mode**

When the function is enabled, the VINX can be controlled as a 2D video wall. The VINX can be configured for video mixing and video wall display in the control software (LDC and LW3).

- A Video Wall must be composed of two VINX Extensions devices, VINX-120-HDMI-ENC and VINX-120-HDMI-DEC.
- A Video Wall can be configured to display 1x1, 2x2, 2x3, 3x2, 3x3, 4x4, 5x5, 6x6, 7x7, 8x8, 9x9, 10x10, 11x11, 12x12, 13x13, 14x14, 15x15.