Optical AV Over IP Video System for 10G Networks with Full USB 2.0 support

UBEX is an optical scaling extender which allows 4K UHD@60Hz 4:4:4 uncompressed signal extension with latency-free multistreaming. The device is designed to use Video Over IP transmission on a 10G Ethernet network with full USB 2.0 support.



Details

The UBEX-PRO20-HDMI-F130 integrates the Icron USB 2.0 extension solution into the UBEX system. The resulting product variants are able to transmit USB2.0 traffic to compatible UBEX endpoints as well as to the USB20-1GBE-DS and USB20-1GBE-HS type of standalone USB2.0 extender boxes. Reliable USB2.0 transmission is ensured by proper Ethernet QoS.

Due to the versatality of UBEX, the USB 2.0 functionality can be further enhanced by subsequent software updates. Such enhancements could include the ability to encrypt the USB 2.0 stream and to control the USB 2.0 transmission through LW3.

The F130 genre is very similar to the F120, but without IR and with full USB 2.0 support. Moreover, the USB-B type of host connector is replaced with an USB-C connector (with USB 2.0 data only support).

UBEX is an optical scaling extender which allows **4K UHD@60Hz 4:4:4 uncompressed signal extension with latency-free multistreaming**. The device is designed to use **Video Over IP transmission on a 10G Ethernet network**, it has standard, 10 Gbps **SFP+ optical modules** installed, which are field-exchangeable by the user.

UBEX units can connect to create a **complex network with the use of a standard Ethernet switch**.

An UBEX-MMU-X200 **Matrix Management Unit** (MMU) is required to **control and supervise a virtual matrix**, which can be created by connecting UBEX units as input and output endpoints to an Ethernet switch acting as crosspoint.The MMU device can **update the firmware of endpoint UBEX units** in a virtual matrix application **simultaneously**, without limitation for the number of devices in the setup.

One of the prime advantages of such new architecture is **scalability**: the virtual matrix created can have a **virtually infinite number of endpoints**, limited only by the number of open ports on the Ethernet switch used. Such a virtual matrix can be also extremely asymmetrical, as e.g. it could have only a few (or one) devices on the input side, while an almost unlimited number of output end units.

Using **visually lossless compression**, UBEX can **extend two signals over a single, 10 Gbps Ethernet port**. This generates **substantial cost saving** on the required Ethernet switch side, as with UBEX only half the router size is required compared to the needs of similar, 10 Gbps IP based architectures. For video signals which can be transferred within the 10G speed limit of a single optical fiber, a **video signal redundancy** feature is available employing the second optical fiber channel.

Details

The UBEX design also favors dual-screen applications: each transmitter and each receiver handles 2x HDMI 2.0 video ports.

UBEX can also be used in a point to point setup as a conventional extender pair between endpoints. It is not required to use an Ethernet switch when point to point extension is required.

The Video Wall Wizard for UBEX features quick video wall installation with bezel adjustment and cropping, includes options for various layouts within the video wall matrix and also allows zones for smart management.

The maximum reachable distance is ranging between 400 m and 80km, depending on the type of singlemode or multimode optical modules installed in the device, and on the signal properties.

The internal power source of UBEX has Medical (60601) and ITE (60950) grade classifications for maximum reliability.

Features

- **Scaling of video signals to match the properties of the target display/sink**
- **Full USB 2.0 support**
- **Support for high bitrate audio, including Dolby TrueHD, Dolby ATMOS and DTS-HD Master Audio**
- **Multiviewer operation mode**
- **Ethernet extension (1 Gbps)**
- **Audio embedding and de-embedding**
- **USB KVM (HID) extension**
- **4096x2160@60Hz/4:4:4 maximum resolution (600MHz)**
- **Uncompressed video up to 18 Gbps datarate (600 MHz pixel clock)**

Specifications

Part Number	Product Name	SFP+ Module Installed
91820400	UBEX-Pro20-HDMI-F130	None
91820401	UBEX-Pro20-HDMI-F130 RED	None
91820402	UBEX-Pro20-HDMI-F130 RED 2xSM	2x 10G SFP+ singlemode
91820403	UBEX-Pro20-HDMI-F130 RED 2xMM	2x 10G SFP+ multimode
91820404	UBEX-Pro20-HDMI-F130 BLACK	None
91820405	UBEX-Pro20-HDMI-F130 BLACK 2xSM	2x 10G SFP+ singlemode
91820406	UBEX-Pro20-HDMI-F130 BLACK 2xMM	2x 10G SFP+ multimode
91820407	UBEX-Pro20-HDMI-F130 RED 2xCAT	2x 10G SFP+ to RJ45
91820408	UBEX-Pro20-HDMI-F130 BLACK 2xCAT	2x 10G SFP+ to RJ45

For further information on our SFP+ modules and color options please contact your regional Lightware Office or Lightware HQ.

Specifications

Hardware Features	UBEX-PRO20 HDMI-F100	UBEX-PRO20 HDMI-F110	UBEX-PRO20 HDMI-F120	UBEX-PRO20 HDMI-F130
Link	20G	20G	20G	20G
Optical	✓	✓	✓	✓
Type of videos	HDMI 2.0	HDMI 2.0	HDMI 2.0	HDMI 2.0
Nr. of video inputs	2	2	2	2
Nr. of video outputs	2	2	2	2
USB HID (KVM)	✗	✗	✓	✓
Full USB 2.0	✗	✗	✗	✓
Balanced stereo analog audio I/O ports	✗	✓	✓	✓
IR I/O and RS.232 control ports	✗	✓	✓	✓ only RS232, no IR
1 Gbps Ethernet	✓	✓	✓	✓
Nr. of fibers (W/STANDARD SFP +)	4	4	4	4
Nr. of fibers (W/BIDI SFP +)	2	2	2	2

Software Features	UBEX-PRO20 HDMI-F100	UBEX-PRO20 HDMI-F110	UBEX-PRO20 HDMI-F120	UBEX-PRO20 HDMI-F130
4K scaling	✓ 2	✓ 2	✓ 2	✓ 2
Framerate conversion	✓	✓	✓	✓
4K UHD @ 60Hz 4:4:4	✓	✓	✓	✓
30 bit deep color support	✓	✓	✓	✓
Audio embedding and de-embedding	✗	✓	✓	✓
Advanced edid management	✓	✓	✓	✓
HDCP 2.2 compliant	✓	✓	✓	✓
Seamless switching	✓	✓	✓	✓
Multiviewer operation mode	✓	✓	✓	✓