

25G-FR80x80

25G Hybrid 80x80 Crosspoint Matrix Frame

Part No: 9121 0010

Features:

- 25 Gbit/sec per port video signal speed
- Multilayer signal management – signal switching in 3 dimensions
- 80x80 video crosspoints
- Independent switching of audio, video and controls
- USB KVM extension
- Built-in 160 port 100 Mbit Ethernet switch with 1 gigabit uplink
- Dual redundant CPU processor boards for fail safe operation
- Hot swappable components
- RS-232 bidirectional transmission and control
- IR and CEC transmission
- Intuitive GUI interface for easy handling of all functions
- Room and User Management
- Front panel touch screen
- Advanced error handling and logging with time code
- TCP/IP Ethernet control (multiple connections)
- Advanced EDID Management
- HDCP compliant
- Combine non-HDCP and HDCP capable I/O boards in the same frame
- Redundant power supplies – 24/7 secure operation
- Supports former LW protocols
- Barco Encore and Vista Spyder compatible
- Hybrid Modular technology

The 25G-FR80x80 frame handles 80 input and 80 output ports and manages the signals on 8 different layers which means the signals are switched in 3 dimensions. The 25G frames are able to: transmit video signals up to 4K resolution, support all the 3D formats, handles forward and return audio, transmit USB-KVM, Ethernet, bidirectional RS-232, IR and CEC signals. The intuitive graphical user interface makes the controlling of the matrix very easy and allows the user access to all the functionality. Lightware's Advanced EDID Management is included in the frame which is also HDCP compliant as well.

Each board which contains electronic components is hot swappable which makes changes of the configuration very easy and quick and it also means that the system is able to work 24/7 without any delays. If any error occurs it can easily be fixed without switching the matrix off. Redundant power supplies and CPU such as the monitoring board are also available for this frame for fail safe operation in mission critical applications. The 25G CPU stores the settings of all boards and sends backups for the second CPU. If the first CPU fails the second takes over automatically with the same settings. With the redundant power supplies N+1 and N+2 redundancies can be reached.



Graphical User Interface

25G Hybrid matrices have a built-in JAVA-based graphical user interface which eases system control, setup, maintenance and troubleshooting. It is accessible via LAN, RS-232 and the front panel touch screen.

25G Hybrid matrices have a built-in front panel touch screen capable of showing the 25G control software with full control options. Unit information, crosspoint setup and switching, EDID Management, User & Room Management, maintenance, troubleshooting and every other tool is available on the front panel display.



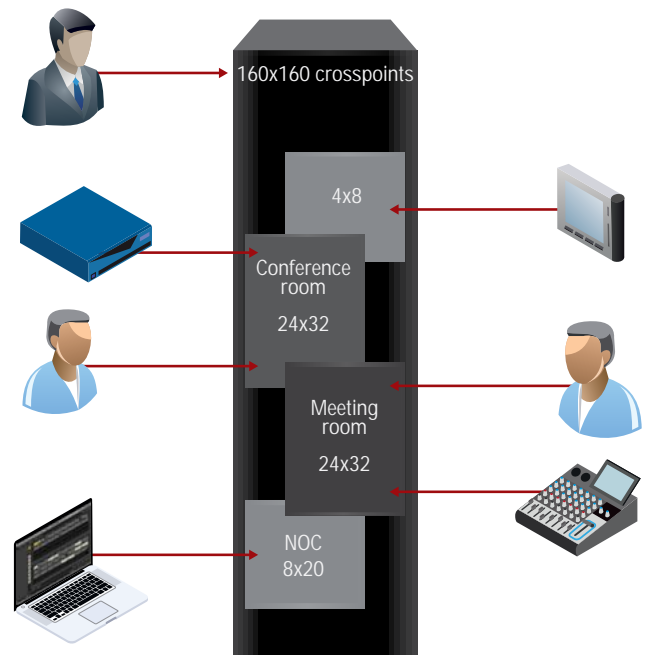
The screenshot above presents the GUI for the 25G routers. The control software is available for both Apple Macintosh and PC computers as a standalone desktop application.

Room Management

As the maximal crosspoint area in the 25G Hybrid routers is a large switching plane, we have introduced 'Room Management'. A room could be a conference room, meeting room or network operation center (NOC) – in essence, whatever you want it to be.

All these rooms can be programmed with their own sources and destinations, but also can share some resources if required. If, for example, you want to prohibit an operator in one room from accidentally making switches in another, the maximal crosspoint area can be divided in smaller virtual matrices called 'rooms'.

Third party controllers will see only the crosspoints assigned to them. In this example a remote control device located in the Conference room controls the 24x32 matrix area, while the touch panel system in the Meeting room has access to a 32x32 matrix area. These controllers do not know anything about the rest of the system. However, as you can see, the two mentioned matrices overlap meaning both controllers also share common resources.



User Access Management

For security, a user password can be set to access system control.

25G-FR80x80 specifications:

| Media layers | |
|----------------------|---|
| Video data rate: | 25 Gbit/sec per port |
| Video compatibility: | DisplayPort 1.2, HDMI 2.0 with 3D, Single-Link DVI, SDI, HD-SDI, and 3G-SDI |
| Audio: | 3 layers – embedded, forward and return audio channels |
| Audio compatibility: | HDMI audio formats, IEC 60958-1 and IEC 61937 * |
| Ethernet: | 100 Mbit/port (total 160) with 1 Gigabit uplink |
| USB KVM: | USB HID crosspoint and extension |
| RS-232 & IR: | Control for all devices through the matrix |
| CEC: | According to the HDMI standard |

* See the format compatibility table.

| Control | |
|---------------------------|--|
| Ethernet: | Redundant control (one for each CPU) |
| Ethernet control: | Ethernet 10Base-T or 100Base-TX (Auto-negotiation) |
| RS-232: | Redundant control (one for each CPU) |
| RS-232 symbol rate: | Selectable (9600,38400, 57600, 115200 Baud, default: 57200 Baud) |
| Room and User Management: | Unlimited rooms and users |
| Virtual matrix option: | Virtual I/O numbering, Virtual matrices |
| 3rd party control: | Vista Spyder and Barco Encore compatible |

| Connectors (frame) | |
|--------------------------|--|
| Ethernet control: | 2 x RJ45 (1-1 per CPU) |
| RS-232 / 422 control: | 2 x 9 pole D-sub (1-1 per CPU) |
| Ethernet layer: | 2 x RJ45 - 1 Gigabit uplink for Ethernet |
| SMPTE 269M Alarm output: | 1 x BNC |
| Power: | 4 x IEC-320 C-20 |

| Redundance & Reliability | |
|--------------------------|--------------------------------------|
| CPU: | Dual redundant |
| Hot swappable: | Each IO board / CPU / fan tray / PSU |
| Power supplies: | Maximum 3 PSUs |
| PSU redundancy: | Up to N+2 |
| MTBF: | 200.000 hours |

| General | |
|-----------------------|---|
| Crosspoint size: | From 8 x 8 up to 80 x 80 |
| Power: | 100 - 240 V AC |
| Power consumption: | 200 W (typ) - without I/O boards |
| Power consumption: | 1500 W (typ - depends on current configuration) - with I/O boards |
| Enclosure dimensions: | 446(482) W x 640 D x 1288,5 H mm |
| High in rack units: | 29U |
| Temperature: | 0°C to +50°C operational, -40°C to +70°C storage |
| Humidity: | 10 to 90% non-condensing |
| EMI/EMC compliance: | Yes, EN 55022 Class B |
| RoHS compliance: | Yes |

Format compatibility of the different audio layers:

| | Embedded Audio | Forward Audio | Return Audio |
|---|----------------|------------------------|------------------------|
| LPCM (up to 8 channels) | ✓ | ✓ (up to 2 channels) | ✓ (up to 2 channels) |
| Dolby Digital (AC-3, up to 5.1 channels) | ✓ | ✓ | ✓ |
| MPEG1 (Layer 1 and Layer 2) | ✓ | × | × |
| MPEG1 Layer 3 | ✓ | × | × |
| MPEG2 | ✓ | × | × |
| AAC | ✓ | × | × |
| DTS (up to 5.1) | ✓ | ✓ | ✓ |
| DTS ES (5.2 or 6.1 channels) | ✓ | ✓ | ✓ |
| Adaptive Transform Acoustic Coding (ATRAC) | ✓ | × | × |
| One Bit Audio | ✓ | × | × |
| Dolby Digital Plus (Enhanced AC-3, up to 7.1 channels)* | ✓ | ✓ (up to 5.1 channels) | ✓ (up to 5.1 channels) |
| Dolby Digital EX (5.2 channels) | ✓ | ✓ | ✓ |
| Dolby Digital Surround EX (5.2 channels) | ✓ | ✓ | ✓ |
| DTS-HD (up to 7.1 channels)** | ✓ | × | × |
| Dolby Digital TrueHD (MAT, MLP, up to 8 channels) | ✓ | × | × |
| Direct Stream Transport (DST) | ✓ | × | × |
| WMA Pro | ✓ | × | × |

* Standard supports 15.1 channel format, but that is not defined yet.

** DTS-HD High Resolution Audio and Master Audio.