

25G-FR160x160 / 25G-FR120x120 / 25G-FR160x80 / 25G-FR80x160

Up to 160x160 crosspoint 25G Hybrid matrix frame

Part No: 9121 0001 (FR160x160), 9121 0002 (FR120x120),
9121 0003 (FR160x80), 9121 0004 (FR80x160)

Features:

- 25 Gbit/sec per port video signal speed
- Multilayer signal management – signal switching in 3 dimensions
- 160x160, 120x120, 80x160, 160x80 video crosspoint versions
- Independent switching of audio, video and controls
- USB KVM extension
- Built-in 320 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
- Genlock and Word clock
- 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-FR160x160 frame handles up to 160 input and 160 output ports, making this frame one of the largest on the market. This frame is managing 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, handle 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 are 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 and 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 send 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.

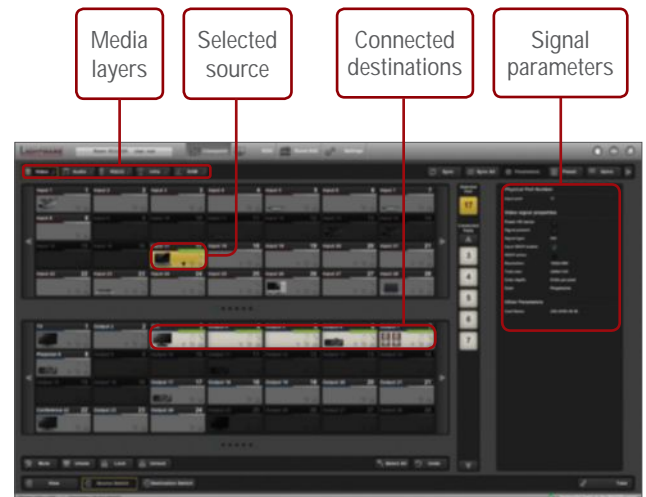
This frame can come configured with 120x120, 80x160 and 160x80 crosspoints as well. Software upgrade for these frames is available if the user wants to raise the capacity up to 160x160.



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.



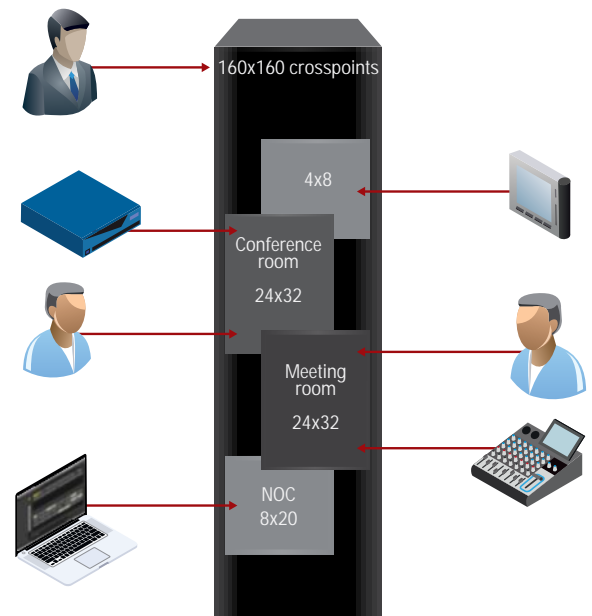
The screenshot above presents the GUI for the 25G routers. The control software is available for both Apple Macintosh and PC computers as a standalone desktop application.

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 Management

User Management allows the system administrator to control the rights of the users: Any number of users can be created and assigned with different rights. Combined with the Room Management the system administrator or users (based on the settings of the User Management) can create, edit and manage virtual rooms from the matrix topology. For an example if we have two 40x40 virtual rooms (room A and B) created of the 80x80 25G matrix the users assigned to room A can be set with reduced or no rights for room B.

25G-FR160x160 specifications

Media layers	
Video data rate:	25 Gbit/sec per port
Video compatibility:	DisplayPort 1.2, HDMI 2.0 with 3D, Single & Dual-Link DVI, 3G-SDI
Audio:	3 layers – embedded, forward and return audio channels
Audio compatibility:	S/PDIF 7.1, 5.1 Dolby Digital, DTS Audio, HDMI 1.4 embedded audio (with ARC), stereo and multichannel PCM
Ethernet:	100 Mbit/port (total 320) 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

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 Baud rate:	Selectable baud rate (9600, 38400, 57600, 115200) (default:57600)
Room and User Management:	Unlimited rooms and users
3rd party control:	Vista Spyder and Barco Encore compatible

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

Redundance & Reliability	
CPU:	Dual redundant
Hot swappable:	Each I/O board / CPU / fan tray / PSU /etc.
Power supplies:	Maximum 6 PSUs
PSU redundancy:	Up to N+2
MTBF:	30.000 hours

General	
Video crosspoint size:	From 8 x 8 up to 160 x 160
Power:	100 - 240 V AC
Power consumption:	300 W (typ) - without I/O boards
Power consumption:	2000 W (typ - depends on current configuration) - with I/O boards
Enclosure dimensions:	446(482) W x 640 D x 1866 H mm
High in rack units:	42U
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 separate audio layers

Embedded audio	Forward audio (S/PDIF)	Return audio (S/PDIF)
Multichannel PCM (max 8 channel, up to 192 kHz)	Stereo PCM (up to 48 kHz)	Stereo PCM (up to 48 kHz)
Dolby Digital 2.1	Dolby Digital 2.1	Dolby Digital 2.1
Dolby Digital 5.1	Dolby Digital 5.1	Dolby Digital 5.1
Dolby Digital 7.1	Dolby Digital 7.1	Dolby Digital 7.1
DTS 2.1	DTS 2.1	DTS 2.1
DTS 5.1	DTS 5.1	DTS 5.1
DTS 7.1	DTS 7.1	DTS 7.1