

# BroaMan Mux22-IVT/IC444

3G/HD/SD-SDI video I/O unit with built-in CWDM module, intercom I/O and data

Video, Audio, Data interface



## Product Features

- **3G/HD/SD-SDI capacity**
  - 8 3G/HD/SD-SDI ports
- **3G/HD/SD-SDI modules**
  - Dual Input with adaptive EQ
  - Dual Output
  - Reclocker for each input or output
  - All modules with or without redundancy
- **Intercom module**
  - 4 Line in, 4 Line out, 4 GPIO (IC444)
- **Built-In CWDM module**
- **Fiber 1310nm auxiliary port for 3<sup>rd</sup> party devices and protocols**
- **Full integration into SANE and Optocore network**
- **Optocore module with 2 LAN ports and 2 SANE/LAN ports**
- **4x RS485 or GPIO or optional 4x Dual RS422 ports**
- **Tri/Bi-Level sync with Word Clock**
- **Redundant power supplies**
- **Full control with Optocore control software**

BroaMan (Broadcast Manufacturer), the German-based broadcast network specialist provides scalable, protocol independent, routing, repeating, transport and distribution of multiple professional video signals, such as 3G/HD/SD-SDI, over optical fiber.

Complete BroaMan systems are built from a collection of modules that include coaxial and optical I/O, routers, repeaters, and optical multiplexers. Using the modular BroaMan building blocks, any system configuration can be realised.

BroaMan systems are built around three main product series – Repeat48, Mux22 and Route66. Repeat48 series offers basic E-O-E conversion as well as fiber multiplexing. The Mux22 series is a flexible and small-sized redundant video, audio, data transport and basic routing platform. Route66 enables customisable routing solutions as well as E-O-E conversion and multiplexing.

The Mux22 can be used as a video and data (Ethernet, RS485/422 or GPIO) device with 8 3G/HD/SD video ports configured with the required number of inputs and outputs in group of two, audio and GPIO (analogue audio and control data).

The Tri/Bi-level video clock input and output module installed in the device enables to sync from external video reference sources and distribute it through out the network.

The Mux22 seamlessly integrates into the OPTOCORE OPTICAL DIGITAL NETWORK SYSTEM. Audio signals are sent transparently through the optical network together with video, Ethernet and serial data. Each audio and data channel can be routed to and from every device on the network using the OPTOCORE CONTROL software. The software also enables the monitoring of video signals displaying the status of each SFP built into the device.

The Mux22 is equipped with a CWDM module with auxiliary fiber ports to allow for connection of external fiber systems, such as Optocore, to the CWDM module. All video, audio and data channels can be multiplexed onto a single duplex fiber. Mux22 is populated with SDI I/O and multiplexers at the time of manufacturing, according to customer's specifications.

Mux22 is equipped with a built-in redundant power supply with an automatic switchover. All fiber links can be delivered as redundant with an automatic switchover in case of fiber failure.

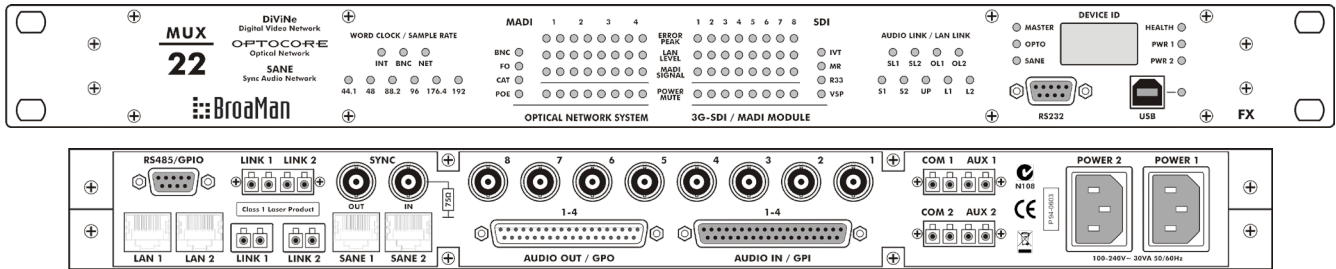
Mux22 units can be used in multiple different applications, starting from a very simple point-to-point links between OB truck and remote location. Mux22 can also be used in a redundant ring topology or with BroaMan Route66 units, as a part of large routing solution.

Revision 2.1 / January 2017



## Line Drawings

Front and back panels



## Technical Specifications

<b>Video</b>	
<b>Standards</b>	SD, ED, HD, Dual Link, 3G
<b>Complies with SMPTE</b>	259M, 292M, 344M, 372M, 424M
<b>Interface</b>	SDI – Serial Digital Interface
<b>INTERCOM ports</b>	
<b>Analog Line Input</b>	Impedance 10 k $\Omega$ Maximum input level +18 dBu SNR 115 dB (A-weighted) THD+N @ -1dBFS $\geq$ 100 dB
<b>Analog Line Output</b>	Impedance 45 $\Omega$ Maximum input level +18 dBu SNR 115 dB (A-weighted) THD+N @ -1dBFS $\geq$ 98 dB
<b>Serial I/O</b>	EIA / TIA – 485
<b>General Purpose Inputs GPI</b>	Optically isolated 3...48V DC, 5...7mA
<b>General Purpose Outputs GPO</b>	Relay contacts DC 30V 2A (resistive load) AC 125V 0.6A (resistive load)
<b>Auxiliary Power</b>	+5V DC +12V DC $\geq$ 100mA combined
<b>Optical Connection</b>	
<b>Connection</b>	Complies with 21 CFR 1040.10 and 1040.11 LC
<b>Data rate</b>	Dependent on the Video data rate – no bandwidth restriction
<b>Fiber cable lengths</b>	Standard singlemode transceiver $\leq$ 10 km ( $\leq$ 80 km on request)
<b>SANE, LAN ports</b>	
<b>Convention</b>	Convention
<b>Audio</b>	TIA - 568A/B, Optocore 200 Mbit/s
<b>LAN</b>	TIA - 568A/B, IEEE - 802.3 10/100 Mbit/s
<b>Auxiliary Ports</b>	
<b>Convention</b>	Convention EIA / TIA-485
<b>Data channels</b>	Digital control data 4
<b>Data rate</b>	Up to 10 Mbps
<b>Impedance</b>	Termination 330 $\Omega$ Source $\leq$ 10 $\Omega$
<b>Word Clock</b>	
<b>Hardware standard</b>	Hardware standard BNC - 75 $\Omega$
<b>Data rate</b>	Dependent on sample rate Up to 192 kHz
<b>Impedance</b>	Output Output $\leq$ 5 $\Omega$ Input Input 75 $\Omega$
<b>Drive level</b>	Output $\geq$ 1 V <sub>pp</sub>
<b>Zero level</b>	Referring to GND + 1.7 V
<b>Sense level</b>	Input $\geq$ 400 mV <sub>pp</sub>
<b>Remote Control</b>	
<b>RS232</b>	EIA / TIA – 232 57 600 Baud
<b>USB</b>	USB 2.0 – Device 12 Mbit/s
<b>LAN</b>	IEEE – 802.3 10/100 Mbit/s
<b>Power Supply</b>	
<b>Type</b>	Switch-mode, universal input
<b>Mains voltage</b>	100... 240 V 50 60 Hz
<b>Frequency</b>	50 60 Hz
<b>Cooling</b>	Passive, via surface and ventilation openings on both sides of the device
<b>Dimensions</b>	
<b>1 RU / 19"</b>	1 RU / 19"
<b>W x H x D</b>	19.0 x 1.73 x 7.87 inch
<b>Weight</b>	Dependent on configuration