C100 CORE PROCESSING MODULE

DESCRIPTION

The C100 core processing module forms the powerful epicenter of the V__matrix ecosystem and is the compute core upon which the Lawo V__matrix software virtual modules are loaded. Each C100 has dual front serviceable 40GE QSFP+ ports for connectivity to redundant IP switches or for increased throughput. In addition, each C100 has a dedicated 1GE management port, a mini-USB serial console port, a PPS output port and a USB port for external configuration management.

The C100 core processing module slots in from the front of the V__matrix frame into an optional rear mounted IO interface module. These rear-plates can house a variety of application specific physical interface connectors in order to provide connectivity to legacy broadcast equipment such as baseband video and audio equipment. The design of the V__matrix platform allows the core processing module to be replaced from the front without touching any of the physical connectors on the back, greatly simplifying maintenance.

In combination with Lawo's VSM control system the C100 processing modules scale linearly from tens to thousands of I/O and audio/video processing functions which make it ideal for any size live broadcast facility. The C100's software defined nature allows broadcast systems to easily be modified or upgraded to address your constantly changing business requirement providing unprecedented flexibility.

AT A GLANCE

- Powerful FPGA based compute blade capable of running a large variety of software enabling a vast array of media processing functionality
- Dual 40Gbps QSFP+ ports offer massive IP capacity while maintaining full redundancy
- Modular application specific rear-plates provide interfacing to legacy formats and simplify maintenance by being separate from the core processing module
- The high-density micro-BNC based SDI rear-plates are capable of 12G single-link UHD as well as 3G, HD and SD[1].
- Dedicated RJ45 and USB ports for out-of-band management and OLED status display for on-site monitoring and troubleshooting.

ORDERING INFORMATION

1000/100	C100 core processing module
1000/9_IO_BNC_10+10	io_bnc_10+10 rear-plate
1000/9_IO_BNC_18+2	io_bnc_18+2 rear-plate
1000/9_IO_BNC_2+18	io_bnc_2+18 rear-plate
1000/9_IO_BNC_2+2+16	io_bnc_2+2+16 rear-plate
1000/9_IO_BNC_11+11	io_bnc_11+11 rear-plate
1000/9_IO_BNC_16+16	io_bnc_16+16 rear-plate
1000/9_IO_BNC_16_BIDI	io_bnc_16_bidi rear-plate

[1] Video format support depends on the rear plate type. Please see section "Technical Specification" for more information.

C100 CORE PROCESSING MODULE

TECHNICAL SPECIFICATION

INTERFACES

2 x QSFP+[2]:
Each configurable as 40GE Ethernet or 4x10GE[3]
1x RJ45 100/1000Base-T dedicated management port
1 x USB Console port
1 x PPS pulse per second output

PROCESSING THROUGHPUT

IP:
Max 36 Gbps of incoming (RX) traffic when in SPS mode or 54 Gbps when in discrete mode
Max 40 Gbps of outgoing (TX) traffic when in SPS mode or 80 Gbps when in discrete mode

SDI:
Max 18 x 12G incoming (RX) and 18 x 12G outgoing (TX) on the rear-plate - limited by the capacity of the rear plates.

VIDEO REFERENCE

- IEEE1588 PTPv2
- SDI
- Analog Video Ref (Tri-Level, BB using rear-plate)
- IP Vid-stream

MANAGEMENT

Protocols: HTTP, SNMPv1/v2/v3, Ember+, Syslog
User interface: Embedded HTML5 user interface
Management interface: Out-of-band and in-band management with guaranteed minimum bandwidth for egress in-band management & control

ENVIRONMENTAL SPECIFICATIONS

Operating temperature: 0°C to +30°C (+32°F to + 86°F), ext. range possible
Storage temperature: -20°C to +70°C (-4°F to +158°F)
Relative humidity: < 90% non-condensing
Ventilation/Air-flow: Front to back cooling
Noise emission: < 58 dBA per C100 core processing module
Power draw: Max 125W. Nominal < 100W
Electromagnetic environment: E2 (EN55103-1,-2)

CABLE LENGTH (BELDEN 1694A):

SD: > 350m, HD: > 180m, 3G: > 120m, UHD: > 40m

REAR PLATES (OPTIONAL)[4]

Rear Plate	BNC total	Inputs 12G/3G/HD/SD	Outputs 12G/3G/HD/SD	Inputs 3G/HD/SD	Outputs 3G/HD/SD	Bidirectional[5] 12G/3G/HD/SD	Bidirectional[5] 3G/HD/SD	Analog Ref In	Ref Loop
io_bnc_10+10	22	5	5	5	5	0	0	✓	✓
io_bnc_2+18	22	1	9	1	9	0	0	✓	✓
io_bnc_18+2	22	9	1	9	1	0	0	✓	✓
io_bnc_2+2+16	22	0	0	2	2	0	16	✓	✓
io_bnc_11+11	22	11	11	0	0	0	0	X	X
io_bnc_16+16	32	11	11	5	5	0	0	X	X
io_bnc_16_bidi	16	0	0	0	0	16	0	✓	✓

[2] SFPs or AOCs only. No support for DACs.
[3] Please consult datasheets of virtual modules to see which interfacing modes are supported.
[4] Please note that the total amount of I/O combinations also depends on the C100's processing throughput properties listed in the respective section of this datasheet
[5] Can be configured to be either input or output