

fast
4 ns
reliable
flexible

MetaConnect 16

The 4 nanosecond layer 1 switch with dynamic patching, media conversion, tapping, monitoring and timestamping.



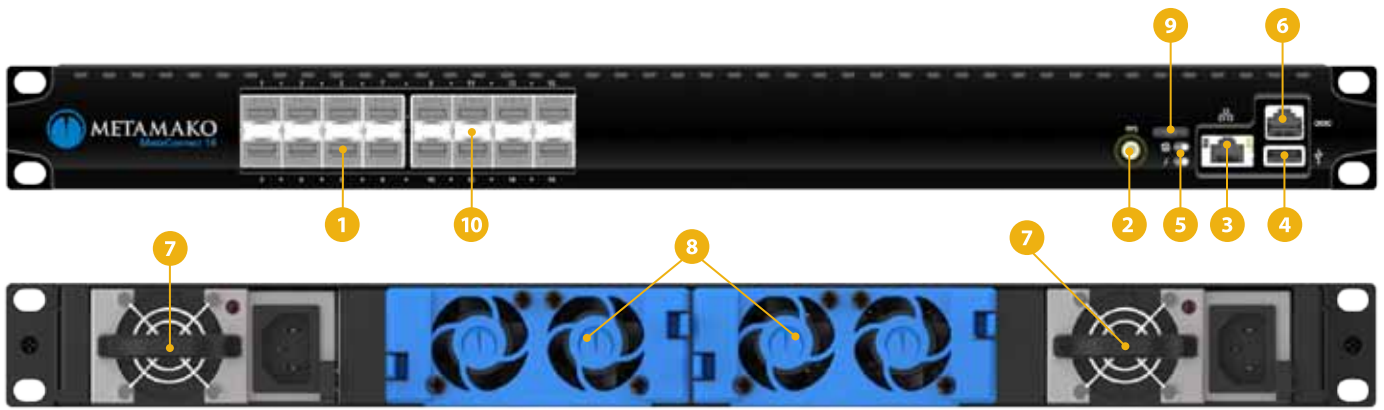
MetaConnect 16 is a 16 port layer 1 switch specially designed for latency sensitive applications such as trading, but can benefit any network without adding overheads.

It behaves like a configurable patch panel, forwarding bitstream-level data between ports with near-zero latency, full bandwidth and virtually no jitter. It also supports a large range of data rates including 10GbE and 1GbE.

MetaConnect 16 is a state of the art device, gathering comprehensive statistics, providing signal quality monitoring and diagnostics, including eye diagrams, timestamped streams and packet sniffing with tcpdump.

A variety of SFP/SFP+ devices are supported, including long-range multi-mode (LRM) and direct-attach copper cables up to 7m long. Metamako devices support all standards-compliant SFP modules.

FEATURE	BENEFITS
4 ns deterministic latency	Provides a rich feature set yet has the same latency and determinism as a meter of fibre.
Crosspoint switch	Acts as remotely configurable patch panel, kill-switch and can perform bypass for failed links. "Wire once" to reduce visits to the data-center.
Port mirroring	Replaces taps to monitor or share feeds such as market-data with full regeneration and no additional overhead.
Media conversion	Reduces costs by converting between different media types running at the same rate. e.g. convert from high cost fibre to lower cost copper.
Flexible SFP/SFP+ support	Allows the use of less expensive modules that are boosted by MetaConnect's high performance signal recovery and regeneration.
Precision timestamping with synchronisation	Precisely timestamps packets on ingress using PPS or PTP synchronisation.
Protocol agnostic	Connects any bit-stream with regeneration to improve signal quality.
Layer 1+ packet stats	Captures higher-level packet statistics across all ports with layer 1 performance.
Class leading signal integrity circuitry	Provides full clock and data recovery on both input and output for ultra-reliable transmission including the improvement of long haul or poor quality links. Use long direct attach cables up to 7 metres without bit errors.
x86-64 Linux management	Uses open standards platform that is extensible going into the future. Debugging and diagnosis: use tcpdump on any port or LLDP to confirm network functionality and connectivity.



- 1 16 SFP Ports Works with any SFP module
- 2 SMA Connector Pulse-per-second timing
- 3 Ethernet Management 100/1000
- 4 USB Upgrades, storage
- 5 Indicator LEDs Fan, power, status
- 6 Industry-standard console port
- 7 Dual redundant power supplies
- 8 Dual redundant fan modules
- 9 Tri-colour status LED for system-wide status
- 10 Per-port link and activity LEDs

Core features

- 16 SFP/SFP+ ports from 100M-11.3Gbps
- Full signal recovery, regeneration and conditioning
- Bit-for-bit forwarding for any protocol
- Port-to-port mirroring with regeneration
- Multiple independent links through the device which can run at different data-rates
- High performance signal regeneration (EDC on input, CDR on input and output)
- Layer 1+ packet statistics and precise timestamping

Ultra low latency

- 4 ns deterministic latency
- 100 ps variation
- Same latency and determinism for 1-n port mirroring
- Virtually no jitter
- Completely non-blocking

Cable compatibility

- Compatible with SR, LR, ZR, LRM and direct attach cables
- 100M, 1GbE, 10GbE and many others
- Works with any standards compliant SFP/SFP+ modules
- 0.5m, 1m, 2m, 3m and 7m direct attach copper cables with zero bit errors

Redundancy and data center

- 1 rack unit (1RU)
- Dual redundant, hot-swappable power supplies (DS460S)
- Dual redundant, hot-swappable fans
- Fan and power supply replacement kits are available
- Front-to-back or back-to-front air flow. AC or DC supply kits are available

Operating environment

- Temperature: 0C to 40C
- Humidity: 10% to 85%, non-condensing
- Maximum altitude: 3000m (9800ft)

Monitoring

- Packet statistics captured on every port (valid packets, invalid packets, link state)
- Eye diagram for monitoring and troubleshooting signal quality
- Front panel LEDs for port activity and status
- Tcpdump can be used on any port to determine connectivity
- LLDP can be used for discovering network topology
- Precise timestamping on ingress with PTP or PPS synchronisation
- Fully managed SFP+ interface diagnostics including light levels, temperature and voltages

Management platform

- Dual-core, hyperthreaded x86-64 CPU
- 2GB RAM, 2GB on-board SSD
- Industry standard command line interface (serial/SSH/telnet)
- Web-based GUI
- API to interact with the switch subsystem¹
- Linux based (shells, scripting, Python, RPMs etc.)
- Binary compatibility with other x86-64 based systems
- Firmware restore and update via USB and network

Management protocols

- HTTPS, SSH, telnet
- Serial console
- PTP, NTP
- SNMP v1, v2, v3, Netconf¹
- DHCP
- Local and remote syslog
- LLDP
- RADIUS, TACACS+ and LDAP authentication¹

Physical and electrical

- Dimensions (h x w x d): 4.3 x 44.8 x 37.9cm (1.7 x 17.6 x 14.9in)
- Weight: ~9kg (20lbs)
- Maximum power: 190W
- AC voltage range: 100-240V, AC frequency: 50/60Hz
- DC voltage range: 40-72V

1. Planned for a future software release.



METAMAKO

Contact us today to evaluate MetaConnect:

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