

CM-1

CobraNet™ CM-1 Digital Audio Network Interface Module

Compact, Low-Power Design Provides 32 x 32 Simultaneous I/O Channels

CM-1

CobraNet, the industry-leading digital audio networking technology from Cirrus Logic®, has established itself as the product of choice for networked audio. The CobraNet solution leverages the rapid developments in the computer networking

industry to provide an increasingly cost-effective connectivity solution for audio professionals worldwide.

The CM-1 is a DSP-based solution providing an interface in the form of a compact, low-

power module. Featuring 32 simultaneous channels, each of distributed digital audio input and output, the CM-1 is designed to be easily integrated into a wide variety of audio products such as signal processors, mixers, amplifiers and self-powered loudspeakers.

CM-1 FEATURES

- 100BASE-TX Ethernet Interface – 100 Mbps, full-duplex Ethernet, fully compliant with IEEE 802.3u Standard.
- Secondary 100BASE-TX Ethernet Interface – redundant network connection for fault tolerance.
- Quad Synchronous Serial Output Ports – capable of supplying 32 total audio channels at 48 or 96 kHz sample rates.
- Quad Synchronous Serial Input Ports – capable of receiving 32 total audio channels at 48 or 96 kHz sample rates.
- Studio Grade, Low-Jitter Clock Source – less than 1 ns of jitter.
- High Speed Parallel Host Port Interface – interfaces to an optional external control processor.
- SNMP Agent – Standards-based Ethernet control, monitoring and management.
- TFTP Support – firmware updates over the network.
- Low Latency – selectable 1.33, 2.66 or 5.33 ms across network.
- Optional Remote Power Through RJ-45 Connection – for powering via the Cat-5 Ethernet connection. External circuitry required.
- Asynchronous Serial I/O Port – bridge serial control data over Ethernet.
- Status LEDs – Link, Activity and CobraNet conductor status for each Ethernet jack.
- Order CM-1 or CM-1-FW option – The CM-1 Ethernet connector includes an RJ-45 jack with integrated transformer isolation. The CM-1-FW option & includes solder points to be wired to external Ethernet connector.

COBRANET TECHNOLOGY ADVANTAGES

- Also available as low-cost ICs without licensing or royalty fees.
- CobraNet technology can coexist with data traffic over existing Ethernet networks, saving money by eliminating additional infrastructure costs.
- De-facto industry standard with tens-of-thousands of installed nodes in high-profile “mission-critical” venues worldwide.
- Networked audio, control and monitoring (bi-directional).
- Uses SNMP for control and monitoring (IT-friendly).
- Incorporates multiple fault-tolerant features.
- Ability to send audio from any CobraNet interface to any other – unlimited addressing, unlimited capacity.

Electrical Specifications

Host Port

Description	Direction	Notes
Host Data	In/Out	Host port data (x8)
Host Address	In	Host port address (x3)
Host Direction	In	Host port transfer direction
Host Request	Out	Host port DMA request
Host Alert	Out	Host port interrupt request
Host Strobe	In	Host port select

Synchronous Serial (Audio) Ports

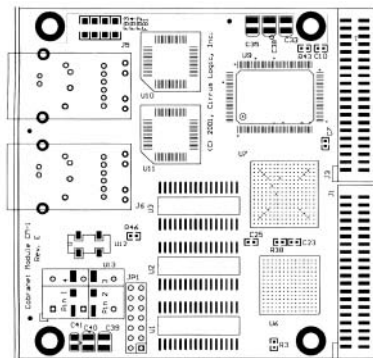
Description	Direction	Notes
Audio Bit Clock	Out	Synchronous serial bit clock
Audio Output Data	Out	Output serial audio data (x4)
Audio Input Data	In	Input serial audio data (x4)
Sample Clock	Out	48 or 96 kHz sample clock
Master Audio Clock In	In	External 24.576 MHz clock input for systems containing multiple CobraNet™ interfaces
Master Audio Clock Out	Out	Low jitter master 24.576 MHz clock output
Reference Clock	In	Auxiliary reference sample clock input for synchronizing network to an external clock source

CM-1 Ethernet Electrical Specifications

- Ethernet Primary Connector – RJ-45 jack. Standard Ethernet pinout. Complies with IEEE 802.3u Standard.
- Ethernet Secondary Connector – RJ-45 jack with integrated transformer isolation. Standard Ethernet pinout. Complies with IEEE 802.3u Standard.
- Ethernet uses 2 of the 4 twisted wire pairs available on a Cat-5 cable. The unused pairs are available at the module interface connector as Cable Power for DC power (if supplied).

CM-1 Physical Specifications

The module is a square circuit board, 3.5 inches on a side equipped with two Ethernet connectors. Four mounting holes are provided. An optional bracket is available for chassis mounting. Connector options are available that allow the module to be mounted in a variety of ways. This allows for maximum flexibility in space-limited systems.



CM-1

Power

Description	Notes
VCC +3.3	System +3.3V, +/-0.3 volts, 1.2A
VCC +5	System +5.0V, +/-0.25 volts, 0.1A
GND	System ground

Operating Temperature Range - 0 to 70 degrees Celsius ambient.

Asynchronous Serial

Description	Direction	Notes
Serial Receive Data	In	Serial data receive
Serial Transmit Data	Out	Serial data transmit
Transmit Drive Enable	Out	RS485 multi-drop transmit enable

Miscellaneous

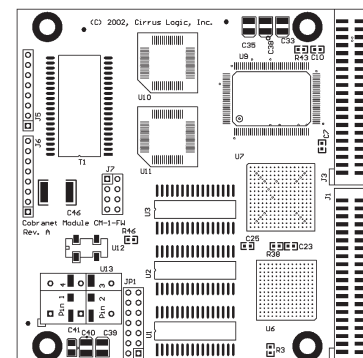
Description	Direction	Notes
Reset	In	System reset (active low)
Watch Dog	Out	Continuously toggles to indicate proper operation
Interface Ready	Out	Deasserts during initialization, when fault detected or connection to network is lost
Cable Power	In/Out	Aux RJ-45 pins for Cat-5 powered applications

CM-1-FW Ethernet Electrical Specifications

- Ethernet Primary Connector – Solder points to be wired to external Ethernet connector. Transformer isolated. In-use/conductor and Link/Act/Fault LEDs supported. Complies with IEEE 802.3u Standard.
- Ethernet Secondary Connector – Solder points to be wired to external Ethernet connector. Transformer isolated. In-use/conductor and Link/Act/Fault LEDs supported. Complies with IEEE 802.3u Standard.
- Ethernet uses 2 of the 4 twisted wire pairs available on a Cat-5 cable. Connection points are provided for all 8 conductors on each port. The unused pairs are available at the module interface connector as Cable Power for DC power (if supplied).

CM-1-FW Physical Specifications

The module is a square circuit board, 3.5 inches on a side equipped with solder pads for two external Ethernet connectors. Four mounting holes are provided. Limited connector options are available that allow the module to be mounted in a variety of ways. This allows for maximum flexibility in space-mounted systems.



CM-1-FW