Ci series
wall mount

CobraNet® Interfaces

MEDIA
TECHNOLOGY
SYSTEMS

MEDIA TECHNOLOGY SYSTEMS INC.
www.mediatechnologysystems.com
766 Lakefield Road, Unit F, Westlake Village
California 91361, USA
Tel: +1 (323) 908 0655 | Fax: +1 (323) 517 2051

The Media Technology Systems Ci2.0 and Ci0.2 are CobraNet® Analog audio to LAN interfaces in a convenient 2-gang wall mount package. The interfaces are designed to fit commonly available decorative wall plates and backboxes, etc. This feature allows the installer to meet the Interior Designer or Architects requirements for color and finish.

The wall mount configuration enables conversion from analog audio to a LAN to take place at the wall. This eliminates long lines of analog audio cable between a conventional passive wall plate and the nearest control room rack. The solution also eliminates complex rack patch bays, as patching can easily be achieved by changing the network address of each Ci wall interface. This feature also provides a simple room combining solution.

The Ci2.0 converts 2 channels of analog Mic/Line audio input into an CobraNet® audio stream. The XLR connectors accept a +4dBu balanced audio signal and have three gain settings...0dB, +30dB (electret condensor microphones) and +60dB (dynamic microphones). Phantom power is always present at the XLR connector. The RCA inputs accept a -8dBu signal and are summed to mono.

The Ci0.2 converts 2 channels of incoming CobraNet® data stream back into analog audio signals. The XLR and RCA outputs are +24dBu clip.

The outgoing CobraNet® audio LAN streams can be transmitted multicast to all audio receivers on the network, or unicast to a particular receiver.

The Ci2.0 and Ci0.2 versions have 100MIPS of DSP processing, with EQ filters, Compressors, Limiters, Duckers and Matrix switching/mixing. In addition the Ci0.2 interface can accept up to 8 incoming CobraNet® audio streams to provide a local mixing capability.

Key Features

- Wall mount CobraNet® interface converts analog audio into a real-time, low latency Ethernet audio stream.
- Input/Output Configurations
  - Ci2.0 = 2 in, 0 out
  - Ci0.2 = 0 in, 2 out
- Balanced XLR inputs (Ci2.0 with Mic/Line gain switch settings of 0dB, +30dB and +60dB.
- Balanced XLR outputs (Ci0.2) with sensitivity switch settings of +24dB, +18dB and +12dB peak.
- Phantom power of always present on the Ci2.0 XLR
- 100MIPS internal DSP with Mixer, Router, AGC, EQ, Peak compressor, HPF, LPF, etc.
- CCC Compliant

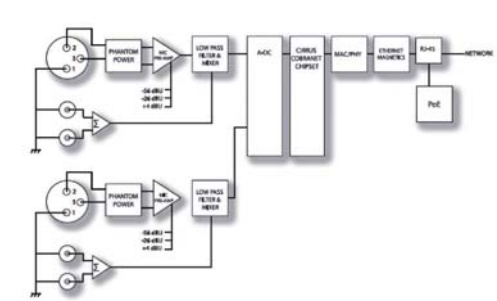
Applications

- Hotels/Hospitality
- Convention Centers
- Corporate Meeting rooms
- Classrooms and Lecture rooms

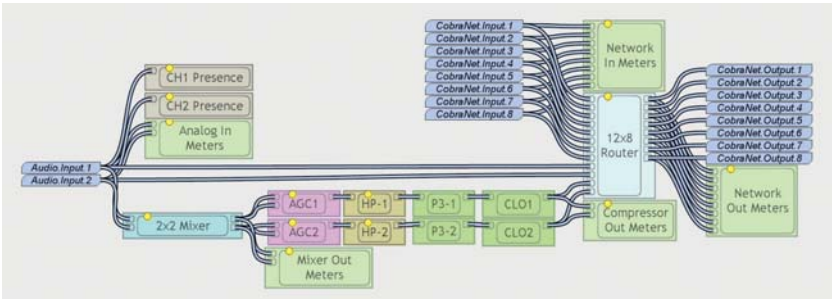
Specifications

- Frequency response: 20Hz-20kHz, +0,-1dB
- THD: <0.1%
- Ci2.0 input levels: XLR +4dBu nominal: +24dBu Clip, RCA -8dBu nominal, +12dBu Clip
- Ci0.2 output clip level +24dBu
- Power Supply: IEEE802.3af complient Power over Ethernet (PoE)
- Input:>1.5k ohms balanced and RF filtered. EIN 20Hz-20kHz, less than 117dBu (+60dB gain setting)
- Output:600 ohms balanced (XLR)/10Kohms unbalanced (RCA)
- Control and Monitoring: SNMP, CN Discovery, MTS Control

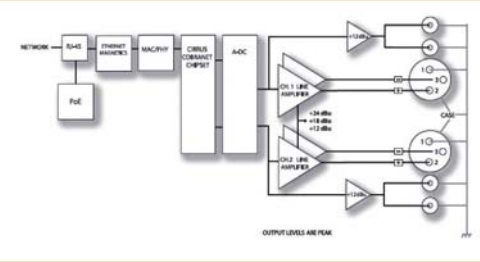
CobraNet® is registered to Cirrus Logic



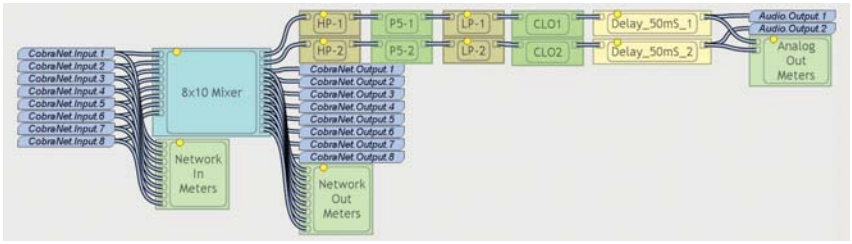
Ci2.0 schematic



Internal DSP schematic of the Ci2.0



Ci0.2 schematic



Internal DSP schematic of the Ci0.2

UI screenshot

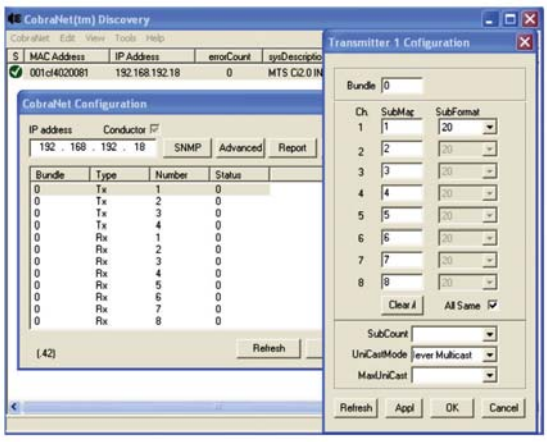
QUICKSTART: Download and install CobraNet™ Discovery (CNDISCO) from the Cirrus Logic Website into the host PC and then set the following

- Set the Advanced Feature = 1 and CC Enable = 1 (see CNDISCO manual-found in the C:\Program Files\Cirrus Logic\ CobraNet Discovery folder)
- Enable the SNMP panel (see CNDISCO manual)
- Go to Options and set the range for auto assignment of IP addresses (see CNDISCO manual)
- Set the Host PC default IP subnet in order to talk to the ION.

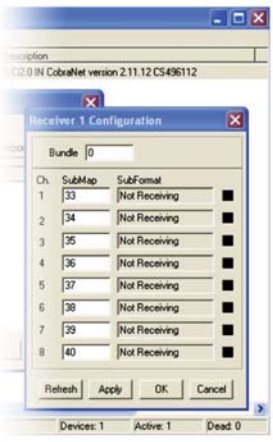
Run the CNDISCO application, double click on the required device in the screen to open the "Configuration" menu and then double click on the TX or RX to access the Transmitter and Receiver settings, respectively (see P1.1)

The key setting is the "Bundle" number at the top of the page. This sets the transmitter network address of the audio "bundle". The bundle number values can be 0 (off, ie no transmission), 1-255 for multicast, 256-65279 are unicast and 65280-65535 are private.

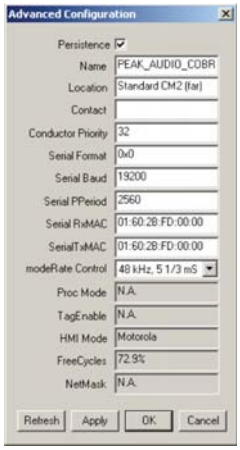
Double clicking on a receiver will open the equivalent menu for the receiver (see P1.2). To transport audio a transmitter and receiver need to have the same bundle address.



P1.1

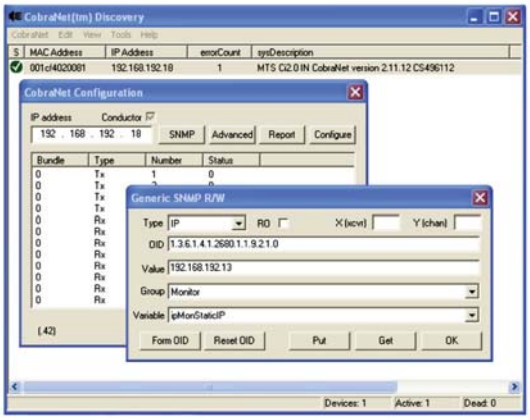


P1.2



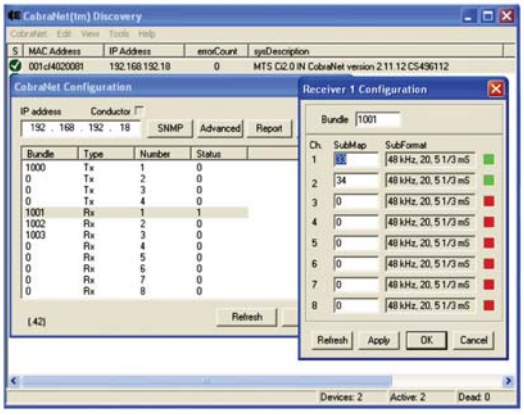
The Ci0.2 and Ci2.0 are a simple interface products and do not have a preset memory, so "persistence" is used to store the last settings in case of power down. However, note that all CobraNet™ settings need up to 1 minute to establish persistence, as they are stored in the CobraNet™ flash. If the Ci power is cycled before the settings are stored to flash, then the settings will be lost. If the persistence tick box is off, then no settings will be saved.

To set a static IP address: First set persistence on. Then double click on the device in the main CNDISCO window to open the configuration menu (see below). In the configuration menu select the "SNMP" button. An SNMP window will open and select the "Monitor" Group and the "ipMonStaticIP" variable. In the value section, type the desired IP address in AAA.BBB.CCC.DDD format and then press "PUT". Confirm the setting by pressing "GET" See below for an example.



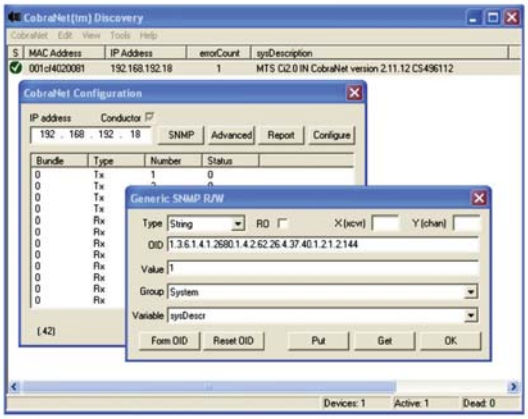
Creating 8 channel bundles: The Ci2.0 has 2 audio input channels. However, many Cobranet products can only receive 8 channel bundles. It is possible for one CI2.0 to receive three 2 channel CobraNet™ bundles from three other CI2.0's and use the internal router to combine the 6 CobraNet™ channels with the local analog inputs to make one 8 channel CobraNet™ Bundle. The 3rd party Cobranet product will receive an 8 channel bundle with CI2.0-#1 on channels 1-2, CI2.0-#2 on channels 3-4, CI2.0-#3 on channels 5-6 and CI2.0-#4 on channels 7-8.

Open the target Ci2.0 in CNDISCO... and set the following bundle addresses, where 1001, 1002, 1003 are the 2 channel bundles from 3 other Ci2.0. Bundle 1000 is the 8 channel bundle transmitted to the 3rd party Cobranet product. The main configuration menu shows 3 receive bundles and 1 transmit bundle. Right click on the first receive (rx) bundle and the following menu will appear...



This will allow the user to set the receive bundle address. This should match one of the 3 transmitting CI2.0's. In our main configuration page that would be 1001, 1002, 1003. Then set the sub map channels. The first 2 channel bundle will be set to 33 and 34, the second to 35, 36 and the third to 37, 38. This will import the 6 audio streams into the bottom 6 channel submap addresses.
In the screen above, it can be seen that the bundle is successfully receiving 2 audio channels from the remote CI2.0. Click OK and return to the main configuration menu.

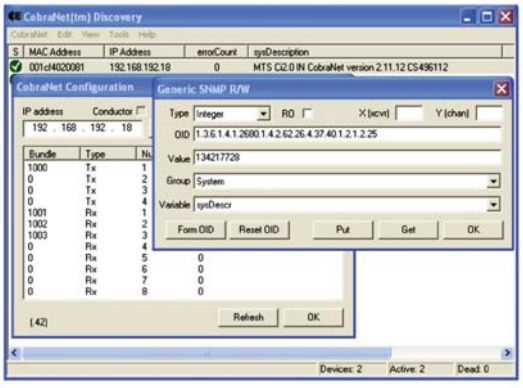
Select the SNMP button and the following menu will appear...



This will allow values to be poked directly into the DSP OID's. In the example above, address 1.3.6.1....144 is the "Network out router", channel 1 (see DSP block diagramabove). 145 is channel 2, 146 is channel 3... 151 is channel 8. The value sent to the router address (click the "Put" button) sets which input channel is routed to the chosen output channel. In the screenshot above, input channel 1 was routed to output channel 1. Output channels 2-6 should be set to input channels 2-6, ie ...145 is set to 2, ...146 is set to 3 and so on until ...149 is set to 6. However, output 150 is set to 9 and 151 is set to 10, as these represent the local analog inputs to the local CI2.0 – see below.

At that point the local CI2.0 will successfully be creating an 8 channel bundle from 4 CI2.0's; 1 local and 3 remote.
Notes:
1. RO (read only) tickbox must be unchecked
2. Type must be Integer
3. Group and Variable do not matter, as the OID is being entered manually.
4. X and Y should be left blank.
5. Check the value has been entered by pressing the "Get" button after "Put".

Gain Adjustment: The Ci2.0 has a 3 position analog gain switch on the front panel. The gain settings are 0dB (Line level equipment), +30dB (Condenser Microphones) and +60dB (Dynamic Microphones). For gain adjustment between those settings, the internal DSP can be used. The DSP is accessed using CNDISCO and the SNMP page (see below)...



The OID's ...25 and ...26 are the input gains for channels 1 and 2 respectively. The gain value is 31bit, so use the equation (POWER(10, gain in dB/20)/16)*2^31.

Sensitivity adjustment: The Ci0.2 has a 3 position sensitivity switch to set the output sensitivity to +24dbu (to connect to ProAudio equipment), +18dBu (Prosumer equipment) and +12dBu (Consumer equipment and Amplifiers).