

**EMOD**  
**CI8L**  
 8 Ch. Analog  
 Line In Module



The CI8L is Whirlwind's 8-channel CobraNet line level input module. Use it to convert line level analog audio into professional quality digital audio, for distribution over CobraNet digital networks. The CI8L can be temporarily or permanently connected to the CobraNet network, anywhere network access and AC power are available. Connect any line level source such as mixer matrix or aux outputs, speaker system crossover outputs, or surround sound processor outputs and instantly send them throughout the CobraNet digital audio network.

Setup and operation are simple and easy. Just set the bundle select wheels to the desired transmit bundle number, and set the bitwidth:latency selector to match the bitwidth and latency of the receiving device. Then apply the eight channels of audio and adjust the input level as necessary, ensuring that the level is below the 0 dB clipping level.

**FEATURES**

- Uses CobraNet networking protocol compatible with all other CobraNet devices from over 40 manufacturers.
- Transmits 20 or 24 bit word length.
- Transmits 5.33 ms, 2.66 ms or 1.33 ms latencies.
- Multiple transmitters may be accessed through CobraNet Discovery.
- Input level controls can provide 35 dB of gain or 43 dB of attenuation to the analog input signal.
- Front panel LED meters indicate analog signal level.
- Integrated universal power supply for 100-250 VAC, 50/60 Hz operation
- The CI8L is 1 RU high and mounts in standard 19" racks.



**Specifications for Whirlwind CI8L**

Frequency Response	± .74 dBv 20-20 kHz at unity gain
Total Harmonic Distortion +noise	< .0028 % 20-20 kHz at unity gain
Dynamic Range	107 dBv at unity gain, 97 dBv at 20 dBv of gain 98 dBv at 20 dBv of attenuation
Stereo Separation	< -98 dBv at 20 kHz <-112 dBv at 1 kHz
Total Gain	35 dBv
Range of level pot	-43 dBv to + 35 dBv
Common Mode Rejection of Input	70 dBv at 60 Hz
Maximum Input level	+19 dBv
Input Impedance	20 k Ohms balanced
Noise at various gains	-97 dBv at unity, -87 dBv at 20 dBv of gain -98 dBv at 20 dBv of attenuation
LED threshold	0 dBfs, -12 dBfs, and -36 dBfs
Thermals	Fan cooled with off, low, and high fan speeds. Fan on low at 30°C internal temperature and on high speed at 40°C internal temperature. 5 to 43°C operating range
Power consumption	27 Watts idle, 40 Watts max
Power requirements	85-264 VAC, 50 or 60 Hz
Size	19" x 1.75" x 10" (W x H x D)
Weight	8.7 lb.
Internal Mains fuse	2.5 A slo-blo (replaceable)

*All specifications subject to change without notice*

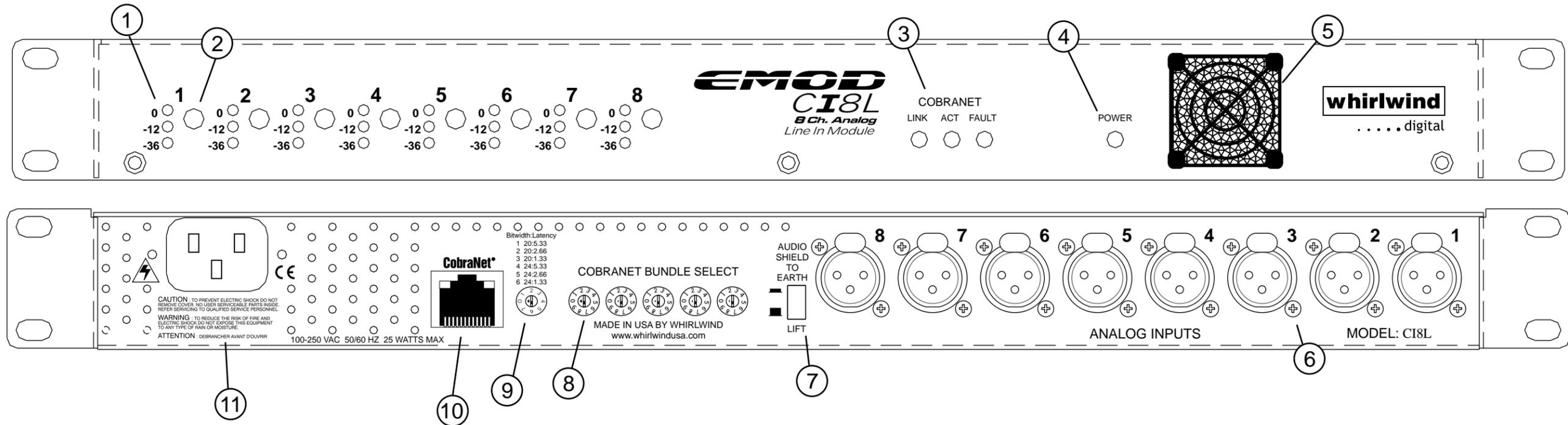
**WARRANTY**

This product is guaranteed to be free from defects in materials and workmanship to the original purchaser for a period of 5 years from the date of purchase. Should service be required, return the unit postage prepaid along with the original sales receipt to:

Whirlwind  
 Attention - Repair  
 99 Ling Road  
 Rochester, New York 14612

The warranty on this product shall not apply to defects or damage resulting from abuse, abnormal use or from repairs or modifications performed by anyone other than Whirlwind. If it is determined a manufacturing defect has occurred, Whirlwind will repair or replace the unit at our option and pay the postage back to you.

99 Ling Road - Rochester, NY 14612  
 800-733-9473 / 585-663-8820 Fax: 585-865-8930  
 Website: <http://www.whirlwindusa.com>  
 Email: [sales@whirlwindusa.com](mailto:sales@whirlwindusa.com)



## Controls and Connections

- Three position LED meters monitor the analog signal at the inputs of the analog to digital converters after the input level controls. The green LED illuminates at -36 dBfs, the yellow at -12 dBfs and the red at the clipping point of the analog to digital converter.
- Input Controls adjust the level of the analog input signal being applied to the analog to digital converters. 35 dB of gain or 43 dB of attenuation allows optimization of the analog signal to minimize noise at the converters. Adjust the signal so that peaks do not light the red 0 dBfs LED.
- CobraNet LINK, ACT, and FAULT LEDs indicate the status of the CobraNet network connection; LINK LED illuminates only when the Ethernet cable is connected to a network with other CobraNet devices. ACT (activity) LED is on only when there is a match between the bitwidth:latency and bundle settings of the CI8L and those of the receiving device. FAULT LED is used to blink a numeric code to the user with a series of blinks followed by a pause. The number of blinks indicate the following:
  - Mismatched format or bundle settings
  - Not used on CI8L
  - Invalid bundle number selected (greater than bundle # 65279) or multicast/unicast boundary straddled (bundles 255/256)
  - Ethernet cable disconnected or no other CobraNet devices on network.
  - CobraNet can not communicate with DSP in the CI8L.
  - This code blinks once on power up and whenever an encoder setting change is detected, to warn the user that persistence is enabled through CobraNet Discovery v3.4.4 and that changing the encoders from 00000 will defeat Disco control at the next power cycle. Persistence enabled means that the unit will remember its last settings through power cycling.
- Power LED illuminates when AC power is applied to the unit and the unit is operating.
- Fan provides cooling to the internal components of the CI8L. There is a foam filter on the front, which should be cleaned periodically to maintain good airflow. The front plastic fan guard snaps out to expose the filter.
- XLR Inputs 1 through 8 accept balanced or unbalanced analog audio at line levels. For unbalanced inputs, connect pin 3 to pin 1 in the inline XLR connector.
- AUDIO SHIELD TO EARTH switch breaks the connection from AC Earth to the audio common to reduce hum when necessary.
- CobraNet Bundle Select switches are used to select the bundle number to be transmitted by the CI8L. All 65,279 CobraNet bundles are directly accessible from the encoders. Bundles 1-255 are Multicast bundles and 256-65,279 are Unicast. The leftmost encoder also has 3 special functions. With the encoder in the 7xxxx position, the front three status LEDs (LINK, ACT, FAULT) will flash a code for the software version in the CI8L. The LEDs will blink the number of the software version with a long pause between the series of blinks; e.g., four flashes followed by a long pause equals version four. Should the CI8L ever need to be rebooted, the 8xxxx position of the encoder will cycle a reset of the unit every two seconds. Unplugging and reconnecting the power cord will also reset the CI8L. The 9xxxx position of the encoder is a self test for all the LEDs except the power LED. Setting all switches to 0 allows remote setting of bundle parameters through the network with CobraNet Discovery software v3.4.4.
- Bitwidth:Latency Selector matches the audio bitwidth and latency transmitted by the CI8L to that of the receiving CobraNet device. Individual CobraNet devices must have the same bitwidth and latency to communicate with each other properly. The transmit setting must be acceptable to the device set to receive that bundle. Many receive devices have an autodetect feature that will match the bitwidth and latency to that of the transmitter. The CI8L uses an 8 position selector for choosing 20 or 24 bit word length and 5.33 ms, 2.66 ms or 1.33 ms latencies.
 

**In 24 bit word length and 5.33 ms latency, a special case exists; there are a maximum of 7 audio channels that can be packaged into a single bundle at this setting. Whirlwind uses pairs of bundles where seven audio channels are contained in one bundle and one audio channel in the next higher bundle. Channel 8 is automatically pushed up into the channel 1 slot of the next higher bundle number.**
- CobraNet jack connects the CI8L to the Ethernet switch carrying the CobraNet network. A green LED indicates network link and a yellow LED indicates data activity. These are duplicated by two green LEDs on the front panel along with a red FAULT LED indicator.
- Power inlet is a standard IEC connection. The power supply is internationally universal with a voltage range of 100 to 250 VAC at 50 or 60 Hz.

## CobraNet Parameter Control through Discovery v3.4.4.

Setting all the Bundle Select Switches to 00000 allows remote setting of CobraNet parameters through the network with CobraNet Discovery software, v3.4.4 available at [www.cirrus.com/cobranetsoftware](http://www.cirrus.com/cobranetsoftware). Some of the parameters that can be controlled on the CI8L include bundle numbers, number of channels in the bundles, digital word length, latency and persistence.

These parameters are unlike the selections made with the encoders. Bundle numbers and bitwidth:latency selections made with the switches are hard coded and remembered when the power to the CI8L is cycled. Settings made through Disco are volatile and forgotten on a power cycle, unless persistence is turned on and Bundle Select Switches are set to 0. There are also four transmitters available through Disco instead of just the one through the encoders.

Disco will temporarily override encoder settings other than 00000 on a CI8L. These settings will not be remembered on power cycling regardless of the persistence setting in Disco.