

MODEL 8022AEQ

ANALOG VARIABLE Q EQUALIZER CARD

The Model 8022AEQ Analog Variable Q Equalizer Card is a component of the IED 8000 Series™. It is a 2-channel, 26 band 1/3 octave equalizer with 2 frequency shelving.

EQ1 can be connected to input channels 1 or 3, but not both, by the use of jumpers. It can be connected to output channels 1 and/or 3. EQ2 can be connected to input channels 2 or 4, but not both, by the use of jumpers. It can be connected to output channels 2 and/or 4. The inputs are electronically balanced, and the outputs are balanced line drivers.

The card has an on-board microcontroller (MCU) that sets up the EQ and shelving of each channel. Each channel has 26 bands of 1/3 octave Variable Q equalization plus 2 options for low frequency shelving. Each EQ band and shelving is set up for 12 dB of cut and boost with 1 dB of resolution. Table 1 is a listing of the 1/3 octave bands and shelving frequencies.

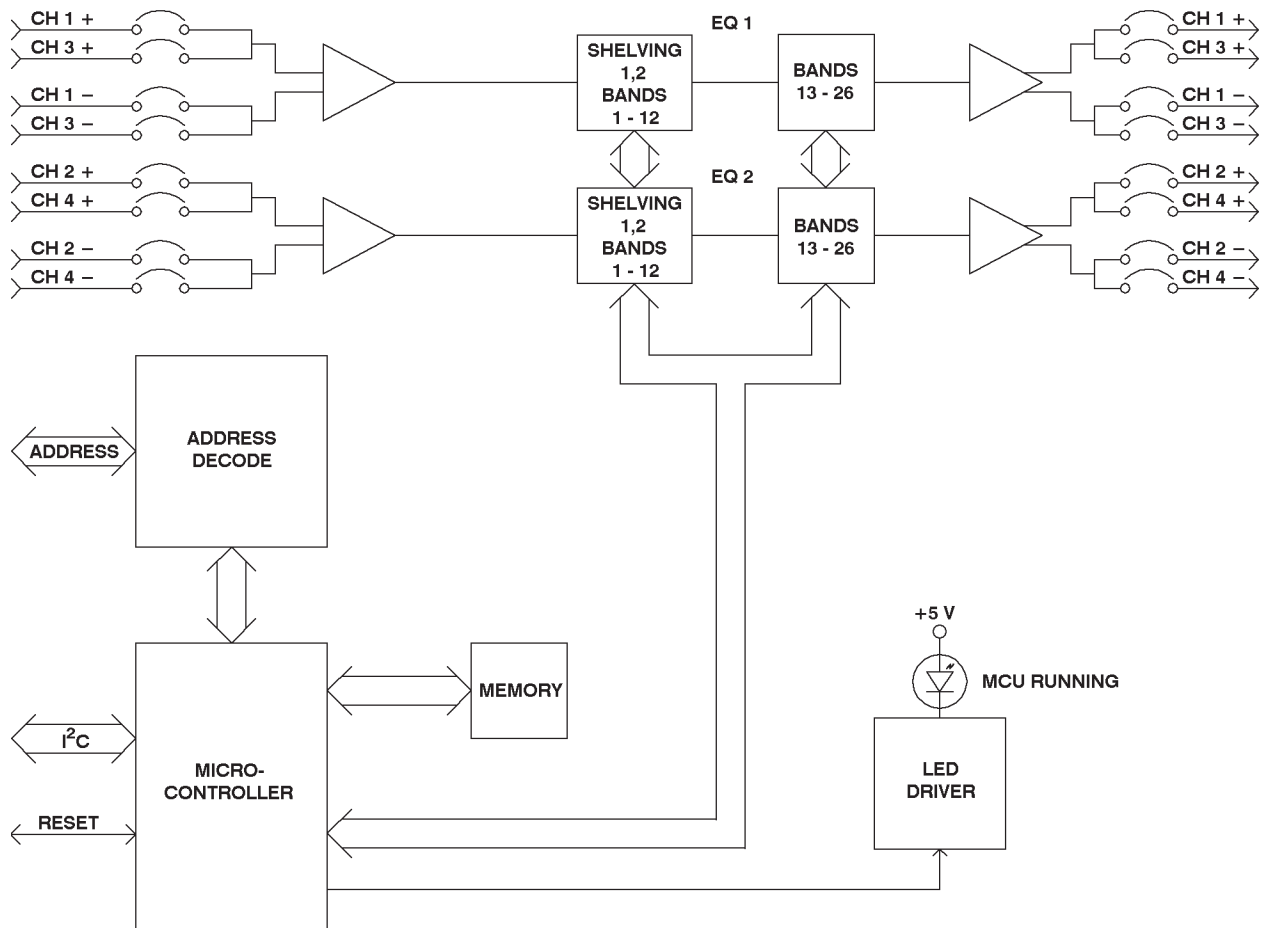


Figure 1 - 8022AEQ Analog Equalizer Card



The card has on-board non-volatile memory that can store EQ setups. It can store up to 7 different EQ curves per channel. The MCU communicates with the 8001CPU via an I²C bus on the mother board. A reset line on the mother board allows the 8001CPU to reset the MPU.

1/3 OCTAVE BANDS PLUS SHELIVING FREQUENCIES			
85 Hz Shelving	160 Hz	800	4 kHz
160 Hz Shelving	200 Hz	1 kHz	5 kHz
50 Hz	250 Hz	1.25 kHz	6.3 kHz
63 Hz	315 Hz	1.6 kHz	8 kHz
80 Hz	400 Hz	2 kHz	10 kHz
100 Hz	500 Hz	2.5 kHz	12.5 kHz
125 Hz	630 Hz	3.15 kHz	16 kHz

Table 1 - 1/3 Octave Bands
Center Frequencies Plus Shelving Frequencies

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SPECIFICATIONS

ELECTRICAL, ANALOG, EQ Set Flat

1. Frequency Response	+0, -0.2 dB
20 Hz - 20 kHz	
2. Total Harmonic Distortion, THD	<0.03%
20 Hz - 20 kHz, 80 kHz filters	
3. Intermodulation Distortion, IMD.	<0.03%
60 Hz/7 kHz	
4. Signal-to-Noise Ratio, S/N	>85 dB
Referenced to +4 dBu, 20 Hz - 22 kHz filters	
5. Cross Talk	<-70 dB
Between EQ channels, 20 Hz - 20 kHz	
6. Maximum Input Level	+18 dBu
7. Maximum Output Level	+18 dBu
$R_L = 600 \tau$	
8. EQ Control Steps, each 1/3 octave band plus shelving	1 dB
9. Maximum cut and boost.	12 dB
10. Power Supply	
Supply Voltage Range	
+15 V Supply	+14.25 V to +15.75 V
-15 V Supply	-14.25 V to -15.75 V
Supply current	
V= +15 V	180 mA
V= -15 V.	168 mA

INDICATORS

1. MCU Running	Green LED
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CONNECTORS

1. 32-pin Euro Connector, male, right-angle (2 each). . .	Hirose PCN10-32P-2.54DS
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MECHANICAL

1. Size (maximum overall dimensions as viewed from the front)	
Height	(11.43 cm) 4.50"
Width	(2.03 cm) 0.80"
Depth.	(20.42 cm) 8.04"
2. Weight	(217 gm) 0.48 lb

ENVIRONMENTAL

1. Operating Temperature Range	(+32 °F - +104 °F) 0 °C - +40 °C
2. Storage Temperature Range	(-40 °F - +158 °F) -40 °C - +70 °C



PIN	FUNCTION	PIN	FUNCTION
1	CH 4 OUT +	17	CH 4 OUT -
2	CH 3 SHIELD	18	CH 4 SHIELD
3	CH 3 OUT +	19	CH 3 OUT -
4	GROUND	20	GROUND
5	CH 2 OUT +	21	CH 2 OUT -
6	CH 1 SHIELD	22	CH 2 SHIELD
7	CH 1 OUT +	23	CH 1 SHIELD
8	GROUND	24	GROUND
9	GROUND	25	GROUND
10	CH 4 IN +	26	CH 4 IN -
11	CH 4 SHIELD	27	CH 3 SHIELD
12	CH 3 IN +	28	CH 3 IN -
13	GROUND	29	GROUND
14	CH 2 IN +	30	CH 2 IN -
15	CH 2 SHIELD	31	CH 1 SHIELD
16	CH 1 IN +	32	CH 1 IN -

Table 2 - Pin Connections, Upper Euro Connector

PIN	FUNCTION	PIN	FUNCTION
1	Address Line 4	17	ADDRESS LINE 3
2	Address Line 2	18	ADDRESS LINE 1
3	Address Line 0	19	I ² C Bus Interrupt Line (Inverted)
4	I ² C Serial Data	20	I ² C Serial Clock
5	+5 V	21	Master Reset Line
6	-15 V	22	-15 V
7	+15 V	23	+15 V
8	Spare 2	24	Spare 3
9	Ground	25	Ground
10	Ground	26	Ground
11	GROUND	27	Ground
12	Audio Test Bus +	28	Audio Test Bus -
13	Audio Monitor Bus +	29	Audio Monitor Bus -
14	Audio Test Signal Bus +	30	Audio Test Signal Bus -
15	Internal Audio Routing Bus 2	31	Internal Audio Routing Bus 1
16	Internal Audio Routing Bus 3	32	Internal Audio Routing Bus 4

Table 3 - Pin Connections, Lower Euro Connector

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