MODEL 8081MT

8 INPUT/1 OUTPUT MONITOR/TEST CARD

The Model 8081MT Monitor/Test Card is a component of the IED 8000 Series™. It has 8 balanced audio input channels which can be switched through a digitally controlled amplifier (DCA) for level control, and then routed to the balanced audio monitor bus and/or audio test bus.

The audio output driver is balanced and floating and is designed to drive long lines without high frequency rolloff. The output bus selector makes use of a relay to switch the inputs to the audio test bus, and a solid state switch for switching inputs to the audio monitor bus. Although the switching speed is relatively slow, the relay maintains the low impedance of the audio driver, allowing the audio test bus output to drive long lines with minimal high frequency rolloff. The solid state switch used for the audio monitor output is

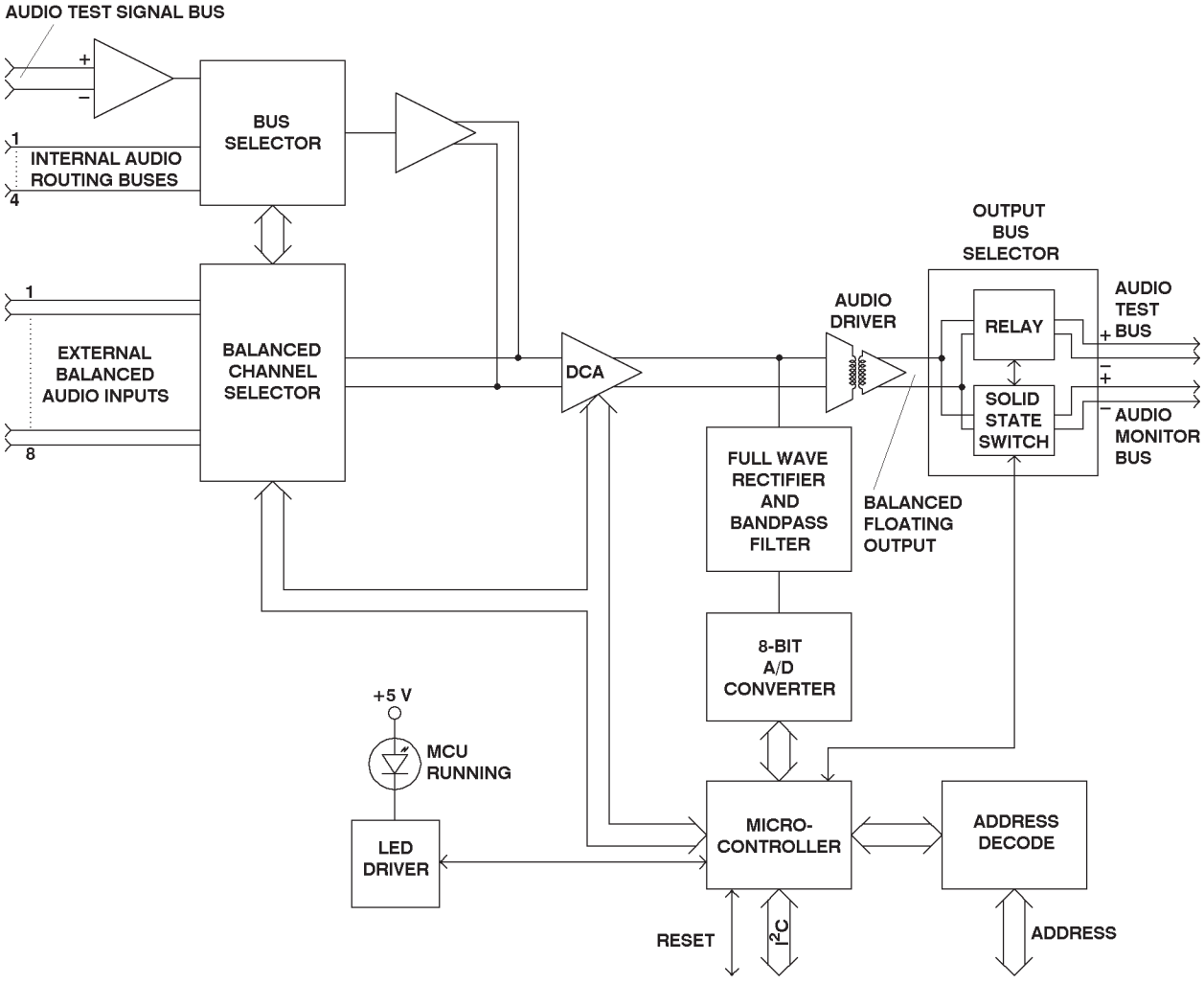

Figure 1 - 8081MT 8 Input/1 Output Monitor/Test Card Block Diagram

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a fast switch, but its added impedance introduces high frequency rolloff, limiting this bus to internal chassis routing only.

The input can accept a signal anywhere in the range between a 70 V line (using maximum attenuation) and –40 dBu (using maximum gain). The on-board gain control has a range of 30 dB of gain to 17 dB of attenuation.

The 8081MT can also select for a test signal appearing on any of the 4 internal audio routing buses, making it possible to test signals from other cards in the system.

The test tone which is eventually routed to the 8081MT is normally generated by the 8001SA card, but can also be generated externally with the right hardware and software.

All routing gain control, and testing is under the control of an on-board microcontroller (MCU) which communicates with the 8001CPU and 8001SA via an I^2C bus. A reset line allows the MCU to be reset by the 8001CPU, if necessary.

SPECIFICATIONS

ELECTRICAL, ANALOG, V_S = +15 VDC, –15 VDC, Gain control set to 0 dB

1. Frequency Response . . . . . +0, –0.1 dB
   20 Hz - 20 kHz
2. Total Harmonic Distortion, THD . . . . . <0.02%
   20 Hz - 20 kHz, 10 Hz - 80 kHz filters
3. Intermodulation Distortion, IMD . . . . . <0.02%
   60 Hz/8 kHz
4. Signal-to-Noise Ratio, S/N . . . . . >85 dB
   Input switches on 'Referenced to +4 dBm', 20 Hz - 22 kHz filters
5. Crosstalk . . . . . <–60 dB
   Between any 2 input channels, 2 kHz
6. Input Signal (max.)
   At maximum attenuation. . . . . (70 Vrms, 100 V peak) +38 dBu
   At maximum gain . . . . . –9 dBu
7. Gain Range
   Max. gain
   20 Hz - 2 kHz . . . . . 30 dB
   20 kHz . . . . . 16 dB
   Max. Attenuation . . . . . 17 dB
   Total Gain Range . . . . . 47 dB
   Number of Steps 255
8. Otput (max.)
   Audio Test Bus Output . . . . . +24 dBu
   $R_L \geq 600\ \Omega$
   Audio Monitor Output . . . . . +18 dBu
   $R_L \geq 2\ k\Omega$
9. 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
   No audio input 90 mA
   Audio input = +18 dBu, unity gain, R_L = 600 Ω 95 mA
   V= –15 V
   No audio input 50 mA
   Audio input = +18 dBu, unity gain, R_L = 600 Ω 55 mA

INDICATORS

1. MCU Running . . . . . Green LED

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 . . . . . (151 gm) 0.33lb

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 8 In +	17	Ch 8 In –
2	Ch 7 In Shield	18	Ch 8 In Shield
3	Ch 7 In +	19	Ch 7 In –
4	Ground	20	Ground
5	Ch 6 In +	21	Ch 6 In –
6	Ch 5 In Shield	22	Ch 6 In Shield
7	Ch 5 In +	23	Ch 5 In –
8	No Connection	24	No Connection
9	No Connection	25	No Connection
10	Ch 4 In +	26	Ch 4 In –
11	Ch 4 In Shield	27	Ch 3 In Shield
12	Ch 3 In +	28	Ch 3 In –
13	Ground	29	Ground
14	Ch 2 In +	30	Ch 2 In –
15	Ch 2 In Shield	31	Ch 1 In Shield
16	Ch 1 In +	32	Ch 1 In –

Table 1 - 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^2C Bus Interrupt Line (Inverted)
4	I^2C Serial Data	20	I^2C 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 2 - Pin Connections, Lower Euro Connector

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