

MLC-PCB-SLM

Operations Guide

Midi Line Converter



ELM Video
Technology, Inc.

PRODUCT OVERVIEW

The MLC module is a dual two input two output midi to line or line to midi converter. Conventional midi signals are good for 50 feet. The MLC-PCB will convert the length to 4000 feet and allows looping (daisy chaining) of up to 32 other MLC-PCB's. If an optional MLC-S can be added for additional functions.

PCB SETUP

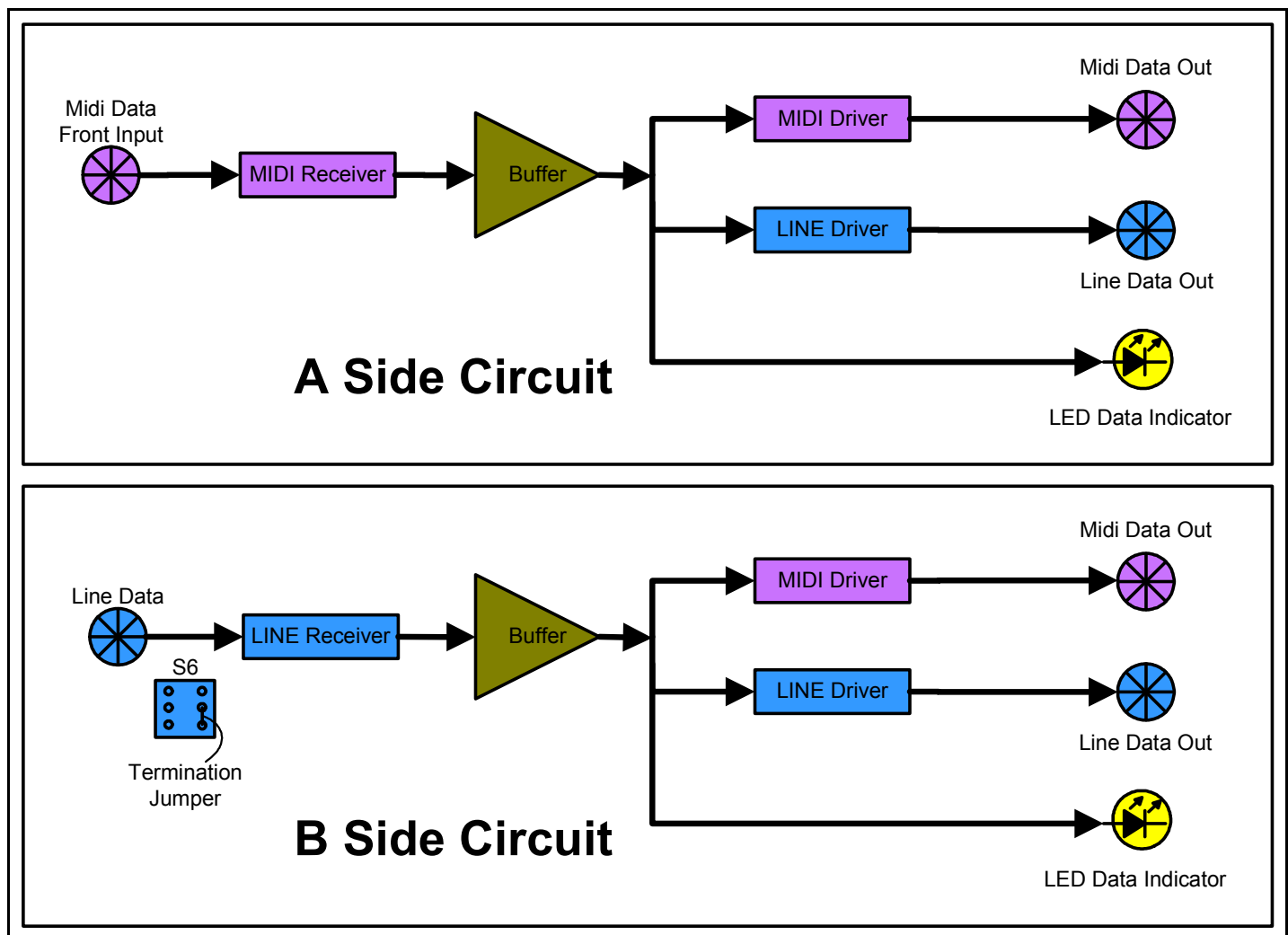
Note - Before handling the PCB, touch a grounded source to discharge any electrostatic electricity. Electrostatic discharge may cause permanent damage to the PCB.

WARNING! Damage will result if REVERSE VOLTAGE is applied to the input voltage terminals. Take great care that the +5V and Gnd connections are connected as marked on the PCB!

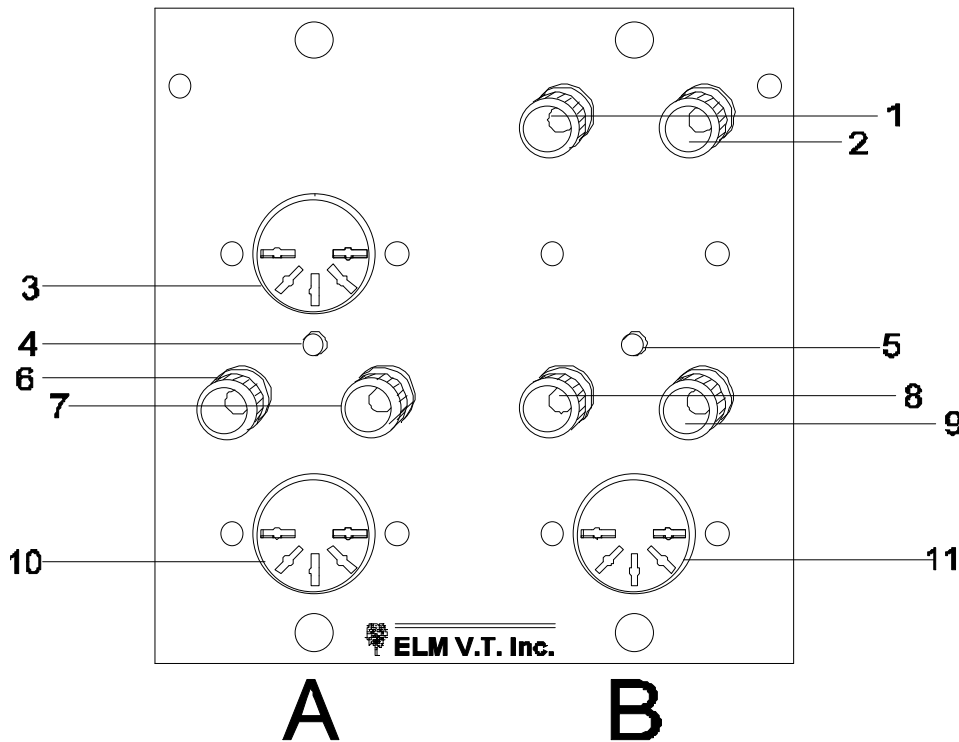
Mount the PCB in a suitable enclosure and use good quality connectors for the power and LINE inputs and outputs. Connect a +5VDC (regulated and fused) power source to J12 "+5" and "G" pins.

The only termination needed is the LINE input. For the MLC-PCB-SLM only the B side LINE input can be terminated. To terminate the input short the two lower right pins in the S6 box. To remove termination clip this jumper to open the connection. *Note - an alternate method to terminate the input is to connect a 220 ohm resistor from the LINE IN + connection to the LINE IN - connection.*

MLC-PCB-SLM Block Diagram

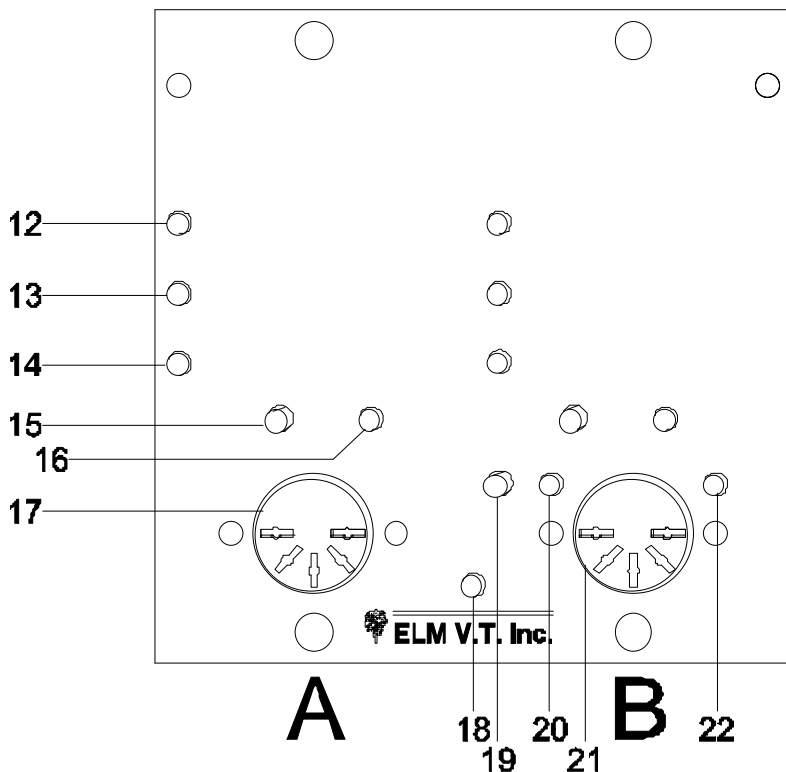


CONNECTION OVERVIEW



MLC

1. B Line Input + Connection
2. B Line Input - Connection
3. A Midi Input Connection
4. A Data Indicator
5. B Data Indicator
6. A Line Input + Connection
7. A Line Input - Connection
8. B Line output + Connection
9. B Line output - Connection
10. A Midi Output Connection
11. B Midi Output Connection



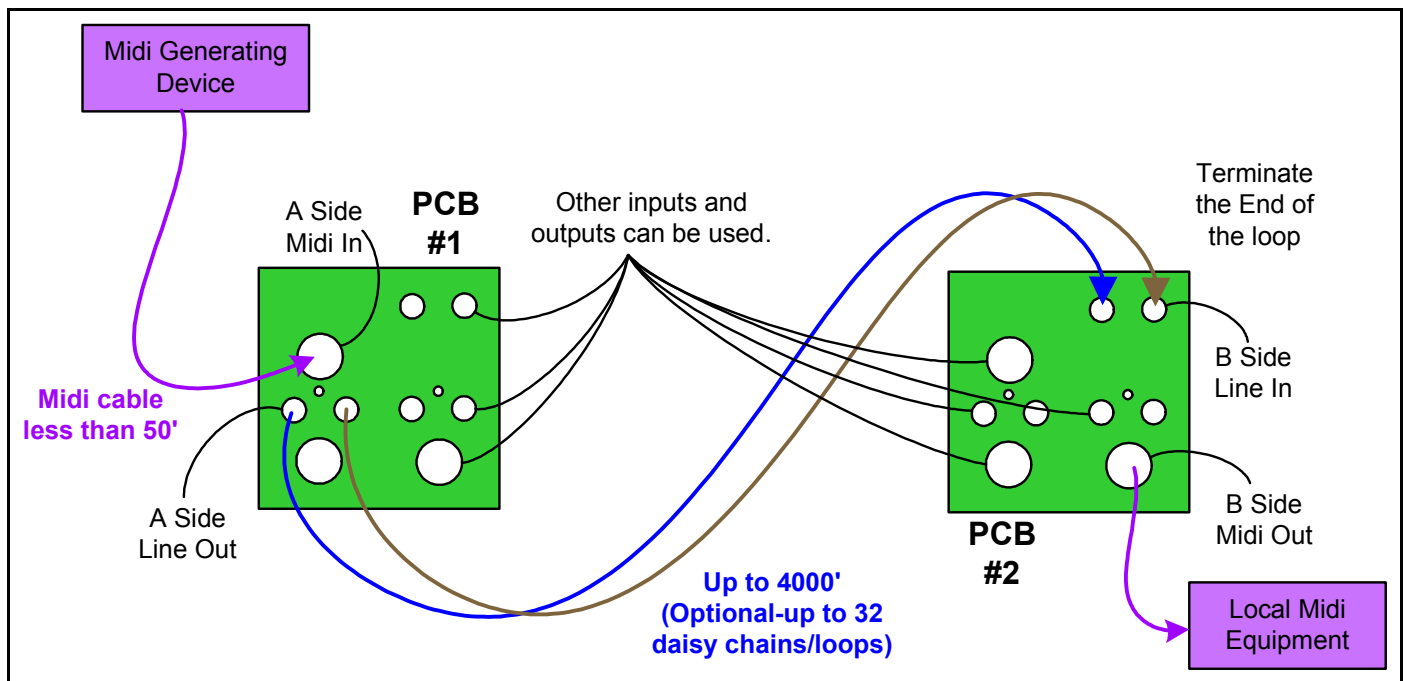
MLC-S (optional)

12. BUS Input Indicator
13. MLC Input Indicator
14. FNT (Front) Input Indicator
15. Input Selection Switch
16. Selected Data Indicator
17. Front Midi Input Connector
18. Module Power Indicator
19. Front Output Selection Switch
20. A Side Output Indicator
21. Front Midi Output Connector
22. B Side Output Indicator

OPERATION

The MLC-PCB module has two independent circuits: A and B. The A side has a Midi input and the B side has a LINE input. Both the A and B side has a Midi and LINE output. Insert a standard Midi cable into the Midi input side A, Midi data is indicated by the data LED. Side A's Midi and LINE outputs will repeat the input data and both can be used and are active continuously. For the B side connect the LINE input from a LINE source, data is indicated by the data LED. Side B's Midi and LINE outputs will repeat the input data and both can be used and are active continuously.

For a typical installation, install two MLC-PCB's within 4000' cable length from each other. Connect a standard Midi device to MLC-PCB #1 Side A "Midi" In. Connect a pair of wires (24AWG, 22AWG, CAT5, or equivalent) to the MLC-PCB #1 side A LINE output. Connect the other side of this wire to MLC-PCB #2 side B LINE input. Connect a Midi cable from MLC-PCB #2 side B Midi out to any standard Midi device. *Note-The last MLC-PCB of the daisy chain must be terminated, all other MLC-PCB's should not be terminated.* See the MLC-PCB instructions to make these settings.



The LINE outputs and any of the looped inputs should not be terminated. Always run a loop from one PCB to another never break away, 'Y', or split the wire. Any twisted pair will work well, insure the wire that is used isn't tied to another source or network before connecting. *Note - By using multi pair wire, extra pairs within the same wire could be used for return, or multiple data transmission paths*



TROUBLESHOOTING

PROBLEM	CHECK
<ul style="list-style-type: none"> Unit won't power up 	<ul style="list-style-type: none"> check fuse and power connections check the ribbon cable
<ul style="list-style-type: none"> Won't receive data on local module 	<ul style="list-style-type: none"> verify data is being sent from source check that the ribbon cable is connected properly
<ul style="list-style-type: none"> MAIN module will receive data but the SECONDARY modules do not 	<ul style="list-style-type: none"> check that J3 is jumpered on MAIN module check that the ribbon cable is connected properly make sure that two data signals are not on the ribbon cable (see jumper settings section)
<ul style="list-style-type: none"> Can't select the 'BUS' input on the MLC-S module 	<ul style="list-style-type: none"> check that J8 (A side) or J9 (B side) are not jumpered
<ul style="list-style-type: none"> Can't select the MLC or 'BCK' input on the MLC-S module 	<ul style="list-style-type: none"> check that the MLC 14 pin connections are seated properly
<ul style="list-style-type: none"> The receiving MLC modules in the daisy chain don't seem to be receiving data 	<ul style="list-style-type: none"> Check the polarity of the wire (green post to green) Insure only ONE MLC module is the OUTPUT and all the other modules are connected to the INPUT Insure there are NOT any 'Y' or split wire configurations in the wiring scheme Insure there are no other connections to the transmit pair

SPECIFICATIONS

Power Consumption	MLC apx 120mA MLC & MLC-S 200mA
Power Input	+5 volts DC Regulated
Input Power Connector	2.1 mm I.D. X 5.5 mm O.D. Center positive (optional)
Fuse	2.5 Amp Fast Acting 5 X 20 mm
PCB Dimensions	3.385" Width X 2.92" Height X .846" Depth (w/o fuse)
Midi Input	31.5 kHz
Midi Output	20mA Max
Line Input	2 wire (balanced)
Line Output	2 wire (balanced)
Maximum Loops	32
Maximum Cable Length	4000'

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