GOLDING AUDIO LTD

MAPS Card Specification

Programmable Playback Card

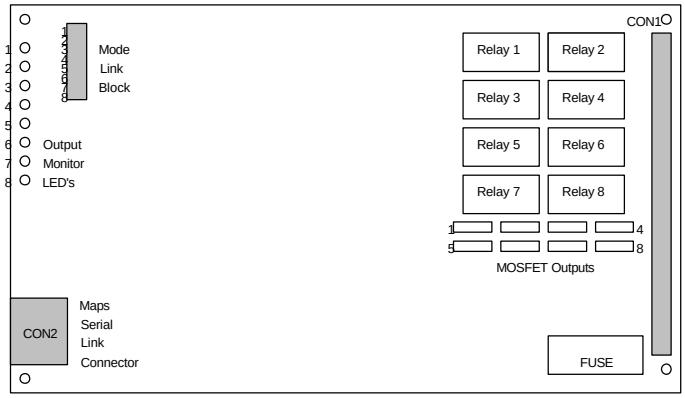
Golding Audio Ltd
Unit 8
Peartree Business Centre
Stanway Colchester
Essex CO3 5JN
Tel: 01206 762462 Fax: 01206 762633
Web Site: www.goldingaudio.co.uk

Specification

Board Size	100 x 160 x 25mm
Logic Supply	12 - 18v D.C.
Switch Supply	12 - 24v D.C.
Trip Input Lines	5v active LOW
Stop Input	5v active LOW
Run Input	5v active LOW
Sync Input	5v -ve edge
Clock Input	5v +ve pulse (1Hz to 120Hz)
Clock Output	5v +ve pulse
Fet Outputs	Open Drain 1 Amp 30v max
Relay Outputs	Dry contact 500mA, 50v max
Analogue Outputs	0 to 10v at 20mA 2off
Card Format	6 Programme Banks 10min 55sec

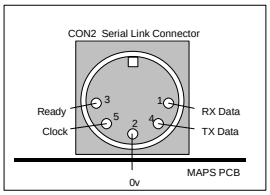
Board layout

This is a general layout of the MAPS Playback PCB including link blocks, and connectors . Use this diagram to locate link blocks etc. as described in this book should you need to format or re-format any particular MAPS Playback card.



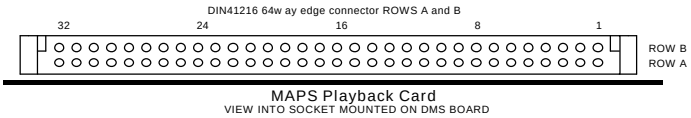
Maps Serial Link Connector (CON2)

This 5Pin 180deg DIN Socket provides a bi-directional data link between the MAPS Playback card and MAPS PROGRAMMING UNIT whilst programming is in progress.



Control and I/O pins

The control and I/O pins of the MAPS Playback Card all appear on the 64way DIN41612 edge connector (CON1) on the rear edge of the PCB. The pin-out of this connector is listed and described in this section.



Din 41612 Pin Out Table

Pin	ROW A	ROW B
1	5v Output 100mA Max	5v Output 100mA Max
2	No Connection	No Connection
3	Switch supply 12-24v	Switch supply 12-24v
4	Switch supply 0v	Switch supply 0v
5	No Connection	No Connection
6	Relay 1 N/O	Relay 1 COM
7	Relay 2 COM	Relay 2 N/O
8	Relay 3 N/O	Relay 3 COM
9	Relay 4 COM	Relay 4 N/O
10	Relay 5 N/O	Relay 5 COM
11	Relay 6 COM	Relay 6 N/O
12	Relay 7 N/O	Relay 7 COM
13	Relay 8 COM	Relay 8 N/O
14	Mosfet 1 Output	Mosfet 2 Output
15	Mosfet 3 Output	Mosfet 4 Output
16	Mosfet 5 Output	Mosfet 6 Output
17	Mosfet 7 Output	Mosfet 8 Output
18	Switch supply 0v	Switch supply 0v
19	Not Used	Not Used
20	Analogue Output 1	Analogue Output 2
21	Logic supply 0v	Logic supply 0v
22	Trip Input 1	Trip Input 2
23	Trip Input 3	Trip Input 4
24	Trip Input 5	Trip Input 6
25	Stop Input	No Connection
26	No Connection	No Connection
27	Stop Input	No Connection
28	Sync Input	Run Input
29	Clock Output	Clock Input
30	TX Data	RX Data
31	Logic supply 0v	Logic supply 0v
32	Logic supply 12-18v	Logic supply 12-18v

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Control and I/O pins

Control and I/O pins on the 64 way edge connector (CON1) are described below.

Relay Outputs - Pins A6-A13 B6-B13
Connected directly to the Normally Open contact pairs of the 8 output relays. (Dry contact 500mA switching, 50v max)

Mosfet Outputs - Pins A14-17 B14-14
Mosfet outputs can be used as a alternative to the output relays. The mosfets are N type and output 0v when active. (Open Drain 1 Amp 30v max)

Analogue Outputs - Pins A20-B20
Two outputs 0 - 10volts used to drive external equipment such as Dimmers, VCA's or Servos (0 to 10v D.C. at 20mA.)

Trip Inputs - Pins A22-24 B22-24
Trip inputs used to initiate playback of any given recorded programme. Card Format 1= Trips 1 to 6 correspond to Programme banks 1 to 6 Card Format 2= Trips 1 to 2 correspond to Program banks 1 to 2 (Trip input lines 5v active LOW.)

Stop Input - Pin A25 and A27
An LOW pulse on this line will stop and reset playback of any running programme. This line must be released before any other valid trip input is accepted (Stop input line 5v active LOW.)

Sync Input - Pin A28
With link 3 **Not fitted** this pin is inoperative (Standalone Mode.) With link 3 **Fitted** (Sound Store\ External Sync mode) a low or high sync pulse (see link4) from a sound stores loop point or any external control equipment will restart a currently playing MAPS programme, provided a valid trip input is still present.

Run Input - Pin B28
With link 3 **Not fitted** this pin is inoperative (Standalone Mode.) With link 3 **Fitted** (Sound Store\ External Sync mode) this line must be held LOW for the MAPS can to run, any valid trip input will be ignored whilst this line is HIGH. (normally conected to run line of DSU6000 sound store or GO OUT of DMS2000 sound store)

Clock Output - Pin A29
With link 2 **FITTED** (Internal clock) this pin outputs the 25Hz onboard clock. (used to drive other MAPS cards configured for External clock input)

Clock Input - Pin B29
With link 2 NOT FITTED (External clock) this pin recives an external clock (1Hz to 120 Hz) from a master clock sourse for multi board sync applications. This clock can be supplied by a Master MAPS card or Sound Store.

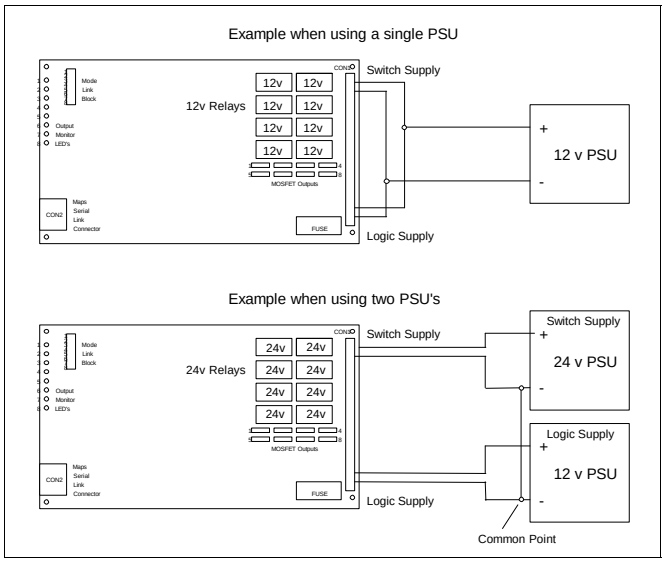
RX and TX Data - Pins A30-B30
These pins provide connection for serial data to and from the MAPS PROGRAMMER whilst programming MAPS cards. These pins are common with the MAPS SERIAL LINK Connector (CON2) which is the preferred way of connecting to the Programming system.

Power Supply Input Pins

Provision is made for two separate power supplies to be used on MAPS Playback cards, for example when a **Logic Supply** of say 12v D.C. is being used, and output devices require 24v D.C a separate power supply can be connected to the **Switch Supply** input. Care must be taken to common the Grounds (0v) of the two supplies as near to the power supply output pins to minimise possible noise being pasted from the **Switch Supply** rail to **Logic Supply** rail.

Logic Supply - Pins A31-32 B31-32
An external D.C. power supply must be connected to these pins to supply the boards logic circuitry only.

Switch Supply - Pins A3-2 B3-4
An external D.C. power supply connected to these pins supplies the external devices connected to the output relays or Mosfets.



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Mode Select Link Block

There are several user options available on the MAPS Playback Card that should be set before use. These options are listed and described in this section.

	FITTED	NOT FITTED
1-	Clock Divide by 2	Clock Normal
2-	Enable Internal Clock	Use External Clock
3-	Enable External Sync Mode	Standalone mode
4-	Sync Input Active HIGH	LOW
5-	NOT USED	NOT USED
6-	Idle Mode Enable	Idle Mode Disable
7-	Con't Loop from pulse	Con't Loop OFF
8-	One Shot Trips ON	One Shot Trips OFF

Link 1 - Fitted
MAPS card divides 25Hz on board or external clocks to 12.5Hz to double program running time.

Link 1 - Not Fitted
MAPS card runs on normal 25Hz on board clock (default.)

Link 2 - Fitted
Runs the MAPS card from it's own 25Hz onboard clock.

Link 2 - Not Fitted
Disables the onboard clock and accepts an external clock input from 1Hz to 120Hz applied to Pin B29 of CON1. This external clock is typically supplied by another Master MAPS card or Sound Store in multi board sync applications.

Link 3 - Fitted
Enables the Run Input and Sync Input control lines pins A28 and B28 CON1 these pins are used to controls the MAPS Card when running in sync with sound stores.

Link 3 - Not Fitted
Run and sync inputs are not active.

Link 4 - Fitted (works in conjunction with link 3)
With link 3 FITTED this configures the Sync Input Pin to active high operation. Used with DMS2000 sound stores or other control equipment.

Link 4 - Not Fitted
With link 3 FITTED this configures the Sync Input Pin to Active LOW operation. Used with DSU6000 sound stores or other control equipment.

Link 5 - Fitted
Not Used

Link 5 - Not Fitted
Not Used

Link 6 - Fitted
Programmed data (if any) in the start of memory bank 1 will be output whilst the MAPS card is idle (not running.)

Link 6 - Not Fitted
Turns off all outputs whilst the MAPS card is idle egardless of programme content.

Link 7 - Fitted
Any programme will play back in a continuous loop after a short pulse is applied to it's Trip Input. The Stop Line is used to cancel playback.

Link 7 - Not Fitted
Programme plays once from start to end after a short pulse is applied to it's Trip Input.

Link 8 - Fitted
Trip Inputs held active will play their programme only once, Trip Inputs must be released and reapplied to restart programme.

Link 8 - Not Fitted
Trip Inputs held active will play programme in continuous loop whilst the Trip Input is active.

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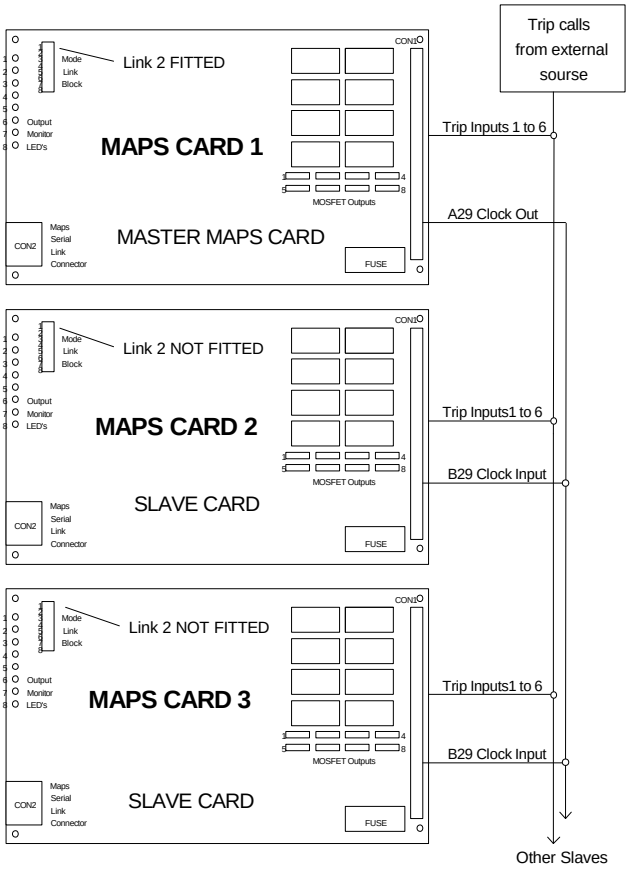
MASTER CARD clocking slave cards

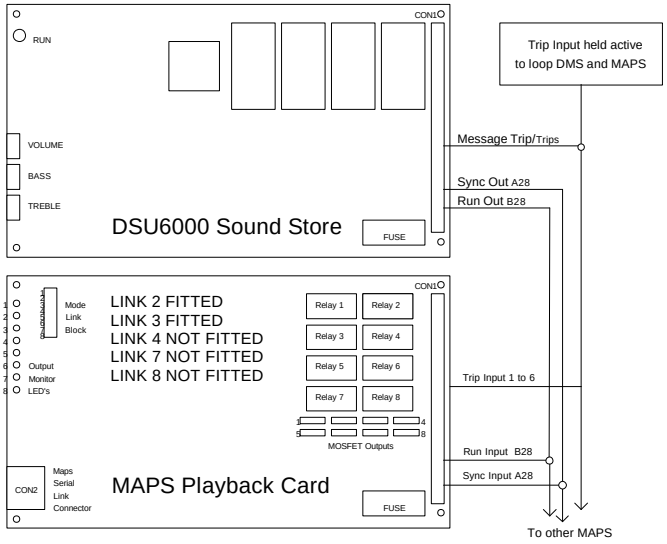
In the example below MAPS CARD 1 is configured for internal clock, it's clock is being taken from Clock Output (A29) and run to slave boards 2 and 3's Clock Input (B29). Slave boards are configured for external clock. (link 2 NOT FITTED)

Trip Inputs being used are all connected together trip1 to trip1 trip2 to trip2 etc. It is important to ensure that link configurations of all boards are correct such as Trip modes, if not all boards may not behave in the desired way under certain trip conditions.



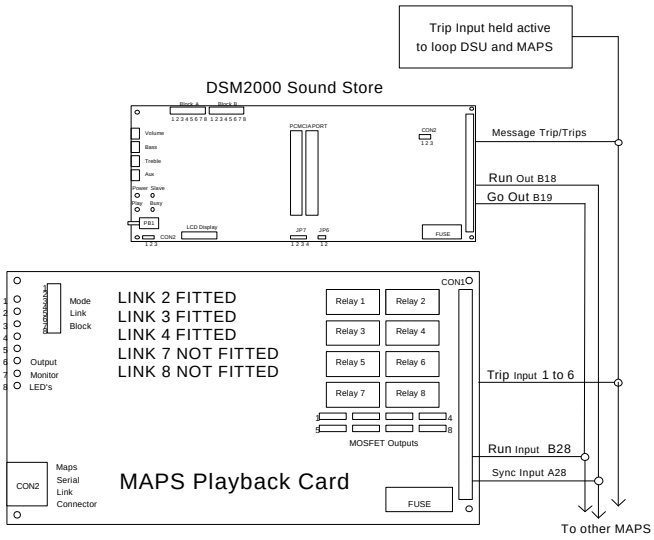
DSU6000 Sound Store Controlling MAPS Card

Used mainly for continuously looped sound track applications. In the example below the DSU6000 Sound Store is controlling the MAPS card via the Sync and Run Inputs. (A28-B28) This configuration is useful for example: if Message 1 of the DSU6000 sound store is replayed in a loop by holding Trip input 1 active, at the loop point of the sound track the MAPS card is re synchronised to the sound track.



DMS2000 Sound Store Controlling MAPS Card

Used mainly for continuously looped sound track applications. In the example below the DMS2000 Sound Store is controlling the MAPS card via the Sync and Run Inputs. (A28-B28) This configuration is useful for example: if Message 1 of the DMS2000 sound store is replayed in a loop by holding Trip input 1 active, at the loop point of the sound track the MAPS card is re synchronised to the sound track.



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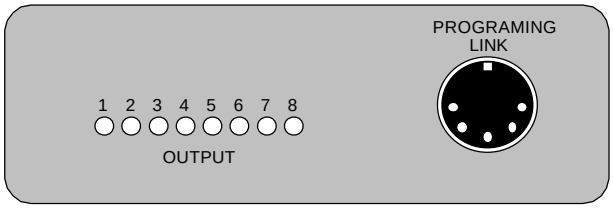
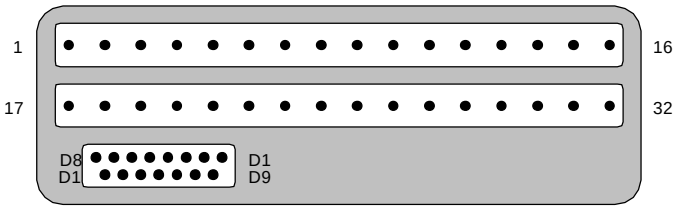
MAPS card Cased with Control I/O and output terminals

The cased unit presents output terminations on 5mm Pitch, 2 part PCB connectors. Control I/O is terminated on a 15 pin din socket. Digital output monitors and programming I/O are located on the front panel.

FRONT PANEL



BACK PANEL



15 way D-Type (I/O Connection)

Pin 1 : Trip 1 (Control Input)
Pin 2 : Trip 3 (Control Input)
Pin 3 : Trip 5 (Control Input)
Pin 4 : Stop (Control Input)
Pin 5 : Run (Control output)
Pin 6 : Clk Mon (Program link)
Pin 7 : TX (RS 232 Program link)
Pin 8 : RX (RS 232 Program link)
Pin 9 : Trip 2 (Control Input)
Pin 10 : Trip 4 (Control Input)
Pin 11 : Trip 6 (Control Input)
Pin 12 : Sync (Control Output)
Pin 13 : Clk Out (Control Output)
Pin 14 : 0v (Logic Supply)
Pin 15 : 12v Supply (Logic Supply)

32 Way Screw Terminal Output Connection

Pin 1 : 12-18v Input (Logic Supply)
Pin 2 : 0v Input (Logic Supply)
Pin 3 : Stop Input (Control Input)
Pin 4 : Trip 1 Input (Control Input)
Pin 5 : Analogue 2 (0v—10v Output)
Pin 6 : Analogue 1 (0v—10v Output)
Pin 7 - Pin 14 : Fet 1 - Fet 8 (Digital Fet Outputs)
Pin 15 : 0v Supply to Fets & R1-8 (Digital Fet Supply)
Pin 16 : +v Supply to Fets (Digital Fet Supply)
Pin 17,18 : Relay 1 Output (N/O Contact)
Pin 19,20 : Relay 2 Output (N/O Contact)
Pin 21,22 : Relay 3 Output (N/O Contact)
Pin 23,24 : Relay 4 Output (N/O Contact)
Pin 25,26 : Relay 5 Output (N/O Contact)
Pin 27,28 : Relay 6 Output (N/O Contact)
Pin 29,30 : Relay 7 Output (N/O Contact)
Pin 31,32 : Relay 8 Output (N/O Contact)