

Yamaha Professional Audio Products

DM2000 Digital Production Console Internal connector inspection guide

1. Introduction

The majority of interconnections within the DM2000 are made using bare-wire ended ribbon cables, which terminate into “wire-trap” connectors at each Printed Circuit Board (PCB). Whenever a ribbon cable is reconnected to a PCB after repairs or modifications have been completed, care should be taken to ensure that all of the cable's conductors have been properly inserted and locked into their respective holes in the PCB's wire-trap connector.

The tables shown in the remainder of this document describe the fault symptoms that may result from incorrect connection of the more important connectors within the DM2000. To avoid repetition, not all of the PCBs listed in “**2. PCB function description**” have their relevant connectors described in “**3. PCB Connector/Fault symptom relationship**”. For example, since the front-panel **PN** PCBs are connected to the **SUB** PCB, only the connectors at the **SUB** end of the cables are listed. In practice, the connectors at both ends of the cable would be checked if the indicated fault symptom was evident.

2. PCB function description

PCB name	PCB function
2TRI	2-Track analog inputs 1 & 2 preamplifiers
AD	12-channels of analog to digital conversion. Two AD PCBs are used to provide 24-channel analog input capability
ANI	Balanced input analog pre-amplifier with balanced Insert in/out jacks.
BRG	Power supply distribution, cooling fan control
CPU	Central control of console functions
DA1	8-channels of digital to analog conversion for Omni outputs
DA2	8-channels of digital to analog conversion for Stereo Out, LRG and SML Control Room Monitor, Studio Monitor and Headphones, 5-channels of analog to digital conversion for Talkback, 2TR IN analog 1, 2TR IN analog 2
DS	SmartMedia Card interface
DSP	Digital Audio signal processing
FD1	Fader position sense, touch sense and motor drive Ch1 – Ch16
FD2	Fader position sense, touch sense and motor drive Ch17 – Ch24, Stereo
JK1	Word Clock, MTC/SMPTE Timecode, To Host/USB, External Keyboard, 2TR digital inputs 1, 2 and 3
JK2	MIDI, Remote, Control and Meter interfaces, Cascade in/out
LCDCOM	LCD contrast and backlight control
LRG	Balanced 2-channel LRG Control Room Monitor analog output

2. PCB Function description *continued*

PCB name	PCB function
OPT	YGDAI Card Option slots
PHN	Headphones and Talkback
PN1	Left hand section panel switches, LEDs and rotary encoders
PN2	Center section panel switches, LEDs and rotary encoders, joystick
PN3	Right hand section panel switches, LEDs and rotary encoders and potentiometers
PN4	Right hand lower section panel switches, LEDs and PARAMETER wheel
PS Unit	Power Supply Unit
SML	Balanced 2-channel SML Control Room Monitor analog output
ST	Balanced 2-channel Stereo analog output
STD	Balanced 2-channel Studio analog output, unbalanced Stereo analog output
SUB	Control of all panel functions
SW	240VAC power switch, fuse and filter

3. PCB Connector/Fault symptom relationship

PS Unit (Power Supply Unit)

Connector	Fault symptoms if incorrectly connected
CN101	Backlight only, no LCD, no LEDs, no operation
CN102	No operation at all
CN103	Panel and LCD operation OK, no analog audio
CN104	Panel and LCD operation OK, no analog audio
CN1	No operation at all

BRG PCB (Power Supply Distribution)

Connector	Fault symptoms if incorrectly connected
CN001	None – Temperature sensor fitted but software not implemented
CN002	Backlight only, no LCD, no LEDs, no operation
CN003	No operation at all
CN004	Panel and LCD operation OK, no analog audio
CN005	Panel and LCD operation OK, no analog audio
CN006	No cooling fan
CN007	No analog inputs (Ch1 – Ch12)
CN008	No analog inputs (Ch13 – Ch24)
CN009	No analog OMNI OUT 1 – 8
CN010	No analog STEREO, LRG/SML Control Room Monitor, Studio and Phones output, no 2TR analog input

BRG PCB (Power Supply Distribution) *continued*

Connector	Fault symptoms if incorrectly connected
CN011	No FL module operation (channel name display)
CN012	Backlight only, no LCD, no LEDs, no operation
CN013	Backlight only, no LCD, no LEDs, no operation
CN014	No JK1 PCB operation (Digital 2TR In/Out, Ext keyboard, Word Clock, To Host, USB, Time Code)
CN015	No JK2 PCB operation (Cascade In/Out, MIDI, Remote, Meter), LCD displays "WARNING: REMOTE PARITY ERROR"
CN016	No YGDAI slot operation
CN017	No YGDAI slot operation
CN018	No LCD or backlight
CN019	Erratic PN1 PCB operation (no LEDs on left-hand section of panel, erratic panel switch operation)
CN020	Erratic PN2(1/2) PCB operation (no center-section LEDs including 7-segment MEMORY NUMBER display)
CN021	Erratic PN3 PCB operation (No right-hand section panel LEDs)
CN022	No motor drive on faders 1 – 16. Touch sense and manual operation OK
CN023	No motor drive on faders 17 – 24 & Stereo Master. Touch sense and manual operation OK
CN024	No panel operation. LCD displays "MAIN-SUB DISCONNECTED"

AD #1 PCB (Analog to Digital Converter)

Connector	Fault symptoms if incorrectly connected
CN001	No analog inputs (Ch1 - Ch12)
CN002	"
CN003	"

AD #2 PCB (Analog to Digital Converter)

Connector	Fault symptoms if incorrectly connected
CN001	No analog inputs (Ch13 - Ch24)
CN002	"
CN003	"

DA1 PCB (Digital to Analog Converter)

Connector	Fault symptoms if incorrectly connected
CN001	No analog OMNI outputs
CN901	"

DA2 PCB (Digital to Analog Converter)

Connector	Fault symptoms if incorrectly connected
CN001	No analog STEREO, LRG/SML Control Room Monitor and Studio Monitor
CN901	“
CN902	No Talkback, analog 2TR In

CPU PCB (Central Processing Unit)

Connector	Fault symptoms if incorrectly connected
CN101	LCD displays “WARNING: MAIN/SUB DISCONNECTED”
CN104	No operation, only LCD backlight
CN105	“
CN106	No LCD characters, backlight and panel operation OK
CN107	No SmartMedia card operation
CN108	“

SUB PCB (Panel CPU)

Connector	Fault symptoms if incorrectly connected
CN101	LCD displays “WARNING: MAIN/SUB DISCONNECTED”
CN104	“
CN111	No rotary encoder operation Ch1 - Ch16
CN112	No panel operation of entire right hand section
CN113	No rotary encoder operation Ch17 – Ch24, EQ, Pan Surround
CN114	No joystick, SOLO contrast level, Surround Monitor level
CN115	All LEDs on right hand section of panel remain illuminated, no left hand section panel switch operation, rotary encoders OK
CN117	No FL module operation (channel name display)
CN118	No fader operation, no touch sense Ch1 - Ch16, Stereo Master
CN119	No fader operation, no touch sense Ch17 - Ch24

OPT PCB (YGDAI Option Card Slots PCB)

Connector	Fault symptoms if incorrectly connected
CN801	No operation of any slot
CN802	“
CN803	“
CN804	No operation of Slot 4
CN805	No operation of Slot 5
CN806	No operation of Slot 6
CN807	No operation of any slot

OPT PCB (YGDAI Option Card Slots PCB) *continued*

Connector	Fault symptoms if incorrectly connected
CN907	No operation of any slot
CN908	No operation of AD/DA type option cards, digital format types OK

Joseph Pantalleresco

Technical Support Co-ordinator
Professional and Music Products
Yamaha Music Australia

14 August 2003