

## OVERVIEW

The D1U54P-12-CONC (4407001-1) interface connector card is a dual card that is intended to interconnect the output voltages and signals of two D1U54x Series power modules for laboratory/bench level evaluation of the product.

The outputs are capable of being parallel connected and a common ISHARE bus is provided to ensure that both power modules share current within specified limits.

The Interface Card is capable of operation from standby voltages of 3.3V, 5V, and 12V (provided by the D1U54x variant under test) without any reconfiguration.

It is designed and intended to be used for the members within the following series (both AC and DC input source variants and both airflow options):

MODEL VARIANTS	3.3VSTANDBY Output	5VSTANDBY Output	12VSTANDBY Output
D1U54x-x-650-12-HBxxC-xxx	N/A	N/A	HB3xC HB4xC
D1U54T-x-800-12-HBxxC-xxx	N/A	N/A	HB3xC HB4xC HB3TC HB4TC
D1U54x-x-1200-12-HxxxxC	HC3PC HC4PC	HA3PxC HA4PxC	HB3C HB4C HB3AC HB4TAC
	HU3C HU4C HU3AC HU4TAC		
D1U54x-x-1500-12-HxxxxC	HC3C HC4C	HA3C HA4C	HB4xC

This card can also be used as an alternative to a host system power/mid or interposer plane in end-user application (Consult Murata Sales for details).

## SAFETY PRECAUTION

The D1U54P-12-CONC output connector card is intended to facilitate the connection of the DC output supply rails of the power module. As such, there is a high energy source exposed on the output connector card; please take the necessary safety precautions during the use of this connector card for product evaluation. Refer to the specific product datasheet for additional information

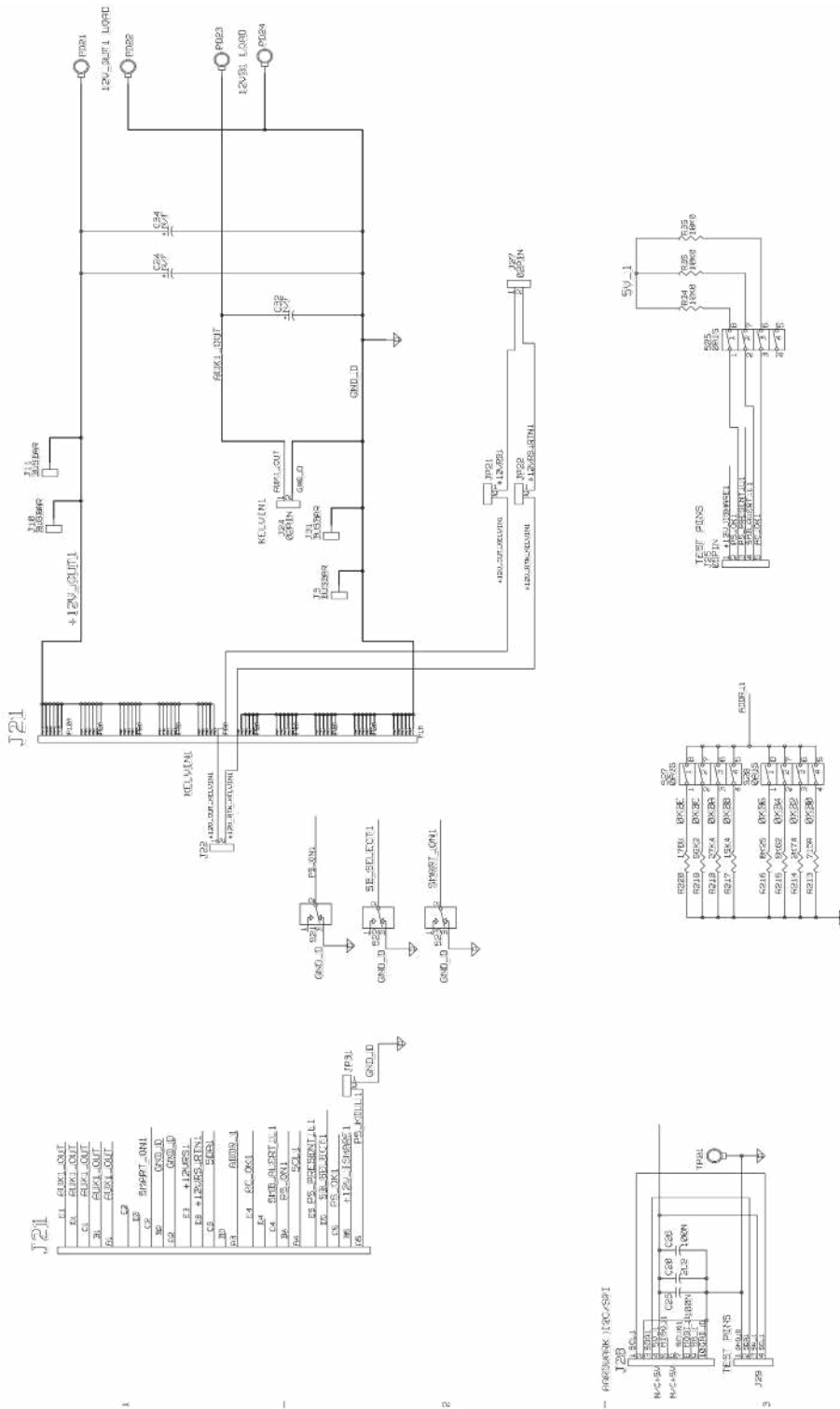
IMAGE

Component Side (Top) View

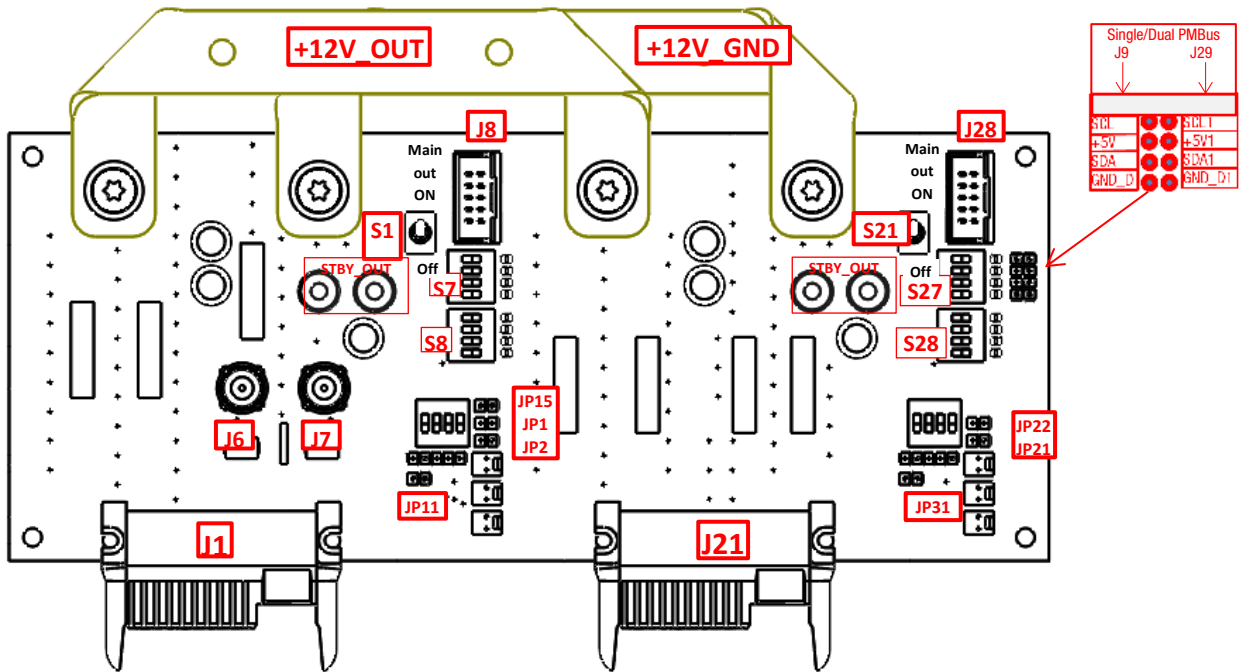




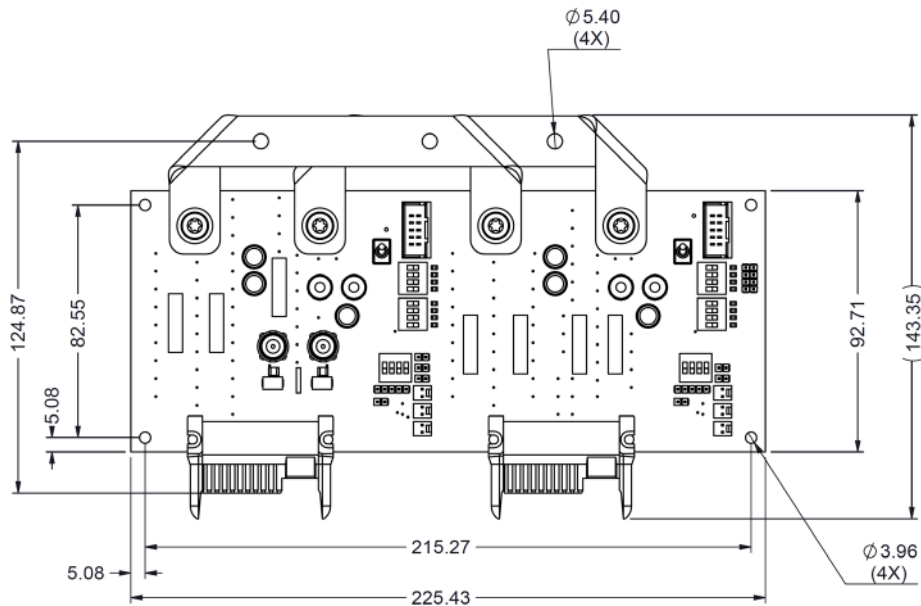
### SCHEMATIC – D1U54P-12-CONC – SLOT-2



**MECHANICAL DETAILS**  
**FEATURE LOCATIONS**



**DIMENSIONS**



## CONFIGURATION NOTES:

1. The Interface Connector card is basically two identical circuits provided on a single card (PCB). Each “half” has all the necessary configuration links duplicated to enable each “half” to operate individually if required.

Common connections exist these being as follows:

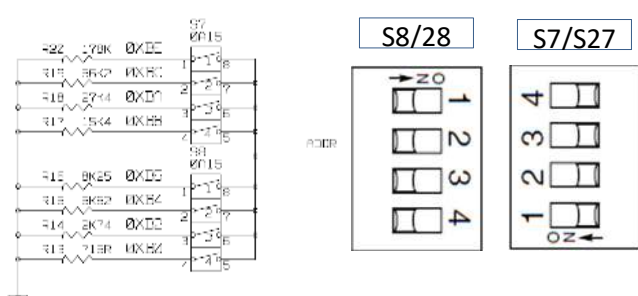
- a. Power bus bars that are intended to interconnect the main 12VDC outputs of each “half”; these can be removed as required, and substituted with separate cables to the required load.
- b. ISHARE signal bus between each “half”. This interconnection is provided by a single jumper JP15 and can be removed if operation as two independent (no parallel connection) is required.

Note that no physical parallel connection is provided to interconnect the VSTANDBY output of each “half”. If required cable connections can be provided by the End User (note: parallel connection of the VSTANDBY is subject to the limitations as described in the respective product datasheets).

2. To configure each “half” for independent or parallel operation, ensure that the following configurable jumpers (headers) have shorting links (shunts Dual Beam; TE Connectivity Pt# 390088-2) fitted across their respective Pins 1 & 2 (refer to schematic & photograph):
  - a. JP1/JP21; +12VSENSE local voltage sense selection; deselect if remote sense connection is provided to the load.
  - b. JP2/JP22; +12VSENSE\_RTN local voltage sense selection; deselect if remote sense connection is provided to the load.
  - c. JP11 & JP31 (PS\_KILL connection to GNDB/GNDD return ; enables output.
  - d. JP15; this jumper interconnects the ISHARE signals between the two power modules. Fit the shorting link across Pins 1 & 2 if the units are to be operated in parallel to share a common load.  
Remove the shorting link if the units are to be operated “independently” as separate power modules.
3. The two DC Main 12V DC outputs are interconnected with bus bars.
4. The BNC connectors for ripple & noise measurements of 12VSTBY (J7 bias/standby) and 12VOUT (J6 Main output) are intended for direct (BNC to BNC) connection (or via a 10X probe if required) to an oscilloscope. Note also that the measurement node is filtered with a parallel connected 10 $\mu$ F tantalum and 1 $\mu$ F ceramic capacitor (across tip to ground) A short 50ohm coaxial cable connection shall be provided between the relevant BNC measurement connector and the input to the measuring ‘scope (the ‘scope bandwidth shall be limited to 20MHz).
5. Connector J8 is a PMBob™ I<sup>2</sup>C/SPI interface connector. The PMBob™ USB to I2C Interface external device allows communications via a USB port of a laptop or PC that can be used with the provided MPS software GUI.  
As such this is the recommended communication interface for use with this interface card for initial bench evaluation.
6. S1/S21 enables/disables (turns “on”/“off”) the main output by connecting PS\_ON\_L to the respective 12VSTBY Return.  
Close S1/S21 to enable (turn “on”) the respective power module 12VDC Main Output.

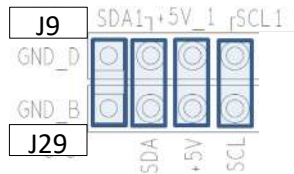
### CONFIGURATION NOTES:

7. S7/S8 (slot 1 PSU) and S27/S28 (Slot 2 PSU) are four (4) position DIL/DIP switches used to assign the variable address for I<sup>2</sup>C communications with the power module. Address selection is possible by applying an external resistor from the address signal pin to DC Return. This connector card provides both the dip switches and fixed resistors as a convenient method of assigning one of eight address combinations, shown in the table:

Switch	Position	Slave device addresses		External Resistance (KΩ; ±5%)	Switch Diagram (Slot 1 PSU shown)
		Microprocessor	EEPROM		
S7/S27	1	0xBE	0xAE	178	
S7/S27	2	0xBC	0xAC	56.2	
S7/S27	3	0xBA	0xAA	27.4	
S7/S27	4	0xB8	0xA8	15.4	
S87/S28	1	0xB6	0xA6	8.25	
S87/S28	2	0xB4	0xA4	5.62	
S87/S28	3	0xB2	0xA2	2.74	
S87/S28	4	0xB0	0xA0	0.715	

- The D1U54x Series employs “left-shifted” 7-Bit addressing; where Bit “0” of the device address is the Read/Write bit. The addresses, as shown above, assume that the Read/Write bit is a logic level “0”. Refer to
- For any address change to take effect, either the AC PSU input needs to be recycled (leave unpowered for approx. 10 seconds to ensure standby output is fully discharged) or the “PS\_KILL” signal (JP11/JP31) can be recycled.

8. J9/29 consists of 4 pairs of jumper headers that can be fitted with jumpers allowing PMBus™ communication with two installed power supplies using a single PMBob™. For this mode, install the four jumpers as shown:



- PMBob™ may be connected to either J8 or J28 when using two power supplies and the Jumpers shown above are installed.
- If using a single power supply, J9/29 jumpers shown above, may be left in place.
- Unique addresses need to be set for each of the two power supplies (refer to note 6 above for details).
- Add a jumper across PS\_ON and PS\_ON1 for single switch (either S1 or S21) enabling / disabling both power supply main outputs.

