D1U86P-CONC-2200W

ACAN-75 Connector Card Application Note

OVERVIEW

The D1U86P-CONC-2200W dual interface connector card is intended to interconnect the output voltages and signals of two D1U86x-x-2200-12-HBxDC Series power modules for laboratory/bench level evaluation of the product.
The outputs are capable of being parallel connected.

Order Guide:

Order Number	Compatible Model Variants	STANDBY Output "12VB"
D1U86P-CONC-2200W	D1U86x-x-2200-12-HxxDC	HB3DC HB4DC

End Users can also use this card in their applications as an alternative to a host system power/mid or interposer plane (consult Murata Sales for details).

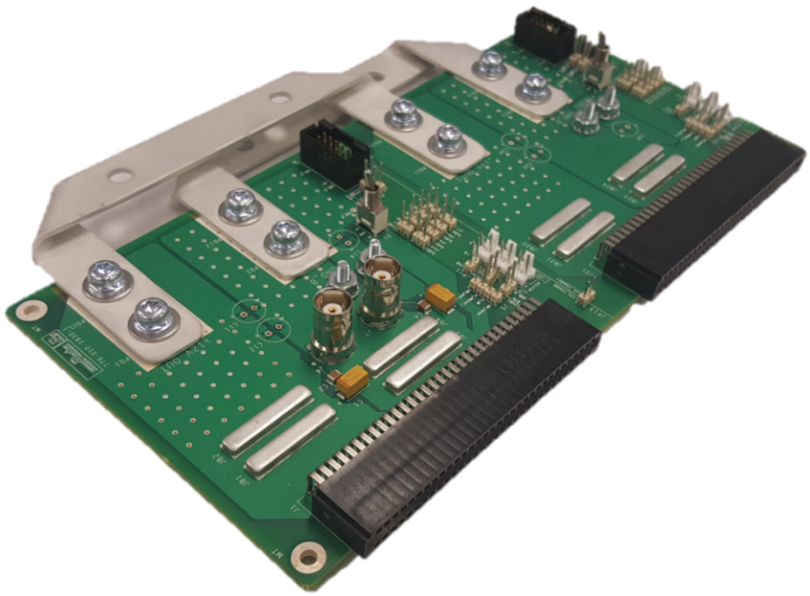
To get the most from this application note, refer also to the corresponding PMBus™ communications protocol ACAN-76 & product datasheet.

SAFETY PRECAUTION

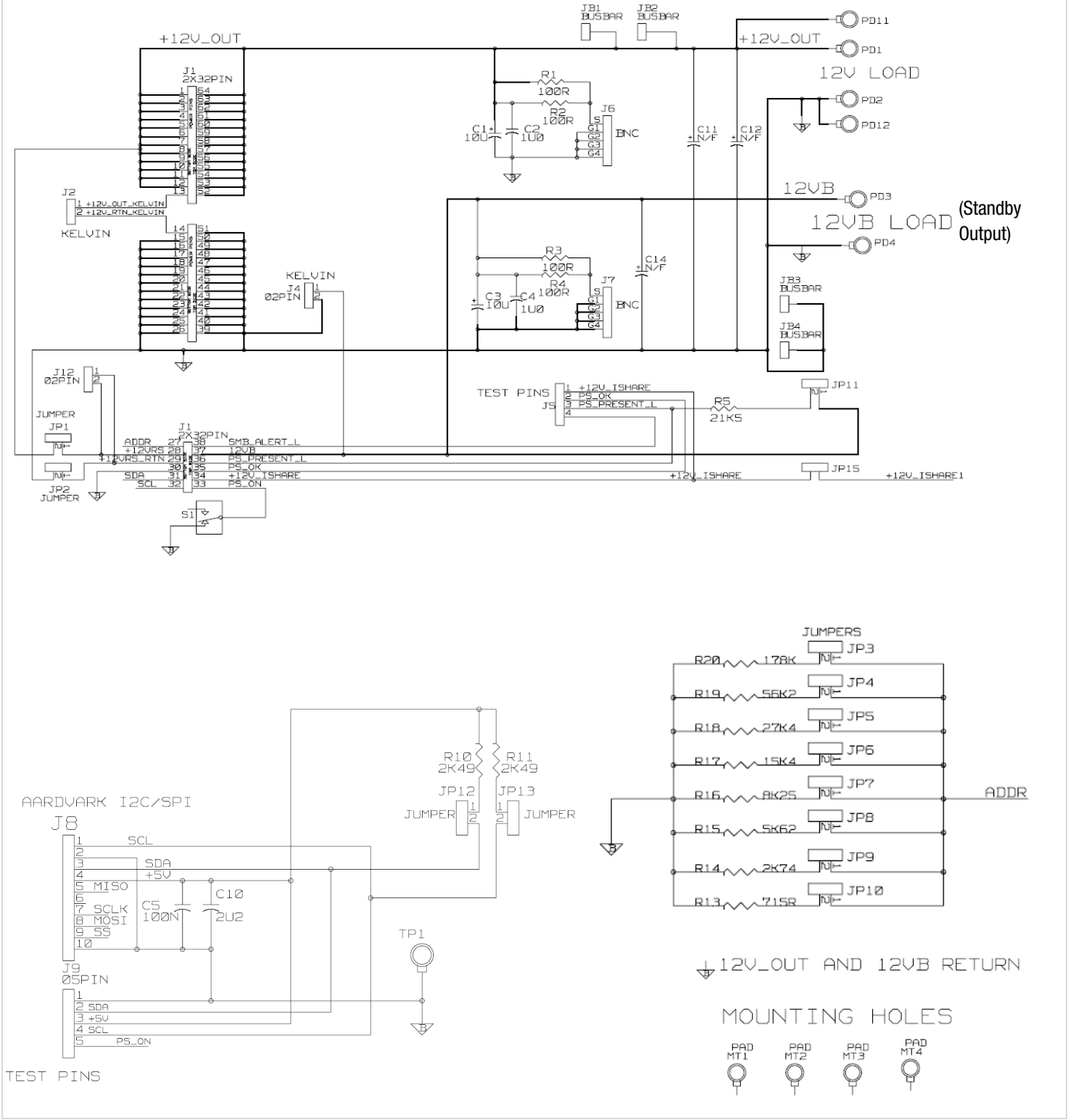
The D1U86P-CONC-2200W output connector card is intended to facilitate the connection of the output supply rails of the power module. As such there a high energy source exposed on the output connector card; please take the necessary safety precautions during the use of this connector card for product evaluation.

IMAGE – D1U86P-CONC-2200W

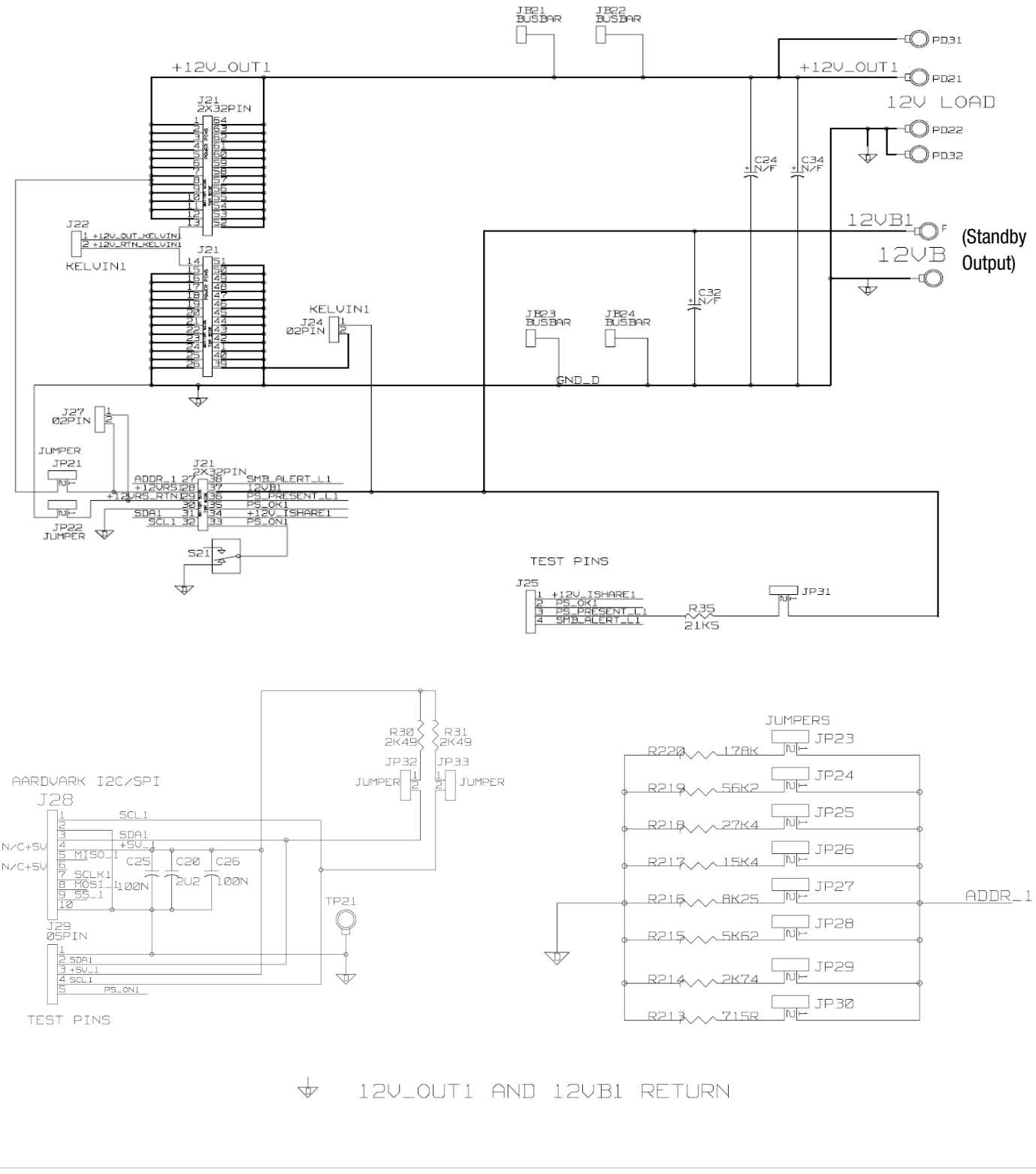
Component Side (Top) View



SCHEMATIC – D1U86P-CONC-2200W Slot 1

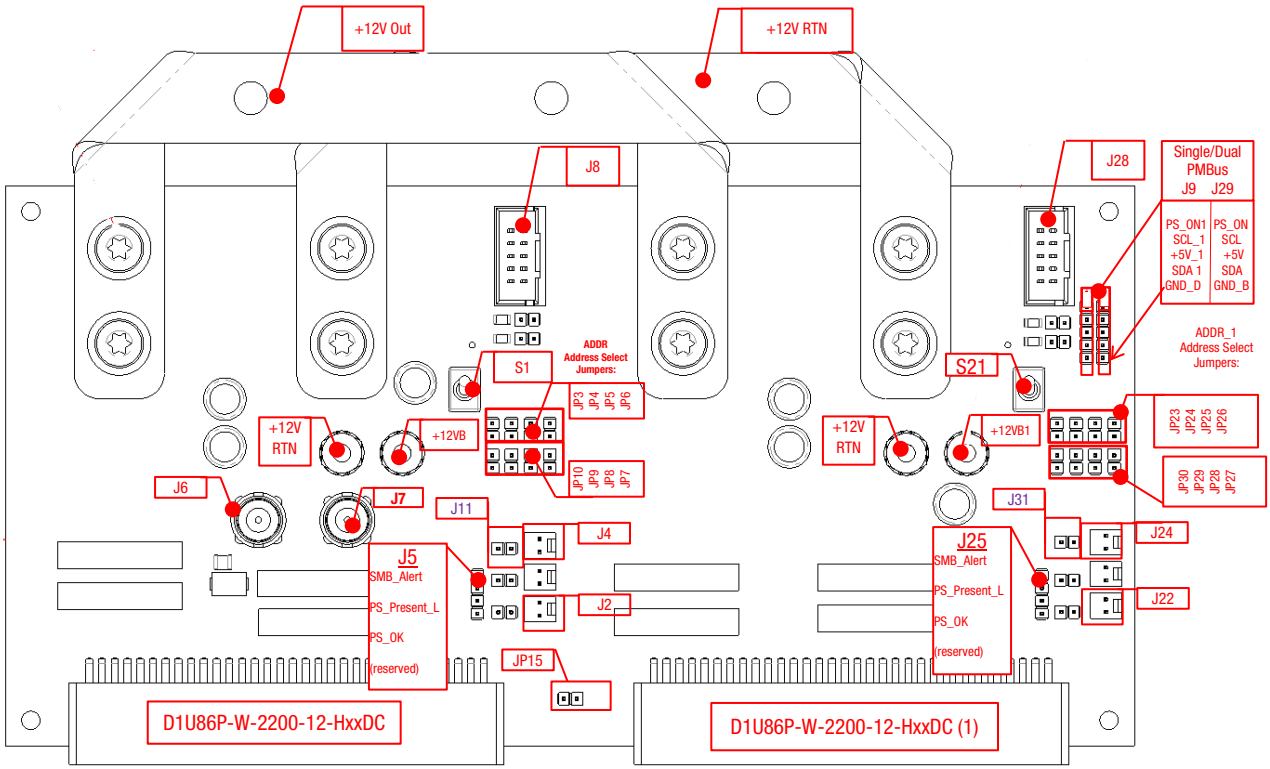


SCHEMATIC – D1U86P-CONC-2200W Slot 2

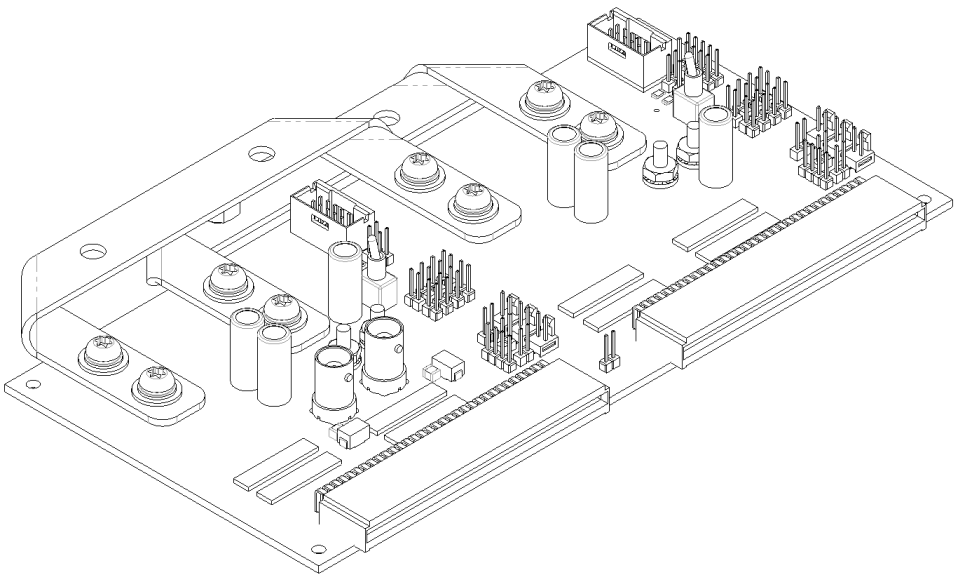


MECHANICAL OUTLINE

Top View



3D View



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.
   The power bus bars that are intended as a means of interconnecting the main 12VDC output of each "half"; these can be removed as required and substituted with separate cables to the required load.

   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. The BNC connectors J6 & J7 are provided for ripple & noise measurements of both ppower supply outpus. +12VB (J7 bias/standby) and 12V OUT (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 10µF tantalum and 1µF ceramic capacitor (across tip to ground)
   A short 50ohm coaxial cable connnection shall be provided between the relevant BNC measurement connector and the input to the measuring 'scope (the 'scope bandwidth shall be limited to 20MHz).

3. Connector J8/J28 is a PMBob I^2C/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.
   Refer to ACAN 76 for PMBus™ Communications Protocol for this product

4. 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.

5. Product series D1U86x-x-2200-12-HxxDC power supplies employ an analogue input that is used to set the address of the internal slave devices (EEPROM and microprocessor) by connection of a suitable resistor between the ADDR pin and +VSB_Return. This resistor in conjunction with a resistor divider chain internal to the power module, will configure the required address for PMBus™ communications.

6. PS Present- Fit jumpers across JP11/31 to enable the 12V main output when "system side" pull up to 12V is not provided. See datasheet for additional details.

   This interface board simplifies address selection by providing jumpers JP3-10 & JP23-30 and resistors for setting one of the module slave addresses listed below.

Jumper position (place one jumpe into possiton for each "Half")	**Power Module Main Controller** (Serial Comm Slave Address)	**Power Module Main EEPROM** (Serial Comm Slave Address)	**ADDR External Resistance to RTN/Ground (KΩ; ±5% Tolerance)**
JP3/23	0xBE	0xAE	178
JP4/24	0xBC	0xAC	56.2
JP5/25	0xBA	0xAA	27.4
JP6/26	0xB8	0xA8	15.4
JP7/27	0xB6	0xA6	8.25
JP828	0xB4	0xA4	5.62
JP9/29	0xB2	0xA2	2.74
JP10/30	0xB0	0xA0	0.715

The D1U86x-x-2200-12-HxxDC 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".

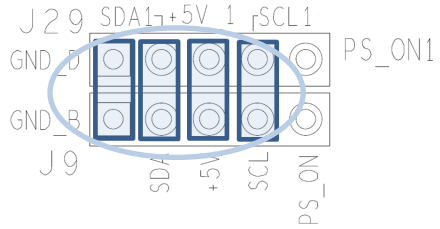
CONFIGURATION NOTES Cont'd

7. The following signals and functions are accessible for monitoring (see specific product datasheet to verify support for specific power module).

    - J5/25 header provide access / monitor points for:
        - PS_Present
        - SMB_ALERT
        - PS_OK
    - J4/24: 12VB (Standby output) voltage

8. Remote output voltage sense - JP1/2, JP21/22 – If remote sense is required, Jumpers are required for these positions otherwise not required for operation. See product datasheet for additional details

9. J9/29 are 5 position headers that provide a convenient method of PMBus™ communication with two installed power supplies using a single PMBob. This feature is enabled by installing four jumpers as shown:



Additional notes for two-unit, single PMBob™ configuration:

- PMBob may by connected to either J8 or J28 when using two power supplies and 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 of both power supply main outputs.

10. JP15 is provided to connect the ISHARE signal pins (location 34) of both power supplies together to forming the common ISHARE bus. This is required for optimum current sharing function of the 12V main output.

Refer to datasheet for additional details.

Referenced Document Links		
Document Number	Description	Link to Document
ACAN-76	D1U86P-W-2200 Communication Protocol	URL Link to Document
D1U86x-x-2200-12-HxxDC	Product series datasheet	URL Link to Document

Link back to order guide

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