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:

<table>
<thead>
<tr>
<th>Order Number</th>
<th>Compatible Model Variants</th>
<th>STANDBY Output “12VB”</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1U86P-CONC-2200W</td>
<td>D1U86x-x-2200-12-HxxDC</td>
<td>HB3DC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HB4DC</td>
</tr>
</tbody>
</table>

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

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SCHEMATIC – D1U86P-CONC-2200W Slot 2

+12V_OUT1

12V_LOAD

12VB1

(Standby Output)

12V_OUT1 AND 12VB1 RETURN
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 power supply outputs. +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 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).

3. Connector J8/J28 is a PMBOb I²C/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.

<table>
<thead>
<tr>
<th>Jumper position (place one jumper into position for each “Half”)</th>
<th>Power Module Main Controller (Serial Comm Slave Address)</th>
<th>Power Module Main EEPROM (Serial Comm Slave Address)</th>
<th>ADDR External Resistance to RTN/Ground (KΩ; ±5% Tolerance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP3/23</td>
<td>0xBE</td>
<td>0xAE</td>
<td>178</td>
</tr>
<tr>
<td>JP4/24</td>
<td>0xBC</td>
<td>0xAC</td>
<td>56.2</td>
</tr>
<tr>
<td>JP5/25</td>
<td>0xBA</td>
<td>0xAA</td>
<td>27.4</td>
</tr>
<tr>
<td>JP6/26</td>
<td>0xB8</td>
<td>0xA8</td>
<td>15.4</td>
</tr>
<tr>
<td>JP7/27</td>
<td>0xB6</td>
<td>0xA6</td>
<td>8.25</td>
</tr>
<tr>
<td>JP8/28</td>
<td>0xB4</td>
<td>0xA4</td>
<td>5.62</td>
</tr>
<tr>
<td>JP9/29</td>
<td>0xB2</td>
<td>0xA2</td>
<td>2.74</td>
</tr>
<tr>
<td>JP10/30</td>
<td>0xB0</td>
<td>0xA0</td>
<td>0.715</td>
</tr>
</tbody>
</table>

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”.

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ACAN-75-A01 page 5 of 6
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.

Refer to datasheet for additional details.

Referenced Document Links

<table>
<thead>
<tr>
<th>Document Number</th>
<th>Description</th>
<th>Link to Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACAN-76</td>
<td>D1U86P-W-2200 Communication Protocol</td>
<td><a href="http://power.murata.com/datasheet/?/data/apnotes/acan-76.pdf">Link</a></td>
</tr>
</tbody>
</table>

Link back to order guide