**Murata Power Solutions**

PRODUCT OVERVIEW

The D1U4-54-CONC (779-010-1793-1) interface connector card is intended to be used to interconnect the output voltages and signals of the D1U4-W-1600-54-HxxC Series of power modules for laboratory/bench level evaluation of the product. End Users can also use this card in their applications as an alternative to a power/mid or interposer plane in their host system (consult Murata Sales for details).

SAFETY PRECAUTION

The D1U4-54-CONC 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 (54VDC) exposed on the output connector card; please take the necessary safety precautions during the use of this connector card for product evaluation.
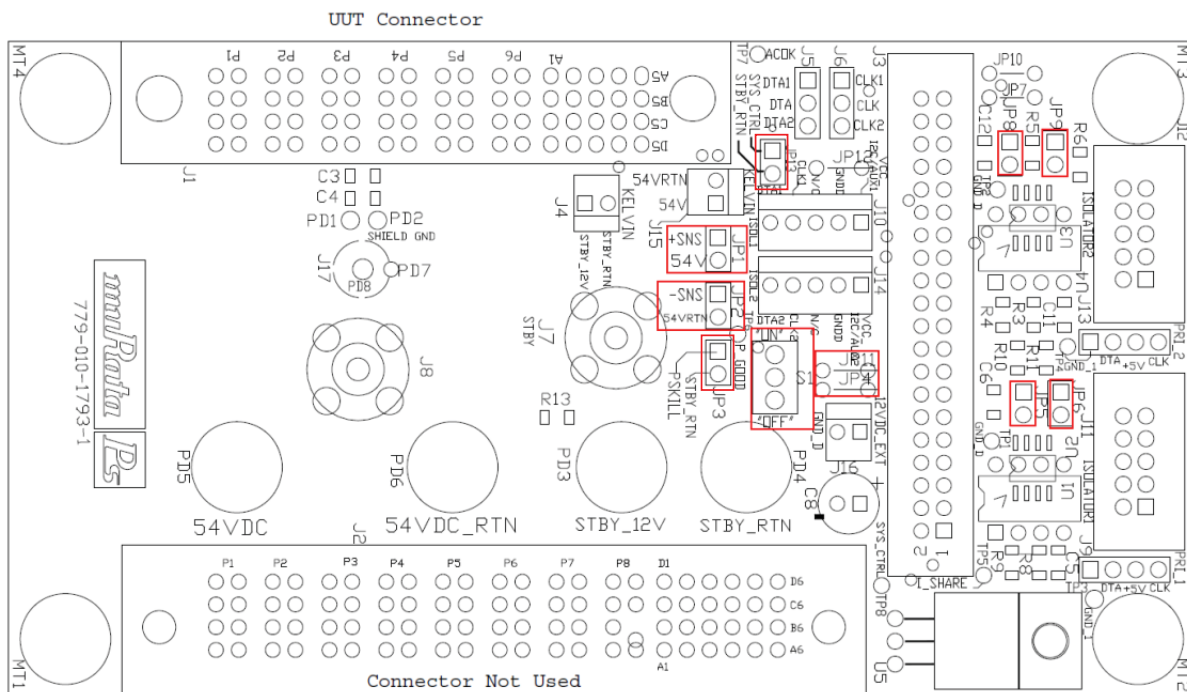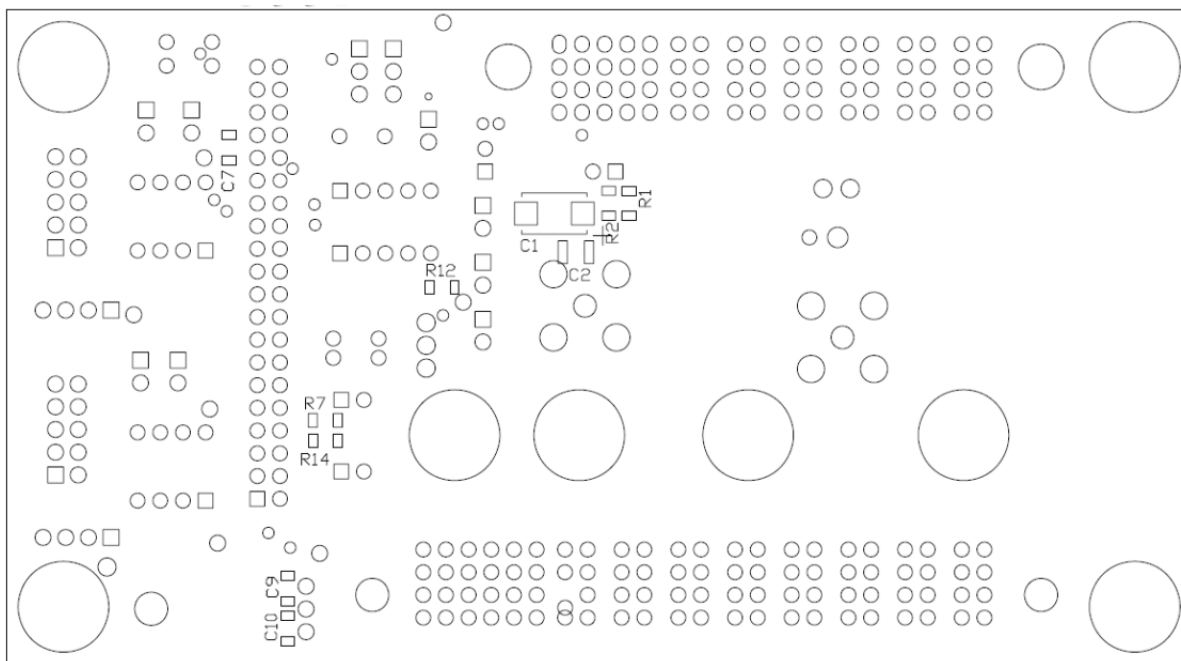
SCHEMATIC - D1U84-54-CONC

RoHS COMPLIANT
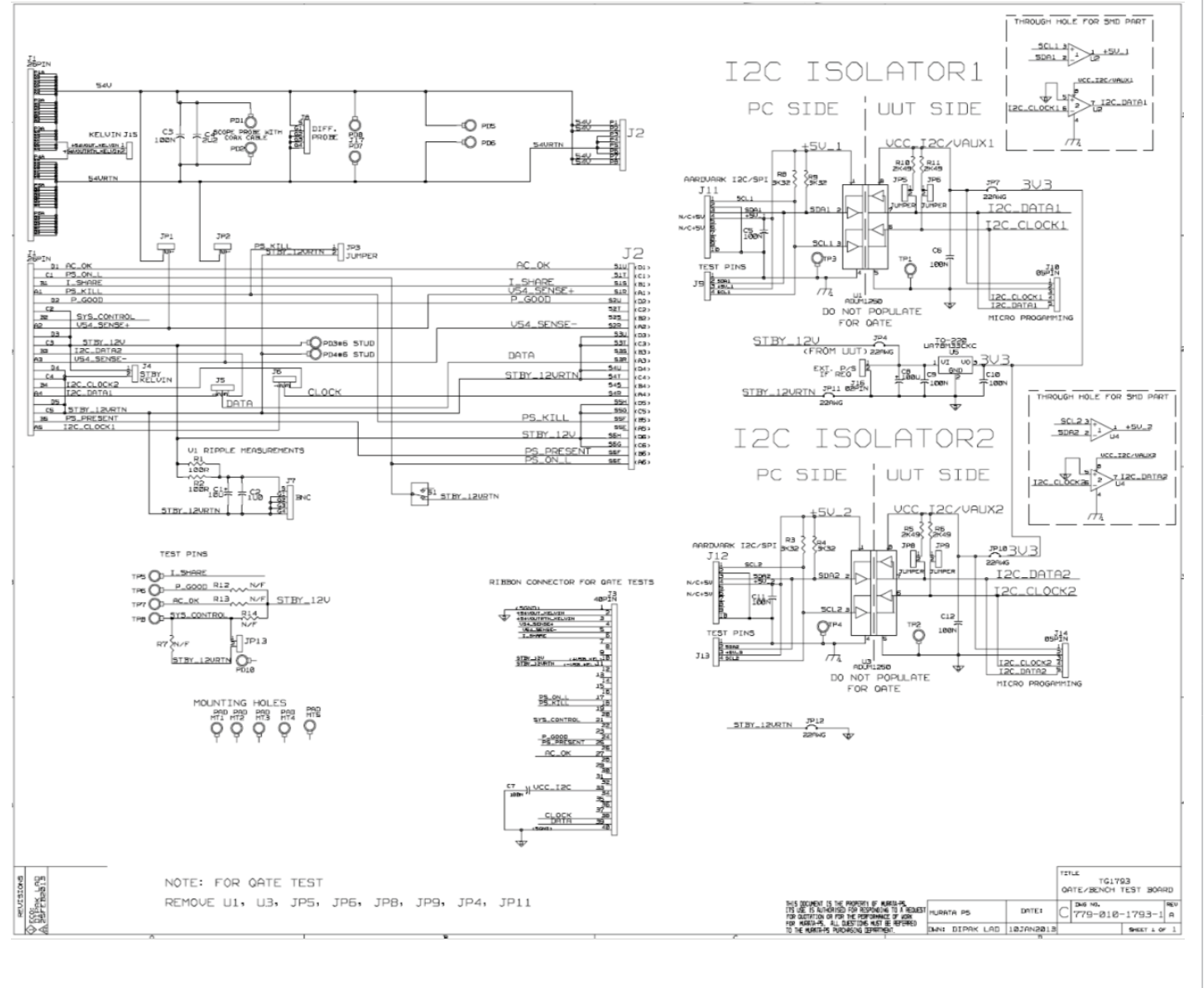
For full details go to
www.murata-ps.com/rohs

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IMAGES – D1U4-54-CONC

Component Side (Top) View

Solder Side (Bottom) View

CONFIGURATION NOTES

1. Ensure that the following jumpers are fitted:
   a) JP1 & JP2 (local voltage sense selection; deselect if remote sense connection is provided to the load)
   b) JP3 (PS_KILL connection to VSTBY Return; enables output)[1]
   c) JP5 & JP6 (selects internal pull up resistors for I²C isolator devices U1)
   d) JP8 & JP9 (selects internal pull up resistors for I²C isolator devices U3)
   e) JP4 & JP11 (selects internal bias for I²C isolator devices U1 & U3)
   f) JP13 (SYS_CONTR; permanently enables/turns "on" the output disconenct switch)[1]

2. The BNC connectors for ripple & noise measurements of 12VSTBY (J7 bias/standby) and 54VOUT (J8) are intended for direct (BNC to BNC) connection (via a 10X probe for 54VOUT due to BNC voltage rating limitations) 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); the measurement bandwidth should be limted to 20MHz.

   A short 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. In some applications it may be desirable to provide an external bias supply to the I²C Isolator via J16.

4. Connectors J11 & J12 are Aardvark I²C/SPI interface connectors. The Aardvark external device allows communications via a USB port of a laptop or PC that can be used with the proprietary Aardvark Control Centre™ software GUI. The interface to the power module is buffered via an I²C Isolator device (Analog Devices ADµM1250) that is connected to J11/J12 (see schematic). This device isolates and level shifts the Serial Clock (SCL) and Serial Data (SDA) lines respectively to allow trouble free communication.

   As such this is the recommended communication interface for use with this interface card for initial evaluation.

   To select the required communications path:

   a. If using J11 "link" pins "DTA" & "DTA1" on J5 & "CLK" & "CLK1" on J6

   b. If using J12 "link" pins "DTA" & "DTA2" on J5 & "CLK" & "CLK2" on J6

5. S1 enables/disables (turns "on"/"off") the 54VDC main output by connecting PS_ON_L to the 12VSTBY Return. Close S1 to enable (turn "on") the powwer module54VDC Main Output[1].

6. There are two I²C buses provided by the D1U4-W-1600-54-HxxC power modules. These provide redundancy of the communication path to the slave I2C device (embedded in the power module) by providing dual "master" buses.

   Internally within the D1U4-W-1600-54-HxxC power module is located a NXP PCA9541A/03 2-1 I²C-Bus Master Selector device that allows operation with dual buses.

   The dual master devices (each with it's own dedicated bus) shall arbitrate between themselves by the method defined in NXP I²C Specification UM10204 Section 3.1.8 for details. The bus that "wins" the arbitration process shall control the bus for the remaining duration of the transaction.

   Since dual I²C buses are provided there are no variable address selections possible. Each NXP PCA9541A/03 address is fixed as 0xB0

   Also shown is the address of the EEPROM device resident in the power module.

Power Module Main Controller (Serial Comm Slave Address)	Power Module Main EEPROM (Serial Comm Slave Address)
0xB0	0xA0

[1] Note that the power module has three methods to enable/disable the power module dependent upon its mode of operation. For the purposes of this application note only the use of PS_ON_L via S1 is used to enable/disable the 54VDC Main output.

This product is subject to the following operating requirements and the Life and Safety Critical Application Sales Policy:
Refer to: http://www.murata-ps.com/requirements/

www.murata-ps.com/support