



United Electronic Industries builds various test adapters to verify and validate our products. We offer these same adapters to customers, allowing you to troubleshoot any problems or run preliminary tests before using our hardware in your real-world applications.



This reference provides an overview of each test adapter and lists criteria and expected output values. Adapters are organized into three categories: powered adapters, loop-back adapters and 2-board double adapters.

Powered adapters

Powered adapters may use a voltage source **onboard** the adapter (provided by the I/O board) or an **external** supply (provided by the user) to generate a signal supplied to I/O board inputs.

I/O Board	Adapter P/N	Power Source	Expected Values ¹	Notes
AI-201	DNX-TADP-201	Onboard	Even channels: 10.0 V Odd channels: 5.0 V	Differential mode for all channels
AI-202	DNX-TADP-202	Onboard	All channels: 8.9 mA	(none)
AI-204	DNX-TADP-204	Onboard	All channels: 5.45 mA	Circuit Breakers will trip if gain set too high (5 or 10)
AI-205	DNX-TADP-205	External (user supplied)	Even channels: 3.6 V Odd channels: -1.2 V	User must supply a voltage between 5.0 – 15.0 V
AI-207	DNX-TADP-207-17	Onboard	Even channels: 7.5 V Odd channels: -7.5 V	CJC =2.5 V
AI-208	DNX-TADP-208	Onboard	Ch0 and Ch4: PS*0.005 Ch1 and Ch5: PS*0.012 Ch2 and Ch6: PS*0.017 Ch3 and Ch7: PS*0.024	PS is the excitation voltage programmed per channel
AI-211	DNX-TADP-211	Onboard	All channels: (Ioutn * 3550)	Ioutn is the excitation current programmed for a channel
AI-212	DNX-TADP-212	Onboard	Even channels: 1.667 V Odd channels: 0.83 V	CJC0 = CJC1 = ambient
AI-217	DNX-TADP-207-17	Onboard	Even channels: 7.5V Odd channels: -7.5V	CJC not supported
AI-218	DNX-TADP-218-28	Onboard	Even channels: -5.6 V Odd channels: 3.74 V	(none)

¹ Note that values listed in the Expected Value column are approximate and will have board-to-board variations. Test adapters are designed to test board functionality; they are not intended for calibration.



I/O Board	Adapter P/N	Power Source	Expected Values ¹	Notes
AI-222	DNX-TADP-222	Onboard	All channels: 50 Ω	(none)
AI-224	DNX-TADP-224	Onboard	All channels: PS*0.01	PS is the excitation voltage programmed per channel
AI-225	DNX-TADP-225	Onboard	Even channels: -1.0 V Odd channels: 1.0 V	(none)
AI-228	DNX-TADP-218-28	Onboard	Even channels: -5.6 V Odd channels: 3.74 V	(none)
AI-248-230	DNX-TADP-248-230	External (User Supplied)	Even channels: 12.43 V Odd channels: 5.93 V	User must supply a voltage of at least 24 V
AO-318	DNX-TADP-318	Onboard (AOUTn pin)	Voltage: Programmed AOUTn value Current: AOUTn_V / 4000	AOUTn_V is the user-programmed output voltage for a channel (AOUTn) Uses on-board resistors = 4 kΩ
AO-318-020	DNX-TADP-318-20	Onboard (AOUTn pin)	Voltage: (AOUTn_I * 453) Current: Programmed AOUTn value	AOUTn_I is the user-programmed output current for a channel (AOUTn) Uses on-board resistors = 453 Ω
AO-319-420	DNX-TADP-319	Onboard	Current: Programmed value Voltage: 5V - I*100Ω	Each sinking output has 5V connected through a 100Ω to it. Guardian readback can verify voltage and current.
TC-378	DNX-TADP-378	Onboard	Current: Programmed Voltage/100k CJC: Ambient Temperature	Each channel has a 100kΩ resistor on its output. Guardian readback can verify output voltage and current
RTD-388	DNX-TADP-388	External (user supplied)	Current: 10V/(1000 + Programmed Resistance Value)	User must supply 10-24V to adapter. Guardian readback can verify current through set resistance.
DIO-432	DNX-TADP-432	External (user supplied)	Voltage: External Supply ² Current: V / 2500	Must enable output to read current Confirm that jumper blocks JL1 and JL2 on the adapter are configured for the DIO-432: <ul style="list-style-type: none"> For DIO-432 JL1 jumper block, connect jumper between 2-3 For DIO-432 JL2 jumper block, connect jumper between 1-2

² Read when channel is low.



I/O Board	Adapter P/N	Power Source	Expected Values ¹	Notes
DIO-433	DNX-TADP-433	External (user supplied)	Voltage: External Supply Current: $-V / 2500$	Must enable output to read current Confirm that jumper blocks JL1 and JL2 on the adapter are configured for the DIO-433: <ul style="list-style-type: none">• For DIO-433 JL1 jumper block, connect jumper between 1-2• For DIO-433 JL2 jumper block, connect jumper between 2-3
DIO-448	DNX-TADP-448	External (user supplied)	Voltage: External Supply (V_{in}) Even channels: V_{in} Odd channels: $0.5 * V_{in}$	Configure high and low voltage thresholds to interpret digital high/low for channels and to verify correlation with voltage changes.
DIO-449	DNX-TADP-449	External (user supplied)	Voltage: External Supply (V_{in}) Even channels: V_{in} Odd channels: $0.5 * V_{in}$	Configure high and low voltage thresholds to interpret digital high/low for channels and to verify correlation with voltage changes.
DIO-462	DNX-TADP-462-63	External (user supplied)	Voltage: External Supply ² Current: $V / 500$	N.C. Resistor=22.1 k Ω N.O. Resistor = 500 Ω
DIO-463	DNX-TADP-462-63	External (user supplied)	Voltage: External Supply ² Current: $V / 500$	N.C. Resistor=22.1 k Ω N.O. Resistor = 500 Ω



Loop-back adapters

Loop-back adapters cross connect different channels /ports. This enables a defined signal to be output from one channel/port and read on another.

I/O Board	Adapter P/N	Cross-Connected Channels	Configuration Notes
MF-101	DNX-TADP-101	<p>Aln0+ or Aln0 <-> AOut0 Aln0- or Aln1 <-> AOut1 Aln1+ or Aln2 <-> AOut1 Aln1- or Aln3 <-> AOut0 Aln2+ or Aln4 <-> AOut0 Aln2- or Aln5 <-> AOut1 Aln3+ or Aln6 <-> AOut1 Aln3- or Aln7 <-> AOut0 Aln4+ or Aln8 <-> AOut0 Aln4- or Aln9 <-> AOut1 Aln5+ or Aln10 <-> AOut1 Aln5- or Aln11 <-> AOut0 Aln6+ or Aln12 <-> AOut0 Aln6- or Aln13 <-> AOut1 Aln7+ or Aln14 <-> AOut1 Aln7- or Aln15 <-> AOut0</p> <p>DIO15 <-> DIO7 DIO14 <-> DIO6 DIO13 <-> DIO5 DIO12 <-> DIO4 DIO11 <-> DIO3 DIO10 <-> DIO2 DIO9 <-> DIO1 DIO8 <-> DIO0</p> <p>TTL0 <-> TTL2 TTL1 <-> TTL3 TRIGIN <-> TRIGOUT</p> <p>If TRIGOUT = 1: TX232 <-> RX232 RTS232 <-> CTS232 If TRIGOUT = 0: TX485+ <-> RX485+ TX485- <-> RX485-</p> <p>I2CSCL <-> ADT7420 SCL</p>	<ul style="list-style-type: none"> Differential Aln mode measures the difference between AOut0 and AOut1. If AOut is in current mode, read Aln single-ended. $Aln_voltage = AOut_current * 1.1\ k\Omega$ Industrial digital outputs use an external Vcc supplied by the user. Switch between RS-232 and RS-485 mode using the TRIGOUT line On-board ADT7420 temperature sensor tests



I/O Board	Adapter P/N	Cross-Connected Channels	Configuration Notes
AI-254	DNX-TADP-254	Channel 0 <-> Channel 1 Channel 2 <-> Channel 3	<ul style="list-style-type: none"> The test adapter connects channels in pairs. Configure one channel of the pair as an input and the second channel of the pair as a simulated R/LVDT (output channel). Configure the input channel(s) to provide internal excitation. Configure the simulated output channel(s) to accept external excitation. Value read by input(s) = value generated by simulated output(s)
AI-255	DNX-TADP-255-56	Channel 0 <-> Channel 1	<ul style="list-style-type: none"> The test adapter connects channel 0 outputs to channel 1 inputs (and ch1 outputs to ch0 inputs). Configure one channel as an input and the second channel as a simulated Synchro/Resolver (output channel). Configure the input channel to provide internal excitation. Configure the simulated output channel to accept external excitation. <p>Angle read by input = angle generated by simulated</p>
AI-256	DNX-TADP-255-56	Channel 0 <-> Channel 1	<ul style="list-style-type: none"> The test adapter connects channel 0 outputs to channel 1 inputs (and ch1 outputs to ch0 inputs). Configure one channel as an input and the second channel as a simulated output channel. Configure the input channel to provide internal excitation. Configure the simulated output channel to accept external excitation. <p>Value read by input = value generated by simulated output</p>
DIO-403	DNX-TADP-403	Port 0 (channel 0 to 7) <-> Port 1 (channel 8 to 15) Port 2 (channel 16 to 23) <-> Port 3 (channel 24 to 31) Port 4 (channel 32 to 39) <-> Port 5 (channel 40 to 47)	<ul style="list-style-type: none"> Channels are configured as inputs vs outputs by port, where a port consists of 8-channels. The test adapter connects each channel of one port to the corresponding channel of its paired port. Configure one port as inputs and the other as outputs. <p>Value read by input = value written to corresponding output</p>



I/O Board	Adapter P/N	Cross-Connected Channels	Configuration Notes
DIO-404 / DIO-405 / DIO-406	DNX-TADP-404	DOUTn <-> DINn (e.g., DOUT0 -> DIN0)	<ul style="list-style-type: none"> The adapter board connects each digital output to the corresponding digital input. Note that these boards require external power, supply power via pin 1 and GND on pin 2 of Header 4 of the adapter³. Confirm that jumper block JL1 on the adapter is configured for the board type you are using: Jumper connected 1-2 for DIO-404/405 Jumper connected 2-3 for DIO-406 Value read by input = value written to corresponding output
ARINC 429-566	DNX-TADP-566	TXn <-> RXn (e.g., TX0 <-> RX0)	The adapter board connects each ARINC transmitter to the corresponding ARINC receiver.
ARINC 429-516	DNX-TADP-516	TX0 <-> RX0 <-> RX17 TX1 <-> RX1 <-> RX17 TX2 <-> RX2 <-> RX16 TX3 <-> RX3 <-> RX16 TX4 <-> RX4 <-> RX19 TX5 <-> RX5 <-> RX19 TX6 <-> RX6 <-> RX18 TX7 <-> RX7 <-> RX18 TX8 <-> RX8 <-> RX21 TX9 <-> RX9 <-> RX21 TX10 <-> RX10 <-> RX20 TX11 <-> RX11 <-> RX20 TX12 <-> RX12 <-> RX23 TX13 <-> RX13 <-> RX23 TX14 <-> RX14 <-> RX22 TX15 <-> RX15 <-> RX22	When using this test adapter, only enable EVEN or ODD channels: <ul style="list-style-type: none"> For ARINC channels 0 through 15, the adapter board connects each TX channel to the corresponding RX channel. For ARINC channels 16 through 23, the adapter board connects an EVEN and an ODD TX channel to each receiver. Since TX channels (0, 1) through (14, 15) are connected together on the adapter, you cannot enable both channels in this pair at the same time when the adapter is plugged in.
CAN-503	DNX-TADP-503	All 4 ports are connected	Message sent by 1 port is received on all ports, allowing you to test messages in either direction between any port and any other port.
SL-501	DNX-TADP-501	Port 1 <-> Port 2 Port 3 <-> Port 4	You can send and receive serial data between connected ports. Jumpers on test adapter need to be set specifically for RS-232 or RS-485/422.

³ On UEI Cube chassis only, DIO-404, DIO-405, and DIO-406 can be powered via an internal bus if the Cube also has a PC-912 card in the stack. If you are powering DIO-404, DIO-405, and DIO-406 boards using the Cube's internal power bus, you do not apply power to Header 4 of the adapter board.



I/O Board	Adapter P/N	Cross-Connected Channels	Configuration Notes
SL-504-801	DNX-TADP-504	Port 1 <-> Port 2 Port 3 <-> Port 4	You can send and receive serial data between connected ports.
SL-508	DNX-TADP-508	Port 1 <-> Port 2 Port 3 <-> Port 4 Port 5 <-> Port 6 Port 7 <-> Port 8	You can send and receive serial data between connected ports. Jumpers on test adapter need to be set specifically for RS-232 or RS-485/422.
I2C-534	DNX-TADP-534	Master 0 <-> Slave 2 Master 2 <-> Slave 0 Master 1 <-> Slave 3 Master 3 <-> Slave 1	Send commands from master to be received on connected slave. Slave can respond with data.
CT-601	DNX-TADP-601	CT_OUT0 <-> CT_IN1 CT_OUT1 <-> CT_IN0 CT_OUT2 <-> CT_IN3 CT_OUT3 <-> CT_IN2 CT_OUT4 <-> CT_IN5 CT_OUT5 <-> CT_IN4 CT_OUT6 <-> CT_IN7 CT_OUT7 <-> CT_IN6	Loops back counter-outputs to counter inputs of channels. Program counter output to send out pulse and measure these pulses with counter input.
CT-602	DNX-TADP-602	CLKOUT0(+/-) <-> CLKIN1(+/-) TRIGOUT0(+/-) <-> GATEIN1(+/-) CLKOUT1(+/-) <-> CLKIN0(+/-) TRIGOUT1(+/-) <-> GATEIN0(+/-) CLKOUT0(+/-) <-> CLKIN1(+/-) TRIGOUT0(+/-) <-> GATEIN1(+/-) CLKOUT1(+/-) <-> CLKIN0(+/-)	Loops back counter-outputs to counter inputs of channels. Program counter output to send out pulse and measure these pulses with counter input.
CT-604	DNX-TADP-604	CLK-OUT-0 <-> CH-2-A and CH-3-B TRIG-OUT-0 <-> CH-2-B and CH-3-B CLK-OUT-1 <-> CH-2-Z and CH-3-Z TRIG-OUT-1 <-> TRIG-IN-2 and TRIG-IN-3 CLK-OUT-2 <-> CH-0-A and CH-1-A TRIG-OUT-2 <-> CH-0-B and CH-1-B CLK-OUT-3 <-> CH-0-Z and CH-1-Z TRIG-OUT-3 <-> TRIG-IN-0 and TRIG-IN-1	Use clock and trigger outputs from a channel to test A, B, Z, and trigger inputs of other channels.
1553-533	DNX-TADP-1553	Channel 0 <-> Channel 1 CH0 Side A <-> CH1 Side A CH0 Side B <-> CH1 Side B	Allows you to set one channel as Bus Monitor (BM) & Bus Controller (BC), and the other channel as Remote Terminal (RT) to test a complete 1553 system.



2- board double adapters

The double adapter connects two different adjacent boards. This allows for signals from one board to be read on the other board.

I/O Board	Adapter P/N	Cross-Connected Channels	Configuration Notes
AO-308 <-> AI-201-100	B-D-A-201-308-x ⁴ B-D-R-201-308-x ⁴ x=1: 308-1 x=2: 308-350 x=3: 308-353 x=4: 308-420	Output channel of AO-308 to corresponding input channel of AI-201-100	AINx(-) pins are connected to AGND on test adapter.
AO-332 <-> AI-207/ AI-217	B-D-DNA-207-332 ⁴ B-D-DNR-207-332 ⁴	AO-332 even channel <-> corresponding AI-207 +channel AO-332 odd channel <-> corresponding AI-207 -channel (e.g., AO-332 ch0 <-> AI-207 AIN0+ AO-332 ch1 <-> AI-207 AIN0-)	Input measured is the difference between AIN+ and AIN-.
DIO-401 <-> DIO-402	B-D-DNA-401-402 ⁴ B-D-DNR-401-402 ⁴	Output channel of DIO-402 to corresponding input channel of DIO-401	User must supply 7-36V to the adapter.
VR-608 <-> AO-364	B-D-DNA-608-364 ⁴ B-D-DNR-608-364 ⁴	AO-364 channel 0 <-> VR-608 channel 0 and 2 AO-364 channel 1 <-> VR-608 channel 1 and 3 AO-364 channel 2 <-> VR-608 channel 4 and 6 AO-364 channel 3 <-> VR-608 channel 5 and 7	The adapter connects an AO-364 AOUT pin to (2) VR-608 IN+ pins (per cross-connections listed to the left). The VR-608 IN- pins are connected to channel AGND.

⁴ Due to different inter-board spacing between our Cube and RACKtangle chassis, UEI provides two versions of each double board adaptor. Part numbers beginning with B-D-A- are designed for Cube systems. Part numbers beginning with B-D-R are for use with RACK systems.



For more information

If you have any additional questions, please contact UEI support at support@ueidaq.com or call 508.921.4600.