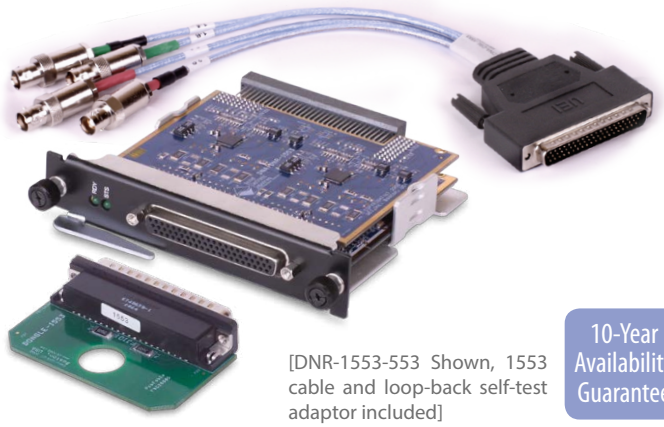
DNA/DNR-1553-553

Dual-channel MIL-STD-1553 Interface

- DNA-1553-553 for use in "Cube" I/O chassis
- DNR-1553-553 for use in RACKtangle™ I/O chassis
- 2 independent dual redundant bus interfaces
- Bus Controller (BC), Remote Terminal (RT), or Bus Monitor (BM)
- Multiple RT simulation up to 31 RT's
- Supports 1553A or 1553B protocols (including Notice 2)
- Independent major and minor frame timing on each port
- Transformer or direct coupling
- 350 Vrms isolation between 1553 bus, other I/O and the "Cube"
- Selective RT monitoring in BM mode



[DNR-1553-553 Shown, 1553 cable and loop-back self-test adaptor included]

10-Year Availability Guarantee

General Description

The DNA-1553-553 and DNR-1553-553 are high performance, two channel MIL-STD-1553 interfaces for UEI's popular "Cubes" and RACKtangle I/O chassis respectively. Each port operates fully independently and provides a complete dual, redundant 1553 interface and may be set as 1553a or 1553b. The "b" interface fully implements specification notices 1 and 2. Each port is transformer coupled, though direct coupling is available as an option.

Many 1553 functions are implemented in an on-board FPGA. This greatly reduces the burden placed on the chassis CPU and ensures the DNx-1553-553 does not interfere with the functionality of other I/O boards installed.

Each port may be independently configured as Bus Controller (BC), Remote Terminal (RT) or Bus Monitor (BM). As Bus Controller, the board supports all standard BC-RT, RT-BC and RT-RT transfers. The Remote Terminal support allows the board to emulate up to 31 different RTs on the bus. Bus Monitoring (BM) mode provides the ability to monitor all activity, or selective activity based upon RT address. In addition to monitoring data, BM monitors time tags, error status and RT response time. Finally, each DNA-1553-553 channel may be set to simultaneously act as an RT and BM or BC and BM.

When installed in the Cube, the DNA-1553-553 is well suited for the harsh environments sometimes encountered in flight testing applications. The board is specified for operation from -40° to +85° C, from 0 to 70,000 feet. The system is also fully tested for operation at 5g vibration and up to 50 g shock.

The DNx-1553-553 includes a standard MIL-1553 cable interface. Also included is a helpful, self-test loop-back adaptor.

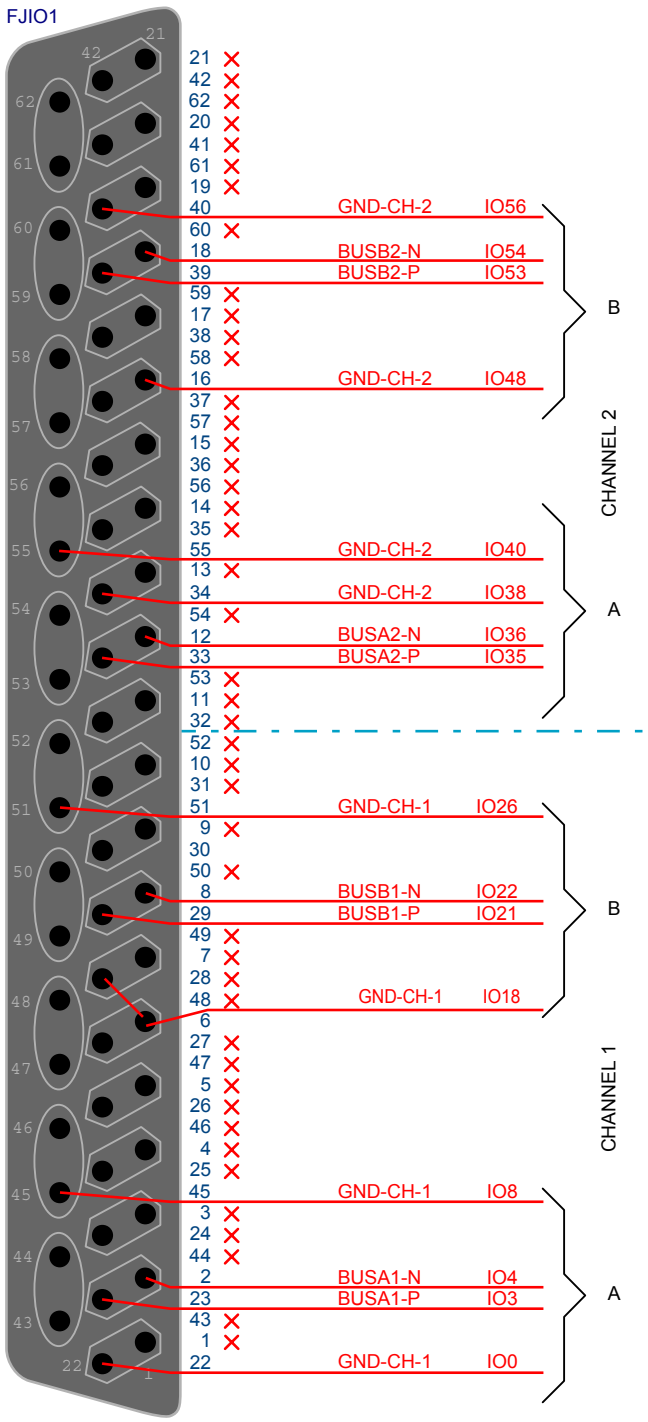
The DNx-1553-553 includes our 1553 API, designed to offer simple, easy-to-use controls and yet maintain the ability to access all 1553 functionality. The software driver is compatible with all popular operating systems including Windows and Linux as well as most real-time OS's such as VxWorks, RTX, QNX, and more. Software support is also included for all popular programming languages and data acquisition (DAQ) application packages including LabVIEW.

Technical Specifications:

General Specifications		
Number channels/ports	2, Independent	
Channel configuration	Dual redundant interfaces	
Specification compliance	MIL-STD-1553a or MIL-STD-1553b including notices 1 & 2	
Configuration	Bus Controller (BC), Remote Terminal (RT) or Bus Monitor (BM). *Either chan may be BC, RT or BM*	
Interface (software selectable) [measured at connector]	Transformer: 18-27 Vpp, 70 Ω load	Direct Coupling: 6-9 Vpp, 35 Ω load
Isolation	350 Vrms	
Power Consumption	5 W (not including load)	
System Data Update Rates (for higher rates please see the DNx-1553-553-900)		
Operation in a standard real-time host-based control loop	1 mS min (host-1553-host or 1553-host-1553 round trip)	
Operation in asynch 1553 host-based control mode	200 uS typical	
Bus Controller (BC) Specs		
Configuration	Independent Ports	
Communication support	BC to RT, RT to BC, RT to RT	
Messaging protocols	Standard Mode Codes, Broadcast messages	
Message timing	Scheduled or asynch with two levels of priority	
Programmability	Major/minor frame timing, intermessage gap times, time out and late response, BC retries	
Error handling	Automatic error detection and recovery.	
Remote Terminal (RT) Specs		
Modes	Single or multiple RT emulator (up to 31 different RTs) RT - RT xfers with simulated RTs may be implemented with user software.	
RT/BM joint mode	Allows the unit to act as an RT while logging data as an BM	
Error handling	Automatic error detection and insertion.	
Bus Monitor (BM) Specs		
Monitor modes	Full or selective monitoring by RT address	
Monitored parameter	In addition to bus data, BM mode time tags data and capture Word/Message/Error status and RT response time	
Environmental		
Operating Temp. (tested)	-40°C to +85°C	
Operating Humidity	0 - 95%, non-condensing	
MTBF	275,000 hours	
Vibration *IEC 60068-2-6* *IEC 60068-2-64*	5 g, 10-500 Hz, sinusoidal 5 g (rms), 10-500 Hz, broad-band random	
Shock *IEC 60068-2-27*	50 g, 3 ms half sine, 18 shocks @ 6 orientations 30 g, 11 ms half sine, 18 shocks @ 6 orientations	
Altitude	0 - 70,000 feet (0 - 21,336 m)	

Pinout Diagram:

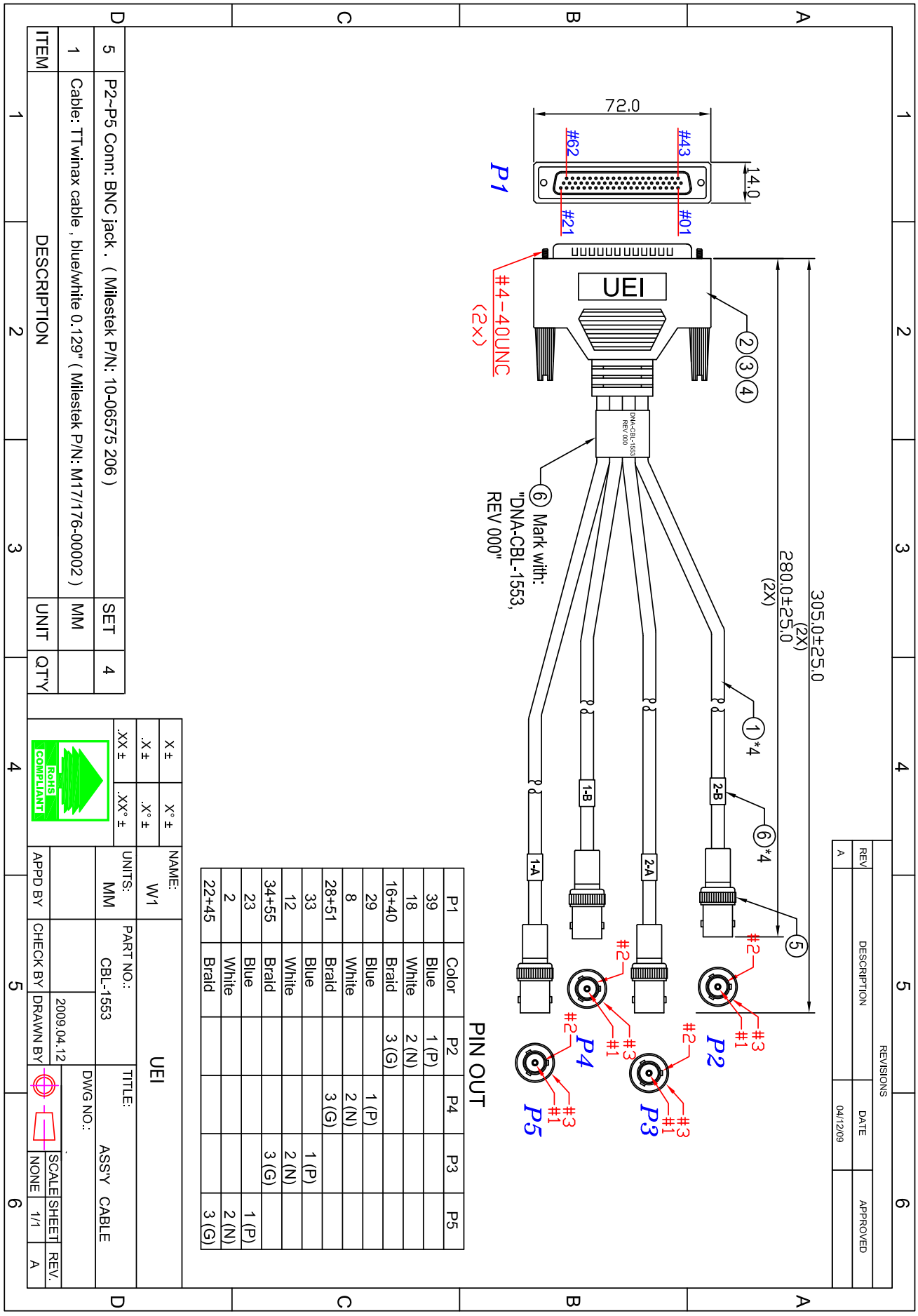
The DNx-1553-553 provides connections via a 62-pin "D" connector. A one foot, 62-pin to (quad connector) cable is also included which provides connection to standard MIL-STD-1553 connectors.



Ordering Guide:

Part Number	Description
DNA-1553-553	Two channel, dual redundant MIL-STD-1553 interface (includes break-out cable to standard 1553 connectors)
DNR-1553-553	Two channel, dual redundant MIL-STD-1553 interface for the PowerDNR RACKtangle™ Chassis (includes break-out cable to standard 1553 connectors)

Cable Diagram:



ITEM	DESCRIPTION	UNIT	QTY
1	Cable: TTwinax cable , blue/white 0.129" (Milestek P/N: M17/176-00002)	MM	SET 4
5	P2~P5 Conn: BNC jack . (Milestek P/N: 10-06575 206)		

PIN OUT

P1	Color	P2	P4	P3	P5
39	Blue	1 (P)			
18	White	2 (N)			
16+40	Braid	3 (G)			
29	Blue		1 (P)		
8	White		2 (N)		
28+51	Braid		3 (G)		
33	Blue			1 (P)	
12	White			2 (N)	
34+55	Braid			3 (G)	
23	Blue				1 (P)
2	White				2 (N)
22+45	Braid				3 (G)

X ±	X° ±	NAME:	W1
.X ±	.X° ±	UNITS:	MM
.XX ±	.XX° ±	PART NO.:	CBL-1553
		TITLE:	ASS'Y CABLE
APPD BY		DWG NO.:	
CHECK BY			
DRAWN BY	2009.04.12	SCALE	NONE
		SHEET	1/1
		REV.	A

UEI

RoHS COMPLIANT