

DNA/DNR-CT-651

Precision Timing Interface

- DNR-CT-651 for use in RACKtangle chassis
- DNA-CT-651 for use in Cube chassis
- Provides 4 channels of synchronous 1 PPS signals
- Slaved or Free-run/Flywheel modes
- Fully software configurable
- Standard ICD-GPS-060 output levels
- Uses standard coaxial connections
- High accuracy/stability on-board oscillator

10-Year
Availability
Guarantee



DNA-CT-651 boards are for use in "Cube" chassis while the DNR-CT-651 is designed for use in RACKtangle® chassis

General Description:

The DNA-CT-651 and DNR-CT-651 are 4-channel, 1 PPS Precision Timing Interfaces for use with UEI's popular Cubes and RACKtangle chassis respectively. The board provides 4 output channels, each of which is compatible with ICD-GPS-060 10 volt output levels.

Each of the output channels may be set via software command over the chassis Ethernet port to any of the three following configurations;

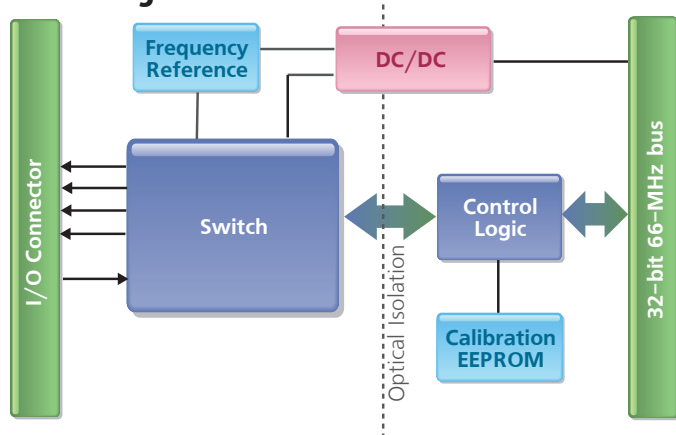
- Slaved to the board's 1 PPS input,
- Free running/Flywheel 1 PPS outputs based on the on-board reference oscillator or disabled.
- Disabled

The DNx-CT-651 is an ideal choice for providing a wide variety of synchronization, timing and system "heartbeat" signals.

All connections are made through a multi-sourced D-sub connector which provides connections for the 5 coaxial connections as well as a number of standard I/O pins (function TBD).

The software API provided is part of the standard UEI Linux release software and makes programming and configuring the board simple and quick.

Block Diagram:



Technical Specifications:

Outputs	
Output channels	4
Output selection	3 modes: 1 PPS slaved to Input, 1 PPS Free run/Flywheel mode or disabled
Output Signal Levels	Conform to ICD-GPS-060
Output High	+10 VDC, +2/-1 VDC (@ 50 Ω)
Output Low	0 VDC, +2/-1 VDC (@ 50 Ω)
Output Clamping	Output not to exceed 13 VDC regardless of load impedance
Output chan to chan skew	2.5 nS max
Output Signal Dynamics	Conform to ICD-GPS-060 (Rv B, Fig 3-2)
Output Rise Time	< 50 nS (10% to 90%)
Output Fall Time	< 1 μ S (90% to 10%)
Output Pulse Width	20 μ S typical (16 μ S min, 30 μ S max)
Sync Input	
Input Range	0 - 10 VDC (-2 VDC min, +20 VDC max)
Input Impedance	50 Ω \pm 10% or >10 k Ω (SW selectable)
Switch Threshold	2.5 VDC \pm 5% (SW programmable between 0.5VDC and 9.5 VDC)
Sync Input to Output skew	35 nS max (@ 2.5 VDC)
Flywheel Oscillator	
Output Frequency	1 PPS
Initial Accuracy	\pm 1 PPM
Output Stability	300 parts per billion per day
Connector	
On-board connector	Conec 3017W5SCT78N40X or equiv
Mating connector	Conec 3017W5PXK99A10X or equiv
General	
Power dissipation	< 3 W, not including PCI Express Card
Operating Temp. Range	Tested -40 to +85 $^{\circ}$ C
Operating Humidity	95%, non-condensing
Vibration IEC 60068-2-6	5 g, 10-500 Hz, sinusoidal
IEC 60068-2-64	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
MTBF	350,000 hours
Testing Conditions	All testing assumes 50 Ω terminations at 150 foot coaxial cable unless otherwise noted