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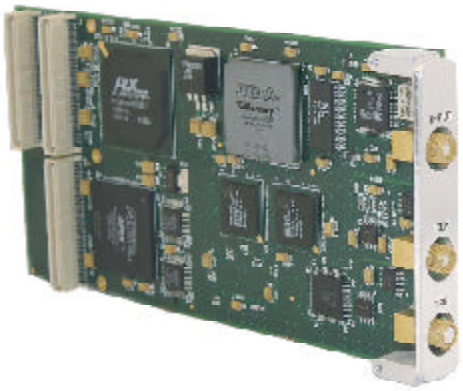
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Find the *Mercury Computer Systems / Echotek ECDR-1-1465-PMC-L100C* at our website: *Click HERE*

SINGLE CHANNEL WIDEBAND DIGITAL RECEIVER - PMC MODULE

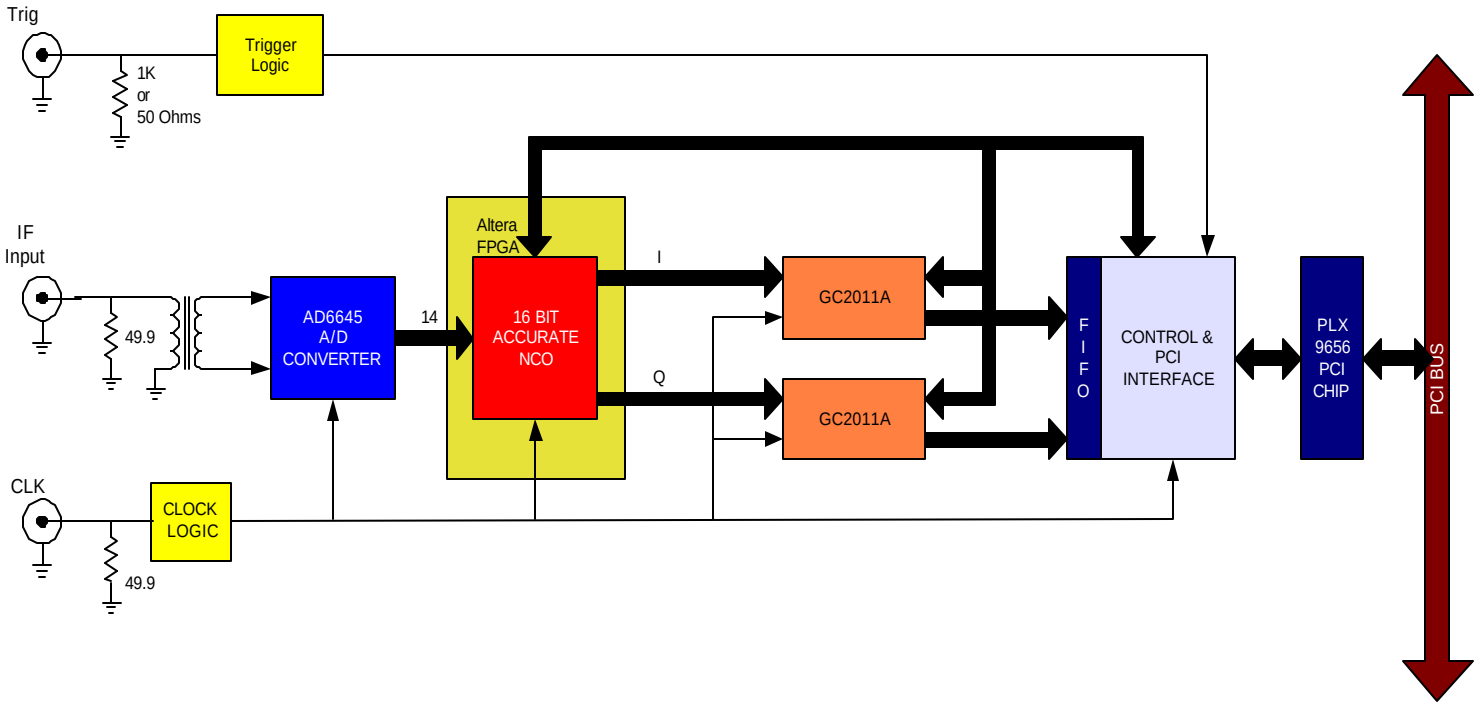
ECDR-1-1480-PMC



FEATURES

* 14 BIT, 80 MSPS ANALOG TO DIGITAL CONVERTER (ANALOG DEVICES AD6645)
* USER PROGRAMMABLE NUMERICALLY CONTROLLED OSCILLATOR.
* USER PROGRAMMABLE 63-TAP FIR FILTERS.
* 16K x 32 FIFO BUFFER FOR RECEIVER DATA. OTHER DEPTHS AVAILABLE.
* SUPPORTS DECIMATION OF 2, 4, 6, 8, 12, AND 16.
* SUPPORTS CONTINUOUS COLLECTION AND COUNTED BURST DATA COLLECTION MODES.
* SINGLE WIDE PMC WITH 64 BIT, 66 MHz PCI INTERFACE.
* CONDUCTION COOLED, EXTENDED TEMPERATURE VERSIONS AVAILABLE.

ECDR-1-1480-PMC BLOCK DIAGRAM



ECHOTEK CORPORATION 555 SPARKMAN DRIVE #400 HUNTSVILLE, AL 35816
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ECDR-1-1480-PMC
FUNCTIONAL DESCRIPTION

The Echotek ECDR-1-1480-PMC is a single channel wideband digital receiver on a single-wide PMC module. The IF input is transformer coupled and sampled with the Analog Devices AD6645 14 bit 80 MSPS A/D converter. The digital receiver is implemented with a user programmable, 100 dB spur-free (typical), Numerically Controlled Oscillator (NCO) in an FPGA and a pair of Graychip GC2011A FIR Filter chips to generate the I and Q (quadrature) output. The GC2011A's provide 63 tap, 14-bit coefficient digital filters with decimations of 2 or 4. An additional post decimation of 2, 3, or 4 can be selected in an FPGA, provided the proper filter cutoff is configured in the GC2011A filter design. Thus, decimations of 2, 4, 6, 8, 12, and 16 are supported.

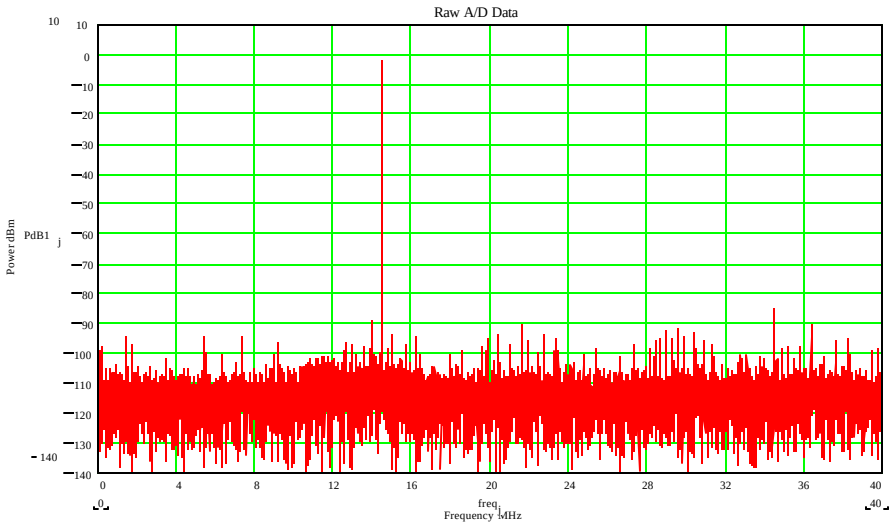
The 2's complement 16 bit I and 16 bit Q (quadrature) receiver output data is buffered in a 128K x 32 bit sample FIFO. The quadrature data in the sample FIFO is available via the PCI interface and supports up to 64-bits at 66 MHz transfer rates on the PCI side. The local side of the PCI Interface is 32-bits wide and therefore limits the Interface to a 264MBytes/Second burst rate.

The ECDR-1-1480-PMC requires a low phase noise external clock input for the A/D converter and receiver. This is a 50-ohm input with a nominal input level of +5 dBM.

Two modes of data collection are supported: Gate Continuous and Counted Burst. Gate Continuous data collection uses the external trigger input or a software register bit as a gate input to turn on and off collection. Counted Burst collection uses the external trigger input or a software register bit as a trigger to start data collection. This mode has several registers to control the data collection process such as the number of zeros to insert to the GC2011A at the start of each collection cycle, the delay until collection should start, and the number of samples to collect. These, as well as other registers, allow for a versatile collection cycle in the counted burst mode.

The ECDR-1-1480-PMC is available in both conduction cooled and commercial versions.

Driver Support: Drivers are supplied for vxWorks and WinNT Operating Systems.



A/D Sample Rate
fs = 80 MHz

Input Frequency
$f$in = 14.5 MHz

Decimation
2 => Wideband
4 => Narrowband

FFT Size
4096 Points

Ordering Information

Model	Part Number	Ruggedization	Options
ECDR-1-1480-PMC	12-0129/CC466	Commercial	128K Fifo’s and 80 MHz A/D’s
ECDR-1-1465-PMC-L100C	12-0092/CC587	Conduction Cooled	128K FIFO's and 65 MHz A/D's

Ruggedization Levels	Operating Temp (°C)	Storage Temp (°C)	Vibration	Shock	Humidity	Notes
Commercial	0 to +55°C with 300ft./ min. airflow	-50 to +85°C	0.002g2/Hz from 10 to 2000Hz random and 2g sinusidal from 5 to 500 Hz	20g peak sawtooth, 11mS duration	Up to 95% RH	Commercial Grade, cooled by blown air, for use in benign environments and software development applications
Conduction Cooled	-40 to +75°C at the normal interface	-50 to +85°C	Random, 0.1g2/Hz from 15 to 2000Hz per MIL-STD-810E ~12g RMS	40g peak sawtooth, 11mS duration	Up to 95% RH with varying temp., 10 cycles, 240 hrs.	Mechanically compliant with ANSI / VITA 20. Designed for severe environment applications with high levels of shock and vibration, small space envelope and restricted cooling. Optional Environment Stress Screening

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