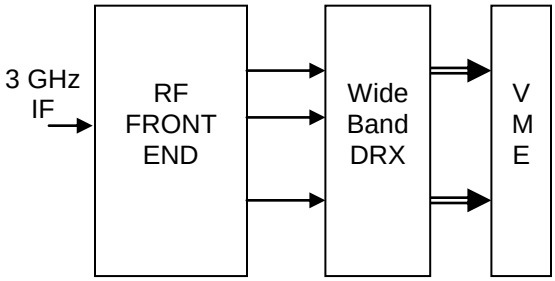
8B Industrial Way
Salem, NH 03079
Tel: (603)898-6800
www.lnxcorp.com
Sales@lnxcorp.com

Dual Channel Wideband Digital Receiver

RX00103-008

Features

- Dual Channel, wideband data acquisition and real-time signal processing module
- 2.2 Gsa/sec, 10-bit analog-digital converter
- > 55 dB SFDR
- 7.6 Effective Bits @ FS = 1.4 Gsps, FIN = 700 MHz
- Real-time DSP using Xilinx Virtex-4 series Field Programmable Gate Arrays
- VME, HotlinkTM, and RS232 interfaces
- Rugged, conduction cooled design.
- For use in applications such as EW, ESM, Radar and software defined receivers
- Offered with or without wideband downconverter

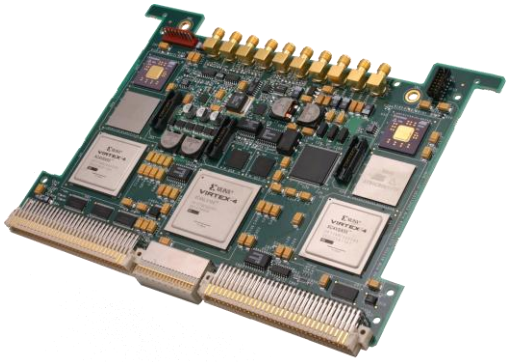


TYPICAL APPLICATION

Wideband Digital Receiver

The board includes two AT84AS008 A/Ds from Atmel which have a maximum sample rate of 2.2 Gsa/sec at 10-bits with a 3 GHz full power input bandwidth. Spurious free dynamic range is 55 dBc (7.4 effective bits at F_S = 1.4 Gsa/sec, f_{IN} = 700 MHz). The A/D's sampling delay and gain can be adjusted to support synchronizing and interleaving multiple A/D channels.

There are sites for three Virtex-IV FPGAs; the three FPGAs are interconnected with 40-bit, 320 MHz buses for array processing applications. The FPGAs are also used to implement the Hotlink and VME interfaces.



DATA ACQUISITION BOARD

An on-board CPU module is used to provide a user interface, local control, and FPGA configuration. There are 32 megabytes of Flash memory that can be used to store FPGA configuration data. A simple command set is used to configure and control data collection and processing.

High speed serial links are implemented using the CYP15G0101DXA HOTLink II™ Transceiver from Cypress Semiconductor. It contains all of the logic to support the serialize/de-serialize (SERDES) function and clock recovery and supports data rates from 200-1500 Mbaud.

The VMEbus interface is designed to conform to the VME64x specification and requires the 160 pin connectors with the added ground pins and +3.3 volt power pins. The interface supports A32/D32 slave data transfers directly to and from a dual port memory buffer residing in one of the FPGAs.

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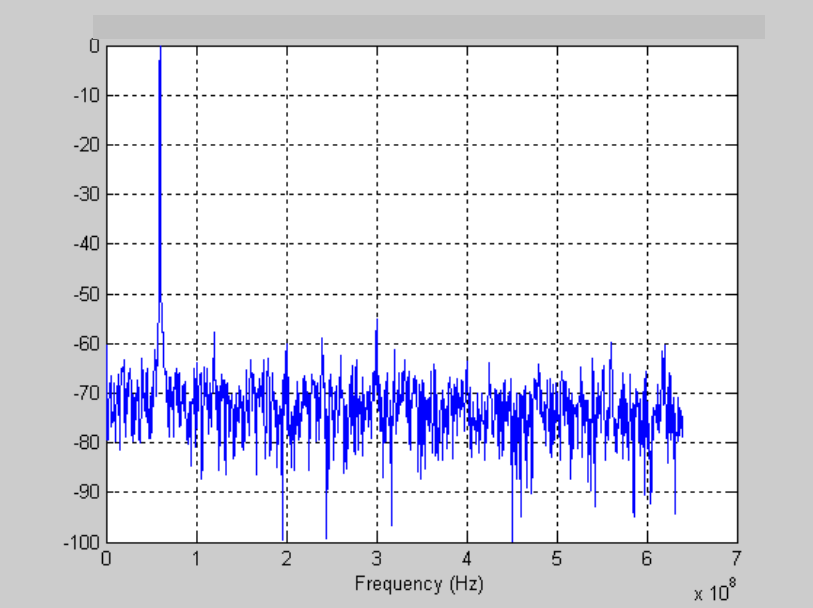

Direct downconversion of 1.54GHz signal, sampled at 1.60 Gsa/sec, appears at 60 MHz. Spurious free dynamic range exceeds 55 dB.

The board is designed for rugged, conduction cooled environments. It has passed stringent environmental screening including temperature cycling, shock, and vibration. Please contact LNX for additional information on this and other digital/microwave products. This “Digital Receiver” can be custom configured to meet your specific needs.