FEATURES

- 8 channel 6U OpenVPX wideband digital tuner
- 2 MHz to 6 GHz frequency coverage
- 80 MHz BW
- 16-bit internal ADC, 256 Msps
- Full bandwidth digital IF output over P1 data plane
- Internal FPGA-based signal processing with variable rate DDCs
- Ethernet command and control

FEATURES (continued)

- Time-tagged digital IF output (based on 1PPS input)
  - Command set matches existing NDR358 command set
- Dedicated fast scan control interface
- Supports four existing NDR358 DSP-based modes of operation:
  - Receiver Mode
  - Fast Scan Mode
  - Coherent Mode
  - Resampler Mode
- Designed for harsh environments

NDR378

2 MHz to 6 GHz
6U OpenVPX Wideband Digital Tuner

DESCRIPTION

The NDR378 digital tuner is an 8-channel, superheterodyne tuner that covers RF signals from 2 MHz to 6 GHz. It is a rugged 6U conduction cooled VPX module, per VITA 46/48/65/67. The NDR378 OpenVPX is designed as a 6U open architecture version of the existing NDR358 tuner to include RF performance, command set and all 4 DSP-based modes of operation. The NDR378 supports efficient system integration for existing NDR358 users. Integrated high dynamic range 16-bit Analog-to-Digital converters (ADC's) are utilized to digitize an 80 MHz wide IF at 256 Msps sample rate. Command and control of the digital tuner are via an Ethernet interface and power is derived from the P0 12V power supply input. Total power consumption is approximately 110 Watts. An on-board Xilinx Kintex UltraScale FPGA is used for the channelizer, the VITA-49 formatter, data multiplexer and the Digital IF data interface.

The Data Plane Digital IF output simultaneously provides both full bandwidth Digital IF data along with multiple narrow bandwidth DDC outputs. Four modes of operation are included: Receiver mode, Fast Scan mode, Coherent mode and Resampler mode. Receiver mode includes numerous DDCs with selectable bandwidths, optional oversampling and demodulators. Fast Scan mode supports a dedicated and simplified control interface for applications such as search. An ARM A8 microprocessor running embedded LINUX is used for command/control of the unit. The unit is packaged in a rugged 6U module that provides RF shielding, thermal management, and protection suitable for harsh environments.

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