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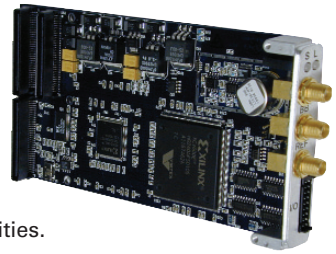
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Find the *Kratos / RT Logic RTL-DBP* at our website: *Click HERE*

DIGITAL BASEBAND PROCESSOR (RTL-DBP)

OVERVIEW



RT Logic's Digital Baseband Processor (RTL-DBP) supports multiple baseband telemetry processing functions. The RTL-DBP provides a flexible platform for demodulation, bit synchronization, and FM discrimination applications in satellite ground, spacecraft test, and range/flight test applications. RT Logic has developed a full range of frequently used firmware and software personalities.

APPLICATION

The RTL-DBP provides a reconfigurable, digital platform for baseband processing functions. The PCI Mezzanine Card (PMC) is designed for use in PCI, cPCI, and VME systems.

There are three baseband I/O ports on the RTL-DBP that can be configured for baseband inputs, baseband outputs, and 10 MHz reference input. In addition, multiple TTL/RS-422 signal lines are provided to support a wide variety of external interface configurations. The selected input is sampled using a 65 Msample/second A/D converter. Signal samples are processed by multiple on-board Field-Programmable Gate Arrays (FPGAs) that provide nearly two million logic gates for the downloaded firmware. In addition, the board has an on-board downconverter ASIC for low rate signals and a digital-to-analog converter (DAC) to generate a baseband output.

RT Logic provides firmware personalities for the RTL-DBP that support subcarrier B/QPSK demodulation, bit synchronization, Viterbi decoding, frame synchronization, and FSK demodulation. SGLS command echo demodulation and FM discrimination firmware personalities are also available.

Sample application code and device drivers are available for the RTL-DBP to support customer integration of the module.

FEATURES

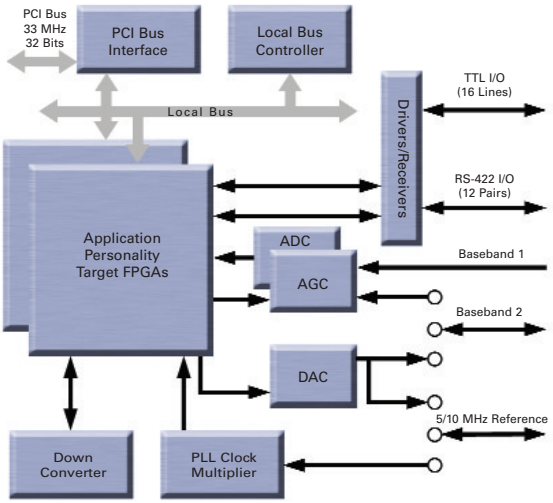
- PSK Subcarrier Demodulation
  - AGC with 60 dB Gain for Low Power Signals
  - Digital Shaping Filters
  - Demodulated Baseband Output
- Bit Synchronization
  - Rates from 100 bps to 10 Mbps
  - NRZ and Bi-Phase PCM Codes
  - Viterbi Decoder
- Other Application Personalities
  - Frame Synchronization to 10 Mbps
  - FSK Demodulation
  - FM Discriminator (IRIG Formats)
  - SGLS FSK/AM Command Demodulation
- Test Code/Device Drivers
- Full Product Documentation/Customer Support

RT Logic!
Enabling Your Solutions

DIGITAL BASEBAND PROCESSOR

DIGITAL DEMOD/ BIT SYNC

The RTL-DBP's digital implementation eliminates the need for tuning, provides outstanding performance across the range of carrier/data rates, and eliminates device variability. The 65 Msps analog-to-digital converter allows the RTL-DBP to support subcarrier frequencies up to 10 MHz. Rates from 100 bps to 10 Mbps are supported for bit synchronization.



The RTL-DBP is configurable with one or more of RT Logic's firmware application personalities to process baseband waveforms such as PSK-modulated telemetry, frequency modulated telemetry, and FSK/AM modulated command tones.

RT Logic can also customize firmware application personalities or develop new ones to meet specific customer requirements.

The RTL-DBP module is part of RT Logic's family of Telemetrix Dynamic Digital Processors. This set of PMC modules support the full spectrum of IF/baseband processing, signal modulation, and digital front-end functions and offer leading edge digital technology.

SPECIFICATIONS

- **Inputs/Outputs**
  - 1 or 2 Baseband Inputs (-50 dBm to +10 dBm)
  - 1 Baseband Output (1 Vp-p to 10 MHz)
  - 5/10 MHz Reference Input (or Baseband Output)
  - 16 TTL Lines/12 RS-422 Pairs
- **PSK Demodulator**
  - BPSK, QPSK, SPSK, Others
  - Subcarrier Frequencies — 400 Hz to 10 MHz
  - Loop Bandwidth — up to 0.25%
- **Bit Synchronizer**
  - NRZ-L, -S, -M, Bi-Phase-L, -M, -S
  - Data Rates — Up to 10 Mbps
  - Loop Bandwidth — up to 1.5%,
  - Viterbi Decoder (Rate 1/2, 1/3)
  - Soft-Bit Decision on Both I and Q Channels
  - Independent I and Q Channel Outputs
- **PM Demodulator**
  - Data Rates — up to 5 Mbps
- **FM Discriminator**
  - Full Support for Standard IRIG Channels
- **Frame Synchronizer**
  - Data Rates — Up to 10 Mbps
  - Programmable Sync Strategy
- **SGLS Command Demodulator**
  - Standard SGLS Data Rates/Tone Frequencies
  - Ternary Output ('0', '1', 'S', Clock)
- **Physical**
  - Single Wide PMC Form Factor
  - Short PCI (via Carrier Board)
- **Power (Typical)**
  - 2A @ 5V
  - 100 mA @ +12V, 100 mA @ -12V
- **Operating Environment**
  - 0 to 50° C
  - 10 to 90% Relative Humidity

RT Logic!

Specifications subject to change.
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1042 Elkton Drive, Colorado Springs, CO 80907 • ph 719.598.2801 fx 719.598.2655
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