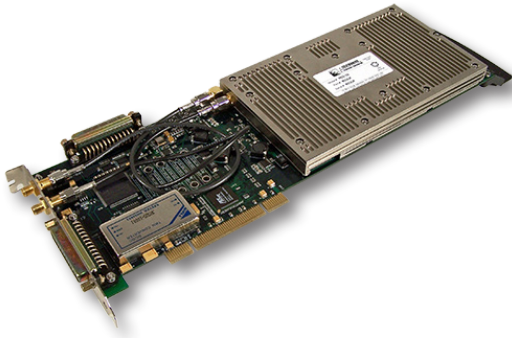


RMDS-300S

PC-Based Multimode (SOQPSK) Telemetry Demodulator,
Receiver, Decom, Simulator, Timecode

**CURTISS-
WRIGHT**

CURTISSWRIGHTDS.COM



Key Features

- PC-based PCI bus full size card with RF receiver, bit synchronizer, data demodulator, simulator, and IRIG time code reader
 - + Using 32 bit/66 MHz PCI bridge
 - + Transfers data in scatter gather mode
- RF receiver
 - + L Band or S Band coverage
 - + Selective tuning with 100 kHz tuning steps
 - + 4 IF band widths; 0.5 to 20 MHz
 - + Processes SOQPSK and PCM/FM
 - + NRZ codes: 315 kbps to 20 Mbps (SOQPSK) 160 Kbps to 10 Mbps (PCM/FM)
 - + Codes can be NRZ-L, RNRZ-L (fwd) per IRIG STD 106, programmable
- Simulator
 - + Regenerates playback archived PCM data at programmable rates of up to 20 Mbps
 - + Random number generator: PRN (n=15)

Applications

- Data analysis
- Data archival
- Flight test instrumentation

Overview

The RMDS-300S combines the functions of RF Receiver, Bit Synchronizer, Data Decommutator and Simulator into a single full size PCI Bus card. The card can be installed in a Desk Top PC for preflight or lab test. The RF Receiver has L or S band coverage (customer specified at time of order) and can demodulate both SOQPSK and PCM/FM. RF Frequency tuning is in 100 kHz steps. There are four IF Bandwidths from 0.5MHz to 20MHz that are automatically selected as a function of bit rate and modulation type. The demodulated RF signal is input to the Bit Sync that provides clock reconstruction and data recovery. Data rates up to 20 Mbps (SOQPSK) and 10Mbps (PCM/FM) can be processed. Recovered PCM data and clock outputs are provided via RS422 and TTL drivers.

The Bit Sync output is also internally connected to the on card Data Decommutator. The Data Decommutator provides full IRIG Frame Synchronization and data Decommutation. The Decom accepts PCM data at rates up to 20Mbps from either an external source or the on-card Bit Sync. The Decom external data and clock inputs are programmable for RS-422 (20 Mbps – 120 ohm) or TTL (10 Mbps – 10K ohm).

Decommutated data words and frame time tags are made available via the PCI bus for analysis, archival, and monitoring. A Parallel Output Port provides the customer with the Frame Data and control signals. The customer can Cherry Pick any or all desired words from the Frame.

A DB25 connector is used for each the Parallel Output Port (top of card) and the I/O port (rear of card on rear I/O plate). The rear I/O plate is also equipped with two SMA connectors, one for the RF Receiver input (Antenna) and one input for future expansion.

Additional Features

- Data decommutator
 - + PCM input rate up to 20 Mbps
 - + Accepts RS-422 or TTL input data and clock
 - + Onboard minor frame time tag
 - + Word select mode: Any or all words from the format can be steered to this PCM output
- IRIG-B time code reader
 - + Accepts IRIG AC or DC time in
 - + Time tags incoming PCM minor frames
 - + Provide IRIG time to the PC
- Supported by third party data analysis software
- Microsoft® Windows® compatible driver software included

Bit Rate

- SOQPSK: Programmable from 315 Kbps to 20 Mbps
- PCM/FM: Programmable from 160 Kbps to 10 Mbps

Data Decommutator (Input Data)

- Inputs: NRZ-L data and clock. RS-422 (120 ohm) or TTL (10K ohm)
- Polarity: Programmable for normal (0 degrees), or inverted (180 degrees)
- Rate: Up to 20 Mbps (RS-422) or 10 Mbps(TTL)
- Time source: IRIG AC, DC or Free-Run from Time circuitry
- Sync pattern: Up to 32 bits programmable
- Lock strategy: Programmable for 1 to 16 good frames to acquire LOCK
- Drop lock: Programmable for 1 to 16 bad frames to drop LOCK
- Bit slip: 0, ± 1 , ± 2 , ± 3 bits programmable
- Bits per word: 8 to 16 programmable
- Time: Time tagged on each minor frame, with one microsecond resolution
- Minor frame length: Up to 1024 words per minor frame
- Major frame length: Up to 256 minor frames per major frame
- Major frame: Major frames are handled by PC application
- Major fram Sync: SFID and sync bits
- SFID: Programmable at any word

RF Diversity Receiver

- RF tuning: Lower L Band (1430 to 1540 MHz); Extended S Band (2200 to 2450 MHz)
- IF bandwidths: Four (4), 0.5, 1.5, 5.0, 20MHz
- Tuner resolution: 100kHz
- Frequency accuracy: 0.002%
- Noise figure: Better than 6 dB
- Damage free level: +10dBm
- 1st IF frequency: 280MHz
- 2nd IF frequency: 70MHz

Simulator

- PCI bus: Interface for setup/control/status/power
- Status indicator: TTL compatible Bit Sync Lock, Frame Sync Lock, IRIG Lock
- PCM output port: Programmable bit rate up to 20Mbps. TTL and RS-422 and has four (4) output modes: Playback—Loopback—Word Select—Random Number Generator
- Parallel output port: Provides 16 bit frame word data and all control signals necessary to Cherry Pick any or all words from frame

IRIG-B Time Code Reader

- Input format: Accepts IRIG-B in either AC or DC forms
- IRIG-B AC in: 0.5V to 10V p-p with nominal ratio of 3:1
- IRIG-B DC in: TTL differential per RS-422
- Acquisition/tracking: Automatically synchronizes to an externally applied input. Will “Flywheel” upon removal of input
- Time lock output: Provides TTL level lock signal indicating “LOCK” to the selected time source (IRIG-B AC or DC)

Ordering Information

- RMDS-300S-1: S Band, RF Receiver, Bit Sync, Decom, Simulator, IRIG-B Time Code
- RMDS-300S-2: Lower L Band, RF Receiver, Bit Sync, Decom, Simulator, IRIG-B Time Code
- Extra mating connector: Contact [Curtiss-Wright](#) for ordering information
- Programming software application: Included