



TRACK > RECEIVE > RECORD > PROCESS

RX-1

COMPACT TELEMETRY RECEIVER

Zodiac Data Systems RX-1 is the **small-size dual channel telemetry receiver** with pre-D combiner that covers all IRIG frequency bands and **all IRIG-specified modulations**. This COTS product is based on the Cortex RTR technology bricks and inherits the well-recognized **RF performance** and **signal processing capability**. The RX-1 fits particularly the **test ranges conditions** and provides the most advanced features to **maximize data availability**.



Launch Vehicle Telemetry

STC& XTD
Space Time Coding and Extended Time Diversity both supported

DQM/DQE
Embedded Data Quality Metrics / Encapsulation compatible with BSS



Missile Testing

EQ+
Adaptive equalizer for all modulations, on video and PCM outputs

CH.10 OUTPUT
Easy and modern UDP data spreading



Fixed & Rotary Wing

LDPC
All LDPC IRIG codes supported

OPERATIONAL TELEMETRY RECEIVER SPECIALLY FIT FOR MOBILE APPLICATIONS

> ANALOG FRONT-END**RF Input Signals**

| | |
|---------------------------|--|
| RF Inputs | 2 (N-type 50 Ω) |
| Input Frequency Range | S-band 2180 – 2485 MHz L-band 1710 – 1850 & 1429 – 1545 MHz P-band 200 – 500 MHz C-IF-band 300 – 1150 MHz C-band 4400 – 5250 MHz |
| Dynamic Range | -10 dBm to noise threshold |
| Noise Figure | < 9 dB (6 dB typ.) |
| Spurious Signal Rejection | > 60 dBc |
| VSWR | < 2 : 1 |

IF Inputs / Outputs

| | |
|------------|-------------------|
| IF Inputs | 2 @ 70 MHz |
| IF Outputs | 3 (RSR interface) |

> SIGNAL PROCESSING SPECIFICATIONS**IF Filtering**

| | |
|-----------------|---|
| Analog Filters | 8 pre-selection SAW (500 kHz to 40 MHz) |
| Digital Filters | 30 FIR IF (3 kHz to 40 MHz) |
| Phase Noise | Compliant to IRIG 106 Tier II |

AGC

| | |
|----------------|-----------------------------|
| Modes | Automatic / Manual / Freeze |
| Time Constants | 5 steps, 0,1 to 1000 ms |

Tracking

| | |
|--------------|----|
| Demodulation | AM |
|--------------|----|

Telemetry

| | |
|--------------|---|
| Demodulation | PCM-FM, MSFM, SOQPSK, Multi-h CPM PCM-PM, BPSK, QPSK, OQPSK, |
|--------------|---|

Advanced Demodulation Space Time Coding (STC)

Diversity Polarisation, Space & Frequency

Combiner Pre-D and Post-D

Pre-D with optimal ratio or best source selection

Pre-D gain up to 2.5 dB

Baseband Filtering 17 digital filters (12.5 kHz to 20 MHz)

De-emphasis CCIR 405-1 (525 or 625 lines)

Error Correction Viterbi, Reed-Solomon, Turbocodes & LDPC

Bit Synchronizer

Output Format RS422 and/or TTL

PCM Codes NRZ-L/M/S, BP-L/M/S, DM-M/S, differential, RNRZ-L

Maximum bit rates 30 Mbps in PCM/FM

60 Mbps in SOQPSK

45 Mbps in Multi-h CPM

> EQ+ ADAPTIVE EQUALIZER

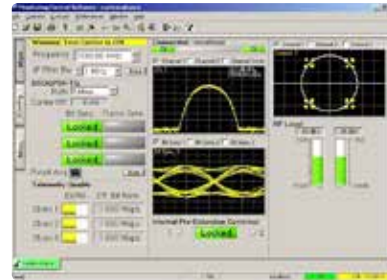
Modulations All, i.e. PCM-FM, SOQPSK & Multi H-CPM

Equalized Outputs Video, PCM & Ethernet

Performance Market-acclaimed error-free telemetry on taxi way,
on parking, & before launch for missiles / launch vehicles

> MONITORING & CONTROL

| | |
|----------------|---|
| Local Control | 3 front panel displays & Direct access keys |
| Local GUI | Menus on local display |
| Extended GUI | Through a KVM – seamless GUI than Cortex RTR |
| Remote Control | Through TCP-IP – seamless GUI than Cortex RTR |

LOCAL M&C**REMOTE M&C seamless to Cortex-RTR****> ENVIRONMENT**

| | |
|-----------------------|---------------------------------|
| Chassis | Rackable, 19", 1U, 508 mm (20") |
| Weight | < 10kg |
| Operating Temperature | 0°C to +50°C |
| Storage Temperature | -40°C to +70°C |
| Power Supply | 100-240 VAC, 50-60 Hz |

> VARIANTS

| | |
|------------------------|---|
| Baseline | RX-1 Dual channel, P/C-IF/L/S-band, AM, PCM-FM, MSFM, SOQPSK, MHCPM & Bit Synchronizer |
| Additional Band | C-band |
| CCSDS Package | PM, BPSK, QPSK, Viterbi, Reed-Solomon & Turbocodes |
| Additional Modulations | STC |
| Additional FEC | LDPC |
| Additional Features | Equalizer EQ+, DQE/DQM... |
| Additional Interfacing | Frame Sync, Ethernet ch10... |

GLOBAL SALES

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ZODIAC DATA SYSTEMS

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