

DATA SYSTEMS



RX-1

Compact Telemetry Receiver
for industrial
and range testing



TELEMETRY GROUND SOLUTIONS



Safran 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 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



Missile
Testing



Fixed &
Rotary Wing

STC & XTD

Space Time Coding and
Extended Time Diversity
both supported

EQ+

Adaptive equalizer for
all modulations, on video
and PCM outputs

LDPC

All LDPC IRIG codes
supported

DQM/DQE

Embedded Data Quality
Metrics / Encapsulation
compatible with BSS

CH.10 OUTPUT

Easy and modern UDP data
spreading

**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, SQPSK, 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 SQPSK
 45 Mbps in Multi-h CPM

> EQ+ ADAPTIVE EQUALIZER

Modulations All, i.e. PCM-FM, SQPSK & 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

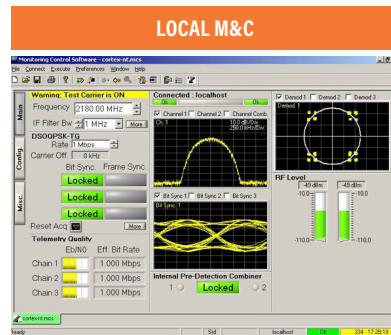
> MONITORING & CONTROL

Local Control 3 front panel displays & Direct access keys

Local GUI Menus on local display

Extended GUI Through a KVM – seamless GUI than RTR

Remote Control Through TCP-IP – seamless GUI than 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, SQPSK, MHCPC & 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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