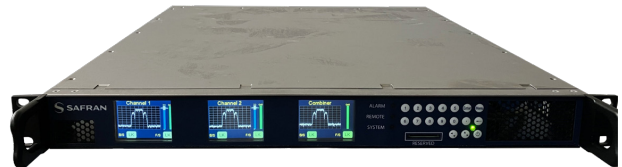




# RTR-X1

**Compact Telemetry Receiver**  
for industrial  
and range testing



TELEMETRY GROUND SOLUTIONS

Safran Data Systems RTR-X1 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 RTR-X1 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 & LPDC

Space Time Coding and LPDC supported, as well as many advanced features

### EQ+

Adaptive equalizer for all modulations, on video and PCM outputs

### FRONT PANEL CONTROLS

3 TFT color screens and keyboard on equipment, and full control from external KVM

### DQM/DQE

Embedded Data Quality Metrics / Encapsulation compatible with BSS

### CH.10 & IRIG18-20 OUTPUT

Easy and modern UDP data spreading

**OPERATIONAL TELEMETRY RECEIVER  
SPECIALLY FIT FOR  
MOBILE APPLICATIONS**

# RTR-X1

## > ANALOG FRONT-END

**RF Input Signals**  
 RF Inputs ..... 2, Wideband (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**  
 Pass-band 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 and 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

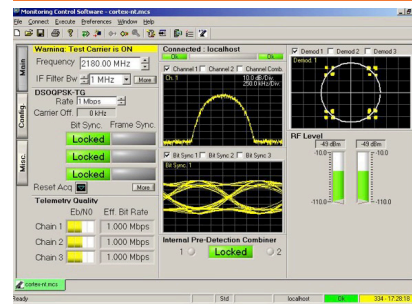
## > EQ+ ADAPTIVE EQUALIZER

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

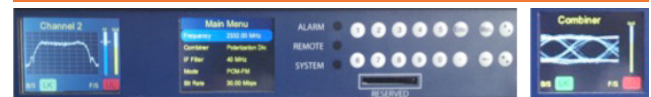
## > MONITORING & CONTROL

Local Control ..... 3 front panel displays & Direct access keys  
 Local GUI ..... Menus on local display  
 Extended GUI ..... Through a KVM – seamless GUI than RTR-X4  
 Remote Control ..... Through TCP-IP – seamless GUI than RTR-X4

### REMOTE M&C seamless to RTR-X4



### Local M&C



## > ENVIRONMENT

Chassis ..... Rackable, 19", 1U, 508 mm (20")  
 Weight ..... < 13kg  
 Operating Temperature ..... +10°C to +50°C  
 Storage Temperature ..... -40°C to +70°C  
 Power Supply ..... 100-240 VAC, 50-60 Hz

## > NEW FEATURES

Full band visibility ..... Sepctrum analysis of the whole telemetry band  
 Test signal generator ..... With both internal and external signal for short and long loop

## > VARIANTS

Baseline ..... RTR-X1 Dual channel, P/C-IF/L/S-band, AM, PCM-FM,  
 ..... MSFM, SQPSK, MHCPM & Bit Synchronizer  
 Additional Band ..... C-band  
 Additional Demodulations ..... PCM-PM, BPSK, QPSK, OQPSK, STC, COFDM, Subcarriers...  
 Additional FEC ..... Viterbi, Reed-Solomon, Turbocodes & LDPC  
 Additional Features ..... Equalizer EQ+, DQE/DQM...  
 Additional Interfacing ..... Frame Sync, Ethernet Ch. 10, Ethernet IRIG218-20

### GLOBAL SALES

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