

DATA SYSTEMS



RSR

Radio Signal Recorder for critical applications



TELEMETRY GROUND SOLUTIONS



Safran Data Systems' RSR is a **digital recorder** allowing the capture and reproduction of the RF or IF analog signal received at the antenna **before any data processing**. It is the key building block of a Telemetry Station to bring **the highest critical data availability**, especially when recording is not possible on-board.

Data captured during the flight can be processed offline, with all the flexibility to adjust various settings in the receiver, the bit synchronizer or the decommutator, to squeeze **each and every bit out of the recording**, which is **only possible when recording RF or IF**.



Launch Vehicle Telemetry



Missile Testing



Fixed & Rotary Wing

The RSR comes in 3 different versions:

TYPE	RF/IF	WB	PCM	AGC A/D	Storage	Throughput
RSR	4 IF	-	(8 in option)	4/4	4TB (8TB, 6 or 12 TB Raid 5 in option)	80MHz / 2Gbps (160MHz / 4Gbps in option)
RSR - RF	2 RF/IF	-	-	-	4TB (6 TB Raid 5 in option)	80MHz / 2Gbps (160MHz / 4Gbps in option)
RSR - Power	2 IF	8	8	8/2	10TB Raid 5 (20TB in option)	320MHz / 5+ GBps

RF OR IF RECORDING

Record Telemetry Signal as close as possible to the antenna for Highest Data Availability

ALL TYPE OF SIGNALS

RF or IF Telemetry, Wide Band Analog, PCM Streams, AGC & IRIG Time

PRE-FLIGHT STATION CHECK

Long Loop Check Secure Station Settings while Replaying Previous Flight Records

8.4" SCREEN

Intuitive GUI, Keyboard and Touchpad for Full and Easy Direct Control

CH.10 RECORDING FORMAT

All Recordings done according to Ch10 Standard

➤ SIGNAL TECHNICAL SPECIFICATIONS

RF Channel (RSR - RF)..... 2

Center Frequency (In & Out) 900 – 2400 MHz or 66-74 MHz selectable
 Bandwidth 0.625 to 40 MHz / Channel
 Level -90 to -30 dBm
 Impedance 50 Ω
 Sampling Rate > 2.5 x BW @250 Msps
 Sample Resolution 8 / 16 bits

IF Channel 4 on RSR, 2 on RSR-Power

Center Frequency 66-74 MHz selectable
 Bandwidth 0.625 to 40 MHz / Channel
 Level -10 to +5 dBm
 Impedance 50 Ω
 Sampling Rate > 2.5 x BW @250 Msps
 Sample Resolution 8 / 16 bits

Wide Band Channel (RSR - Power)..... Up to 8

Frequency DC – 40 MHz
 Bandwidth 0.625 to 40 MHz / Channel
 Analog Level 10 Vpp
 Input / Output Impedance ... 50Ω / 75Ω / 1kΩ selectable (100kΩ Output only)
 Sampling Rate > 2.5 x BW @250 Msps
 Sample Resolution 8 / 16 bits
 Coupling AC / DC

AGC Channel 4 on RSR, 8 on RSR-Power

Bandwidth 50 kHz / Channel
 Analog Level (In& Out) 10 Vpp
 Input / Output Impedance 50 Ω / 75 Ω
 Digital Mode (RTR-RSR)..... 4 on RSR, 2 on RSR-Power

PCM Channel 8 on RSR-Power, 8 in option on RSR

Bit Rate per Channel From 1 kbps to 40 Mbps
 Format / Level TTL / RS422
 Impedance (In/Out)..... TTL: 50, 75Ω (1kΩ Input only) RS-422 120Ω
 PCM Code NRZ-L/M/S & Bi-phase L/M/S
 Data + Clock Sync Rising / Falling Edge / Channel

Recording

File Format IRIG-106 Chap. 10 Compliant
 File Selection Space Time Navigator
 System State Record, Replay, End-to-End
 Monitoring & Control Front Panel Touch Screen
 Protected Embedded OS Remote GUI via TCP/IP
 Network NIST 800-53, SHB
 Network IPV4/IPV6 2 Gbit RJ-45

Storage

Removable Cartridge 1 or 2
 Cartridge Size 4 TB, 6 TB or 10 TB
 RAID 0/1/5 with HW Controller
 Aggregated Data Rate Up to 5+ Gbps
 Recording Time > 2 hours @ 5 Gbps
 File Transfer FTP / SFTP Server
 External Disk USB 3.0

Data Processing

Streaming UDP Ch10
 Spectrum Analyzers RF, IF & HBW Channel

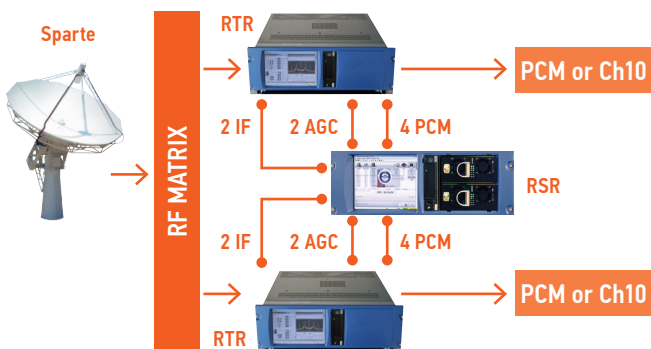
Time & Synchronization

IRIG Time Code IRIG-B122
 Input Level 0.1 to 6 Vpp
 Impedance 100 kΩ In / 50 Ω Out
 1 PPS LVTTTL 50 Ω Rising
 External Ref Frequency 10 MHz, 0.2 to 2 Vpp / 50Ω

Environmental specifications

Touch Screen TFT Color 8.4"
 Chassis 4U, 19" (7"H x 19"W x 22"D)
 Weight (without Storage) 25 kg (55 lb)
 Operating Temperature +10 °C to +40 °C (50 to 104 °F)
 Storage Temperature -20 °C to +60 °C (-4 to 140 °F)
 Relative Humidity <90 % Non Condensing
 Power 100 – 240 VAC / 50-60Hz
 Power Consumption < 450W

RSR-IF implementation in a station



RSR-RF implementation in a station



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