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.

The RSR comes in 3 different versions:

<table>
<thead>
<tr>
<th>TYPE</th>
<th>RF/IF</th>
<th>WB</th>
<th>PCM</th>
<th>AGC A/D</th>
<th>Storage</th>
<th>Throughput</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSR</td>
<td>4 IF</td>
<td>-</td>
<td>4/4</td>
<td></td>
<td>4TB (16TB, 6 or 12 TB Raid 5 in option)</td>
<td>80MHz / 2Gbps (160MHz / 4Gbps in option)</td>
</tr>
<tr>
<td>RSR - RF</td>
<td>2 RF/IF</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4TB (6 TB Raid 5 in option)</td>
<td>80MHz / 2Gbps (160MHz / 4Gbps in option)</td>
</tr>
<tr>
<td>RSR – Power</td>
<td>2 IF</td>
<td>8</td>
<td>8</td>
<td>8/2</td>
<td>10TB Raid 5 (20TB in option)</td>
<td>320MHz / 5+ GBps</td>
</tr>
</tbody>
</table>

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

CH10 RECORDING FORMAT
All Recordings done according to Ch10 Standard

8.4” SCREEN
Intuitive GUI, Keyboard and Touchpad for Full and Easy Direct Control

PRE-FLIGHT STATION CHECK
Long Loop Check Secure Station Settings while Replaying Previous Flight Records
**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 Mbps
- 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 Mbps
- 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 …………………50Q / 75Q / 1kΩ selectable (100kΩ Output only)
- Sampling Rate ………………………………………> 2.5 x BW @250 Mbps
- 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 Q / 75 Q
- 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, 75Q (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
- ……………………………………………………………………………………………Remote GUI via TCP/IP
- Protected Embedded OS ……………………………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 …………………………………………………LVTTL 50 Ω Rising
- External Ref Frequency ……………………………10 MHz, 0.2 to 2 Vpp / 500

**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