

Cortex RSR - Radio Signal Recorder



Multi-channel IF 70MHz Recorder/Reproducer

Main Features

- True IF 70 MHz recording/reproducing
- Recording bandwidth : 40 MHz per IF channel
- Up to 4 IF inputs and 4 IF outputs
- < 5 ns Cross channel synchronization
- Individually selectable signal bandwidth for optimized recording performance
- Direct IF sampling
- Full digital processing
- IRIG-106 Chapter 10 Data File Format
- Removable disk cartridges, LTO archiving supported & FTP Share File Platform

Main benefits

- Efficient phase noise and IF processing to support the advanced modulation schemes (SOQPSK, Multi-h CPM)
- Wideband processing for higher data rates
- Integration with drastically reduced hardware
- No tuning, no preventive maintenance
- IF loopback for channel test
- Touch screen
- IF signal real-time spectrum display for input verification

IN-SNEC® **CORTEX Series**

ZODIAC DATA SYSTEMS Radio Signal Recorder offers multi-channel Intermediate Frequency (IF) analog signal recording and reproducing, and additional data types such as IRIG-B, AGC, PCM and analog baseband.

Standard IF frequency is 70 MHz, and signal bandwidth up to 40 MHz. The 70 MHz signal is directly sampled, without any analog transposition.

Recording time is 2 hours minimum for maximum signal bandwidth.

Recorded file format is compliant with IRIG-106 chapter 10.

Main applications are :

- **Flight Test** : telemetry recording of receiver's IF outputs for telemetry signal improvement, analysis and validation
- **SIGINT** : signal recording of IF level for archiving, future processing, signal processing calibration & evaluation
- **Space** : Satellite TM/TC recording & reproducing at IF level for AIT, IOT, and operations troubleshooting
- **Others applications**

ZODIAC DATA SYSTEMS

AEROSAFETY & TECHNOLOGY
Telemetry & Telecommunications

**ZODIAC
AEROSPACE** 

Technical specifications

Recording

File format	IRIG-106 Chap. 10 compliant
IF bandwidth selection	5, 10, 20, 40 MHz
Signal representation	8 or 16 bits, selectable (per channel)
Total bandwidth	160 MHz aggregate
Record time	> 1 hours for total bandwidth
Event marker insertion	Manual or Remote command
Storage media	> 2 TB, removable disk

Reproducing

Selection modes	Time Sequences, Markers, or Time Cursors
Replay modes	Single or Loop
Channel selection	Any recorded signals

Reproducing quality

Synchronization offset	< 5 ns between IF channels < 1 μ s between time source and recorded signals
Phase noise	-70 dBc/Hz@10 Hz, -120 dBc/Hz @1 MHz
Spurious	< -60 dBc

Archiving

Modes	Storage media removal, Files transfer, LTO
Files transfer	Ethernet, FTP or TCP/IP

Monitoring & Control

Remote Control	Ethernet, TCP/IP
GUI	Local (front panel) or Remote (Ethernet)
Signal monitoring	IF channels real-time spectrum display

Options

Other input signals	Consult factory
---------------------	-----------------

Physical & Electrical specifications

Mounting	Standard 19", rack mount 4U rackable unit
Weight	30 kg (66 lb)
Power	100-240 VAC; 50/60 Hz
Operating temperature	+ 10 °C to + 35 °C
Relative humidity	40 % to 90 % non condensing

Cortex RSR

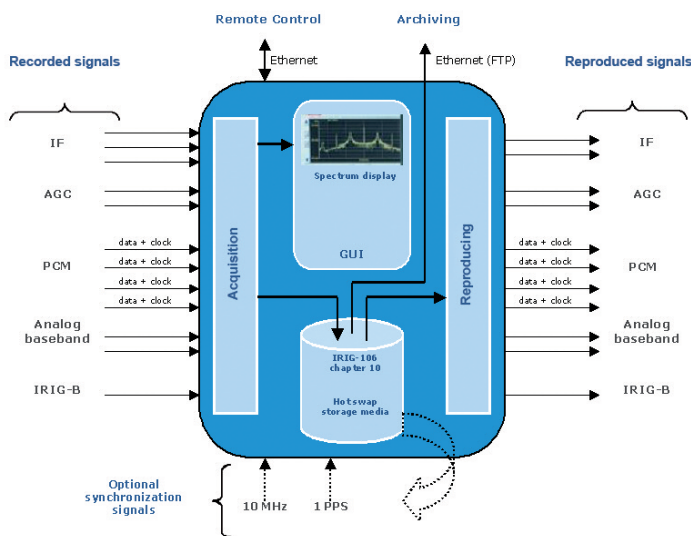
Recorded signals (Inputs) Reproduced signals (Outputs)

	Recorded signals (Inputs)	Reproduced signals (Outputs)
IF*		
Channels	up to 4	up to 4
Center frequency	66-74 MHz	-
Bandwidth	50-90 MHz (@ -3 dB)	-
Level	-30 to +5 dBm	-
VSWR / Impedance	<1.25 / 50 Ω	<1.3 / 50 Ω
AGC		
Channels	2	2
PCM*		
Channels	up to 8	up to 8
Bit rate per channel	40 Mbps max.	-
Format	TTL / RS422	-
Analog baseband*		
Channels	up to 4	up to 4
Bandwidth	0 - 20 MHz	-
IRIG-B		
Channels	1	1
Characteristics	0.1 to 6 VPP / 100 k Ω	50 Ω

* Some restrictions may apply as per signal types and quantities (consult factory)

Synchronization inputs and outputs

External Reference clock	10 MHz, 0.2 to 2 Vpp/50 Ω
1PPS	LVTTTL / TTL high Z



Other products

SPARTE - L/S/L+S-band Compact Station
 Cortex RTR - Telemetry Receiver
 Cortex CRT - Command, Ranging, Telemetry
 GSS - Ground Data Acquisition System

ZODIAC DATA SYSTEMS

Aérodrome d'Arcachon
 33260 La Teste - FRANCE
 Tel. +33 (0)5 57 52 76 30

2 rue de Caen
 14740 Brettville l'Orgueilleuse - FRANCE
 Tel. +33 (0)2 31 29 49 49

5 avenue des Andes
 91978 Courtaboeuf - FRANCE
 Tel. +33 (0)1 69 82 78 00

3 avenue du Canada
 91966 Courtaboeuf - FRANCE
 Tel. +33 (0)1 64 86 34 00

contact_zds-fr@zodiac aerospace.com - <http://www.zds-fr.com>

www.zds-fr.com

Z.D.S. reserves the right to change specifications without notice - FIP191.2.1