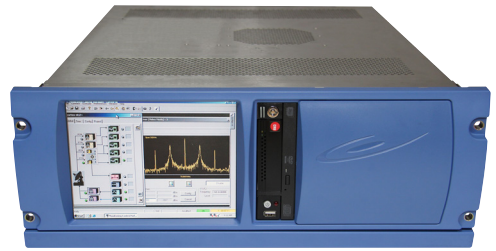


## DATA SYSTEMS



# CORTEX CRT

**Digital Modem for  
Satellite Housekeeping &  
Critical Communications**

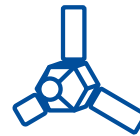


## SATELLITE TRACKING SOLUTIONS

Safran Data Systems' **Cortex CRT** is the COTS modem to support **any satellite** at **any time** from manufacturing to orbit. Based on a flexible design, Cortex CRT technology is available in **different form factors and architectures** to meet your system requirements. 4,000+ deployed units compatible and field proven with all commercial satellite platforms make Cortex CRT the **risk-free Command & Control (C2)** modem within the space community.



Communication  
& Relay  
Satellites



Earth  
Observation  
Satellites



Launch  
Vehicle  
Telemetry

### 4,000+ UNITS IN USE

Dependable Long Term Support

### INNOVATIVE RANGING

Infrastructure & Operational  
Cost Savings

### SOFTWARE DEFINED RADIO

Multi-Mission &  
Field Upgradeable

### FLEXIBLE ARCHITECTURE

Stand-Alone Box or Distributed  
(Digitizer + FEP)

### RADIO SIGNAL RECORDER

RF Recording & Playback

**THE COMMAND & CONTROL  
COMMUNITY STANDARD**

# CORTEX CRT

## > DOWNLINK

Independent IF Inputs ..... 3

### Telemetry

Telemetry Channels ..... Up to 6  
 PM/FM Demodulation Rate ..... Up to 600 kbps  
 PM/FM Subcarrier Frequency ..... Up to 2 MHz  
 BPSK (S)OQPSK GMSK AQPSK Demodulation Rate... 1 kbps to 40 Mbps  
 CCSDS Decoding ..... Viterbi LDPC Reed Solomon Turbocode Derandomization  
 Acquisition Threshold .....  $E_s/N_0 < -2$  dB  
 BER Degradation .....  $< 0.5$  dB (Typical)  
 IF Level Range .....  $-15$  to  $-105$  dBm  
 Telemetry Simulation ..... File, Replay, Random data, LAN  
 Polarization Diversity Combining ..... Pre-Detection, Post-Detection

### Narrow Band Recorder (RSR)

3 Channels IF Record & Replay ..... 80 MHz Aggregate Bandwidth  
 BER Degradation .....  $< 0.5$  dB  
 Inter-Channel Synchronization .....  $< 5$  ns

## > UPLINK

Independent IF Outputs ..... 2

### Telecommand

Modulation ..... PM FM BPSK (O)QPSK GMSK  
 Bit Rate ..... 7 bps to 2.6 Mbps  
 Advanced Capabilities ..... CCSDS COP-1, Carrier Sweeping Capacity  
 Telemetry Simulation ..... TC Loopback, Noise Source

## > RANGING

Modes ..... Active / Semi Active / Hybrid  
 Standards ..... ESA-Tone, ESA-Like, ESA-Code, USB, CCSDS PN  
 Resolution Measurement ..... 1 ns

## > EMBEDDED FREQUENCY CONVERTER

Interfaces ..... Downlink: 3 / Uplink: 2  
 Input / Output Frequencies ..... 70 MHz, L/S-Band (950-2400 MHz)

## > IT SECURITY

OS Hardening ..... OS Bi Annual Update, NESSUS Scans NIST Rules

## > TOOLS

Measurements ..... BER, Eb/N0, Frequency, Doppler  
 Signal Retrieval ..... Doppler Compensation, Automatic Ambiguity Resolution  
 Monitoring & Control ..... Remote, Local, Web Based GUI  
 Signal Monitoring ..... Spectrum & Constellation Display

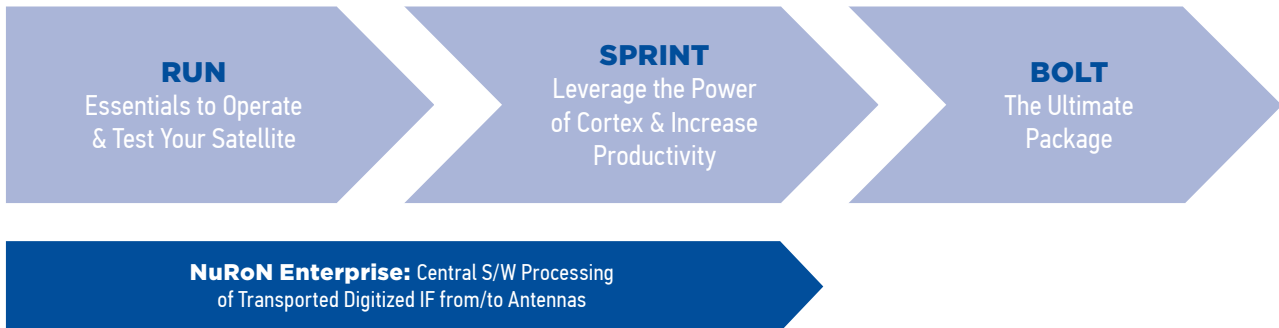
## > TIME & FREQUENCY

Time Format ..... IRIG-B, NASA-36, NTP  
 Frequency ..... Internal/External Clock 5, 10, 100 MHz

## > ENVIRONMENT

Chassis Size ..... 2U or 4U  
 Chassis Weight ..... 25 kg / 55 lb (Average)  
 Operating Temperature .....  $+10^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$  /  $+50^{\circ}\text{F}$  to  $+104^{\circ}\text{F}$   
 Power Supply ..... Hot-swappable redundant  
 Connectors ..... SMA BNC RS422 TTL

## LEO, GEO: We Meet Your Needs!



### GLOBAL SALES

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