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TECHNOLOGY GROUP

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with experienced engineers and technicians on staff.

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Custom engineering
so your equipment works exactly as you specify.

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Cortex CRT-Q
Command, Ranging & Telemetry



Perform TT&C at no risk !

IN-SNEC®

CORTEX Series

With a long experience in the TT&C with the Cortex Product, ZDS introduces the Cortex CRT-Q, the first COTS baseband processor.

The flexible Architecture of the CRT-Q allows a continuous improvement of the signal processing and the support of advanced and future standards.

For more than 30 years ZODIAC DATA SYSTEMS has been involved in most of the Ground Control Systems all over the world.

The Cortex CRT-Q is involved during all the satellite lifetime with the following key missions:

- Ground Assembly Integration and Test (AIT)
- Launch and Early Orbit Phase (LEOP) and Transfer Orbit operation
- In Orbit Control and In Orbit Testing of the satellite

Main Features

- 70 MHz Intermediate Frequency
- Direct IF sampling & Full Digital Signal Processing
- Telemetry processing of PCM direct w/o sub-carrier
- CCSDS telecommanding with COP-1 layer processing
- Ranging measurements (ESA, ESA-LIKE, USB...)
- Doppler estimation
- Spread Spectrum Processing for TM/TC and Ranging
- Space Link Extension
- Compact 1U interconnection panel or 3U interconnection panel with RS422 connectors

Main Benefits

- Benefit of long experience of Cortex product CRT
- Field proven compatibility with most of satellites
- User assets preserved thanks to back-compatibility
- Flexible architecture for continuous improvement of Signal Processing
- Support advanced and future standard
- High level of reliability with no preventive maintenance
- High integration COTS product

ZODIAC DATA SYSTEMS
AEROSAFETY & TECHNOLOGY
Telemetry & Telecommunications

ZODIAC AEROSPACE

Cortex CRT-Q

Technical specifications

Telemetry Processing

Carrier Frequency	60 to 78 MHz
IF level range	-15 to -105 dBm
Acquisition range	±10 to ±500 kHz
Doppler compensation	Available
Diversity combining	Polarization, Pre-D, Post-D
Remnant carrier PLL BW	10 to 3000 Hz
Sub-Carrier Frequency	up to 2 MHz
PM/PSK/PCM Bit rate	10 to 600 000 bps
Direct PCM demodulation	PM/PCM, PCM/FM BPSK, QPSK, OQPSK, SOQPK, GMSK, AQPSK ...
Symbol rate	1 kbps to 20 Mbps
Acquisition threshold	Eb/N0 < -2 dB.
BER degradation	< 0.5 dB (typical)
CCSDS decoding	Bi-phase, Differential, Viterbi, De-scrambling, Turbo code 1/2
Telemetry Simulation	As per downlink capabilities
Noise C/N0 range	50 dB range
Simulated TM source	Pseudo, PRN, File, TM replay or remote TCP-IP server

Telecommanding

Low and High level TC instructions for all protocols

Synchronized TC (for spinner)

CCDS COP-1	Available
Modulation scheme	any standards
Carrier sweeping capability	
Bit rate	7 bps to 1 Mbps

Ranging

All standards	(ESA, ESA-LIKE, USB,...)
Major Tone Frequency	< 500 kHz
PLL bandwidth	0.1 to 8 Hz
Measurement resolution	1 ns

Time and frequency

Time format	IRIG-B or NASA-36
Internal or external clock	5 or 10 MHz

Mechanical specifications

Chassis	H 7" x W 19" x D 550mm

MULTIPLE APPLICATIONS IN ONE SINGLE HARDWARE

Satcom

- Multichannel low rate Telemetry with Diversity combination and Viterbi decoding
- Low rate Telecommand with COP1 and TC loopback
- Accurate Ranging measurement and Doppler estimation
- Embedded Telemetry simulator, noise generator and BER estimation

Science and Weather forecast

- Multichannel high rate Telemetry with Diversity combination, Viterbi + Reed Solomon and Turbo decoding
- High rate Telecommand with COP1 and TC loop back
- All advanced Ranging standards
- Accurate Doppler estimation
- Spread spectrum processing for TM, TC & RG
- Embedded high rate TM simulator with noise generator and BER estimation

Satellite manufacturing and AIT

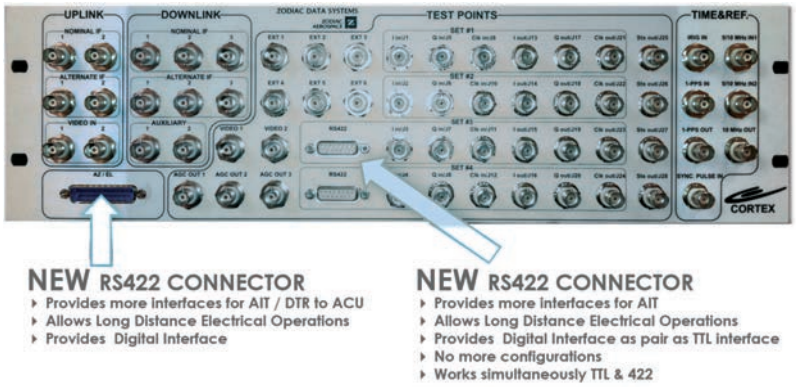
- Telemetry, Command, Ranging same as for operational mode
- Multiple I/Os (IF, Video, PCM)

NEW 1U or 3U INTERCONNECTION PANELS

- **Compact 1U interconnection panel**



- **3U interconnection panel**



NEW RS422 CONNECTOR
- Provides more interfaces for AIT / DTR to ACU
- Allows Long Distance Electrical Operations
- Provides Digital Interface

NEW RS422 CONNECTOR
- Provides more interfaces for AIT
- Allows Long Distance Electrical Operations
- Provides Digital Interface as pair as TTL interface
- No more configurations
- Works simultaneously TTL & 422

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Artisan Technology Group is an independent supplier of quality pre-owned equipment

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Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

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