

DATA SYSTEMS



Cortex Lasercom

Optical Digital Processor Unit

Multi-mission Optical Terminal



SATELLITE MODEMS & RECEIVERS

Safran Data Systems' **Cortex Lasercom** is your solution for High Data Rate space-to-ground laser transmissions.

Tailored for future generations, it can handle high speed laser transmission up to 10 Gbps in OOK as well as in DPSK, from LEO to GEO missions.

Benefitting from the industry-standard Cortex heritage makes Cortex Lasercom the risk-free and easy to deploy optical communication link to ground station (OGS).



Commercial Earth Observation Satellites



Communication & Relay Satellites



Scientific Missions

Multi-mission support

Payload Data Receiver E/O
Feeder downlink for GEO telecom
Mobile User terminal

OOK & DPSK modulation Embedded FEC

O3K std., LDPC, AR4JA, DVB-S2, TPC

Hard-decision and digital soft-decision decoding

ASE noise / Shot noise (LLR)

10 GBPS DEMODULATION

Most Powerful in Market

Cortex heritage

Cortex ICD and configuration management

Quasi error-free @-52dBm

Synchronisation down to -57 dBm DPSK

CORTEX LASERCOM

> ANALOG FRONT-END

RF Input - Photodetector connection

Input bandwidth 8 GHz (-3dB BW)
 Type SMA 50Ω Single Ended

> SIGNAL PROCESSING

Modulations

Modulation Schemes NRZ OOK, DPSK

Optical interleaver

Block interleaver Up to 8 GB LLR
 Spread factor (VDR) 1, 2, 4, 8, 16

FEC

CCSDS 142.0.B-1 (LDPC) + O3K addition (pink sheet)
 On request for other FEC: DVB-S2, QC-LDPC, AR4JA, TPC,...

> FRONT-END PROCESSING

CCSDS Processing

Data Processing Raw, CADU, VCDU, CFDP
 Protocol AOS, TM Space Data Link, SLE

Interfaces & Storage

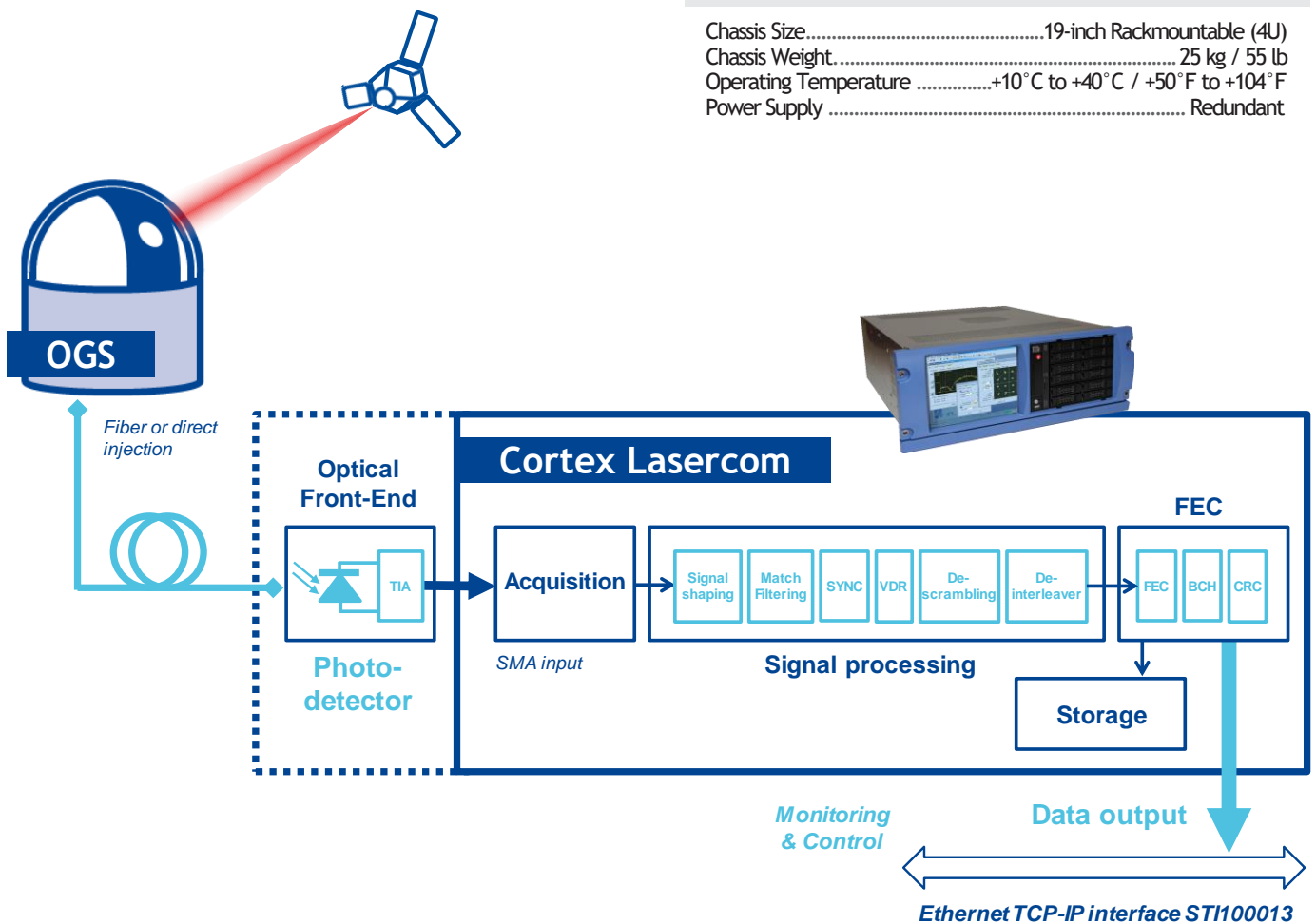
Real Time Data Output..10 GigE (Raw, Processed data) up to 4 Gbps
 Storage up to 20 TB
 Data Playback, FTP File Retrieval

> TOOLS

Measurements BER, Eb/NO, Frequency, Doppler, ROP (Received Optical Power)
 Signal Retrieval.....Automatic Ambiguity Resolution
 Monitoring & Control Remote, Local, Scheduler
 Signal Monitoring Spectrum Display

> ENVIRONMENT

Chassis Size19-inch Rackmountable (4U)
 Chassis Weight 25 kg / 55 lb
 Operating Temperature+10°C to +40°C / +50°F to +104°F
 Power Supply Redundant



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