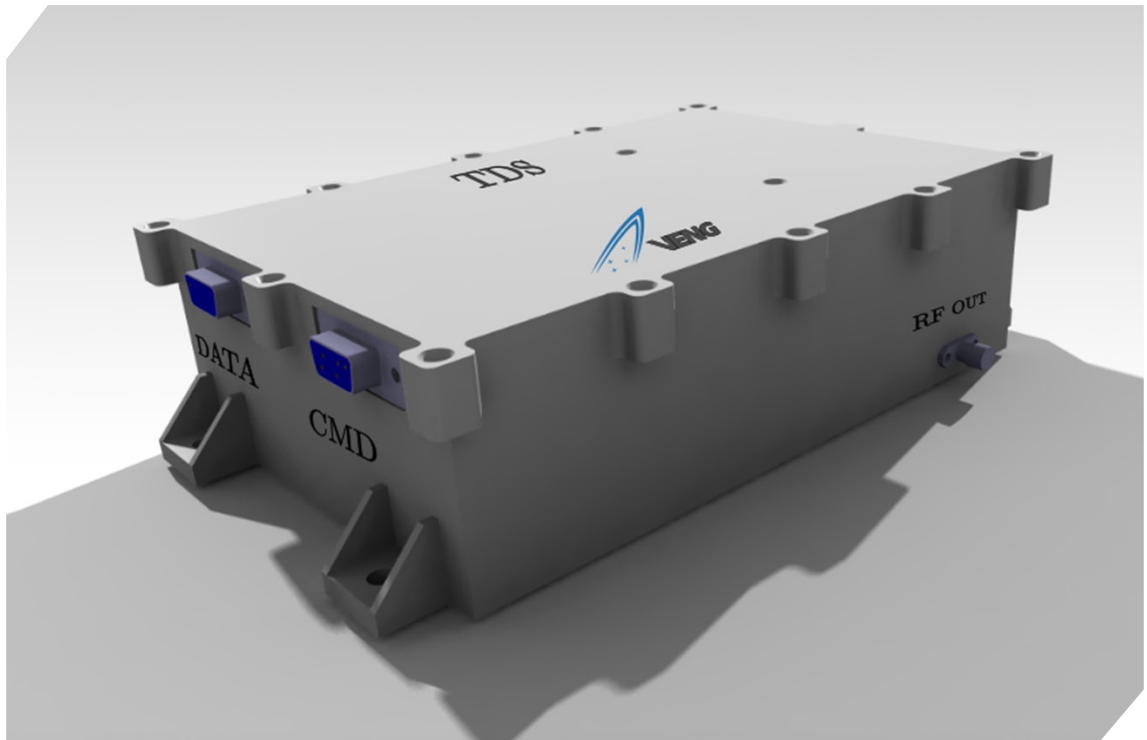




S-BAND DATA TRANSMITTER

S-Band Data Transmitter (TDS)



TDS is an **SDR based S-Band transmitter designed for launch vehicles**, engineered to meet **telemetry standards** requirements.

It supports three modulation schemes defined by the IRIG-106 telemetry standard: PCM/FM (Tier 0), SO-QPSK (Tier 1) and Multi-h CPM (Tier 2).

It also features CCSDS/IRIG randomization and convolutional (7, 1/2) channel coding, enhancing data integrity.

Its embedded Linux OS allows customization of the system to meet the specific mission requirements.



Main features

Frequency band

2200 to 2290 MHz
(lower S band)

Output power

Variable output power up to 40 dBm

Modulations(*)

PCM/FM (Tier 0) + SOQPSK-TG
(Tier 1) y ARTM CPM (Tier 2)

(*) Custom modulations can be implemented upon request

Bit rate

Up to 5 Mbps RS-422
Up to 15 Mbps Ethernet (TBC)

Data Interfaces

Sync RS-422, Ethernet

Channel coding

Convolutional (7, 1/2)

Control interface

Ethernet, Serial UART

Randomization methods

Synchronous CCSDS, IRIG PN15

Power consumption

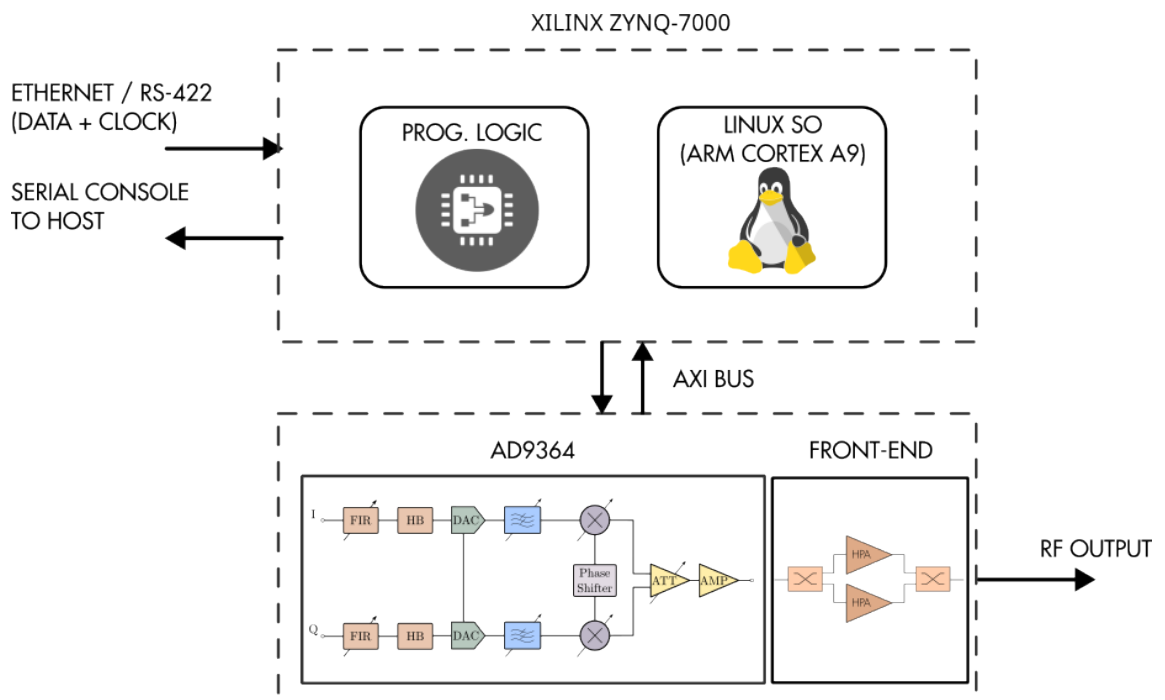
28 VDC, 1.7 A

Mass

1.3 kg (TBC)

Dimensions

Length: 190.5 mm
Width: 130 mm
Height: 53 mm



Modulator Highlights

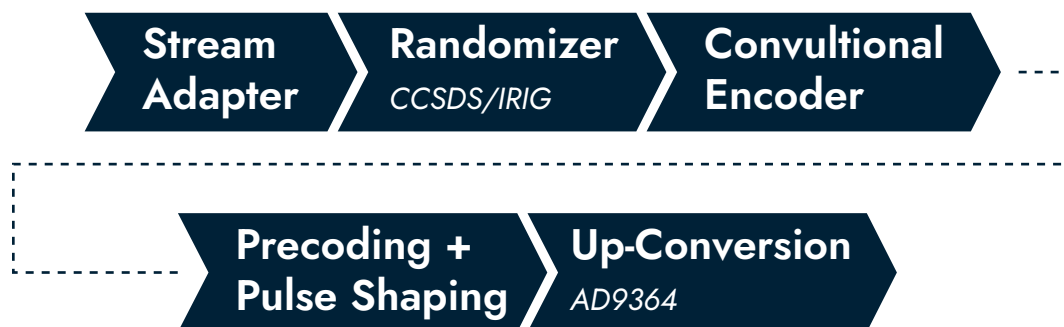
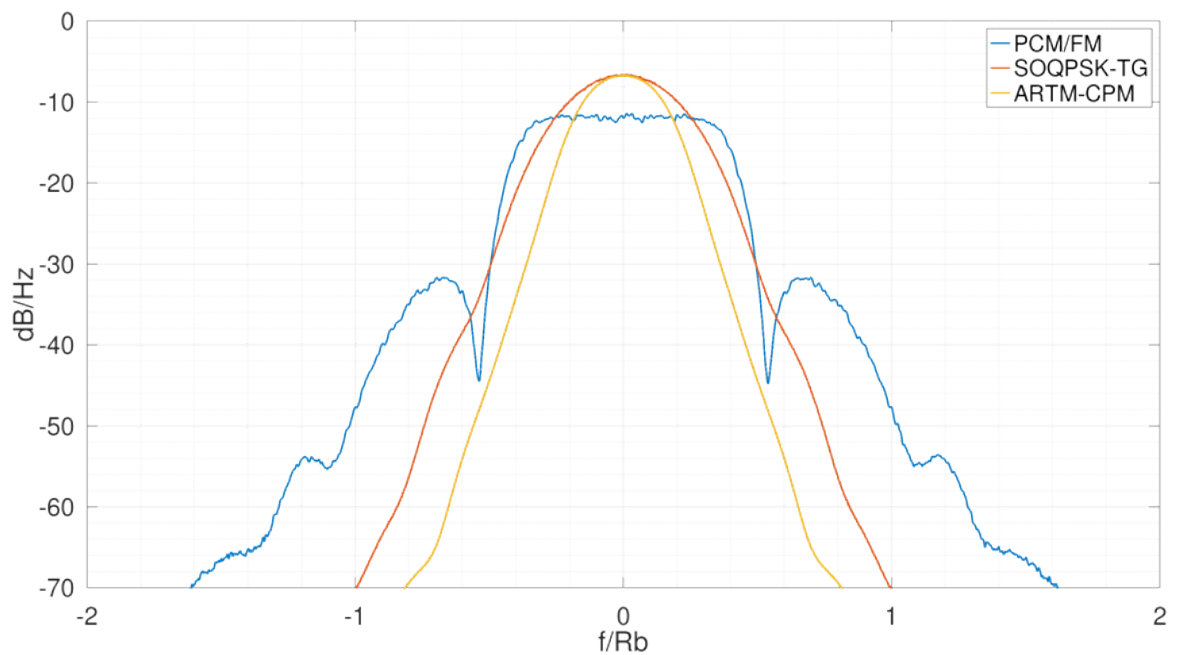
Zync - 7000 SoC + AD9364

Embedded Linux

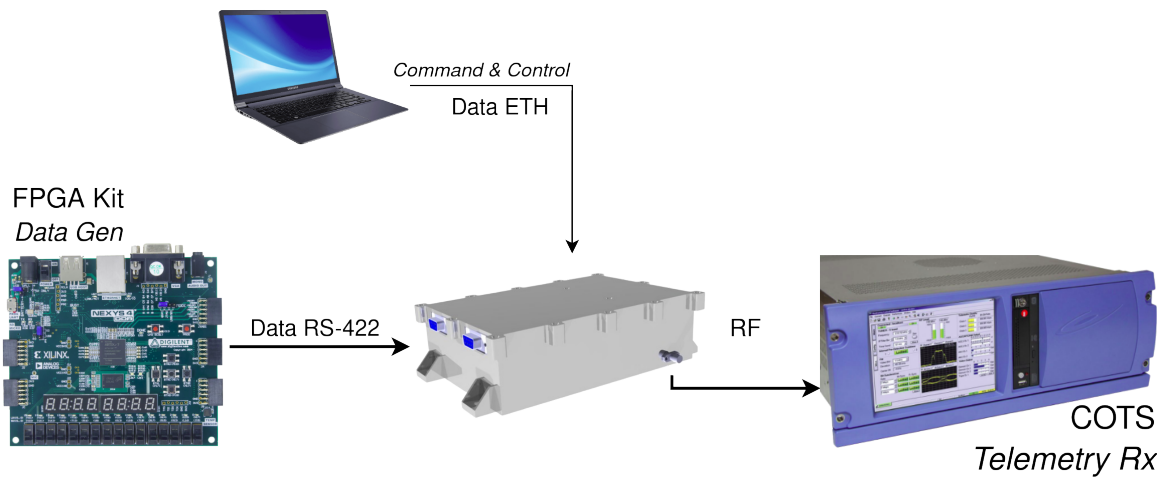
Custom modulations can be implemented upon request

Potential for Custom Software/HDL Integration

IRIG Compliant Command



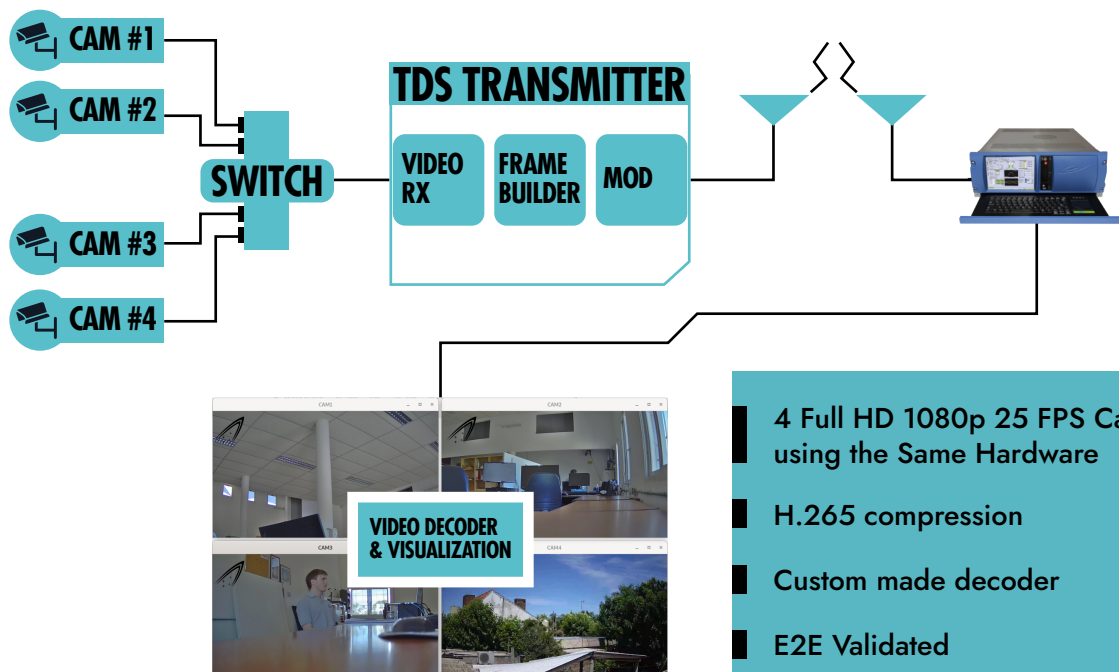
END to END Test



E2E validated using Safran Cortex RTR receiver and a custom data generator

All three IRIG Tier modulations tested

Digital Video System Application





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