

VILSA XDL



The **VILSA XDL** is a high-speed X-Band downlink transmitter designed for high-throughput payload data transmission in demanding space missions. Optimised for payload downlink applications, it combines high RF output power with DVB-S2X adaptive modulation to maximise the total volume of data transferred during each ground-station pass.

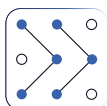
Built on the proven VILSA platform, the VILSA XDL delivers a fixed, flight-qualified solution while benefiting from shared architectural heritage and a clear evolution path toward future X-Band and multi-band communication products.

High-Throughput X-Band

DVB-S2X

Adaptive Modulation

VILSA Architecture



+
**High-Throughput X-band
Downlink Transmitter Up to
800 Mbps**

+
**DVB-S2X Support With
Modulation From QPSK to
256-APSK**

+
**Adaptive Modulation
Maximising Data Per
Ground-Station Pass**

anywaves.com

+
**Configurable X-Band RF
Output Power From +28 to
+38 dBm**

+
**X-Band Downlink Transmitter
Based on Proven VILSA
architecture**

+
**Optional Deep-Space Filter
Compatibility**

ANYWAVES

Benefits



Technical Information

General

System on Chip (SoC)	Zynq UltraScale+ ZU9/15EG
Weight (XDL / Deep Space Filter)	≈ 1 851 g ≈ 400 g
Dimensions (XDL / Deep Space Filter)	88 mm x 58 mm x 210 mm 180 mm x 32 mm x 120 mm (W x H x L)
High-speed Communication (OBC)	1x Gigabit Ethernet (For Payload Data)
Low-Speed Interface (OBC)	CAN, RS422 (For TM/TC)
DC Power Supply	+28 V (24.5 - 33.6 V Range)
DC Power Consumption	≤ 70 W (@ Max Output Power)
Connector Type	SMA, 50 Ω, Female
Radiation	18 krad TID 46 MeV·cm ² /mg (in SEE)
- Environment	> 5-year lifetime in LEO Operating between -20°C and +50°C

Transmitter

Transmit Power	Configurable Output Power : +28 → +38 dBm
Transmit Power Stability	± 0.5 dB Over The Lifetime
Frequency Band	X-Band (8.025 – 8.400 GHz)
Standard encoding	DVB-S2X
Symbol Rate	Configurable Rate (25/50/100/150/200/250 MSymbols/s)
Datarate	Up to 800 Mbits/s
Error Vector Magnitude (EVM)	≤ 8 %

Deep-Space Filter

Frequency Passband	X-Band (8.025 – 8.350 GHz)
Insertion Loss	< 2.0 dB with < 0.8 dB variation
Return Loss	> 15 dB
Main Rejection Band	8.4 - 8.45 GHz
Connector Type (IN & OUT)	SMA, 50 Ω, female