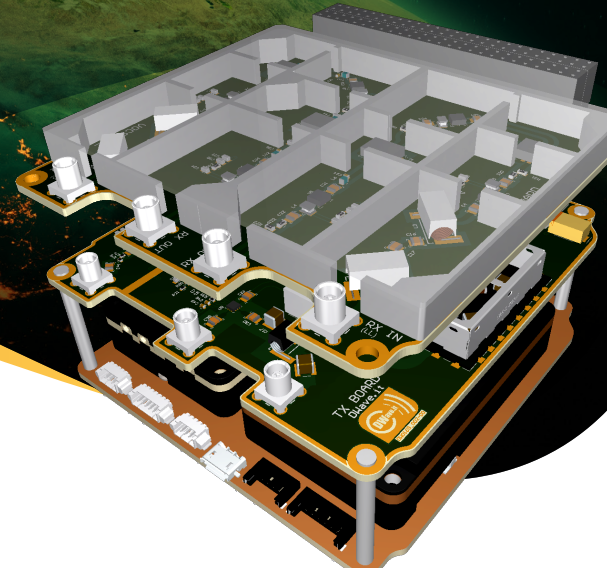




VHF VDES Half-Duplex

RF Front-End subsystem for CubeSats

VOCS platform is a VDES Half-Duplex RF Front-End subsystem for CubeSats (nanosat, microsat) with dedicated TX and RX Radio Front-end, for Half-Duplex operations.



Key features

Compliant with standard 1U CubeSat
Compatible with COTS processing boards (e.g. GomSpace and Alen Space)

RF capabilities

Reception of 3 VDE-SAT uplink channels
Reception of 2 ASM-SAT channels
Reception of 4 AIS channels
Transmission of up to 3 VDE-SAT down-link carriers
VDES Frequency: 156 – 162 MHz
Peak Power: 5 W

Digital Signal Processing

VDES capabilities
VDE-SAT Link IDs Uplink & Downlink extendable to AIS/ASM

Dimension

Total Dimensions: 90x96x65mm
Total Weight: 0.750Kg

VDES Payload

VDES payload obtained equipping Cubesat with COTS parts:

- VHF antenna
- VOCS platform
- Processing Board
- GNSS Receiver

Compatible HW parts (example) Processing Platforms

GOMSpace:

NanoDock SDR + NanoCom TR-600 module (AD9361 IC radio) + Z7000 module (Zynq-7000: CPU, DSP and mixed signal functions)

AlenSpace:

- TREVO, modular high performance SDR
- TOTEM, flight proven high performance SDR

Antenna

GOMSpace:

- NanoCom ANT-6F VHF and NanoUtil AR6 (antenna release system)

OXFORD:

- Yagi (TBC)

GNSS Receiver

GOMSpace:

- NanoSense GPS Kits
- NanoDock ADCS-6

Interfaces

MCX RF Connectors:

- N. 1 TX/RX antenna

PC104 Headers Connectors:

- H1/H2 (BUS) N.XY control signals

VDES SW/FW

VDES SW/FW available for compatible processing platforms

The VOCS platform has TX and RX capabilities, designed to manage the overall VDES frequency range, and allows the management of VDE-SAT Link IDs, as well as standard AIS & ASM vmessages as defined by ITU-R M.2092-1 (02/2022).



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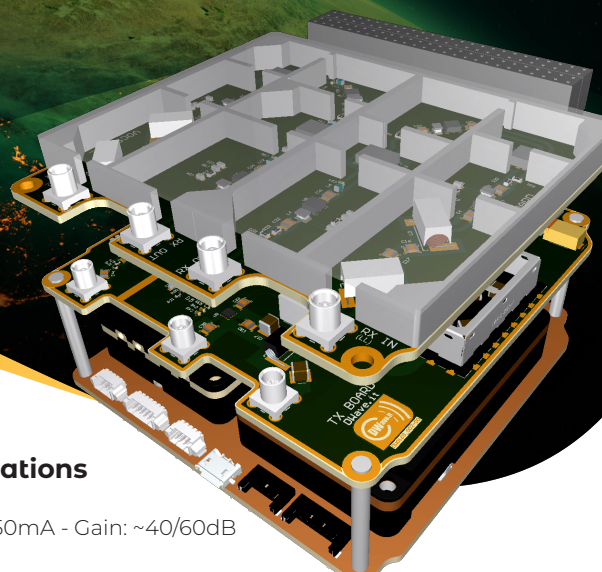


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VHF VDES Half-Duplex

RF Front-End subsystem for CubeSats



TX board specifications

-Voltage Supply for HPA, RF Switch and control logic:

V1: 16-28V, 240-600mA

V2: +5V, 200mA

-Peak Power: 5W

-Signal Output Power: 29dBm

-MCX RF Connectors

- Weight: 0.350Kg

- Fits Standard PC104

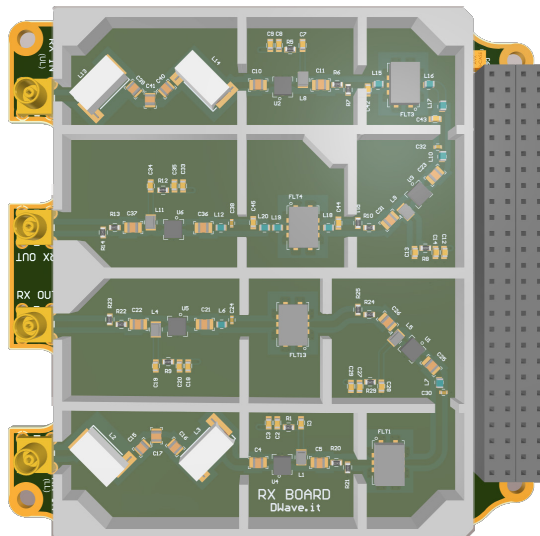
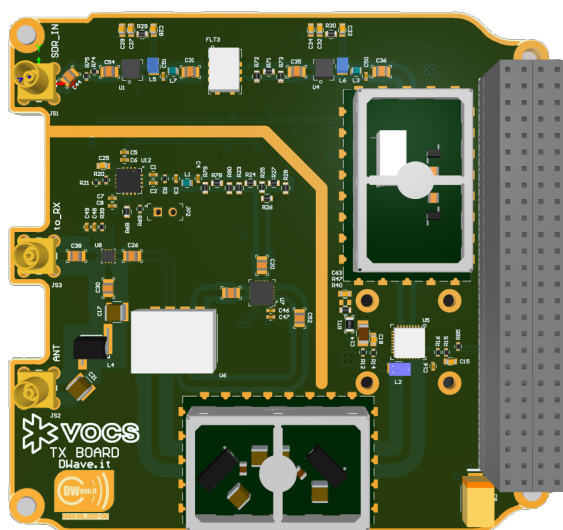
RX board specifications

- Voltage Supply: +5V, 150mA - Gain: ~40/60dB

- MCX RF Connectors

- Weight: 0.2Kg

- Fits Standard PC104



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