

PICOSATS

SPACE TECHNOLOGIES SOLUTIONS

RADIOSAT

KU - BAND TRANSPONDER



MINIATURIZED NON-REGENERATIVE TRANSPONDER
DESIGNED FOR CUBESAT AND SMALL SATELLITES FOR LEO
AND GEO APPLICATIONS

OVERVIEW

A miniaturized non regenerative **bent-pipe** transponder designed for CubeSat and Small Satellites for **LEO** and **GEO** applications. With a volume **<1 U** and a mass **<1 kg**, the transponder operates in **Ku-band** and it is characterized by **high performances** and **low power consumption**.

The transponder analog **bandwidth can be customized from 400 kHz to 500 MHz**. The receiver and transmitter can be tuned independently and the **gain can be set in 30 dB** range as fixed (**FGM**) or adaptive with automatic gain control mode (**AGC**). The transponder offers a versatile **CW beacon** mode as an option.

APPLICATIONS

- LEO small satellites services
- GEO satellites services



KEY FEATURES

FREQUENCIES

- Downlink: 10.7 – 12.75 GHz
- Uplink (dual selectable bands) :
 - 12.75 – 13.25 GHz
 - 13.75 – 14.8 GHz

PERFORMANCE

- Customizable bandwidth: from 400 kHz to 200 MHz (30 MHz default)
- RF output power: up to 5 W
- Receiver noise figure: 3 dB

INTERFACES

- 2.92 mm RF connectors
- Space qualified data and power connectors
- Transponder telemetry and control over RS422
- Debug and FW update over RS485

WORK ENVIRONMENT and TESTING

- Operating temperature range: -20 °C to +70 °C
- Non-operating temperature range: -30 °C to +90 °C
- Vibration and TVAC qualified by ECSS-E-ST-10-03C

POWER SUPPLY

- Power consumption: < 40 W
- Input supply: from 12 V to 24 V

ACCOMODATION

- Mass: < 1 kg
- Volume: 93.5 x 114.2 x 62.1 mm

ADDITIONAL FEATURES

- Fixed Gain Mode (FGM) and Automatic Gain Control mode (AGC) available
 - In-Orbit firmware updating
 - Optional CW beacon mode
-

