
S-band Programmable Downconverter

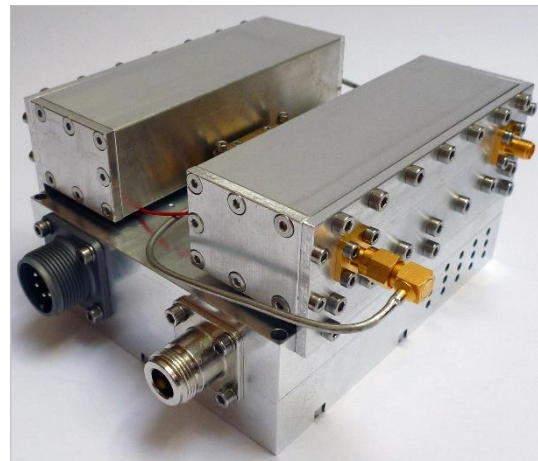
DCP-S is a high-rejection frequency programmable downconverter which translates the S-band satellite frequency range (2.2 – 2.3 GHz) to a fixed IF intermediate frequency (typ. 140 MHz). It has a compact size, low weight, excellent RF performance and is intended to be mounted at the feed point of the ground station parabolic reflector antenna. Optionally, it includes two high-rejection band-pass filters to suppress the RF interference from the ground communications systems (DVB-T, GSM, UMTS, LTE) and two ultra low-noise LNAs. Transferring the VHF signals to the control room, RF cabinet or the communication utility, instead of the S-band signals, enables a higher signal-to-noise ratio in the RF receiver chain and thus a higher quality and reliability of the space-to-Earth ground station operations.

SPECIFICATIONS:

- RF input frequency range: 2.2 – 2.3 GHz *
- Fixed IF output frequency: 140 MHz *
- Conversion gain: 33 dB typ. *
- Ultra low phase noise: -90 dBc/Hz @ 10 kHz typ.
- Low noise figure: 12 dB typ.
- No frequency inversion
- High image rejection: 60 dB typ. *
- Internal TCXO or OCXO frequency reference
- Rugged and reliable
- RF input connector (S-band): SMA-F *
- RF output connector (140MHz): N-F *
- Input DC voltage: 15 V
- ASCII-based programmable commands (USB)
* Custom options possible

Options:

- S-band LNA: $G \geq 16$ dB, NF < 0.45 dB (typ.)
- High-rejection band-pass filters

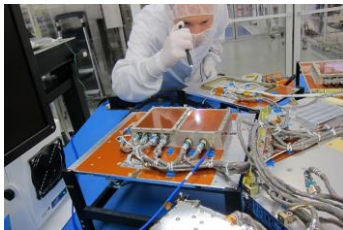


APPLICATIONS:

- a. LEO AND GEO TRACKING GROUND STATIONS
- b. S-BAND RECEIVING STATIONS
- c. WEATHER SATELLITE DIRECT READOUT OPERATIONS
- d. TACTICAL/MILITARY INSTALLATIONS

Company's profile:

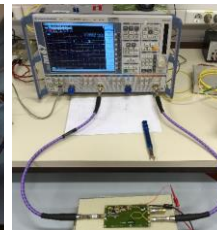
ELEP Electronics is a small company active in the field of advanced radio communication technologies. Its strength is in an innovative R&D, proven expertise in the RF/microwave/millimeter-wave engineering and high-performance hardware manufacturing. We specialize in the custom developments from DC to 1+ THz. ELEP had actively participated in the first Slovenian microsatellite development (NEMO-HD @SPACE-SI, launched in 2020). In addition, ELEP designed and manufactured a X-band high-speed data downlink transmitter payload for the NEMO-HD spacecraft - TRL9 achieved in 2021. Company's current focus are ground-segment SATCOM technologies and on-board spacecraft communication payloads. ELEP released a new world-class product: X-band data downlink transmitter payload for the micro- and nano-satellites with the data rates up to 200 Mbps. For the low Earth orbit (LEO) ground stations ELEP Electronics designed and manufactured a state-of-the-art auto-track dual-band feed (S-band: TX/RX, X-band: simultaneous RHCP/LHCP RX).



NEMO-HD microsatellite integration and testing ©SPACE-SI 2016



X-band transmitter TVAC testing

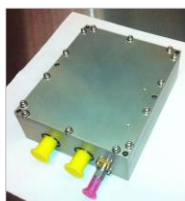


RFµwave evaluation

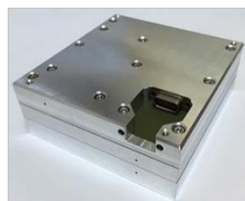


X-band transmitter payload final testing

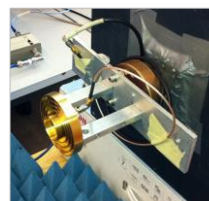
ELEP Electronics dedicated R&D for the SATCOM and aerospace market resulted in various products:



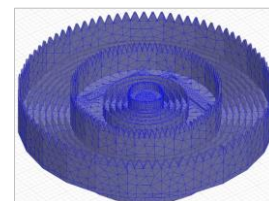
Microsatellite X-band transmitter payload (TRL9)



200Mbit/s nanosatellite X-band transmitter payload



Antennas, parabolic dish feeds & subsystems



Advanced design and simulation of electromagnetic structures