XLink is an advanced transceiver system (Software Defined Radio - SDR) for X band communication links of small satellites in LEO environment. The compact 0.3U housing fit for 1U CubeSat as well as for larger satellites. The radio interface and protocol are developed according to standard CCSDS protocols. Downlink data rates with net payload rates of 25 Mbps+ are possible. Based on the general concept, even higher data rates of up to 100 Mbps may be feasible. Adaptive modulation and coding schemes (AMC) are applicable to maximize data throughput. The satellite receiver (uplink) used for tele-command purposes of the satellites is designed for BPSK with BCH coding and data rate of at least 64 kbps. Alternative X band or S band uplink receiver frequencies are usable. A special feature of the XLink transceiver is the optional application of dual polarized antenna elements which could be used for MIMO (multiple input multiple output) signal processing to enable a higher radio channel capacity and/or redundancy.

Key Specifications

- X Band Tx Operation: 8.025-8.400 GHz
- X Band Rx Operation: 7.145-7.250 GHz
- S band Rx Operation: 2.025-2.110 GHz
  Operational Mode: FDD/ Full duplex/ Half duplex
- Data Rate Sat2Ground: 25 Mbps+
- Data Rate Ground2Sat: 64 kbps+
- Linear RF Output Power: Up to +30 dBm (2x +27 dBm)
- Automatic Doppler Shift compensation in RX: Up to 200 kHz
- Low Power Consumption: Up to 15W (Rx + Tx) 3.5W (Rx-S) 4.5W (Rx-X)
- DC Supply Voltage: 8-18 V
- Ultra Small Volume: < 0.2U
- Low Mass: < 200 grams
- Technology Readiness Level (TRL): 6/7