SWIFT™-XTS

High Throughput X-band Downlink with S-band Transceiver

TETHERS UNLIMITED

Transformative Technologies for Space, Sea, Earth, & Air

SWIFT-XTS is a re-programmable software defined radio that combines a frequency agile S-band transceiver with a wideband X-band transmitter.

Capabilities

SWIFT-XTS provides small satellites with a high-throughput downlink in X-band and a robust S-band transceiver in a compact package. The waveform and coding agility of the software defined radio enables a wide range of link margins to suit multiple missions and multiple mission profiles.

- >10W X-band Tx w/ >100 MHz bandwidth
- 7.5 to 12 GHz X-band Tx frequency coverage
- 1W S-band Tx w/ 10 MHz bandwidth
- 2-2.5GHz S-band Tx frequency coverage
- 1.5-2.5GHz Rx frequency coverage w/ 10 MHz bandwidth
- Arbitrary waveform/modulation/coding
- 100% on-orbit re-programmable with fail-safe boot modes

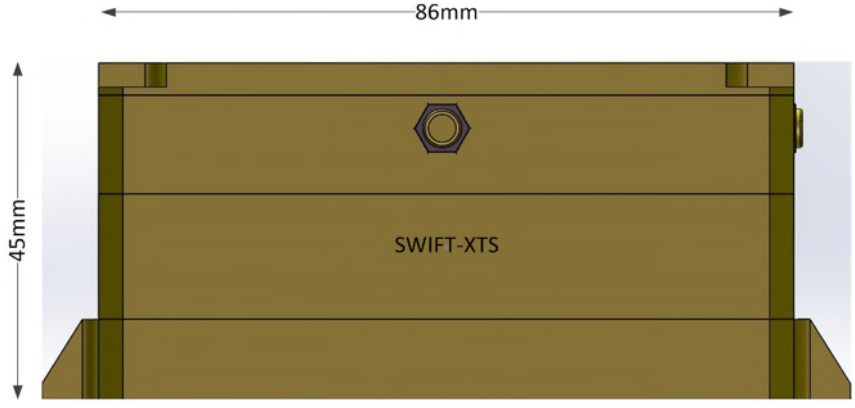
High-order modulation schemes such {8,16A,32A}PSK combined with >100 MHz instantaneous bandwidth and high-efficiency puncture and turbo codes enable real data rates in excess of 300 Mbps.

Specifications

- >1 year LEO mission design life
- ☐86 x 45mm (0.375U)
- 500 grams (TBR)
- Flexible mounting options
  - Flanges for deck mounting
  - Ears for CubeSat rail mounting
- 6-36V unregulated DC
  - Integrated latch-up/fault detection and protection
- 1.4W base power consumption incremental by mode:
  - +1.8W Single S-band receiver
  - +3.4W Dual S-band receiver
  - +5.5W S-band transmitter
  - +35W X-band transmitter (TBR)
- Flexible interface options, including separate or multiplexed command and data interfaces

Status

- Hardware and software platform and S-band components already matured to TRL-5
- Engineering models available Q315
- Roadmap includes baseband components that will enable approx. 500 MHz instantaneous bandwidth with >1 Gbps real data rates



Thermal Interface

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