Flexible High-Performance L- and S-Band Communications

Capabilities
- ≈2W max. S-band Tx w/ ≈40 MHz max. bandwidth
- 1.7-2.7 GHz Tx frequency coverage
- Independent receivers w/ ≈7 MHz typ. bandwidth
- 1.5-3.5 GHz Rx frequency coverage in ≈100 MHz chunks
- ≈0.75 dB typ. receiver noise figure
- Arbitrary waveform/modulation/coding
- Typical LEO max.: 5 Mbps up/20 Mbps down
- 100% re-programmable w/ fail-safe boot modes
- Optional diplexer for full-duplex L-/S-band ops

Specifications
- > 3 year LEO mission design life
- 86 x 86 x 25-35mm (0.25U) (excl. diplexer)
- ≈300 grams (excluding diplexer)
- 6-36V unregulated DC
- Pre-qualified to NASA GEVS shock/vibe
- Pre-qualified to -40 to +60°C
- Scalable power consumption
  - 3.0W active standby
  - 6.5W single receive
  - 12W transmit only
  - 15W transmit and single receive

Network Compatibility
Optional AFSCN-specific firmware interoperable with all non-deprecated modes in ICD-0502E. In addition to AM/FSK, direct carrier PSK uplinks are supported giving the SWIFT-SLX the ability to interoperate with both traditional and newer commercial ground stations.
- NASA’s NEN, TDRS (SN), DSN
- Verified w/ RT Logic T400XR, Cortex T70, and Amergint satTRAC
- Simultaneous SGLS and USB uplink reception
- Interface compatible with KI-55 and GNOME Type-1 encryption module
- Onboard commercial-grade AES-256/GCM “full-rate” encryption available, including compatibility with GYPHON personalities of KIV-7MS

Flight Units Available Now!

Tethers Unlimited, Inc.
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Flexible RF Connectivity

<table>
<thead>
<tr>
<th>Qty</th>
<th>Freq. Range</th>
<th>Bandwidth</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tx</td>
<td>2</td>
<td>1.5-2.5 GHz</td>
<td>≈40 max. MHz Inst.</td>
</tr>
<tr>
<td>Rx</td>
<td>4</td>
<td>1.0-4.0 GHz</td>
<td>≈100 MHz Tuning ≈7 MHz Inst.</td>
</tr>
</tbody>
</table>

This parallel RF connectivity can be leveraged in multiple ways to create a variety of half- and full-duplex L- and S-band communication systems. If you don’t see what you need, just ask! There are too many options to list here!

Typical Use | Band | Frequency Range |
-------------|------|-----------------|
Uplink       | L-band Uplink | 1755 to 1850 MHz |
Uplink / Downlink | Mobile Satellite | 1930 to 2025 MHz |
Uplink       | USB S-band    | 2025 to 2110 MHz |
Downlink     | USB S-band    | 2200 to 2300 MHz |
Uplink / Downlink | ISM S-band     | 2400 to 2483 MHz |

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