

# SWIFT<sup>®</sup>-XTS

Flexible S/X Communications Solutions for Space Missions

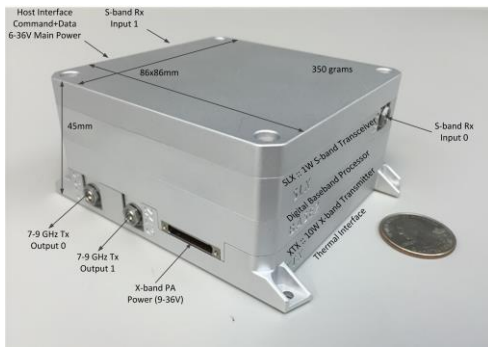


Transformative Technologies  
for Space, Sea, Earth, & Air

SWIFT-XTS provides unprecedented communications agility and runtime flexibility for missions using CCSDS protocols with the NEN, DSN, TDRS, and commercial ground stations operating coherently in S- and/or X-bands.

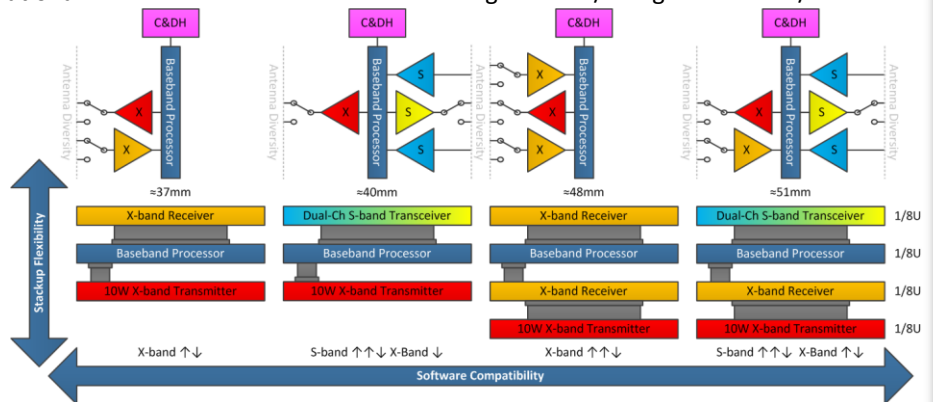
## Hardware Capabilities

- Phase-coherent, full-duplex S/S, S/X, X/X communications
- Efficiently scalable X-band Tx power (1-7W or 2-12W) for optimizing throughput vs. power consumption
- Continuously adjustable X-band Rx bandwidth for optimizing throughput vs. range
- MIMO Tx and Rx antenna connectivity for attitude diversity and ADCS error recovery
- Runtime configurable and non-volatile profile-based CCSDS TM and TC link parameters (SWIFT-LINK)
  - Mod: BPSK/OQPSK/8PSK w/ cont. adj. symbol rates
  - FEC: LDPC/BCH/Reed-Solomon/Convolutional



## Interface Capabilities

- Flexible digital interface options, including separate command and data ports:
  - RS-422: Dual async. serial or clock+data
  - SpaceWire: Dual up to 200 Mbps each
  - Ethernet: 10/100/1000 Mbit (IP/TCP/UDP)
  - CMOS/LVDS: Custom async./sync. serial protocols
  - GPIO: discrete on/off, receive interrupts, hard reset
- AES-256 crypto offload w/ multiple key indexing
- Integrated CCSDS TM and TC framing w/ deep store-and-forward buffers, automatic frame sizing, and padding
- Automated link management w/ integrated health/status



Integrated VSRS™ radiation shielding available!

	S-band Tx (1x)	S-Band Rx (x2)	X-band Tx (1x)	X-band Rx (1x or 2x)
<b>Power/Sensitivity</b>	2W	<1.5dB NF	1x PA: 1-7W 2x PA: 2-12W	<2.5dB NF
<b>Gain Control Range</b>	-30 to 0 dB	>90dB AGC	-30 to +6 dB	>90dB AGC
<b>Dynamic Range</b>	>60dBc harmonic suppression	>66dBc SFDR	>60dBc harmonic suppression	>70dBc SFDR
<b>Analog Bandwidth</b>	Adj.: 1 to 10 MHz	Fixed: Up to 30 MHz/ea	Fixed: 10 to >100 MHz	Adj.: 1 to >100 MHz
<b>Frequency</b>	1700-2700 MHz	1000-3000 MHz	7000-9000 MHz	6000-12000 MHz
<b>Frequency Stability</b>	0.1ppm initial calibration, ±2ppm/yr w/o conditioning (optional 1PPS and/or 10MHz conditioning inputs available)			
<b>Input Power</b>	2.4W base input power, incremented by Tx and Rx modes (1.4W base input option available)			
	+6W	1x Rx: +2.5W 2x Rx: +4.5W	1x PA: +10-35W 2x PA: +20-70W	+5.5W/ea
<b>Shock/Vibration</b>	Pre-qualified to NASA GEVS levels			
<b>Temperature</b>	Pre-qualified to -40 to +85°C			

