

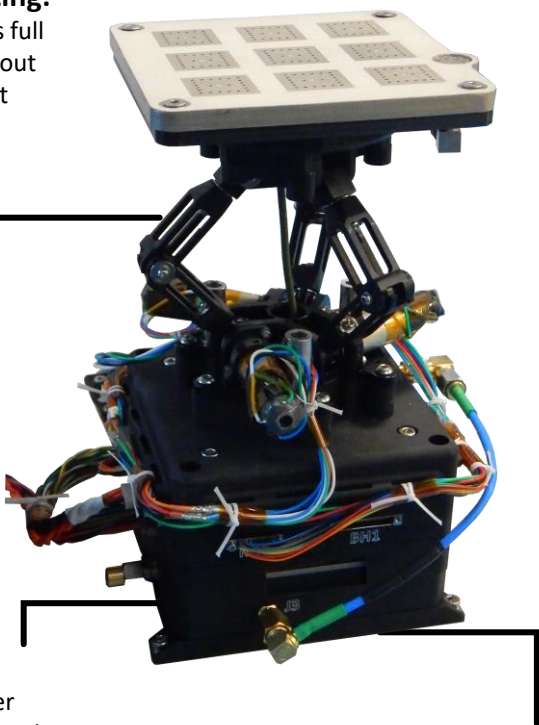
TIGHTBEAM™ Terminal

Fully-Integrated Radio, Gimbal and Antenna Solution

Description

The TIGHTBEAM Terminal integrates TUI's high-performance Software Defined Radios with a compact, high-precision gimbal mechanism and an antenna to provide a turnkey solution for steered high-gain communications. With a range of options for frequencies, the TIGHTBEAM Terminal can help you close both your link budget and your cost budget for demanding missions.

**Twist-Free
Cable Routing:**
Design allows full
rotation without
inducing twist



Low SWaP:
-115 mm diameter
-70 mm stowed height
- 1.2 kg mass
- 6 W standby

Flight Proven Hardware:
Gimbal and radio platforms on orbit

Why TIGHTBEAM?



Near Hemispherical Pointing

More than just pan/tilt and Singularity free $\pm 165^\circ$



Increased Packaging Efficiency

Integrated design reduces radio/antenna footprint



Fully Integrated Solution

Radio and gimbal in one



Improve Link Budgets

Tracking allows radio to operate in center of beam

Radio Transmit (Tx) – SWIFT-XTX	Tx Specification
Center Frequency	8 GHz to 8.5 GHz (XTX)
Large Signal Bandwidth	Up to 50 MHz
Data Throughput	Up to 100 Mbps (max 50 Mbps with HDLC framing)
Modulation	BPSK, QPSK, OQPSK, 8PSK, 16APSK, SGLS, USB
Radio Output Power	+33 dBm
Effective Isotropic Radiated Power (EIRP)	45dBm (with antenna as shown)

Radio Transmit (Tx) – Raven	Tx Specification
Center Frequency	1.5 GHz to 18 GHz (antenna dependent)
Large Signal Bandwidth	Up to 200 MHz
Throughput	Up to 166 MSym/s per channel
Data Throughput	Up to 1 Gbps per channel
Modulation	BPSK, QPSK, OQPSK, 8PSK, 16APSK, 32APSK, DVB-S2X, SGLS, USB
RF Output Power	30 dBm
Effective Isotropic Radiated Power (EIRP)	45 dBm (with antenna as shown)

Hardware	Specification – SWIFT-XTX	Specification - RAVEN
Housing		
Dimensions	(L) 105 x (W) 100 x (H) 122-165 mm (stowed)	(L) 150 x (W) 100 x (H) 130-175 mm (stowed)
Mass	1200 g	< 2 kg
Interfaces		
Ethernet	-	2x GbE Ethernet
RS-422	2x Full duplex	2x Full duplex, up to 20 Mbps
LVDS	2x pairs	5x pairs, up to 500 Mbps
Power		
Input Voltage	9-34.6 VDC	22-34.6 VDC
Operating	43 W Max	65 W Max (TBD)
Standby	5.5 W	15 W (TBD)

Gimbal	Specification
Pointing Precision	< 1 deg
Workspace	±165 deg
Slew Rate	30 deg/sec
Radiation	15 krad

Gimbal	Environmental
Thermal Environment	-30°C to 60°C
Radiation	15 krad
Vibration	7.1 Grms
Power	7 W Operational; 4 W Standby