

1.2m Multi Orbit Quick Deploy Antenna System

Overview

The Global Invacom unique low SwaP-C multi orbit antenna system uses an XY motorised system. Small, light, quick deploy system with no backlash and integrated cable raceway in a single mechanical IP67 housing. This ensures orthogonality and repeatable operation at all angles.

A quadpod pedestal for stability with built in ACU offers multiple levels of operation including auto-acquire, inclined orbit tracking, program track with closed loop signal tracking, along with search algorithms to auto calibrate.

Build the antenna, apply power, automated network connect in less than 15 minutes.

Axis symmetric carbon fibre reflector integrated Global Invacom transceivers (Ku and Ka band) as well as offering high power BUC integration. Built to be compliant with MIL-STD/STANAG specifications.



Product Features

- Quick deploy modular design with twist and lock connectivity, with easy assembly even in extreme weather, < 10 minutes to assemble.
- Compatible with the LEO, MEO, HEO & GEO constellations.
- Axis symmetric segmented carbon fibre reflector with RF Kits for multi band operation.
- X, Ku and Ka Band RF kits with either transceivers or discrete RF components.
- No keyhole with motorised X/Y mount operates with 50kg payload.
- Harmonic drive design with no backlash.
- Auto-acquire with built auto calibration (built in IMU) and integrated signal tracking & pointing, on satellite <15 minutes (including antenna assembly).
- Integrated brake and manual point in case of power failure.
- OpenAMIP control interface and standard L/S band IF interface.
- Integrated transceiver Ku and Ka band. Discrete RF at X band.
- Compliant to MIL-STD-461G; MIL-STD-810H; MIL-STD 188-164C (STANAG 4484).
- Optional integrated modem.
- Optional RF over fibre and/or IDU controller to allow remote operation.
- Optional digital RF interface with DIFI.
- Optional advanced PNT for operation in contested environments.

Specifications (Typical Performance)

RF						
Frequency Band	X Band		Ku Band		Ka Band	
	Rx	Tx	Rx	Tx	Rx	Tx
Operating Frequency, GHz	7.25 – 7.75	7.9 – 8.4	10.70 – 12.75	13.75 – 14.50	17.7 – 21.2	27.5 – 31
Polarisation	Circular		Linear		Circular	
Antenna Gain, dBi	37.4	37.8	41.2	42.3	46.1	49.1
3dB Beamwidth,	2.3 °	2.1°	1.49°	1.25°	0.85°	0.58°
G/T, dB/K (20° EI)	18.4 (LNB 0.7dB NF)		21.4 (LNB 0.7dB NF)		23.6 (XRJ TxRx)	
EIRP, dBW (P_{lin})	57.8 (200W P_{sat} BUC)		59.3 (100W P_{sat} BUC)		62.4 (XRJ, 40W)	
Antenna Cross Pol Isolation, dB	25dB (on Axis)		30dB (on Axis)		25dB (On Axis)	
Antenna Sidelobe Envelope	ITU 580-6		ITU 580-6		ITU 580-6	
VSWR			1.3:1 Max		TX 1.3:1MAX, Rx 1.5:1 MAX	

Mechanical

Antenna Type & Material	Dual Reflector, Central Fed, Carbon Fibre
Reflector Segments	6 +1
Motorisation	2 axis, X-over-Y Mount, optional Polarisation
Travel Ranges	360°Az, 180°EI (90°Polariser)
Antenna Speed/Acceleration	20°/sec; 10°/sec/sec
Controller	Global Invacom APS700/900 Controller
Satellite Acquisition	RSSI via built in Selective Power Meter or OpenAMIP, Optional DVB-S2X Receiver
Cases	4 (Reflector & Feeds, Pedestal Base & Electronics, Pedestal Legs, XY Motorisation)

Environmental

Wind Speed	48 km/h, gusting to 72km/h (operational, anchored), 112km/h (survival, anchored, fixed skyward)
Temperature	- 40°C to +60°C
Relative Humidity	100%, Non-Condensing
Atmosphere	IP67, Salt Spray (ASTM B-117)
Solar Radiation	360 BTU/h/ft2 (1000 Kcal/h/m²)
Shock and Vibration	As encountered During Shipping and Handling

Description	Weight / Size
Case 1-Pedestal Legs	37kg / 110x50x45cm
Case 2-Pedestal Base with ACU	29.2kg / 66x42x43cm
Case 3 – XY Motor System	43.3kg / 80x60x44cm
Case 4 Antenna Reflector with XCVR	28kg / 80x60-x54cm

