

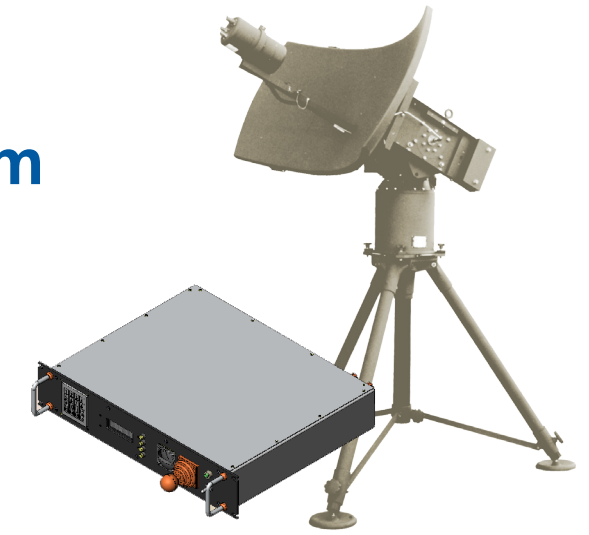


Specification	TAS-5000-L	TTAS-5000-L	TAS-5000-S	TTAS-5000-S	TAS-5000-CL	TTAS-5000-CL	TAS-5000-CH	TTAS-5000-CH	TAS-5000-150-40	TTAS-5000-150-40
Mode	Receive	Receive/Transmit (fixed diplexer)	Receive	Receive/Transmit (fixed diplexer)	Receive	Receive/Transmit (fixed diplexer)	Receive	Receive/Transmit (fixed diplexer)	Receive	Receive/Transmit (fixed diplexer)
Frequency	L	L	S	S	C low	C low	C high	C high	Ku	Ku
Gain (dBi)	22	22	24	24	30	30	32	32	39	39
Polarization	Linear	Linear	Linear	Linear	Linear	Linear	Linear	Linear	RHCP	RHCP
VSWR	2.0:1	2.0:1	2.0:1	2.0:1	2.0:1	2.0:1	2.0:1	2.0:1	2.0:1	2.0:1
Beam width (AZ/EL deg.)	10/20	10/20	9/18	9/18	3.6/7.2	3.6/7.2	3.6/7.2	3.6/7.2	1.6/1.6	1.6/1.6
Monopulse tracking	Yes (specify single or dual axis)	Yes (specify single or dual axis)	Yes (specify single or dual axis)	Yes (specify single or dual axis)	Yes (specify single or dual axis)	Yes (specify single or dual axis)	Yes (specify single or dual axis)	Yes (specify single or dual axis)	Yes, dual axis	Yes, dual axis
Tracking Method	Auto/Aero/Slave	Auto/Aero/Slave	Auto/Aero/Slave	Auto/Aero/Slave	Auto/Aero/Slave	Auto/Aero/Slave	Auto/Aero/Slave	Auto/Aero/Slave	Auto/Aero/Slave	Auto/Aero/Slave
Azimuth speed (deg./sec.)	20	20	20	20	20	20	20	20	20	20
Elevation speed (deg./sec.)	20 (-5 to +85)	20 (-5 to +85)	20 (-5 to +85)	20 (-5 to +85)	20 (-5 to +85)	20 (-5 to +85)	20 (-5 to +85)	20 (-5 to +85)	20 (-5 to +85)	20 (-5 to +85)
LNA noise figure Standard (dB max.)	2	2	2	2	3	3	3	3	4	4
LNA gain Standard (dB min.)	20	20	20	20	20	20	20	20	20	20
Optional Uplink Power Amplifiers										
Amplifier gain (dB)	N/A	30	N/A	30	N/A	30	N/A	30	N/A	30
Amplifier 1dB compression (watts)	N/A	5	N/A	5	N/A	20	N/A	20	N/A	15
Group delay (nS)	N/A	<5	N/A	<5	N/A	<5	N/A	<5	N/A	<5
IP3 (dB)	N/A	>50	N/A	>50	N/A	>50	N/A	>50	N/A	>50

* Auto-track is pseudo-monopulse tracking of the downlink RF signal.
 * Aero-track is tracking using the GPS location of the aircraft.
 * Slave-track is tracking slaved to another BMS tracking system.

Legend
L = 1710 - 1850 MHz
S = 2200 - 2500 MHz
CL = (low) 4400 - 5000 MHz
CH = (high) 5250 - 5850 MHz
Ku = 14.4 - 15.35 GHz

TAS-5000 Tracking Antenna System



Applications

- Military Aircraft/UAV Tracking
- Surveillance
- TC DL

Key Features

- Downlink Only or With Duplex Data Link
- RF Signal Strength (Monopulse) Tracking
- AeroTrac (GPS)
- Rugged
- 360° Azimuth Coverage
- Easily Transported
- Data With Optional Range Tone Board
- Optional Up-Link Transmitter
- Optional Dual Axis Tracking
- Optional Self-calibrating Feature

The TAS-5000 is a rugged and versatile pan and tilt pedestal that comes with different antenna options, and can transmit command and receive aircraft data. It provides continuous 360° azimuth coverage for tracking an aircraft transmitting live video and data via a microwave downlink. The pedestal is rated for continuous operation. The TAS-5000 is easily transported and may operate remotely.

Power is provided by a controller which can be either a 19" rack mounted BPC-600 or a GCU-600 weather proof receiver/controller enclosure assembly. Each controller provides front panel control and monitoring of the system and can manually point the antenna with a joystick or can automatically follow the RF signal using monopulse tracking. (Remote Control serial port and 400 meter fiber optic link are optional). Every antenna is shipped with Control-Point™ software application for PC control.

The TAS-5000 was developed to be transported in a HMMWV shelter. The pedestal is removable from the folding tripod. The main section of the antenna remains attached to the pedestal, while the two ears are removable for easy transport. The removal of a quick release pins folds the feed support into the remaining dish section for transport. Eye-bolts are provided for lifting, and a stow pin inhibits pedestal motion during transportation.

The system can be provided with a command up-link transmitter to transmit command data as well as receive aircraft data. The appropriate diplexer filtering is in the antenna feed.

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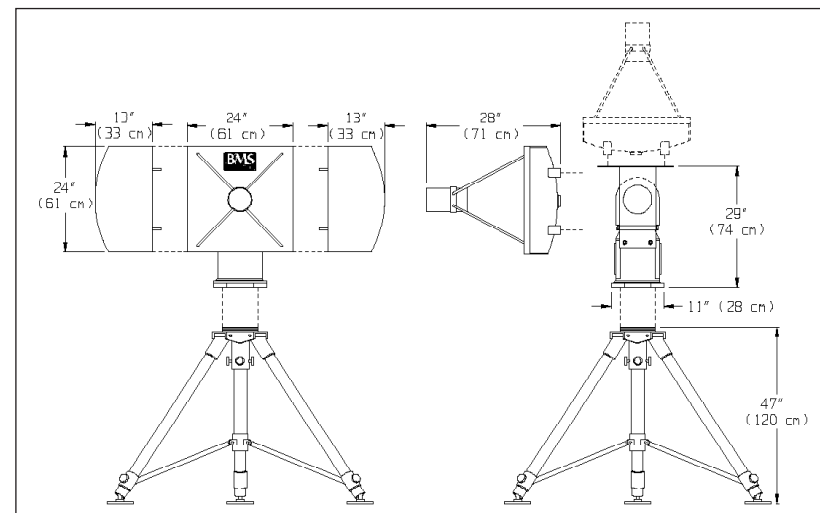
Specifications	
Antenna	Truncated Parabolic (1 piece or portable 3 piece) (others up to 6' dia. available)
Frequency	1.4-15.4 GHz (in bands)
Gain	30 dBi @ 4.8 GHz
AZ Beamwidth	3.6° @ 4.8 GHz
EL Beamwidth	7.2° @ 4.8 GHz
VSWR	≤ 1.5:1
Polarization	Vertical

Pedestal	
Azimuth Travel	360° Continuous Rotation
Azimuth Drive Motor	90W DC Servo Motor
Elevation Travel	-5° to +85°
Elevation Drive Motor	90W DC Servo Motor
Tracking Rate	Up to 20°/sec. AZ & EL
Servo Amplifier Type	PWM
Servo Amplifier Operation	4 Quadrant
Command Signal Input	0 to ± 10V
Signal Input Impedance	10 kΩ
Thermal Shut Down	Preset to +65°C
Overcurrent Protection	Internally Adjustable
Azimuth Encoder	Synchro Resolver
Azimuth Resolution	12 Bit, Binary
Azimuth Reporting Accuracy	± 0.1°
Elevation Encoder	Synchro Resolver
Elevation Reporting Accuracy	± 0.1°

Physical	
Operating Temperature	-30° to +60°C
Operating Wind Load	Up to 40 MPH
Power	Provided Through Controller (28VDC 300W Peak)
Size	Tripod Extends From 40-60" (See Outline Drawing)
Weight	Pedestal: 165 lbs (74.8 kg) Includes Uplink Transmitter, Dish, Feed, and Counterweights Tripod: 35 lbs (15.9 kg)

Environmental	
Temperature, Operating	-20°C to +50°C
Temperature, Non-Operating	-40°C to +71°C
Relative Humidity	100%, Condensing
Environment	Sand, Dust, and Salt Spray
Vibration and Shock	3g Peak, Normal Road Transport
Altitude, Operating	0 to 20,000 ft.
Altitude, Non-Operating	0 to 50,000 ft.
Wind loading, Operating	Up to 40 mph
Wind load, Non-Operating	Up to 120 mph

Options	
<ul style="list-style-type: none"> • Uplink Transmitter or Power Amplifier • Rack Mounted BPC-600 or Weatherproof GCU-600 Controller • Dual-Axis Tracking • Standard Paint O.D.; Desert Sand & White Optional • Re-usable Transit Cases • CIU-100 FO Interface With Tactical Fiber Reel • Dual Band Operation • Enhanced Control-Point™ Windows® application for controlling multiple downlinks and uplinks. • Self-calibrating module • Larger antennas (BMA-3/6, 4' and 6' diameters) 	





L, S, or C Model



3' Ku Model



Optional Tactical Fiber Optic Cable

	BPC-600	GCU-600																				
Controller Options	<p>BPC-600L (Local Controller): Provides the user with a keyboard, joystick (for manual control of clockwise, counter clockwise, and up down slewing), and front panel control (of azimuth and elevation position, mode of operation, and signal strength) on an LCD display for easy interface to steer a pedestal or to store/recall system setups. The BPC-600M (Master Controller) can remotely control and monitor all the functions of the BPC-600L from an identical front panel.</p> 	<p>Encased in a weatherproof enclosure, the GCU-600 consists of a pedestal controller and a BMS BMR120 receiver which slides into an opening in the control panel. A backlit LCD display shows antenna position and mode of operation. Power is supplied by the controller and the BMR120 receiver can be controlled through its own front panel controls or receive commands from the controller via the remote serial port. If the system is routed with a command uplink transmitter at the antenna, transmitter uplink commands are routed through the second serial port. A joystick allows manual control.</p> 																				
Modes of Operation	<table border="1"> <thead> <tr> <th>Manual</th> <th>The azimuth and elevation position of the pedestal are controlled by the joystick.</th> </tr> </thead> <tbody> <tr> <td>Goto</td> <td>Commands the pedestal to a specific azimuth and elevation position.</td> </tr> <tr> <td>Store</td> <td>Can store up to 16 preset memory locations for specific users defined</td> </tr> <tr> <td>Recall</td> <td>Recalls a previously stored configuration from memory. "Goto" must also be used to implement change.</td> </tr> <tr> <td>Aerotrac™</td> <td>Uses external GPS or other data from aircraft position to calculate pointing of angles for pedestal.</td> </tr> <tr> <td>Autotrac™</td> <td>Allows the pedestal to follow an RF signal using monopulse tracking.</td> </tr> </tbody> </table>	Manual	The azimuth and elevation position of the pedestal are controlled by the joystick.	Goto	Commands the pedestal to a specific azimuth and elevation position.	Store	Can store up to 16 preset memory locations for specific users defined	Recall	Recalls a previously stored configuration from memory. "Goto" must also be used to implement change.	Aerotrac™	Uses external GPS or other data from aircraft position to calculate pointing of angles for pedestal.	Autotrac™	Allows the pedestal to follow an RF signal using monopulse tracking.	<table border="1"> <thead> <tr> <th>Manual</th> <th>Front panel controls enable manual slewing using a joystick</th> </tr> </thead> <tbody> <tr> <td>Goto</td> <td>Commands the pedestal to a specific azimuth and/or elevation position commanded through the remote control serial port</td> </tr> <tr> <td>Autotrac™</td> <td>Allows the pedestal to follow an RF signal using monopulse tracking.</td> </tr> <tr> <td>Remote</td> <td>Complete control of the system is switched to a serial port, which can have a fiber optic interface for control over long distances</td> </tr> </tbody> </table>	Manual	Front panel controls enable manual slewing using a joystick	Goto	Commands the pedestal to a specific azimuth and/or elevation position commanded through the remote control serial port	Autotrac™	Allows the pedestal to follow an RF signal using monopulse tracking.	Remote	Complete control of the system is switched to a serial port, which can have a fiber optic interface for control over long distances
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Pedestal Resolution	Typically 1.4° for Potentiometer Sensor 0.1° for Synchro Resolver.	1° Shown on LCD Display 0.1° Reported on Serial Link																				
Power	Standard 85-250 VAC, 50-60 Hz <30W Typical Not Including Pedestal Power. Optional DC Available	85-260 VAC, 50-60 Hz 300W Peak, Including Pedestal																				
Size	5.25" x 19" x 17.5" (back plate to front plate 3 RU high 19" mount)	20.6" x 14.5" x 16.25" (52.3 x 36.8 x 41.3 cm)																				
Weight	15 lbs. (Approximate)	46 lbs (21 kg)																				
Operating Temperature	-10° to +50°C Operating Range (extended range available)	-20° to +50°C (-30° with optional display heater)																				
Humidity	Up to 95 % Non-Condensing	Up to 95 % Non-Condensing																				
Options	<ul style="list-style-type: none"> • DC Power • 400m Tactical Fiber Optic Cable on Cable Reels (40 lbs) • Command Uplink Transmitter (Installed in Pedestal) • Range Tone Board (Requires Uplink Transmitter) • Multiple Frequency Band Operation within 1.4-8.5 GHz • Aerotrac™ GPS Track 	<ul style="list-style-type: none"> • 400m Tactical Fiber Optic Cable on Cable Reels (40 lbs) • Command Uplink Transmitter (Installed in Pedestal) • Range Tone Board (Requires Uplink Transmitter) • Multiple Frequency Band Operation within 1.4-8.5 GHz 																				