

AvL TECHNOLOGIES

Model 2.4m 2020 SNG/Military Quad-Band Motorized Transportable FlyAway Antenna

Unique Features

Standard Rx/Tx Feed

Optional Rx/Tx Feeds

Military Standard

Polarization Adjustment

Standard Colorization

- 2.4m Segmented 9-piece Carbon Fiber Reflector
- Rugged/Heavy Duty Case-Based Positioner
- 15-Minute Setup; One-Button Auto-Acquisition
- 2-Port Ku-Band Precision (standard Cross-Pol comp.)
- 4-Port Ku-Band Precision (standard Cross-Pol comp.)
- 2- or 4-Port Ku-Band Mode-Match (enhanced Cross-Pol comp.)
- 2- or 4-Port C-Band CP
- 2- or 4-Port C-Band LP
- 2-Port C-Band Troposcatter
- 2-Port X-Band with optional Rx/Tx reject filter kit
- 2- or 4-Port Ka-Band (MIL or Commercial)
- MIL-STD-188-164A
- Motorized Rotation of Feed
- White, OD Green or Desert Tan (optional colors available)



Mechanical

Az/EI Drive	Motorized AvL Low Backlash Cable Drive System (Patent Pending)
Polarization Drive System	Motorized Rotation of Feed
Reflector Construction	2.4m Segmented 9-piece Carbon Fiber
Axis Travel	
Azimuth	±200°
Elevation (operational)	7° to 90° of reflector bore sight from calibrated inclinometer
Polarization	±95° Adjustable to within 1°
Az/EI Speed	
Slewing/Deploying (typical)	2°/second Az; 1°/second EI
Peaking (typical)	0.2°/second
Motors	24V DC variable speed, constant torque
Interfaces	
BUC Mounting	Feed boom or behind reflector (additional CFE case or optional case required)
RF	Std. 50 ohm Coax (2) at base, cover flange at feed Tx port
Electrical	30 ft. cable with connectors for controller
Manual/Emergency Drive	Hand crank for Az and EI, knob on pol axis
Configuration	
2020 Motorized Positioner	Four or five rugged, weather-resistant plastic cases 26 x 24 x 30 inches, 170 lbs. (66 x 61 x 76 cm, 77 kg)
Outriggers/Feed Boom/Ku or Ka Feed	44 x 44 x 18 inches, 150 lbs. (112 x 112 x 46 cm, 68 kg), includes Ku or Ka feed
Reflector Panels (2 cases)	44 x 44 x 18 inches, 150 lbs. each (112 x 112 x 46 cm, 68 kg each)
Additional Feeds	43 x 28 x 21 inches, 70 lbs. (109 x 71 x 53 cm, 32 kg) typical, dependent on feed options selected (optional)
Set-up Time	Less than 15 minutes

Environmental

Wind – Survival (anchored)	80 mph in zenith stowed position
Wind – Operational	
Without Anchoring	25 mph
With Anchoring	30 mph gusting to 45 mph
Pointing Loss	
Ku-band Rx, Operational winds	1.3 dB typical, 2.4 dB max
Ka-band Rx, Limited wind*	1.0 dB typical, 2 dB max, 20 mph gusting to 30 mph
*Active wind tracking required for Ka-band for higher wind	
Temperature:	
Operational	-22° to 125°F (-30° to 52°C)
Survival	-40° to 140°F (-40° to 60°C)

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RF/Electrical

Feed Type ▶	Std. 2-Port Precision Ku <i>DBS bands available upon request</i>		Opt. 2-Port C		Opt. 2-Port C - INSAT		Opt. 2-Port X (Military/WGS)		Opt. 2-Port Ka	
	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit
RF Parameter ▼										
Frequency Range (GHz)	10.95-12.75	13.75-14.5	3.625 - 4.20	5.85 - 6.425	4.50 - 4.80	6.725 - 7.025	7.25 - 7.75	7.9 - 8.4	20.2 - 21.2 (military) or 17.7 - 20.2 (commercial)	30.0 - 31.0 (military) or 27.5 - 30.0 (commercial)
Polarization Configuration	Orthogonal Linear, Optional Co-pol Linear		Linear or Circular Options				Circular RHCP or LHCP		Circular or Linear	
Gain (mid-band, dBi)	47.4	48.9	37.7	41.6	39.2	42.6	43.3	44.1	52.1	55.0
VSWR	1.30:1		1.30:1				1.30:1		1.30:1	
-3dB Beam width (mid-band)	0.7°	0.6°	2.2°	1.4°	1.9°	1.3°	1.2°	1.1°	0.4°	0.3°
Radiation Pattern Compliance	FCC 25.209, ITU-R S.580-6, IESS 208		FCC 25.209, ITU-R S.580-6, IESS 207		ITU-R S.580-6		MIL-STD-188-164A		FCC 25.209, MIL-STD-188-164A	
Antenna Noise Temp. (mid-band, 20° el)	61° K		49° K		48° K		59° K		104° K	
Power Handling Capability		500 watts per port		1000 watts per port		1000 watts per port		1000 watts per port		250 watts per port
G/T with LNB, Midband	26.5 dB/° K (with 50°K LNB)		19.5 dB/° K (with 20°K LNB)				22.7 dB/° K (with 55°K LNB)		29.0 dB/° K (with 100°K LNB)	
Axial Ratios Axial Ratio within Tracking Cone			2.3 dB (CP only)	1.3 dB (CP only)			1.21 dB (CP only)	2.0 dB (CP only)	1.5 dB (CP only)	1.0 dB (CP only)
Cross-Pol Isolation On-axis within pointing cone Within Pointing Cone Within Pointing Cone	35 dB 28 dB standard 25 dB MM option	35 dB 30 dB standard 35 dB MM option	35 dB / 30 dB	35 dB / 30 dB	35 dB / 30 dB	35 dB / 30 dB				
Feed Port Isolation – TX to RX (dB)	35	80 (includes filter)	65	105 (includes filter)	35	70	115 (includes filter)	115 (includes filter)	30	80 (includes filter)

Controller

Controller ▶	AvL AAQ
Features	AvL one button auto-acquisition of selected satellites, including peaking and optimization of cross pol. Internal movement detector and automatic stow. Optional hand-held control and separate power supply. Certified for auto-commissioning on most satellite services.
Size	Embedded ACU with separate 1 Rack Unit Controller Interface Panel (CIP) power supply with LCD and keypad. 250 W and 500 W (1.6m and larger antennas) versions available.
CIP Input Power	120/240 VAC 60/50 Hz, 6/3 A Max. Power consumption is antenna size dependent: During acquisition 150 W or 300 W is typical, ~ 50 W Idle.

Available Options, Upgrades & Services

- Standard feed is 2-Port Ku-Band Precision (standard Cross-Pol comp.); optional feeds include 4-Port Ku-Band Precision, 2- or 4-Port Ku-Band Mode Match (enhanced Cross-Pol comp.), 2- or 4-Port C-Band CP, 2- or 4-Port C-Band LP, 2-Port C-Band Troposcatter, 2- or 4-Port Ka-Band Commercial, 2- or 4-Port Ka-Band MIL (WGS) and 2-Port X-Band MIL (WGS) with optional Rx/Tx Reject Filter Kit
- BUC/HPA mounting
- Optional 75 ohm coax
- Waveguide interconnect options
- Beacon receiver – inclined orbit tracking – resolvers/upgrade
- Grounding options (lightning conductor)
- Anchoring kit options
- Custom logo on reflector face (1- or 2-color; per AvL Logo Policy)
- Controller options – see above
- Spare parts kit

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