

AvL TECHNOLOGIES

Model 3810 Premium SNG/MIL 3.8m Motorized Transportable Vehicle-Mount Antenna

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|--------------------------------|--|
| Unique Features | <ul style="list-style-type: none"> • 3.8m AvL Single Piece Carbon Fiber Reflector • Optional three-piece carbon fiber reflector with removable wings, manually folding hinged wings, or motorized folding hinged wings • Zero Backlash AvL Cable Drive • Compact/Rugged Pol Gear Drive • Rotary Joint on Pol Axis with Flex W/G to BUC • "One-Button" Auto-Acquisition |
| Standard Rx/Tx Feed | <ul style="list-style-type: none"> • 2-Port Precision Ku-Band (LP) |
| Optional Feeds | <ul style="list-style-type: none"> • 4-Port Precision Ku-Band (LP) • 2-or 4-Port Commercial or Military Ka-Band (CP or LP) • 2- or 3- or 4-Port C-Band (CP or LP) • 2-Port X-Band (CP) |
| Polarization Adjustment | <ul style="list-style-type: none"> • Motorized Worm Gear Drive |
| Standard Colorization | <ul style="list-style-type: none"> • AvL White, Tan or Metallic Gray (optional colors available) |



Mechanical

Az/EI Drive	Motorized AvL Zero Backlash Cable Drive (Patent Pending)
Polarization Drive System	Motorized Worm Gear Drive
Reflector Construction	3.8m Single Piece AvL Carbon Fiber; Optional three-piece carbon fiber reflector with removable wings, manually folding hinged wings, or motorized folding hinged wings
Axis Travel	
Azimuth	270° (± 135°)
Elevation	0° to 90° of reflector bore sight from calibrated inclinometer (-5° to 65° CE approval)
Polarization	± 95°
Az/EI Speed	
Slewing/Deploying (typical)	1°/second Az and Pol, 0.5°/second EI
Peaking (typical)	0.2°/second typical, settable in controller
Motors	90V DC variable speed, constant torque
RF Interface	BUC/HPA Mounting Waveguide Coax
Electrical Interface	Connectors at bulkhead below azimuth bearing
Manual/Emergency Drive	Hand cranks on Az, EI and Pol
Weight (approximate)	2500 - 2700 lbs. (1137 – 1227 kg) depending on options
Stowed Dimensions	213 L x 151 W x 43 H inches (541 L x 384 W x 109 H cm)
Time to Acquisition	Less than 15 minutes typical
Mounting	(24) 1/2-13 Female Threaded Holes

Environmental

Wind – Survival	Deployed: 70 mph (113 kph); Stowed: 120 mph (193 kph)	
Wind - Operational	65 mph (97 kph)	
Pointing Loss in Operational Wind (dB):	Ku-Band Receive:	Ka-Band Receive:
20 mph (32 kph)	0.5 dB max	1.4 dB max
30 mph gusting to 45 mph (48 kph gusting to 72 kph)	2.0 dB Typical	2.0 dB Typical (with "elevation wind hold" controller upgrade activated)
45 mph gusting to 60 mph (72 kph gusting to 97 kph)	3.3 dB Typical (with "elevation wind hold" controller upgrade activated)	
	<i>NOTE: figures above assume CFE platform stiffness per AvL interface control document. Elevation wind hold software upgrade recommended for Ku operation above 45 mph or Ka operation above 30 mph.</i>	
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-Band		2-Port Ka-Band		2-Port C-Band		2-Port X-Band		
RF Parameter ▼	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit	
Frequency Range (GHz)	10.7 - 12.75	13.75 - 14.50	Commercial: 17.7 - 20.2 MIL: 20.2 - 21.2	Commercial: 27.5 - 30.0 MIL: 30.0 - 31.0	Standard: 3.625 - 4.2 INSAT: 4.5 - 4.8	Standard: 5.850 - 6.425 INSAT: 6.725 - 7.025	MIL: 7.25 - 7.75	MIL: 7.9 - 8.4	
Polarization Configuration	Linear orthogonal 2-Port std., optional co-pol or 4-Port		Circular or Linear 2-Port, optional 4-Port		LP or CP 2-Port, optional 3-Port		RHCP or LHCP 2-Port		
Gain (mid-band) (dBi)	2-Port	51.5	53.0	56.1	59.4	Standard: 42.0 INSAT: 43.5	Standard: 45.9 INSAT: 46.9	47.6	48.3
	4-Port	51.1	52.5	56.1	59.4			Not including optional filters	
Beam width (Degrees)	-3 dB	0.5	0.4	0.3	0.2	Standard: 1.4 INSAT: 1.2	Standard: 0.9 INSAT: 0.8	0.7	0.7
Radiation Pattern Compliance	FCC 25.209, ITU-R S.580-6, IESS 208		FCC 25.209, MIL-STD-188-164A		FCC 25.209, ITU-R S.580-6, IESS 207		MIL-STD-188-164A		
Antenna Noise Temp. at 20° EI	2-Port	54° K		102° K		37° K		45° K	
	4-Port	73° K		102° K					
Power Handling Capability			500 watts per Port		200 watts per Port		1000 watts per Port		1000 watts per Port
Circular Axial Ratio (within pointing cone) (dB)				1.5	1.0	2.3	1.3	1.21	2.0
Cross-Polarization Isolation (dB)									
On-Axis (minimum)		35	35						
Within pointing cone		26	26 (Intelsat Requirement)						
On Axis within pointing cone						35 / 27	35 / 27		
Feed Port Isolation – Tx to Rx (dB)		35	80 (incl. filter)	85	85 (incl. filter)	35	105 (incl. filter)	115 (incl. filter)	115 (incl. 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

- Add Co-polarization Kit (for 2-port Ku feeds only) - configures Rx and Tx to same polarization sense
- BUC/HPA Mounting (NOTE: minimum elevation may be restricted by these options)
- Waveguide interconnect options
- Beacon receiver
- Inclined orbit tracking (Step/Memory)
- TLE Tracking
- Active wind tracking for high winds
- Upgrade to Custom RF/IF I/O cabling configurations available
- Custom Colorization (contact factory for available colors)
- Add Custom Logo on Reflector Face (1- or 2-Color; per AvL Logo Policy)
- Spare Parts Kit