

AVL TECHNOLOGIES

Models 1010KVH / 1210 KVH Ka-Band Mobile VSAT IP Broadband Antenna Systems

- Key Features**
- Highly Efficient Motorized Antennas
 - Zero Backlash AvL Cable Drive
 - Auto-Acquisition Controller
- Standard Feed** Commercial Ka-Band
- Reflector Sizes** 1.0m or 1.2m (future option for 85cm)
- Configurations**
- Vehicle-Mount
 - Fly&Drive
 - FlyAway – Case-Based or Tripod
- Market Solutions**
- Mobile Broadband Internet Access
 - Satellite News Gathering
 - Disaster Relief
 - Oil & Gas Data Backhaul
 - Defense & Homeland Security
- Operates With** HughesNet



Mechanical

Az/El Drive	Motorized AvL Zero Backlash Cable Drive (Patent Pending)		
Polarization	RHCP/LHCP Pol Select Option Available		
Reflector Construction	Single Piece Carbon Fiber		
Axis Travel	Azimuth	400° (±200°)	
	Elevation	0-90° antenna bore sight (true elevation from calibrated inclinometer)	
Az/El Speed	Slewing/Deploying	Typical: Elevation 0.1°/second, Azimuth 2°/second	
Motors	24 VDC Variable Speed, Constant Torque		
Interface	Type F connector(s) at antenna base or 25 ft. (7.6m) Coax from Base		
Electrical Interface	One 25 ft. (7.6m) cable with connector from base connector panel to controller		
Manual/Emergency Drive	Hand crank for az and el axes		
Time to Acquisition	Less than 15 minutes; 8 minutes typical		
Stowed Dimensions	<u>85cm Antenna</u>	<u>1.0m Antenna</u>	<u>1.2m Antenna</u>
	53 L x 36 W x 13½ H inches (135 L x 91 W x 34 H cm)	61.5 L x 40 W x 15 H inches (156 L x 102 W x 38 H cm)	69 L x 48 W x 16.3 H inches (174 L x 122 W x 41 H cm)
Weight (approximate – depends on options selected)	90 lbs. (41 kg) typical	111 lbs. (50 kg) typical	130 lbs. (59 kg) typical

Environmental

Wind – Survival	Deployed	<u>85cm Antenna</u>	<u>1.0m Antenna</u>	<u>1.2m Antenna</u>
	Stowed	80 mph (129 kph) 100 mph (161 kph)	80 mph (129 kph) 100 mph (161 kph)	80 mph (129 kph) 100 mph (161 kph)
Wind – Operational		45 mph (72 kph)	45 mph (72 kph)	45 mph (72 kph)
Pointing Loss in Wind - Ka (Rx)		1.0 dB typical	1.0 dB typical	1.0 dB typical
	30 mph gusting to 45 mph (48 kph gusting to 72 kph)			
Temperature:	Operational	-25° to 125° F (-32° to 52° C)	-25° to 125° F (-32° to 52° C)	+5° to 125° F (-15° to 52° C)
	Survival	-40° to 140° F (-40° to 60° C)	-40° to 140° F (-40° to 60° C)	-40° to 140° F (-40° to 60° C)

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RF/Electrical						
Reflector Size ►	85 cm (future option)		1.0m		1.2m	
RF Parameter ▼	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency Range (GHz)	19.7 - 20.20	29.5 - 30.0	19.7 - 20.20	29.5 - 30.0	19.7 - 20.20	29.5 - 30.0
Polarization Configuration	RHCP or LHCP		RHCP or LHCP		RHCP or LHCP	
Gain (mid-band) @ Horn Interface (dBi)	43.1	46.6	44.5	48.0	46.1	49.6
G/T (mid-band, clear horizon) assuming 100 K LNB (dB/K)	19.8		21.2		22.8	
Beam width (degrees) -3 dB	1.2	0.8	1.1	0.7	0.9	0.6
-10 dB	2.3	1.5	1.9	1.3	1.6	1.1
Radiation Pattern Compliance	ITU-R S.580.6		ITU-R S.580.6		FCC 25.209, ITU-R S.580.6	
Antenna Noise Temperature (midband)	109 K		107 K		107 K	
Power Handling Capability		50W		50W		50W
VSWR @ Horn Interface	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
Reflector Optics	0.7 f/D		0.8 f/D		0.8 f/D	
Feed Type	Integral Feed/ Polarizer/OMT/Transceiver		Integral Feed/ Polarizer/OMT/Transceiver		Integral Feed/ Polarizer/OMT/Transceiver	
Axial Ratio	Feed Dependent		Feed Dependent		Feed Dependent	
Cross-Polarization Isolation	Feed Dependent		Feed Dependent		Feed Dependent	
Feed Port Isolation – Tx to Rx	Feed Dependent		Feed Dependent		Feed Dependent	

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

- Optional 2-Port Ku-band Precision (standard Cross-Pol comp.) or Mode-Matched (enhanced Cross-Pol comp.) Feed
- Optional Ku-Band BUC mounting
- Future option for 85cm reflector
- Optional controller upgrade to 1RU with display
- 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)
- Optional aerodynamic cowling
- Spare Parts Kit

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