AvL TECHNOLOGIES

Model 1878 Ku-Band Mobile VSAT
1.8m Motorized Transportable
Vehicle-Mount Antenna

Unique Features
- 1.8m AvL Engineered Composite Reflector
- Zero Backlash AvL Cable Drive
- Compact/Rugged Pol Gear Drive
- Optional Rotary Joint on Pol Axis with Flex W/G to BUC
- "One-Button" Auto-Acquisition

Standard Rx/Tx Feed
- Fixed Feed: 2-Port Ku-Band Precision (standard Cross-Pol comp.)

Polarization Adjustment
- Rotation of Feed with Motorized Worm Gear Drive

Standard Colorization
- AvL Metallic Gray (optional colors available)

Mechanical

Az/El Drive		Motorized AvL Zero Backlash Cable Drive (Patent Pending)
Polarization Drive System		Motorized Worm Gear Drive
Reflector Construction		1.8m Single Piece AvL Engineered Composite
Axis Travel		
Azimuth		400° (±200°)
Elevation	Mechanical	0-90° antenna bore sight
	Electrical	Standard limits at 5° to 65° (CE Approval) or 0° to 90°
Polarization		±95°
Az/El Speed		
Slewing/Deploying (typical)		2°/second
Peaking (typical)		0.2°/second
Motors		24 VDC Variable Speed, Constant Torque
RF Interface		
BUC Mounting		Feed boom 50 lbs. max. weight; BUC envelope 25 L x 22 W x 9 H inches (64 L x 56 W x 23 H cm)*
Feed Tx		WR75 Flat Flange; Optional Polarization Rotary Joint w/flex waveguide from feed, WR75
Coax		RG59 Rx from feed to base plus 25 ft. (8m); Tx coax as required per customer specification
Electrical Interface		One 25 ft. (7.6 m) cable with connectors to controller
Manual/Emergency Drive		Hand crank on Az, El and Pol axes
Weight		Approximately 300 lbs. (136 kg) depending on options
Stowed Dimensions		101 L x 71.5 W x 22.1 H inches (256.5 L x 181 W x 56.1 H cm)**
Time to Acquisition		Less than 15 minutes, 8 minutes typical
Mounting		Pallet for vehicle roof mounting

Environmental

Wind – Survival	Deployed: 80 mph (128 kph); Stowed: 125 mph (201 kph)
Wind - Operational	30 mph (48 kph) gusting to 45 mph (72 kph)
Pointing Loss in Wind (Ku RX):	
20 mph (32 kph)	0.2 dB typical
30 mph gusting to 45 mph (48 kph gusting to 72 kph)	0.6 dB typical
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 Ku-Band Precision	
RF Parameter ▼	**Receive**	**Transmit**
Frequency Range (GHz)	10.95 - 12.75	13.75 - 14.50
Polarization Configuration	Linear orthogonal standard	
Gain (mid-band) (dBi)	45.0	46.7
Beam width -3dB (Degrees)	1.0	0.8
-10 dB (Degrees)	1.8	1.5
Radiation Pattern Compliance	FCC §25.209, ITU-R S.580-6	
Antenna Noise Temperature	57° K @ 20° elevation, midband	
Allowable Power		FCC: -14 dBw/4 kHz ITU: -0 dBw/4 kHz
VSWR	1.30:1	1.30:1
Cross-Polarization Isolation (dB)		
On Axis	35	35
Off Axis (within pointing cone)	27	28
Feed Port Isolation	35	80
Output Flange Interface	WR75 Flat flange	

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

- Thule Bar roof mounting kit
- Without Mounting Pallet: stow height = 17.8 H inches (45.2 H cm)
- Add BUC/HPA Mounting (NOTE: minimum elevation may be restricted by these options)
- Rotary Joint on Pol Axis with Flex W/G to BUC
- 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

*Minimum elevation may be restricted by these options
**With standard controller. Stow height with optional controller: 23.0 H inches (58.4 H cm)

Request A Quote