

# AvL TECHNOLOGIES

## Model 1278FD Mobile VSAT (MVSAT) 1.2m Motorized Fly & Drive Antenna

- Reflector:** 1.2m AvL Engineered Composite
- Feed:** AvL Precision 2-Port Ku (LP)
- Optics:** Offset, Prime Focus, 0.8 f/D
- Positioner Configuration:** El-over-Az
- Az/El Drive Type:** Motorized AvL Compact Cable Drive
- Feed Drive Type:** Motorized Low-Backlash Worm Gear
- Transport Configuration:** One-Case Solution
- TX/BUC Interface:** RJ on Pol Axis w/Flex W/G
- Standard Colorization:** AvL Metallic Gray (optional colors)
- Warranty:** 3-year mechanical; 3-year electrical



### Mechanical

<b>Az/El Drive</b>	Motorized AvL Low Backlash Cable Drive System (Patent Pending)
<b>Polarization Drive System</b>	Motorized Worm Gear Drive
<b>Reflector Construction</b>	AvL Proprietary Precision Engineered Composite
<b>Axis Travel</b>	
<b>Azimuth</b>	400° (± 200°)
<b>Elevation</b>	5°-90° (reflector boresight from calibrated inclinometer)
<b>Polarization</b>	± 95°
<b>Az/El Speed</b>	
<b>Slewing/Deploying (typical)</b>	2°/second az; 1°/second el
<b>Peaking</b>	0.2°/second
<b>Motors</b>	24V DC variable speed, constant torque
<b>RF Interface</b>	
<b>BUC Mounting (Optional)</b>	Feed boom (maximum weight 16 lb.)
<b>Feed TX Input</b>	AvL-Supplied 90° WR75 Waveguide Rotary Joint @ Feed TX Input (Square Flange w/ O-Ring)
<b>Coax</b>	Rx and Tx: Type F (75-ohm) connectors on panel at antenna base
<b>Controller Interface</b>	One 30-ft. cable with connector from base connector panel to controller
<b>Manual/Emergency Drive</b>	Common handcrank for az, el, and pol axes
<b>Case Weight</b>	Approximately 285 lbs. (standard configuration, including case lid)
<b>Case Transport Dimensions</b>	33.4"W x 28"H x 77.5"L (85W x 72H x 197L cm)
<b>Time to Acquisition</b>	Less than 15 minutes, 8 minutes typical

### Environmental

<b>Wind – Survival</b>	Deployed/Anchored: 65 mph (105 kph) Stowed/Anchored: 80 mph (128 kph)
<b>Wind - Operational</b>	Without Anchoring: Gusts to 30 mph (48 kph) With Anchoring: 30 gusting to 45 mph (48g72 kph)
<b>Pointing Loss in Wind (Ku RX):</b>	
<b>20 mph (32 kph)</b>	0.5 dB (typical)
<b>30 gusting to 45 mph (48g72 kph)</b>	1.0 dB (typical)
<b>Temperature:</b>	
<b>Operational</b>	-22°F to 125°F (-30° to 52°C)
<b>Survival</b>	-40°F to 140°F (-40° to 60°C)

## RF/Electrical

RF Parameter	Receive	Transmit
Frequency Range	10.95 – 12.75 GHz	13.75-14.50 GHz
Gain (Midband)	42.0 dBi	43.2 dBi
VSWR	1.30:1	1.30:1
Beamwidth		
-3 dB	1.4°	1.2°
-10dB	2.5°	2.1°
Radiation Pattern Compliance	FCC § 25.209, ITU-R S.580-6	FCC § 25.209, ITU-R S.580-6
Antenna Noise Temperature	54K at 20° elevation, 11.85 GHz	n/a
G/T (50° LNB, midband, clear horizon)	21.5 dB/° K	n/a
Polarization Type	Linear orthogonal	Linear orthogonal
Allowable Power		
FCC	n/a	-14 dBw / 4 kHz
ITU	n/a	-0 dBw / 4 kHz
Cross Pol Isolation:		
On Axis (minimum)	30 dB	35 dB
Off Axis (within 1 dB BW)	28 dB	30 dB
Feed Port Isolation	35 dB	80 dB

## Controller

Input Power	100 – 240 VAC 50/60 Hz 4 A peak; 150 W Antenna running with max load
User Interface	Standard: Hand-held status/command/configuration box with display and scroll/select buttons; includes 10-in. x 9-in. x 2.5-in. tabletop power supply ("blue-box" - indoor rated); includes 25-foot (7.6-meter) remote cable (hand-held to "blue-box" power supply) Optional: 1RU configuration with built-in power supply



### Standard Features:

- Compact/distributed integration with antenna, including high-precision motors with optical encoders
- 1-button switch (green) for deploy & satellite search/acquisition
- 1-button switch (red) for stop & stow
- GPS, compass and DVB sensors for 1-button auto-acquisition of pre-loaded Ku-band satellites
- Peaking capability for optimization of cross-polarization orientation
- Internal movement detector with automatic stow
- Certified for auto-commissioning on most satellite services
- Modem interface

## Available Options/Upgrades/Services

- Co-polarization Kit (configures Rx and Tx to same polarization)
- Extended Tx Ku-Band (13.2 GHz to 14.5 GHz)
- BUC/HPA Mounting (NOTE: minimum elevation may be restricted by these options)
- Roof Mounting Kit (designed to interface with most commercial factory and after-market roof rack systems)
- Custom RF/IF I/O cabling configurations available
- Custom Colorization (contact factory for available colors)
- Customized Logo on Reflector Face (1- or 2-Color; per AvL Logo Policy)
- Controller Upgrades:
  - Worldwide satellite acquisition software upgrade
  - Controller packaged in 1RU configuration (replaces hand-held and tabletop power supply)
  - Optional power supply-to-antenna controller cable lengths: 50'(15m), 75'(23m), 100'(30m), 125'(38m), 150'(45m), 175'(53m) or 200'(61m)
- Recommended Spare Parts Kit
- Extended Warranty