

# AvL TECHNOLOGIES

## Model 1.6m 2020 FA SNG/Military Quad-Band Motorized Transportable FlyAway Antenna

- |  |  |
|--|--|
| <b>Unique Features</b>                           | <ul style="list-style-type: none"> <li>• 1.6m Segmented 4-piece Carbon Fiber Reflector</li> <li>• Rugged/Heavy Duty Case-Based Positioner</li> <li>• 15-Minute Setup; One-Button Auto-Acquisition</li> </ul> |
| <b>Standard Rx/Tx Feed</b>                       | <ul style="list-style-type: none"> <li>• 2-Port Ku Precision (standard Cross-Pol comp.)</li> </ul>   |
| <b>Optional Rx/Tx Feeds</b>                      | <ul style="list-style-type: none"> <li>• 2-Port Ku Mode-Match (enhanced Cross-Pol comp.)</li> <li>• 2-Port C</li> <li>• 2-Port X with optional Rx/Tx reject filter kit</li> <li>• 2-Port Ka</li> </ul>       |
| <b>Military Standard Polarization Adjustment</b> | <ul style="list-style-type: none"> <li>• MIL-STD-188-164A</li> </ul>   |
| <b>Standard Colorization</b>                     | <ul style="list-style-type: none"> <li>• Motorized Rotation of Feed</li> <li>• White, OD Green or Desert Tan (optional colors available)</li> </ul>  |



### Mechanical

Az/EI Drive	Motorized AvL Low Backlash Cable Drive System (Patent Pending)
Polarization Drive System	Motorized Rotation of Feed
Reflector Construction	1.6m Segmented 4-piece Carbon Fiber
Axis Travel	
Azimuth	±200°
Elevation (operational)	0° to 90° of reflector boresight from calibrated inclinometer
Polarization	±95° Adjustable 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	Handcrank for Az and EI, knob on pol axis
Configuration	Three rugged, weather-resistant plastic cases, total weight: 450 lbs.
2020 Motorized Positioner	26" x 24" x 30", 170 lbs.
Outriggers/Feed Boom/Ku or Ka Feed	71" x 18" x 19", 105 lbs. (includes Ku or Ka feed)
Reflector Panels	38" x 38" x 22", 120 lbs.
Additional Feeds	43" x 27" x 20", 70 lbs. 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	30 mph gusting to 45 mph
Pointing Loss	
Ku-band Rx	0.1 dB typical, 0.5 dB max
Ka-band Rx	0.3 dB typical, 1 dB max
Temperature:	
Operational	-22° to 125°F (-30° to 52°C)
Survival	-40° to 140°F (-40° to 60°C)

# AvL TECHNOLOGIES

## Model 1.6m 2020 FA SNG/Military Quad-Band Motorized Transportable FlyAway Antenna

### RF/Electrical

Feed Type ▶	Std. 2-Port Precision Ku <i>DBS bands available upon request</i>		Opt. 2-Port Ka		Opt. 2-Port X (Military/WGS)		Opt. 2-Port C – Std. <i>Requires special approval by satellite operator</i>		Opt. 2-Port C - INSAT <i>Requires special approval by satellite operator</i>	
	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit
RF Parameter ▼										
Frequency Range (GHz)	10.95-12.75	13.75-14.5	20.2 - 21.2 (military) or 17.7 - 20.2 (commercial)	30.0 - 31.0 (military) or 27.5 - 30.0 (commercial)	7.25 - 7.75	7.9 - 8.4	3.625-4.20	5.85 -6.425	4.50 - 4.80	6.725 - 7.025
Polarization Configuration	Orthogonal Linear, Optional Co-pol Linear		Circular or Linear		Circular RHCP or LHCP		Linear or circular options			
Gain (mid-band, dBi)	43.7	45.3	48.9	52.3	39.7	40.5	34.2	38.1	36.0	39.4
VSWR	1.30:1		1.30:1		1.30:1		1.30:1			
-3dB Beamwidth (mid-band)	1.1°	0.9°	0.6°	0.4°	1.8°	1.6°	3.4°	2.1°	2.8°	1.9°
Radiation Pattern Compliance	FCC 25.209, ITU-R S.580-6, IESS 208		FCC 25.209, MIL-STD-188-164A		MIL-STD-188-164A		FCC 25.209, ITU-R S.580-6, IESS 207		ITU-R S.580-6	
Antenna Noise Temp. (mid-band, 20° el)	54° K		107° K		45° K		49° K		48° K	
Power Handling Capability		500 watts per port		250 watts per port		1000 watts per port		1000 watts per port		1000 w per port
G/T with LNB, Midband	23.5 dB/° K (with 50°K LNB)		25.3 dB/° K (with 100°K LNB)		19.7 dB/° K (with 55°K LNB)		15.8 dB/° K (with 20°K LNB)			
Axial Ratios										
Axial Ratio within Tracking Cone			1.5 dB (CP only)	1.0 dB (CP only)	1.21 dB (CP only)	2.0 dB (CP only)	2.3 dB (CP only)	1.3 dB (CP only)		
Circular Axial Ratio (within pointing cone)										
Cross-Pol Isolation										
On-axis within pointing cone	35 dB	35 dB					35 dB / 30 dB	35 dB / 30 dB	35 dB / 30 dB	35 dB / 30 dB
Within Pointing Cone	28 dB standard	30 dB standard								
Within Pointing Cone	25 dB MM option	35 dB MM option								
Linear Cross-Pol Isolation (in pointing cone)							>30 dB	>30 dB		
Feed Port Isolation – TX to RX (dB)	35	80 (includes filter)	30	80 (includes filter)	115 (includes filter)	115 (includes filter)	65	105 (includes filter)	35	70

### Controller

Feature ▼	Controller Type ▶	Std. Auto-Acquire with Opt. Ethernet IP Interface	Opt. Enhanced Auto-Acquire with Ethernet IP Interface
Standard Features		Fully-automatic satellite acquisition, with automatic azimuth, elevation and cross-polarization peaking; includes on-board, one-button deploy/acquire interface for pre-configured systems; includes on-board GPS, electronic compass, level sensors and auto-compensation; customer-configurable satellite list. <i>Note: Beacon Receiver or Modem as acquisition signal source may be required for non-commercial satellites.</i>	
Integration		Embedded w/ Handheld, incl. Shelf-Mount P/S (optional 1RU w/ front-panel keypad + integral P/S)	Embedded w/ Ethernet IP Interface (P/S optional) (optional rack-mount P/S available)
User Interface		Menu-driven display w/ keypad	Intelligent/simple GUI for on-board or remote CFE laptop
Input Power		115/230 VAC (at rack); up to 200W	28V DC (at antenna positioner); optional 115/230 VAC rack-mount power supply; up to 200W
Software Upgrades/Options		Inclined orbit tracking (using step-track or TLE track); automatic band sensing	Inclined orbit tracking (using step-track, memory track, or TLE track); automatic band sensing

### Available Options, Upgrades & Services

- 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