

# AvL TECHNOLOGIES

## Model 1.0m 1030 FA SNG/Military Tri-Band Motorized Transportable FlyAway Antenna



- Unique Features**
- 1.0m Segmented 6-Piece AvL Carbon Fiber Reflector with optional (1.2m) Extender Panels
  - Rugged AvL Cable Drive Case-Based Positioner
  - Case-Based Positioner (AvL or CFE) or Rugged Tripod Mount
  - Offset Prime Focus Highly Efficient Optics
  - Interchangeable Feeds
  - 15-Minute Setup; One-Button Auto-Acquisition
- Standard Rx/Tx Feed**
- 2-Port Ku Precision (standard Cross-Pol comp.)
- Optional Rx/Tx Feeds**
- 2-Port Ku Mode-Match (enhanced Cross-Pol comp.)
  - 2-Port X-Band
  - 2-Port Ka-Band
- Polarization Adjustment**
- Ku LP: Motorized/Manual Options
  - Ka CP: Manual, Field-Reversible LH/RH
  - X CP: Manual, Field-Reversible LH/RH
- Military Standard Standard Colorization**
- MIL-STD-188-164A Compliant
  - White, OD Green or Desert Tan (optional colors available)

### Mechanical

Az/EI Drive	Motorized AvL Low Backlash Cable Drive System (Patent Pending)	
Polarization Drive System	Motorized/Manual Options depending on feed	
Reflector Construction	1.0m Segmented 6-Piece AvL Carbon Fiber Reflector (optional 1.2m segmented 10-piece reflector)	
Axis Travel	<u>Case-Based</u>	<u>Tripod</u>
Azimuth	±90° (CFE base dependent)	±90°
Elevation (operational)	7°-100° (CFE base dependent)	0°-100° (7°-100° over tripod legs)
Polarization (Ku only)	±95°	±95°
Az/EI Speed		
Slewing/Deploying (typical)	Azimuth: 2°/sec      Elevation: 1°/sec	
Peaking (typical)	Azimuth: 0.2°/sec      Elevation: 0.2°/sec	
Motor	24V DC variable speed, constant torque	
Manual/Emergency Drive	Handcrank for az and el, knob on pol	
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	
Electrical Interface	Connectors on base	
Transit Configuration (Ku-band)	<u>Case-Based</u>	<u>Tripod</u>
Case 1: Positioner & Feed	29.0" x 20.3" x 16.9" (< 70 lbs)	31.3" x 20.4" x 15.5" (< 70 lbs)
Case 2: Reflector, Boom, Controls	31.3" x 20.4" x 15.5" (< 70 lbs)	31.3" x 20.4" x 15.5" (< 70 lbs)
Set-up Time	Less than 15 minutes	

### Environmental

Wind – Survival (anchored)	80 mph in zenith position
Wind – Operational	
Without Anchoring	30 mph
With Anchoring	30 mph gusting to 45 mph
Pointing Loss	
Ku-band	0.7 dB max (1.0m reflector)
Ka-band	2.0 dB max (1.0m reflector)
X-band	1.5 dB max (1.2m reflector with extender panels)
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		Opt. 2-Port Ka		Opt. 2-Port X (Military/WGS)	
RF Parameter ▼	Receive	Transmit	Receive	Receive	Receive	Transmit
Frequency Range (GHz)	10.95-12.75 GHz	13.75-14.5 GHz	20.2 - 21.2	30.0 - 31.0	7.25 - 7.75	7.90 - 8.40
Polarization Configuration	Linear Orthogonal standard, Optional Co-pol		Circular or Linear		RHCP or LHCP	
Gain (mid-band)	40.0 dBi	41.5 dBi	44.6 dBi	47.9 dBi	36.0 dBi (less opt. filter)	36.8 dBi (less opt. filter)
Beamwidth (midband) -3 dB	1.8°	1.5°	1.0°	0.7°	2.8°	2.6°
Radiation Pattern Compliance	FCC § 25.209, ITU-R S.580.6		Per MIL-STD-188-164A		Per MIL-STD-188-164A	
Antenna Noise Temp. at 20° Elevation	54° K at 11.85 GHz		107° K @ 20.2 GHz		52° K @ 7.50GHz	
G/T with 50° LNB, midband, clear horizon	19.6 dB/K		21.1 dB/K with 100°K LNB		15.5 dB/K with 55°K LNB	
Power Handling Capability		500 watts per port		250 watts per port		1000 watts per port
VSWR	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
Axial Ratio CP only, within pointing cone			1.5 dB	1.0 dB	1.21 dB	2.0 dB
Cross-Polarization Isolation On Axis (minimum)	35 dB	35 dB				
Off Axis ( in 1 dB BW)	28 dB	30 dB				
Port-to-Port Isolation – Tx to Rx	35 dB	85 dB	85 dB	85 dB (with filter)	115 (includes optional filter)	115 (includes optional filter)

### 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
- Custom pack-ups

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