

# AvL TECHNOLOGIES

## Model 9066 FA SNG/MIL FlyAway 90cm x 66cm Airline Checkable, Band-Upgradable Motorized Transportable Antenna

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|-------------------------------------|---|
| <b>Unique Features</b>              | <ul style="list-style-type: none"> <li>• 90x66cm Heavy-Duty 5-Piece Carbon-Fiber Reflector</li> <li>• Compact Cable Drive Positioner</li> <li>• Airline Checkable Pack-up (Overnight Air Freightable)</li> <li>• Configurable Bases: Low (std.), Tripod, PIB Case-Base</li> </ul> |
| <b>Standard Rx/Tx Feed</b>          | <ul style="list-style-type: none"> <li>• 10-Minute Setup; "One-Button" Auto-Acquisition</li> <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 Ka Commercial</li> <li>• 2-Port Ka MIL (WGS)</li> <li>• 2-Port X MIL (WGS) – Opt. Rx/Tx Reject Filter Kit</li> </ul>   |
| <b>Optional Integration Support</b> | <ul style="list-style-type: none"> <li>• BUC on Boom</li> <li>• Filter Kit (Optional X-band) on Boom</li> </ul>   |
| <b>Polarization Adjustment</b>      | <ul style="list-style-type: none"> <li>• Unique Rotation of Reflector (motorized)</li> </ul>  |
| <b>Standard Colorization</b>        | <ul style="list-style-type: none"> <li>• AvL "SNG White" (optional colors available)</li> </ul>   |



## Mechanical

Az/EI Drive	Motorized AvL Low Backlash Cable Drive System (Patent Pending)
Polarization Drive System	Unique Rotation of Reflector (to maintain alignment with orbital arc); includes Manual Override
Reflector Construction	90cm x 66cm Segmented 5-Piece Carbon Fiber
Axis Travel	
Azimuth	180°
Elevation (reflector foresight)	15°-75° (via calibrated inclinometer; boom-mounted CFE may reduce travel)
Polarization	Motorized ± 75° with manual H/V selection
Az/EI Speed	
Slewing/Deploying (typical)	5°/second azimuth; 2°/second elevation; 3°/second polarization
Peaking (typical)	0.2°/second
Motors	24V DC variable speed, constant torque
Standard Interfaces	
BUC (& other CFE) Mounting	Call factory
Tx Input @ Feed	Ku: WR 75 Cover Flange at Feed Tx Port
Rx Input (AvL-supplied coax)	Type RG59 from feed to base
Controller Interface	One 30-ft. cable with connector from base connector panel to controller
Manual/Emergency Drive	Common handcrank for az, el, and pol axes
Weight – Std. Low Base	2-Case Carry-on or 1-Case Checkable, <70 lbs.
Weight – Opt. Tripod	Checkable (or Air-Freight) Roll-Around Storm Case Kit (2 Cases): < 75 lbs. (40 kg) ea.
Weight – Opt. Roto-Mold Case Base	Checkable (or Air-Freight) Positioner Base Case: < 87 lbs. + Storm Case: < 75 lbs.

## Environmental

Wind – Survival	Deployed: 75 mph (121 kph); Stowed: 100 mph (161 kph)
Wind - Operational	45 mph (72 kph)
Pointing Loss in Wind (Ku RX):	
10 mph (16 kph)	0.1 dB (0.1 deg) typ.
20 mph (32 kph)	0.2 dB (0.2 deg) typ.
Temperature:	
Operational	-22°F to 125°F (-30°C to 52°C)
Survival	-40°F to 140°F (-40°C to 60°C)

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### RF/Electrical

RF Parameter ▼	Std. 2-Port Precision Ku		Opt. 2-Port X (Military/WGS/XTAR)		Opt. 2-Port Ka (Military/WGS)	
	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency Range (GHz)	10.95 - 12.75	13.75 - 14.50	7.25 - 7.75	7.9 - 8.4	20.2 - 21.2	30.0 - 31.0
Polarization Configuration	Linear – orthogonal (H/V)		Circular – orth. (RHCP/LHCP)		Circular – orth. (RHCP/LHCP)	
Gain (mid-band)	37.8 dBi	39.3 dBi	33.5 dBi	34.2 dBi	41.8 dBi	45.2 dBi
-3dB Beamwidth (mid-band)	2.0°	1.6°	3.1°	2.8°	1.1°	0.8°
Radiation Pattern Compliance (outside main beam)	FCC 25.209 and ITU-RS-580-6 Eutelsat (opt. MM feed)		MIL-STD-188-164A		MIL-STD-188-164A	
First Side lobe Level (typical)	-22 dB	-25 dB	-22 dB	-25 dB	-22 dB	-25 dB
Antenna Noise Temp. (mid-band, 20° el)	54K	--	54K	--	130K	--
Maximum Feed Transmit (Tx) Power	--	250W	--	1000W	--	250W
Maximum Allowable Power *Subject to local applicable regulations	--	-14dBw/4kHz (per FCC) -0dBw/4kHz (per ITU)	--	*	--	*
VSWR	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
Axial Ratio (Ka and X only, within pointing cone)	--	--	1.2 dB	2.0 dB	1.5 dB	1.0 dB
Cross-Polarization Isolation (Ku only)						
On Axis (minimum)	30 dB	35 dB	--	--	--	--
Off Axis (in 0.3 deg. cone)	28 dB	28 dB	--	--	--	--
Off Axis (in 0.3 deg. cone, opt. MM feed)	25 dB	32 dB	--	--	--	--
Feed Port Isolation (Tx to Rx)	70 dB (incl. std. filter)		25 dB (excl. filter)	25 dB (excl. filter)	30 dB	85 dB (incl. std. filter)

### 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

- Upgrade from 2-Port Precision Ku Feed to: a) 2-Port Enhanced Cross-Pol (Mode-Matched) Ku; b) 2-Port X MIL; c) 2-Port Ka MIL; d) 2-Port Ka Comm.
- Add Co-polarization Kit (for 2-port Ku feeds only) - configures Rx and Tx to same polarization sense
- Add BUC/HPA Mounting (NOTE: minimum elevation may be restricted by these options)
- 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)
- Upgrade from Standard TracStar Auto-Acquire controller to AvL AAQ2000 Enhanced Auto-Acquire (see Controller section, above, for some of these options)
- Add Power Supply for AAQ2000 Controller Upgrade
- Spare Parts Kit

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