

# AvL TECHNOLOGIES

DRAFT

## Model 1098 Flyaway/ Fly and Drive 85cm/1.0m/1.2m, Multiple Band Motorized Transportable Antenna

- Unique Features**
  - 85cm/1.0m/1.2m Resin/Fiber Composite
  - Multiple Segmentation Options
  - Compact Elevation-over-Azimuth Cable Drive Positioner
  - PIB Case-Base
  - 2 Case System
  - 10-Minute Setup; "One-Button" Auto-Acquisition
  - 2-Port Ku "Precision" (standard Cross-Pol comp.)
- Standard Rx/Tx Feed**
- Optional Rx/Tx Feeds**
  - 2-Port Ku "Mode-Match" (enhanced Cross-Pol comp.)
  - ViaSat Ka Commercial
- Optional Integration Support**
  - Custom BUC Integration
  - Universal BUC Tray
  - Fly and Drive Upgrade Kit
- Polarization Adjustment**
- Standard Colorization**
  - AvL Metallic Grey (optional colors available)



### Mechanical

Az/EI Drive	Motorized AvL Low Backlash Cable Drive System (Patent Pending)
Polarization Drive System	Motorized Worm Gear
Reflector Construction	Composite Resin/Fiber Construction
Axis Travel	
Azimuth	400° (±200°)
Elevation (reflector boresight)	0°-90° antenna boresight (true elevation readout from calibrated inclinometer)
Polarization	± 95°
Az/EI Speed	
Slewing/Deploying (typical)	2°/second azimuth; 2°/second elevation; 2°/second polarization
Peaking	0.2°/second
Motors	24V DC variable speed, constant torque
Standard Integration Interfaces	
Tx Input @ Feed	Ku: WR 75 Cover Flange at Feed Tx Port; Type F coax from BUC to base
Rx Input (AvL-supplied coax)	Type F coax from LNB to base
BUC (& other CFE) Mounting	Feed boom (maximum weight 16 lbs.)
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. Positioner Case	TBD
Weight – Std. Reflector Case	Dependent on reflector size and segmentation – TBD

### 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):	
20 mph (32 kph)	0.5 dB (0.5 deg) typ.
30 gusting 45 mph (48/72kph)	1.0 dB (1.0 deg) typ.
Temperature:	
Operational	-25°F to 125°F (-32°C to 52°C)
Survival	-40°F to 140°F (-40°C to 60°C)

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## Model 1098 FlyAway

RF/Electrical		
Feed Type ▶	Std. 2-Port Precision Ku	
RF Parameter ▼	Receive	Transmit
Frequency Range (GHz)	10.95–12.75	13.75-14.50
Polarization Configuration	Linear – orthogonal (H/V)	
Gain (mid-band)	39.9 dBi	41.4 dBi
-3dB Beamwidth (Degrees)	1.8°	1.5°
-10dB Beamwidth (Degrees)	3.2°	2.8°
Radiation Pattern Compliance	FCC 25.209 and ITU-RS-580-6 Eutelsat (opt. MM feed)	
First Sidelobe Level (typical)	--	--
Antenna Noise Temp. (mid-band, 20° el)	55K	--
Maximum Feed Transmit (Tx) Power	--	FCC: -14 dBw/4 kHz ITU: -0 dBw/4 kHz
VSWR	1.30:1	1.30:1
Axial Ratio (Ka and X only, within pointing cone)	--	--
Cross-Polarization Isolation (Ku only)		
On Axis (minimum)	30 dB	35 dB
Off Axis (within 1 dB BW)	28 dB	30 dB
Feed Port Isolation (Tx to Rx)	35 dB	80 dB
Options & Configurations		
Reflector options	1.0m available in solid (one piece) or segmented with two-pieces	
Packaging options		
Controller		
Controller Type ▶	Std. TracStar	Opt. AAQ2000
Feature ▼	Auto-Acquire with Opt. Ethernet IP Interface	Enhanced Auto-Acquire with Std. Ethernet IP Interface
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- or shelf-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, memory track, or TLE track); automatic band sensing	Inclined orbit tracking (using step-track, memory track, or TLE track); automatic band sensing
Available Upgrades/Services		
<ul style="list-style-type: none"> <li>• Upgrade from 2-Port Precision Ku Feed to: a) 2-Port Enhanced Cross-Pol (Mode-Matched) Ku; b) ViaSat Ka Comm.</li> <li>• Add BUC/HPA Mounting (NOTE: minimum elevation may be restricted by these options)</li> <li>• Field Installable Fly and Drive Upgrade Kit (Designed with interface for standard Thule Bar Kits: <a href="http://www.thule.com">www.thule.com</a>)</li> <li>• Upgrade to Custom RF/IF I/O cabling configurations available</li> <li>• Custom Colorization (contact factory for available colors)</li> <li>• Add Custom Logo on Reflector Face (1- or 2-Color; per AvL Logo Policy)</li> <li>• Upgrade from Standard TracStar Auto-Acquire controller to AvL AAQ2000 Enhanced Auto-Acquire (see Controller section, above, for some of these options)</li> <li>• Add Power Supply for AAQ2000 Controller Upgrade</li> <li>• Spare Parts Kit</li> <li>• Factory Training</li> </ul>		



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