

AvL TECHNOLOGIES

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

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

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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 | 48.5 | 51.7 | 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

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