# Model 830
## 85cm Fly-Away Multi-Band Antenna

## ANTENNA FEATURES

- 85cm segmented AvL-engineered composite reflector
- Two-Port Ku-Band Precision (standard cross-polarization performance – see optional feeds)
- High-performance Ka-Band azimuth/elevation cable drive positioner
- Compact, user-friendly I/O connector panel
- Five-minute one-person setup; less than five-minute one-button auto-acquisition process
- Compact ATA-checkable pack-up
- Optional receive/transmit feeds:
  - 2-Port Ka-Band (Commercial, MIL or Wide-Band)
  - 2-Port MIL X-Band (with compact Rx and Tx filters)
- Optional integration support:
  - Customizable I/O panel for remote cables & power
  - Fast feed change between bands
  - Multiple SSPA options
- Standard colorization: white with black hardware (optional colors available upon request)

## MECHANICAL SPECIFICATIONS

| | | |
|---|---|---|
| **Az/El Drives** | | Motorized cable drive system |
| **Polarization Drive System** | | Motorized worm gear |
| **Reflector Construction** | | 85cm multi-piece AvL carbon fiber composite |
| **Axis Travel** | **Azimuth** | 180° (± 90°) |
| | **Elevation** | 0°-90° antenna boresight (true elevation readout from calibrated inclinometer) |
| | **Polarization** | ± 95° |
| **Axis Speed** | **Slewing/Deploying** | 2°/second azimuth; 2°/second elevation; 2°/second polarization |
| | **Peaking** | 0.2°/second |
| **Motors** | | 24 VDC variable speed, constant torque |
| **Feeds (Two-, Three-, and Four-Port)** | **X-Band** | X-Band LH/RH-switchable with filters available |
| | **Ku-Band** | Precision, mode-matched, and Part 30B wideband |
| | **Ka-Band** | Commercial, military, wideband (commercial and military), WGS simultaneous dual polarity for C2 and GBS; LH/RH circular switchable |
| **Controller Interface** | | Two cables – Ethernet and power to integrated controller |
| **Manual/Emergency Drive** | | Manual hand cranks for azimuth, elevation, and polarization axes |
| **Weight (Two-Case Pack-Up)** | | 31.30 L x 20.40 W x 15.50 H in. (79.5 L x 51.8 W x 39.4 H cm) per case, weighing less than 88 lbs. (22.7 kg) each |

## ENVIRONMENTAL SPECIFICATIONS

| | | |
|---|---|---|
| **Wind – Survival** | Deployed (Anchored) | 60 mph (97 km/h); reflector in horizontal position |
| **Wind – Operational** | | 30 mph gusting to 45 mph (48 to 72 km/h); anchoring required in winds exceeding 20 mph (32 km/h) |
| **Pointing Loss in Wind (Ku-Band Receive)** | 20 mph (32 km/h) | 0.3 dB typical |
| | 30 mph gusting to 45 mph (48 km/h to 72 km/h) | 0.8 dB typical |
| **Temperature** | Operational | -22°F to 125°F (-30°C to 52°C) |
| | Survival | -40°F to 140°F (-40°C to 60°C) |

## RF PARAMETERS: X-BAND (TWO-PORT)

| | | **Receive** | **Transmit** |
|---|---|---|---|
| **Frequency Range (GHz)** | | 7.25 – 7.75 | 7.90 – 8.40 |
| **Polarization Configuration** | | Circular – orthogonal (LH/RH) | |
| **Gain – Midband (dBi)** | | 34.6 dBi | 35.3 dBi |
| **Beamwidth (Degrees)** | -3 dB | 3.2 | 2.9 |
| | -10 dB | 5.8 | 5.4 |
| **Radiation Pattern Compliance** | | MIL-STD-188-164C | |
| **Antenna Noise Temperature (Midband, 20° El)** | | 45° K | -- |
| **Maximum Feed Transmit (Tx) Power** | | -- | FCC: -14 dBw/4 KHz<br>ITU: -0 dBw/4 KHz |
| **Feed Port Isolation (Tx to Rx, dB)** | | 115 (including filter) | 115 (including filter) |
| **G/T with 100° LNB, Midband, Clear Horizon** | | -- | -- |
| **VSWR** | | 1.30:1 | 1.30:1 |
| **Axial Ratio (dB)** | | 1.21 dB | 2.0 dB |



Specifications subject to change without notice.
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## RF PARAMETERS: KA-BAND (TWO-PORT)

| | | Receive | | Transmit | |
|---|---|---|---|---|---|
| **Frequency Range (GHz)** | | Military: 20.2 – 21.2 | Commercial: 17.7 – 20.2 | Military: 30.2 – 31.2 | Commercial: 27.5 – 30.0 |
| **Polarization Configuration** | | Circular or Linear | | | |
| **Gain – Midband (dBi)** | | 43.3 | | 46.5 | |
| **Beamwidth (Degrees)** | -3 dB | 1.2 | | 0.8 | |
| **Radiation Pattern Compliance** | | FCC 25.209 & MIL-STD-188-164A | | | |
| **Antenna Noise Temperature (Midband, 20° El)** | | 109° K | | -- | |
| **Maximum Feed Transmit (Tx) Power** | | -- | | 250 W per port | |
| **Feed Port Isolation (Tx to Rx, dB)** | | 35 | | 85 (including filter) | |
| **G/T with 100° LNB, Midband, Clear Horizon** | | 20.0 dB°/ K | | -- | |
| **VSWR** | | 1.30:1 | | 1.30:1 | |
| **Axial Ratio (dB)** | | 1.5 | | 1.0 | |

## RF PARAMETERS: KU-BAND (TWO-PORT)

| | | Receive | Transmit |
|---|---|---|---|
| **Frequency Range (GHz)** | | 10.95 – 12.75 | 13.75 – 14.50 |
| **Polarization Configuration** | | Linear – orthogonal (H/V) | |
| **Gain – Midband (dBi)** | | 38.5 | 40.0 |
| **Beamwidth (Degrees)** | -3 dB | 2.1 | 1.7 |
| | -10 dB | 3.8 | 3.2 |
| **Radiation Pattern Compliance** | | FCC 25.209, ITU-R S.580-6, Eutelsat | |
| **Antenna Noise Temperature (Midband, 20° El)** | | 55° K | -- |
| **Maximum Feed Transmit (Tx) Power** | | -- | FCC: -14 dBw/4 KHz<br>ITU: -0 dBw/4 KHz |
| **Feed Port Isolation (Tx to Rx, dB)** | | 35 | 80 |
| **G/T with 100° LNB, Midband, Clear Horizon** | | -- | -- |
| **VSWR** | | 1.30:1 | 1.30:1 |
| **Axial Ratio (dB)** | | -- | -- |



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## CONTROLLER – AAQ1500

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|---|---|
| **Features** | AvL one button auto-acquisition, including peaking and optimization of cross-polarization. Inclined surface auto-compensation. Built-in DVB receiver enables modem agnostic and beacon/no-modem acquisition. Inclined orbit/TEL tracking. Internal movement detector and automatic stow. Certified for auto-commissioning on most networked services. |
| **Software / GUI** | AAQRemote / AAQ WebUI |
| **Input Power** | 120/240 VAC 60/50 Hz, 6/3 A maximum; during acquisition, 100 W, less than 50 W idle (antenna only) |
| **Size** | Antenna Control Unit (ACU) embedded on antenna; 19 in 1RU rack or antenna-mounted power supply options available |

## OPTIONS – UPGRADES AND SERVICES

- Alternate feeds
  - Military Ka-Band
  - Commercial Ka-Band
  - Wideband Ka-Band
  - Military X-Band (with filters)
- ATA-checkable third case for up to two alternate feeds
- Boom-mounted modem integration – antenna is modem-agnostic
- BUC mounting/integration
- High-wind kits
- Color options
- Spare parts kit
- Pack-up and case options



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