

AVL TECHNOLOGIES

Model 1660 / 1220 PIB F/A

Auto Acquire Quad-Band Motorized FlyAway Antenna

| | |
|-------------------------|------------------------------------|
| Reflector Type | 1.6M 4 Segment Carbon Fiber |
| Optics | Offset, Prime Focus, 0.8 F/D |
| Interchangeable Feeds | C LP or CP, X CP, Ku LP, Ka CP |
| Positioner | Case-based Pack-in-the-Box |
| Az/EI Drive System | Patented Roto-Lok® Positioner |
| Mount Geometry | Elevation over Azimuth |
| Polarization Adjustment | Motorized Rotation of Linear Feeds |



Mechanical/Environmental

| | | |
|--------------------------------------|---|--|
| Travel | - Azimuth | ±200° |
| | - Elevation (Operational) | 0°-90° with ±200° Az Travel |
| | - Polarization (LP Feeds) | ±95° Adjustable within <1° |
| Speed | - Slewing/Deploying | 2°/second Az; 1°/second EI |
| | - Peaking | 0.2°/second |
| | - Tracking | 0.1°/second |
| Emergency Drive | | Hand Crank on Az, EI; Hand Knob on Pol |
| Configuration – Rugged Cases, 1 each | Positioner, Outriggers/Boom, Reflector: | |
| | -1220 Motorized Positioner | 26" x 24" x 30" 150 lbs |
| | -Outriggers/Feed Boom | 71" x 18" x 17" 105 lbs. (includes Ku or Ka feed) |
| | -Reflector Panels | 39" x 39" x 24" 120 lbs. |
| | -C/X/Ka Feeds (up to 3/case) | 43" x 27" 20" 70 lbs. typical |
| Interfaces | | |
| | -HPA Mounting | Feed boom or behind reflector (additional CFE case or optional case required) |
| | -RF | Coax (2) at base, Flex Waveguide from feed with groove |
| | -Electrical | 25 ft. Cable with Connectors for Controller |
| Set-up Time | | Less than 30 minutes |
| Wind | - Operational | 30 mph gusting to 45 mph |
| | - Survival | Anchoring required when gusts exceed 40 mph 80 mph (With anchoring in zenith stowed position) |
| Pointing Loss | - Ku-band Rx | 0.4 dB typical, 0.7 dB max in operational wind |
| | - Ka-band Rx | 1.0 dB typical, 1.7 dB max in operational wind |
| Temperature | - Operational | +14° to 125°F (-10° to 52°C) |
| | - Survival | -40° to 140°F (-40° to 60°C) |

Controllers

| | |
|----------------------|--|
| Auto-Acquisition | One-button deploy with auto acquisition, peaking, and cross-pol adjustment using GPS, compass, and level-sensor inputs; certified for auto-commission on certain satellite systems |
| Tracking | Inclined orbit step-tracking with CFE or optional beacon receiver |
| Operator Interface | Front panel or Hand Held Remote or Remote PC options |
| Positioning Accuracy | ± 0.2° |
| Input Power | Single phase 110/240 60/50 Hz 10 A peak, 2 A continuous |

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C-Band*

| | <u>Receive</u> | <u>Transmit</u> |
|---|--|---------------------|
| Frequency | 3.625-4.20 Ghz | 5.85 -6.425 Ghz |
| Polarization | Linear or circular options | |
| Gain (Midband) | 34.2 dBi | 38.1 dBi |
| Antenna Noise Temperature @ 20° EI | 48° K | |
| G/T with 20°K LNB, Midband | 15.8 dB/° K | |
| Radiation Pattern Compliance | 29-25 log Θ dBi , 3.5° > Θ < 36° | |
| Circular Axial Ratio (within Pointing Cone) | 2.3 dB | 1.3 dB |
| Linear Cross Pol Isolation (in Ptg. Cone) | >30 dB | >30 dB |
| Power Handling Capability | | 1000 watts per port |

*Requires special approval by satellite operator

X-Band

| | <u>Receive</u> | <u>Transmit</u> |
|------------------------------------|-----------------------|---------------------|
| Frequency | 7.25 7.75 Ghz | 7.9 - 8.4 Ghz |
| Polarization | Circular RHCP or LHCP | |
| Gain (Midband) | 39.7 dBi | 40.5 dBi |
| Antenna Noise Temperature @ 20° EI | 45° K | |
| G/T with 55°K LNB, Midband | 19.7 dB/° K | |
| Radiation Pattern Compliance | MIL – STD – 188-164A | |
| Axial Ratio within Tracking Cone | 1.21 dB | 2.0 dB |
| Power Handling Capability | | 1000 watts per port |

Ku-Band

| | <u>Receive</u> | <u>Transmit</u> |
|---------------------------------|---|--------------------|
| Frequency | 10.95-12.75 Ghz | 13.75-14.5 Ghz |
| Polarization | Orthogonal Linear, Optional Co-pol Linear | |
| Gain (Midband) | 43.7 dBi | 45.3 dBi |
| Antenna Noise Temperature @ 20° | 54° K | |
| G/T with 50°K LNB, Midband | 23.5 dB/° K | |
| Radiation Pattern Compliance | IESS-601 Std. G and FCC 47CFR25.209 | |
| Cross Pol Isolation - on-axis | 35 dB | 35 dB |
| - within pointing cone | 28 dB standard | 30 dB standard |
| - within pointing cone | 25 dB MM option | 35 dB MM option |
| Power Handling Capability | | 500 watts per port |

Ka-Band

| | <u>Receive</u> | <u>Transmit</u> |
|------------------------------------|----------------------------|--------------------|
| Frequency | 17.7 - 20.2 Ghz | 27.5 -30.0 Ghz |
| Frequency (Military) | 20.2 - 21.2 Ghz | 30.0 -31.0 Ghz |
| Polarization | Circular RHCP and LHCP | |
| Gain (Midband Military) | 50.6 dBi | 53.8 dBi |
| Antenna Noise Temperature @ 20° | 107° K | |
| G/T with 100°K LNB, 20.7 GHz | 25.3 dB/° K | |
| Radiation Pattern Compliance | FCC and MIL – STD-188-164A | |
| Axial Ratio (within pointing cone) | 1.5 dB | 1.0 dB |
| Power Handling Capability | | 250 watts per port |

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