**Agile Milcoms**
*An ACS Company*

# ACS-14SQD-XK (Super Quick Deploy) Antenna System

*Powered by AVL Technologies*

The ACS-14SQD-XK joins the class of Super Quick Deploy Satcoms antenna systems from ACS designed to provide the warfighter with the latest in Quick-on-the-Halt, (QOTH) communications. The system locates the desired target satellite in 20-50 seconds, (typically ~35 seconds). The system employs many new features such as the ability to locate the spacecraft even when GPS signals are blocked or not available. The terminals can be dual-band or tri-band configured so that X, KU or KA-Band feeds can be quickly interchanged on-the-fly, to provide for a different band of communications. Antenna sizes range from 60cm to 1.8M with an assortment of BUC power and modems to suit any application and uplink bandwidth up to 20Mbps. As always, ACS custom integrates all RF and electronics to maximize transmission capabilities.

| | |
|---|---|
| **Reflector** | *Single Piece* 1.4 Meter Carbon Fiber Backing Structure |
| **Optics** | Offset, Prime Focus, 0.6 f/D |
| **Motorized Drive System** | AVL Cable Drive |
| **Mount Geometry** | Elevation over Azimuth |
| **Polarization** | Rotation of Feed Motorized Worm Gear |
| **Warranty** | 3-yr Mechanical/RF; 1-yr Controller |

## Mechanical

| | |
|---|---|
| Travel | |
| Azimuth | 400° (± 200°) |
| Rotational Boom distance from rear of motors | 48.4” (1229mm) |
| Elevation | |
| Mechanical | 0° to 90° + of Reflector Bore sight |
| Electrical | Standard: 5° to 65° (meets CE Approval); or 0° to 90° |
| Polarization | ± 95° for 2 and 3 port feeds<br>± 50° for 2 – port Wideband and 4-port feeds |
| Speed | |
| Slewing/Deploying (Super Quick Deploy) | 14°/second typical Az, 14°/second typical El, High Speed Deploy |
| Peaking | 0.2°/second |
| Motors | 24V variable speed, constant torque |
| RF Interface | |
| BUC Mounting | Interchangeable Band-Specific Feed horns, BUCs and LNBs |
| Waveguide | Flex waveguide from feed with O-ring groove |
| Coax | Two Type F or BNC connectors at antenna base |
| Electrical Interface | One 32 ft. cable with connectors to controller |
| Manual Drive | Hand crank for Az, El and Pol |
| Weight | 175 lbs (72-79 kg) depending on options |
| Stowed Dimensions | 82.2 L x 55.6 W x 16 H inches (209L x 141 W x 41 H cm) |
| Time to Acquisition | Less than 1 minute (typical 35 seconds) |
| Vehicle Roof Mounting | Integral composite base/vehicle adapter |

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## Environmental

| | |
|---|---|
| Wind | |
| Survival Deployed | 75 mph (105 kmph) |
| Survival Stowed | 100 mph (161 kmph) |
| Operational | 30 - 45 mph (48 kmph), Gusts to 44 mph (72 kmph) |
| Pointing Loss in Wind | |
| 20 mph (32 kmph) | 0.5 dB Typical, Ku-band, typical .15 degrees |
| 30 mph gusting to 45 mph (48 to 72 kmph) | 0.7 dB Typical, Ku-band, typical .30 degrees |
| Temperature | |
| Operational | -25° to 125° F (32° to 52° C) |
| Survival | -40° to 140° F (-40° to 60° C) |

## Controls

| | |
|---|---|
| ACS SQD Controller | AvL Standard-Speed Auto-Acquire (Hand-Held or Optional 1RU) |
| Input Power (AvL Standard Auto-Acquire) | 100–240VAC 50/60Hz 8A peak, 380W running with max wind/BUC load |

## Electrical RF

| **X-Band** | **Receive** | **Transmit** |
|---|---|---|
| • Frequency Range (GHz) | 7.25 – 7.75 | 7.9 - 8.40 |
| • Gain (Midband) (dBi) | 39.0 | 39.7 |
| • VSWR | 1.30:1 | 1.30:1 |
| • Beamwidth (-3 dB) | 2.0° | 1.8° |
| • Radiation Pattern Compliance | MIL-STD-188-164A | MIL-STD-188-164A |
| • Ant Noise Temperature @ 20° El, Midband | 46° K | |
| • G/T with 55° LNB, Midband, clear Horizon | 18.7dB/° K | |
| • Polarization | RHCP OR LHCP | RHCP OR LHCP |
| • Axial Ratio (CP only, within pointing cone) | 1.21 dB | 2.0 dB |
| • Power Handling Capability | | 500 watts per port |
| • Feed Port Isolation – TX to RX (dB) | 115 (includes optional filter) | 115 (includes optional filter) |
| **Ku-Band** | **Receive** | **Transmit** |
| • Frequency Range (GHz) | 10.95 - 12.75 | 13.75-14.50 |
| • Gain (Midband) (dBi) | 42.9 | 44.5 |
| • VSWR | 1.30:1 | 1.30:1 |
| • Beamwidth (-3 dB) | 1.3° | 1.1° |
| • Radiation Pattern Compliance | FCC 25.209, ITU-R S.580-6, IESS 208 | FCC 25.209, ITU-R S.580-6, IESS 208 |
| • Ant Noise Temperature @ 20° El, Midband | 52° K | |
| • G/T with 50° LNB, Midband, clear Horizon | 22.6dB/° K | |
| • Polarization | Linear Orthogonal Standard | |
| • Cross Pol Isolation, On-axis | 35 dB | 35 dB |
| • Cross Pol Isolation, Within pointing Cone | 28 dB | 30 dB |
| • Power Handling Capability | | 0.5 KW watts per port |
| • Feed Port Isolation – TX to RX (dB) | 35 | 80 (includes filter) |
| **Ka-Band** (Option - must be order at inital delivery) | **Receive** | **Transmit** |
| • Frequency Range (GHz) | 20.2 – 21.2 (military) | 30.2 –31.0 (military) |
| • Gain (Midband military) (dBi) | 47.6 | 50.8 |
| • VSWR | 1.30:1 | 1.30:1 |
| • Beamwidth (-3 dB) | 0.7° | 0.5° |
| • Radiation Pattern Compliance | FCC 25.209, MIL-STD-188-164A | FCC 25.209, MIL-STD-188-164A |
| • Ant Noise Temperature @ 20° El, Midband | 107° K | |
| • G/T with 100° LNB, Midband, clear Horizon | 24.4dB/° K | |
| • Polarization | Circular or Linear | |
| • Axial Ratio (CP only, within pointing cone) | 1.5 dB | 1.0 dB |
| • Power Handling Capability | | 250 watts per port |
| • Feed Port Isolation – TX to RX (dB) | 30 | 80 (includes filter) |

## Options

| | | |
|---|---|---|
| BUC/HPA mounting (on Boom) | Worldwide Controller Software Upgrade | Ku-band Feed Co-Polarization Kit |
| External GPS input via Ethernet | Direct Point-maintains location when not in use | Operational when GPS signals lost or blocked |
| Ka-Band capable (must be ordered at initial delivery) | Custom cable lengths | Custom Colorization & Logos |
| X, Ku, Ka-Band Feeds | High-Speed SQD Controller | 1RU Power Supply Optional |

** All specifications subject to change without notice*

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