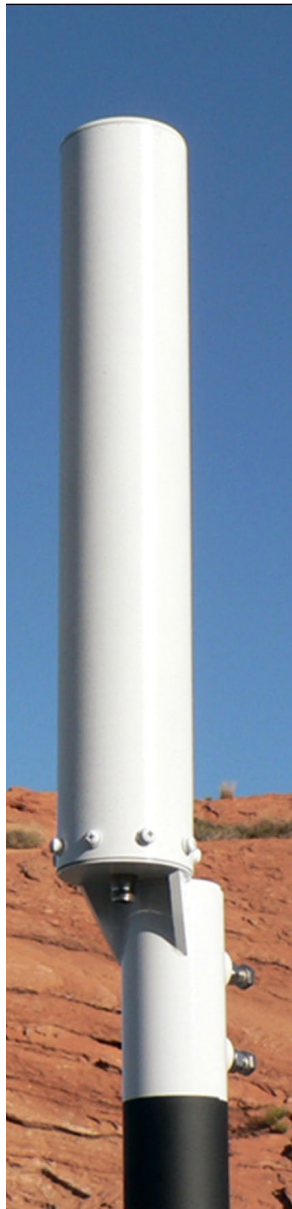


SPECIFICATION SHEET

ADS-B ANTENNA, OMNI-DIRECTIONAL MODEL dBs 620

dBs PART NUMBER 620300-100

APPROVED FOR USE BY FAA UNDER FAR PART 171



The dBs 620 is a 2 element, high performance, full service, all band, omni-directional, Automatic Dependent Surveillance-Broadcast (ADS-B) Antenna. Frequency range is 978, 1030 and 1090 MHz (no adjustments or tuning required).

This omni-directional antenna has 2 active elements and other components, which produce high main lobe and horizon gain with wide beam width. The main lobe of the vertical pattern between 0 degrees and +30 degrees above the horizon.

The array is enclosed and effectively weatherproofed within a lightweight, small diameter, filament wound, and ground smooth fiberglass radome for prolonged trouble-free use under severe environmental conditions.

Mounting is made by means of an integral pipe adapter with 2 mounting bolt holes. All RF input/output ports are type N receptacles.

The model dBs 620 antenna has been designed for ruggedness, lightweight, minimum size, long life, and in accordance with FAA-E-2754 and FAA-G-2100. It also exceeds the requirements of the UK CAA specification.

Model dBs 620 with Marine Option (P/N: 620300-120): The dBs 620 with Marine Option is an optional upgrade. The RF Transmission assembly is completely sealed and weatherproofed to protect in harsh environments such as salt water, extreme humidity, wind, sand, snow, and ice. Contact our factory for more details.

ADS-B ANTENNA, OMNI-DIRECTIONAL

Model dBs 620

dBs PART NUMBER 620300-100

SPECIFICATIONS/CHARACTERISTICS

TYPE: Omni-directional

CIRCULARITY: Circular to within ± 1 dB

FREQUENCY RANGE: 978, 1030 & 1090 MHz (no adjustments or tuning required)

ARRAY: 2 active radiator assemblies and 2 chokes in vertical plane (18.5" tall)

POLARIZATION: Vertically Polarized

GAIN, MAIN BEAM: >3 dB/iso, minimum

GAIN, HORIZON: >0 dB/iso, minimum

MAIN BEAM ELEVATION LOCATION: Between $0^\circ + 30^\circ$ above horizon

SLOPE (VICINITY OF HORIZON): ≈ 0.05 dB/ $^\circ$

POWER HANDLING CAPABILITY: Up to at least 5 KW peak RF power at 3% duty cycle

IMPEDANCE: 50 Ω nominal

VSWR: $\leq 1.5:1$ (1030 & 1090 MHz) measured at end of low loss cable not exceeding 5 feet in length.

VERTICAL FIELD PATTERN: The radiation pattern of the antenna in the vertical plane has a lobe of energy not less than 15 degrees wide at the half-power points. The power gain at angles between 30 and 90 degrees below the horizon is lower than the power gain at the peak of the major lobe above the horizon by at least 12 dB. The power gain at angles between 6 and 40 degrees above the horizon does not pass below a straight line joining the points of co-ordinates ($+6^\circ$, -15 dB) and ($+40^\circ$, -25 dB) with values referenced to the peak of the major lobe above the horizon.

SIZE: 24.5" tall, 2 radiator assemblies (driven elements) plus a choke assembly at each end housed inside a 3 1/4" O.D. radome. Has top cap and mounting base.

WEIGHT: 7 lbs.

PHYSICAL DESIGN: A metal tube, 1.5" O.D. x 1.43" I.D. (0.040" wall thickness) runs through center of antenna for full length. RF transmission lines are located within this tube.

WEATHER PROOFING: Entire antenna, including all cable connectors, is weather proofed. Antenna has a guarantee of water resistance IP5, so long as antenna is mounted vertically with Pipe Adapter and Stainless Steel Cover.

ENVIRONMENTAL: Meets FAA-E-2754 and FAA-G-2100, it also exceeds the requirements of the UK CAA Specification

ANTENNA MOUNTING: The configuration of the antenna base is such that the antenna can be mounted directly to a 1.5" nominal diameter vertical pipe (1.5" nominal pipe has an actual O.D. of 1.90"). Pipe sleeve overlaps mounting pipe by 5". Two 3/8" bolts secure antenna to mounting pipe.

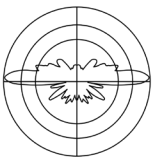
WIND LOADING: Withstands without damage 100 mph gusts

TEMPERATURE: -50° C to $+70^\circ$ C

HUMIDITY: Up to 100%

MONITOR PORTS: Not supported; contact factory if required.

CONNECTORS RF: Type N Jack, 1 each



dB Systems Inc.

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Hurricane, Utah 84737 USA

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ADS-B ANTENNA, OMNI-DIRECTIONAL

Model dBs 620

dBs PART NUMBER 620300-100

SPECIFICATIONS/CHARACTERISTICS

ENVIRONMENTAL NON-OPERATING SPECIFICATIONS:

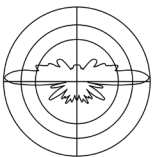
- **TEMPERATURE:** Withstands a temperature range of -50°C to +71°C.
- **ALTITUDE:** Withstands atmospheric pressure of 575 to 1025 mbar (equivalent to approximately 15,000 feet above sea level in a standard atmosphere down to approximately 300 feet below sea level).
- **VIBRATION:** Will not be damaged when subjected to the vibrations listed in Table 514.8C-I, Method 514.8 Annex C of MIL-STD-810, and the exposure durations provided in Annex C paragraph 2.1.4.
- **SHOCK:** Will not be damaged when subjected to the mechanically induced shock as specified in Method 516.8, Procedure II of MIL-STD-810.

ENVIRONMENTAL OPERATING CONDITIONS:

- **OUTDOOR TEMPERATURE:** Operates in the temperature range of -50°C to +71°C.
- **RAIN:** Operates while exposed to wind-blown rain, at a rate of 1.7 mm/minute (4 inches/hour), and up to 18 m/s (40 mph) blowing wind.
- **ALTITUDE:** Operates over the atmospheric pressure range of 700 to 1025 mbar (equivalent to approximately 10,000 feet above sea level in a standard atmosphere down to approximately 300 feet below sea level).
- **ICE LOADING:** In operation, withstands without damage 100 mile per hour gusts and ice loading of up to 1/2" radial ice. In survival, withstands without damage wind bursts up to 140 mph, without frost or ice, and up to 120 mph with 1/2" radial ice or frost.
- **HUMIDITY:** Operates within a relative humidity range from 5% to 100% when the temperature is 40°C or less. Above 40°C, operates with a relative humidity based upon a dew point of 40°C.
- **FINE SAND (DUST):** Impervious to sand and dust intrusion. In operation, withstands sand/dust concentrations up to 1 g/m³, particle size up to 20 micrometers, max speed 20m/s.

OPTIONAL ITEMS:

- **OBSTRUCTION LIGHT:** Not supported; contact factory if required
- **LIGHTNING ROD ASSEMBLY:** Not supported; contact factory if required
- **PIPE ADAPTER:** Built into antenna base
- **COVER FOR PIPE ADAPTER:** Not supported
- **PLATE ADAPTER:** Not supported; contact factory if required



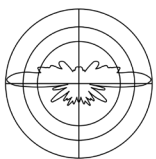
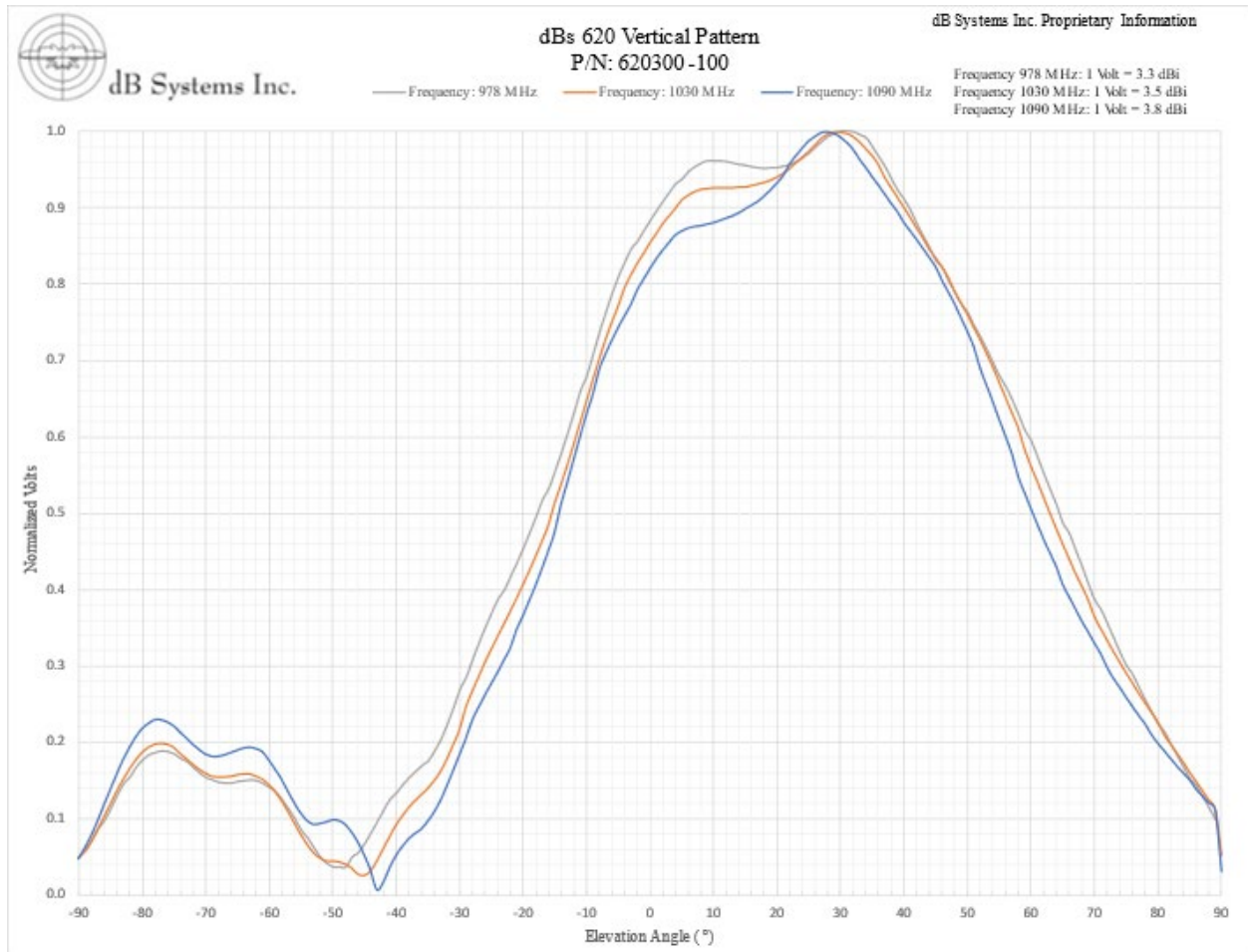
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dBs 620 Vertical Pattern



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