

SPECIFICATION SHEET

VDB ANTENNA, SINGLE ELEMENT MODEL dBs 100



The single element dBs 100 VDB antenna is an elliptically polarized, VHF data broadcast antenna. It exhibits an omnidirectional azimuth pattern and a shaped vertical pattern, which is similar to a dipole.

The elliptical polarization provides 4 dB more gain in the horizontal plane than the vertical plane.

The single element VDB antenna is small and lightweight. It lends itself to mobile applications.

The single element VDB antenna provides VHF data uplink service for all appropriately equipped aircraft within an approximate 20 nmi or greater radius of the LAAS ground station.

It is specifically designed to operate with VDB transmit signals operating from 108 to 118 MHz.

Peak power handling capability for the dBs 100 is > 250 watts CW. The main lobe gain is ≥ -1.0 dBi for the horizontally polarized component and ≥ -5.0 dBi for the vertically polarized component.

Type N female coaxial receptacles are used for all RF interfaces. RF input is 50Ω nominal and VSWR is less than 2.0:1.

VDB ANTENNA, SINGLE ELEMENT

Model dBs 100

SPECIFICATIONS/CHARACTERISTICS

TYPE: Elliptically Polarized Dipole Array

AZIMUTH GAIN VARIATION: Omni-directional, with maximum azimuth gain variation of $\leq \pm 1.0$ dB

FREQUENCY OF OPERATION: 108 MHz to 118 MHz

ARRAY: Single vertically stacked element. Also available in dual or triple vertical stacked arrays.

POLARIZATION: Elliptically polarized; horizontally polarized gain is nominally 4 dB greater than vertically polarized gain

GAIN, MAIN BEAM:
Horizontally Polarized Component: ≥ -1.0 dBi
Vertically Polarized Component: ≥ -5.0 dBi

GAIN OF FIRST MAJOR SIDELOBE: Both vertically and horizontally polarized vertical patterns are similar to a vertically polarized dipole. Side lobes do not exist.

DIRECTION OF MAXIMUM GAIN IN ELEVATION: Nominally 0° (on horizon)

SLOPE (VICINITY OF HORIZON): ± 0 dB/ $^\circ$

POWER HANDLING CAPABILITY: Up to at least 250 W CW

IMPEDANCE: 50 Ω nominal

VSWR: Not greater than 2:1 measured at end of low loss cable not exceeding 5 feet in length.

HALF POWER BEAMWIDTH IN ELEVATION PLANE: $\pm 100^\circ$

HALF POWER BEAMWIDTH IN AZIMUTH PLANE: The antenna is omni-directional in the azimuth plane.

RF MONITOR: Sample of incident RF energy is provided, which is 50 dB \pm 2 dB down from main RF input signal level.

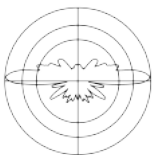
RADOME COVERAGE AND WEATHERPROOFING: Entire antenna weatherproofed and sealed. Antenna does not use a radome. Birds and ice buildup could degrade antenna performance.

HEIGHT, WEIGHT, AND SIZE (OBSTRUCTION LIGHT CONNECTOR INTERFACE): 29.5" H x 48" W (in widest dimension) x 35 lbs. Obstruction light connector is MS-3112E8-3P.

ANTENNA MOUNTING: 6 each 3/4" x 3" L bolts on 12.0" bolt circle, which mounts antenna to pipe adapter. Pipe adapter mounts to 6.63" O.D. vertical mounting pipe. Vertical mounting pipe provided by customer.

WIND LOADING: Withstands without damage 100 mph gusts

RF FEED CONNECTORS: One Type N jack RF port for main RF connection



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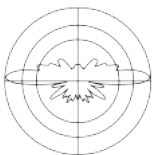
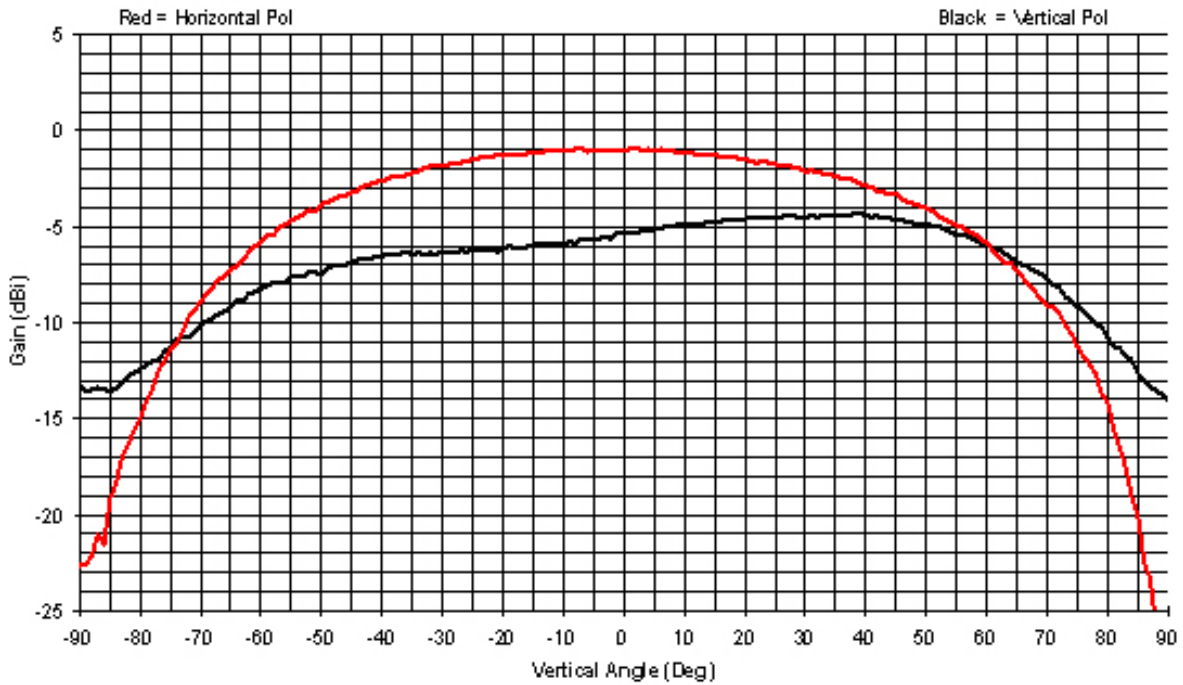
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dBs 100 Vertical Pattern

dBs 1 Element 100 WDB EPOL, Vertical Patterns, Az=0°, 113 MHz, Polarizations Vertical & Horizontal



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