

SPECIFICATION SHEET

VDB ANTENNA, THREE ELEMENT MODEL dBs 100

dBs Part Number 100300-103



The three element dBs 100 VDB antenna is a high gain, elliptically polarized, VHF data broadcast (VDB) antenna. It exhibits an omni-directional azimuth pattern and a shaped vertical pattern, which provides optimal gain and ground multipath attenuation.

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

The three element VDB antenna is less site sensitive than the single element VDB antenna.

The three 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 ≥ 4.0 dBi for the horizontally polarized component and ≥ 0.0 dBi for the vertically polarized component.

One Type N Female Jack is used for the RF connection. RF input is 50Ω nominal and VSWR is less than 2.0:1.

VDB ANTENNA, THREE ELEMENT

Model dBs 100
dBs PART NUMBER 100300-103

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: Three element vertically stacked array

POLARIZATION: Elliptically Polarized – horizontally polarized gain is nominally 4 dB \geq vertically polarized gain

GAIN, MAIN BEAM:
Horizontally Polarized Component: ≥ 4.0 dBi
Vertically Polarized Component: ≥ 0.0 dBi

GAIN OF FIRST MAJOR SIDE LOBE: ≥ 10.0 dB below main beam peak for both vertically and horizontally polarized vertical patterns.

DIRECTION OF MAXIMUM GAIN IN ELEVATION: Nominally $+12^\circ$ (above horizon)

SLOPE (VICINITY OF HORIZON): ≈ 0.3 dB/ $^\circ$

POWER HANDLING CAPABILITY: ≤ 250 W CW.

IMPEDANCE: 50 Ω nominal

VSWR: Less than 2.0:1 measured at end of low loss cable not exceeding 5 feet in length.

HALF POWER BEAMWIDTH IN ELEVATION PLANE: $\approx 30^\circ$

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

RF MONITOR: This option is available upon request.

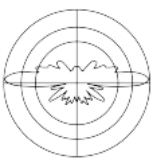
RADOME COVERAGE AND WEATHERPROOFING: Entire antenna weatherproofed and sealed. Antenna does not use a radome.

HEIGHT, WEIGHT, AND SIZE (OBSTRUCTION LIGHT CONNECTOR INTERFACE): 164" H x 48" W (in widest dimension) x 48" D (in widest dimension) x 80 lbs. Obstruction light connector is MS-3112E8-3P.

ANTENNA MOUNTING: 6 each 3/8"-16 x 1 3/4" L bolts on 6.0" bolt circle which mount antenna to pipe adapter. Pipe adapter mounts to 4.0" 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.



dB Systems Inc.

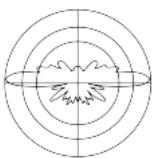
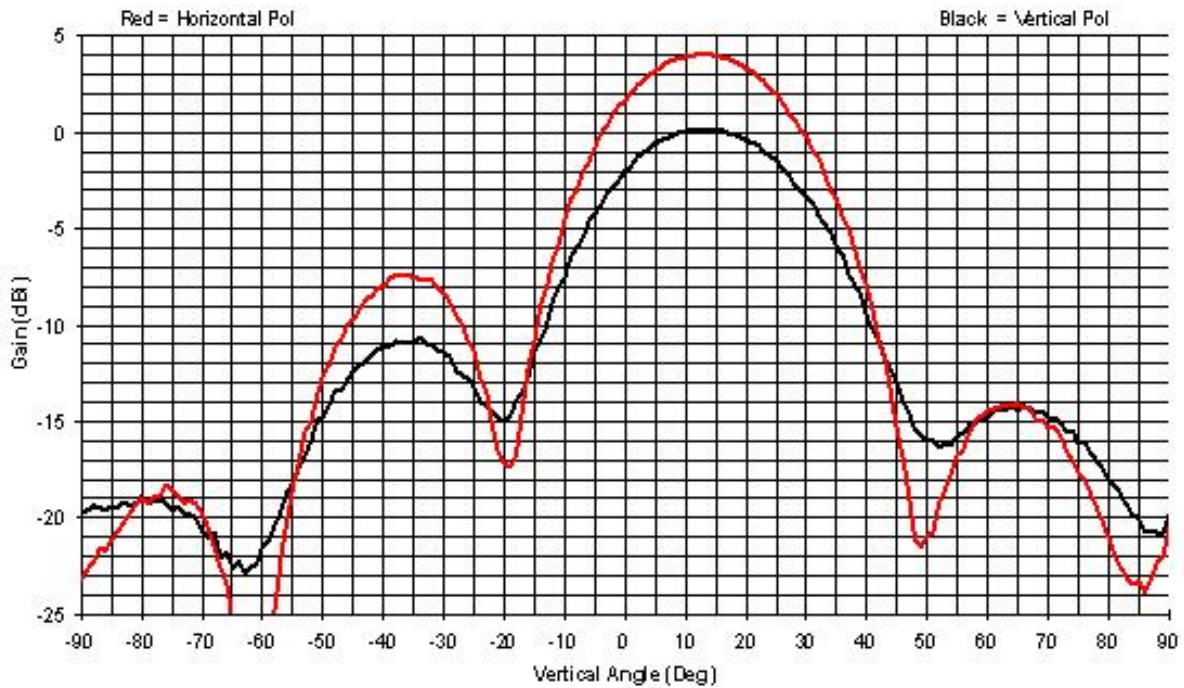
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dBs 100 Vertical Pattern

dBs 3 Element 100 WDB EPOL, Vertical Patterns, Az=0°, 113 MHz, Polarizations Vertical & Horizontal



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