



HDCBR

- Ideal for multi-station operation
- Full 20 MHz bandwidth
- High-power handling
- Very low VSWR
- Single or dual EIA inputs
- Designed for -10 dB IBOC signals
- Minimal windloading
- Superb azimuth circularity and elevation pattern control to ensure uniform coverage
- Custom azimuth patterns available
- Superior antenna isolation
- Ideal for space combining analog and IBOC signals
- >40 dB isolation

The HDCBR (Cavity Backed Radiator) antenna offers ideal characteristics for FM stations desiring the advantages of combined station operation or to stations requiring special directional coverage. The antenna is designed for digital, analog, or both types of service.

The Dielectric HDCBR consists of a crossed dipole radiator fed in phase quadrature and mounted within a square cavity. Rotating RF energy is produced when the cavity is excited by the dipole elements. Cavity size is principally determined by beamwidth requirements. A beamwidth of 90 degrees is required for a 4-around array and 120 degrees is required for a 3-around array (measured at the half-voltage coordinates).

Dielectric Advantages

The cavity used in the Dielectric circularly polarized FM antenna is a welded steel galvanized grid. The cavity grid is supported from a center mounting plate, which also serves as a mounting for the dipole assembly and for attachment of the unit to the supporting structure. The use of grid cavities and aerodynamic design significantly reduces weight and windload requirements of the supporting structure. This often represents substantial savings in support structure cost compared with other panel style antenna designs.

For omnidirectional operation, the shape of the standard azimuth pattern will vary from omni by less than ± 2.0 dB for optimized tower configurations. Stations employing directional arrays will find one of the several patterns available to be ideally suited to their specific needs.

The Dielectric HDCBR antenna is designed for high-power operation enabling station flexibility in transmission system design. Our conservative power rating ensures adequate design headroom for long term reliability. The Dielectric HDCBR antenna can be configured with one or two input ports. This feature allows the top and bottom portions of a typical antenna to be fed by two independent transmission lines. Should standby operation be necessary, one half of the system may be used at reduced power.

Multi-Station Operation

Multi-station FM operation where two or more stations share the same antenna has increased in popularity due to the inherent cost savings which can be realized. Multi-station operation can be achieved only with the wide bandwidth characteristics the Dielectric CBR antenna offers.

These characteristics are achieved through the use of a broadband radiating element in conjunction with high-power hybrid junctions.

Dielectric also offers the associated combining equipment necessary for multi-station

operation. Dielectric's experience with multiplexer installations ensures proper combiner operation to optimize the system operation.

Azimuth Circularity

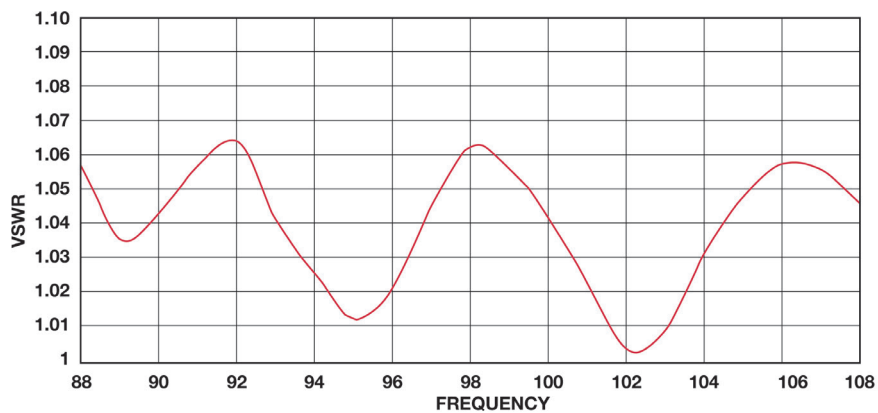
For omnidirectional operation, the shape of the standard azimuth pattern will vary from omni by less than ± 2.0 dB for three-sided tower configurations. With a four-around antenna array, the typical circularity will be comparable.

Stations employing directional arrays will find one of the several patterns available to be ideally suited to their specific needs.

High-Power Capabilities

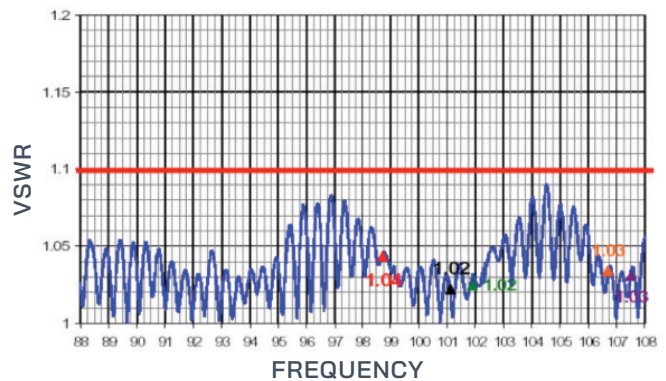
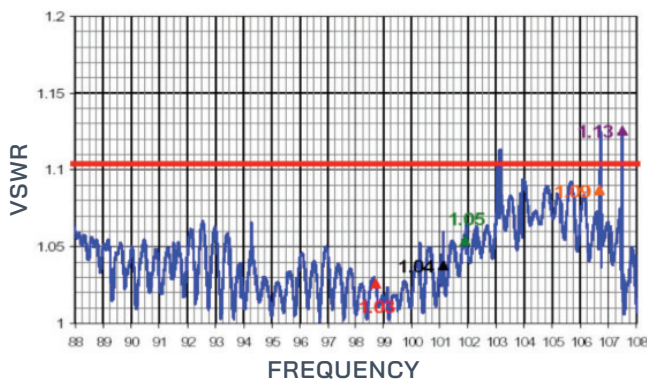
The Dielectric CBR antenna is designed for high-power operation enabling station flexibility in transmission system design. Our conservative power rating ensures adequate design headroom for long term reliability.

The Dielectric CBR antenna can be configured with one or two input ports. This feature allows the top and bottom six bays of a typical twelve-bay antenna to be fed by two independent transmission lines. Should standby operation be necessary, one half of the system may be used at reduced power.



RIGHT HAND CP

LEFT HAND CP



Typical VSWR responses including 1100' of transmission line