GHz Conical Dipole Antenna Model GCD16

Frequency Range 1 to 6 GHz

Photo : Model GCD16

GCD16 was developed for conformity evaluation of radiated emission measurement site in the frequency range 1 to 6 GHz. The shape of the antenna is similar to Bi-conical, but element of this antenna is not conical but cylindrical, and the one end of the cylindrical element is conical. We called the antenna Conical Dipole. The antenna elements are thick cylinder to cover wider frequency range, therefore the antenna is an one of the broadband dipole antenna. To design depend on theoretical principles and conduct practical measurement and valuation, finally completed with the specifications is shown below;

□Complies with CISPR 16-1-4 specification of the omni directional antenna for SVSWR measurement

It can be used as the omni directional transmission antenna for Site VSWR measurement above 1 GHz radiated emission measurement site.

□Larger gain(Less antenna factor)

It is advantage to use above 1 GHz, where there are increased signal losses, compared with similar antennas. The GCD16 also can be used as a broadband omni directional receiving antenna.

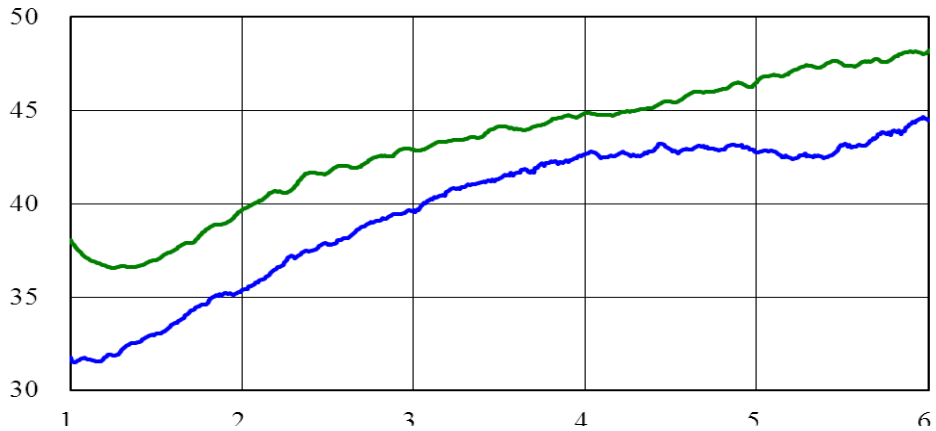


Fig. 1　Antenna Factor Comparison

□Less VSWR

To connect thick cylindrical element and small feeding point, the end of the element is shaped to circular cone. Thus to reduce impedance discontinuous by connecting different shape of the feeding point and the element makes less signal reflection. The VSWR of the antenna is typically less than 1.5 except lower frequency edge, and it can be reduced less than1.2 in all frequency range with 3dB pad to the connector.

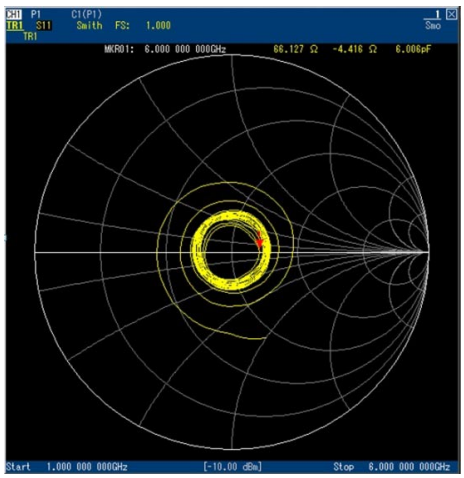


Fig. 2　Impedance Characteristics

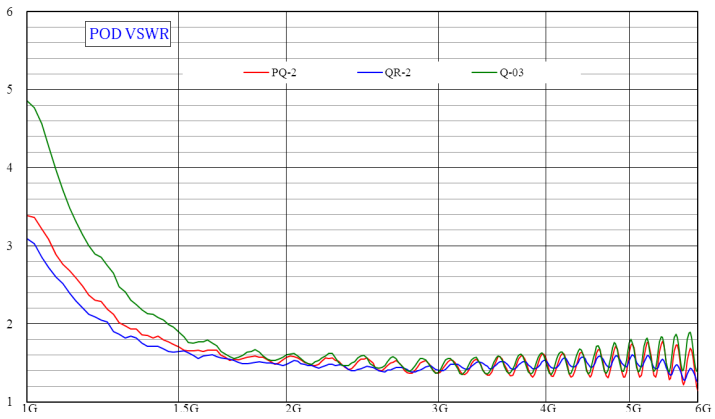


Fig. 3　VSWR (Model GCD16 : blue line)

□Less coupling between antenna element and feeder

To avoid interference between feeder and antenna element, pull out the feeder from inside of the one element axis. There is no current flow inner of the element and no effect by pulling out the feeder cable inside of the element.

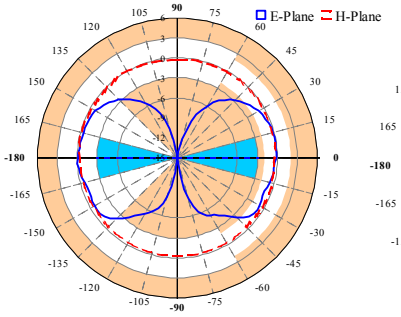
□Can be used for Site Attenuation measurement above 1GHz

Because of larger gain, it can be used for site attenuation measurement, CSA and NSA.

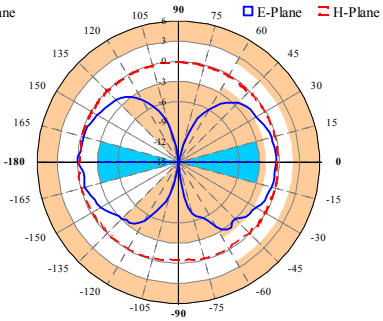
Even though there is no standard yet for site attenuation above 1 GHz site validation, is sure to theoretical principles. It is compromise than SVSWR for site evaluation for validation evaluation. In this case, free-space theoretical attenuation value can be used as the reference.

Other Technical Data

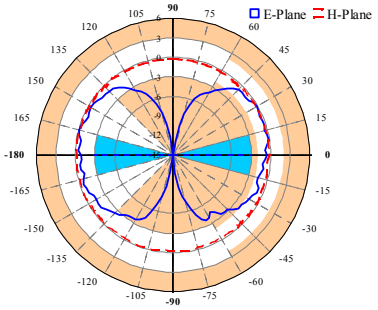
□Directivity



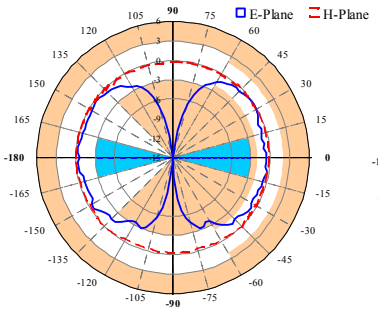
1 GHz



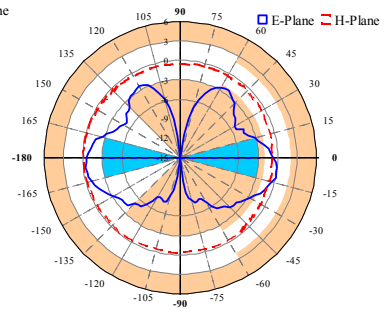
2 GHz



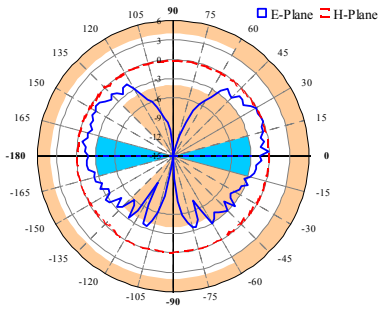
3 GHz



4 GHz

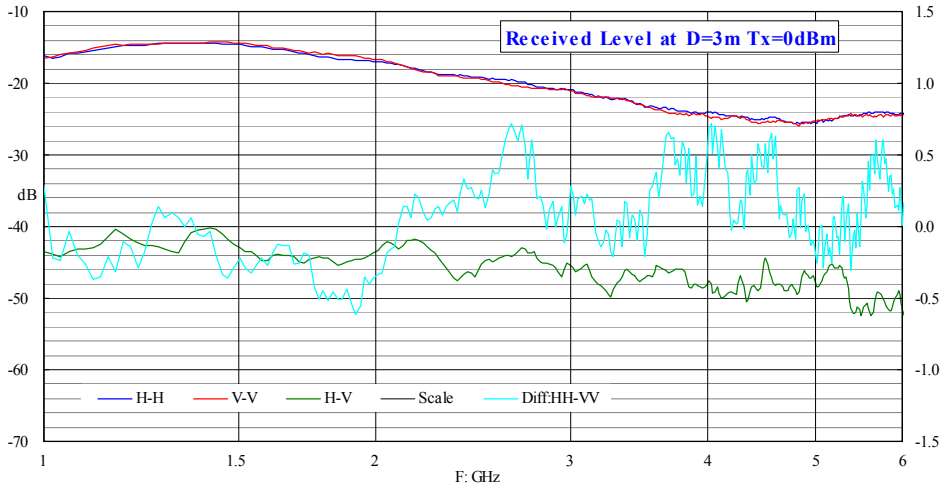


5 GHz



6 GHz

□Cross Polarization Separation



Separation value is shown as difference between moss-green line and red or/and blue line

Specification

	Model GCD16	(Model GCD 618)
Antenna Type	Broadband Dipole	Broadband Dipole
Frequency Range	1-6GHz	6-18GHz
Gain	Nearly same thin dipole	
VSWR	Typically >1.6 (>1.2 with 3dB pad□	Typically > 1.5 (>1.2 with 3dB pad□
Cross Polarization Separation	< 25dB	
Maximum Input Power	10Watt	5Watt
Connector	SMA	SMA
Size	Dia:70mm / Length:545mm	Dia:38mm / Length:525mm
Weight	265g	160g
Options	Hard Caring Case for 2 antennas Holder (antenna center position is not changed depending on polarization change)	

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