

Satellite IoT D2D Ready

TN & NTN Dual-Mode Antenna - Satellite IoT Direct to Device Ready

Direct Mount Single Port 3G/4G Antenna

Covering 4G/5G/Satellite Band 25

The L001254-01 direct to device (D2D) antenna is a multi-band low profile disk/puck antenna operating over the 698-960 MHz and 1710-2700 MHz frequency bands.

Designed to be a surface mount antenna that performs well on metallic and non-metallic surfaces, the antenna is ideal for use in Machine-to-Machine (M2M) applications. The housing incorporates a low profile, rugged design that conforms to IP67 standards making the antenna suitable for both indoor and outdoor applications.

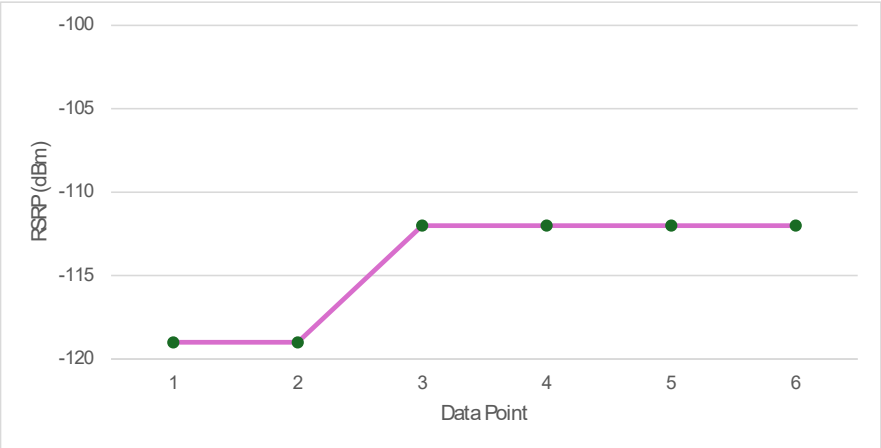
SATELLITE IOT D2D COMMUNICATIONS

Low Earth Orbit (LEO) satellites, positioned a few hundred km's above Earth, orbit rapidly and are ideal for IoT networks. A LEO satellite constellation can now support low data rate communications through specific LTE frequencies.

- Dual-mode capable - Supporting Terrestrial Networks (TN) and Non-Terrestrial Networks (NTN) from a single antenna
  - 698-3800 MHz terrestrial cellular coverage
  - Band 25 (1900 MHz) cellular satellite coverage
    - Testing available for other/future cellular satellite D2D frequency bands used by various network providers
- Enabling dual-mode communications via IoT devices
  - Prioritizing terrestrial networks but capable of automatically switching to satellite when the signal is weak or unavailable

REFERENCE SIGNAL RECEIVED POWER (RSRP) VALUES

The L001254-01 antenna was live-tested for receive signal strength. Data encompasses multiple satellite pass-overs, showing signal strength variation; exceeding the -120 dBm minimum for IoT devices.



An RSRP value of -120 dBm is generally the recognized minimum requirement suitable for the data rates of SMS, CAT-1, CAT-1 Bis connectivity.

RSRP can be susceptible to fluctuations for a variety of reasons. These can include: satellite elevation angle: antenna radiation patterns; solar flares; atmospheric conditions, and more.

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FEATURES AND BENEFITS

- Validated for use on satcom D2D networks
- Dual-Mode TN and NTN capable
- Low profile, aesthetically-neutral housing
- Surface mount with stud and locking nut
- Designed for both indoor and outdoor use
- IP67-rated for harsh environments
- Both 3G/4G LTE and Wi-Fi communications
- Made for both metal and non-metallic surfaces

APPLICATIONS

- Non-Terrestrial and Terrestrial Networks
- Satellite IoT D2D (Direct to Device) applications
- Worldwide 5G/4G/3G/2G
- Cellular IoT: LTE-M (Cat-M1) and NB-IoT
- Remote control, monitoring and sensing
- Internet of Things (IoT) devices

SPECIFICATONS

PARAMETER	SPECIFICATIONS								
Antenna Modal/Part No.	L001254-01								
No. Ports	1 Port								
Antenna Type	SISO Omni								
Connector Type	SMA (M)								
Cable Type	RG316								
Pigtail Length, Lc	610mm±								
Frequency Bands, (MHz)	698-806	824-894	880-960	1417-1690	1710-1880	1850-1990	1910-2170	2300-2500	2500-2700
Peak Gain, dBi (Average)									
On Metal housing	2.6	1.7	2.2	8.0	6.0	5.4	5.2	4.4	4.2
Efficiency (%)	64	58	63	65	68	67	66	63	61
On Plastic Housing w/ Ground Plane Kit	3.0	1.5	2.1	8.2	5.9	5.1	4.9	4.4	4.0
Efficiency (%)	69	62	66	70	69	67	65	64	59
Peak Gain, dBi (Max)									
On Metal housing	3.0	2.2	2.5	9.0	6.8	5.5	5.5	4.7	4.4
On Plastic Housing w/ Ground Plane Kit	3.7	2.0	2.8	9.3	6.4	5.6	5.5	4.9	4.4
Maximum VSWR	3.0:1								
Nominal Impedance, Ω	50								
Polarization	Linear Vertical								
Azimuth Beam Width, (°)	360°, Omnidirectional								
Max Input Power, (W)	10								
Operating Temperature, °C (°F)	-30°C to +70°C								
Storage Temperature, °C (°F)	-40°C to +85°C								
Weight, g (oz.)	0.2Kg								
Radome Color	PC, UL94 V-0 Rating, Black								
Material Compliance	RoHS								
Outdoor Rated	IP67								

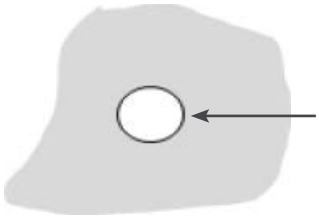
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MOUNTING

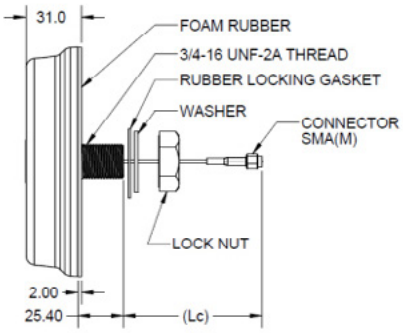
A threaded post on the back of the antenna and a supplied mounting nut is the primary mounting method when access is available to both sides of the mounting surface, such as a ceiling of a truck, meter, and vending machine. Mark the desired mounting location on the tile and cut a ø20 mm (0.8”) hole for threaded post. Feed the cables through the hole and secure the antenna with the mounting nut.

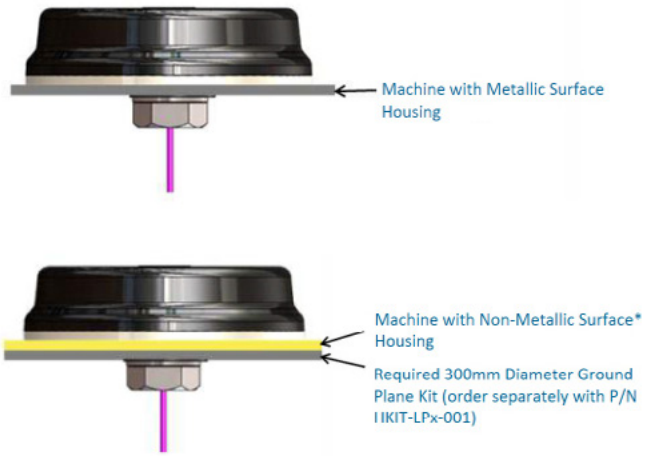
The included rubber locking gasket should only be used with the mounting nut when mounting to a hard surface.

Note: You should mount the antenna on the desired location before you connect the cable. This ensures that you do not twist or damage the cable during the mounting of the antenna.



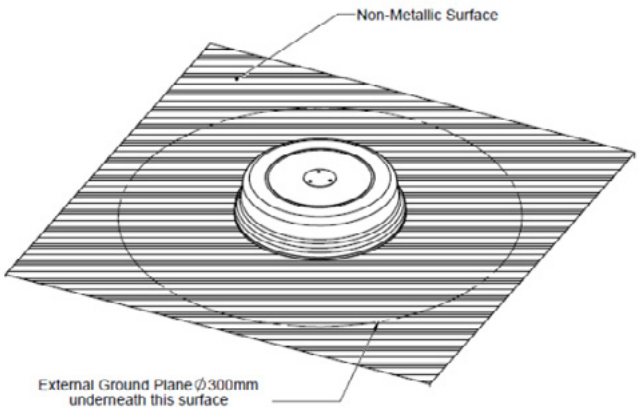
HOUSING CONFIGURATIONS

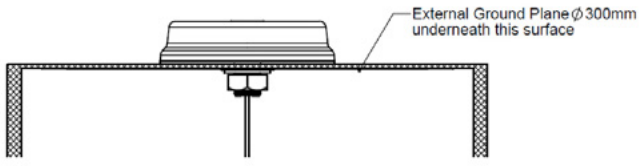




OPTIONAL GROUND PLANE KIT

For mounting on a non-metallic surface – Hardware Kit Part Number: HKIT-LPx-001

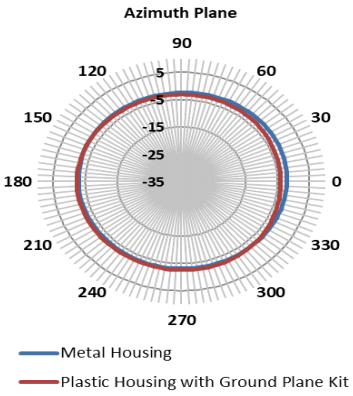


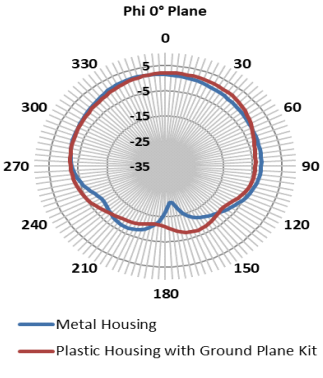


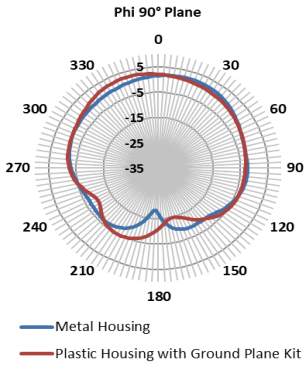
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RADIATION PATTERNS

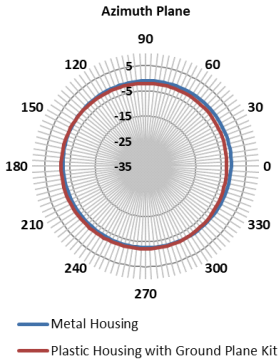
698 MHz

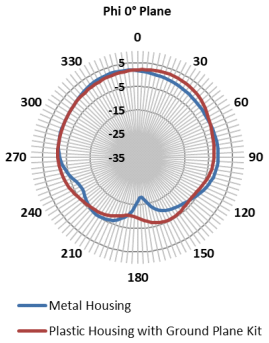


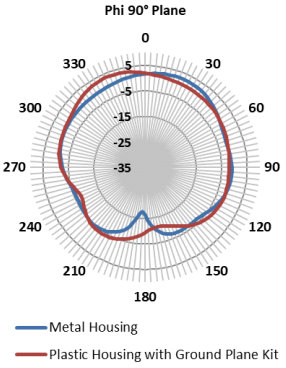




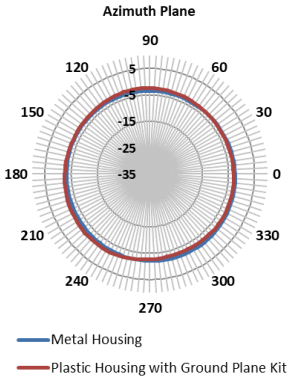
725 MHz

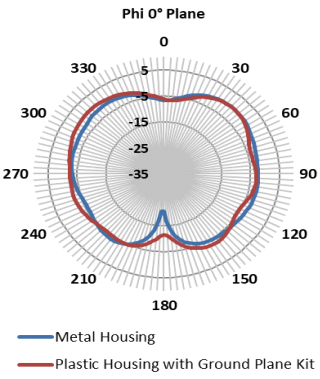


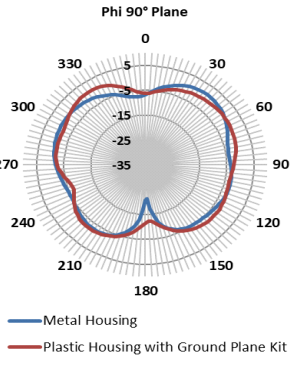




850 MHz

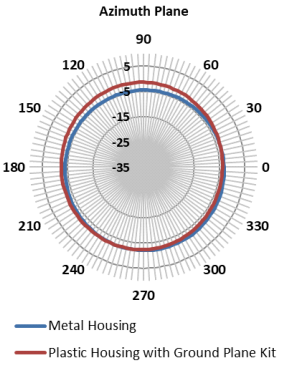


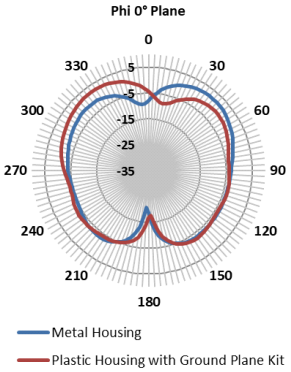


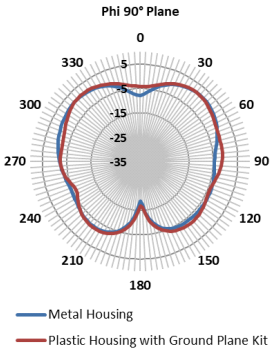


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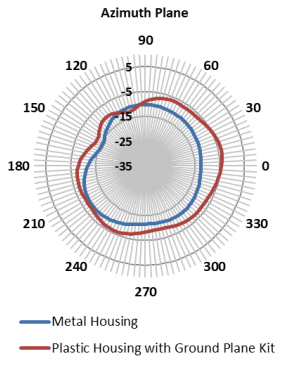
960 MHz

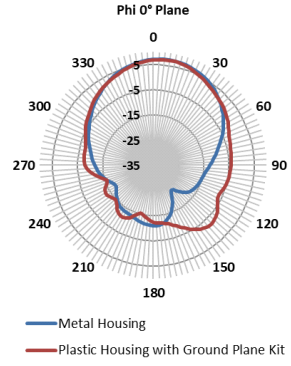


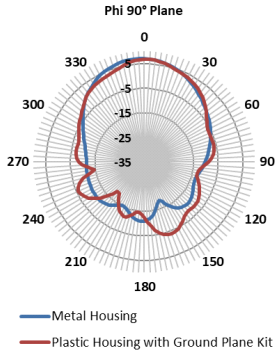




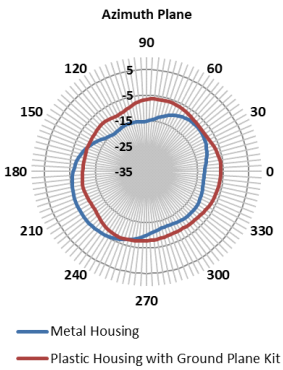
1427 MHz

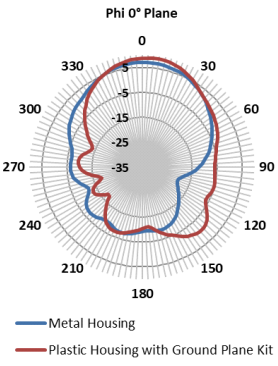


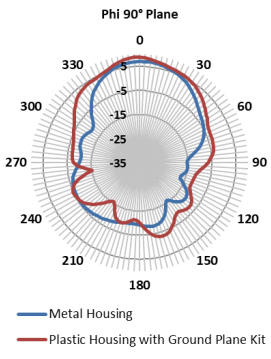




1460 MHz



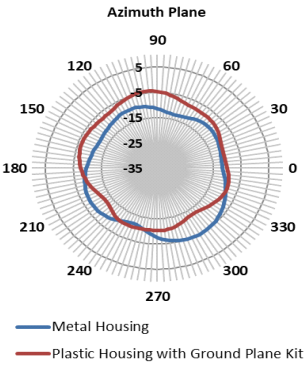


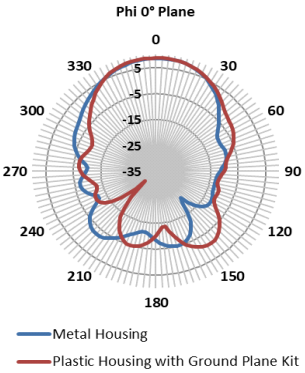


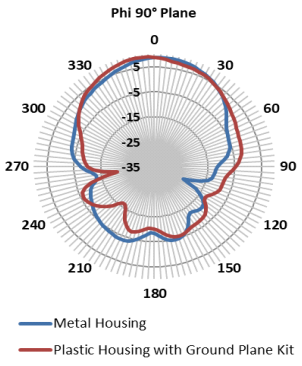
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RADIATION PATTERNS

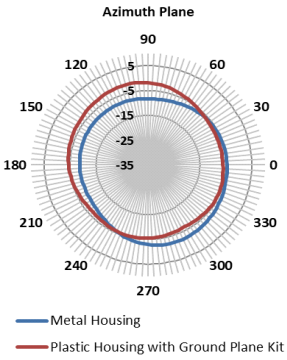
1518 MHz

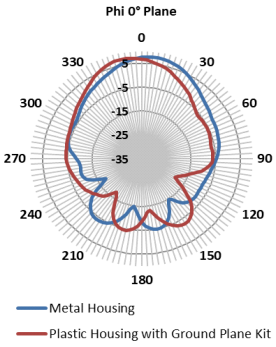


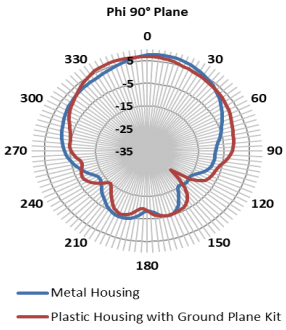




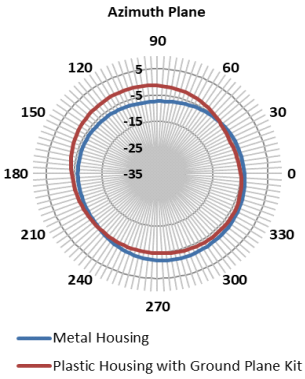
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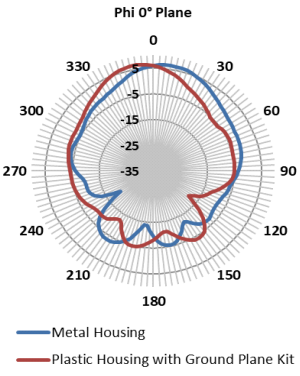


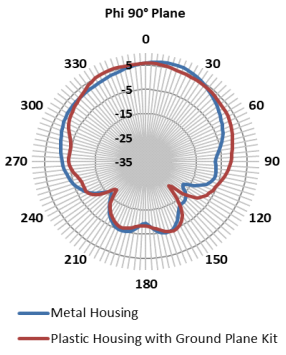




1690 MHz

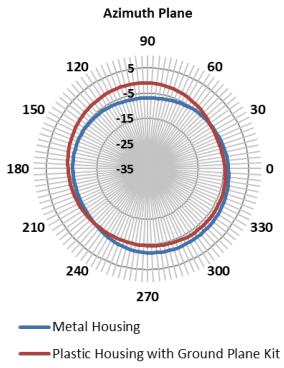


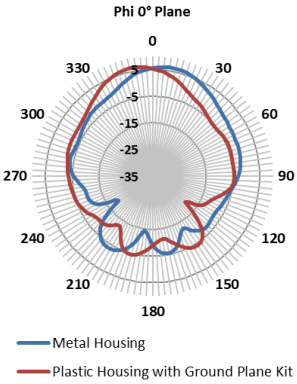


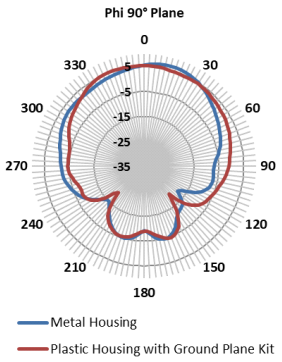


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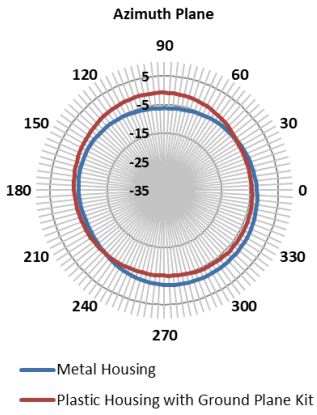
1710 MHz

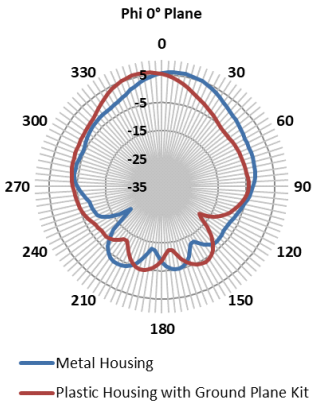


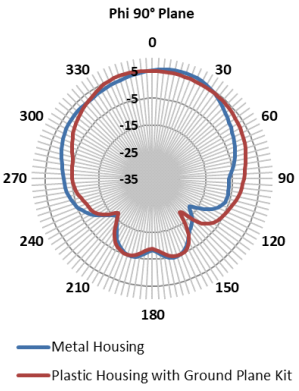




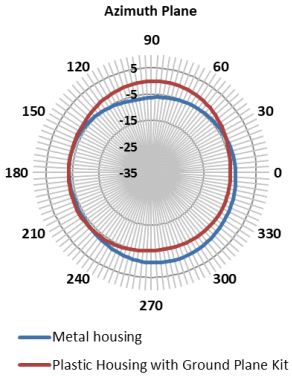
1730 MHz

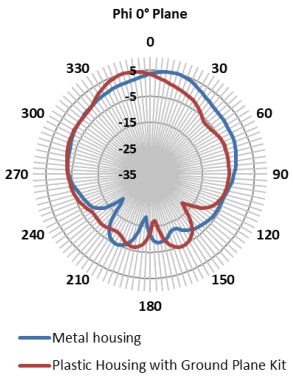


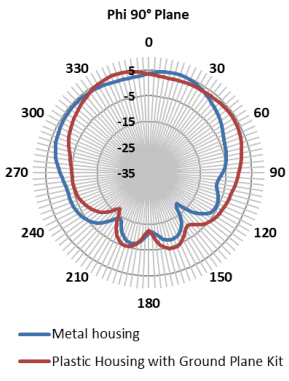




1880 MHz

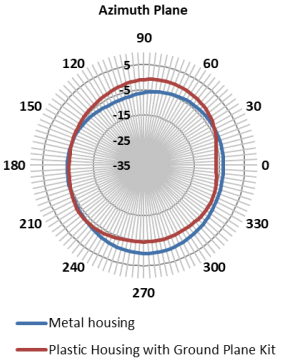


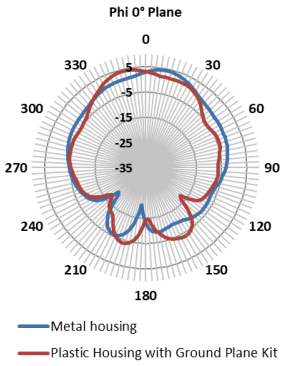


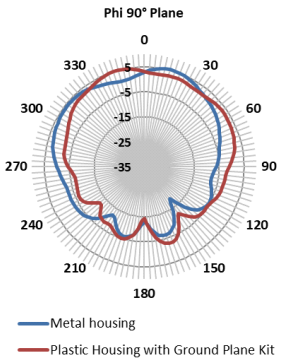


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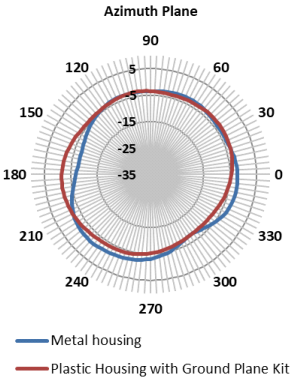
1930 MHz

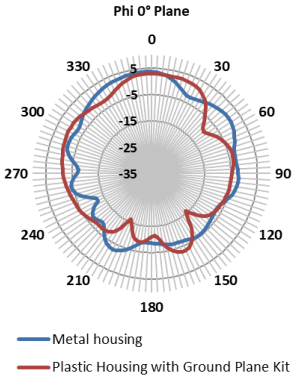


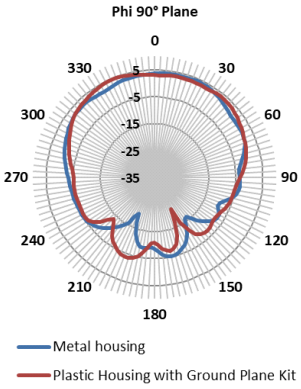




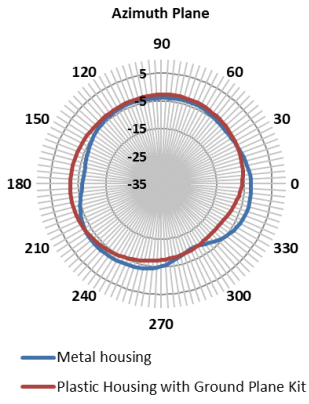
2130 MHz

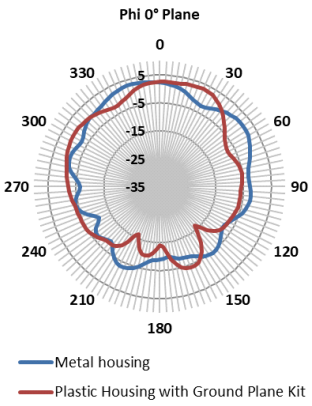


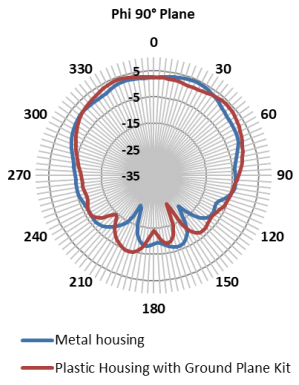




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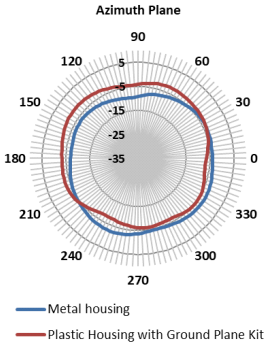


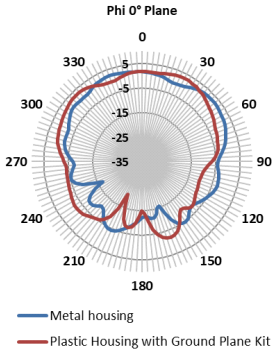


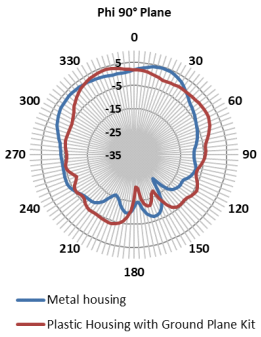


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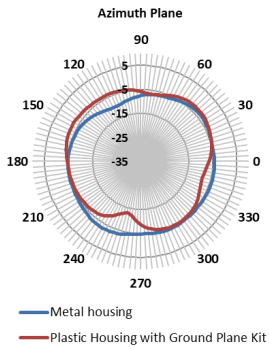
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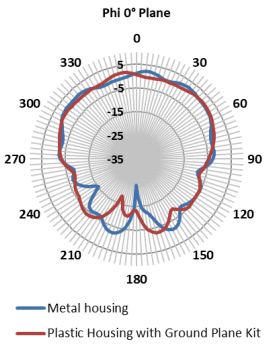


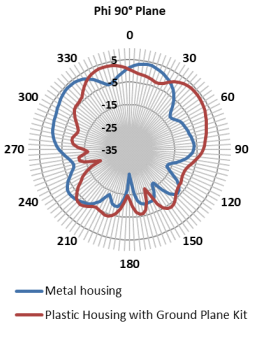




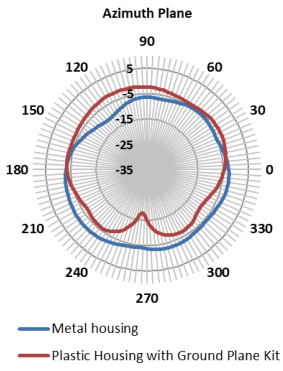
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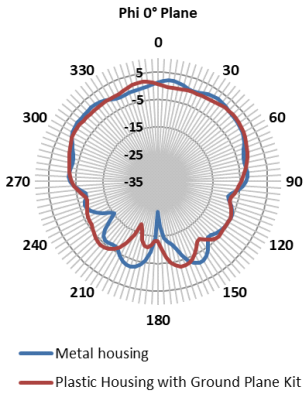


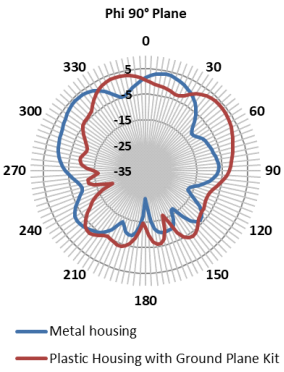




2500 MHz

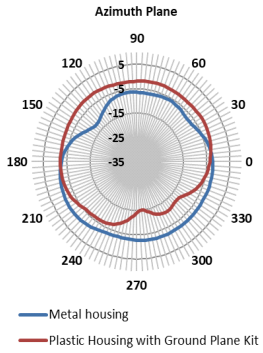


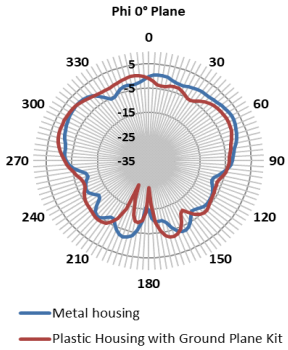


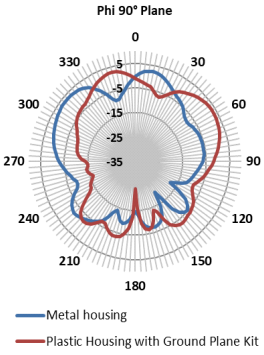


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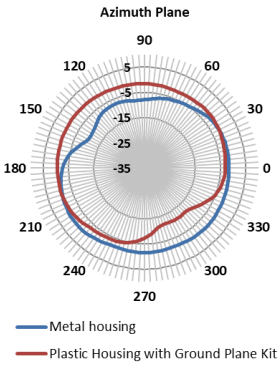
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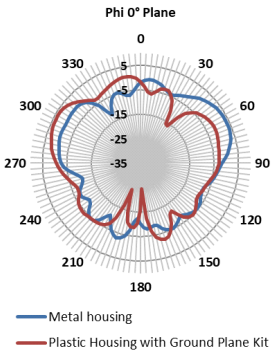


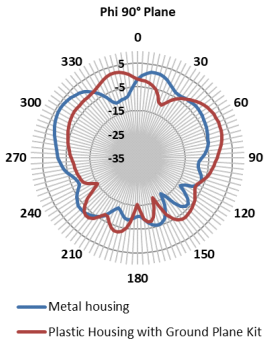




2700 MHz







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