ACX
Advanced Ceramic X

AT7020 Series

Multilayer Chip Antenna

Features

❖ Monolithic SMD with small, low-profile and light-weight type.

❖ Wide bandwidth

Applications

❖2.4GHz WLAN, Home RF, Bluetooth Modules, etc.

Specifications

Part Number	Frequency Range (MHz)	Peak Gain (dBi typ.)	Average Gain (dBi typ.)	VSWR	Impedance
AT7020 -E3R0HBA_	2400~2500	1.3dBi (XZ-V)	-0.5dBi (XZ-V)	2 max.	50 Ω

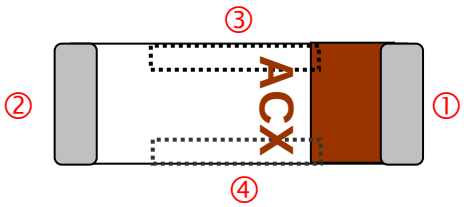
Q'ty/Reel (pcs) : 1,000 pcs
Operating Temperature Range : -40 ~ +85 °C
Storage Temperature Range : +5 ~ +35 °C, Humidity 45~75%RH
Storage Period : 12 months max.
Power Capacity : 2W max.

Part Number

AT ① 7020 ② - E ③ 3R0 ④ HBA ⑤ □ ⑥ □ ⑦

① Type	AT : Antenna	② Dimensions (L × W)	7.0× 2.0 mm
③ Material Code	E	④ Frequency Range	3R0=3000MHz
⑤ Specification Code	HBA	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	=lead-containing /LF=lead-free		

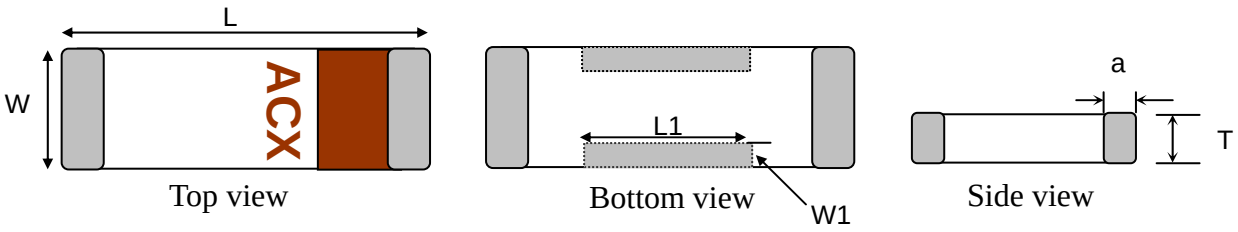
Terminal Configuration



No.	Terminal Name	No.	Terminal Name
①	Feeding Point	③	NC
②	NC	④	NC

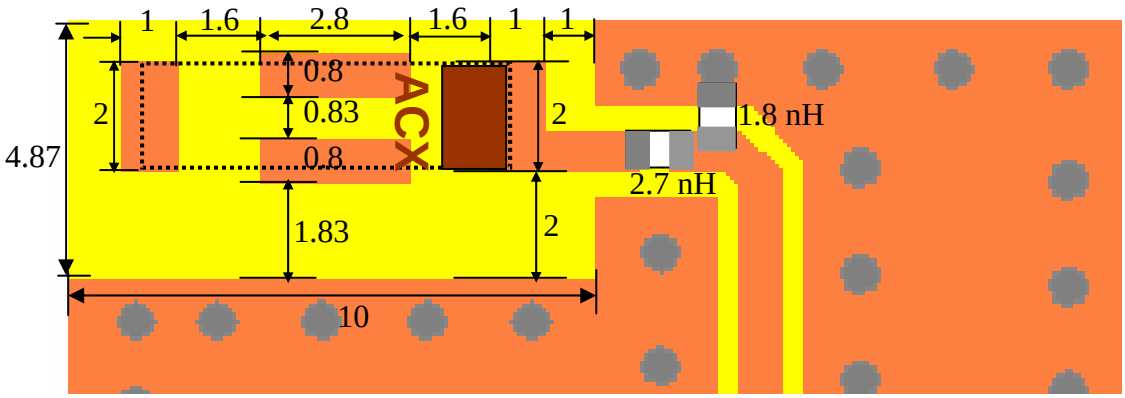
Dimensions and Recommended PC Board Pattern

Unit : mm



Mark	L	W	L1	W1	T	a
Dimensions	7.0±0.2	2.0±0.2	2.6±0.2	0.5±0.2	2.0+ 0.1/-0.2	0.5±0.3

❖With Matching Circuits (Unit in mm)

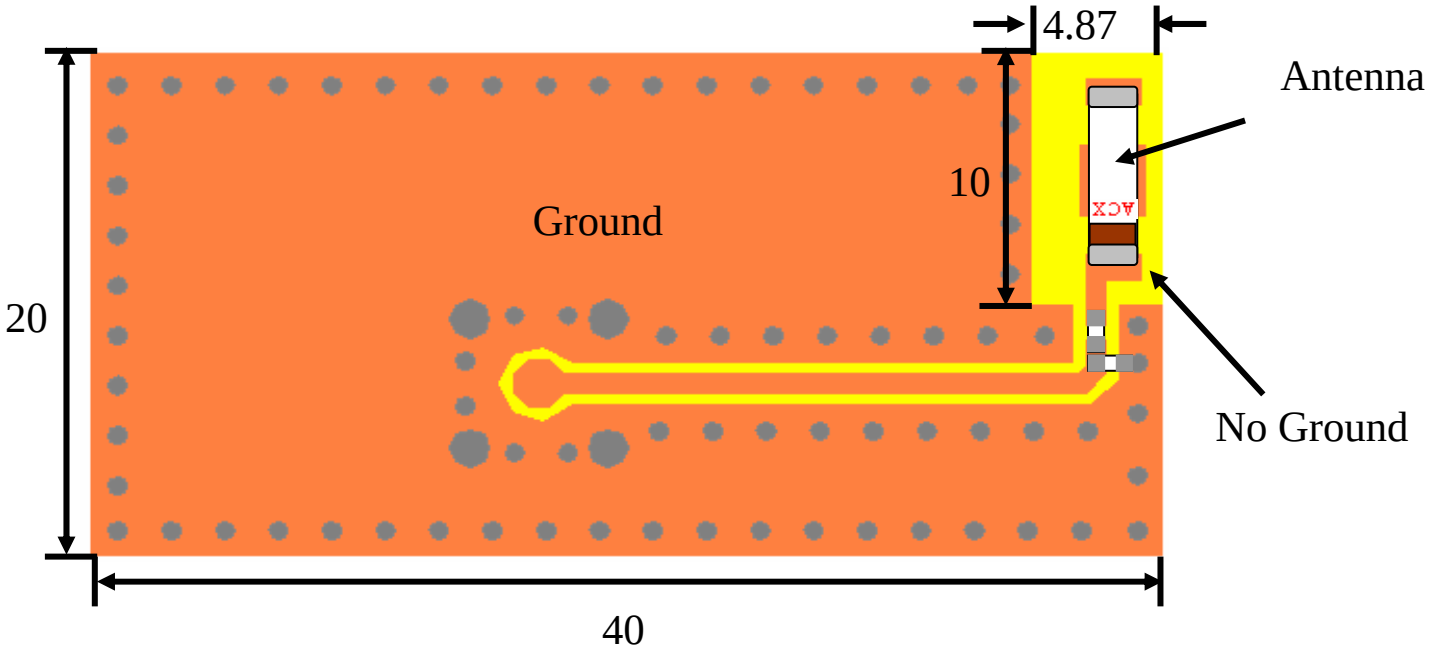


(Matching circuit and component values will be different, depending on PCB layout)

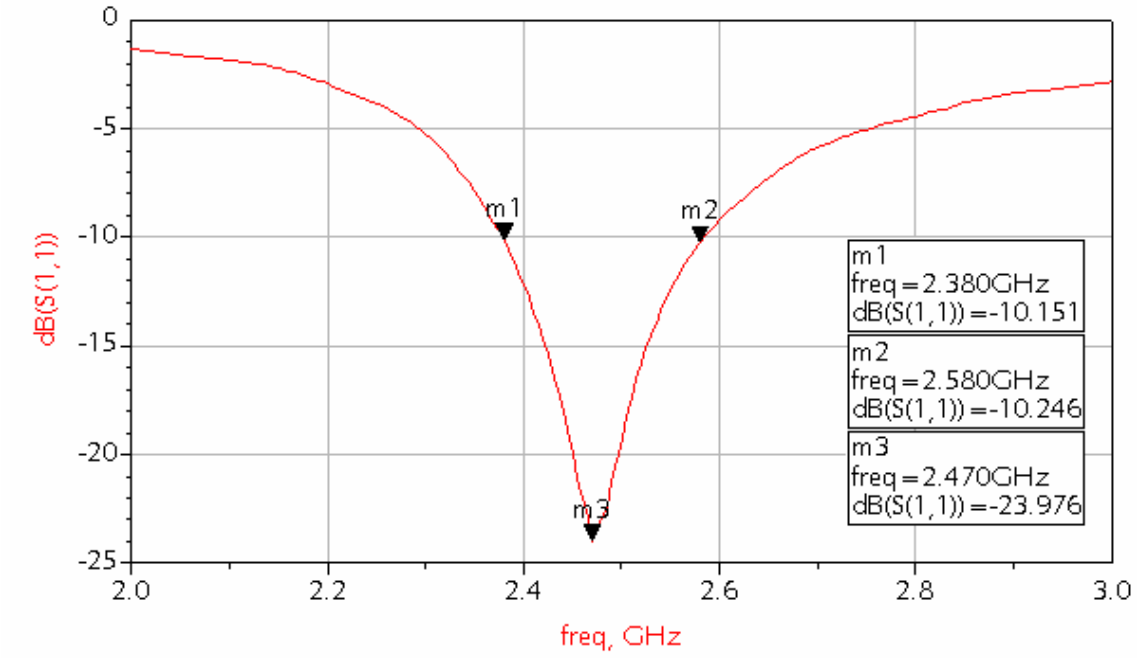
*Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

Typical Electrical Characteristics (T=25°C)

❖ Test Board (Unit in mm)



❖ Return Loss/With Matching Circuits



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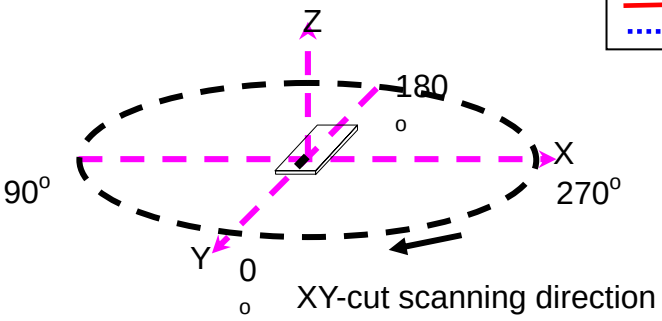
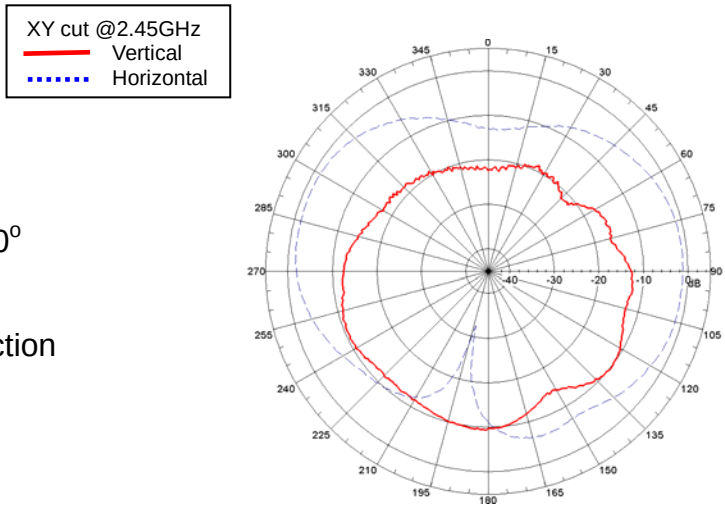
❖ Radiation Patterns

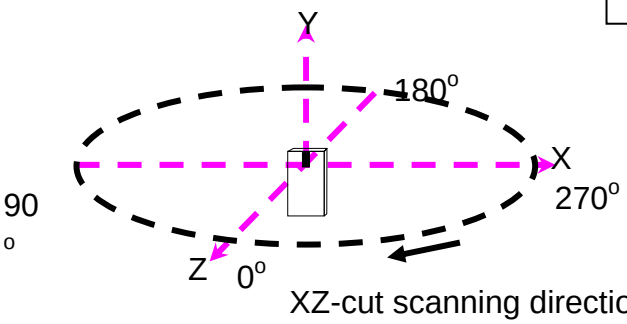
XY-V/XY-H



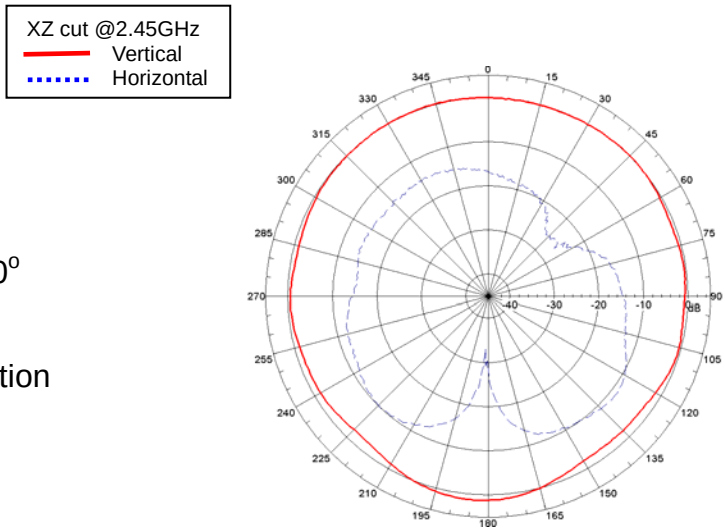
XY-cut scanning direction



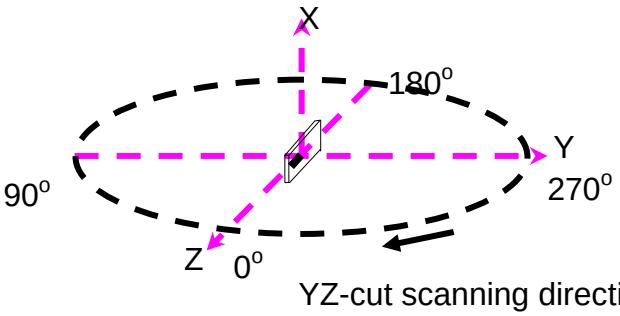
XZ-V/XZ-H



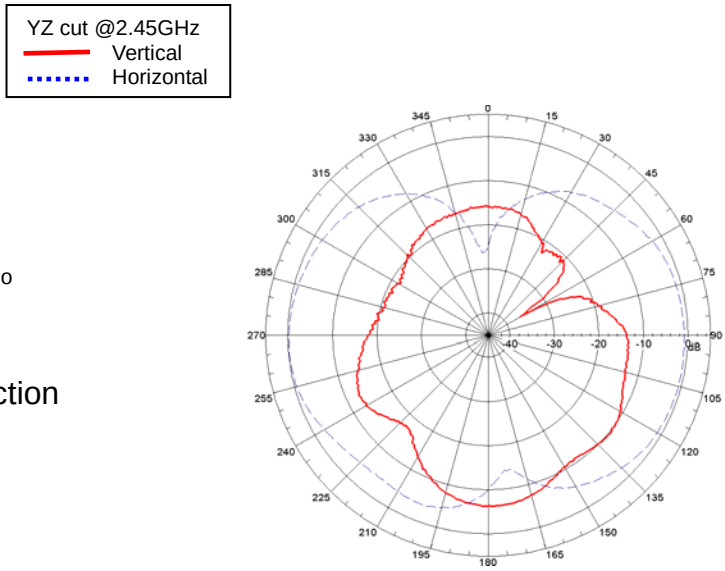
XZ-cut scanning direction



YZ-V/YZ-H

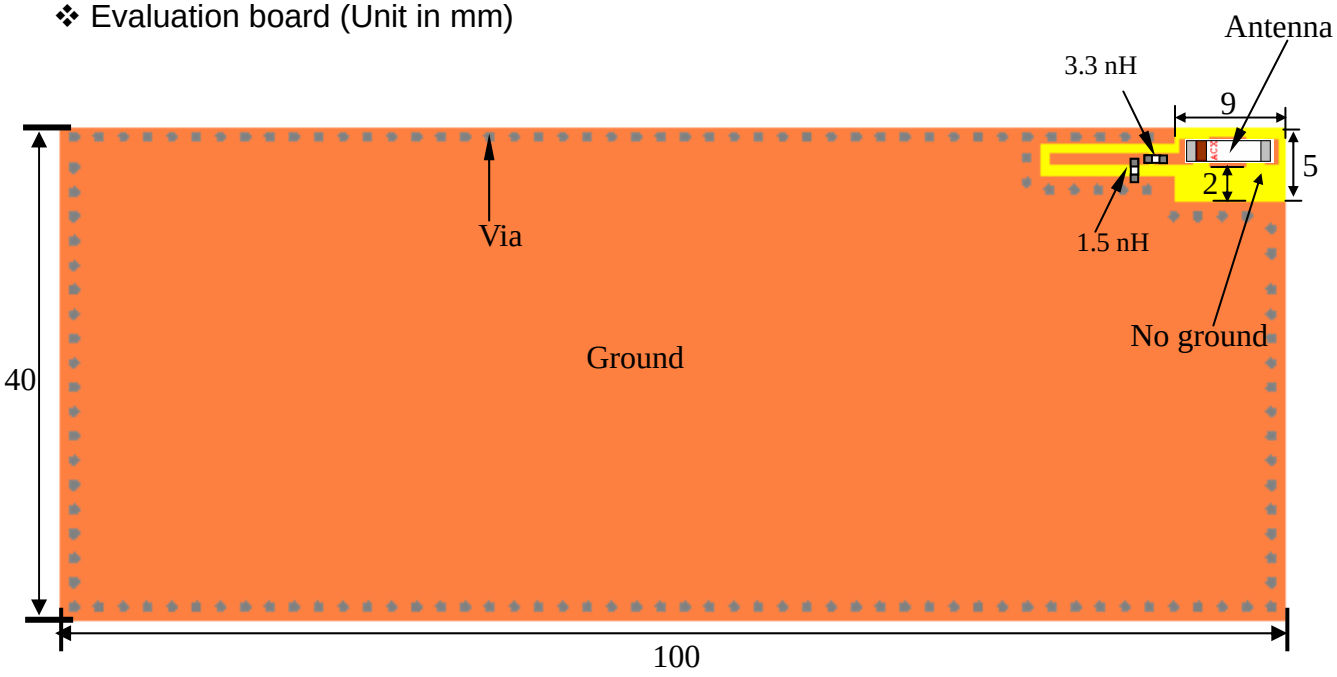


YZ-cut scanning direction

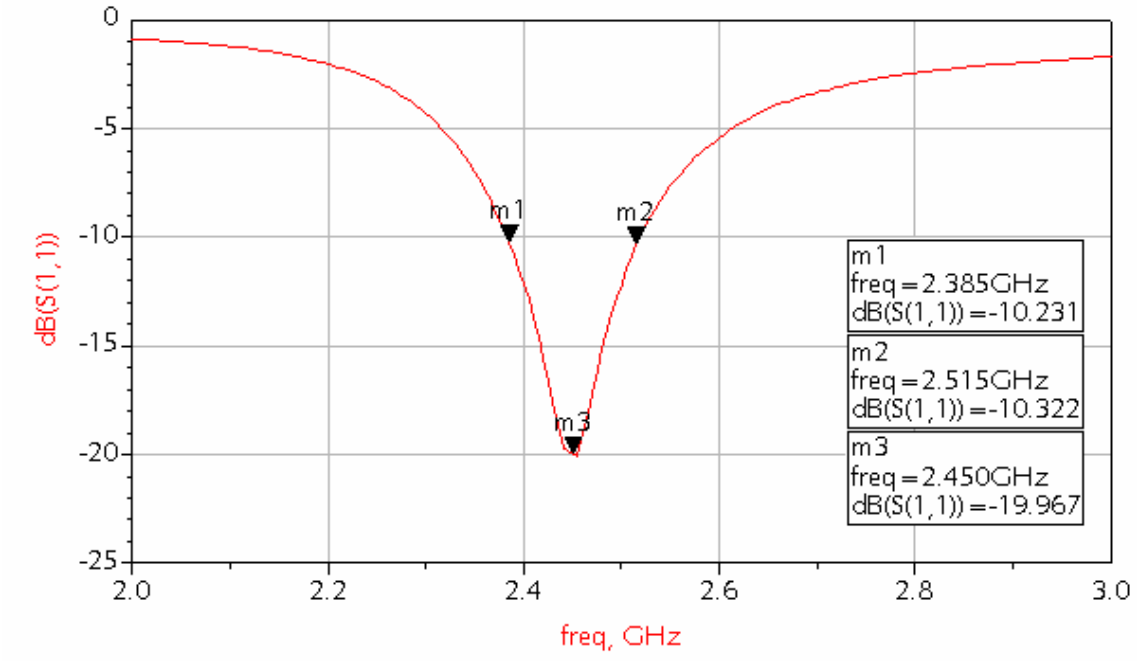


AT7020-E3R0HBA on mobile phone layout

❖ Evaluation board (Unit in mm)

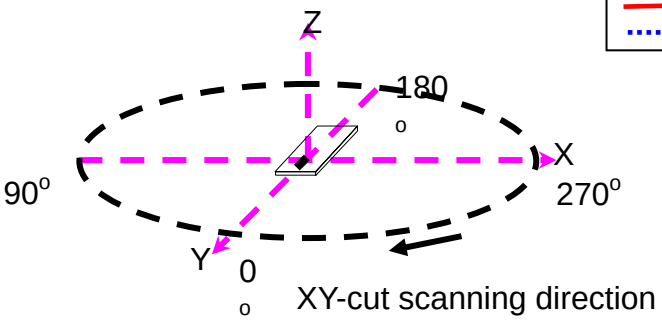


❖ Return Loss/With Matching Circuits

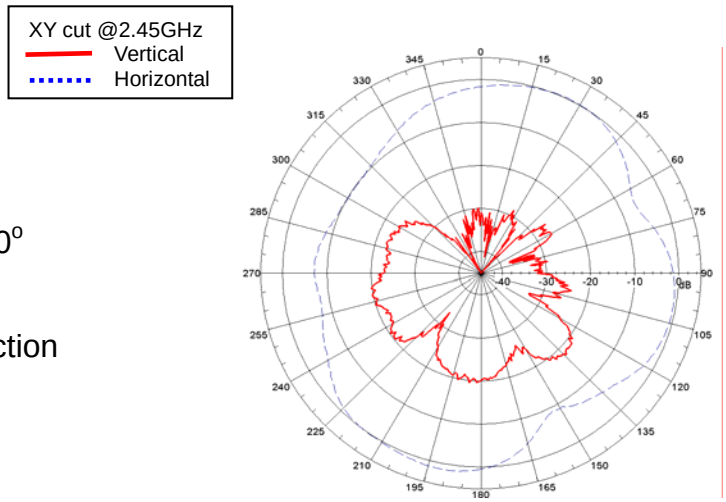


❖ Radiation Patterns

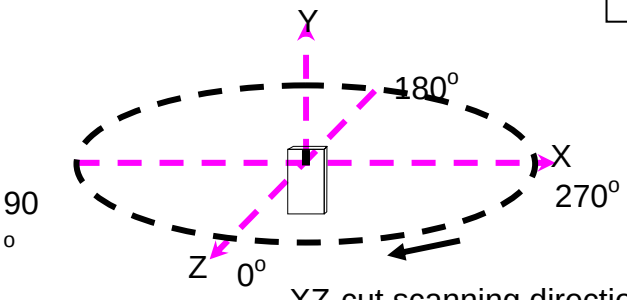
XY-V/XY-H



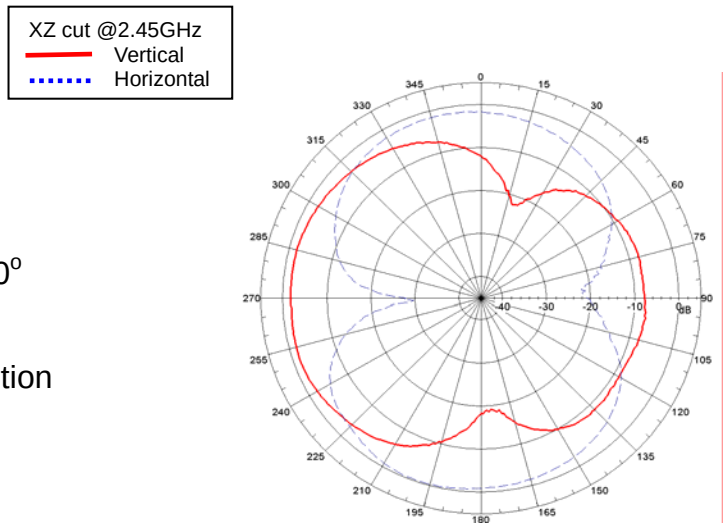
XY-cut scanning direction



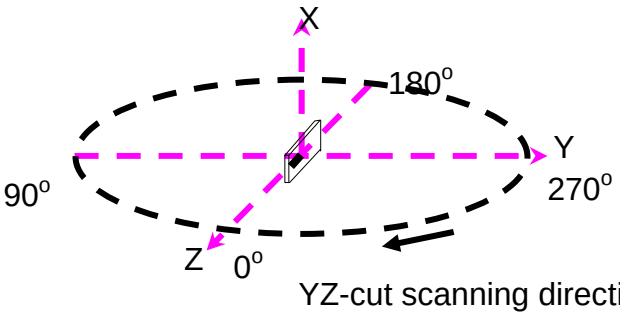
XZ-V/XZ-H



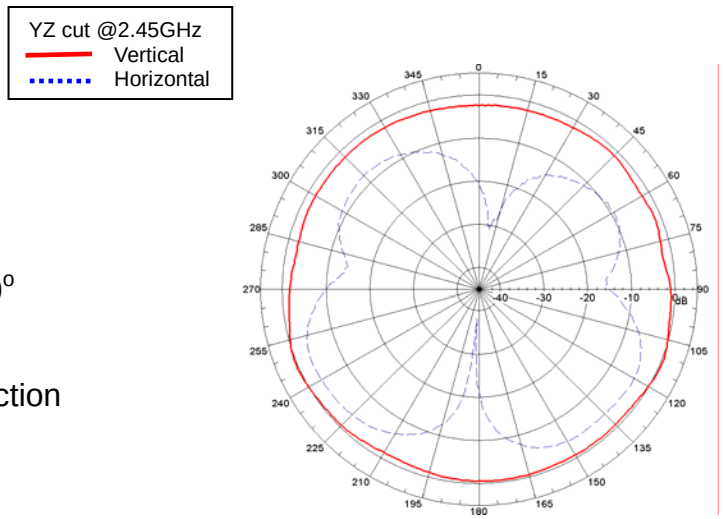
XZ-cut scanning direction



YZ-V/YZ-H



YZ-cut scanning direction



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