NGCL1206UV1R575G3TRF

GPS / WIFI Ceramic Chip Antenna

9001:2015 CERTIFIED

ROHS/REACH COMPLIANT HALOGEN FREE

NIC Components Corp.

Features

- Supports: GPS & WIFI DUAL Band
- Stable and reliable performance
- Low profile, compact size
- SMT processes compatible
- RoHS Compliant

Applications

- Navigation systems or position tracking systems
- Hand-held devices when GPS and WiFi (802.11a/b/g/n/ac) functions are needed, e.g., PDA, Smart phone, PND, Notebook computer.

Specifications

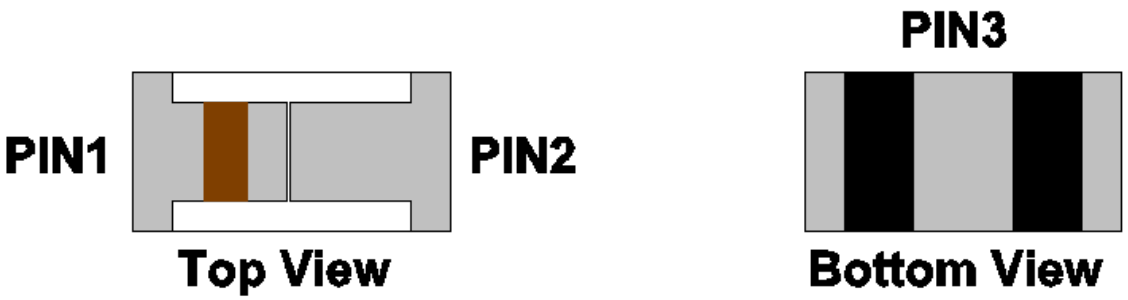
Electrical Table #1			
Frequency Bands	**GPS Band**	**WiFi & Bluetooth**	
Frequency Range	1575.42 MHz	2400~2500 MHz	5150~ 5850 MHz
Center Frequency	-	2442 MHz	5550 MHz
Isolation(S21)	≤ -24 typ.	≤ -8 typ.	≤ -39 typ.
Peak Gain	1.5 dBi typ.	0.4 dBi typ.	2.3 dBi typ.
Average Gain	-2.1 dB typ.	-3.0 dB typ.	-2.0 dB typ.
Efficiency	61% typ.	50% typ.	62% typ.
Return Loss	< -10 dB typ.	< -10 dB typ.	< -5 dB typ.
V.S.W.R	2.0 Max	2.0 Max	3.0 Max
Maximum Input Power	2 W		
Polarization	Linear		
Impedance	50Ω		
Environmental			
Operating Temperature	-40℃~+85℃		
Storage Temperature	-5℃~+40℃ -40℃~+85℃ : After mounting on PCB		
Relative Humidity	10% to 70% : Operating & Storage after mounting on PCB 20% to 70% : Storage		
Shelf Life	1 year		
RoHs Compliant	Yes		

Part Number Breakdown

NGCL1206UV1R575G3TRF

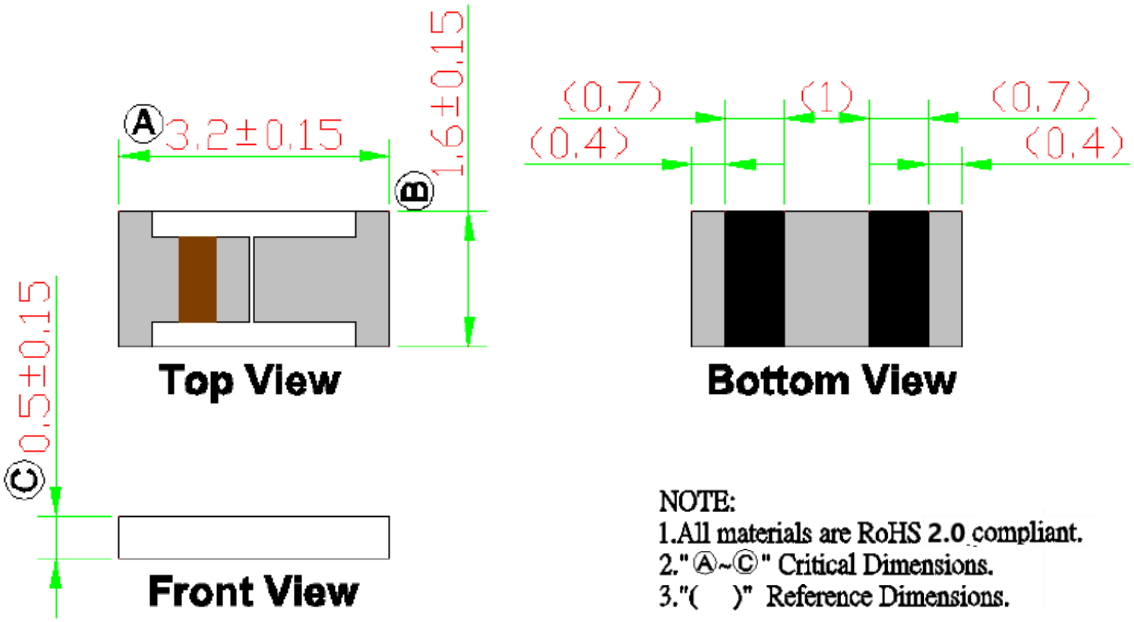
- F = RoHs Compliant
- TR = Tape & Reel
- 3 = # of Bands
- 1R575G = Center Frequency
- V = Combo(GPS / WIFI)
- U = Production Code
- 1206 = Size (3.2mm x 1.6 mm)
- NGCL = Series

Pin Definition



PIN	1	2	3
Soldering Pad	GPS Input	Wi-Fi dual band Input	Ground

Dimension Drawing

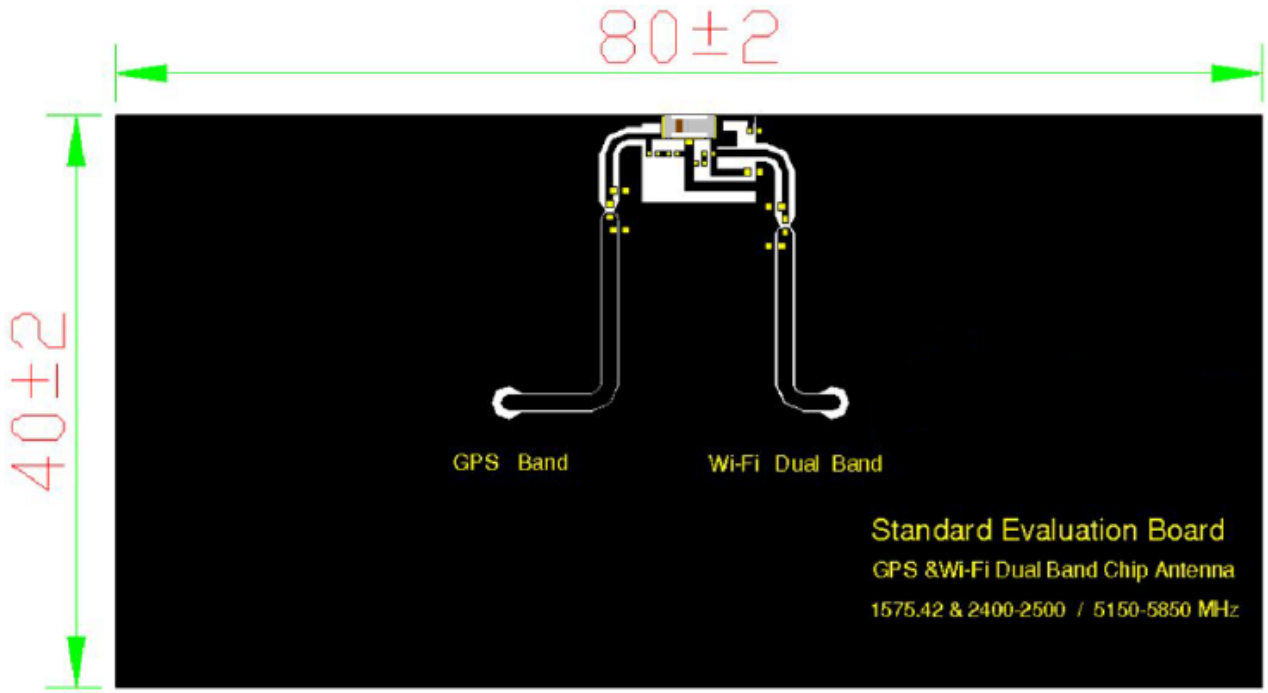


NOTE:
1.All materials are RoHS 2.0 compliant.
2."Ⓐ~Ⓒ" Critical Dimensions.
3."( )" Reference Dimensions.

Dimensions (mm) & Mechanical

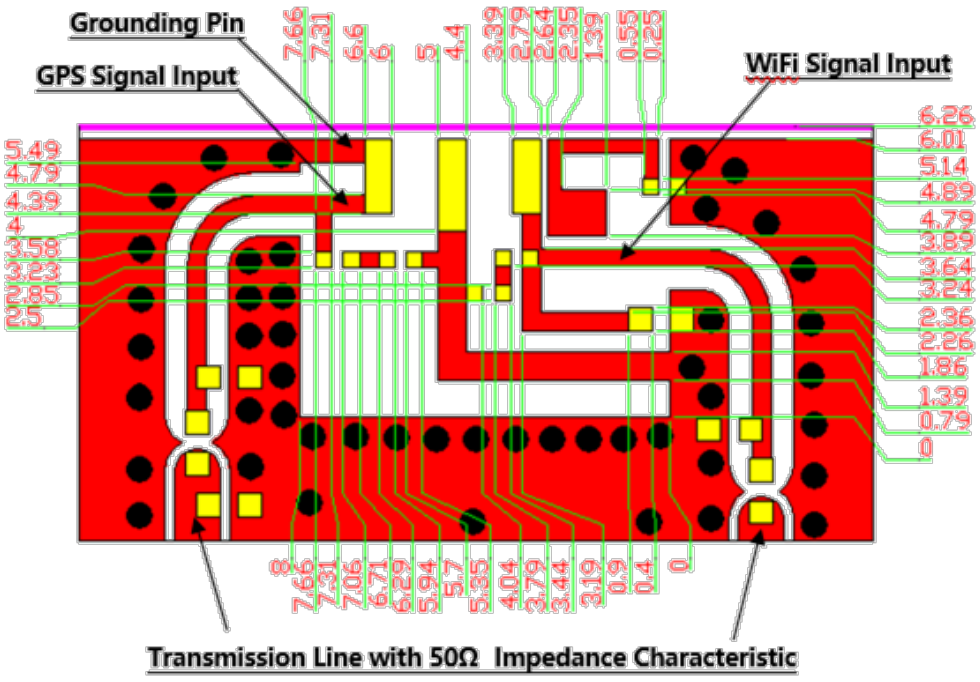
Body Length (A)	3.2 ± 0.15
Width (B)	1.6 ± 0.15
Thickness (C)	0.5 ± 0.15
Connection Type	SMT
Ground Plane	80 mm x 40 mm
Material	Ceramic

Evaluation Board

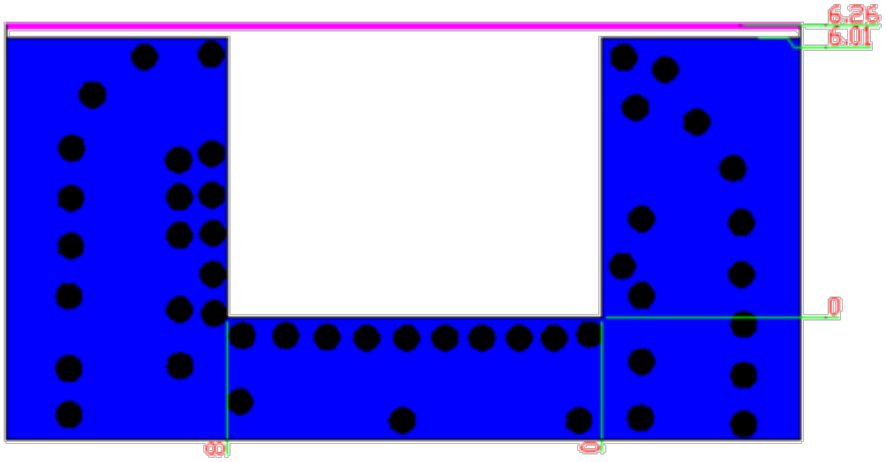


Solder Land Pattern

The gold areas represent the solder land pattern. Any recommendations on the matching circuit will be provided according to the customer's installation conditions.

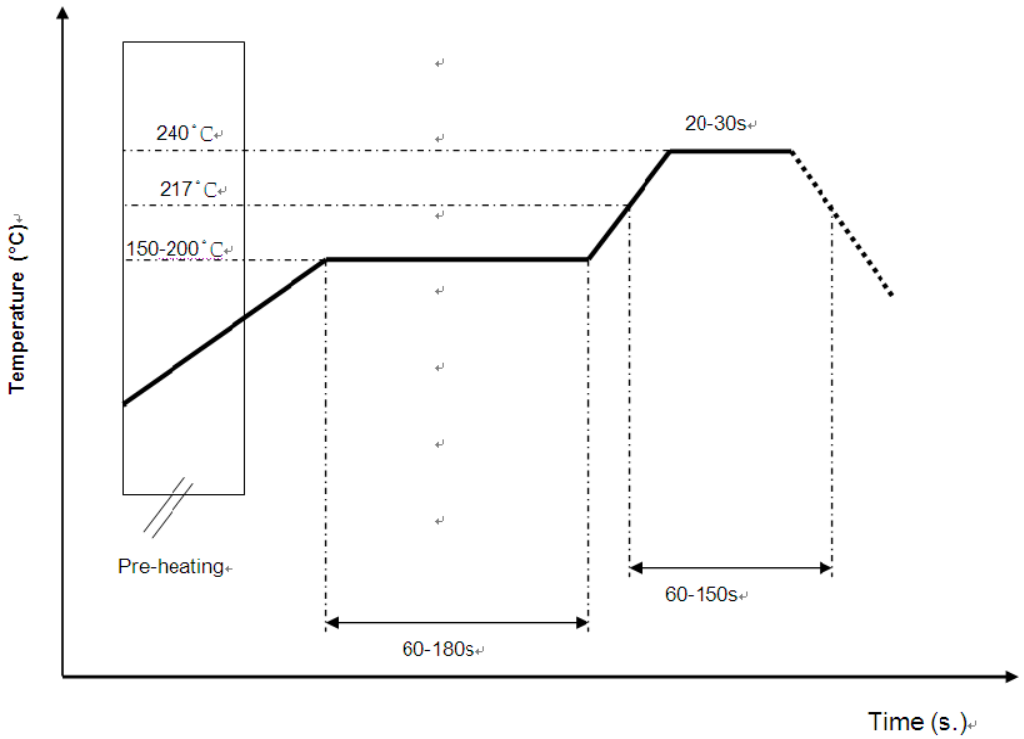


Top View



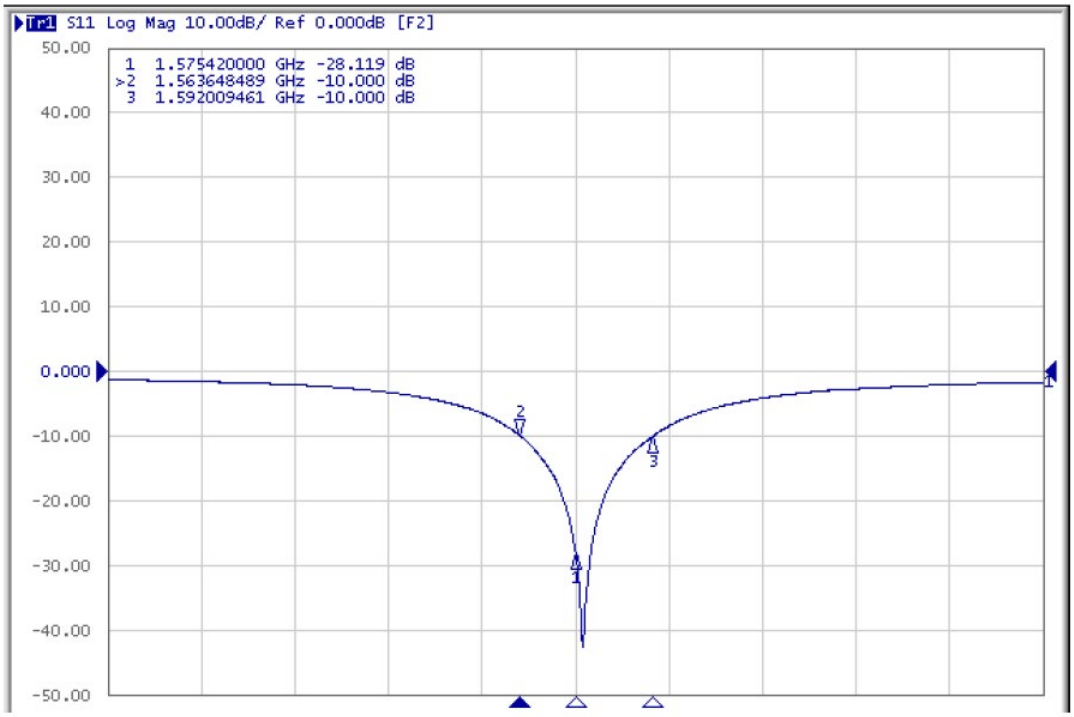
Bottom View

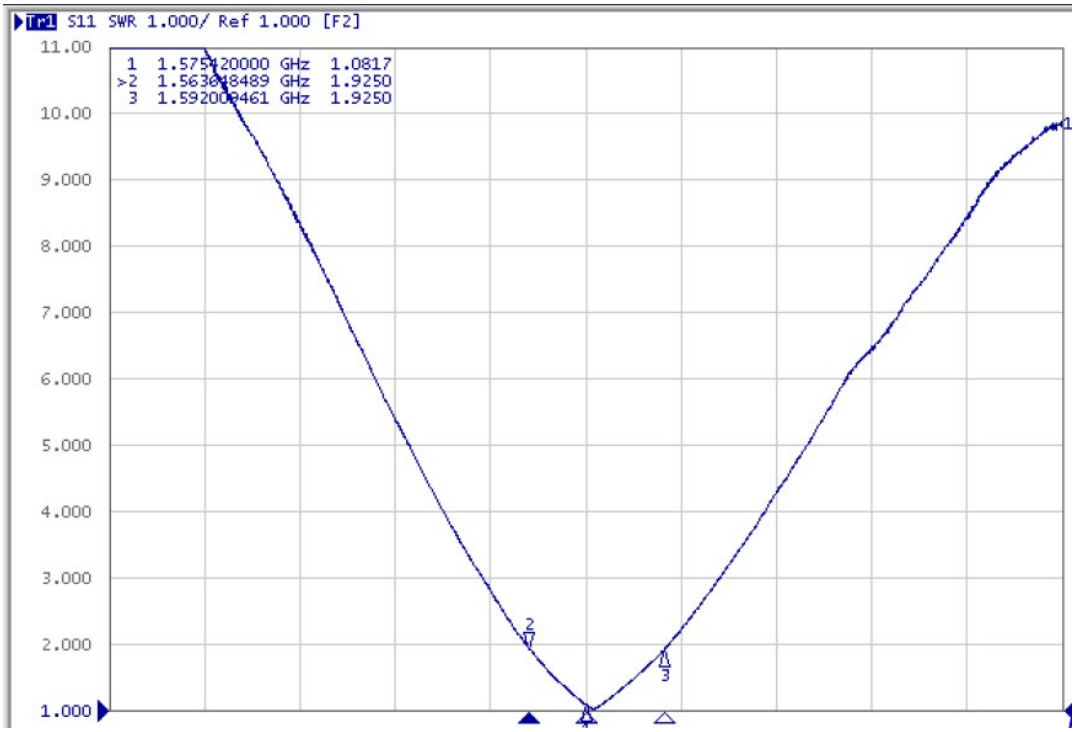
Typical Soldering Conditions



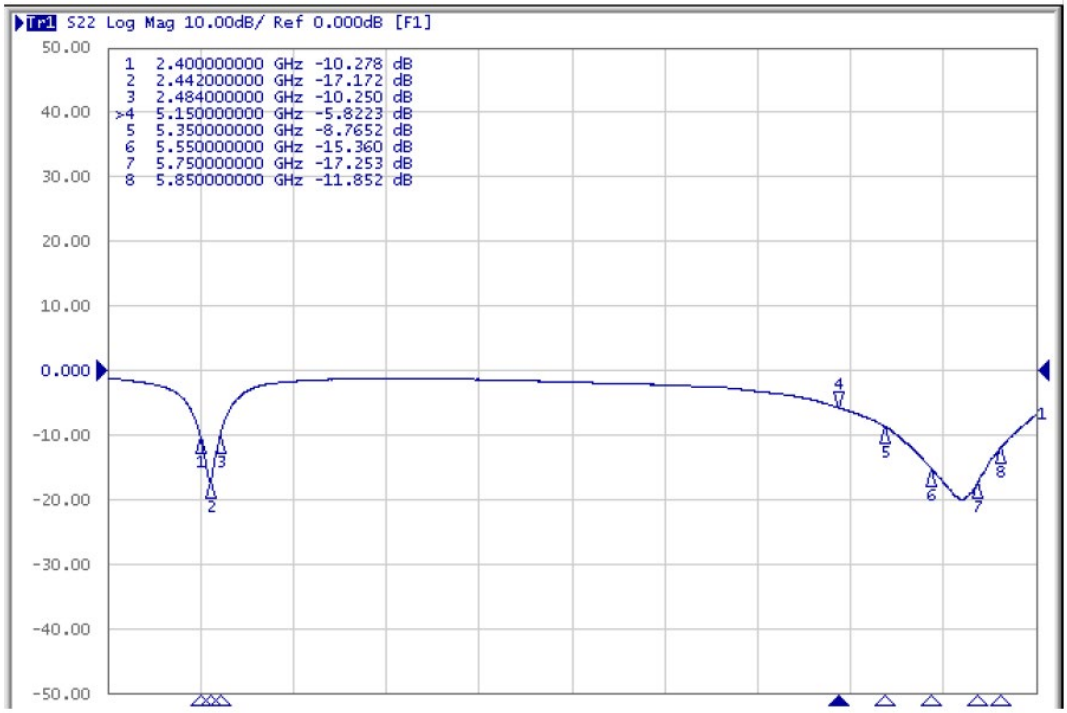
*Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste

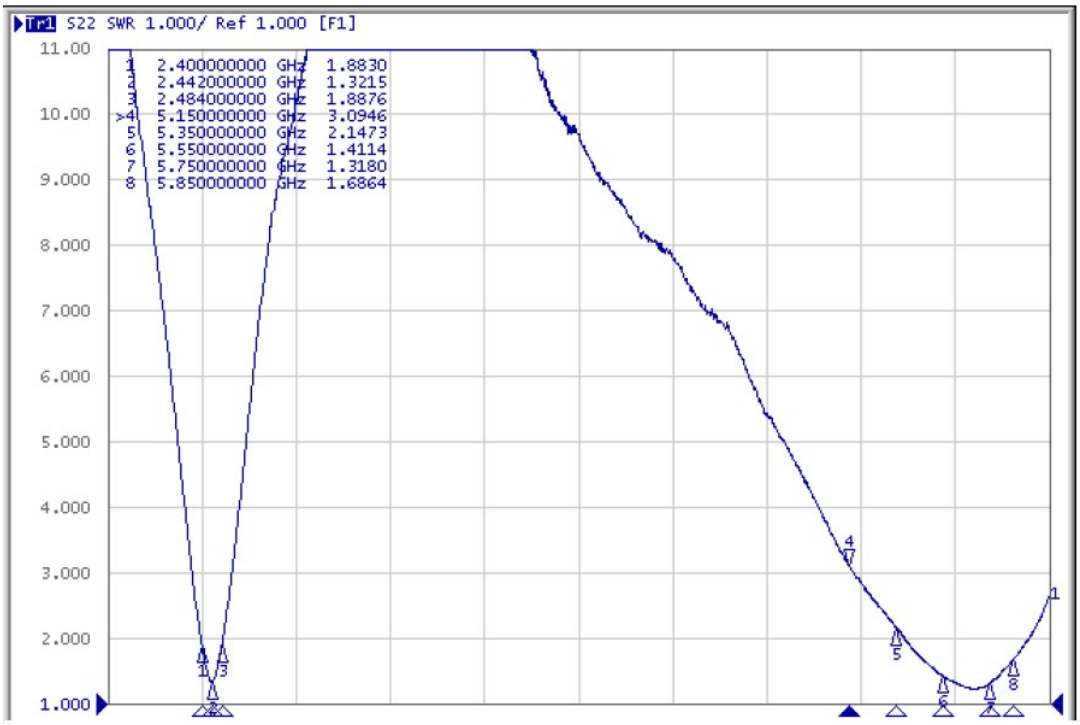
Return Loss & VSWR of GPS Band



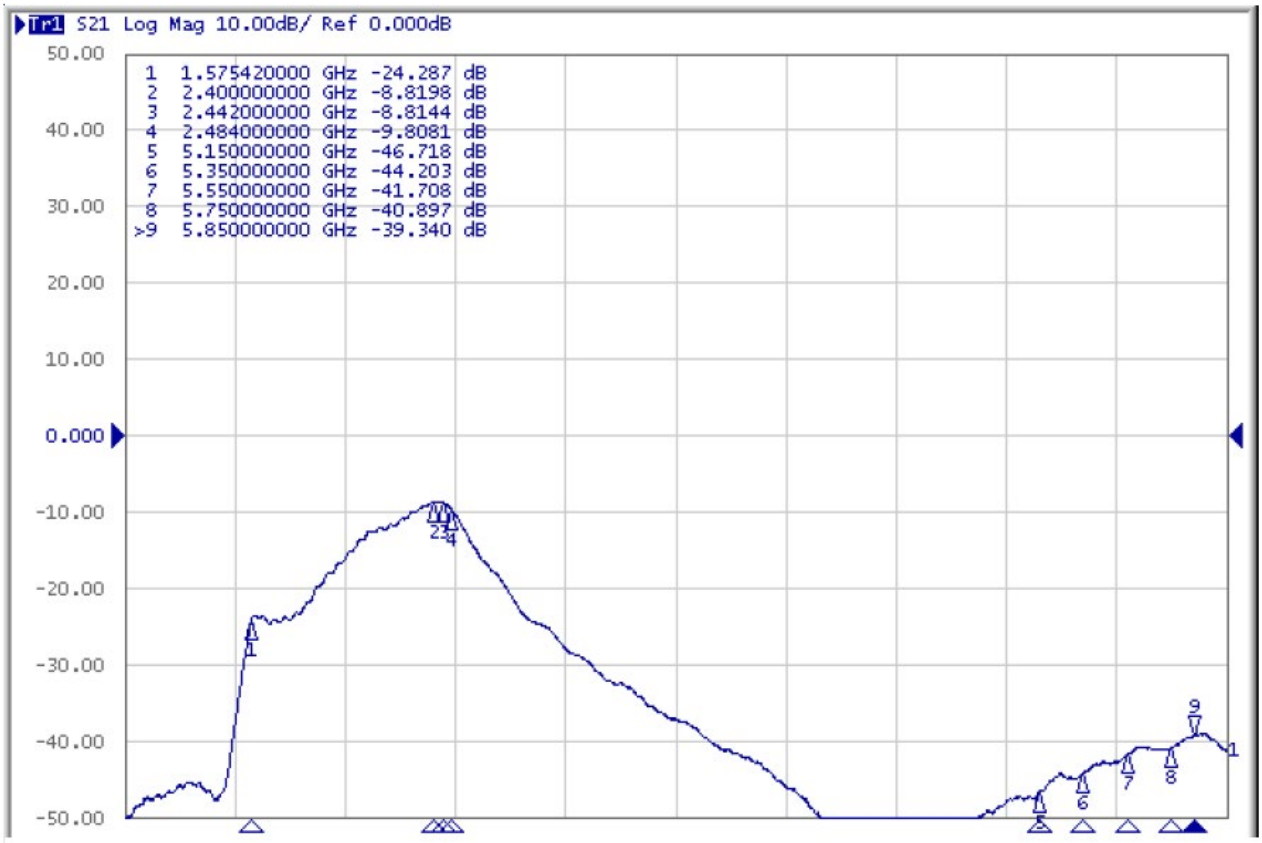


Return Loss & VSWR of WiFi Band



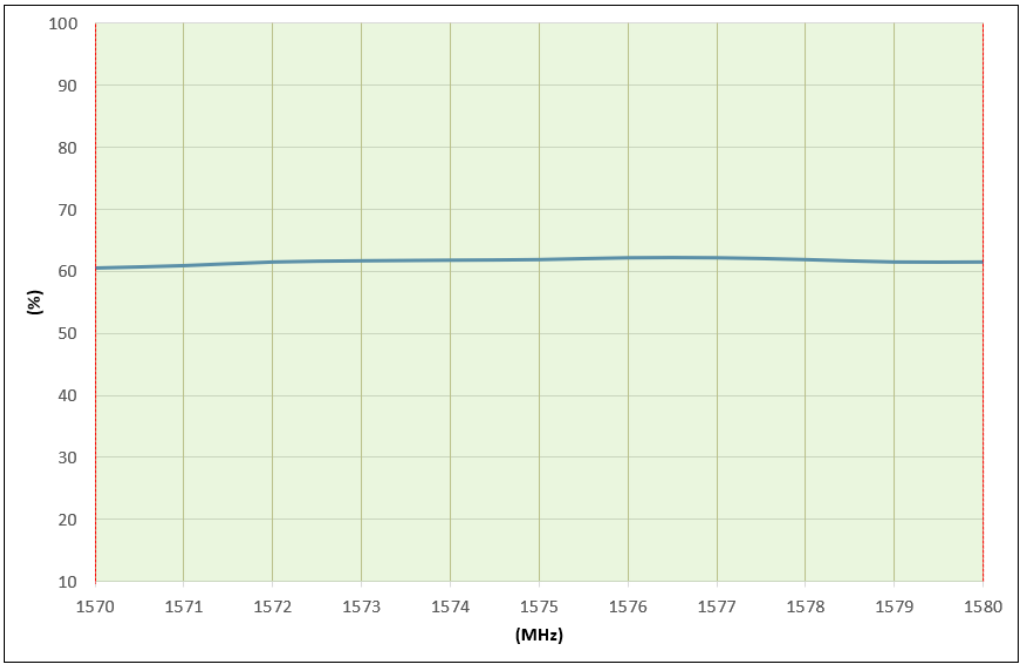


Isolation between GPS Band & WiFi Band

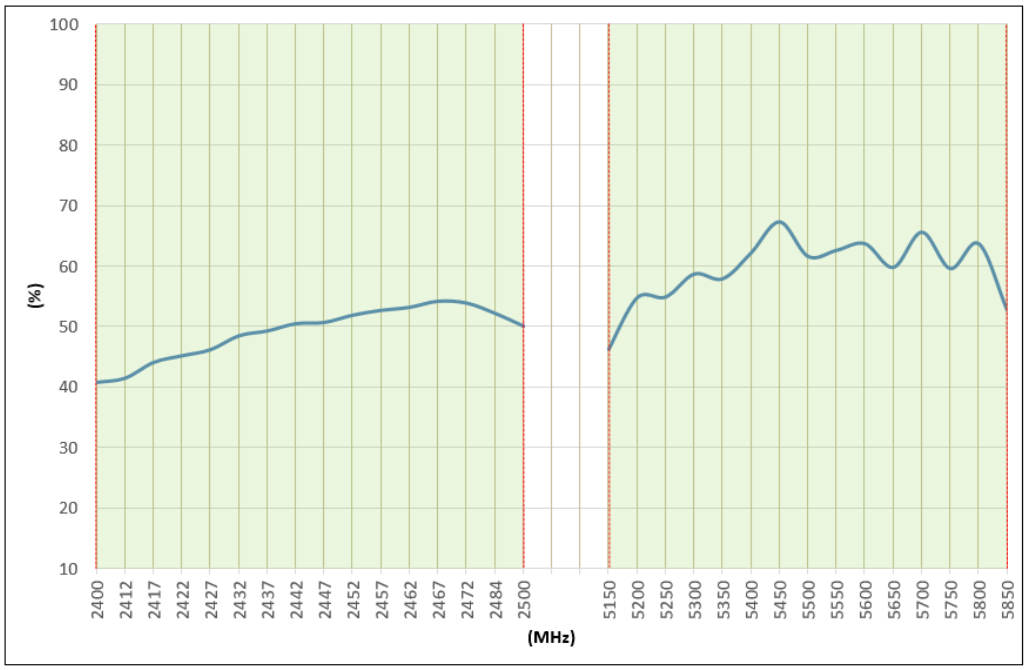


Efficiency (%)

GPS Band

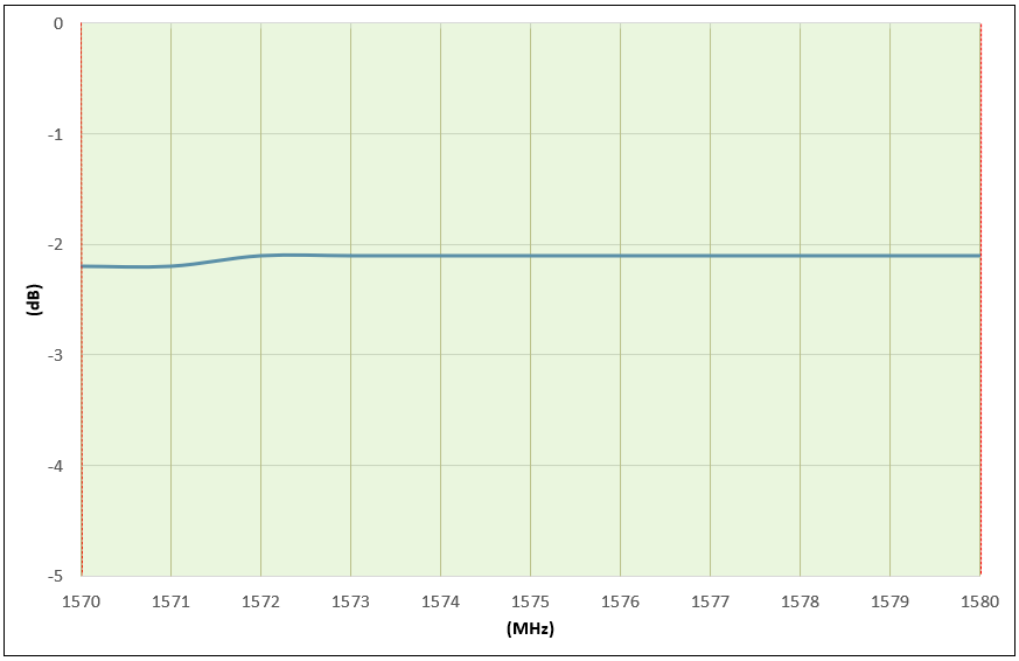


WIFI Band

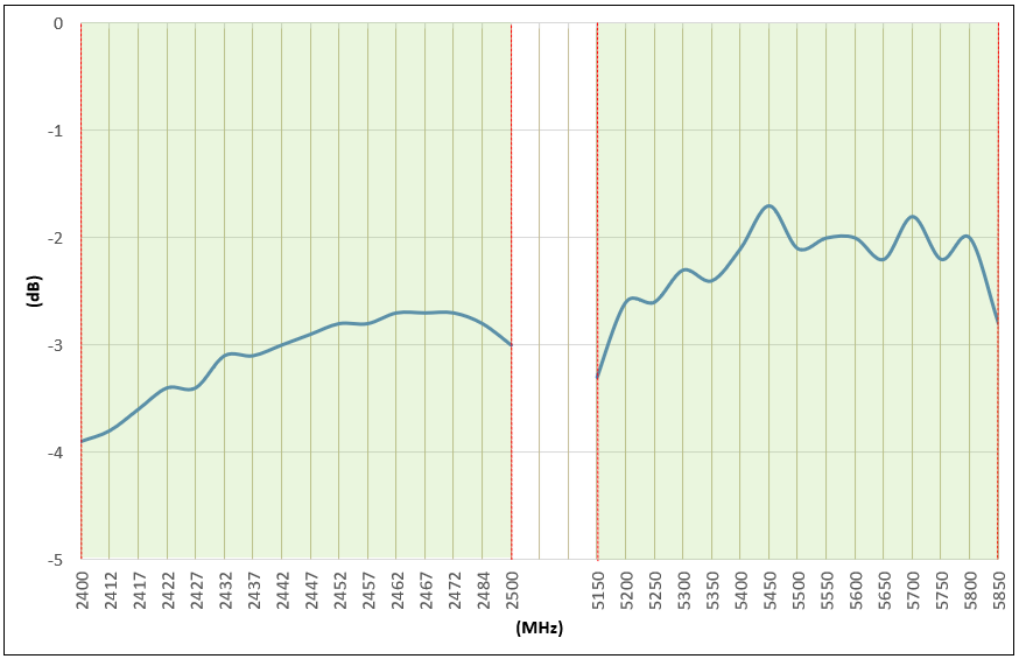


Average Gain (dB)

GPS Band

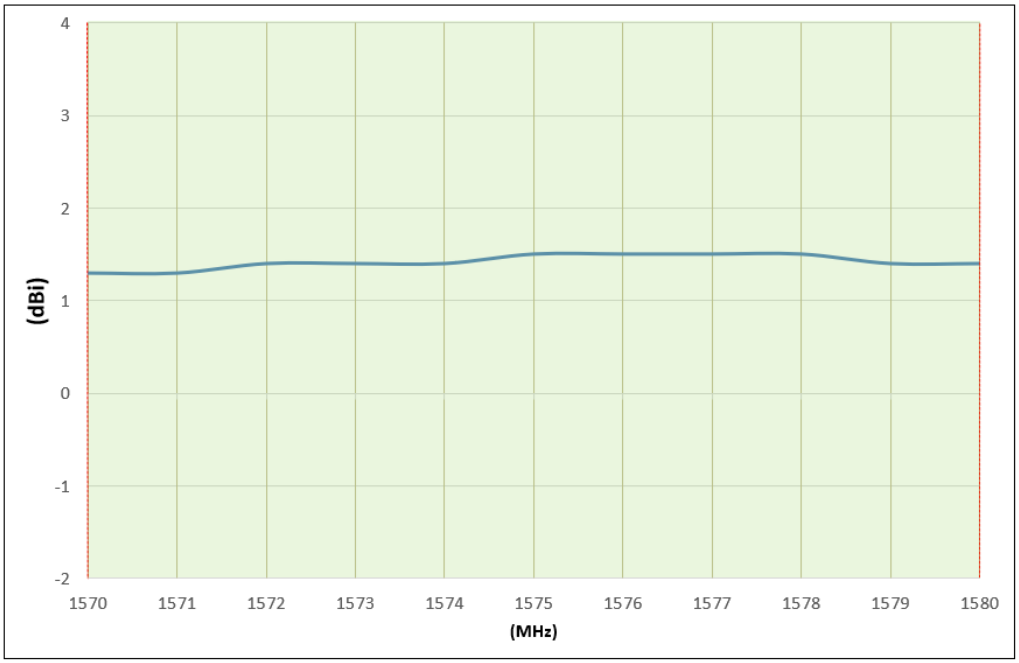


WIFI Band

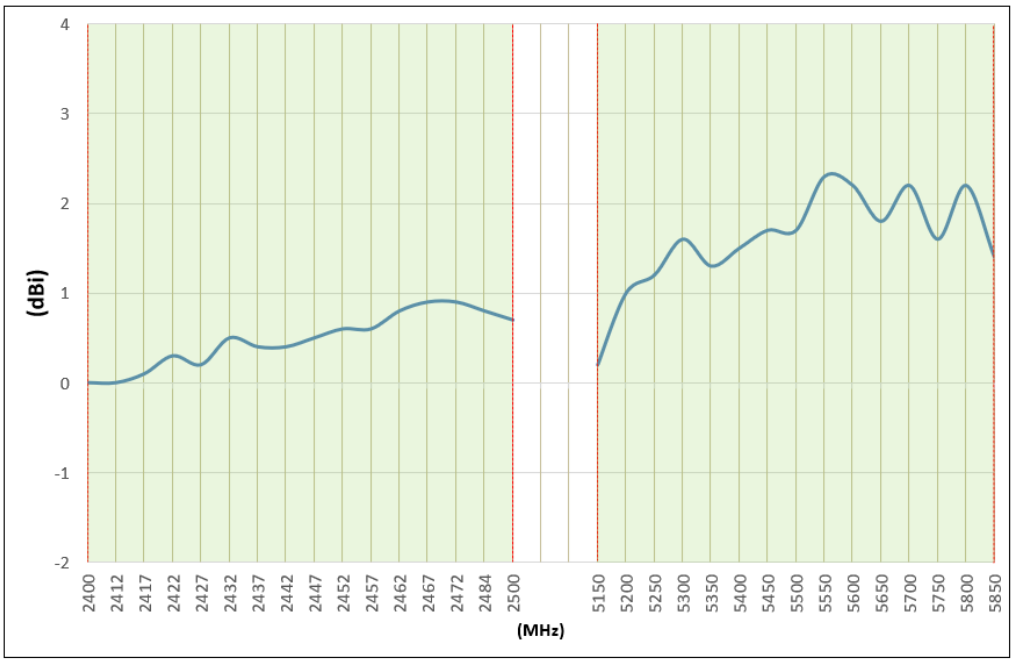


Peak Gain (dBi)

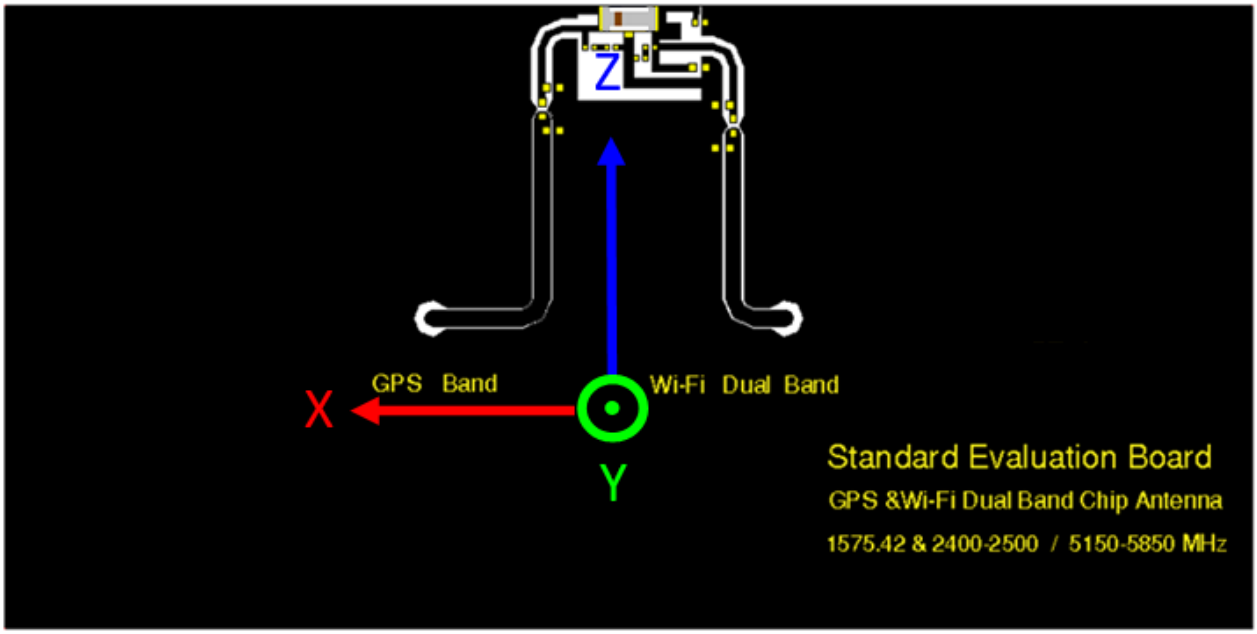
GPS Band



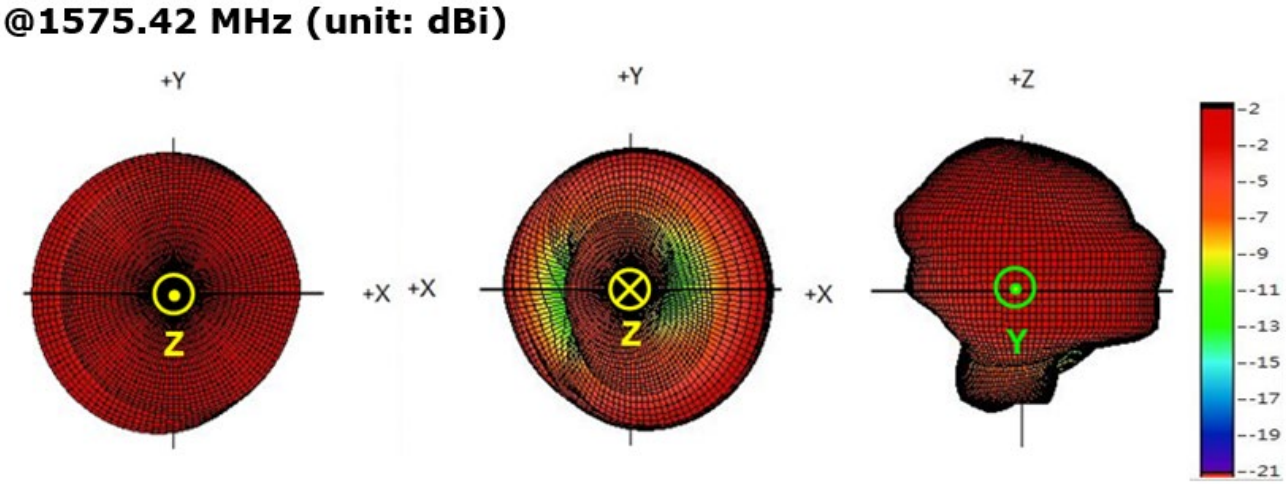
WIFI Band



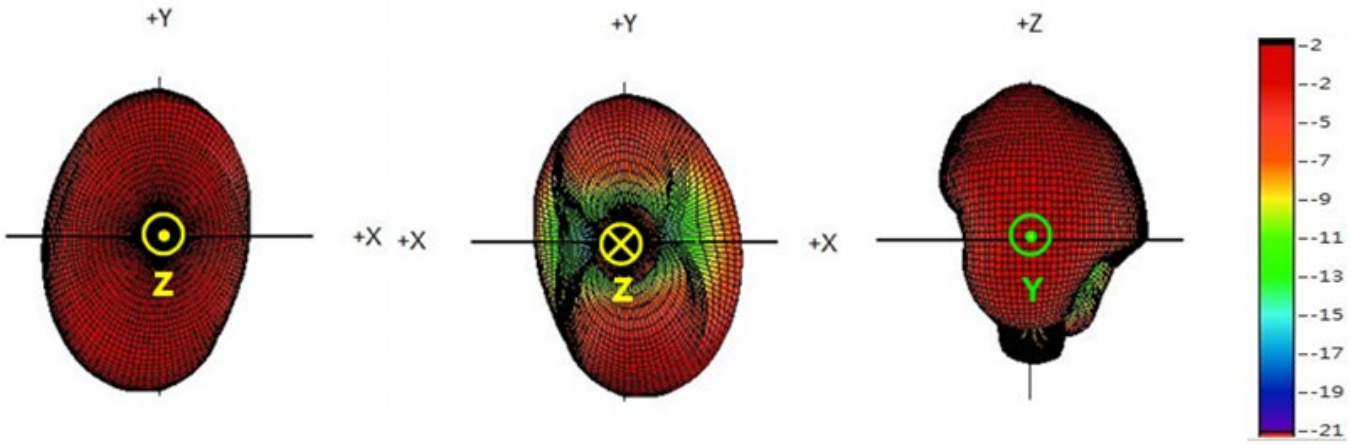
Antenna Radiation Pattern Measurement:



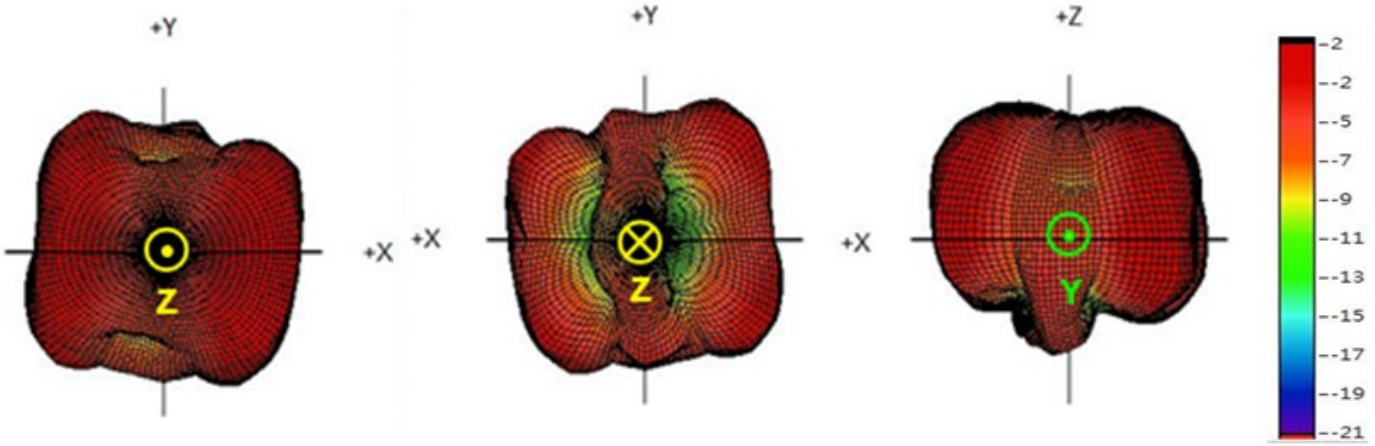
3D Radiation Patterns



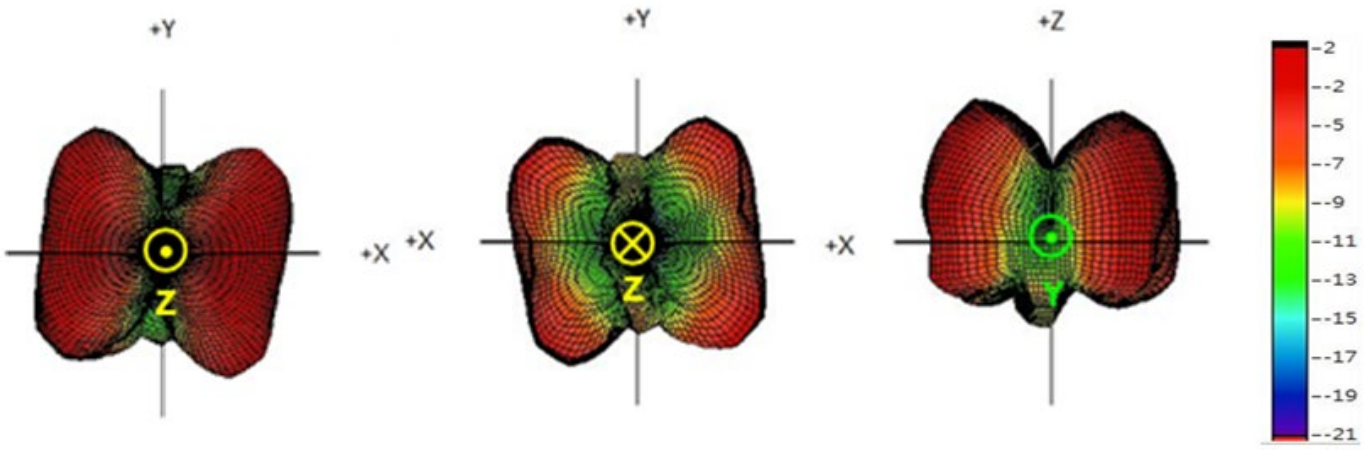
@2442 MHz (unit: dBi)



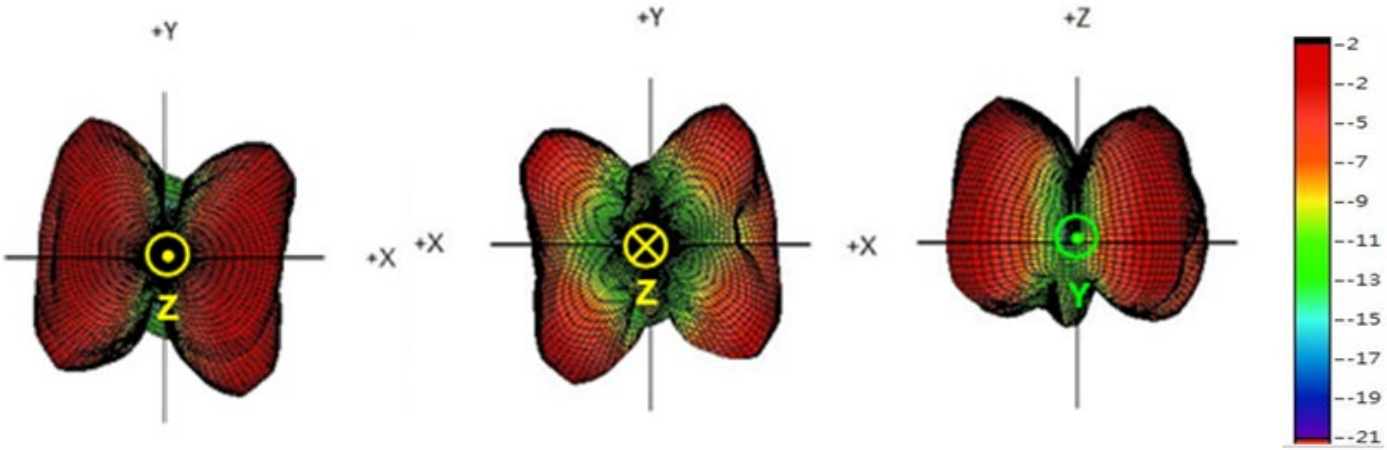
@5150 MHz (unit: dBi)



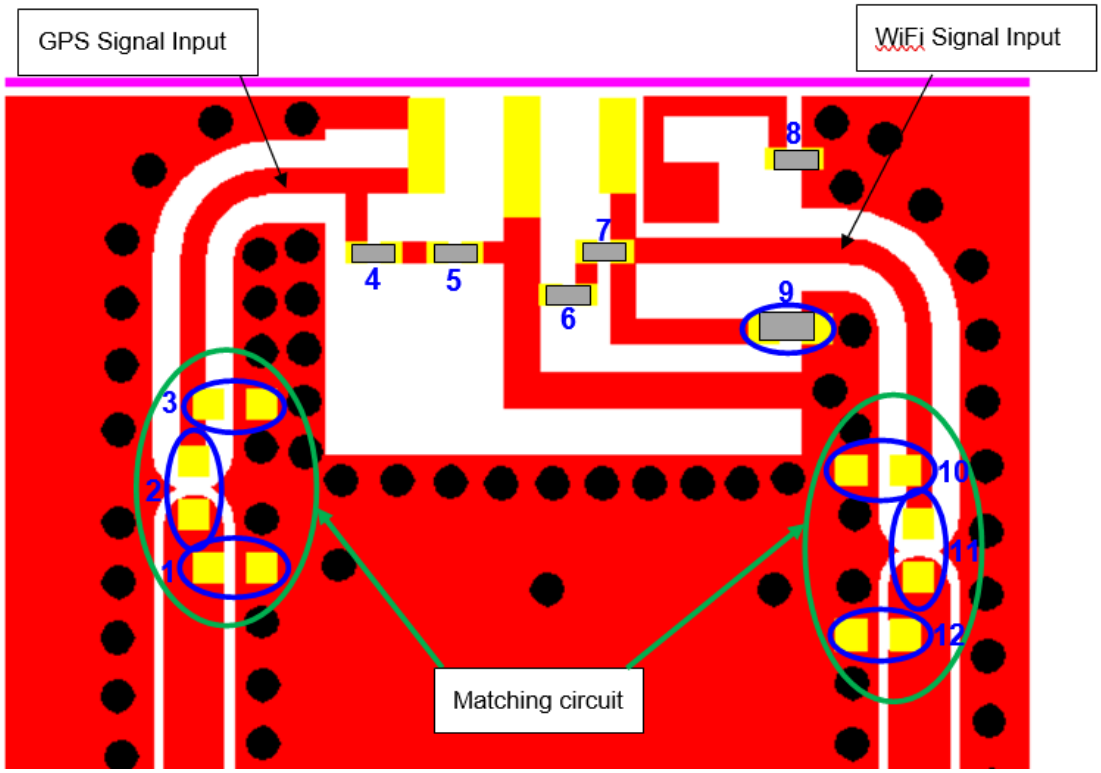
@5550 MHz (unit: dBi)

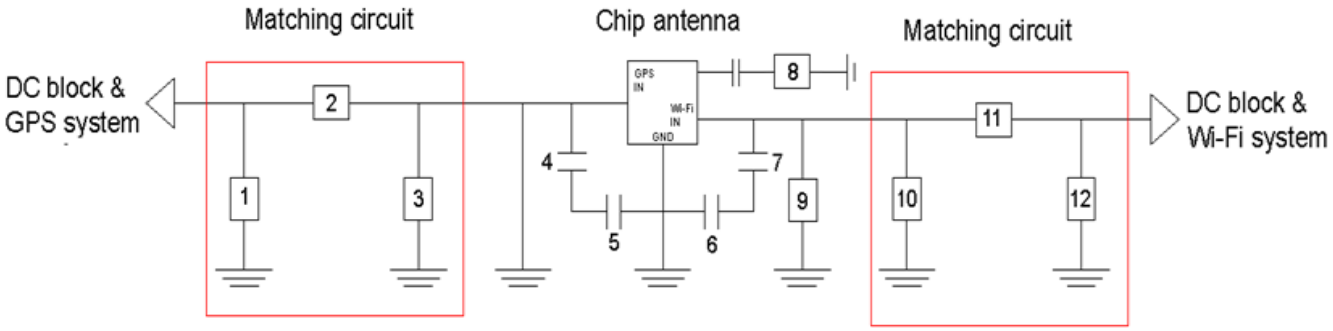


@5850 MHz (unit: dBi)



Frequency Tuning & Matching Circuit





System Matching Circuit Component

Location	Description	Tolerance	NIC Part Number
1,3,10 &12	N/A	-	-
2, 9 & 11	0Ω, (0402)	-	NRC04Z0TRF
4 Fine Tuning Element	1.8pF, (0201)	±0.05pF	NMC-Q0201NPO1R8A50TRPF
5 Fine Tuning Element	0.8pF , (0201)	±0.05pF	NMC-Q0201NPO0R8A50TRPF
6 Fine Tuning Element	0.9pF , (0201)	±0.05pF	NMC-Q0201NPO0R9A50TRPF
7 Fine Tuning Element	0.9pF , (0201)	±0.05pF	NMC-Q0201NPO0R9A50TRPF
8 Fine Tuning Element	0.4pF , (0201)	±0.05pF	NMC-Q0201NPO0R4A50TRPF
DC Block	22pF, (0402)	±5%	NMC-Q0402NPO220J50TRPF

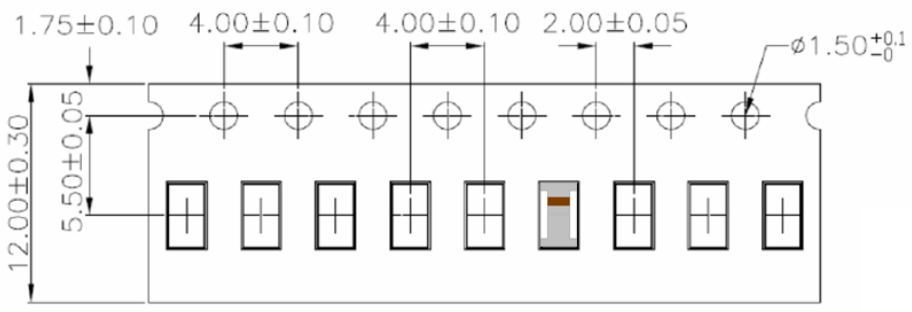
Packing

(1) Unit Weight: 0.008±0.001(g) /pcs

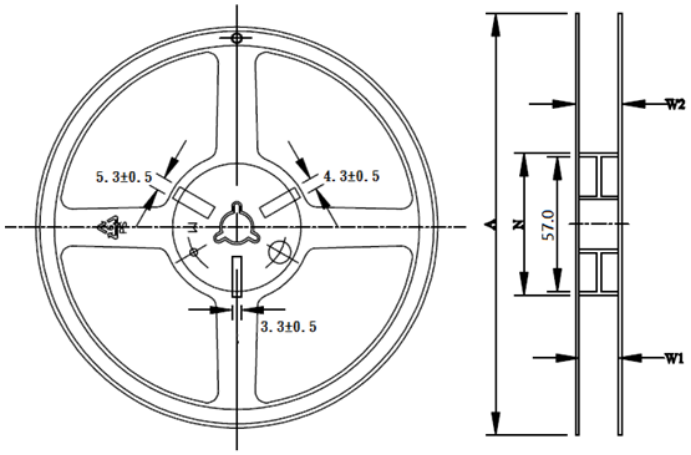
(2) Quantity/Reel: 5000 pcs/Reel

(3) Plastic tape: Black Conductive Polystyrene

a. Tape Drawing (unit: mm)



b. Reel Drawing (unit: mm)



Feature	Specifications	Tolerances
A	178.0	±1.0
B	2.7	±0.5
C	13.3	±0.5
N	60.0	±0.5
W1	13.7	±0.5
W2	16.1	±0.5