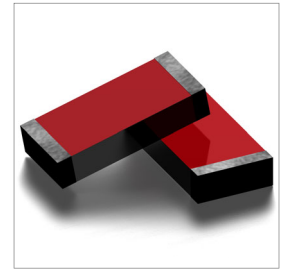
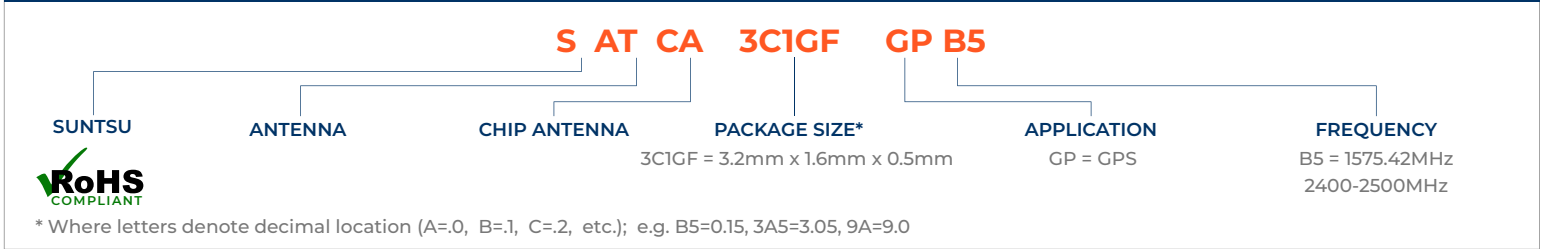


Features
<ul style="list-style-type: none"> • GPS & WiFi/Bluetooth Combo • Chip Type • Stable And Reliable Performance • 1575.42MHZ & 2400-2500MHZ • SMT Process Compatible

Applications
<ul style="list-style-type: none"> • GPS Devices • WiFi / Bluetooth / BLE / ZigBee 2.4GHz Devices • Hand Held Devices where Both GPS And WiFi (Bluetooth) Are Needed. I.E. Smart Phone, Tablet, Trackers.



Part Numbering Guide



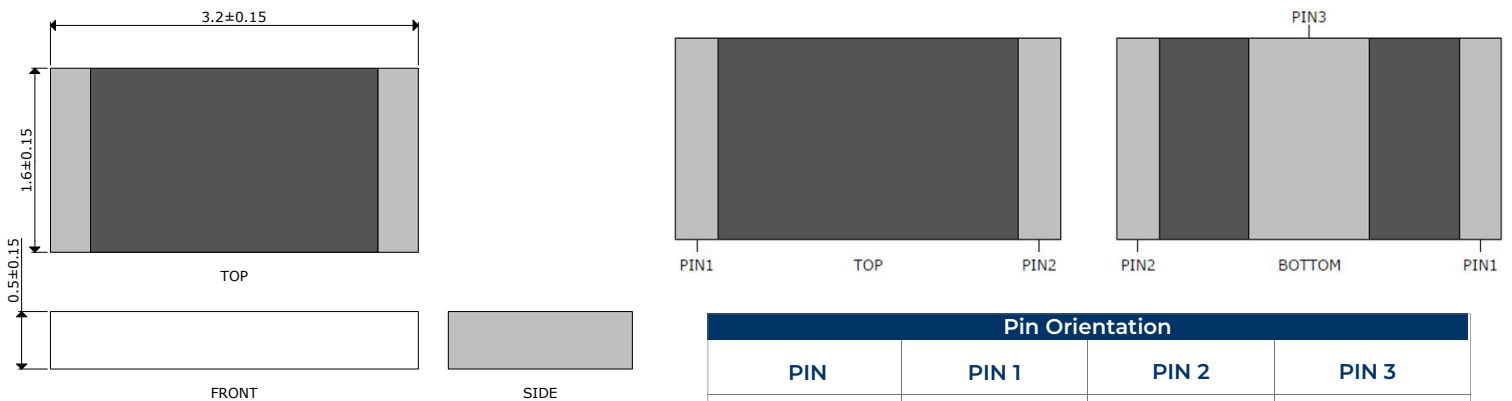
Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Band	MHz		1575.42		
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		1.3 (2.0)		At 1575.42MHz
Efficiency	%		61 (65)		At 1575.42MHz
VSWR				2	At Center Frequency
Operating Temperature	C	-40		85	

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Band	MHz	2400		2500	
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		1.8 (-0.4)		At 2442MHz
Efficiency	%		68 (54)		At 2442MHz
VSWR				2	At Center Frequency
Operating Temperature	C	-40		85	

**Please Note: Parameters above shown in RED are representative of the Combined Signal Mode.

Outline Drawing

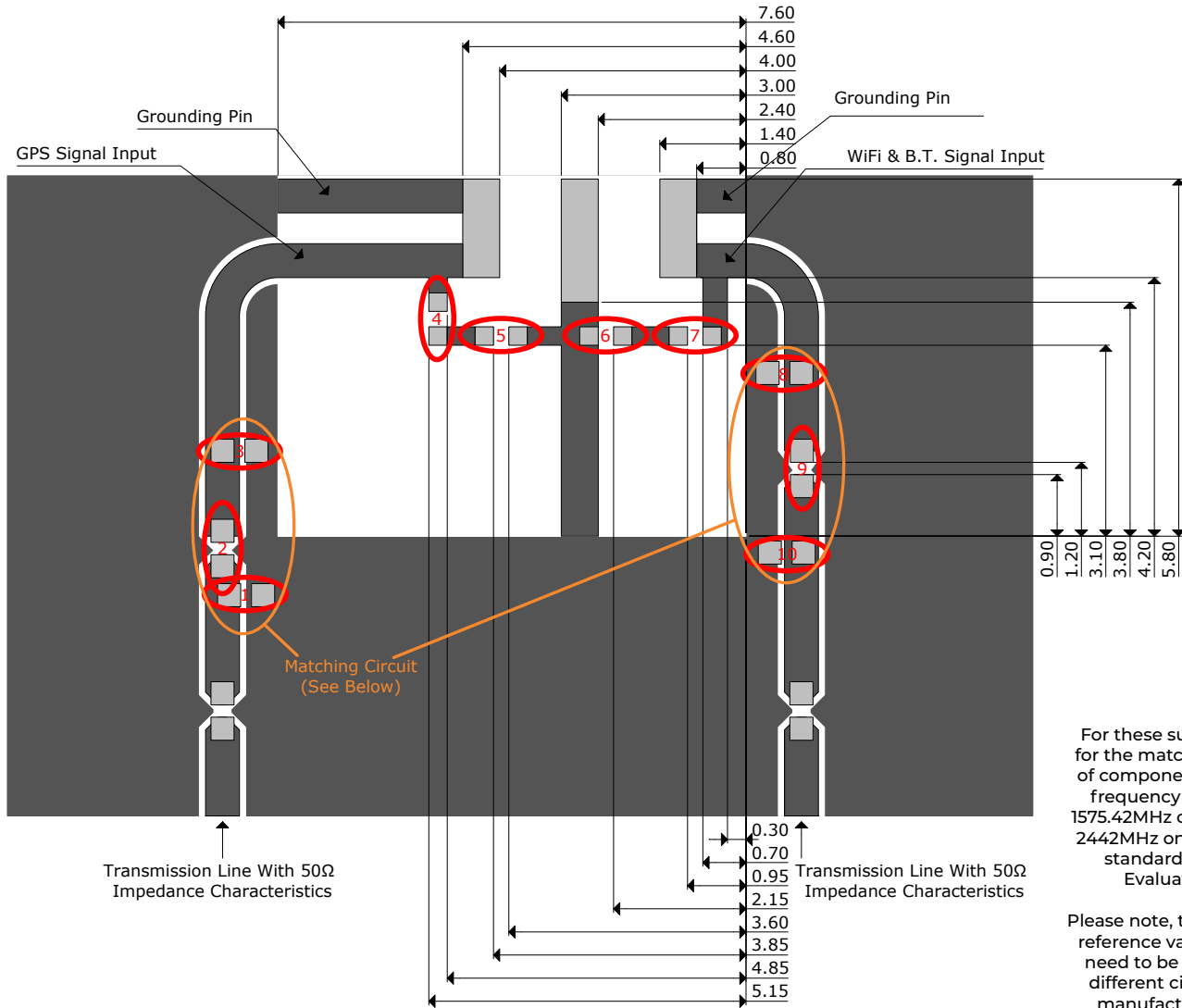
All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.



Pin Orientation			
PIN	PIN 1	PIN 2	PIN 3
Individual Signal	GP	WiFi (B.T.)	Tuning / Ground
Combined Signal	Tuning / Ground	Tuning / Ground	GPS & WiFi (B.T.)

Recommended Land Pattern & Frequency Tuning Scenario Circuit For Single Signal Mode

All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.

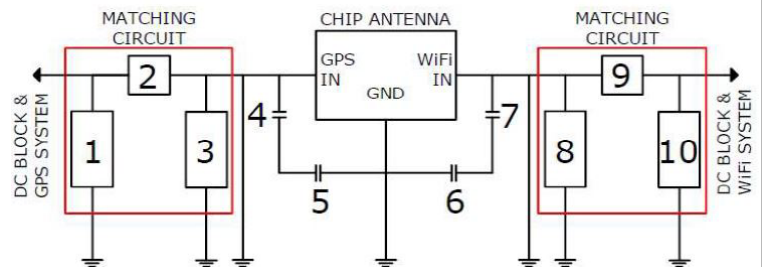


For these suggested values for the matching and tuning of components, the average frequency will be around 1575.42MHz on GPS band and 2442MHz on WiFi Band on a standard 80 x 40mm² Evaluation board.

Please note, these are average reference values which may need to be changed when different circuit boards or manufactures are used.

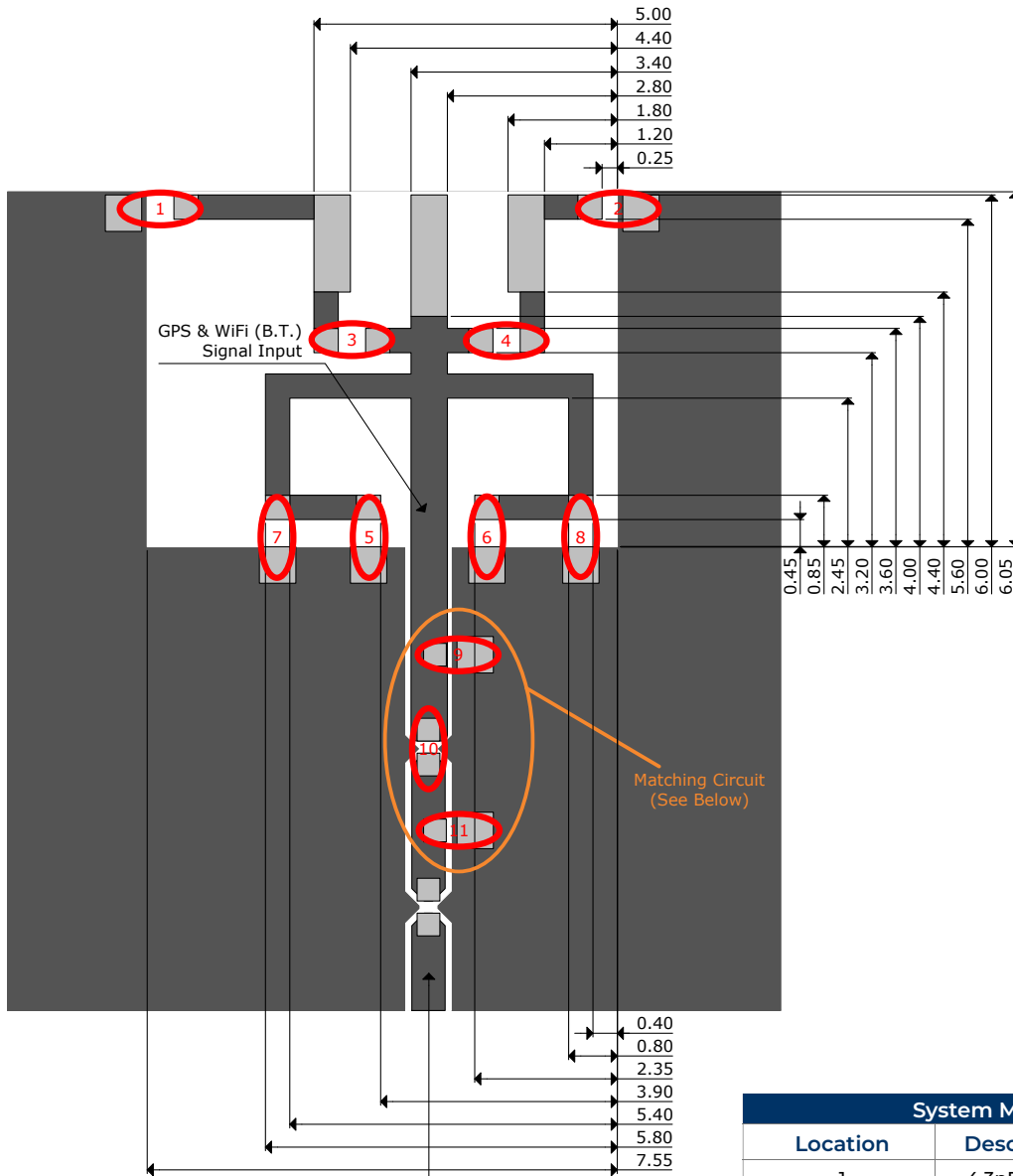
System Matching Circuit Components

Location	Description	Vendor	Tolerance
1	N/A	-	-
2	4.7nH, (0402)	MURATA	±0.3nF
3	N/A	-	-
4 (Fine Tuning)	2.7pF, (0402)	MURATA	±0.05pF
5 (Fine Tuning)	1pF, (0402)	MURATA	±0.05pF
6 (Fine Tuning)	0.6pF, (0402)	MURATA	±0.05pF
7 (Fine Tuning)	0.8pF, (0402)	MURATA	±0.05pF
8	N/A	-	-
9	0Ω, (0402)	-	-
10	N/A	-	-
DC Block	22pF, (0402)	MURATA	±5%



Recommended Land Pattern & Frequency Tuning Scenario Circuit For Combined Signal Mode

All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.

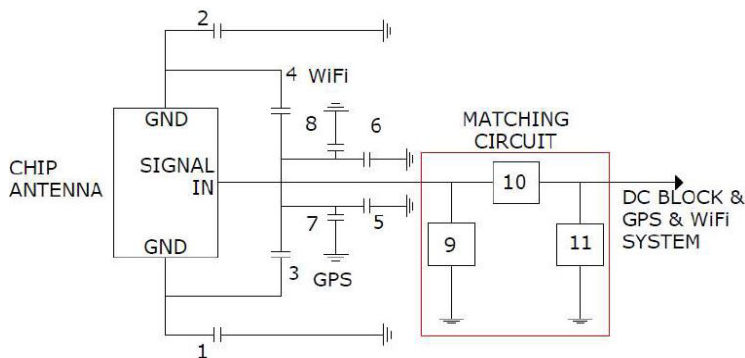


For these suggested values for the matching and tuning of components, the average frequency will be around 1575.42MHz on GPS band and 2442MHz on WiFi Band on a standard 80 x 40mm² Evaluation board.

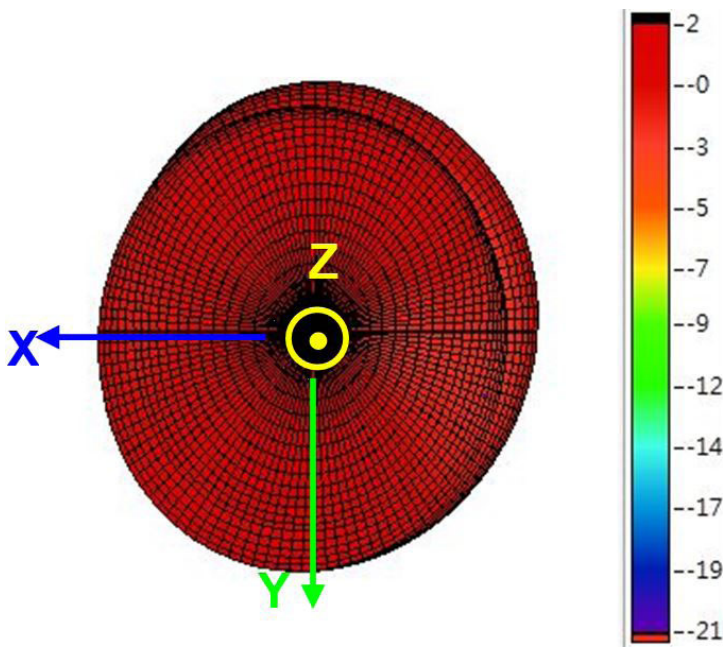
Please note, these are average reference values which may need to be changed when different circuit boards or manufactures are used.

System Matching Circuit Components

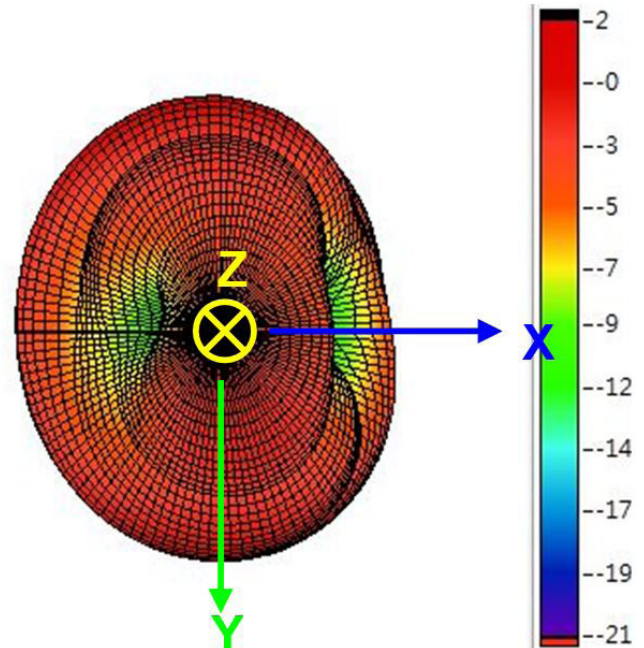
Location	Description	Vendor	Tolerance
1	4.3pF, (0402)	MURATA	±0.05pF
2	2.2pF, (0402)	MURATA	±0.05pF
3	1.5pF, (0402)	MURATA	±0.05pF
4 (Fine Tuning)	0.8pF, (0402)	MURATA	±0.05pF
5 (Fine Tuning)	39pF, (0402)	MURATA	±5%
6 (Fine Tuning)	0Ω, (0402)	-	-
7 (Fine Tuning)	N/A	-	-
8	N/A	-	-
9	1.5pF, (0402)	MURATA	±0.05pF
10	0Ω, (0402)	-	-
11	N/A	-	-
DC Block	22pF, (0402)	MURATA	±5%



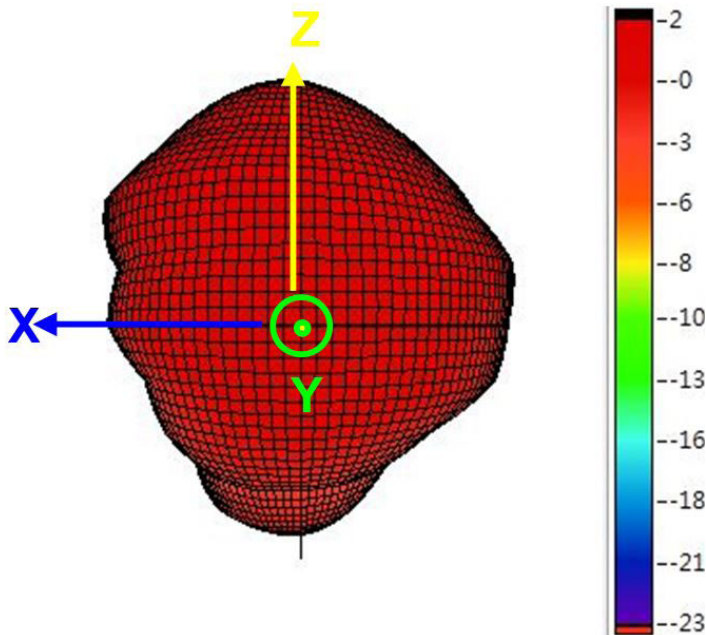
Radiation Pattern For Single Signal Mode
 1575.42MHz GPS Band



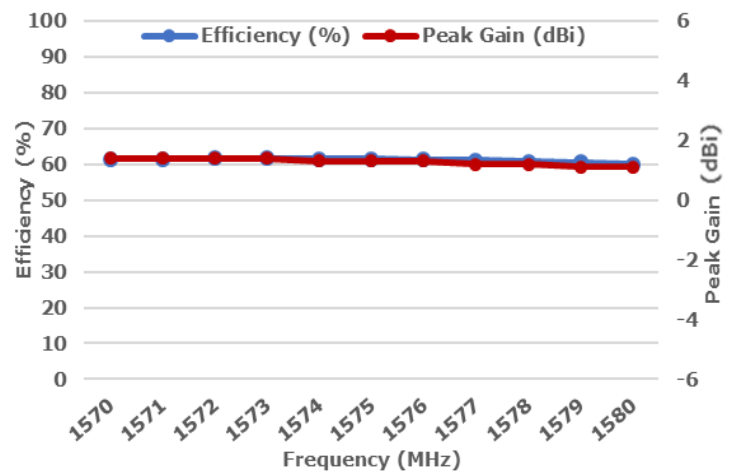
Radiation Pattern For Single Signal Mode
 1575.42MHz GPS Band



Radiation Pattern For Single Signal Mode
 1575.42MHz GPS Band

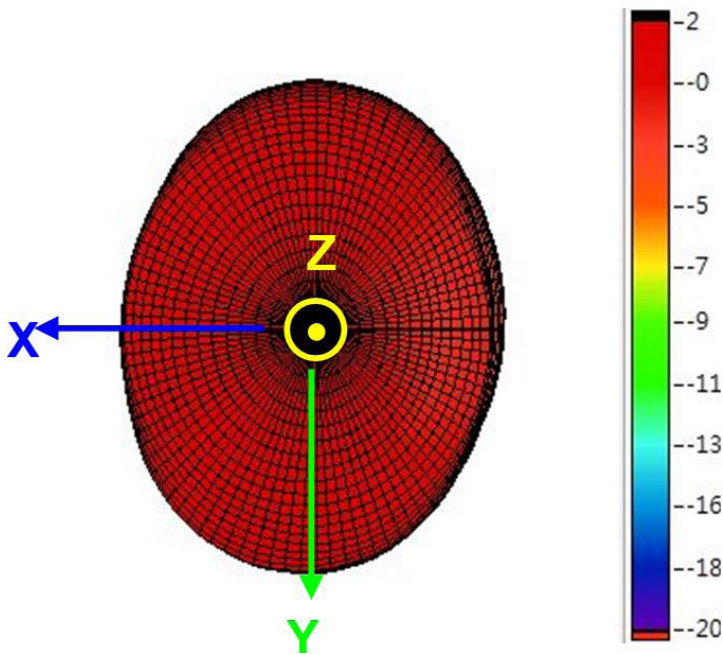


Efficiency V's Frequency
 1575.42MHz GPS Band

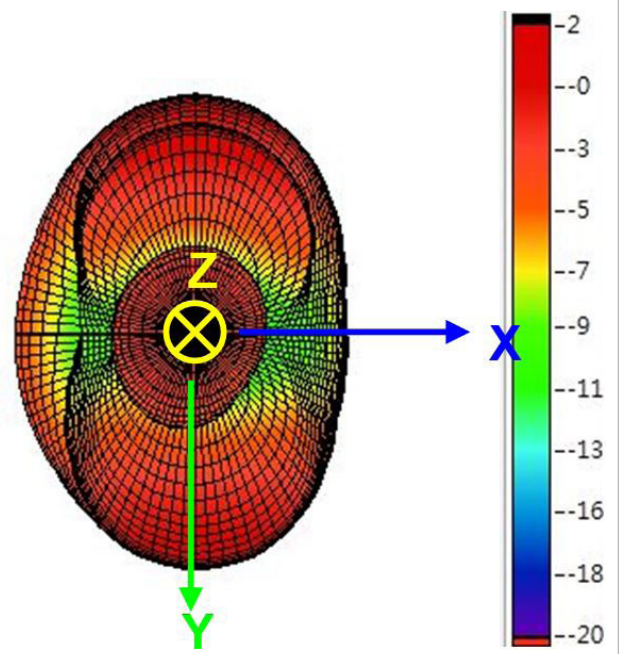


Freq.	1570	1571	1572	1573	1574	1575	1576	1577	1578	1579	1580
Eff. (%)	61.4	61.4	61.7	61.6	61.4	61.4	61.3	61	60.7	60.6	60
P.G.	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.1	1.1

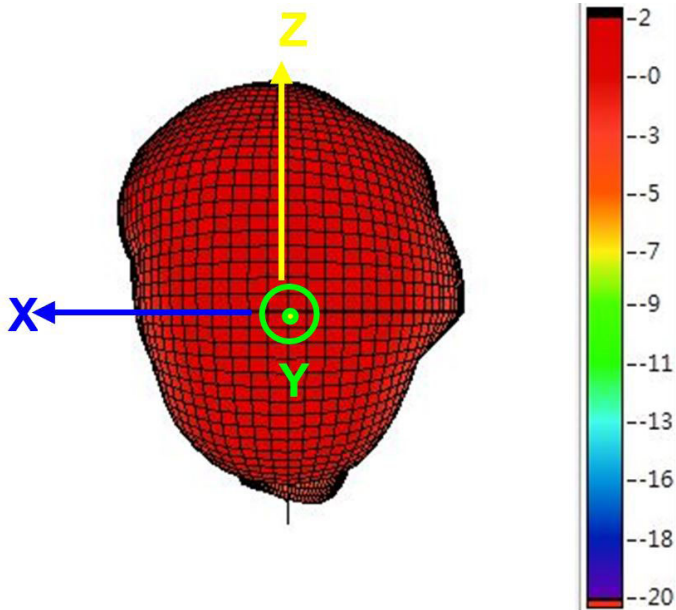
Radiation Pattern For Single Signal Mode
 2442MHz WiFi (B.T.) Band



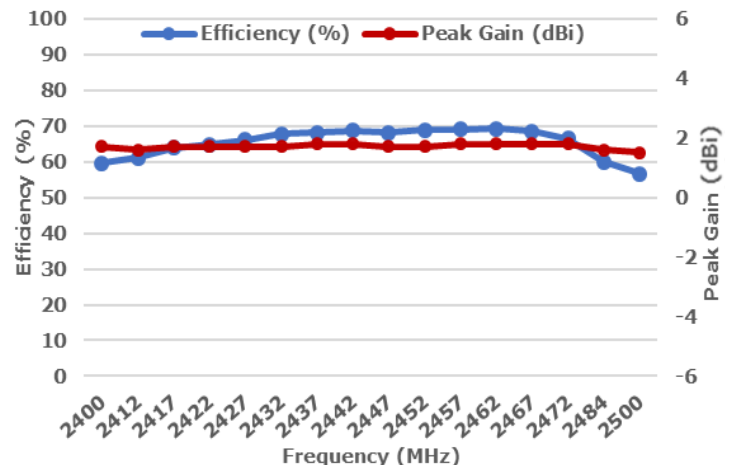
Radiation Pattern For Single Signal Mode
 2442MHz WiFi (B.T.) Band



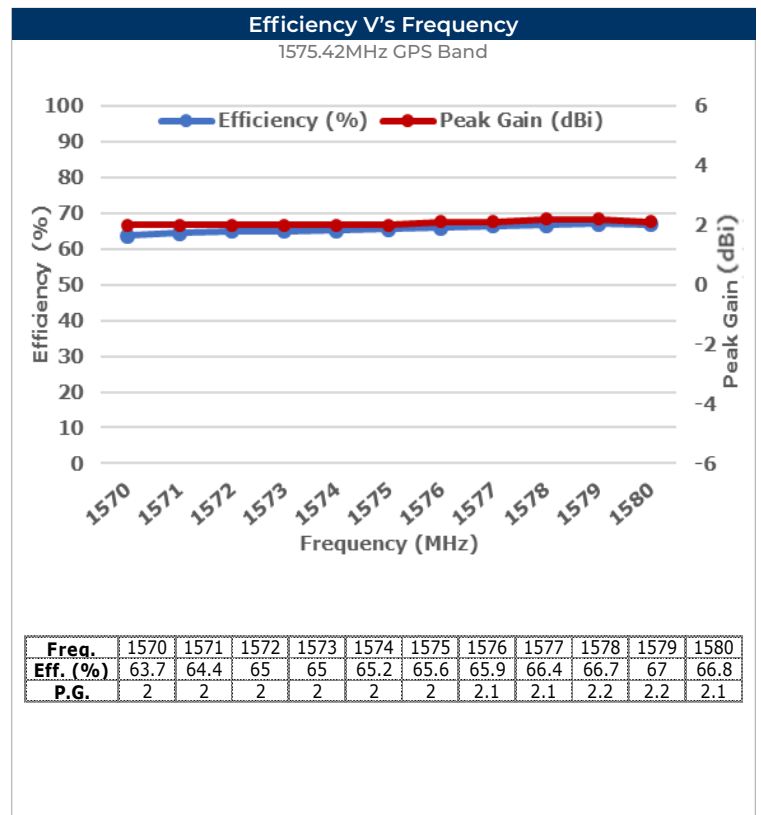
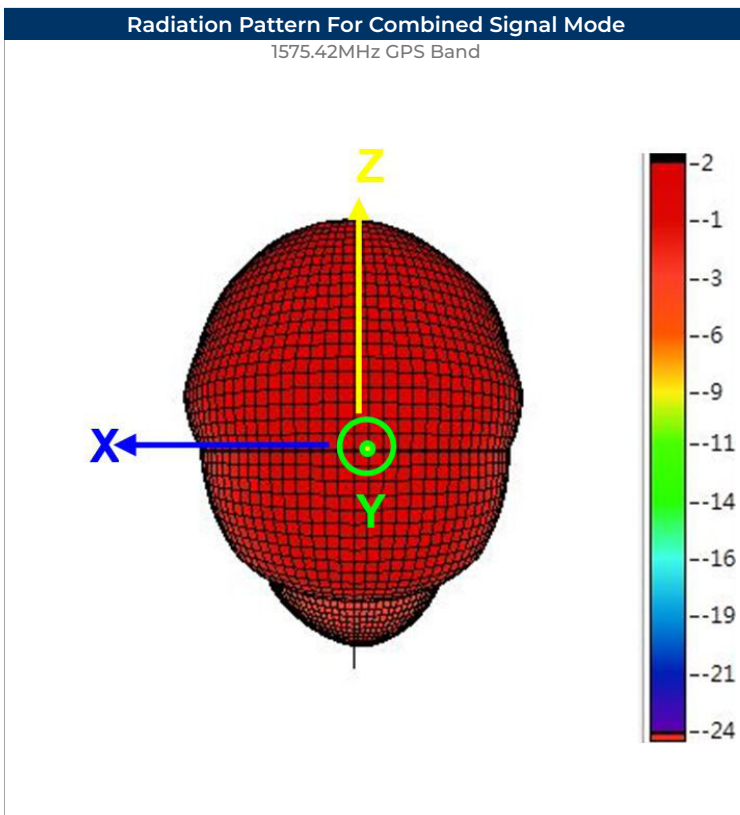
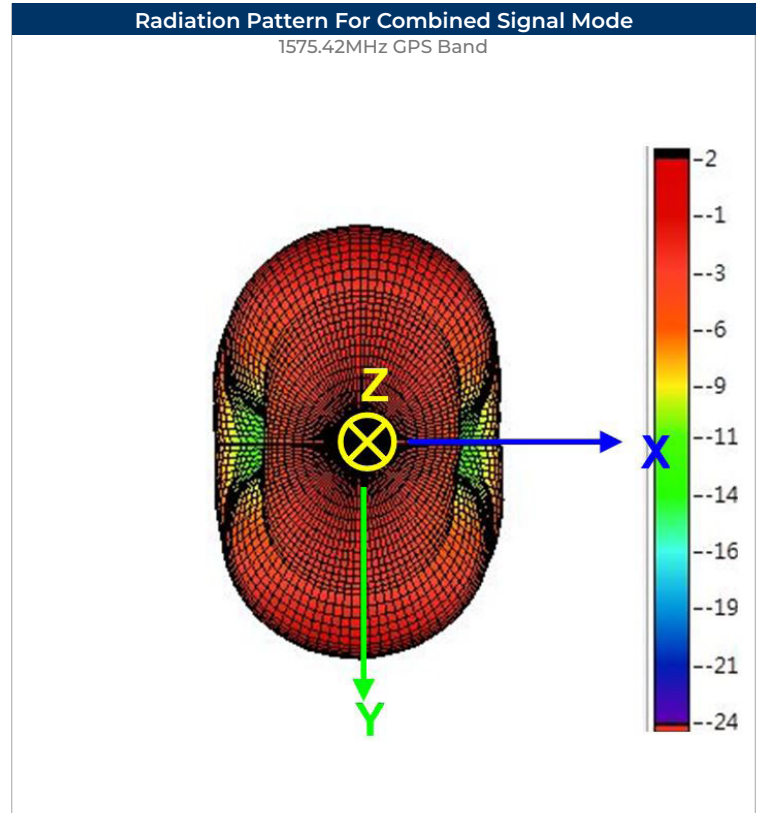
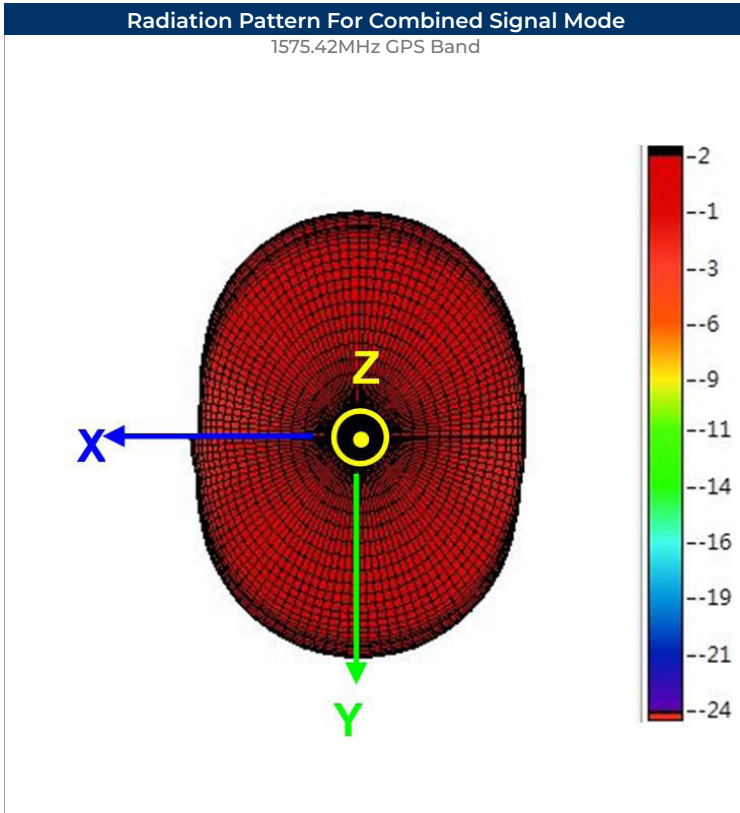
Radiation Pattern For Single Signal Mode
 2442MHz WiFi (B.T.) Band

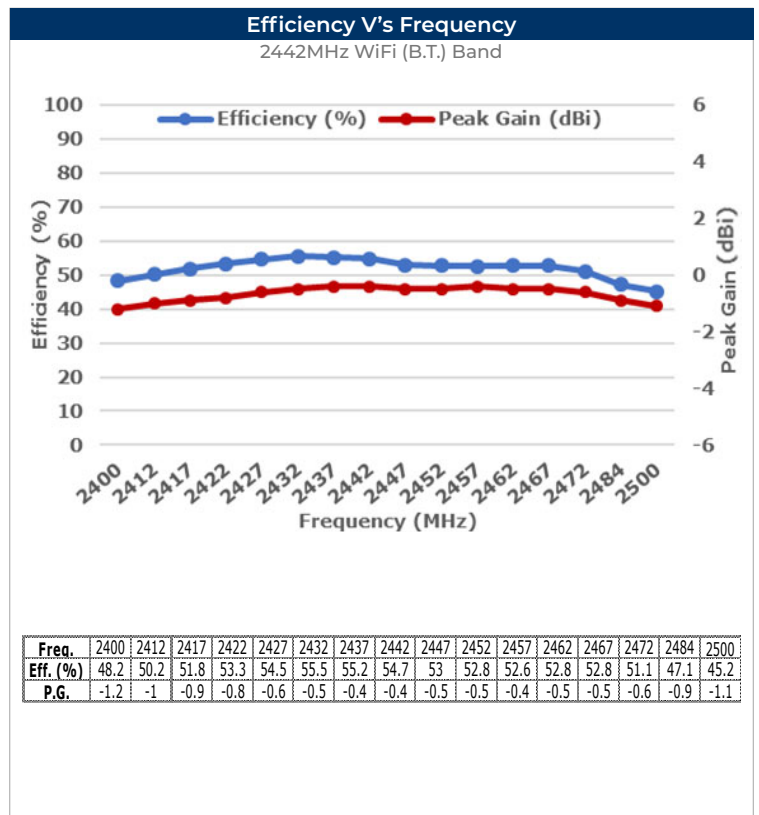
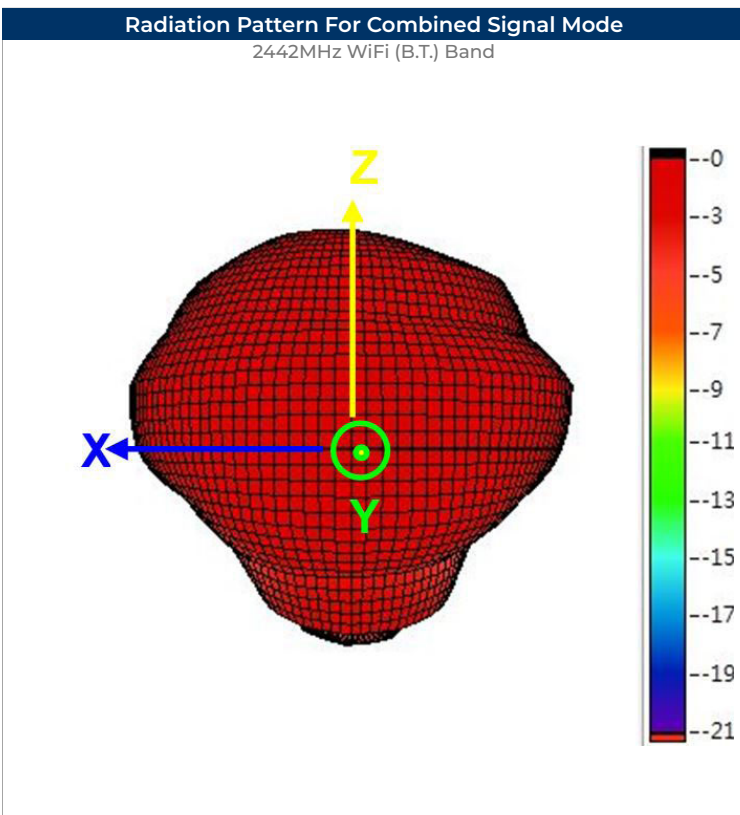
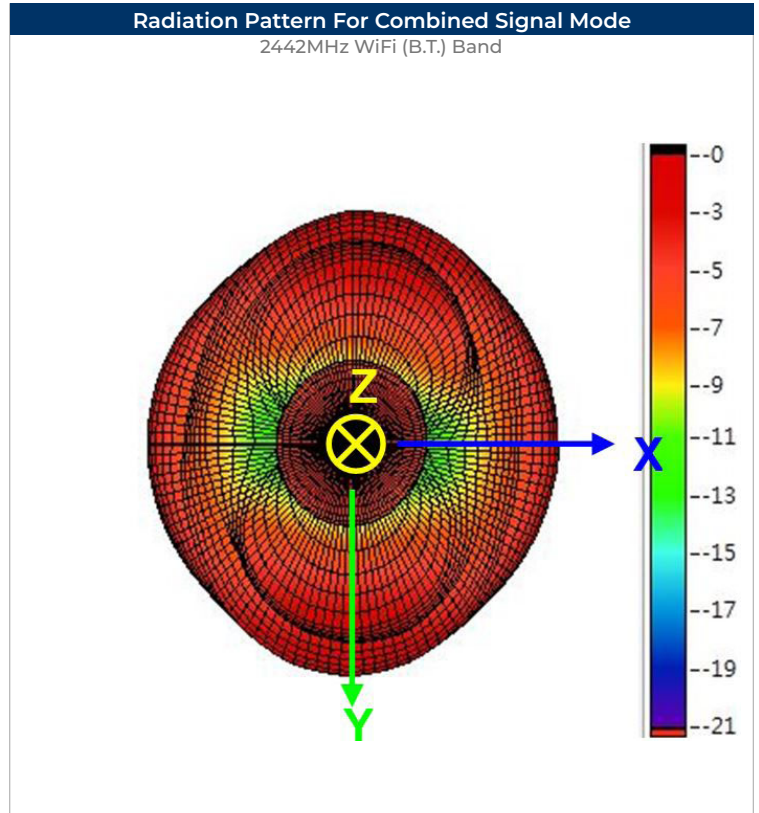
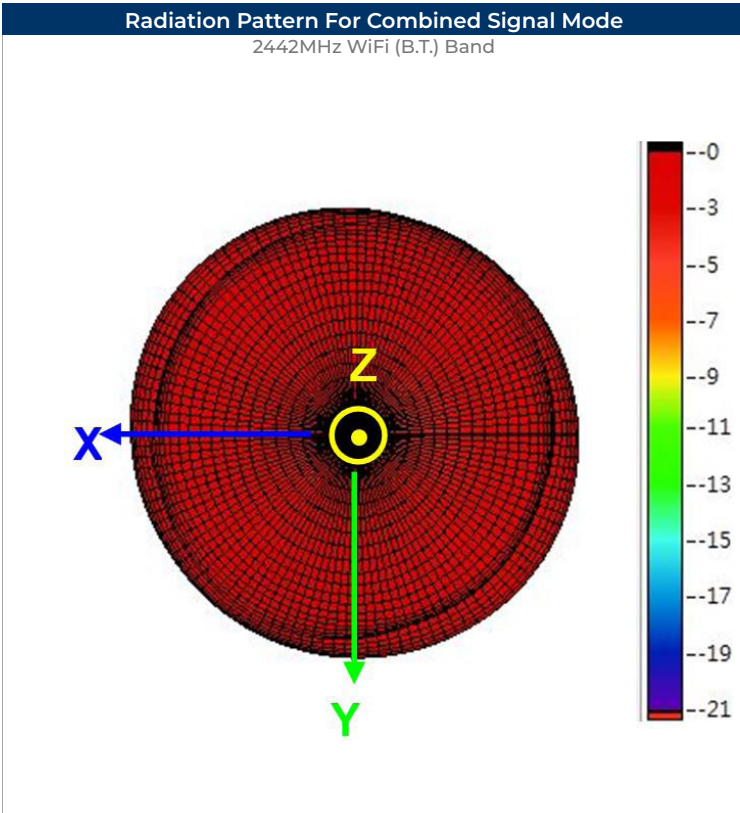


Efficiency V's Frequency
 2442MHz WiFi (B.T.) Band

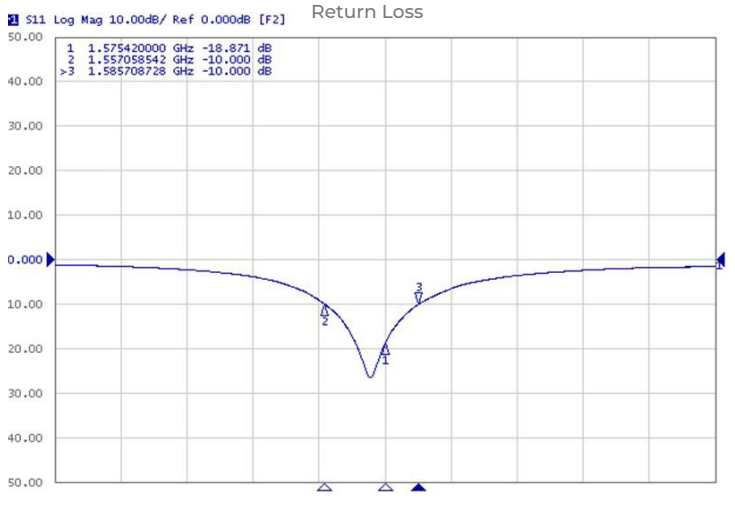


Freq.	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484	2500
Eff. (%)	59.6	61.1	63.8	64.7	66.1	67.7	68.1	68.7	68.1	68.9	69	68.9	69.2	68.5	66.4	59.9
P.G.	1.7	1.6	1.7	1.7	1.7	1.7	1.8	1.8	1.7	1.7	1.8	1.8	1.8	1.8	1.6	1.5

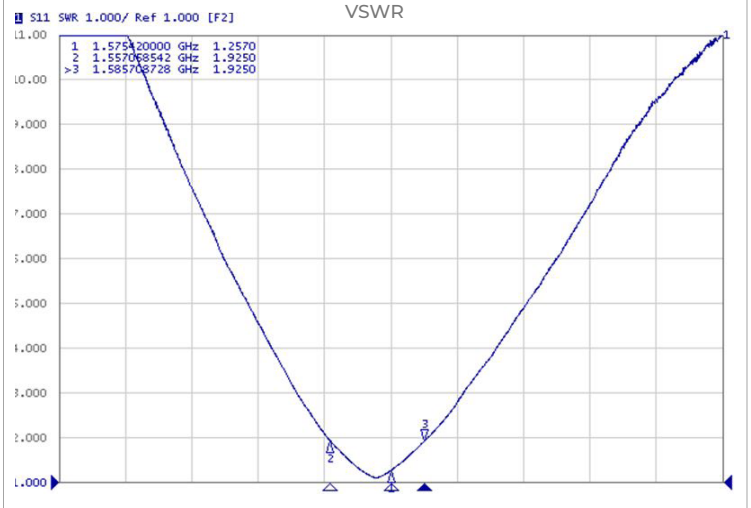




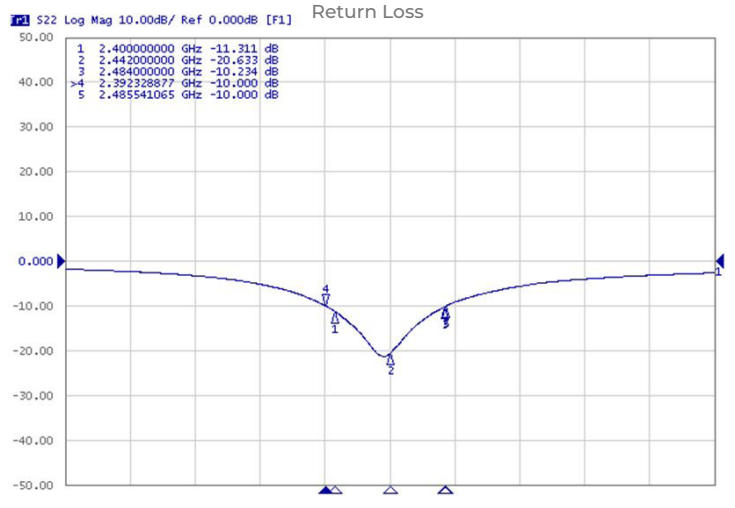
Electrical Test For GPS Band Single Signal Mode



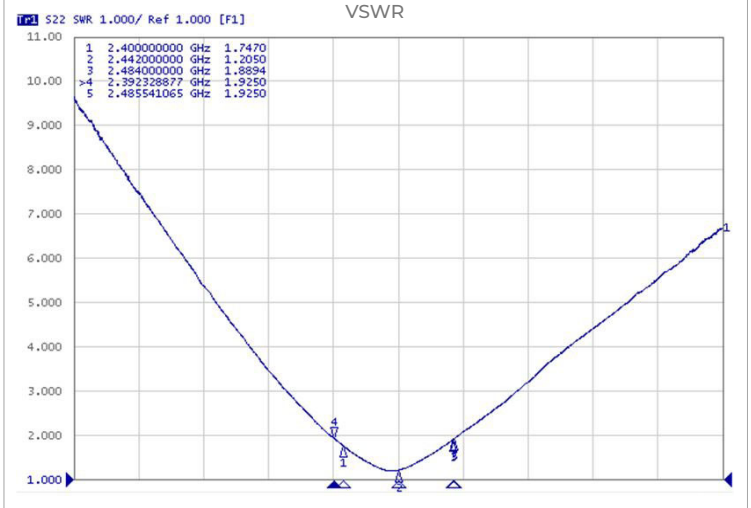
Electrical Test For GPS Band Single Signal Mode



Electrical Test For WiFi (B.T.) Band Single Signal Mode

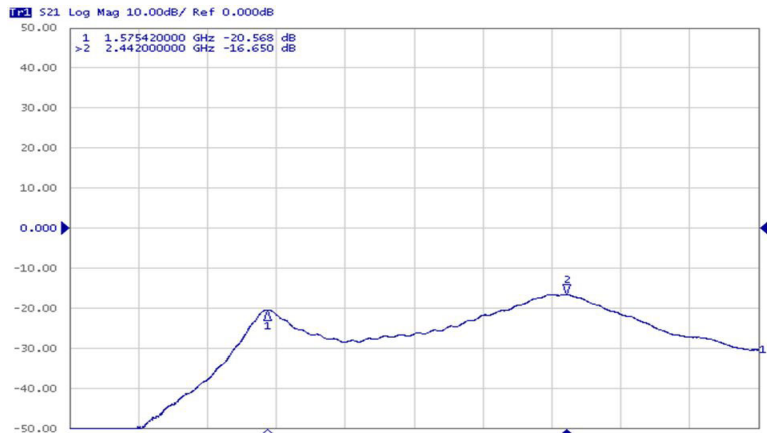


Electrical Test For WiFi (B.T.) Band Single Signal Mode



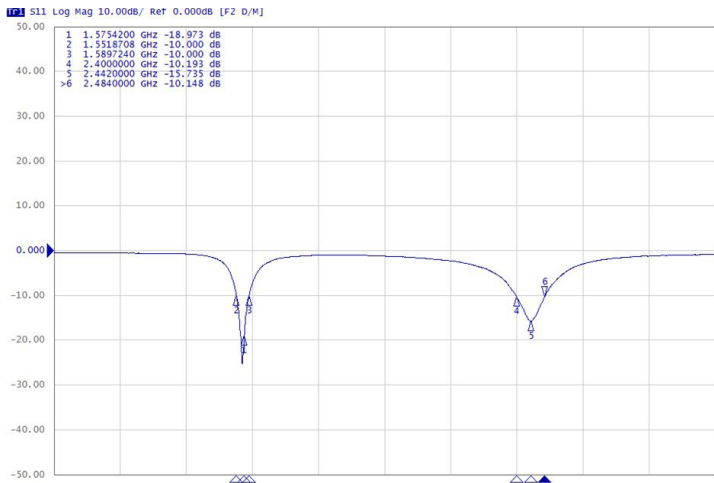
Electrical Test

Isolation Between GPS And WiFi (B.T.) Bands



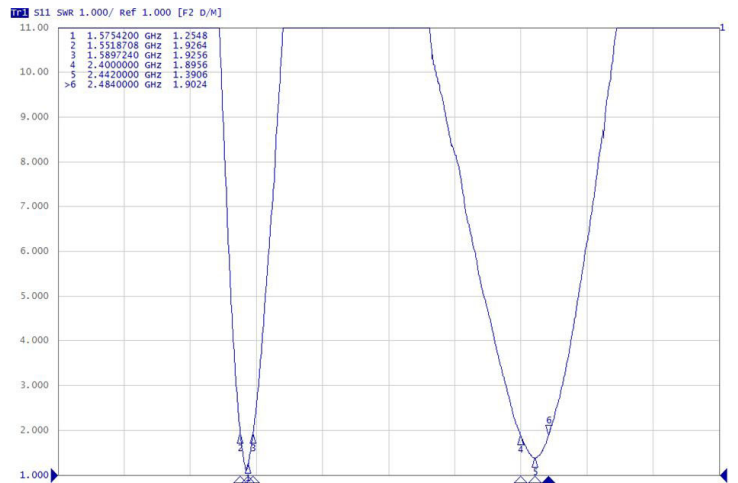
Electrical Test Combined Signal Mode

Return Loss



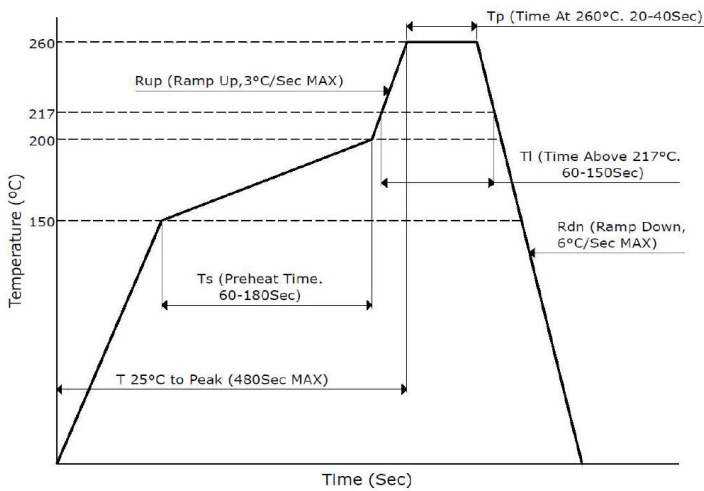
Electrical Test Combined Signal Mode

VSWR



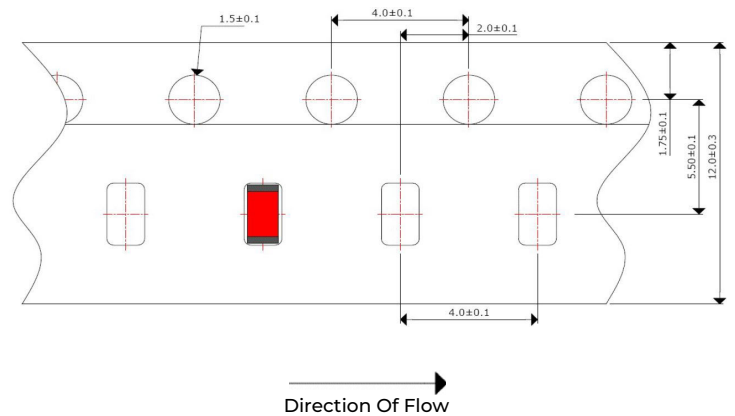
Soldering Conditions

Typical Soldering Profile For Lead-Free Process



Packaging - Tape And Reel

5000Pcs / Reel



Environmental & Mechanical Specifications

High Temperature Test	85°C for 500 hours, and then to normal temperature/humidity for 24hours.
Low Temperature Test	-30°C for 500 hours, and then to normal temperature/humidity for 24hours.
Humidity Test	85°C / 90-95%RH for 96 hours, and then to normal temperature/humidity for 24hours.
Thermal Shock Test	-30°C for 30 min and +85°C for 30 min. 5 cycles, then expose to normal temperature/humidity for 24 hours or more.
Vibration Test	5 to 200 to 5Hz, swept in 10min, 4.5G at max(2mm amplitude), in X and Y directions for 2 hours each and in Z direction for 4 hours.