

JBL Q350 project

Dongle's antenna data parameters

Printed Circuit Board with Ceramic Antenna

2400MHz—2500MHz

Antenna model: FPM5110A2450-FPM54A

Use antenna size 5010

1. Features

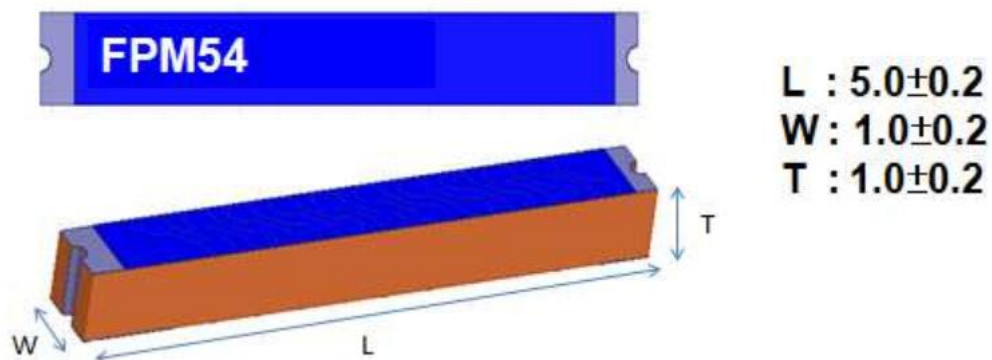
Antenna Frequency for 2400-2500 MHz.

2. Applications

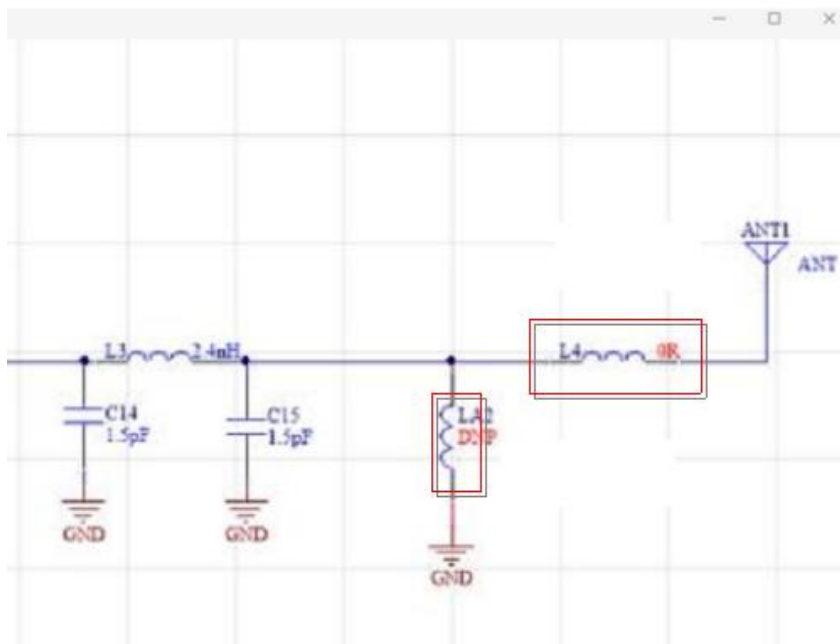
For Miniaturized Bluetooth System.

3. Shapes & Dimensions(Unit : mm)

1). Component :



4. Matching Circuits

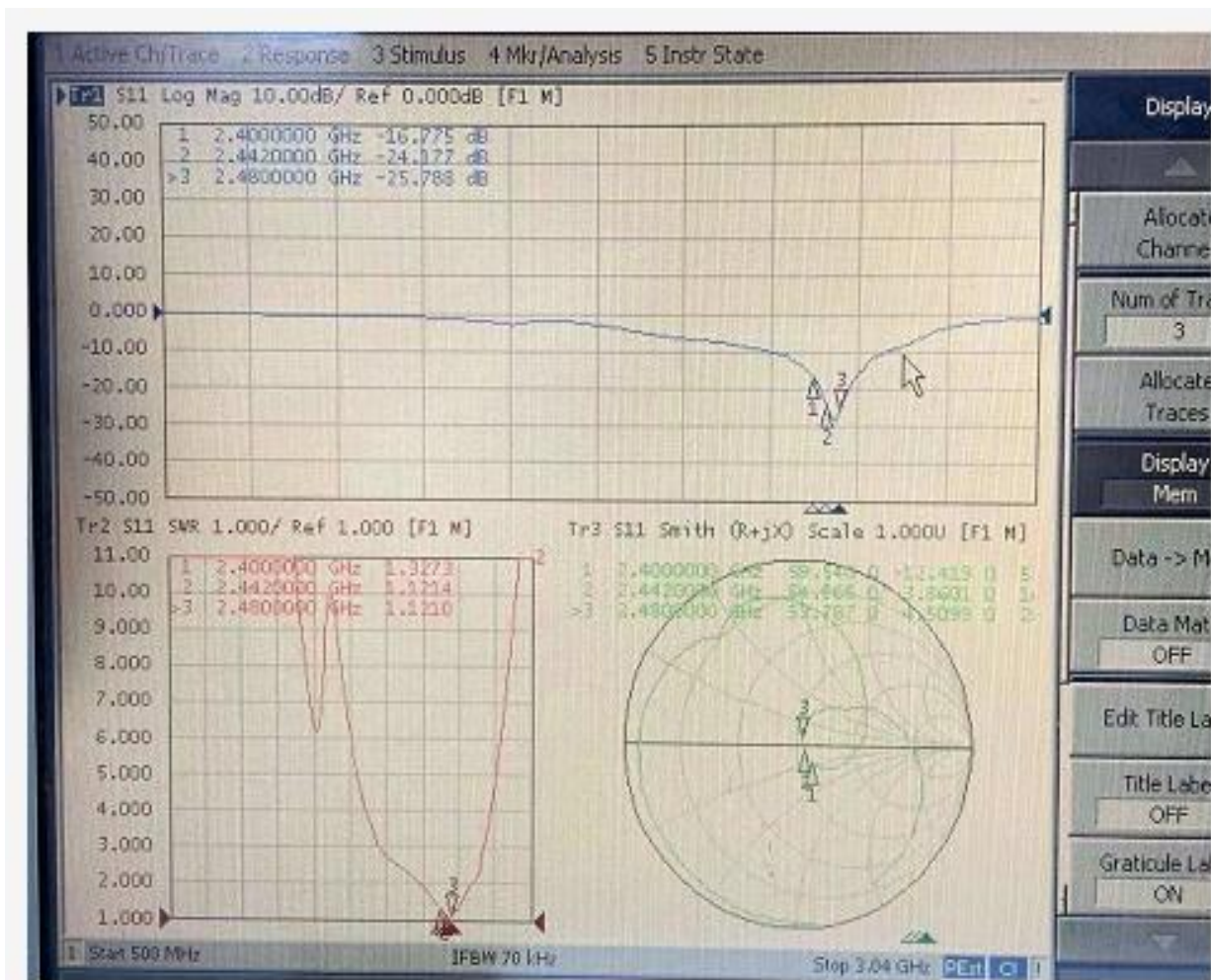


Element:	Value:
	Dongle
C14	原匹配
L3	原匹配
C15	原匹配
L4	3.3NH
LA2	空贴

5. Electrical Characteristics

Part Number	FPM5110A2450-FPM54A	
Central Frequency	2450	MHz
Bandwidth	±50(Min.)	MHz
Return Loss	-10(MAX)	dB
Peak Gain	-1.38	dBi
Impedance	50	Ohm
Polarization	Linear	
Azimuth Beamwidth	Omni-directional	

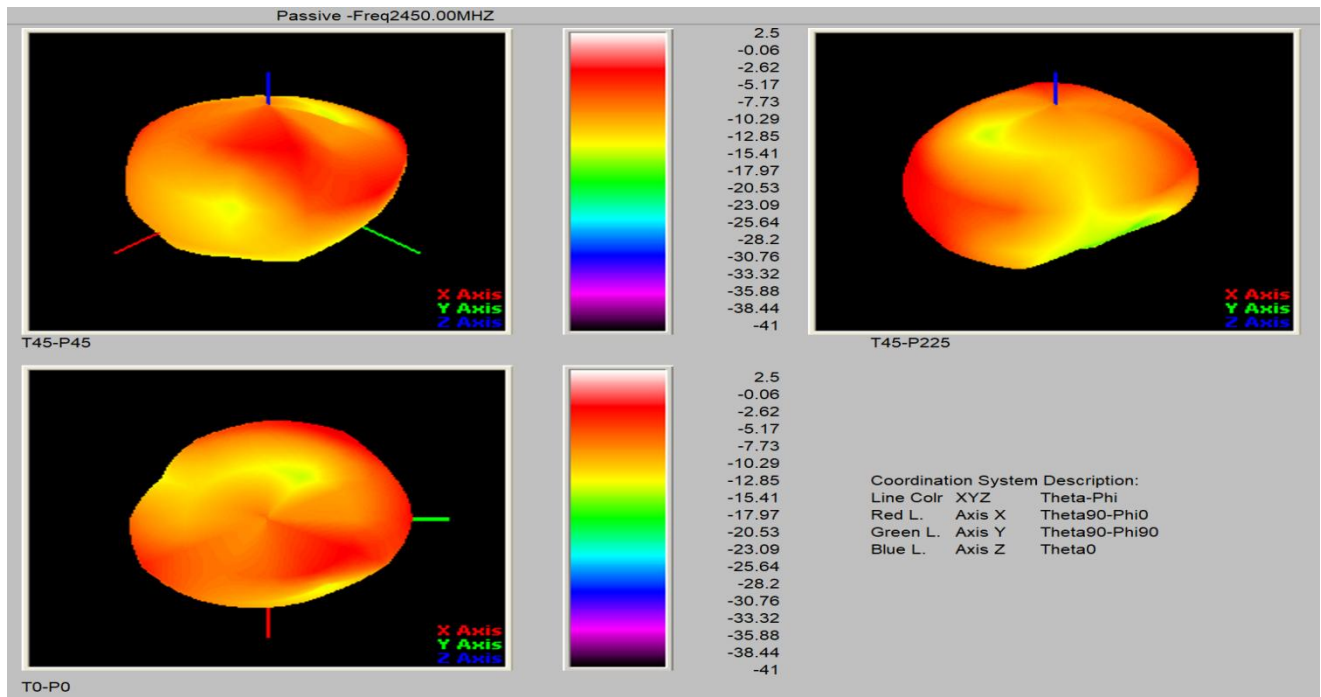
6. Return Loss



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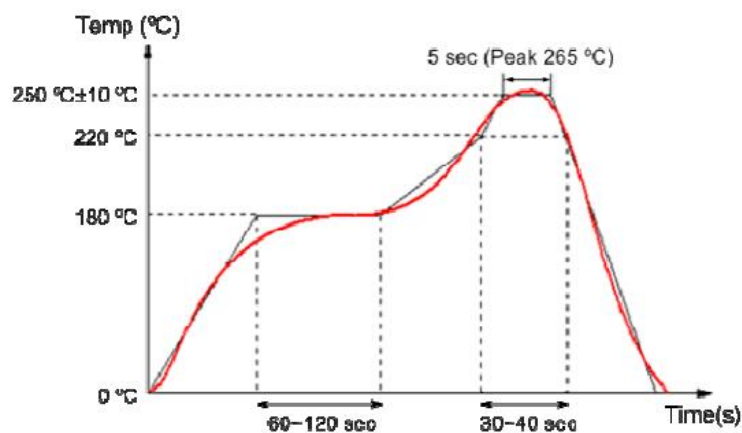
CHANNEL	0	39	78
TRP (dBm)	5.05	5.42	5.30
TIS (dBm)	-89.12	-89.25	-89.11

7. Radiation Pattern & Efficiency



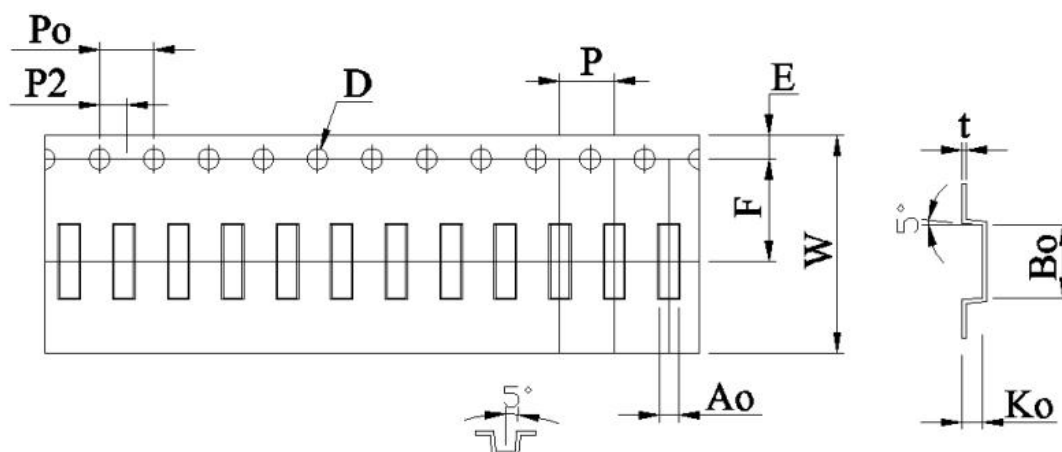
Test Point ID	1	2	3
Freq. (MHz)	2400.0	2450.0	2500.0
Efficiency (%)	44.0%	44.6%	37.2%
Gain (dBi)	-1.42	-1.38	-1.67
Efficiency (dB)	-4.03	-3.85	-4.74

8. Reflow Soldering Standard Condition



9. Packaging and Dimensions 5010 (5.0*1.0mm)

◆ Plastic Tape

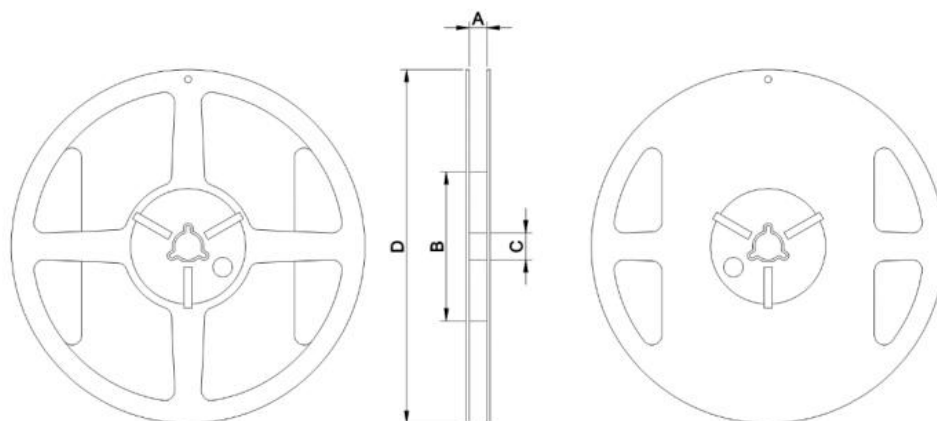


W	Ao	Bo	Ko	P	F	E	D	D1	Po	P2	t
12.0	1.30	5.30	1.50	4.00	7.50	1.75	1.50	0.00	4.00	2.00	0.30
±0.30	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05

◆ Remarks for Package

Reserve a length of 150~200mm for the trailer of the carrier and 250~300 mm for the leader of the carrier and further 250mm of cover tape at the leading part of the carrier.

◆ Reel (3000 pcs/Reel)



Tape Width(mm)	A(mm)	B(mm)	C(mm)	D(mm)	Chip/Reel(pcs)
12	13.0±0.5	60±2	13.5±0.5	178±2	3000

◆ Storage Period

Oxidizable Material, 12 months in vacuum sealed bag, please repack within 168 hours by re-seal the package treatment after using.

Storage Temperature Range : <30 degree C, Humidity : <60%RH

10. Dependability Test

Test item	Test condition / Test method	Specification
Solderability IEC 60068-2-58 GB/T2423.28	*Solder bath temperature : $240\pm5^{\circ}\text{C}$ *Immersion time : 2 ± 0.5 sec Solder : Sn96.5Ag3.0Gu0.5 for lead-free.	At least 95% of a surface of each terminal electrode must be covered by fresh solder.
Leaching (Resistance to dissolution of metallization) JIS C5101	*Solder bath temperature : $260\pm5^{\circ}\text{C}$ *Leaching immersion time : 10 ± 1 sec Solder : Sn96.5 Ag3.0 Gu0.5 for lead-free.	Loss of metallization on the edges of each electrode shall not exceed 25%.
Resistance to soldering heat IEC 60068-2-58 GB/T2423.28	*Preheating temperature : $120\sim150^{\circ}\text{C}$, 1 minute. *Solder temperature : $260\pm5^{\circ}\text{C}$ *Immersion time : 10 ± 1 sec Solder : Sn96.5Ag3.0Gu0.5 for lead-free Measurement to be made after keeping at room temperature for 24 ± 2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature. Loss of metallization on the edges of each electrode shall not exceed 25%.
Drop Test IEC 60068-2-32 GB/T2423.8 Customer's specification.	*Height : 50 cm *Test Surface: Rigid surface of concrete or steel. *Times : 6 surfaces for each units : 2 times for each side.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Vibration IEC 60068-2-6 GB/T 2423.10	*Frequency : $10\text{Hz}\sim55\text{Hz}\sim10\text{Hz}(1\text{min})$ *Total amplitude : 1.5mm *Test times : 6hrs.(Two hrs each in three mutually perpendicular directions)	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Adhesive Strength of Termination IEC60068-2-21 GB/T 2423.6	*Pressurizing force : $5\text{N}(\leq 0603)$; $10\text{N}(>0603)$ *Test time: 10 ± 1 sec	No remarkable damage or removal of the termination.

Bending test IEC 60068-2-21 GB/T 2423.29	The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1 mm/s per second until the deflection becomes 2mm and then pressure shall be maintained for 10±1 sec. Measurement to be made after keeping at room temperature for 24±2 hours.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Temperature cycle IEC60068-2-14 GB/T 2423.22	30 minutes at -40°C±2°C. 10~15 minutes at room temperature. 30minutes at +85°C±2°C. 10~15 minutes at room temperature. Total 100 continuous cycles Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
High temperature IEC 60068-2-2 GB/T2423.2	*Temperature : 85±2°C. *Test duration : 500+24/-0 hours. Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics.
Humidity (steady conditions) IEC60068-2-3 GB/T 2423.3	*Humidity : 85±5%R.H. *Temperature : 85±2°C. *Time : 500+24/-0 hrs. Measurement to be made after keeping at room temperature for 24±2 hrs ※ 200hrs measuring the first data then 300hrs data.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Low temperature IEC 60068-2-1 GB/T2423.1	*Temperature : -40±2°C. *Test duration : 500+24/-0 hours Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.

Bending test IEC 60068-2-21 GB/T 2423.29	The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1 mm/s per second until the deflection becomes 2mm and then pressure shall be maintained for 10±1 sec. Measurement to be made after keeping at room temperature for 24±2 hours.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
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High temperature IEC 60068-2-2 GB/T2423.2	*Temperature : 85±2°C. *Test duration : 500+24/-0 hours. Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics.
Humidity (steady conditions) IEC60068-2-3 GB/T 2423.3	*Humidity : 85±5%R.H. *Temperature : 85±2°C. *Time : 500+24/-0 hrs. Measurement to be made after keeping at room temperature for 24±2 hrs ※ 200hrs measuring the first data then 300hrs data.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Low temperature IEC 60068-2-1 GB/T2423.1	*Temperature : -40±2°C. *Test duration : 500+24/-0 hours Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.