

Technical Data Sheet for BLE Type2EG Measurement result

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Antenna Technical Support Section



Summary

<Content>

EVB for Type2EG is measured.

Condition	Memo
1	Default
2	Optimized matching circuit from Condition 1

Condition	Comment	[dB]	[dBi]
		Total efficiency Average	Peak gain Max.
1	Impedance of antenna doesn't match for BLE band.	-9.3	-3.9
2	Antenna efficiency is improved by optimizing matching circuit.	-6.9	-3.0

<Comment>

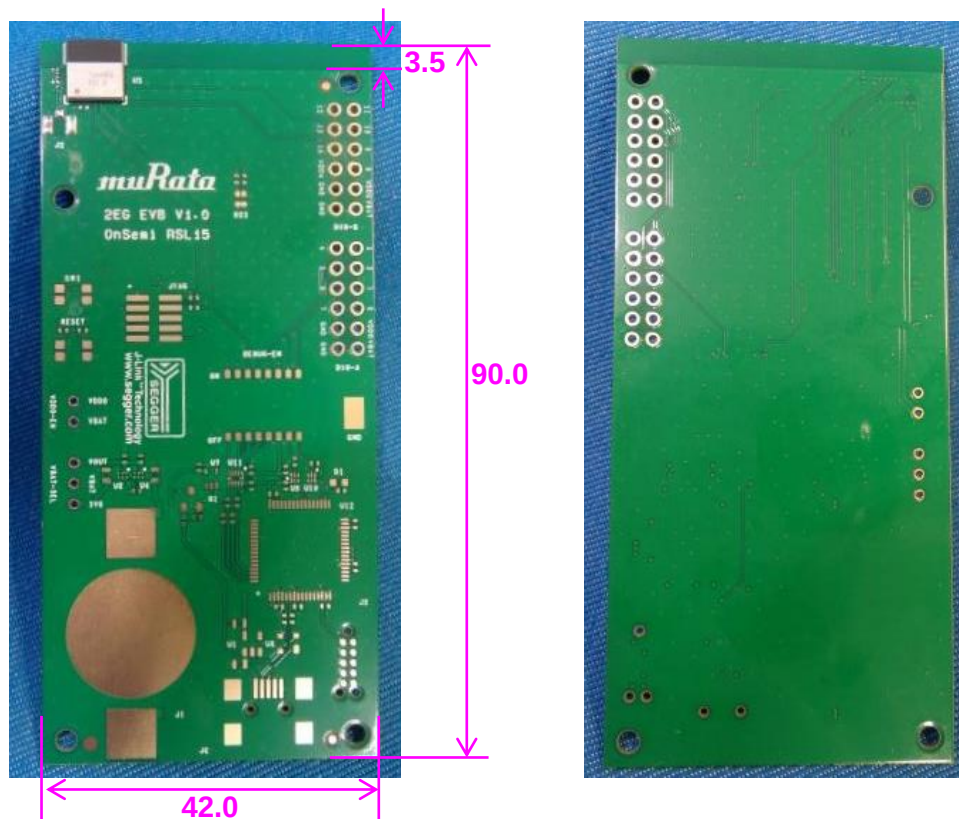
In Condition 1, it is confirmed that impedance of antenna has room for improvement. Therefore, we optimized matching circuit and confirmed that antenna efficiency is improved in Condition 2.



1. Appearance
2. Measurement condition
3. Measurement direction
4. Measurement result

1. Appearance

<DUT>

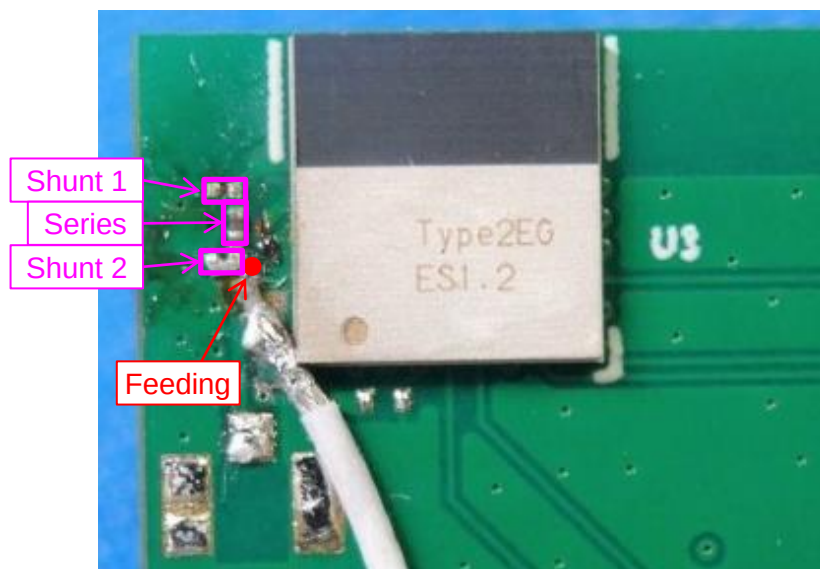


UNIT : mm

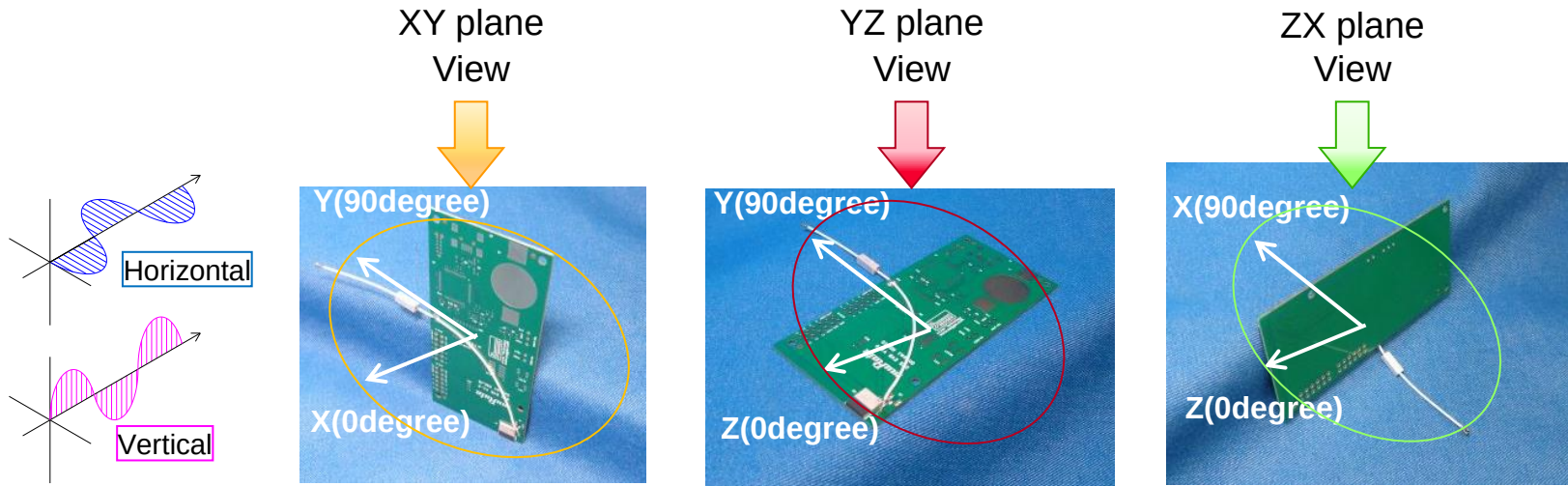
2. Measurement condition

Condition	Memo	Matching circuit(EVB)		
		Shunt 1	Series	Shunt 2
Condition 1	Default	None	0ohm	None
Condition 2	Optimized matching circuit from Condition 1	None	1.6pF	1.2pF

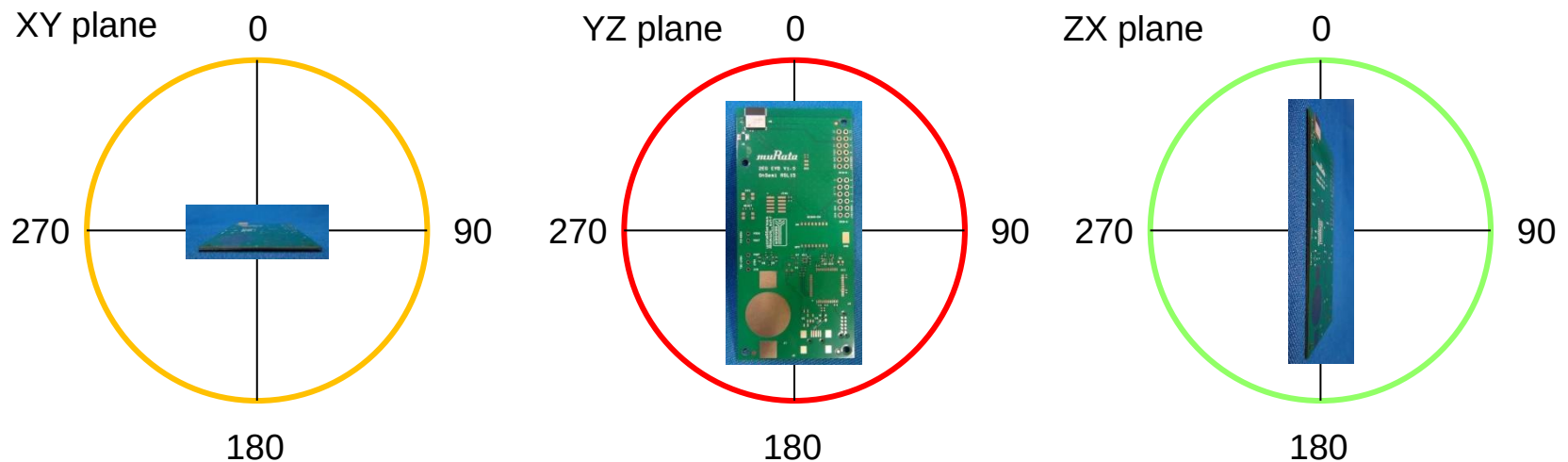
Size:0603 LQP03 / GRM03 / Resistor



3. Measurement direction



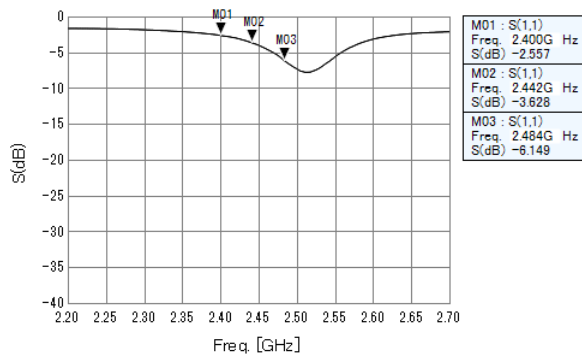
2D Directional indication



4. Measurement result

Condition 1: Default

<Return Loss>

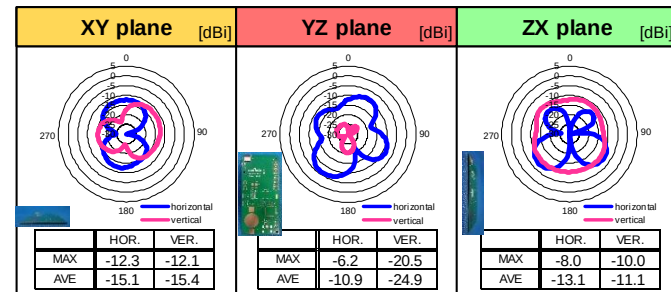


<Efficiency>

*Red color shows peak gain

LINEAR POLARIZATION		XY-plane [dBi]		YZ-plane [dBi]		ZX-plane [dBi]		Total Efficiency [dB]
		hor.	ver.	hor.	ver.	hor.	ver.	
2400 MHz	MAX.	-14.8	-14.5	-9.0	-24.3	-11.2	-13.0	-12.6
	AVE.	-18.1	-18.2	-13.8	-28.8	-16.3	-14.0	
2442 MHz	MAX.	-12.3	-12.1	-6.2	-20.5	-8.0	-10.0	-9.7
	AVE.	-15.1	-15.4	-10.9	-24.9	-13.1	-11.1	
2484 MHz	MAX.	-9.8	-9.7	-3.9	-17.3	-5.5	-7.4	-7.3
	AVE.	-12.6	-13.0	-8.5	-21.9	-10.6	-8.6	

<Directivity>

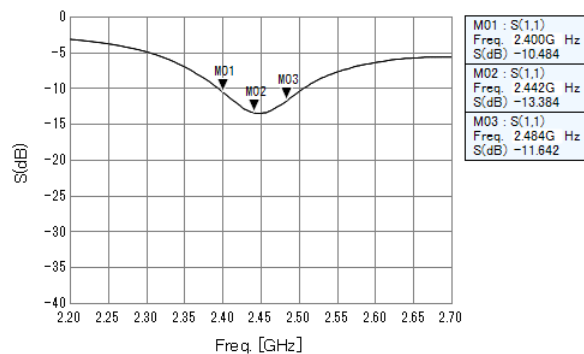


@2442MHz

4. Measurement result

Condition 2: Optimized matching circuit from Condition 1

<Return Loss>

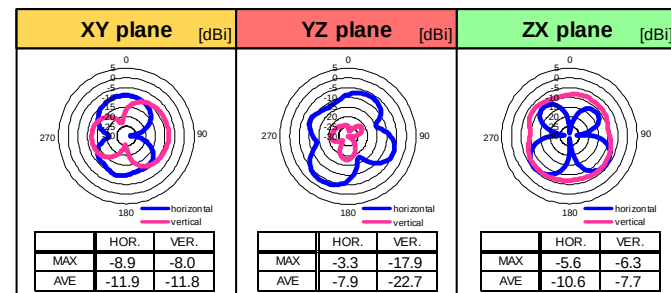


<Efficiency>

*Red color shows peak gain

LINEAR POLARIZATION		XY-plane [dBi]		YZ-plane [dBi]		ZX-plane [dBi]		Total Efficiency [dB]
		hor.	ver.	hor.	ver.	hor.	ver.	
2400 MHz	MAX.	-9.6	-8.8	-4.1	-19.6	-7.0	-7.8	-7.9
	AVE.	-13.3	-12.9	-9.0	-24.8	-11.9	-8.9	
2442 MHz	MAX.	-8.9	-8.0	-3.3	-17.9	-5.6	-6.3	-6.7
	AVE.	-11.9	-11.8	-7.9	-22.7	-10.6	-7.7	
2484 MHz	MAX.	-8.4	-7.8	-3.0	-16.6	-4.9	-5.6	-6.3
	AVE.	-11.3	-11.5	-7.4	-21.8	-10.0	-7.3	

<Directivity>



@2442MHz

4. Measurement result (Comparison)

<Measurement condition>

Condition	Memo
Condition 1	Default
Condition 2	Optimized matching circuit from Condition 1

<Measurement result>

Total efficiency				[dB]	[%]
	Frequency [MHz]			Average	Average
Condition	2400	2442	2484		
Condition 1	-12.6	-9.7	-7.3	-9.3	11.7
Condition 2	-7.9	-6.7	-6.3	-6.9	20.4

Peak gain				[dBi]
	Frequency [MHz]			Max.
Condition	2400	2442	2484	
Condition 1	-9.0	-6.2	-3.9	-3.9
Condition 2	-4.1	-3.3	-3.0	-3.0

<For reference: RERC22066-SE>

Total efficiency				[dB]	[%]
	Frequency [MHz]			Average	Average
Condition	2400	2442	2484		
Condition 1	-6.8	-6.3	-6.2	-6.4	22.9

Peak gain				[dBi]
	Frequency [MHz]			Max.
Condition	2400	2442	2484	
Condition 1	-3.3	-2.8	-2.7	-2.7

*RERC22066-SE is measurement report for last evaluation