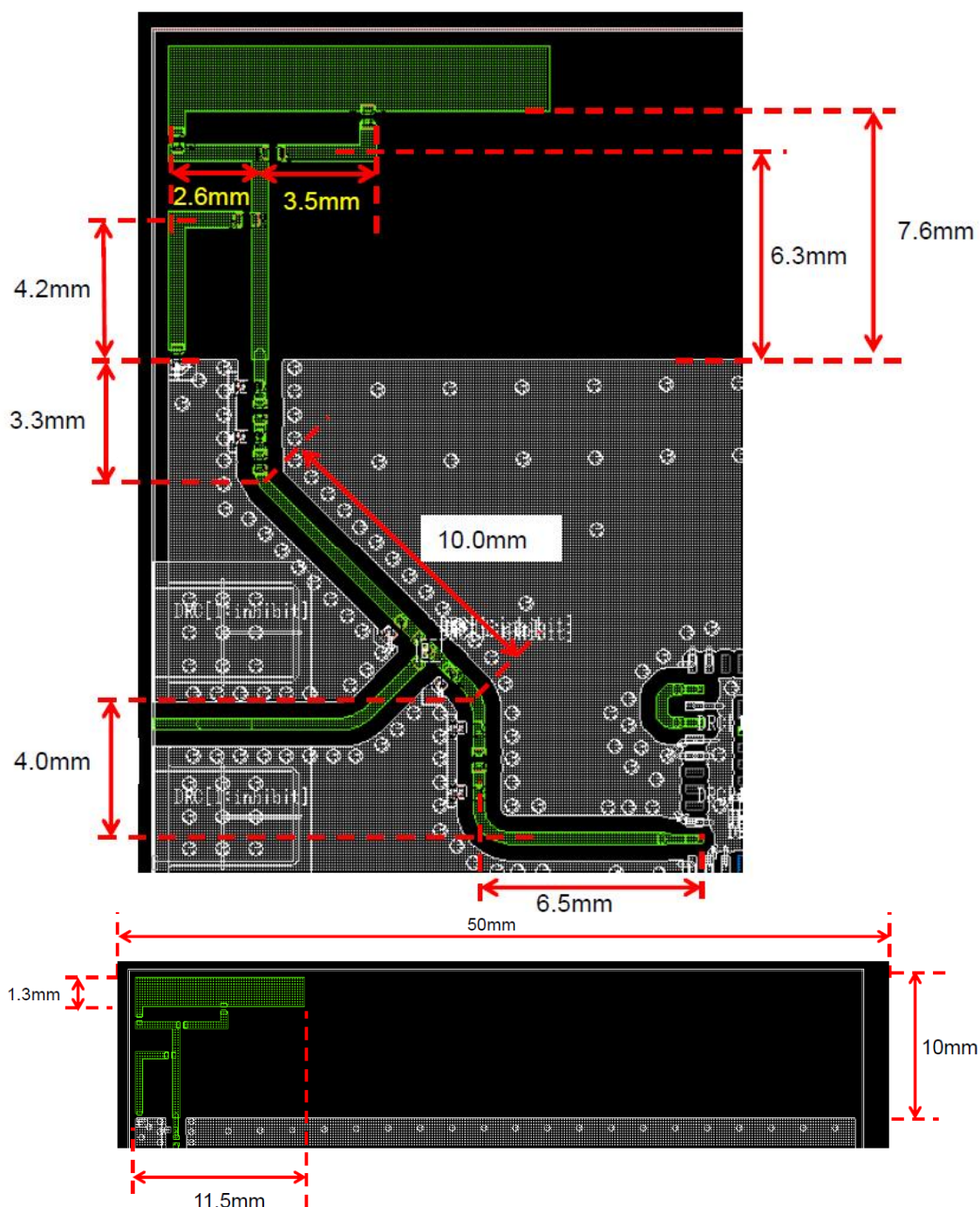


Annex B

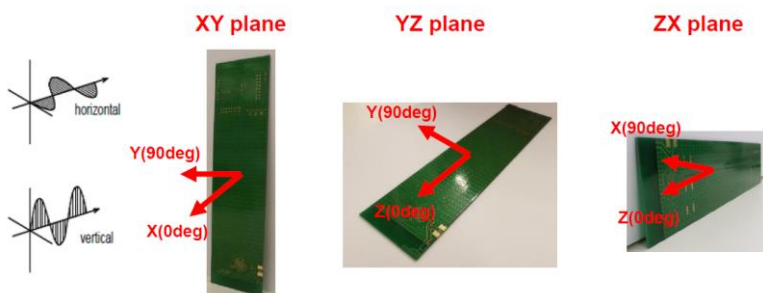
Certified Antenna information

Antenna Model Name	Type1LV-Antenna
Antenna type	Monopole pattern antenna
Antenna manufacture	Murata Manufacturing Co.,Ltd.
Antenna gain	+0.9 dBi@2.4GHz +2.0dBi@5GHz
Frequency	2400-2483.5MHz, 5150-5850MHz

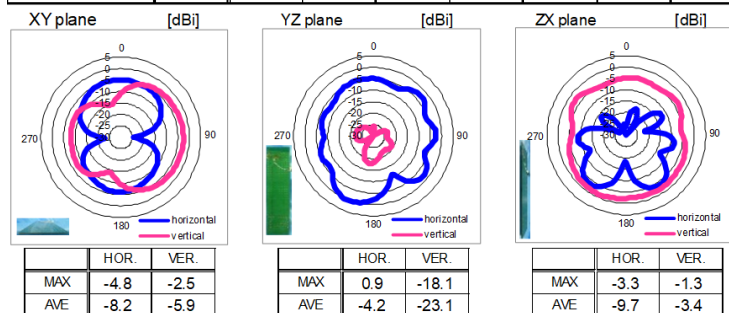


Antenna trace width 0.5mm

Direction

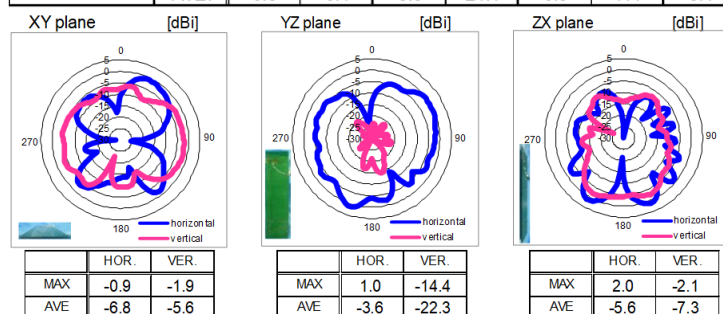


LINEAR POLARIZATION		[dBi]						[dB]
		XY-plane		YZ-plane		ZX-plane		Total Efficiency
		hor.	ver.	hor.	ver.	hor.	ver.	
2400 MHz	MAX.	-5.0	-3.3	0.5	-18.7	-3.4	-1.5	-3.5
	AVE.	-8.3	-6.4	-4.4	-24.1	-9.6	-3.6	
2442 MHz	MAX.	-4.8	-2.5	0.9	-18.1	-3.3	-1.3	-3.4
	AVE.	-8.2	-5.9	-4.2	-23.1	-9.7	-3.4	
2484 MHz	MAX.	-4.5	-2.7	0.1	-18.9	-3.2	-1.1	-3.4
	AVE.	-8.0	-6.0	-4.2	-23.6	-9.7	-3.3	



@2442MHz

LINEAR POLARIZATION		[dBi]						[dB]
		XY-plane		YZ-plane		ZX-plane		Total Efficiency
		hor.	ver.	hor.	ver.	hor.	ver.	
5150 MHz	MAX.	-0.6	-2.6	1.3	-14.9	0.9	-0.1	-3.0
	AVE.	-6.4	-6.6	-3.6	-21.7	-6.6	-5.8	
5500 MHz	MAX.	-0.9	-1.9	1.0	-14.4	2.0	-2.1	-3.0
	AVE.	-6.8	-5.6	-3.6	-22.3	-5.6	-7.3	
5850 MHz	MAX.	-1.0	-2.7	0.6	-13.3	0.8	-2.6	-3.1
	AVE.	-6.8	-6.1	-3.8	-21.1	-6.3	-7.4	



@5500MHz

■ Please perform the antenna design that above certified antenna specifications of the antenna.

About the signal line between an antenna and a module

It is a 50-ohm line design.

Fine tuning of return loss etc. can be performed using a matching network.

However, it is required to check "Class1 change" and "Class2 change" which the authorities define then.

The concrete contents of a check are the following three points.

- 1) It is the same type as the antenna type of antenna specifications.
- 2) An antenna gain is lower than a gain given in antenna specifications.
- 3) The emission level is not getting worse.

-50ohm line (microstrip line length)

50-ohm line length	We test it at 23.8mm as a representative
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Preliminary

< Specification may be changed by Murata without notice >

Murata Manufacturing Co., Ltd.

