

Report for Broadcom

By Alfred Grau

Manufacture's Name:UCI CENTER FOR RF DESIGN ANDCHARACTERIZATION

School of Electronics and Information Engineering, Zhixin Building, Guangdong Campus, Shenzhen

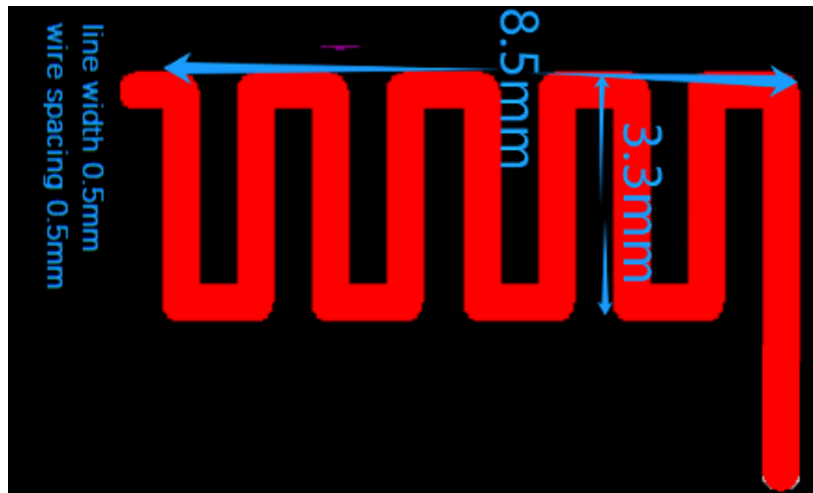
University, No. 3688, Nanhai Avenue, Nanshan District, Shenzhen, China)

UCI CENTER FOR RF DESIGN AND CHARACTERIZATION

Tested Products.

- Antenna 1: integrated antenna.
 - Frequency = 2.402GHz.
 - Frequency = 2.441GHz.
 - Frequency = 2.480GHz.

Coordinate System Reference: Antenna 1.



3-1NormalModuleWiggleAntenna

The performance of S_{11} as blow show and the working frequency band cover 2.4G ISM.

Radiation pattern: Antenna 1. XZ Plane at $f = 2.402\text{GHz}$



Solid line: vertical polarization
Dash line: horizontal polarization

Radiation pattern: Antenna 1. YZ Plane at $f = 2.402\text{GHz}$



Co-cross polarization field (dBi)

Solid line: vertical polarization
Dash line: horizontal polarization



Total field (dBi)

Radiation pattern: Antenna 1. XY Plane at $f = 2.402\text{GHz}$



Co-cross polarization field (dBi)



Total field (dBi)

Solid line: vertical polarization
Dash line: horizontal polarization

Radiation pattern: Antenna 1. XZ Plane at $f = 2.441\text{GHz}$



Co-cross polarization field (dBi)



Total field (dBi)

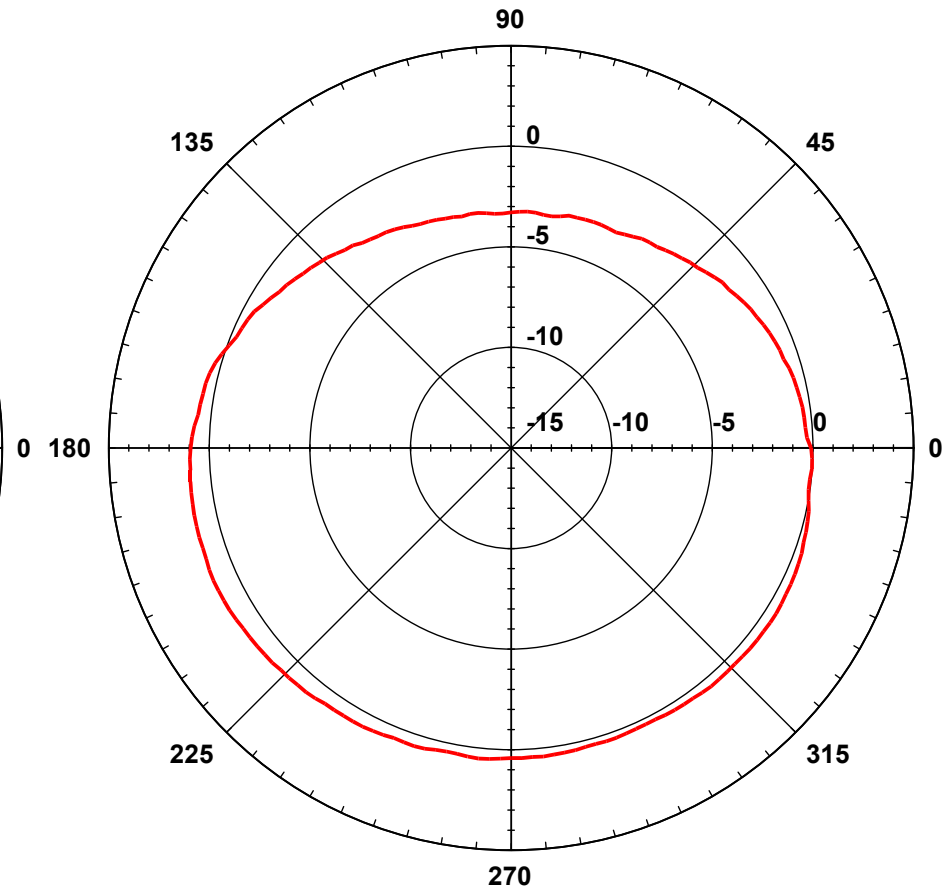
Solid line: vertical polarization
Dash line: horizontal polarization

Radiation pattern: Antenna 1. YZ Plane at $f = 2.441\text{GHz}$



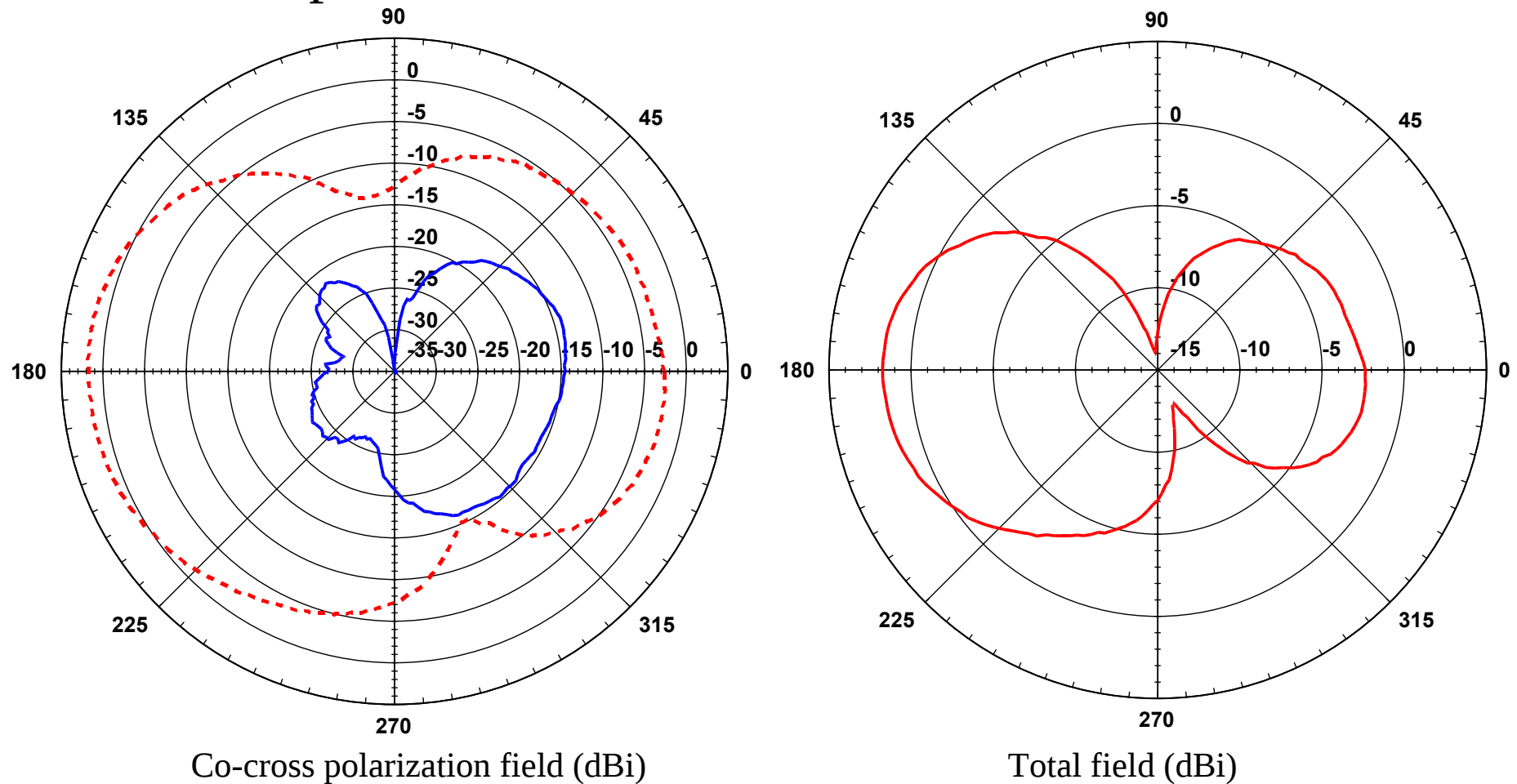
Co-cross polarization field (dBi)

Solid line: vertical polarization
Dash line: horizontal polarization



Total field (dBi)

Radiation pattern: Antenna 1. XY Plane at $f = 2.441\text{GHz}$



Radiation pattern: Antenna 1. XZ Plane at $f = 2.480\text{GHz}$



Radiation pattern: Antenna 1. YZ Plane at $f = 2.480\text{GHz}$



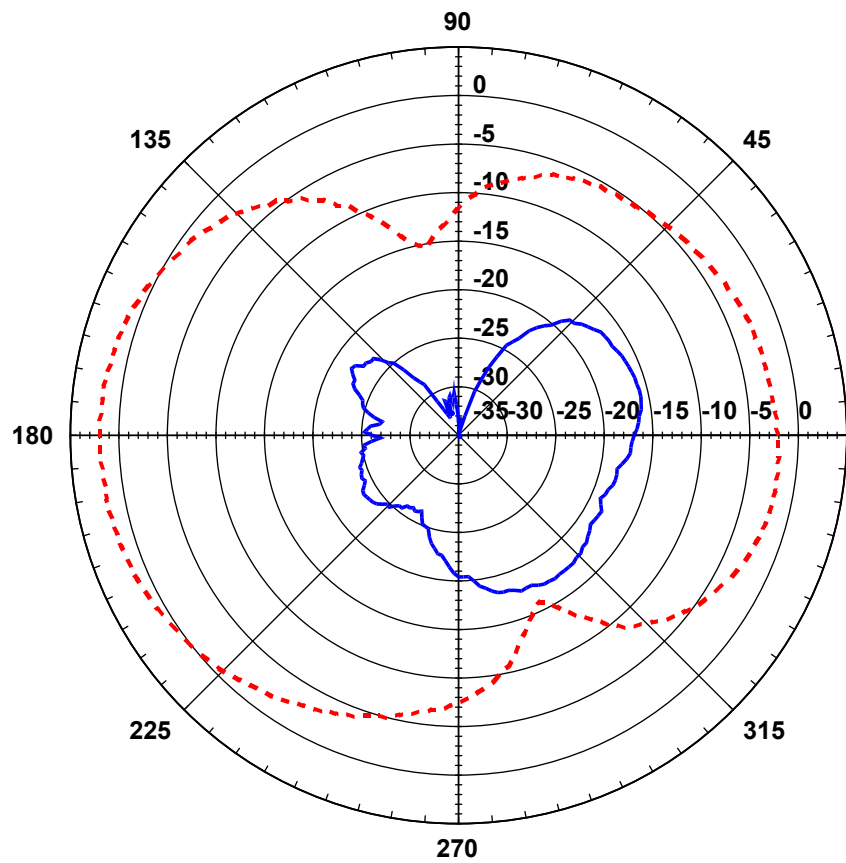
Co-cross polarization field (dBi)



Total field (dBi)

Solid line: vertical polarization
Dash line: horizontal polarization

Radiation pattern: Antenna 1. XY Plane at $f = 2.480\text{GHz}$



Co-cross polarization field (dBi)

Solid line: vertical polarization
Dash line: horizontal polarization



Total field (dBi)

Return Loss: Antenna 1



BW(-10dB) 🕒 13.48%

Measurements summary

	Frequency (GHz)	Plane	Return Loss (dB)	Polarization	Gain max. (dBi)	θ for Gain max.	ϕ for Gain max.
Antenna 1							
	2.402	XZ	-10.90	Vertical	-7.8	290	
	2.402	XZ	-10.90	Horizontal	0.786	182	
	2.402	YZ	-10.90	Vertical	1.21	226	
	2.402	YZ	-10.90	Horizontal	-7.75	10	
	2.402	XY	-10.90	Vertical	-15.4		20
	2.402	XY	-10.90	Horizontal	0.93		180
	2.441	XZ	-12.20	Vertical	-7.36	318	
	2.441	XZ	-12.20	Horizontal	1.32	180	
	2.441	YZ	-12.20	Vertical	0.981	204	
	2.441	YZ	-12.20	Horizontal	-8.23	24	
	2.441	XY	-12.20	Vertical	-14.1		-14
	2.441	XY	-12.20	Horizontal	1.74		180
	2.48	XZ	-13.80	Vertical	-7.95	312	
	2.48	XZ	-13.80	Horizontal	1.81	186	
	2.48	YZ	-13.80	Vertical	0.204	214	
	2.48	YZ	-13.80	Horizontal	-8.38	8	
	2.48	XY	-13.80	Vertical	-15.8		12
	2.48	XY	-13.80	Horizontal	1.87		180