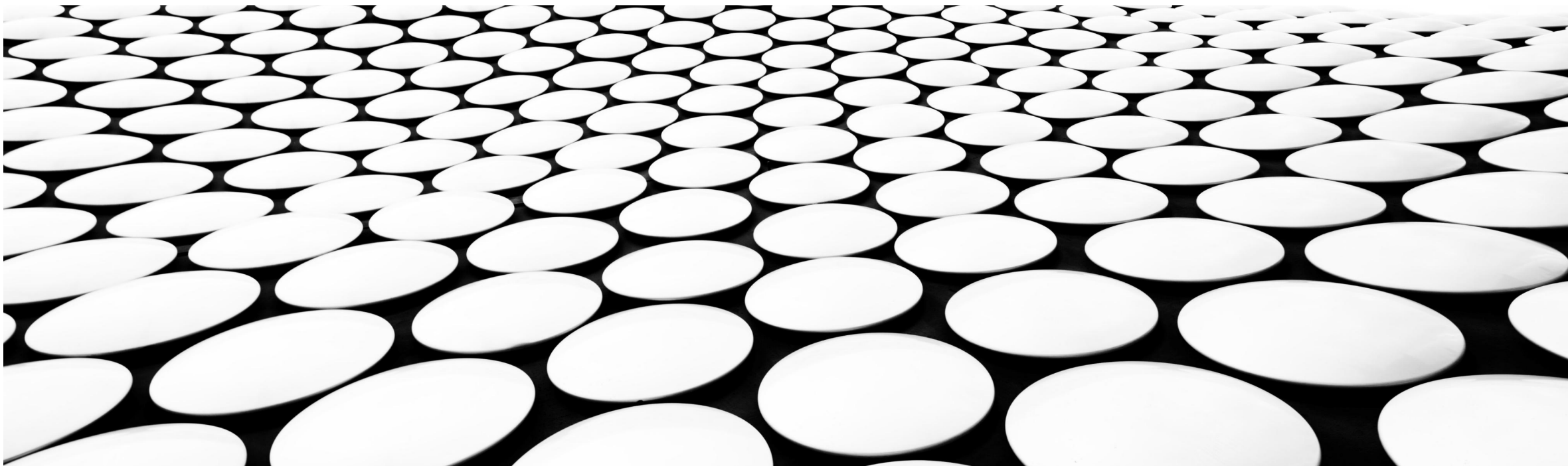

PCB ANTENNA REPORT FOR BLE VOICE REMOTE CONTROL UNIT

JIANGSU HUITONG GROUP



YKF478-B451 PCB ANTENNA REPORT

Suitable for YKF478-B4xx series

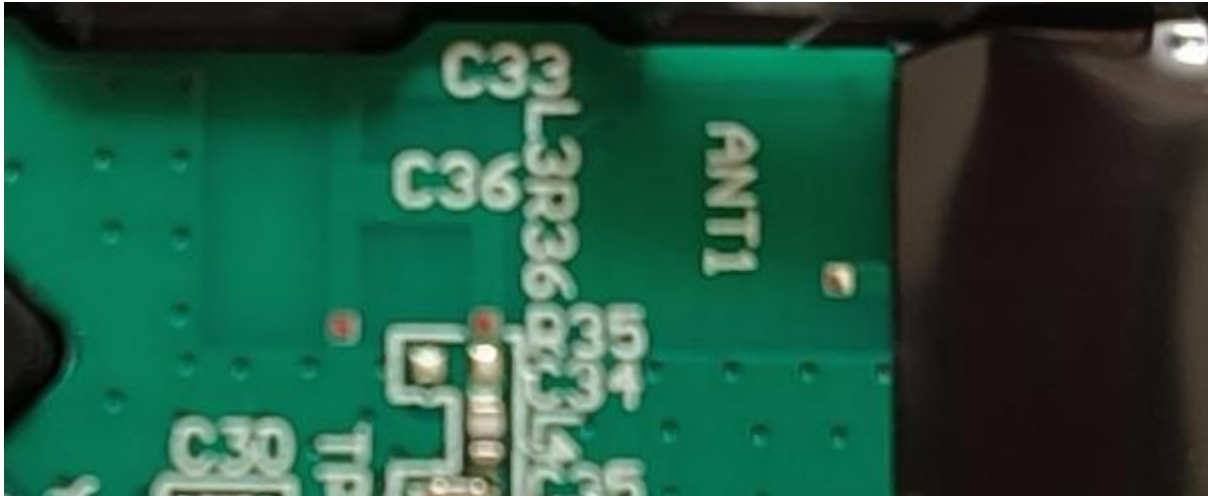
	Test_item		Pattern Type	Spec	2402MHz	2440MHz	2480MHz		
BLE1M	Tx power	Tx power (dBm) Aveage	PRBS9	-20 dBm ≤ PAVG	6.85	7.03	7.07		
		Peak		7.23	7.42	7.47			
	TX output Spectrum-ACP	In-band Spurious Emissions		fTX±2 MHz<-20dB	-46.76	-47.1	-47.11		
				fTX±(3+N) MHz<-20dB	-47.23	-47.37	-47.18		
	Carrier frequency offset and drift	Freq Accuracy (avg)		<150khz	33.49	34.01	34.55		
					34.21	34.48	35.29		
				carrier frequency offset (avg)		fTX-150kHz≤fn	33.76	34.38	34.79
							34.21	34.83	35.29
				carrier frequency offset (max)		f0-fn ≤50kHz	-0.96	-0.91	-0.87
							-1.92	1.43	-1.62
				Freq Drift (avg)		<23kHz	-0.71	-0.52	-0.45
							-1.69	-1.37	-1.63
				Freq Drift (max)		f1-f0 ≤20kHz	-0.06	0.05	0.02
							-1.22	-1.7	1.21
	Modulation Characteristics	△f2 99.9%		10101010	>185khz	212	212.9	213.2	
					99.9% △f2max < 0.5%	223.01	222.73	224.77	
						217.47	216.41	218.52	
					229.24	229.53	231.36		
				△f1 avg (KHz)		11110000	248.43	247.75	247.16
							242.78	243.48	240.37
							253.97	252.1	253.87
							≥0.8	0.9	0.9

Antenna Shape and description

Antenna Ground and Power Source

The antenna consists of a 2.4GHz Meander line PCB antenna

Antenna gain: 0dBi

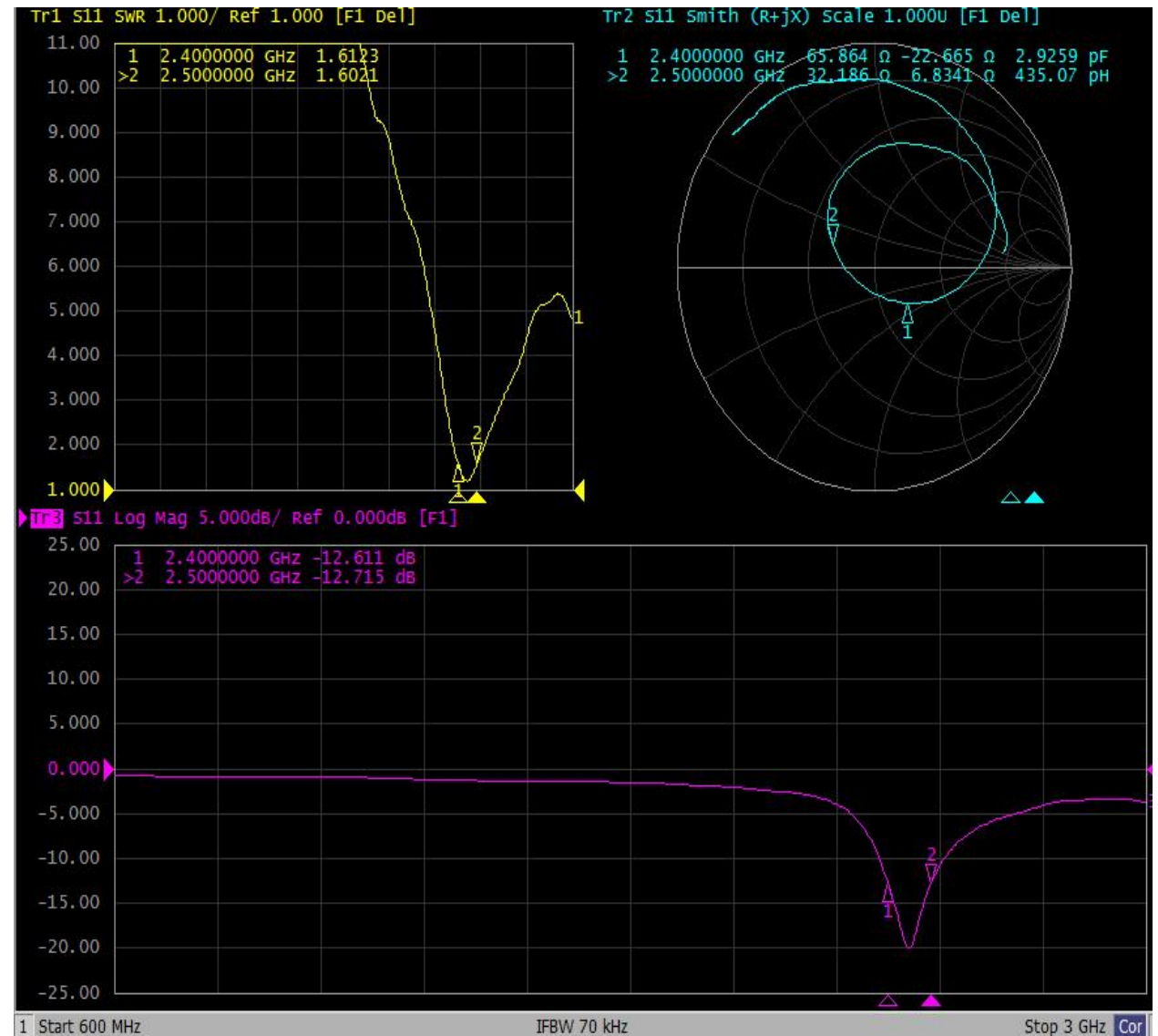


Antenna part number : PCB antenna of [GWA7.820.1029-6 V0.1](#)

Antenna manufacturer : Jiangsu Huitong Group co., ltd

No.24,Block 2,Taohuawu New District Zhenjiang Jiangsu P.R.C

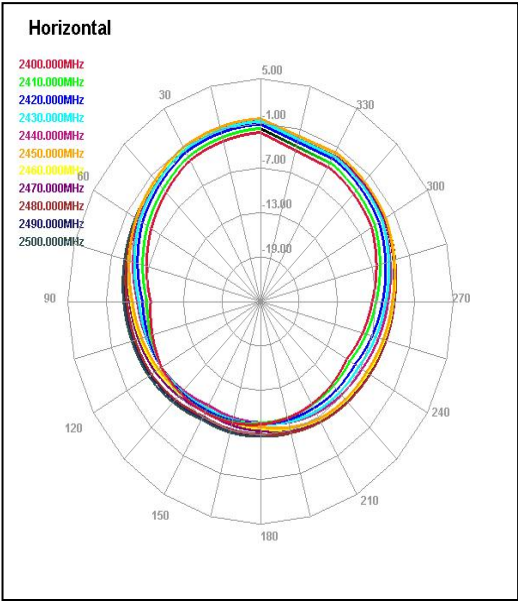
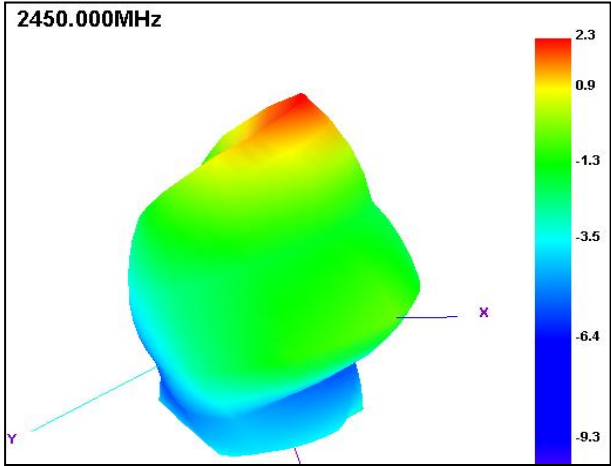
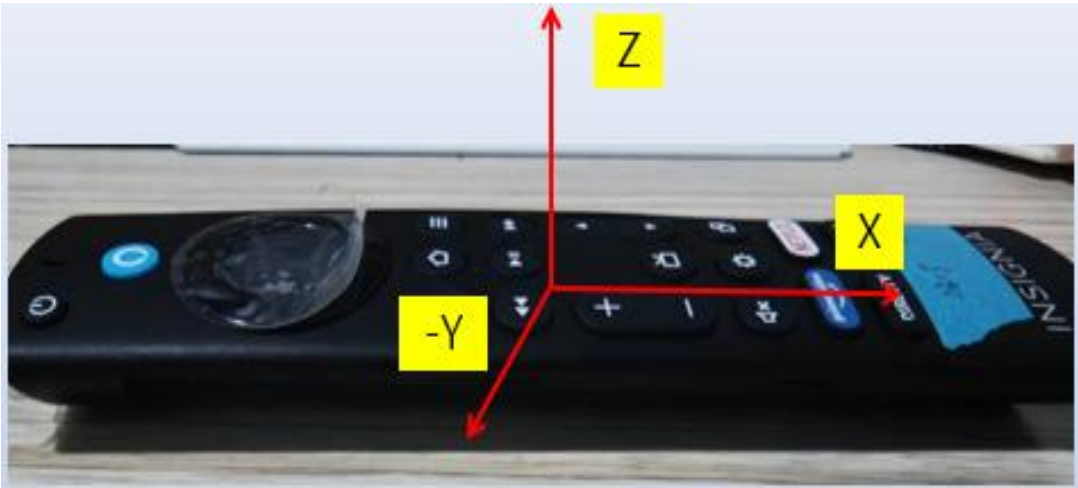
S11 parameters and antenna passive efficiency in



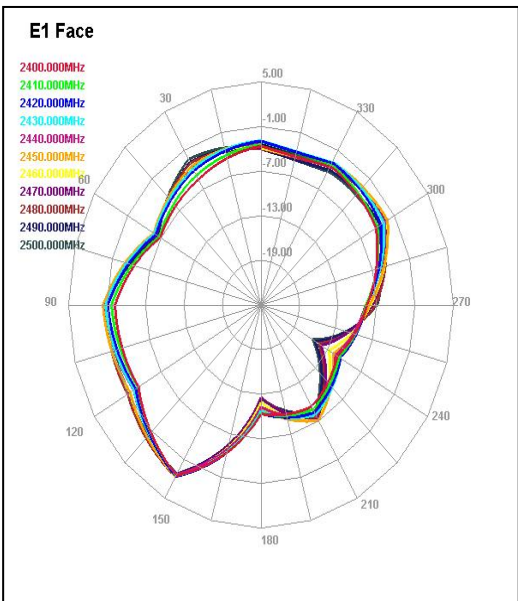
Passive efficiency and gain of antenna optimization

Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)
2400	47.11	-3.26	2.27
2410	50.29	-2.98	2.56
2420	52.47	-2.8	2.78
2430	52.83	-2.77	2.79
2440	54.06	-2.67	2.85
2450	50.64	-2.95	2.45
2460	50.56	-2.96	2.31
2470	51.27	-2.9	2.19
2480	52.32	-2.81	2.25
2490	53.84	-2.68	2.37
2500	51.4	-2.89	2.08

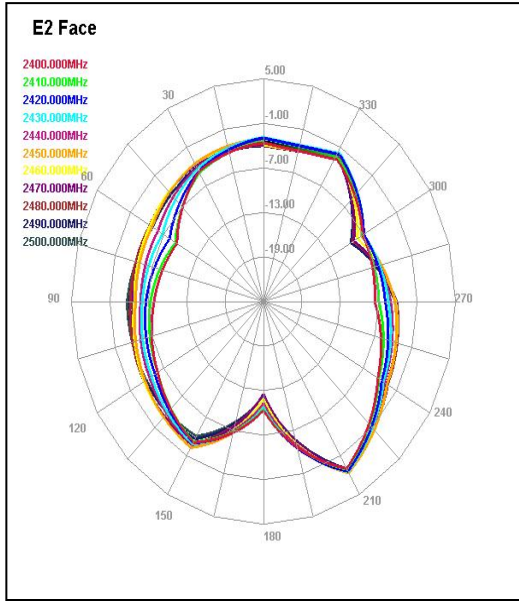
Radiation Patterns



XY Plane



XZ Plane



YZ Plane