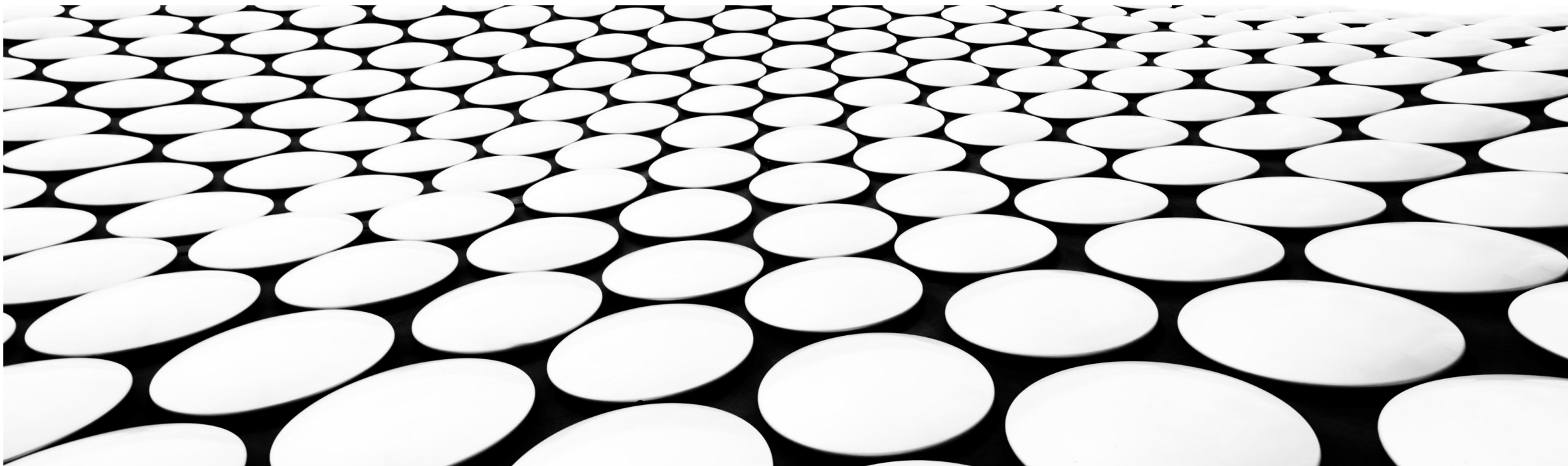


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# PCB ANTENNA REPORT FOR BLE VOICE REMOTE CONTROL UNIT

JIANGSU HUITONG GROUP



# YKF478-B451 PCB ANTENNA REPORT

Suitable for YKF478-B4xx series

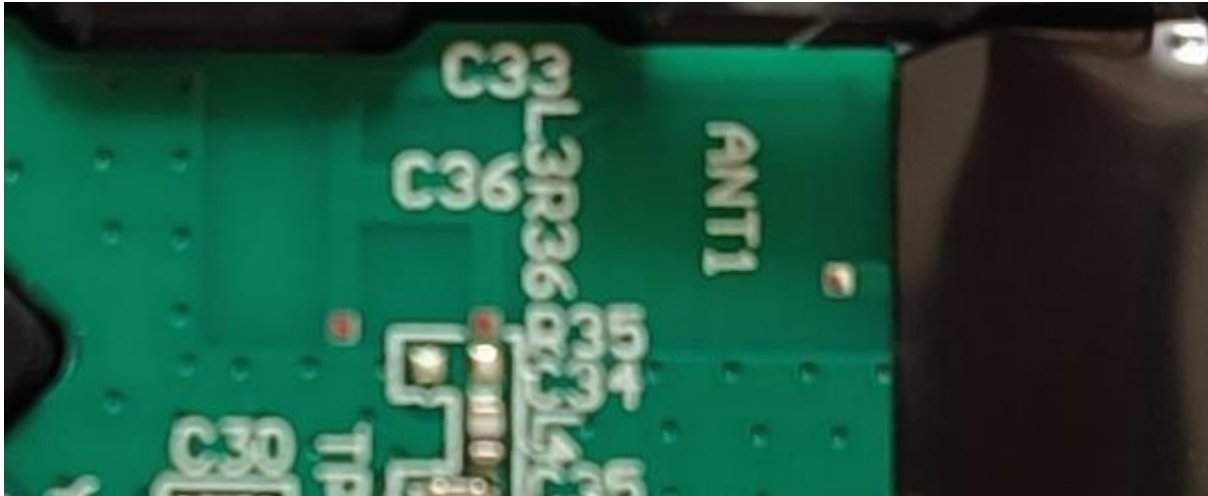
	Test_item		Pattern Type	Spec	2402MHz	2440MHz	2480MHz			
BLE1M	Tx power	Tx power (dBm) Aveage	PRBS9	-20 dBm ≤ PAVG	6.85	7.03	7.07			
		Peak		7.23	7.42	7.47				
	TX output Spectrum-ACP	In-band Spurious Emissions		fTX±2 MHz<-20dB	-46.76	-47.1	-47.11			
				fTX±(3+N) MHz<-20dB	-47.23	-47.37	-47.18			
	Carrier 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	
				Initial Freq Drift (avg)		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		
						223.01	222.73	224.77		
					△f2 avg (KHz)		99.9% △f2max o	217.47	216.41	218.52
								229.24	229.53	231.36
				△f2 min (KHz)		11110000	225kHz≤△f1avg	248.43	247.75	247.16
								242.78	243.48	240.37
				△f2 max (KHz)				253.97	252.1	253.87
								△f1 avg (KHz)		≥0.8

## Antenna Shape and description

### Antenna Ground and Power Source

The antenna consists of a 2.4GHz Meander line PCB antenna

Antenna gain: 0dBi

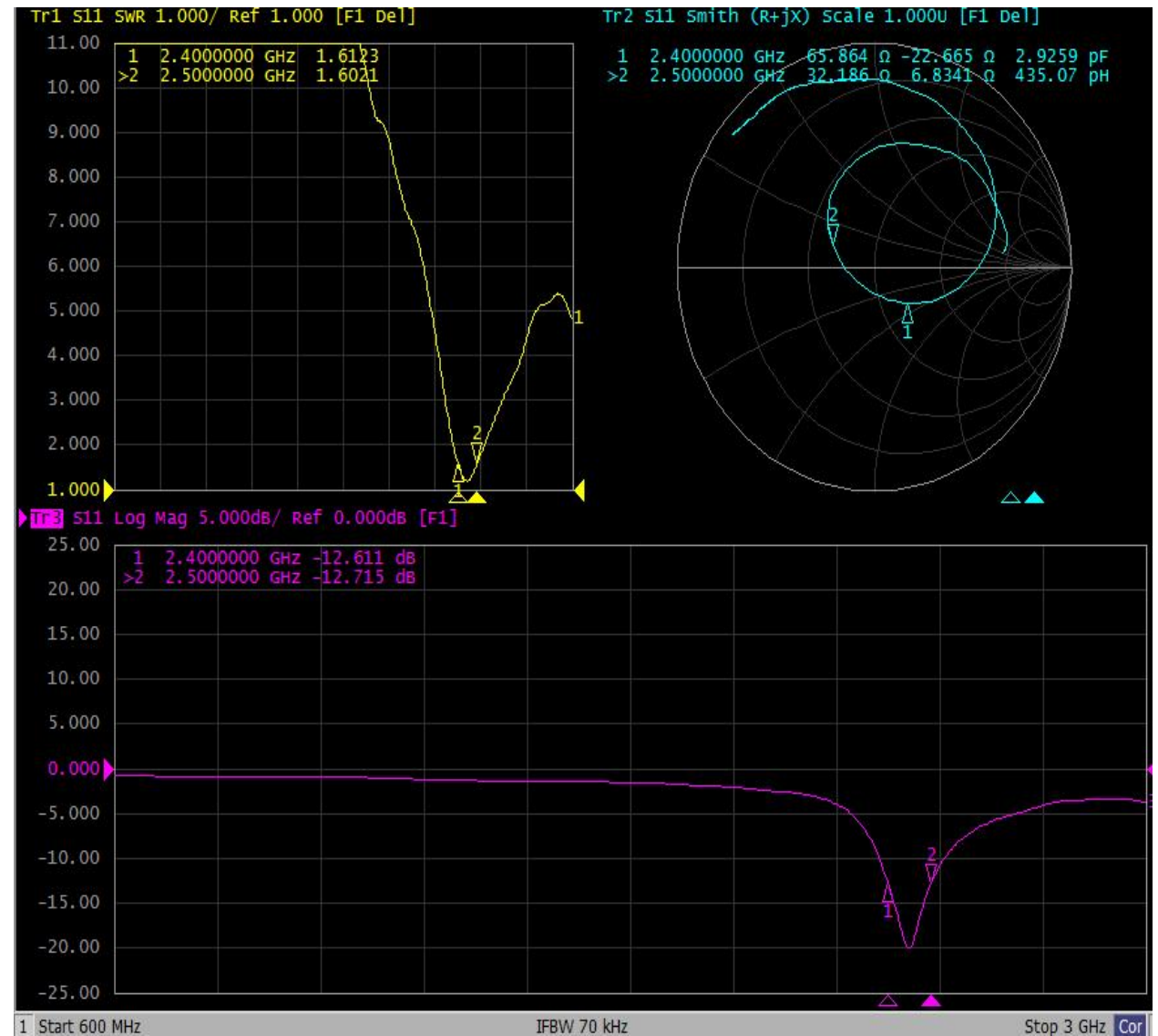


Antenna part number : PCB antenna of [GWA7.820.1029-6 V0.1](#)

Antenna manufacturer : Jiangsu Huitong Group co., ltd

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

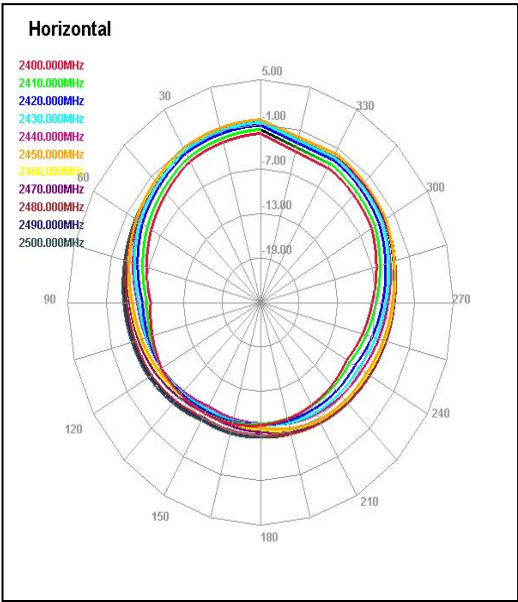
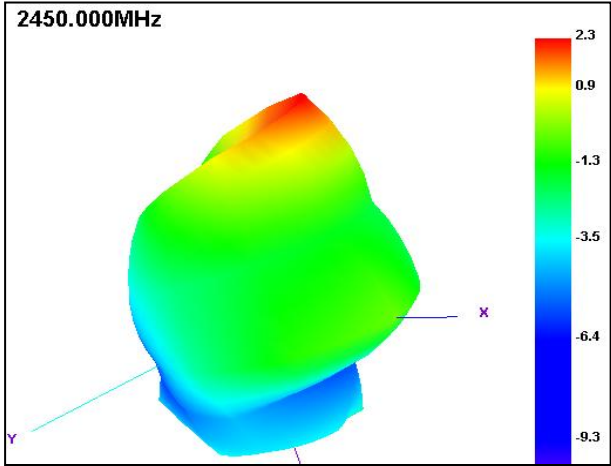
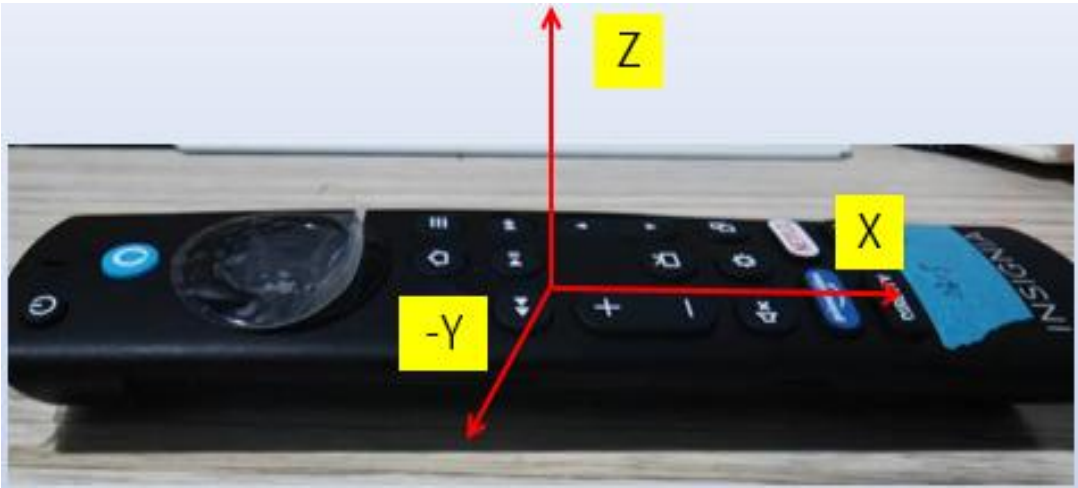
## S11 parameters and antenna passive efficiency in



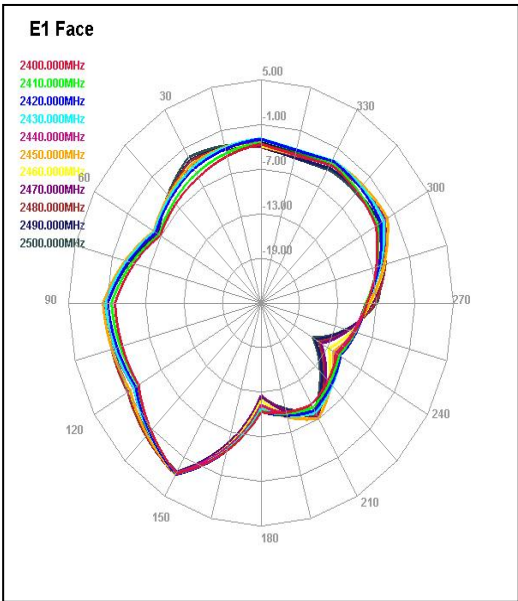
## Passive efficiency and gain of antenna optimization

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

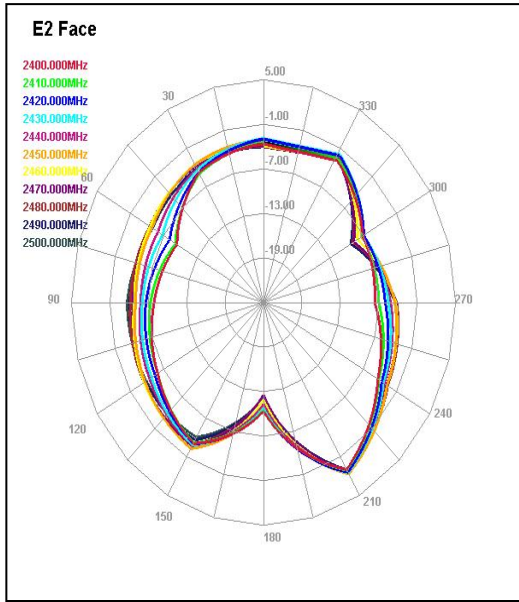
# Radiation Patterns



XY Plane



XZ Plane



YZ Plane