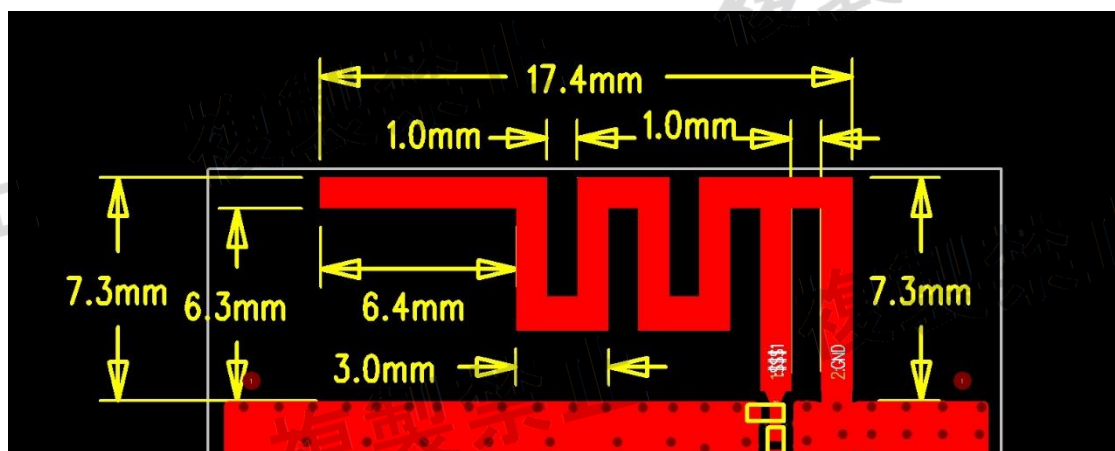


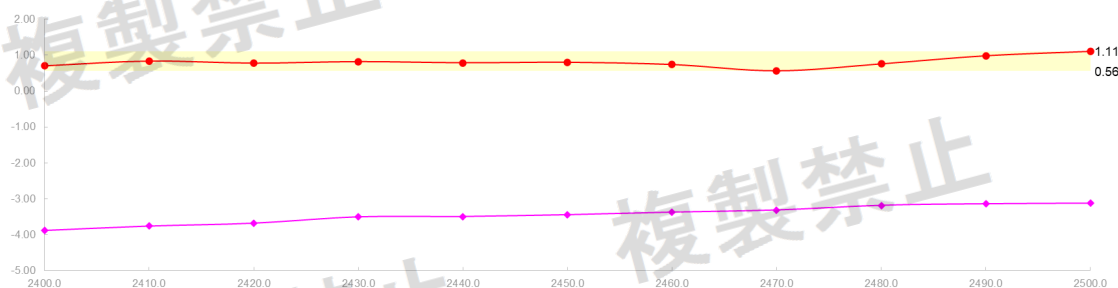
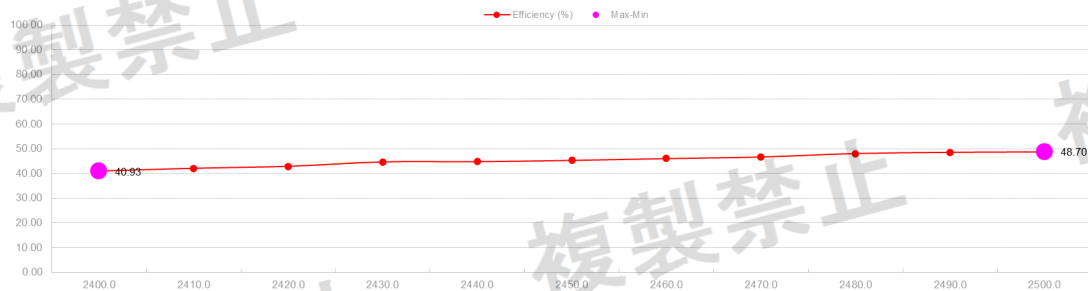
Manufacturer	ShenZhen World Elite Electronics Co.,Ltd.
Address	5th Floor,Office Building,Xiangyu'er Industrial Park,No.8 LongshenWB-87 Series module antennaCommunity, Longgang Street,Longgang District,Shenzhen City, Guangdong Province,China
Model	WB-87 Series module antenna
Antenna Shape	PCB antenna
Antenna Dimensions	7 x 17.4mm
Antenna Material	FR4
RF Frequency Band	2.402~2.480 GHz
Impedance	50 Ω
Polarization	Dual Polarization (Vertical and Horizontal)
Antenna Gain	Vertical Port Peak Gain : 1.11 dBi Horizontal Port Peak Gain : 0.07 dBi Max. antenna gain is 1.11dBi due to there is a 0.5~1.5dB loss ofmatching on board.
Operating Temperature	-30°C~+80°C

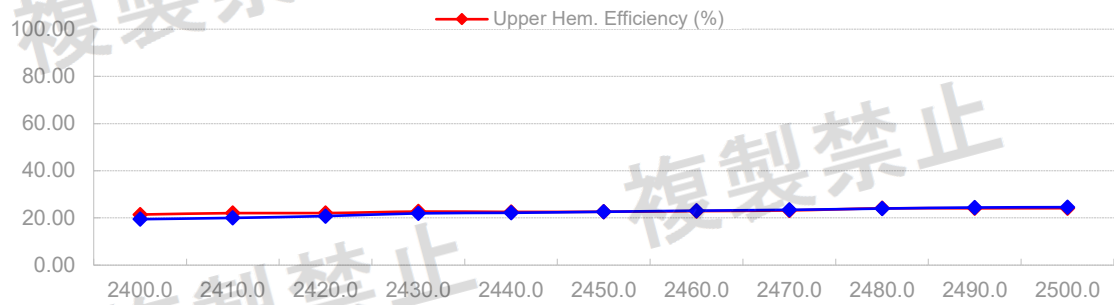
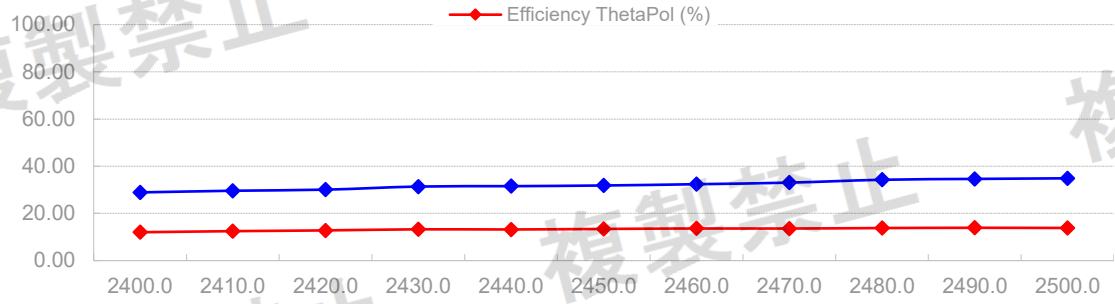


Unit: mm

Antenna Efficiency and Gain

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-3.88	-3.76	-3.68	-3.50	-3.49	-3.44	-3.37	-3.31	-3.18	-3.14	-3.12
Gain (dBi)	0.70	0.84	0.78	0.82	0.79	0.80	0.74	0.56	0.76	0.99	1.11
Efficiency (%)	40.93	42.09	42.87	44.65	44.75	45.26	46.00	46.64	48.05	48.53	48.70
Directivity (dB)	4.58	4.59	4.45	4.32	4.28	4.24	4.11	3.87	3.94	4.13	4.20
Peak Gain Position (Theta)	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	150.00	150.00
Peak Gain Position (Phi)	300.00	300.00	300.00	315.00	315.00	315.00	330.00	330.00	315.00	315.00	315.00
Efficiency ThetaPol (%)	12.02	12.48	12.80	13.27	13.20	13.42	13.61	13.59	13.80	13.91	13.83
Efficiency PhiPol (%)	28.91	29.60	30.08	31.38	31.55	31.83	32.38	33.04	34.25	34.62	34.88
Upper Hem. Efficiency (%)	21.44	22.06	22.07	22.71	22.56	22.64	22.91	23.20	24.07	24.09	24.14
Lower Hem. Efficiency (%)	19.48	20.03	20.80	21.94	22.18	22.62	23.08	23.43	23.98	24.43	24.57





3D antenna gains:

