

2.4 GHz Inverted F Antenna spec.

This document describes a printed-circuit board (PCB) design that can be used with all 2.4GHz BT transceivers and transmitters for F-6201 module series Soc. The gain is measured to be 3.54 dBi, and the overall size requirements for this antenna, this antenna is compact, low cost and high performance.

1 Description of inverted F Antenna Design

Because the impedance of the inverted F Antenna is matched directly 50ohm,so it is no external matching components are required.

1.1 Dimensions.

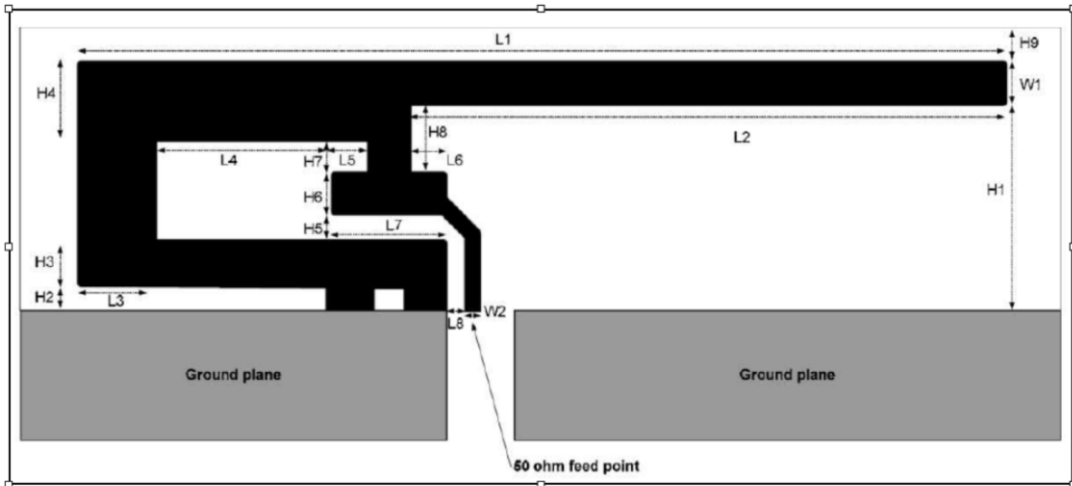
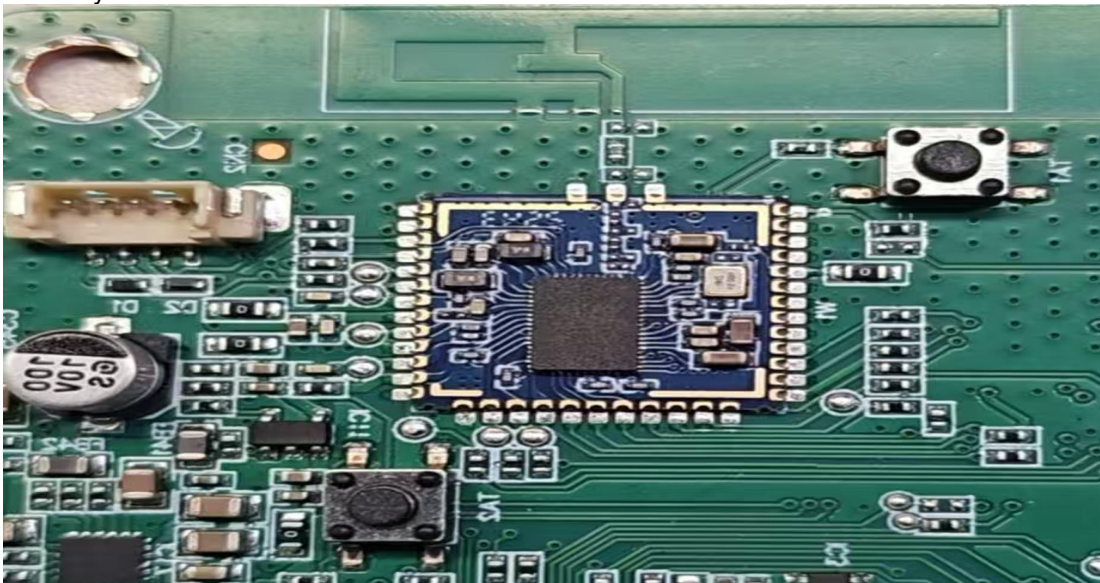


Figure 1. dimensions

H1	5.70 mm	W2	0.46 mm
H2	0.74 mm	L1	25.58 mm
H3	1.29 mm	L2	16.40 mm
H4	2.21 mm	L3	2.18 mm
H5	0.66 mm	L4	4.80 mm
H6	1.21 mm	L5	1.00 mm
H7	0.80 mm	L6	1.00 mm
H8	1.80 mm	L7	3.20 mm
H9	0.61 mm	L8	0.45 mm
W1	1.21 mm		

PCB layout



Frequency ID	1	2	3	4	5	6	7	8	9
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0
Efficiency (dBi)	-3.55	-3.48	-3.49	-3.44	-3.47	-3.39	-3.41	-3.50	-3.64
Gain (dBi)	3.32	3.50	3.54	3.52	3.41	3.42	3.35	3.30	3.27
Efficiency (%)	44.15	44.87	44.77	45.24	44.97	45.78	45.56	44.68	43.21
Directivity (dB)	6.88	6.98	7.03	6.96	6.88	6.82	6.77	6.80	6.91
Peak Gain Position (Theta)	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Peak Gain Position (Phi)	180.00	180.00	180.00	180.00	180.00	180.00	180.00	180.00	180.00
Efficiency ThetaPol (%)	19.77	20.05	20.03	20.20	19.94	20.16	19.95	19.63	19.38
Efficiency PhiPol (%)	24.37	24.82	24.74	25.04	25.03	25.62	25.61	25.05	23.83
Upper Hem. Efficiency (%)	29.64	30.16	30.17	30.50	30.38	30.83	30.74	30.32	29.64
Lower Hem. Efficiency (%)	14.51	14.71	14.60	14.74	14.59	14.95	14.82	14.36	13.57

Empty

