



ANT-D566

2.4GHz ISM Band Working Frequency PCB Antenna Datasheet

V0.0

Revision History

Date	Revision Content	Revised By	Version
2022/10/18	- Initial released (Preliminary)	Issac Chen	0.0
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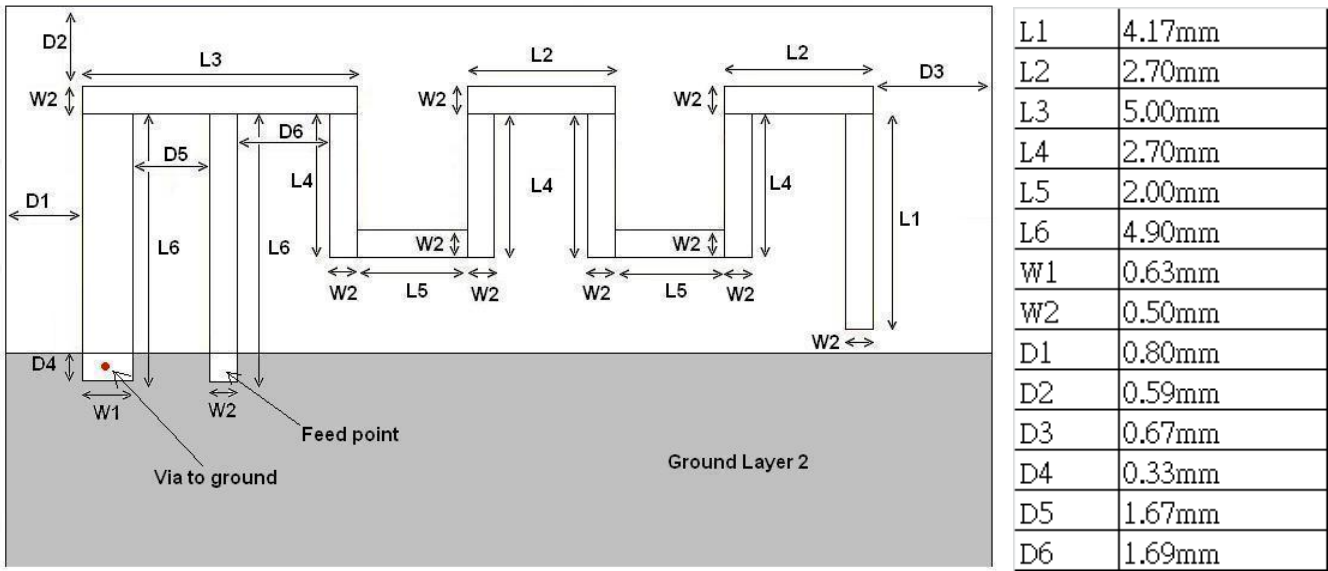
1. Introduction

ANT-D566 PCB antenna used on EWB160031M WIFI+BLE module is described in this datasheet. It can be also used in all 2.4GHz designs, especially where small space is required for the antenna.

This datasheet describes the antenna dimensions and RF performance test result. The suggested antenna design requires no more than 15.2 x 5.7mm of space and ensures a VSWR ratio of less than 2 across the 2.4 GHz ISM band when connected to a 50 ohm source.

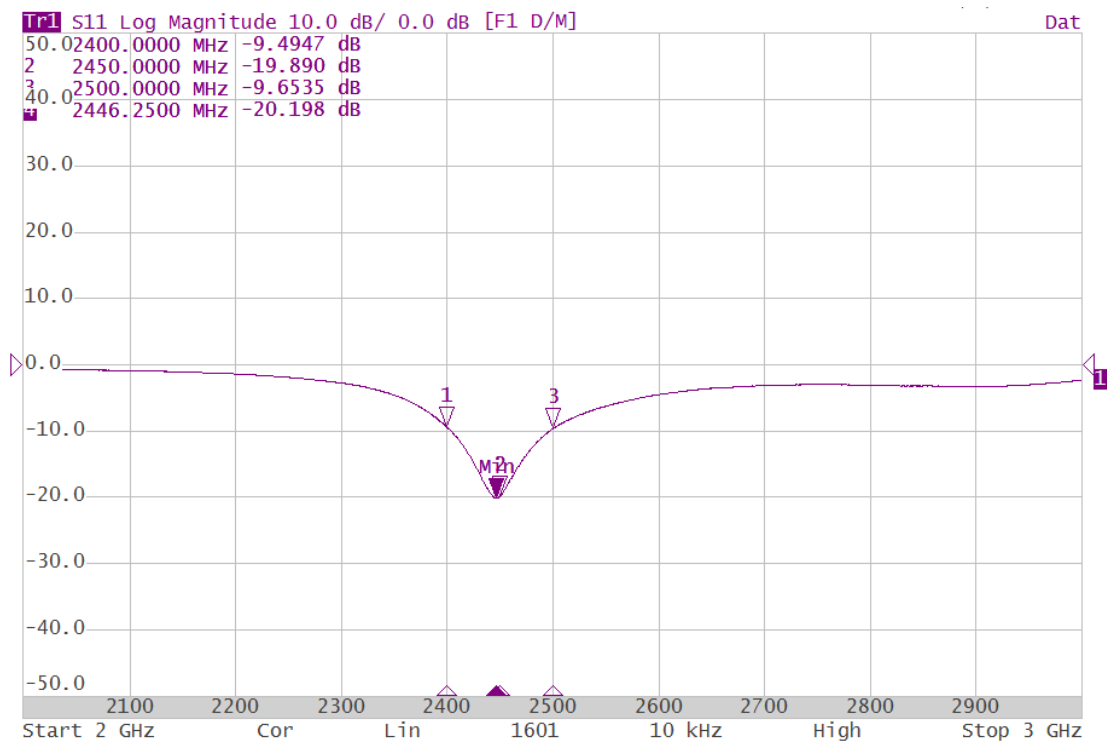
2. Layout and Implementation

Small changes of the antenna dimensions may have large impact on the performance. Therefore it is strongly recommended to make an exact copy of the reference design to achieve optimum performance. It is also recommended to use the same thickness and type of PCB material as used in the reference design. Information about the PCB can be found in a separate readme file included in the reference design. To compensate for a thicker/thinner PCB the antenna could be made slightly shorter/longer.



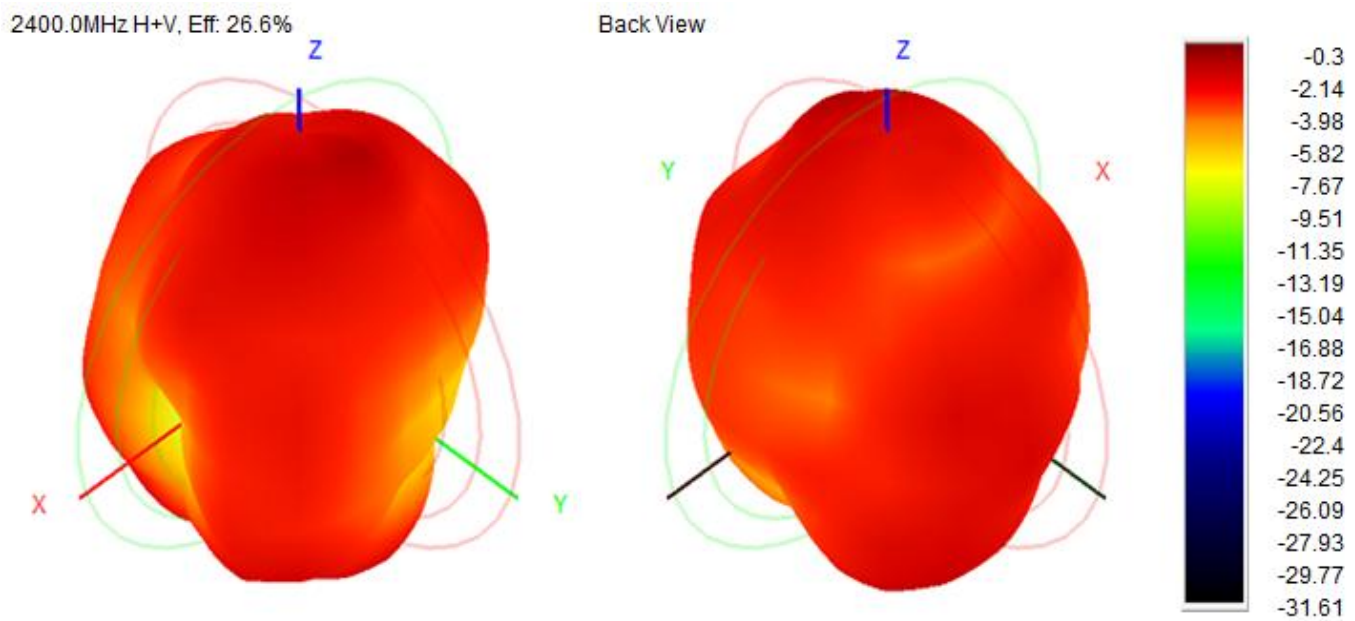
3. General Specification

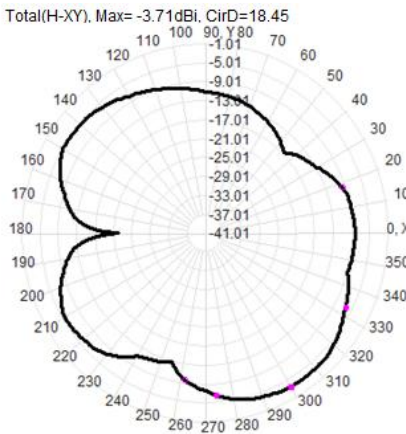
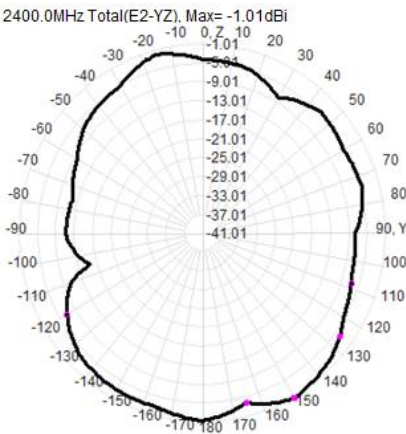
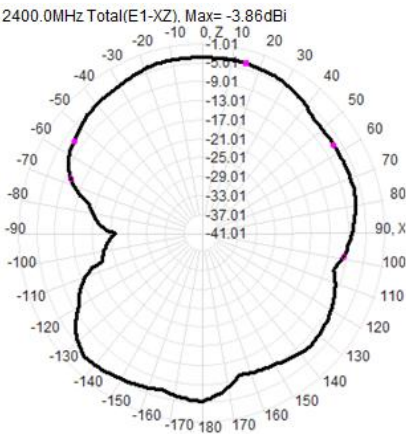
3.1 S11 Parameter



3.2 Gain Pattern

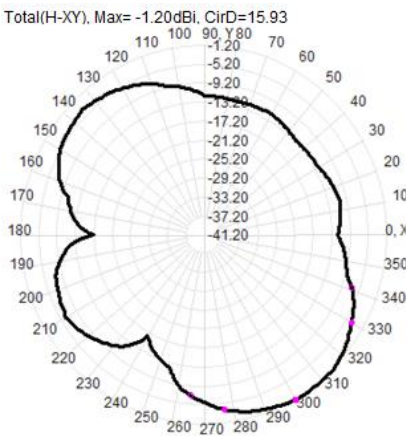
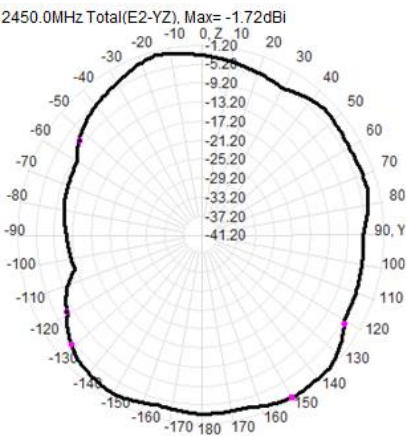
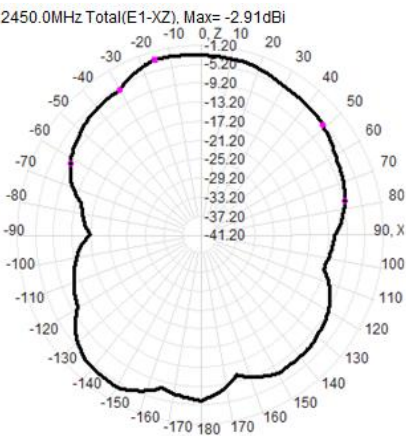
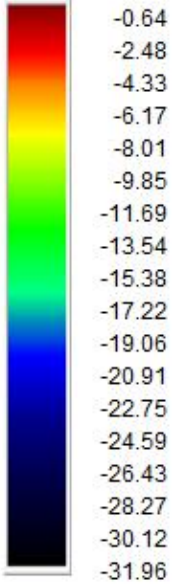
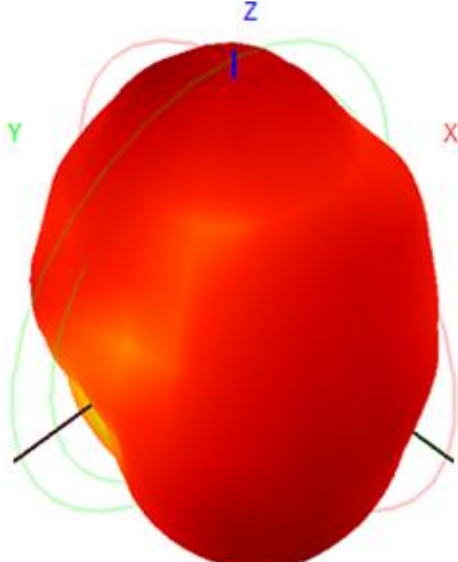
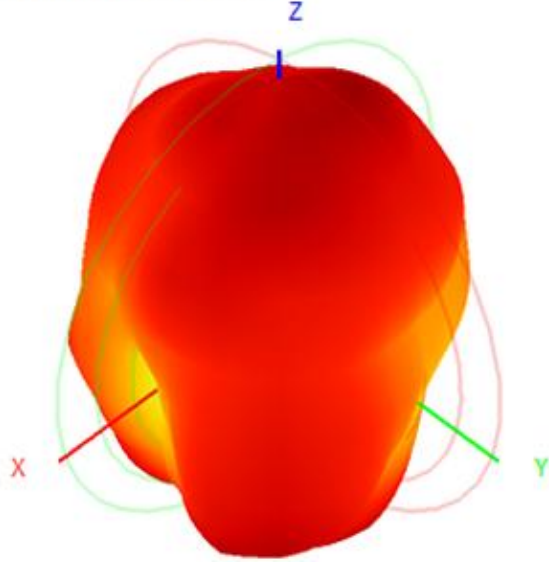
Passive Test (Free Space)





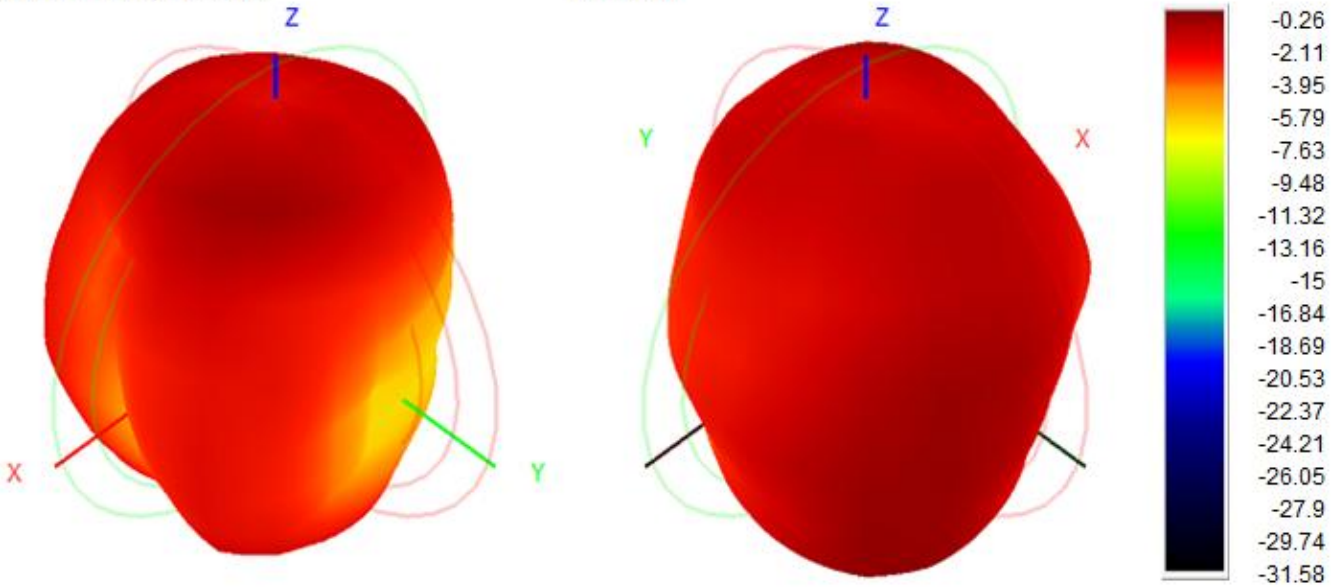
2450.0MHz H+V, Eff. 29.2%

Back View

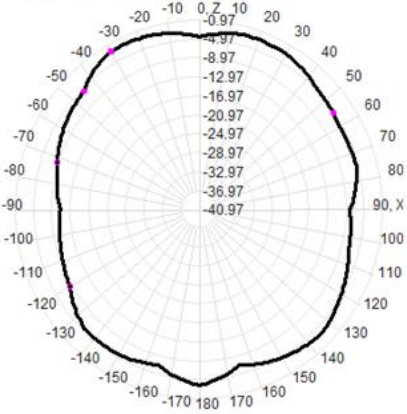


2500.0MHz H+V, Eff. 35.4%

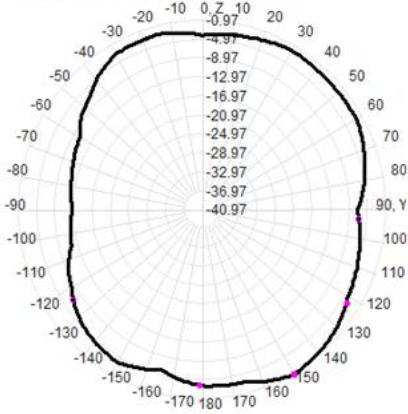
Back View



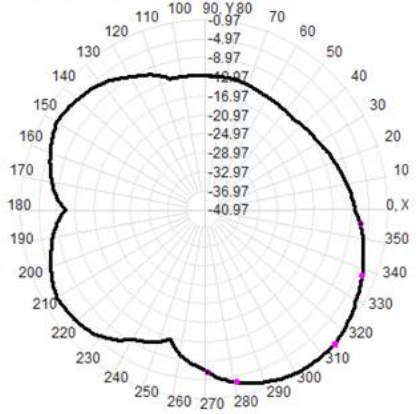
2500.0MHz Total(E1-XZ), Max=-2.51dBi



2500.0MHz Total(E2-YZ), Max=-1.02dBi



Total(H-XY), Max=-0.97dBi, CirD=12.85



3.3 Efficiency

2400MHz~2500MHz (Average Efficiency = 30%)

Frequency ID	11	12	13	14	15	16	17	18	19	20	21
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)	-5.76	-6.08	-6.01	-5.81	-5.23	-5.35	-5.06	-5.03	-4.97	-4.50	-4.51
Gain (dBi)	-0.30	-0.50	-0.52	-0.27	-0.44	-0.64	-0.46	-0.54	-0.45	0.02	-0.26
Efficiency (%)	26.57	24.69	25.09	26.27	29.96	29.20	31.20	31.39	31.84	35.48	35.43
Directivity (dB)	5.46	5.58	5.49	5.54	4.79	4.70	4.59	4.50	4.52	4.52	4.24

