

Product Name : E7165UO-4IN1ANT-V1.0

History List

[illegible]

E7165UO-4IN1ANT-V1.0 Specification

1. Explanation of part number :

E7165UO – 4IN1ANT – V1.0

(1) (2) (3)

(1) Model Name : E7165UO

(2) Frequency : 1575Mhz, 2400-2500MHz, 5150-5850MHz

(3) Suffix :V1.0

2. Electrical Specification :

2-1. Frequency Band:

Frequency Band	MHz
GPS&BT&WIFI	1575Mhz, 2400-2500MHz, 5150-5850MHz

2-2. Impedance

50 ohm nominal

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±2 X.X=±0.1 X.XX=±0.05

ANGLES = $\pm$

HOLEDIA = ±



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SCALE :

UNIT : mm

DRAWN BY :Huangshiyong

CHECKED BY : Xiaokunxiong

DESIGNED BY : Lishenghua

APPROVED BY : Wangwei

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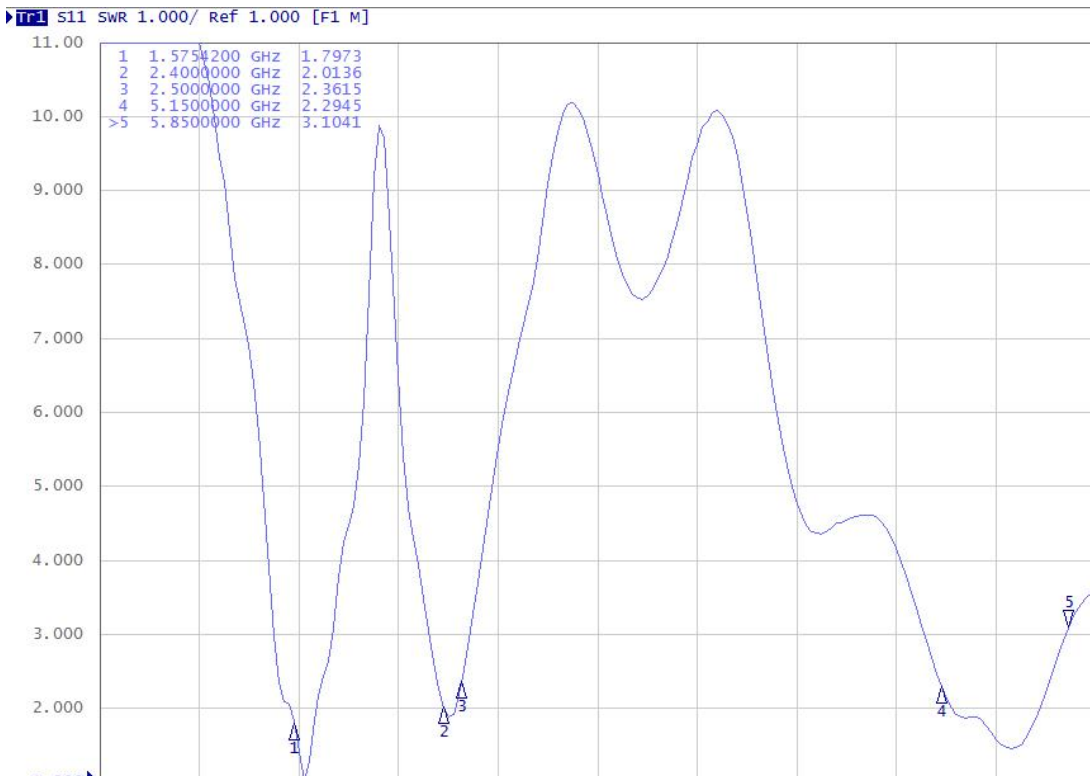
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2-3. VSWR ,Efficiency ,Matching and Active Data :

2-3.1 VSWR:

Frequency Band	1575	2400	2500	5150	5950																		
2-3-1. Typical Value:	≤ 2	≤ 2.5	≤ 2	≤ 3.0	≤ 3.0																		
2-3-2Measuring Method	1. A 50Ω coaxial cable is connected to the fpcb antenna. Then this cable is connected to a network analyzer to measure the VSWR. 2. Keeping this jig away from metal at least 20 cm.																						
2-3-3Picture	▶ Tr1 S11 SWR 1.000/ Ref 1.000 [F1 M]  <table><tr><th>Point</th><th>Frequency (GHz)</th><th>SWR</th></tr><tr><td>1</td><td>1.575000</td><td>1.7973</td></tr><tr><td>2</td><td>2.400000</td><td>2.0136</td></tr><tr><td>3</td><td>2.500000</td><td>2.3615</td></tr><tr><td>4</td><td>5.150000</td><td>2.2945</td></tr><tr><td>5</td><td>5.850000</td><td>3.1041</td></tr></table>					Point	Frequency (GHz)	SWR	1	1.575000	1.7973	2	2.400000	2.0136	3	2.500000	2.3615	4	5.150000	2.2945	5	5.850000	3.1041
Point	Frequency (GHz)	SWR																					
1	1.575000	1.7973																					
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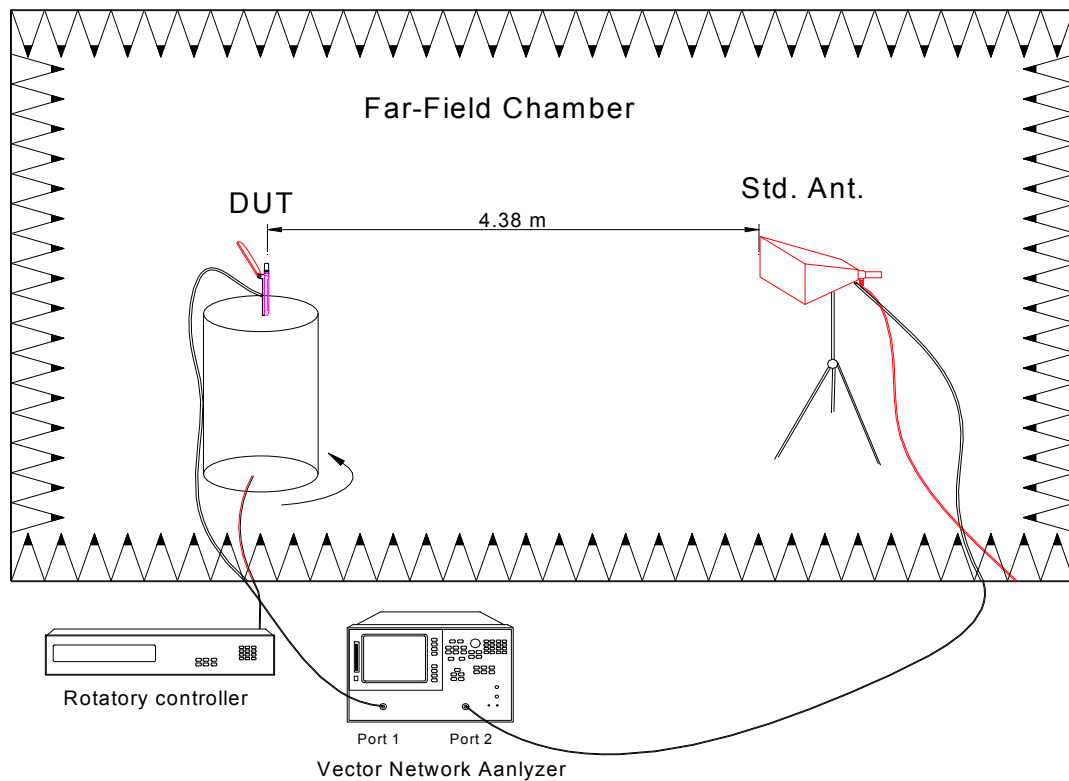
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2-4. Measure and Chamber

2-4-1 Measure method

1. Using a low loss coaxial cable to link a standard handset jig
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

2-4-2 Chamber definition



1. An anechoic chamber (8mx4mx3.5m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quiet room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m
4. Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)
5. Test equipment: CMW500, 8960

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2-4-3 Antenna OTA

2.4G	1	11Mbps	12.83	11Mbps	-83.26
	6	11Mbps	12.73	11Mbps	-83.75
	11	11Mbps	13.19	11Mbps	-85.99
5G	36	6Mbps	11.6	54Mbps	-68.78
	48	6Mbps	11.86	54Mbps	-71.47
	149	6Mbps	12.53	54Mbps	-70.78
	165	6Mbps	12.9	54Mbps	-70.93

2-4-4 Antenna Efficiency

GPS				2.4G WIFI				5G WIFI			
Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)	Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)	Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
1550	3.27	-5.08	31%	2400	4.39	-3.17	48%	5150	1.72	-5.83	26%
1555	2.30	-5.48	28%	2410	4.58	-3.17	48%	5200	1.66	-5.77	26%
1560	2.25	-5.20	30%	2420	5.01	-2.97	51%	5250	1.99	-5.74	27%
1565	2.09	-5.24	30%	2430	4.52	-3.09	49%	5300	1.99	-5.31	29%
1570	1.93	-5.20	30%	2440	4.30	-3.19	48%	5350	2.39	-5.22	30%
1575	1.75	-4.82	33%	2450	4.61	-3.03	50%	5400	2.53	-5.13	31%
1580	1.46	-4.70	34%	2460	4.19	-3.07	49%	5450	2.57	-5.11	31%
1585	1.58	-4.45	36%	2470	3.77	-3.22	48%	5500	3.04	-5.03	31%
1590	1.84	-4.10	39%	2480	3.88	-3.15	48%	5550	2.52	-5.16	31%
1595	1.69	-4.19	38%	2490	3.72	-3.17	48%	5600	2.32	-5.40	29%
1600	1.68	-4.04	39%	2500	3.27	-3.36	46%	5650	2.39	-5.53	28%
								5700	1.07	-6.10	25%
								5750	0.83	-6.06	25%
								5800	1.22	-5.66	27%
								5850	-0.43	-7.06	20%

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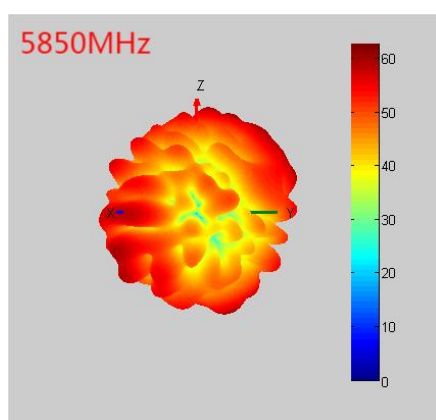
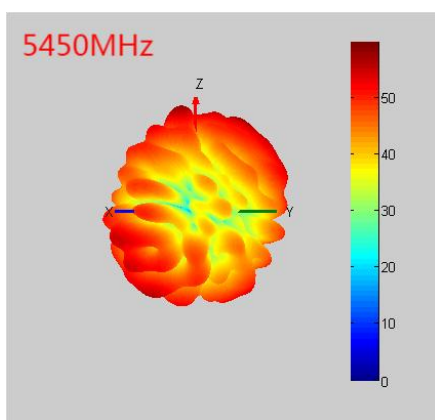
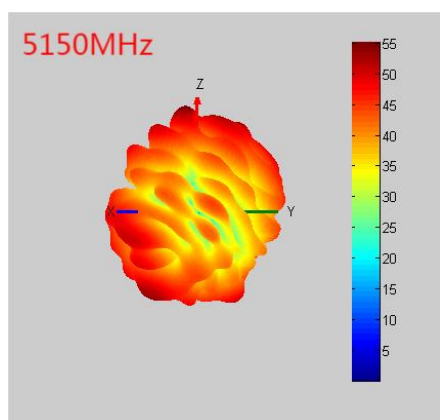
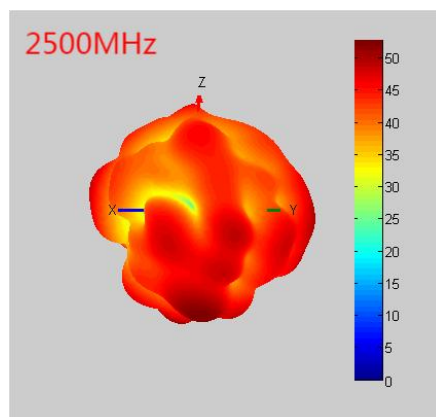
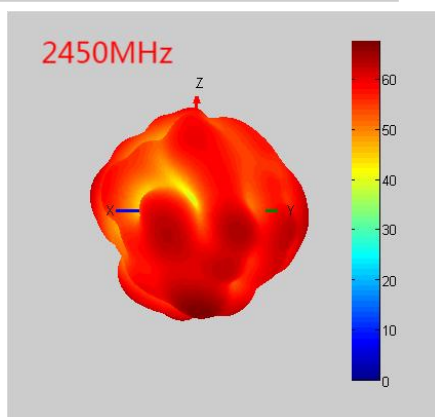
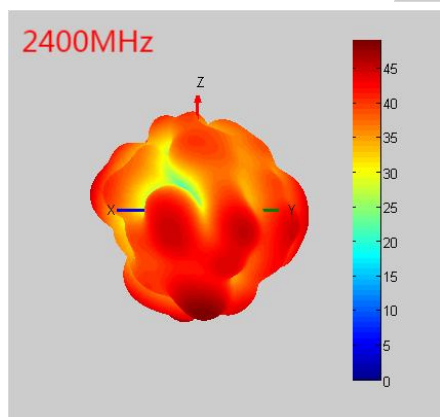
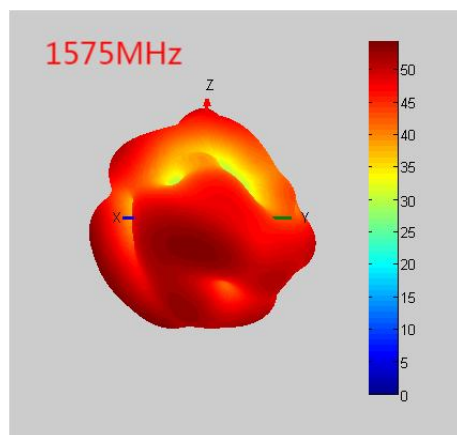
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3. 3D Radiation Pattern



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4. Antenna Dimensions:

Figure 1: Silk screen white character (Positive side)

Figure 2: Reverse side (adhesive backed side)

Marking	Signature	Revision	Date

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