Cisco Jupiter antenna tuning report

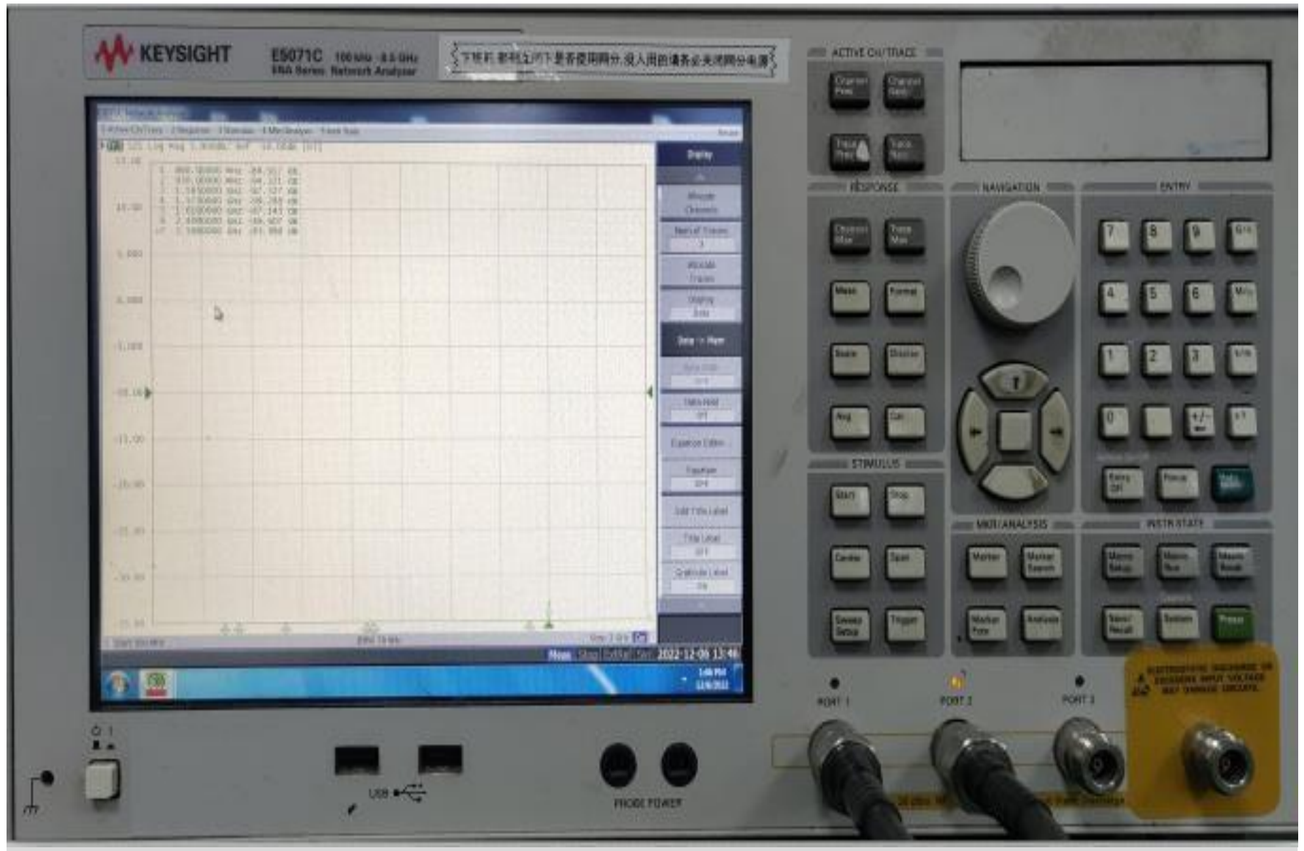
August-19. 2025

Amphenol Report history

Version	Description	Date
V1.0	Original antenna performance	2025-03-28
V1.1	Fine-tuned antenna based on previous version device	2025-04-24
V2.0	Antenna passive performance based on P0 device	2025-08-01
V2.1	Add active performance	2025-08-07
V2.2	Update 3rd party TRP test results	2025-08-19

Amphenol Test setup

All the S-parameter is gotten by the Keysight E5071C VNA .



E5071C VNA (100KHz-8500MHz)

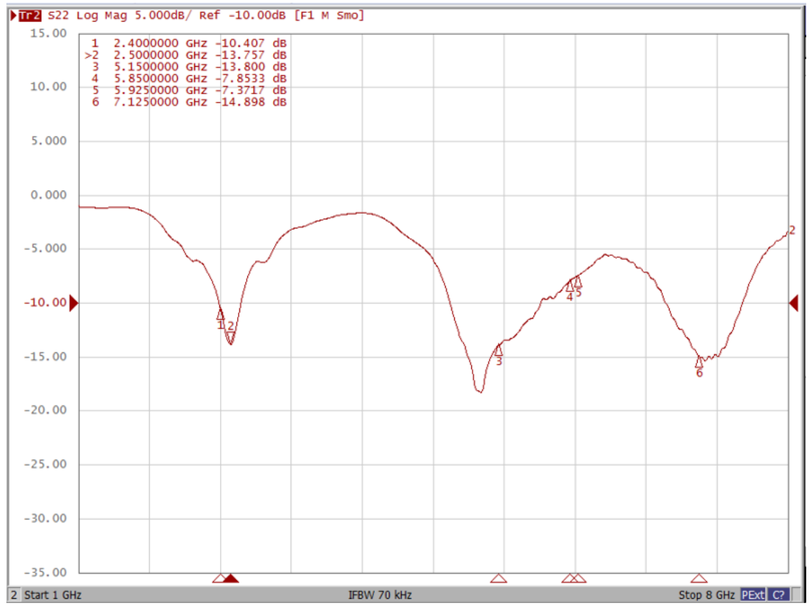
Front side

Rear side

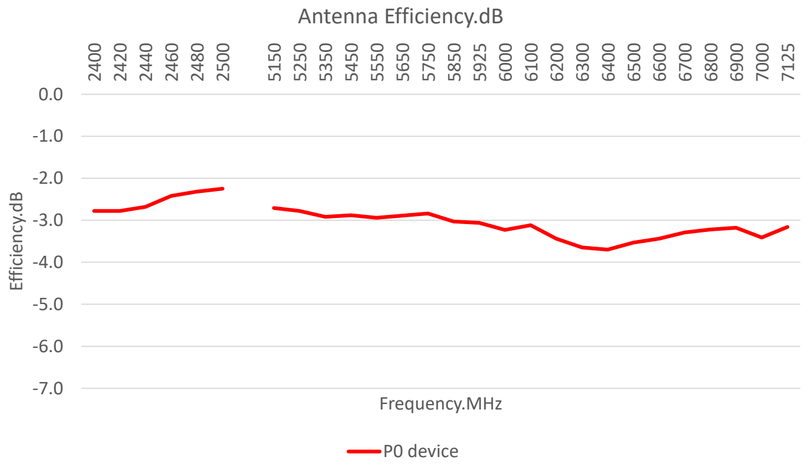
Test fixture

Amphenol | Antenna performance—S11 & efficiency & Peak Gain (previous report)

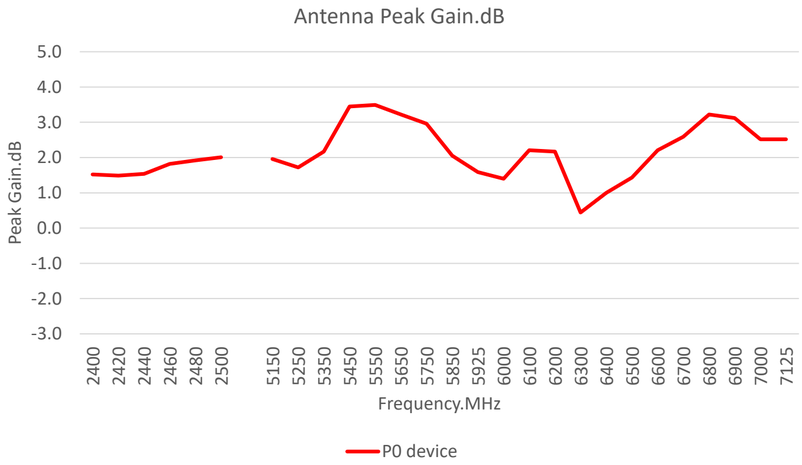
	Efficiency.%	Efficiency.dB	Gain.dB
2400	52.7	-2.8	1.5
2420	52.7	-2.8	1.5
2440	53.9	-2.7	1.5
2460	57.2	-2.4	1.8
2480	58.6	-2.3	1.9
2500	59.6	-2.3	2.0
5150	53.6	-2.7	2.0
5250	52.7	-2.8	1.7
5350	51.1	-2.9	2.2
5450	51.5	-2.9	3.5
5550	50.8	-2.9	3.5
5650	51.4	-2.9	3.2
5750	52.0	-2.8	3.0
5850	49.8	-3.0	2.1
5925	49.4	-3.1	1.6
6000	47.5	-3.2	1.4
6100	48.8	-3.1	2.2
6200	45.3	-3.4	2.2
6300	43.2	-3.7	0.4
6400	42.7	-3.7	1.0
6500	44.4	-3.5	1.4
6600	45.3	-3.4	2.2
6700	46.9	-3.3	2.6
6800	47.6	-3.2	3.2
6900	48.1	-3.2	3.1
7000	45.6	-3.4	2.5
7125	48.3	-3.2	2.5



Antenna S11



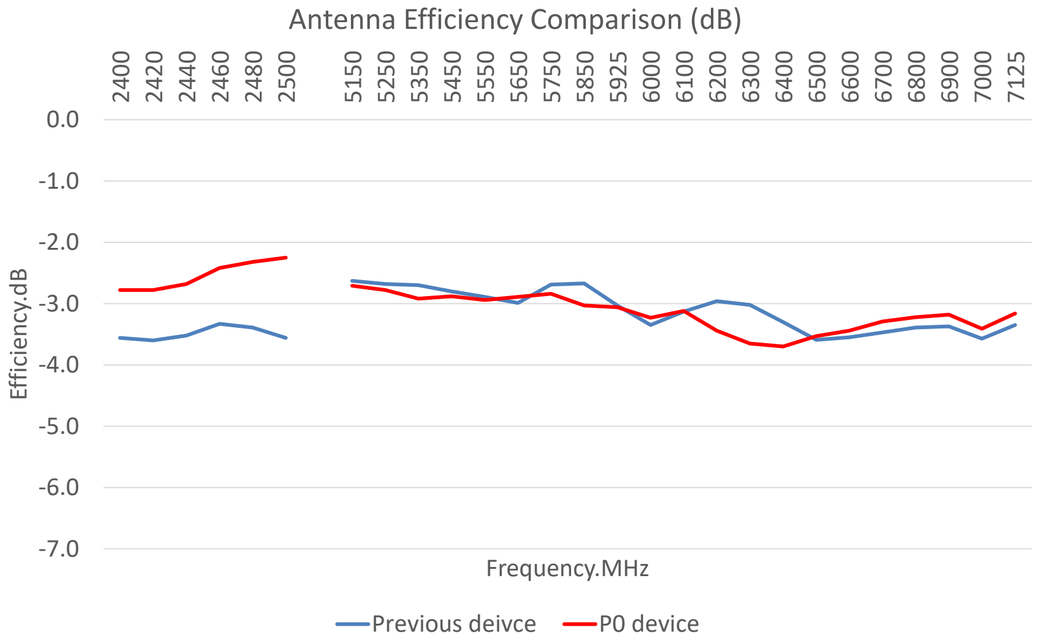
Antenna Efficiency



Antenna Peak Gain

Amphenol | Antenna performance comparison (previous report)

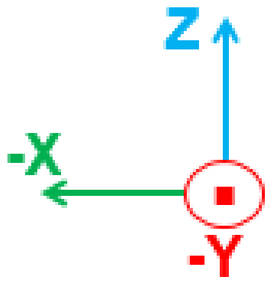
	Antenna Efficiency(dB) Comparison		
	Previous deivce	P0 device	Delta.dB
2400	-3.6	-2.8	0.8
2420	-3.6	-2.8	0.8
2440	-3.5	-2.7	0.8
2460	-3.3	-2.4	0.9
2480	-3.4	-2.3	1.1
2500	-3.6	-2.3	1.3
5150	-2.6	-2.7	-0.1
5250	-2.7	-2.8	-0.1
5350	-2.7	-2.9	-0.2
5450	-2.8	-2.9	-0.1
5550	-2.9	-2.9	0.0
5650	-3.0	-2.9	0.1
5750	-2.7	-2.8	-0.2
5850	-2.7	-3.0	-0.4
5925	-3.0	-3.1	0.0
6000	-3.4	-3.2	0.1
6100	-3.1	-3.1	0.0
6200	-3.0	-3.4	-0.5
6300	-3.0	-3.7	-0.6
6400	-3.3	-3.7	-0.4
6500	-3.6	-3.5	0.1
6600	-3.6	-3.4	0.1
6700	-3.5	-3.3	0.2
6800	-3.4	-3.2	0.2
6900	-3.4	-3.2	0.2
7000	-3.6	-3.4	0.2
7125	-3.4	-3.2	0.2

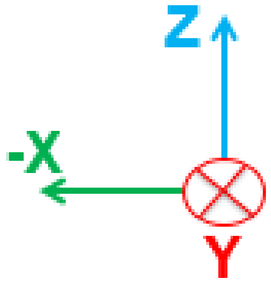


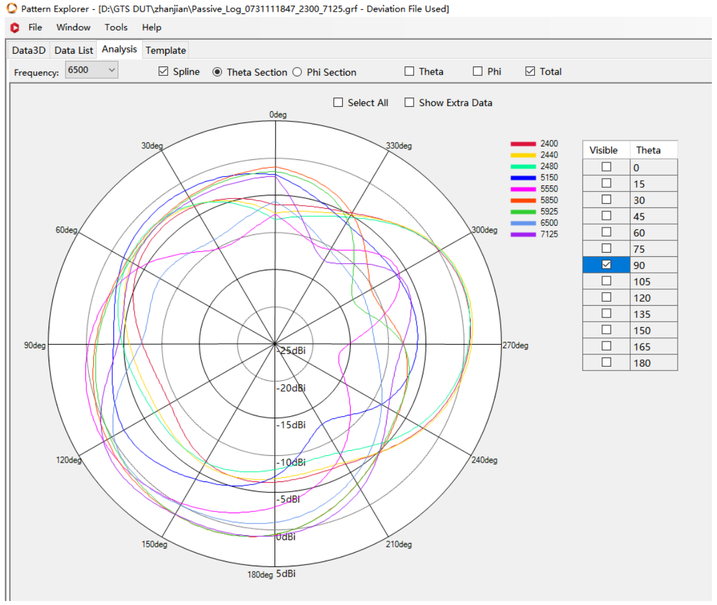
Antenna Efficiency Comparison

We compared the passive performance of the P0 device with that of the previous device. For the 2.4GHz part, the efficiency of the P0 device is about 1db higher than that of the previous. For the 5GHz&6GHz parts, the overall efficiency of the P0 device is close to that of the previous one.

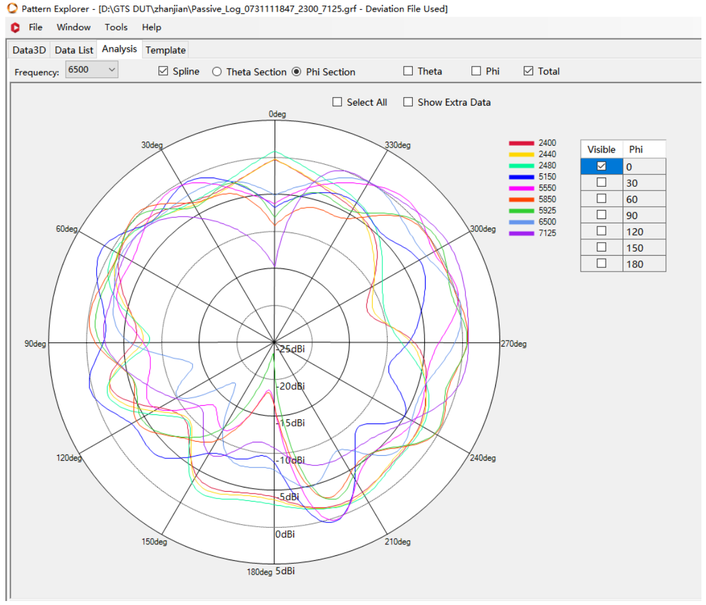
Amphenol | Antenna performance—2D radiation pattern (previous report)



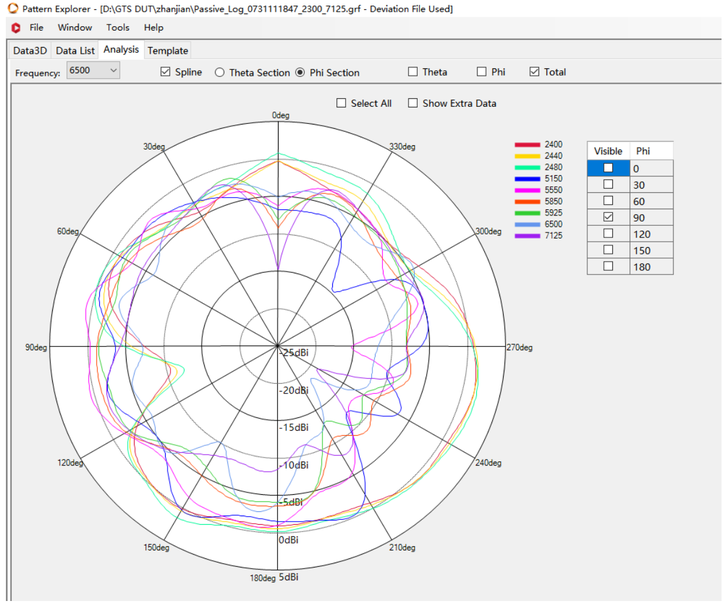




Theta=90deg

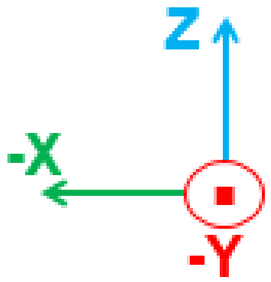


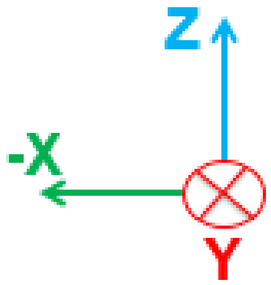
Phi=0deg

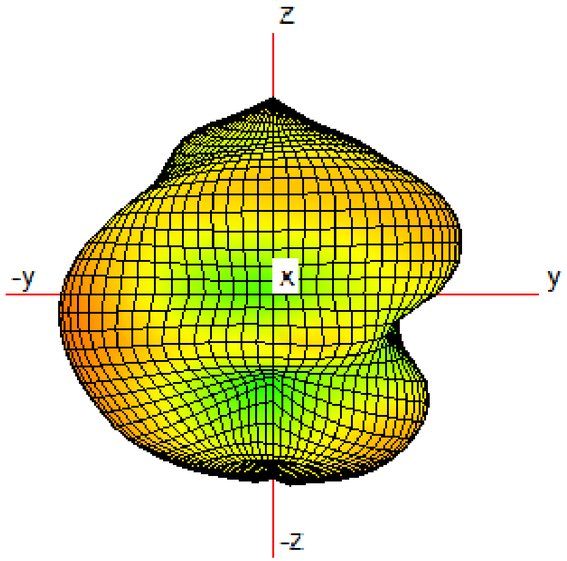


Phi=90deg

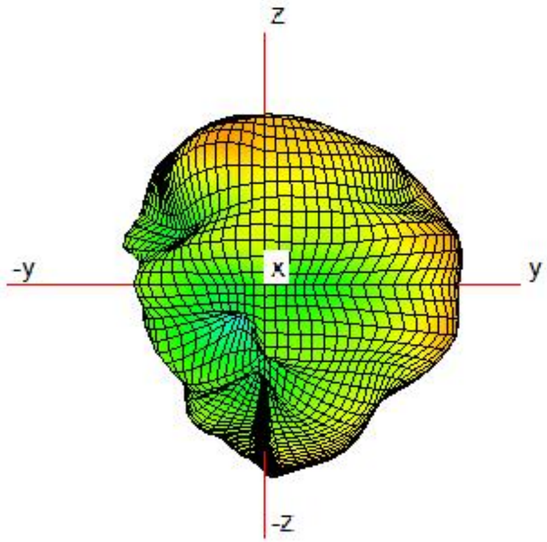
Amphenol | Antenna performance—3D radiation pattern (previous report)



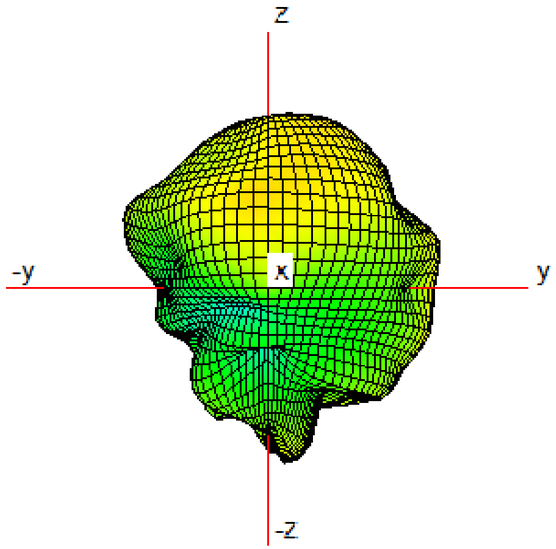




2440MHz



5550MHz



6500MHz

Amphenol | Antenna performance—Active （08.19 updated）

802.11b (Data rate 11M) (test in SAA Lab)				
Channel	CH1	CH7	CH13	
Frequency	2412	2442	2472	
TRP	15.4	15.8	16.0	

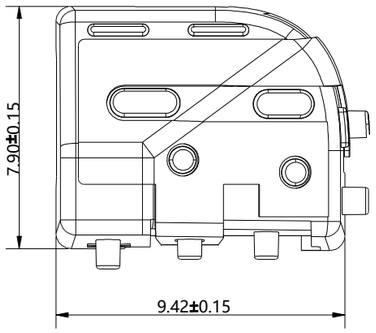
802.11an (HT20_MCS7) (test in 3rd party lab)				
Channel	CH36	CH100	CH149	
Frequency	5180	5500	5745	
TRP	10.8	10.2	10.6	

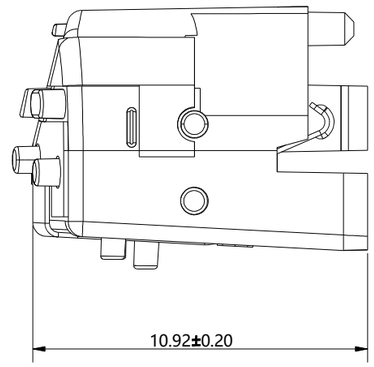
802.11AX (HT20_HE11) (test in 3rd party lab)				
Channel	CH6G1	CH6G97	CH6G117	CH6G185
Frequency	5955	6435	6535	6875
TRP	8.0	7.1	9.2	6.3

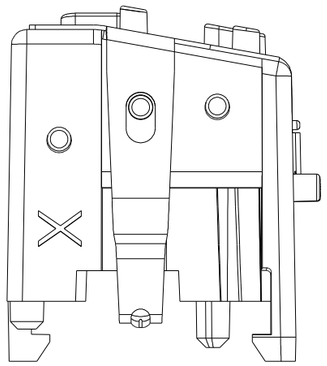
We updated the 3rd party TRP test results of 5GHz and 6GHz band, it seems the TRP is ok.

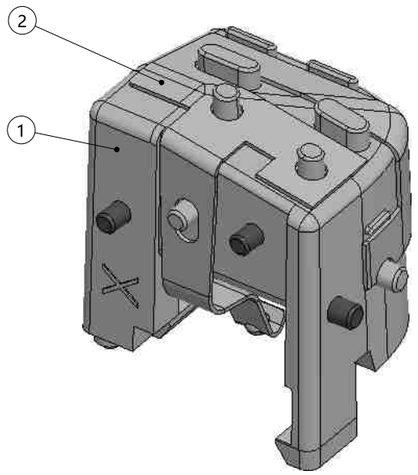
NO.	PART NUMBER	NAME	USAGE
1	R-J112-11-000-47	CARRIER	1
2	R-J112-11-000-46	STAMPING	1

REV	DESCRIPTION	DATE	BY
Draft	Draft Release.	2025-04-23	Karson D









NOTES:
1. [C] - INDICATE A CRITICAL DIMENSION.
   [*] - CRITICAL DIMENSION NEED TO CALCULATE CPK WHEN PART APPROVAL,CPK>1.33.
   [A] - CRITICAL DIMENSION NEED TO CALCULATE CPK WHEN PART APPROVAL,CPK>1.33, NEED CONTROL SPC IN MP.
   "()"-INDICATE A SUPPLEMENT DIMENSION,ONLY FOR REFERENCE.
2. ANY UN-SPECIFIED DIMENSION REFERS TO CAD DRAWING.
3. PARTS MUST BE CLEANED AND DEGREASED.
4. THE PRODUCTS MUST COMPLY WITH SAA RESTRICTED SUBSTANCES CONTROL REQUIREMENT:SAA/E-Z-01 LATEST VERSION. BASICALLY MEET ROHS, HALOGEN FREE AND REACH. DETAIL SEE THE STANDARD.
5. SURFACE INSPECTED REQUIREMENT:ACCORDING TO SAA/Q-S07-01 LATEST VERSION.
6. RELIABILITY TEST REQUIREMENT: ACCORDING TO SAA/Q-S07-10 LATEST VERSION AS DEFAULT.
7. IF WITH CONNECTOR, ITS RELATED DIMENSION AND UNMATING FORCE, MEASURE ACCORDING TO SAA/R-Q00-17 LATEST VERSION. [C]

MATERIAL:		Shanghai Amphenol Airwave Communication Electronics Co.,Ltd	
TREATMENT:			
±0.30 mm ±1°	Unit:mm Scale:	PART NUMBER: OCJ112-11-000-R	PROJECT: P146
DESIGN:	VERIFY:		
EE/ME:	CHECK:	PART NAME: WIFI ANT	A3 SHEET 1/1
DATE: 2014-03-12	SHEET: 125		

for PLM

Thanks