IA.0447.LM.0SE

Antenna Specification

1. Application:

This application shall apply for antenna unit which shall be used such as automotive, conventional communications, smart home, etc..

1. Electrical Specification:

Those specifications were specially defined for customer's model, and all characteristics were measured under the model's handset testing jig .

2-1. Frequency Band:

Frequency Band	MHz
900MHZ	900-920

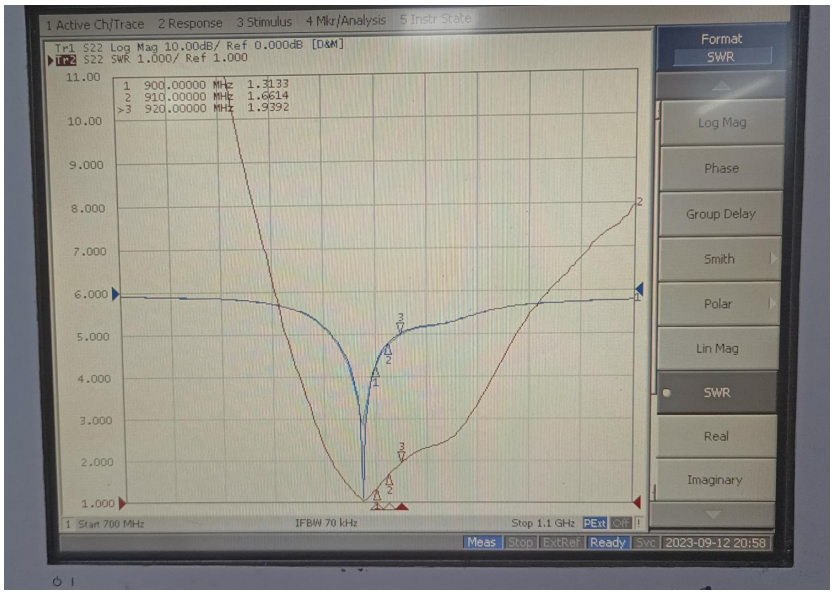
2-2. Impedance

50 ohm nominal

2-3. VSWR

2-3-1.Measurement frequency points and VSWR value

Frequency Band(MHz)	900	910	920
2-3-3. Typical Value:	1.31	1.66	1.93

2-3-4 Measuring Method	1. A 50Ω coaxial cable is connected to the 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
2-3-5 Picture	

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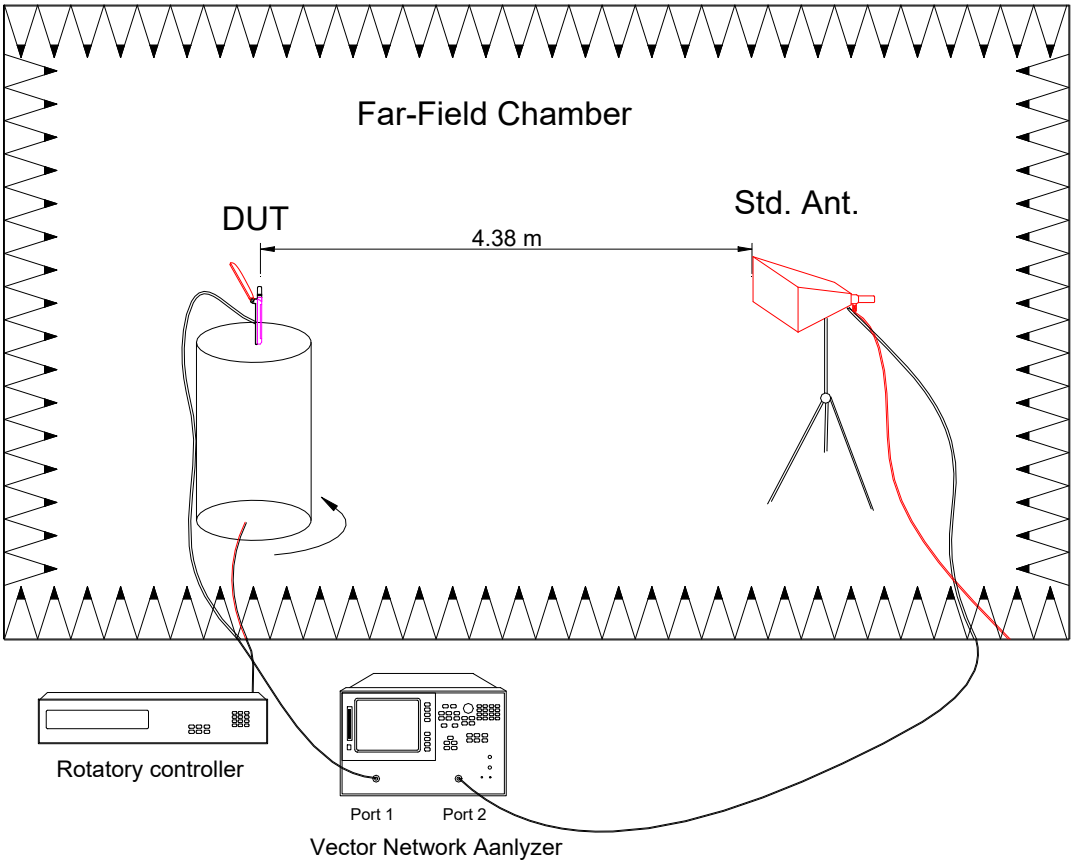
2-4. Efficiency and Gain

4-5.1 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

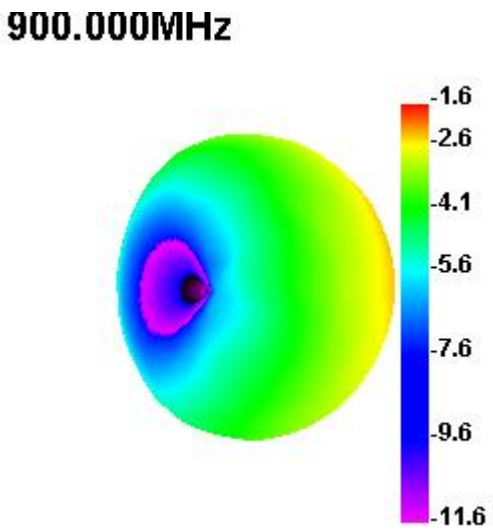
4-5.2 Chamber definition

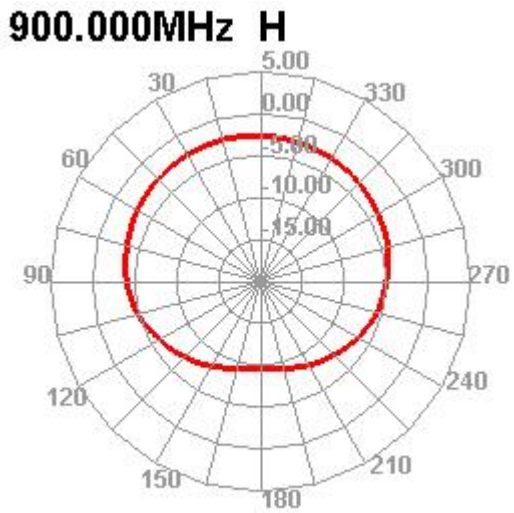


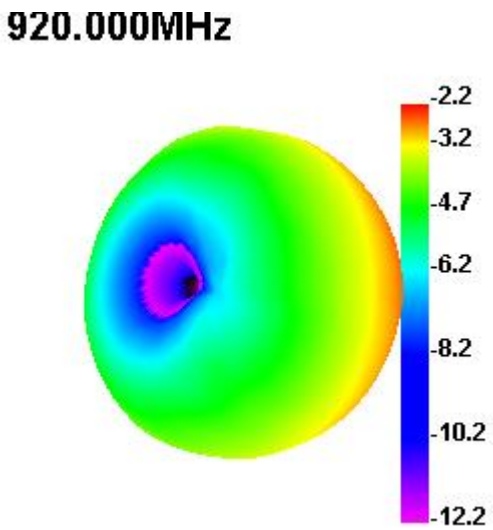
1. An anechoic chamber (7mx4mx3m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quite room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m
4. Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)

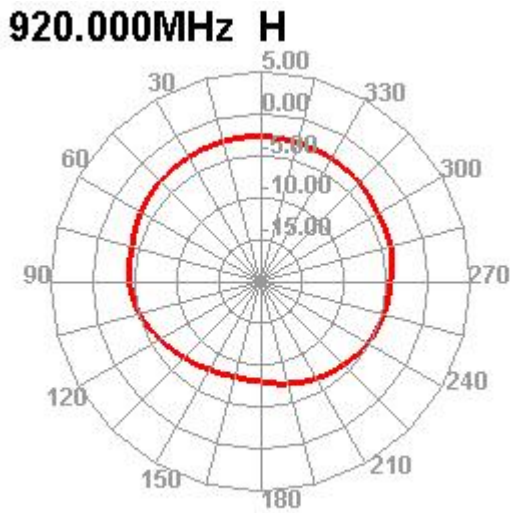
2-4-1 Efficiency and Gain

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
900	34.42	-4.63	-1.64
905	35.24	-4.53	-1.46
910	35.95	-4.44	-1.56
915	34.66	-4.6	-1.93
920	33.38	-4.76	-2.23









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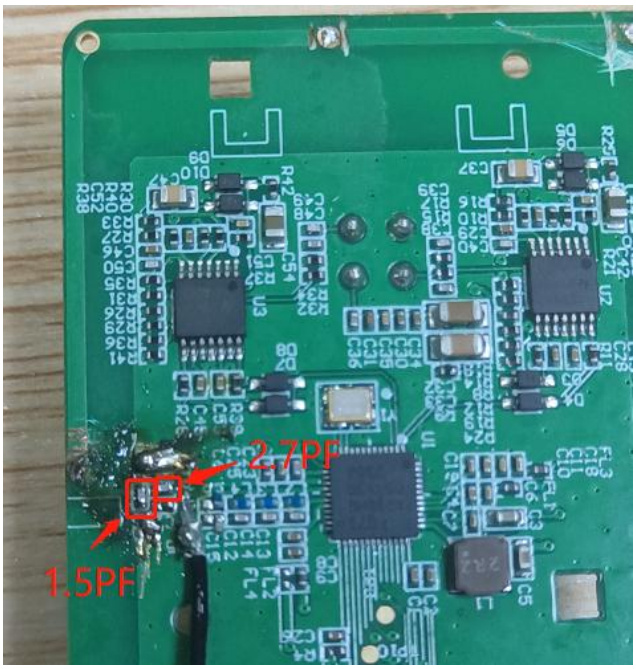
3. Antenna Matching Network

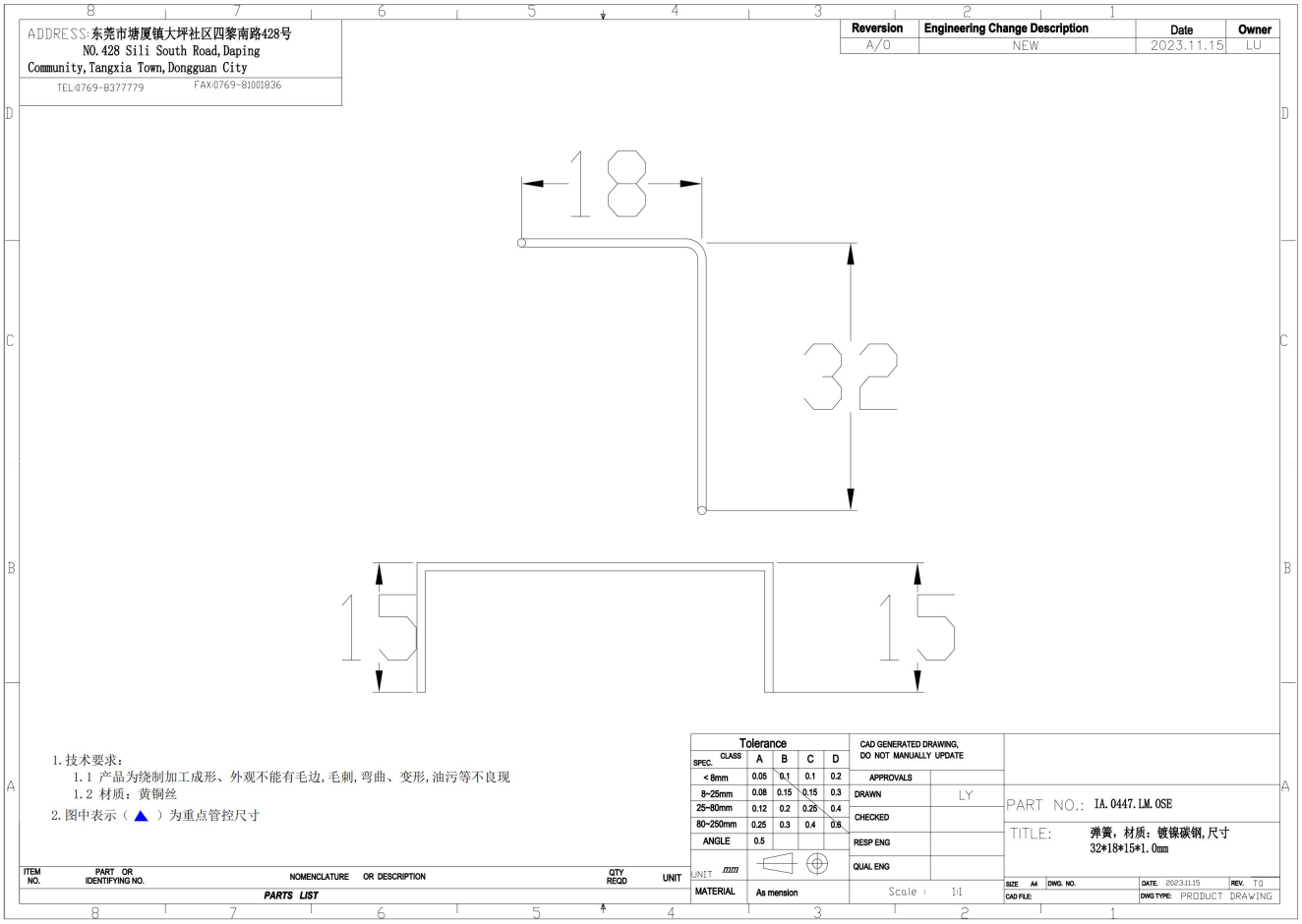
Element	Value
ANT-0	2.7PF
ANT-1	1.5PF
ANT-2	N/C
ANT-3	N/C

4. Mechanical Specification:

4-1. Mechanical Configuration (Unit: mm)

The appearance of the antenna is according to drawing





5.ENVIRONMENT AND RELIABILITY TEST

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Item	Reference standard, experimental conditions	Judgments based	Number of samples / bad quantity(PCS)	Test/equi-pment
Collision	GB/T 2423.6-1995 Acceleration: 200m / s2 Collision pulse duration: 6ms Number of collisions per minute: 40~80 times Total number of collisions: 400 times in the vertical direction, before and after, 300 times in the horizontal direction, 1000 times in total.	The electrical characteristics should be met, and the mechanical properties are normal, but the appearance of scratches, whitening and bending are within the allowable range.	5/0	Collision experiment machine
vibration	GB/T 2423.10-1995 Test FC Frequency: 10~30; 30~50Hz; Resonance point amplitude: 0.35mm Amplitude: 0.75mm Duration: X, Y & Z 0.5 hours in each direction. Period: 1min; Tested after 1 hour of experimentation.	And the firmware is not loose, the parts are not broken or fatigued; No original parts fall off, no solder joint breaks; Electrical performance indicators meet technical specifications;	5/0	Vibration tester

Shock	Acceleration: 300m / s2 Shock pulse duration: 18ms Number of impacts: 18 times GB/T 2423.5-1995	The electrical characteristics should be met, and the mechanical properties are normal, but the appearance of scratches, whitening and bending are allowed.	5/0	Crushing machine
fall	GB/T2423.8-95 Dropped from the height of 100cm to the floor 10 times. GB/T2423.8-95	1. No obvious abnormal appearance 2. After the test, the electrical performance meets the specification requirements, and the electrical characteristics should be met, and the mechanical properties are normal, but the appearance of the bumps, whitening and bending are within the allowable range.	5/0	Drop test machine
High temperature storage	GB/T 2423.2-2001 Test B Environmental conditions: +85 ± 3℃ for 96H The test was completed after standing at room temperature for 24 hours.	The surface coating shall be free from flaking, cracking, separation, etc.; Non-metallic structural parts have not undergone permanent deformation, cracking, degumming, etc.; Mobile components are not stuck or disconnected; Electrical performance indicators meet	10/0	Temperature and humidity cycle test box

		technical specifications		
Low temperature storage	GB/T 2423.1-2001 Test A Environmental conditions: -40 ± 3℃ for 96H The test was completed after standing at room temperature for 24 hours.	The surface coating shall be free from flaking, cracking, separation, etc.; Non-metallic structural parts have not undergone permanent deformation, cracking, degumming, Mobile components are not stuck or disconnected; Electrical performance indicators meet technical specifications	10/0	Temperature and humidity cycle test box
High and low temperature cycle	GB/T2423.22-2002 Test N: The antenna was placed in a T1 = -40 ℃ incubator for 30 minutes, then the temperature was increased to T2 = 80℃ for 60 minutes, then the temperature was maintained for 30 minutes, and the relative humidity was 50% RH, and the cycle was repeated 20 times.	The surface coating shall be free from flaking, cracking, separation, etc.; Non-metallic structural parts have not undergone permanent deformation, cracking, degumming, etc.; Mobile components are not stuck or disconnected; Electrical performance indicators meet technical specifications	10/0	Temperature and humidity cycle test box

Damp heat test	GB/T 2423.3-1993 test Ca: Environmental conditions: 40 ± 2 ℃, relative humidity 80 ~ 90%, placed for 96 hours. The test was completed after standing at room temperature for 24 hours.	1. No obvious abnormality in appearance 2. Various electrical properties after test Meet the specifications, mechanical performance, electrical performance to meet the specifications.	10/0	Temperature and humidity cycle test box
Salt spray test	GB/T 2423.18-2000 Test Kb The test article was placed in a salt spray test chamber, and the test specimen was sprayed with salt at a concentration of (5 ± 1)%, a temperature of 35℃± 1℃, and a sedimentation rate of (1-2) ml / 50 mm 2 * h, 48 hours. After that, check the appearance.	No rust, mechanical properties and electrical properties meet the specifications.	5/0	Salt spray test machine

6 .PACKING INSTRUCTION

Product number： xxx

Product model： xxx

一、Label requirements：

Customer	xxx		
supplier	xxxxx		
Material coding	xx		
Product model	xx		
Number	XXX PCS	Factory date	X X X
Remarks			

二、Boxing：

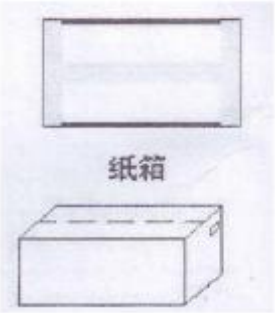
Job description：

1. Inner packaging：

XXpcs A bag

2. External packaging：

Xx PCS ；



3. Matters needing attention：

a. Whether to add partition and pearl cotton；

b. Label attachments, such as ROHS, etc.；

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