



Customer: Testo Instruments (Shenzhen) Co., Ltd

Part name: IPEX-2.4G Copper tube antenna-1.13 Grey-L77.5MM

Part No.:

Customer Part No.:

CHIEF	SALES	CHIEF	DESIGN
Changfei Gu	Changfei Gu	Xinping Jiang	Shen Liang
Date:2016.09.22		Date:2016.09.22	
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Version	Date	Name	Data
01	2016.09.22	Sen Liang	NEW



RoHS Compliant

ABCDE

1234

END PRODUCT DRAWING 成品图

REV	DATE	DESCRIPTION	ECN NO.	NAME
A	2016.06.01	修订图面		梁森
A1	2016.06.13	修改绝缘长度	ECN20160813001	郑少娟
A2	2016.09.19	按客户更改管尺寸公差	ECN201609190001	梁森

要求:

1. 成品须100%网分测试OK
2. 成品须100%全检OK
3. 采用环保制程.
4. 未注公差请以一般公差为准
5. 标@为重点管控尺寸.

工作频段 (Frequency Range)	2400~2500MHz
增益 (Gain)	2dBi
电压驻波比 (VSWR)	对比波导
极化方式 (Polarization)	Linear
特性阻抗 (Impedance)	50 ohm

客户料号	
02350088	

⑤		⑤		⑤		⑤		⑤				
No.	PART No.	Description	Qty	Name	φCritical Dim	φMajor	产品名称 (PRODUCT NAME)	产品料号 (PRODUCT NO)	单位 (UNIT)	M M	比例 (SIZE)	FREE
	1801-0002	135*105*0.4 (白边晋袋) 打孔	1/50	PE袋			产品名称 (PRODUCT NAME)	IPEx-2.4G铜管天线-1.13灰-L77.5MM				
	1701-0145	φ2.5*23 铜管 孔径1.0mm	1	铜管			产品料号 (PRODUCT NO)	3020-2233	页数 (PAGE)	1 OF 1	幅面 (FORMAT)	A4
	1203-0002	2.0-BLACK-普通型 L=26mm	1	热缩套管			设计 (D S)	梁森				
	1113-0004	2027B-112R-13-插头	1	IPEX			审核 (CHK)					
	1301-0012	1.13灰-64-双银-FEP L=77.5MM	1	线材			核准 (APPD)					

SHENZHEN FYX ELECTRONICS CO., LTD.

主 持 人：FVV / F 05 4 1 1 此 士 第 一

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深圳市飞宇信电子有限公司

SHENZHEN FEIYUXIN ELECTRONICS CO.,LTD.

Product Characteristic Spec.

Product Description:

Name : IPEX-2.4G Copper tube antenna-1.1 Grey-L77.5MM	
DESCRIPTION	VALUE
Frequency range	2400~2500MHz
Impedance	50Ω
V.S.W.R	2.0Max (The antenna installed)
Return loss	-10dB (Max)
Gain	1~2.49dBi
Radiation	Omni-directional
Polarization	linear Vertical
Admitted power	1W
Connector	IPEX CONN
Operating temp	-10℃~+60℃
Storage temp	-10℃~+70℃

1. Summary :

This report to account for the measurement setup and result of the Antenna. The measurement setup includes s-parameter, The measured data for Antenna are presented and analysis.

2. S-Parameter Measurement :

A. Reflection coefficient

(a) Instrument : Network Analyzer

(b) Setup:

- (1) Calibrate the Network Analyzer by one port calibration using O.S.L. calibration kits.
- (2) Connect the antenna under test to the Network Analyzer.
- (3) Measure the S11(reflection coefficient) shown in Fig. 1.
- (4) Generally, the S11 is less than -10dB to ensure the 90% VSWR 2.0:1 power into antenna and only less than 10% power back to system.

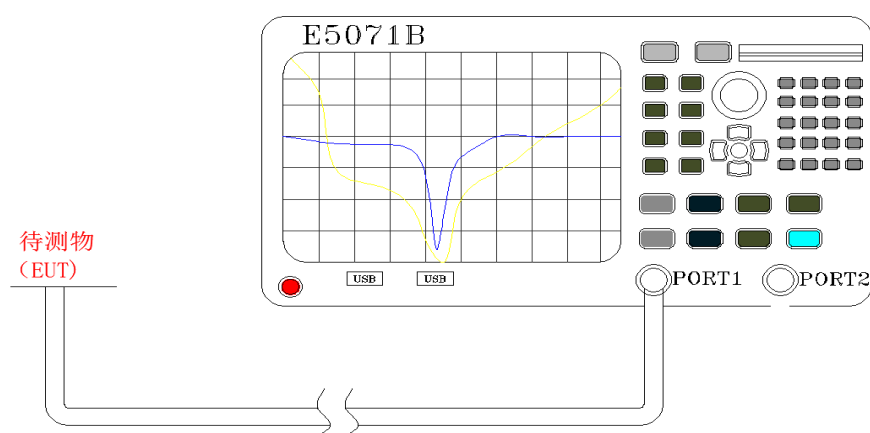


Fig.1 Antenna measured in Network Analyzer

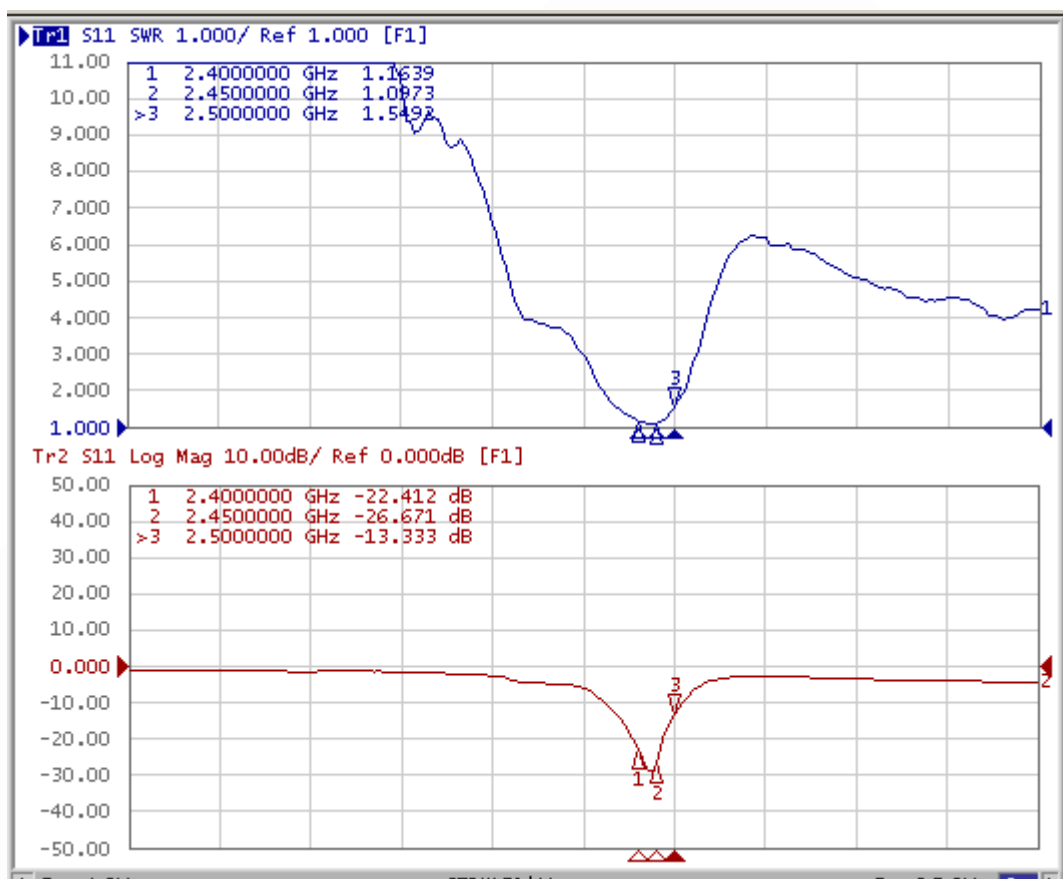
3. S-Parameter Measurement Results:

S-Parameter test data:

Frequency MHz	2400MHz	2450MHz	2500MHz
V.S.W.R	1.16	1.09	1.54
Return Loss	-22.41	-26.67	-13.33

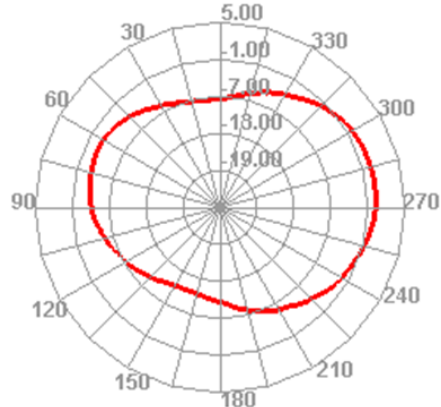
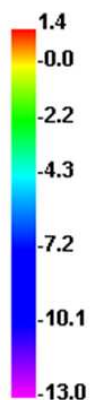
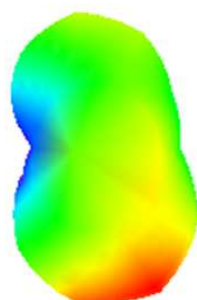
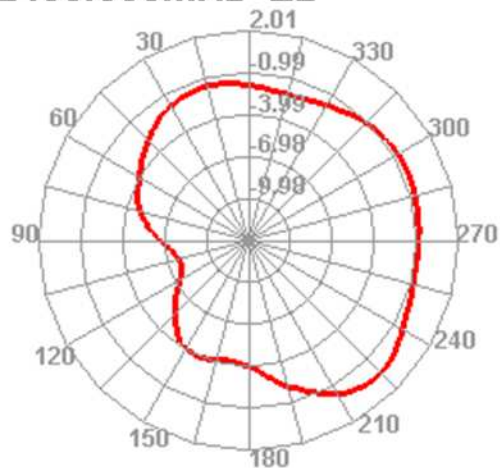
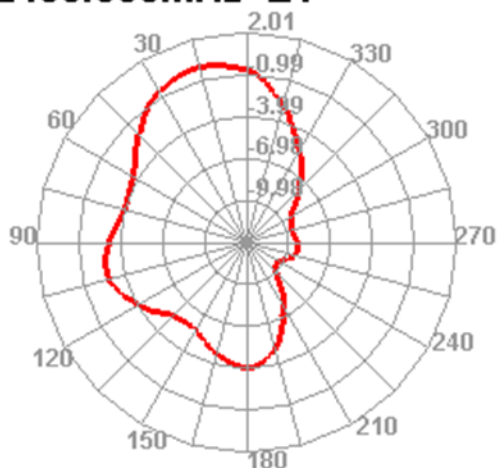
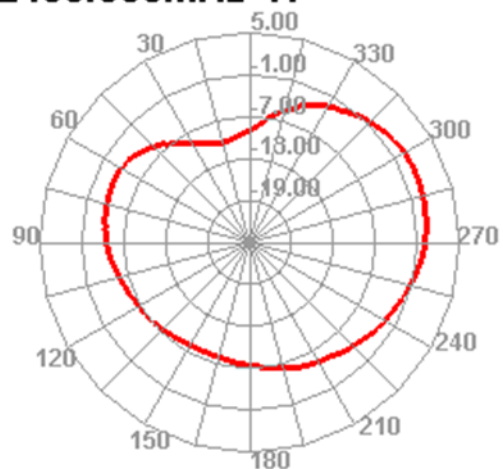
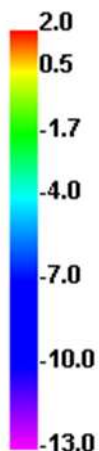
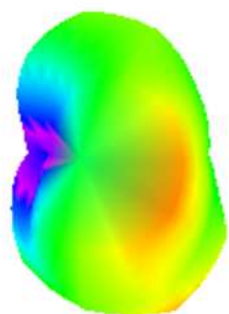


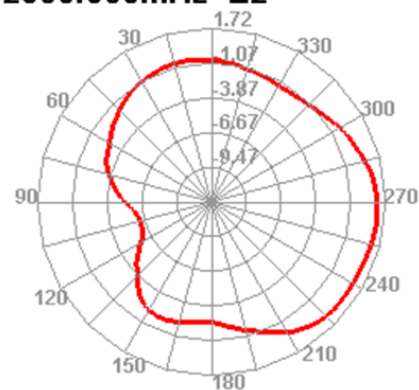
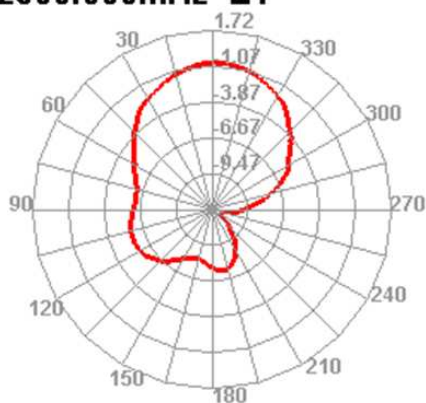
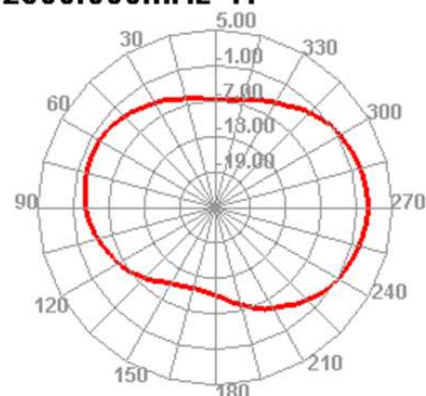
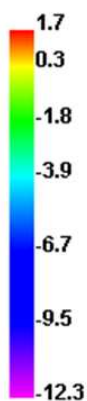
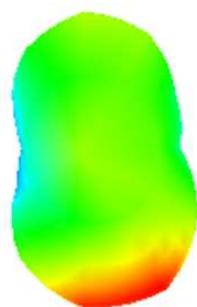
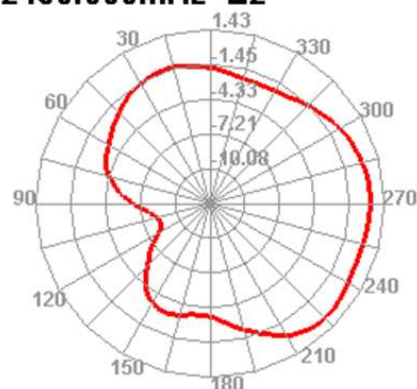
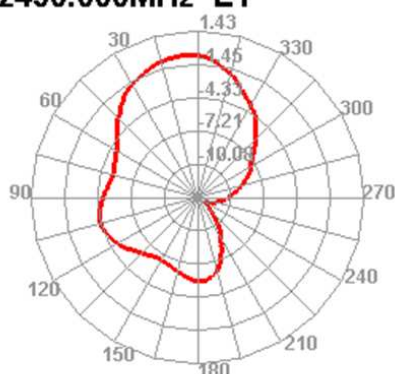
S-Parameter test image:



Gain Efficiency Test

Passive Test For wifi								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
2350	60.89	-2.15	2.26	0.11	2.26	-13.79	47.34	46.77
2360	52.64	-2.79	1.78	-0.37	1.78	-15.06	47	46.32
2370	55.34	-2.57	2.08	-0.07	2.08	-15.25	47.24	46.65
2380	54.81	-2.61	2.09	-0.06	2.09	-15.05	47.5	46.66
2390	52.23	-2.82	1.94	-0.21	1.94	-14.29	47.18	46.59
2400	52.8	-2.77	2.01	-0.14	2.01	-12.98	47.43	46.7
2410	55.77	-2.54	2.23	0.08	2.23	-11.9	47.64	47.07







No.	Item	Request	EQ	Result
1	Temperature and humidity test	Reference EIA 364-31, the 3rd method, test condition is A. the purpose of test is to detail the standard test methods used in the product, evaluate the affecting of the material's performance, when they are affected by high humidity and heat. Temp: 70℃ Humidity: 90~95% (R.H) Test time: 72H	K.SON INS THS-A4L-150	Pass
2	Low temperature test	Placed product in a constant temperature environment.(-20℃) Test time: 24H	K.SON INS THS-A4L-150	Pass
3	Heat test	Placed product in a constant temperature environment.(70℃) Test time : 24H	K.SON INS THS-A4L-150	Pass
4	Heat and cold Shock	Placed product in a temperature environment from -20℃ to 70℃ >8H. (30min/cycle, 12cycle)	K.SON INS THS-A4L-150	Pass
5	Salt spray test	Placed product in a environment: NaCL: 40-60g/1Kg PH: 6.5-7.2 Test time: 24H 1.No shedding for gold-plating 2.No more then 2 rusty spot on one surface for other Plating product	Salt spray test machine	Pass

Mechanical testing requirements

No.	Item	Requirements	EQ	Result
1	Vibration test	Test condition is A. the purpose of test is to detail the standard test methods used in the product, evaluate the affecting the of the material's performance, when they are moving。	Vibrator	Pass
		Frequency: 10-55HZ Range: 0.35mm acceleration amplitude: 50.0M/s sweep frequency: 30cycle		
2	Drop Test	Placed in a certain height, set as 1m,per 6direction ,and 3times/direction	Drop test fixture	Pass
		The mechanical properties is OK, after the drop test		
3	Strain relief test	The fixture measured objects, Reverse direction force on, no product assembly off.	Tensile test machine	Pass
		1. No product assembly off 2. Minimum tension: 1KG		

Note: In the design development and pre-production, FEIYUXIN Electronic Co., Ltd implementation of the above mechanical and environmental parameters testing.