

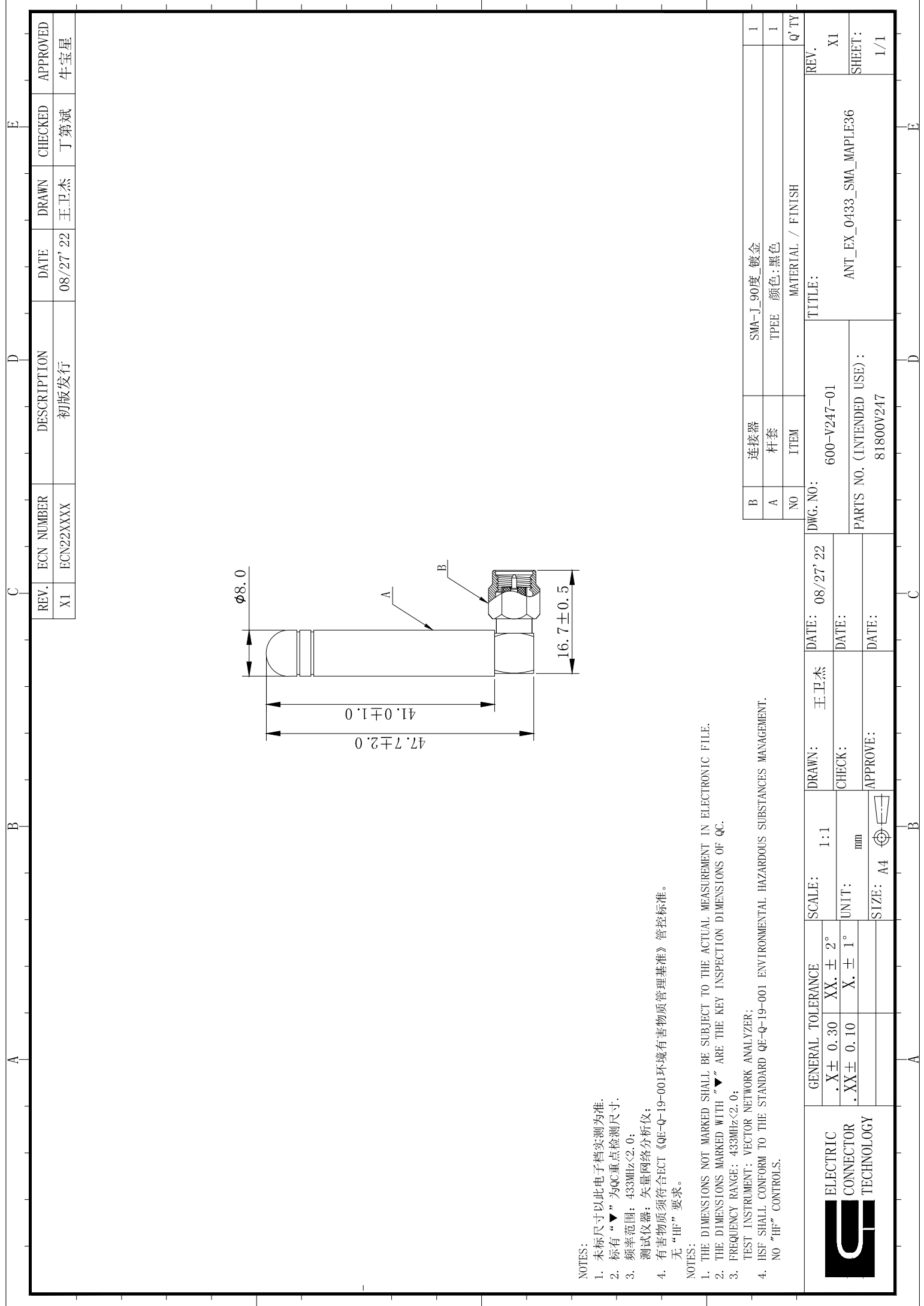
**1. Antenna Specification/天线标准**

Antenna Specification/天线技术参数		
Electrical Specification/电气特性		
Item/目录	Specification/规格	Comment/备注
Freq. Range/频段范围	433MHz	
Impedance/阻抗	50 ( $\Omega$ )	
VSWR/驻波比	<2.0	
Directional/辐射方向	Omni directional (全向辐射)	
Polarization/极化形式	Vertical Polarization (垂直极化)	
Peak Gain/峰值增益	-7.65dBi	
Test condition/测试条件	passive test (无源测试)	
Total Efficiency/无源效率	$\geq 9\%$	
Mechanical Specification/机械指标		
Antenna type/天线类型	Whip antenna	
Connector Type/连接器类型	SMA-J	
RF Cable Type/射频线型号	N/A	
Connector Torque Test/连接器扭力	N/A	
Connector Pull Test/连接器拉力	$\geq 3.0\text{Kgf}$	
Salt Spray/盐雾测试	24 (H)	
Environmental Specification /环境指标		
Operating temp/工作温度	-40°C ~ +65°C	
Storage temp/存储温度	-40°C ~ +80°C	

**2. Antenna Picture/天线图片**



**3. DWG/工程图纸**



- NOTES:
1. 未标尺寸以此电子档实测为准。
  2. 标有“▼”为QC重点检测尺寸。
  3. 频率范围: 433MHz<2.0;
  4. 测试仪器: 矢量网络分析仪;
  5. 有害物质须符合ECT《QE-Q-19-001环境有害物质管理基准》管控标准。无“HF”要求。

- NOTES:
1. THE DIMENSIONS NOT MARKED SHALL BE SUBJECT TO THE ACTUAL MEASUREMENT IN ELECTRONIC FILE.
  2. THE DIMENSIONS MARKED WITH "▼" ARE THE KEY INSPECTION DIMENSIONS OF QC.
  3. FREQUENCY RANGE: 433MHz<2.0;
  4. TEST INSTRUMENT: VECTOR NETWORK ANALYZER;
  5. HSF SHALL CONFORM TO THE STANDARD QE-Q-19-001 ENVIRONMENTAL HAZARDOUS SUBSTANCES MANAGEMENT. NO "HF" CONTROLS.

REV.	ECN NUMBER	DESCRIPTION	DATE	DRAWN	CHECKED	APPROVED
X1	ECN22XXXX	初版发行	08/27' 22	王卫杰	丁第斌	牛宝星

B	连接器	SMA-J_90度_镀金	TITLE: ANT_EX_0433_SMA_MAPLE36
A	衬套	TPEE 颜色:黑色	
NO	ITEM	MATERIAL / FINISH	

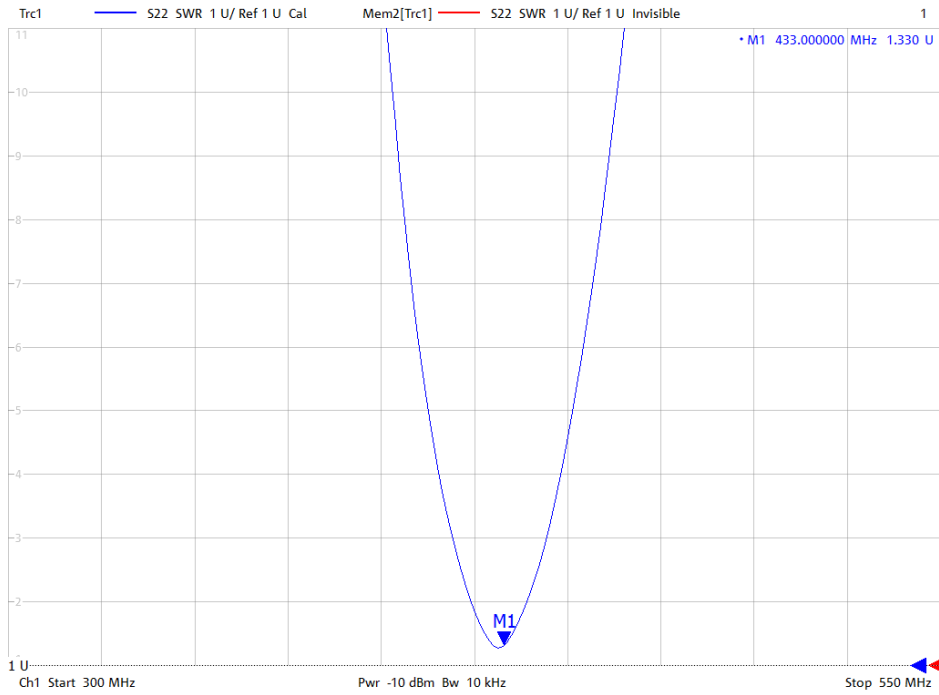
DWG. NO:		600-V247-01	REV.	XI
PARTS NO. (INTENDED USE):		81800V247	SHEET:	
			1/1	

DATE:	08/27' 22	DRAWN:	王卫杰	SCALE:	1:1
DATE:		CHECK:		UNIT:	mm
DATE:		APPROVE:		SIZE:	A4

	GENERAL TOLERANCE	.X ± 0.30	XX. ± 2°
		.XX ± 0.10	X. ± 1°

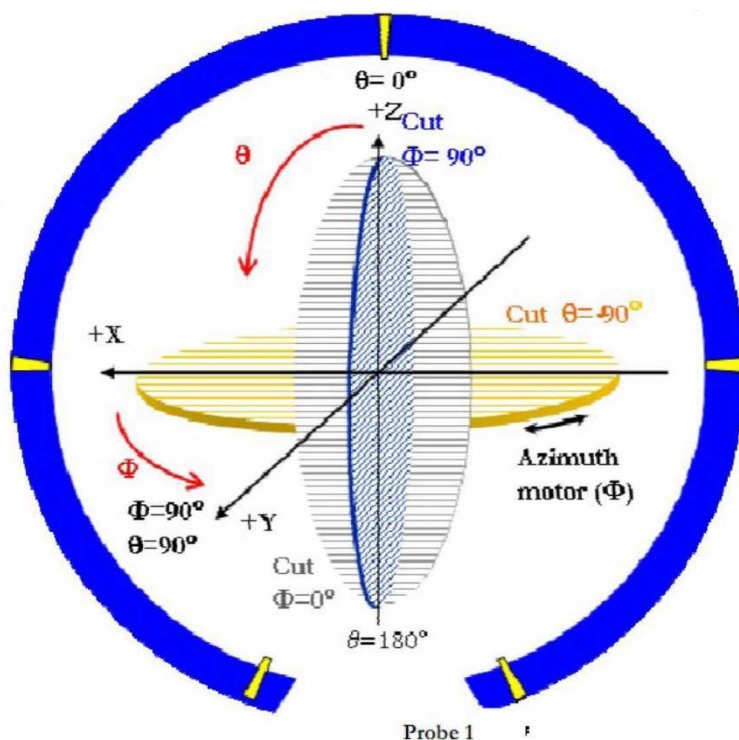
## 4. Antenna test result/测试结果

### 4.1 Return loss/Smith chart/VSWR/回波损耗/史密斯图/驻波比

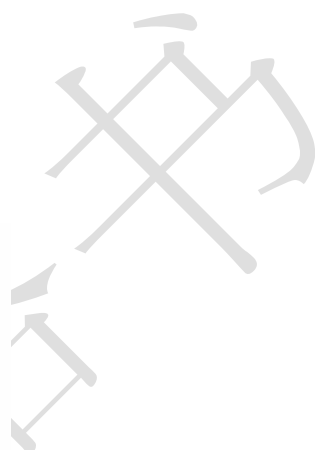


**4.2 The gain and total efficiency test/增益和效率测试**

**4.2.1 The definition of coordinate system/坐标系定义-Satimo SG24**



**The coordinate system of Chamber/暗室坐标系**





**The production test position/天线测试放置位置**

#### 4.2.2 The test result of total efficiency and total gain/天线效率及增益测试结果

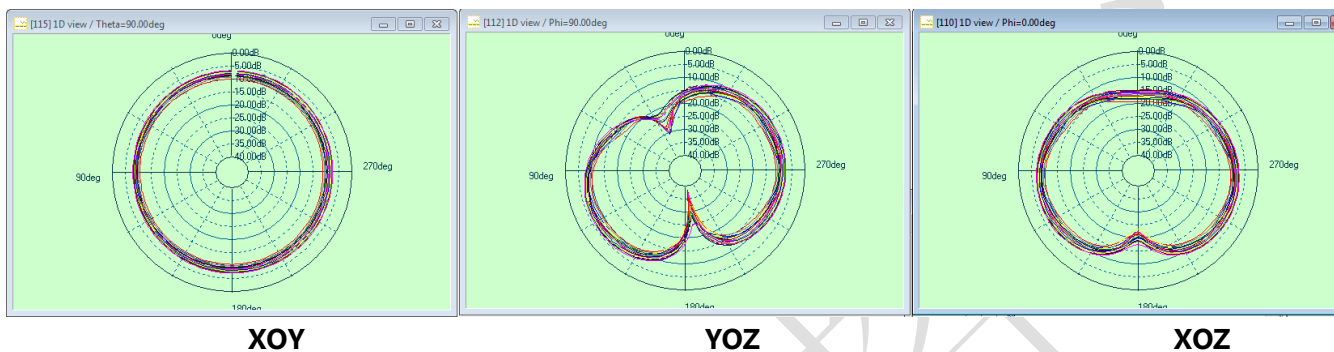
##### 421MHz-451MHz

Frequency	Efficiency(%)	Gain (dBi)
421MHz	6%	-9.62
423MHz	6%	-9.31
425MHz	7%	-8.51
427MHz	8%	-7.95
429MHz	8%	-7.99
431MHz	8%	-7.87
433MHz	9%	-7.65
435MHz	10%	-7.19
437MHz	10%	-6.94
439MHz	10%	-6.98
441MHz	11%	-6.96
443MHz	11%	-6.64
445MHz	12%	-6.26

447MHz	12%	-6.04
449MHz	12%	-6.00
451MHz	13%	-5.79

### 4.2.3 The antenna radiation pattern(2D)/天线辐射方向图 ( 2D )

421MHz -451MHz



### 4.2.4 The antenna radiation pattern(3D)/天线辐射方向图 ( 3D )

Frequency/频点 433MHz

