



Antenna Test Report

生产供应商: 国质信 (NQI)

Supplier

适用项目: M2S-F6

Type/Spec

品 牌: NQI

Brand

送样日期: 2022/12/25

Send out Date

承认日期: _____

Approve Date

物料名称: BT 天线 (BT antenna)

Parts Name

NQI 料号: NQI-M2S-BT-FB-V7

Parts No

客户料号: 1000055944

Quantity

文件编号: NQI-RD-SPEC-20230208

Document No

样品版本: V7

Version

Version: V1

Customer	倍思	Project	M2S
Band	BT	Color	
Issued by	周鹏	Checked by	
Confirmed by		Date	2023.01.03

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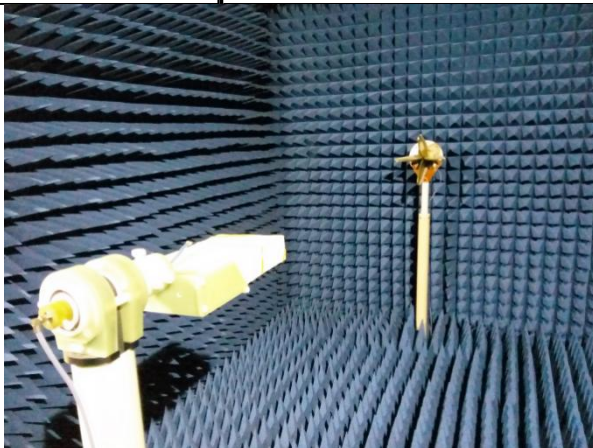
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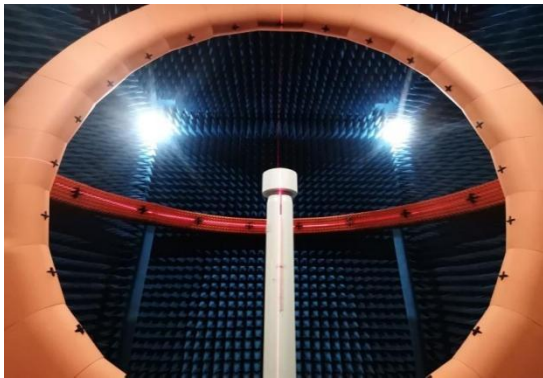


一. 测试设备

	测试项目	设备
1. S 参数	1. 回波损耗(RL) 2. 驻波比 (VSWR)	网络分析仪: Agilent E5071B RS ZVB8
2. 耦合测试 coupling testing	1. 发射功率 (MAX Power) 2. 接收灵敏度 (MIN Sens)	1.2G/3G 测试设备: Agilent 8960 2. 微波暗室: 广屏 ETS 3D Chamber (5x3x3)
3. 3D 无源测试 (Passive Test)	1. 效率 (η) 2. 增益 (Gain) 3. 辐射方向图	1. 微波暗室: TEM24 3D Chamber (5x5x5) 广屏 ETS 3D Chamber (5x3x3) 2. 网络分析仪: Agilent E5071B
4.3D 有源测试 (Active Test)	1. 3D 功率 (TRP) 2. 3D 灵敏度 (TIS) 3. 吞吐测试 4. 人头手测试 5. 人头耳测试	1. 微波暗室: TEM24 3D Chamber (5x5x5) 广屏 ETS 3D Chamber (5x3x3) 2.2G/3G 测试设备: Agilent 8960 3.4G 测试设备: 安立 MT8820C/CMW500 4.WIFI/BT/NB-iot 测试设备: CMW500 5. 5G 测试设备: 星河亮点 SP9500-CTS



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二 . Definitions

VSWR: Voltage Standing Wave Rate

TRP: total radiated power

TIS: total isotropic sensitivity

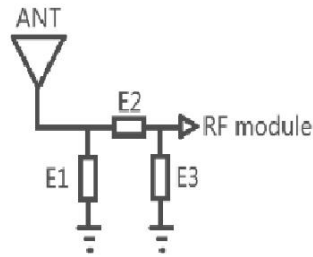
三. Cell-Phone Photo and Dealing Method



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四. 匹配电路match circuit

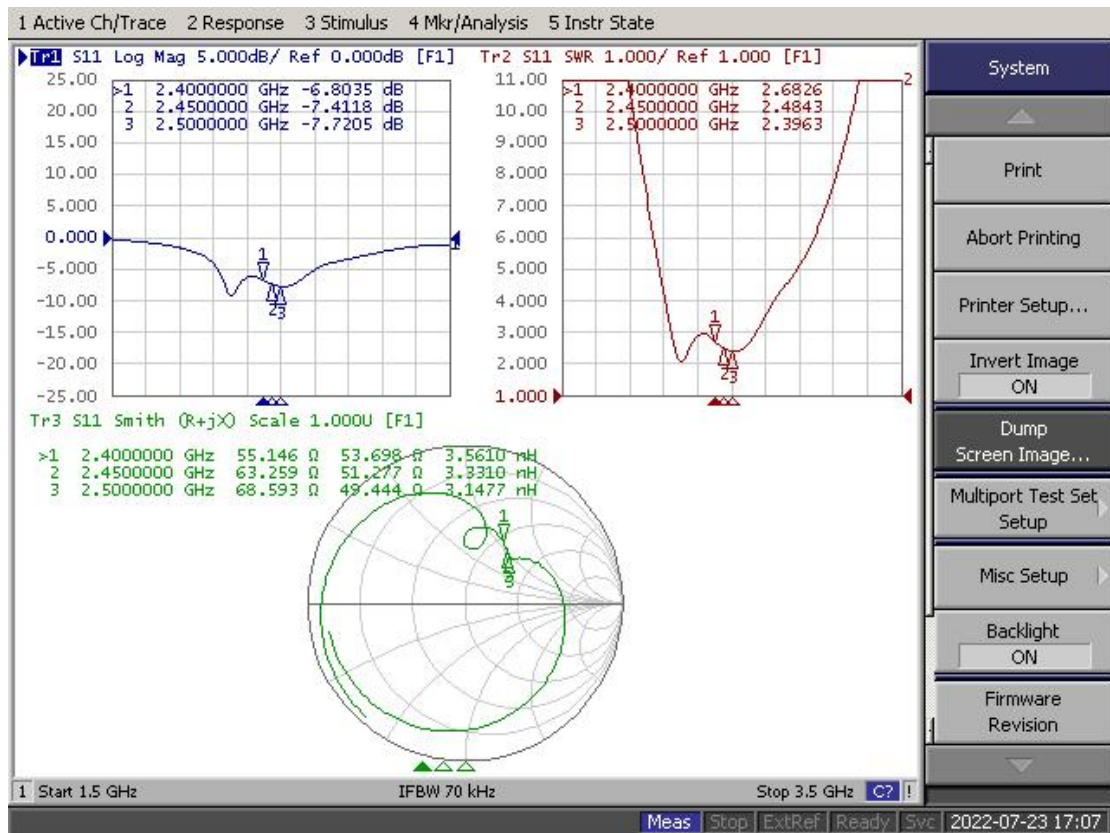


Element	L (Value)	R (Value)
E1(0201)	NF	NF
E2(0201)	0 Ω	0 Ω
E3(0201)	NF	NF

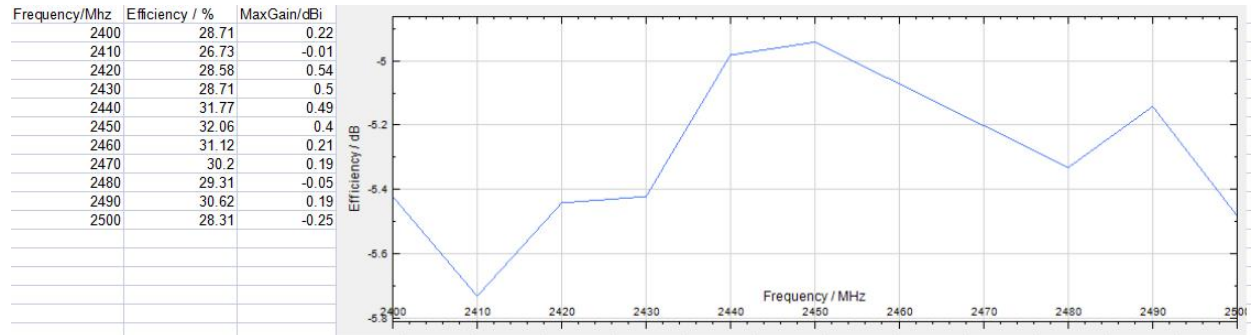
五. 无源测试Passive Test

5.1 回波损耗/驻波比/史密斯图圆

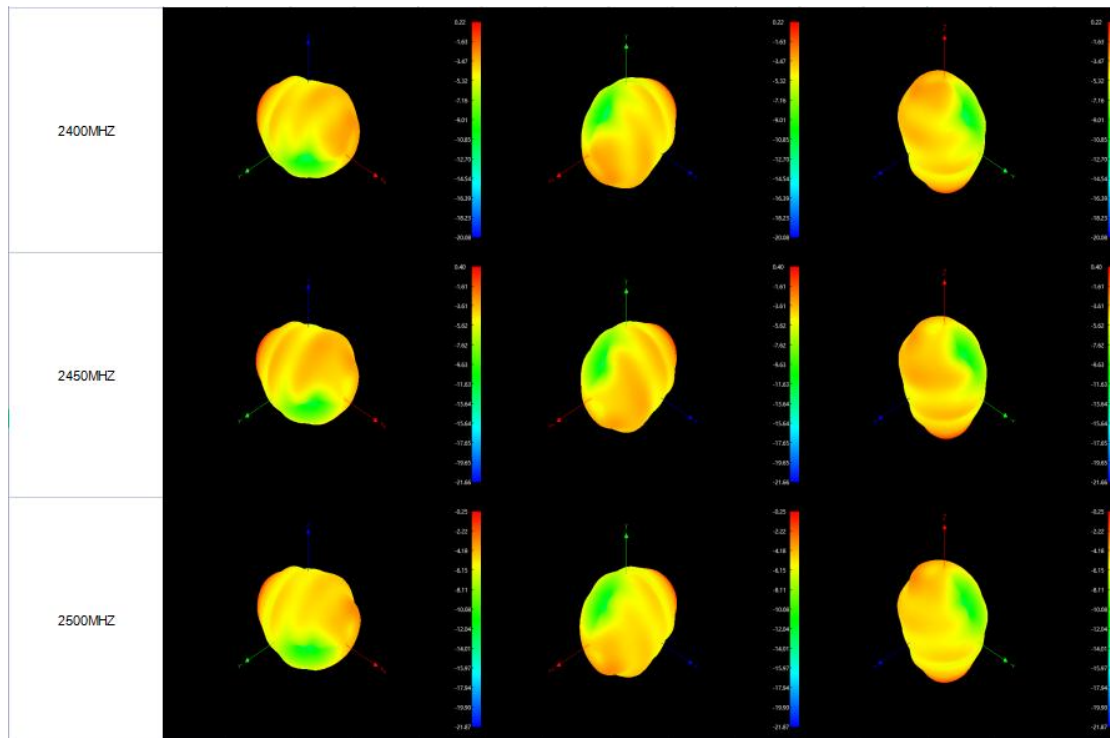
Return loss/standing wave ratio/Smith chart



5.2 效率&增益Efficiency & Gain



5.3 3D 方向图3DDirection diagram



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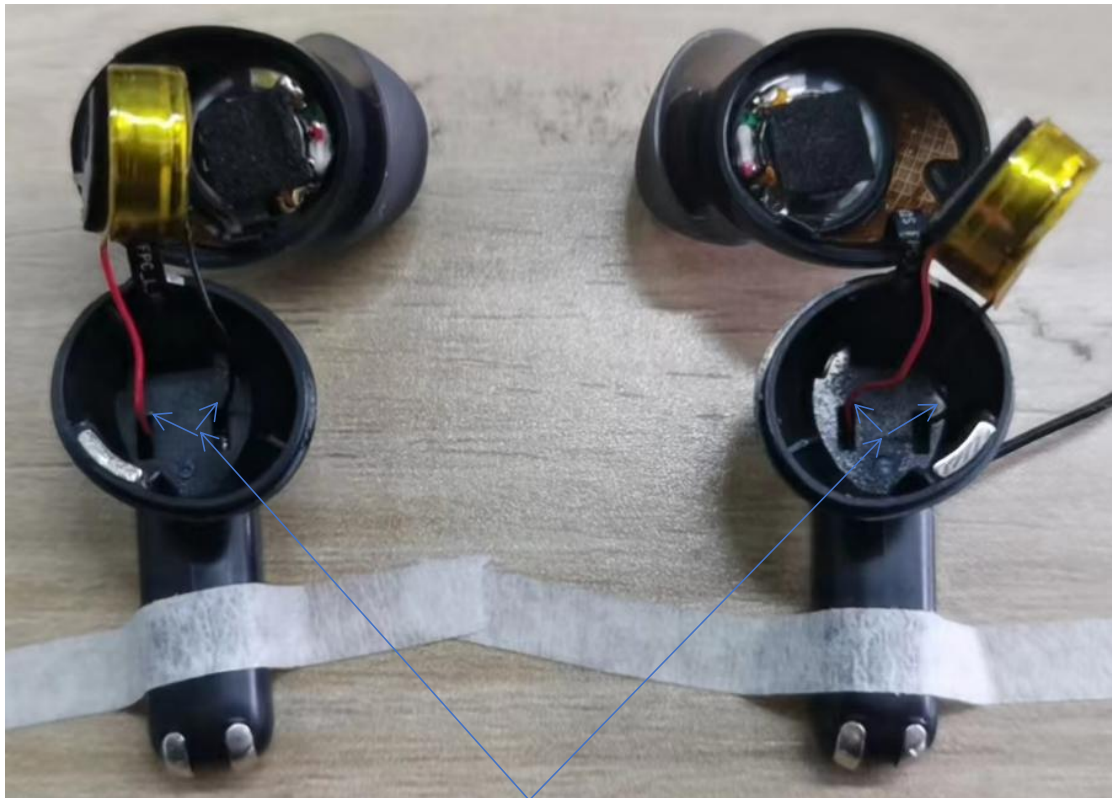
六. TRP&TIS

NQI ANT TRP&TIS parameter Summary of M2S				
自由空间 free space	Test	Bluetooth TRP		
	Result	0	39	78
R	TRP (dBm)	2.27	2.64	2.43
	TIS (dBm)	-84.83	-84.53	-84.41
L	TRP (dBm)	2.88	2.44	2.19
	TIS (dBm)	-84.98	-85.07	-85.31
NQI ANT TRP&TIS parameter Summary of M2S				
二代头耳模	Test	Bluetooth TRP		
	Result	0	39	78
R	TRP (dBm)	-5.82	-5.4	-4.76
	TIS (dBm)	-77.24	-78.16	-78.76
L	TRP (dBm)	-5.23	-4.49	-4.08
	TIS (dBm)	-78.39	-78.93	-77.91

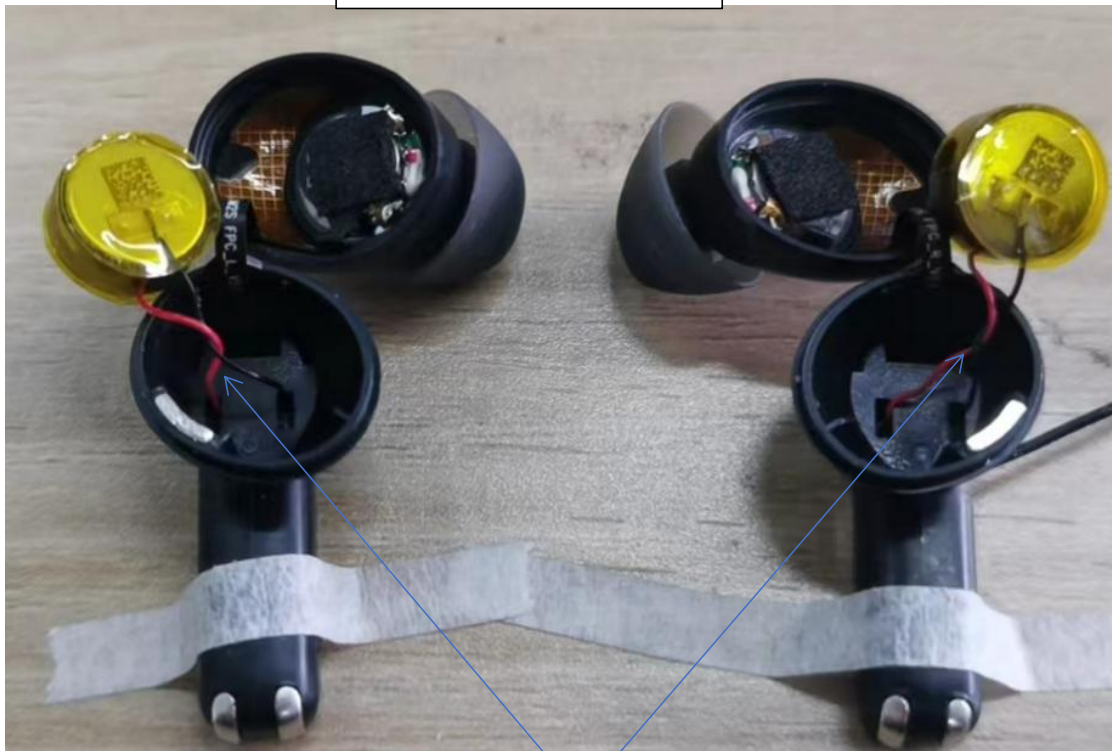
七. 装配方式 the way of assembly



电池边缘出线 15mm
The edge of the battery exits 15mm



电池红黑线如图穿孔，拉出
主板下多余的电池线到前腔



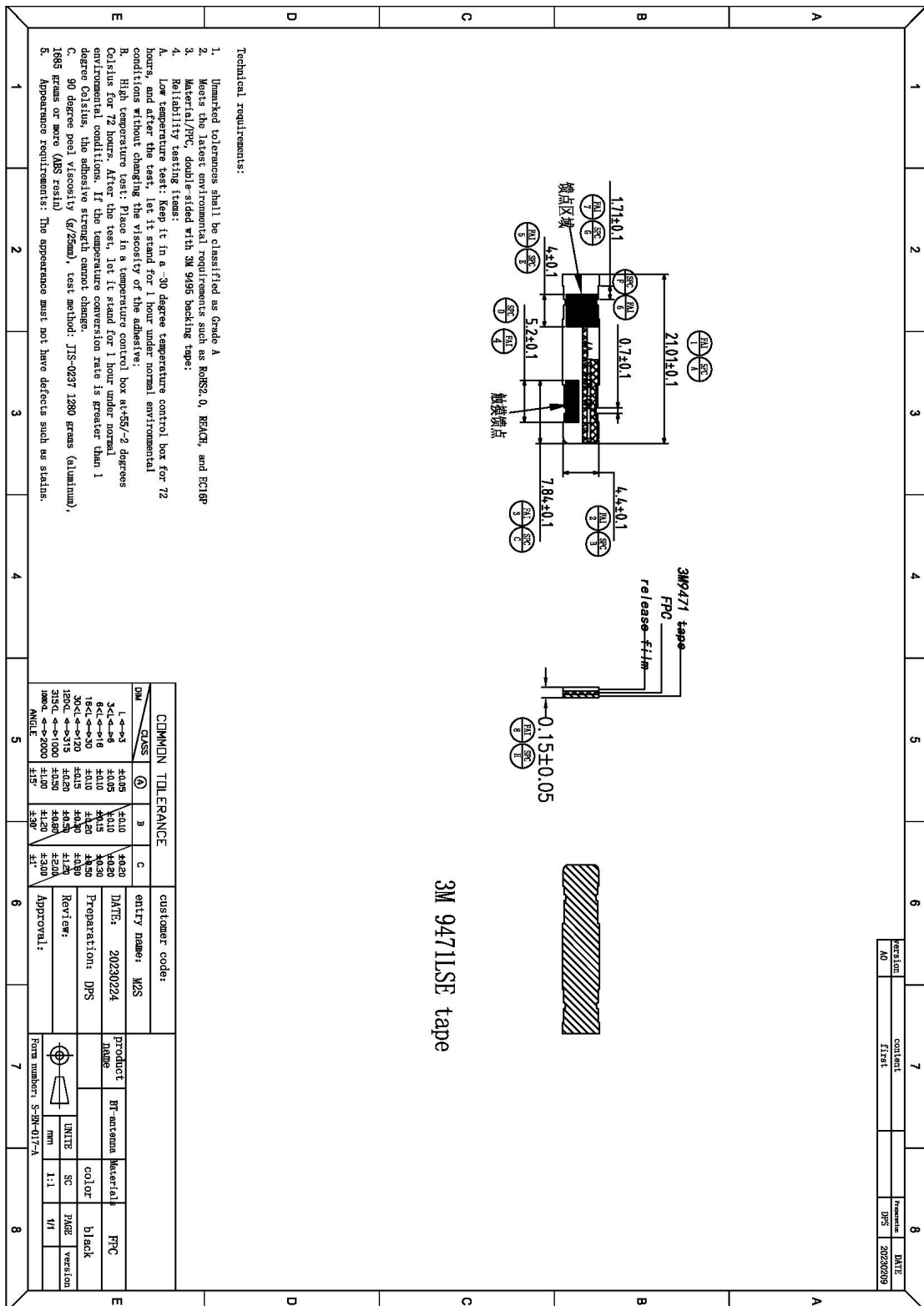
电池红黑线绞线 1 圈



绞线一圈后, 电池负极面扣向主板面, 且出线方向如图。



八.天线结构图纸 (Antenna structure drawing) :



- Technical requirements:
1. Unmarked tolerance shall be classified as Grade A
 2. Meets the latest environmental requirements such as RoHS2.0, REACH, and ECIIP
 3. Material/IPC: double-sided with 3M 9495 backing tape;
 4. Reliability testing items:
 - A. Low temperature test: Keep it in a -30 degree temperature control box for 72 hours, and after the test, let it stand for 1 hour under normal environmental conditions without changing the viscosity of the adhesive;
 - B. High temperature test: Place in a temperature control box at +55/-2 degrees Celsius for 72 hours. After the test, let it stand for 1 hour under normal environmental conditions. If the temperature conversion rate is greater than 1 degree Celsius, the adhesive strength cannot change.
 - C. 90 degree peel viscosity (φ25mm), test method: JIS-0237 1290 grams (aluminum), 1685 grams or more (MS resin)
 5. Appearance requirements: The appearance must not have defects such as stains.

COMMON TOLERANCE		customer code:	
DM	CLASS	a	b
1~4	±0.3	±0.10	±0.20
5~6	±0.5	±0.10	±0.20
7~8	±1.0	±0.15	±0.30
9~10	±1.5	±0.20	±0.40
11~12	±2.0	±0.30	±0.50
13~14	±2.5	±0.40	±0.60
15~16	±3.0	±0.50	±0.80
17~18	±4.0	±0.60	±1.00
19~20	±5.0	±0.80	±1.20
21~22	±6.0	±1.00	±1.50
23~24	±8.0	±1.20	±2.00
25~26	±10.0	±1.50	±2.50
27~28	±12.0	±2.00	±3.00
29~30	±15.0	±2.50	±4.00
31~32	±20.0	±3.00	±5.00
33~34	±25.0	±4.00	±6.00
35~36	±30.0	±5.00	±8.00
37~38	±40.0	±6.00	±10.00
39~40	±50.0	±8.00	±12.00
41~42	±60.0	±10.00	±15.00
43~44	±80.0	±12.00	±20.00
45~46	±100.0	±15.00	±25.00
47~48	±120.0	±20.00	±30.00
49~50	±150.0	±25.00	±40.00
51~52	±200.0	±30.00	±50.00
53~54	±250.0	±40.00	±60.00
55~56	±300.0	±50.00	±80.00
57~58	±400.0	±60.00	±100.00
59~60	±500.0	±80.00	±120.00
61~62	±600.0	±100.00	±150.00
63~64	±800.0	±120.00	±200.00
65~66	±1000.0	±150.00	±250.00
67~68	±1200.0	±200.00	±300.00
69~70	±1500.0	±250.00	±400.00
71~72	±2000.0	±300.00	±500.00
73~74	±2500.0	±400.00	±600.00
75~76	±3000.0	±500.00	±800.00
77~78	±4000.0	±600.00	±1000.00
79~80	±5000.0	±800.00	±1200.00
81~82	±6000.0	±1000.00	±1500.00
83~84	±8000.0	±1200.00	±2000.00
85~86	±10000.0	±1500.00	±2500.00
87~88	±12000.0	±2000.00	±3000.00
89~90	±15000.0	±2500.00	±4000.00
91~92	±20000.0	±3000.00	±5000.00
93~94	±25000.0	±4000.00	±6000.00
95~96	±30000.0	±5000.00	±8000.00
97~98	±40000.0	±6000.00	±10000.00
99~100	±50000.0	±8000.00	±12000.00