

SPEED TECHNOLOGY

SPEED Communication Technology Limited

Approval sheet of

国虹 W20 荷兰版 主天线

Internal Antenna

Customer/Project	国虹 W20 荷兰版主天线	Frequency Band	GSM850/900/DCS/PCS /W1/W8		
SCT P/N	A-AJ-0579	Version	T:A		
Date	2013-09-27				
SPEED					
Checked by	RF		Design by	RF	
	ME			ME	
	QC		Remark	+ / . 2 事	
Customer					
Date					
Confirmed by	RF				
	ME				
Remark					

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1 Indication

This report summarizes the electrical performance results of the proposed external antenna to support the W20 荷兰版 program. The antenna is an assembly GSM850/900/DCS/PCS/W1/W8 odd-band helix. (see Figure1).

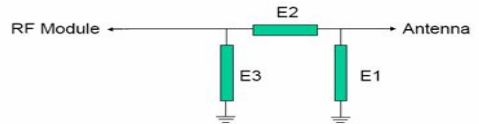


Figure 1: Proposed Antenna

2 Electrical Performance

2.1 Matching Circuit Description

A matching circuit was designed to provide the required impedance match across the bands. Figure 2 shows the topology structure of the matching network, which is provided by SPEED R&D team.



Element	Value
E1	N/H
E2	0欧
E3	N/H

Matching circuit for W20 荷兰版 主天线

2.2 Test Set-up

The antenna was evaluated using the customer provided prototype phone. Figure 3 shows the antenna mounted on the test fixture.



Figure 3: Antenna Mounted on W20 荷兰版 Test Fixture

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2.3.1 VSWR

VSWR measurements (S_{11}) were performed using Agilent E5071C Network Analyzer and the previously described test fixture. A ferrite-loaded coaxial cable was used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

2.3.2 Gain & Radiation Patterns

The gain and efficiency of the antenna was measured in the Speed Communication Technology anechoic chamber. The chamber provides less than -40 dB reflectivity from 800 MHz through 6 GHz and 25cm diameter spherical quiet zone. The measurement results are calibrated using both dipole and leaky wave horn standards.

2.4 Measurement Data

2.4.1 VSWR

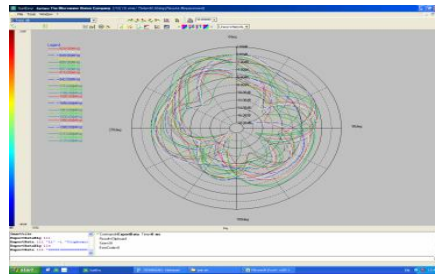
W20 荷兰版 Antenna							
Freq (MHz)	824	960	1710	1880	1990	2025	2170
VSWR	2.83	2.18	2.66	2.11	2.04	2.01	1.90

2.4.2 Peak gain& Efficiency

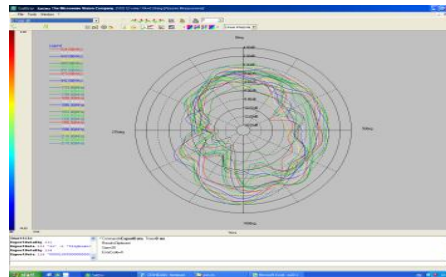
Frequency		Freq. (MHz)	Peak Gain(dBi)	efficiency(%)
		GSM 850	824	-0.62
849	0.94		39	
869	1.71		43	
894	2.08		47	
GSM 900	880	1.66	45	
	925	1.72	43	
	942	2.07	44	
	960	2.32	35	
DCS	1710	-3.02	19	
	1747	-0.98	33	
	1805	-0.34	38	
	1880	0.44	43	
PCS	1850	0.06	41	
	1930	1.04	43	
	1980	0.98	42	
	1990	1.10	43	
WCD MA	2110	-0.04	37	
	2140	0.81	41	
	2170	0.89	42	

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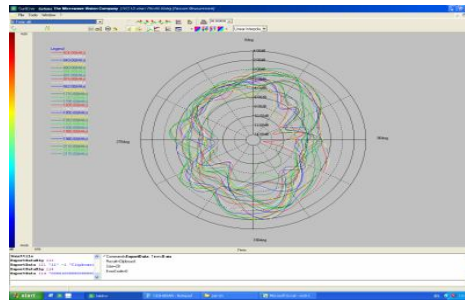
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E1-Plane



E2-Plane



H-Plane

3 Suggestion and Conclusion

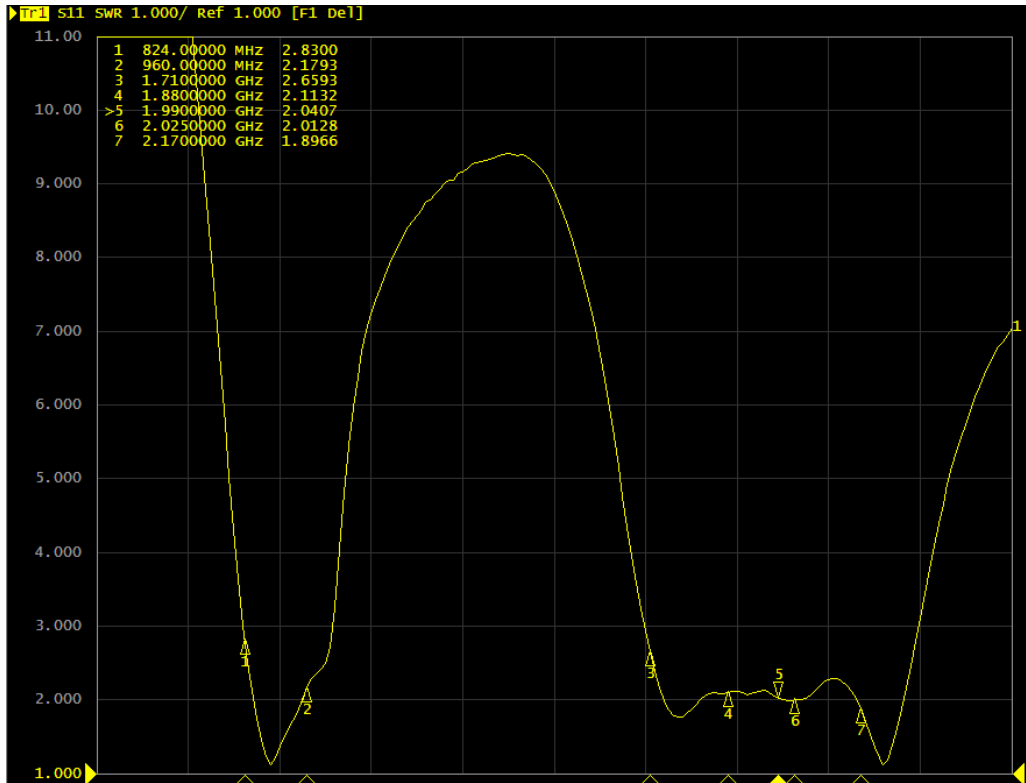
This report summarizes the electrical performance of internal screw antenna for W20 荷兰版. The antenna was tested using the customer provided final working phones. The report shows satisfied RF performances across the band. SCT team is looking forward to getting your approval. Thanks for your cooperation.

4 Attachment

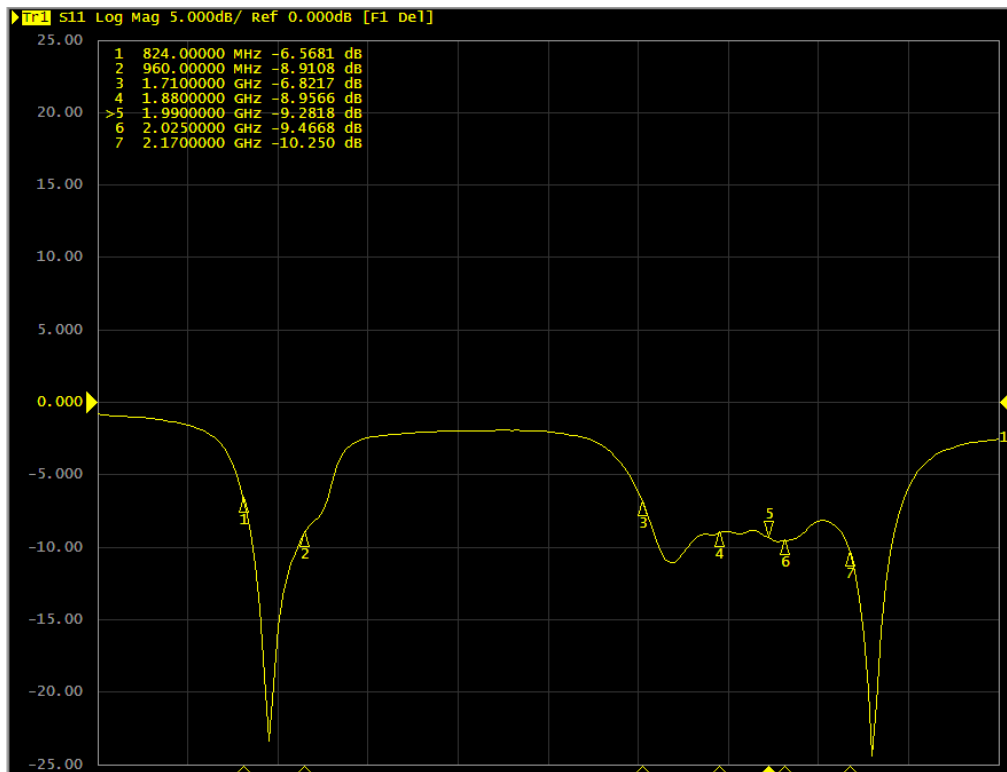
4.1 S11 Parameter

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VSWR, W20 荷兰版 Antenna

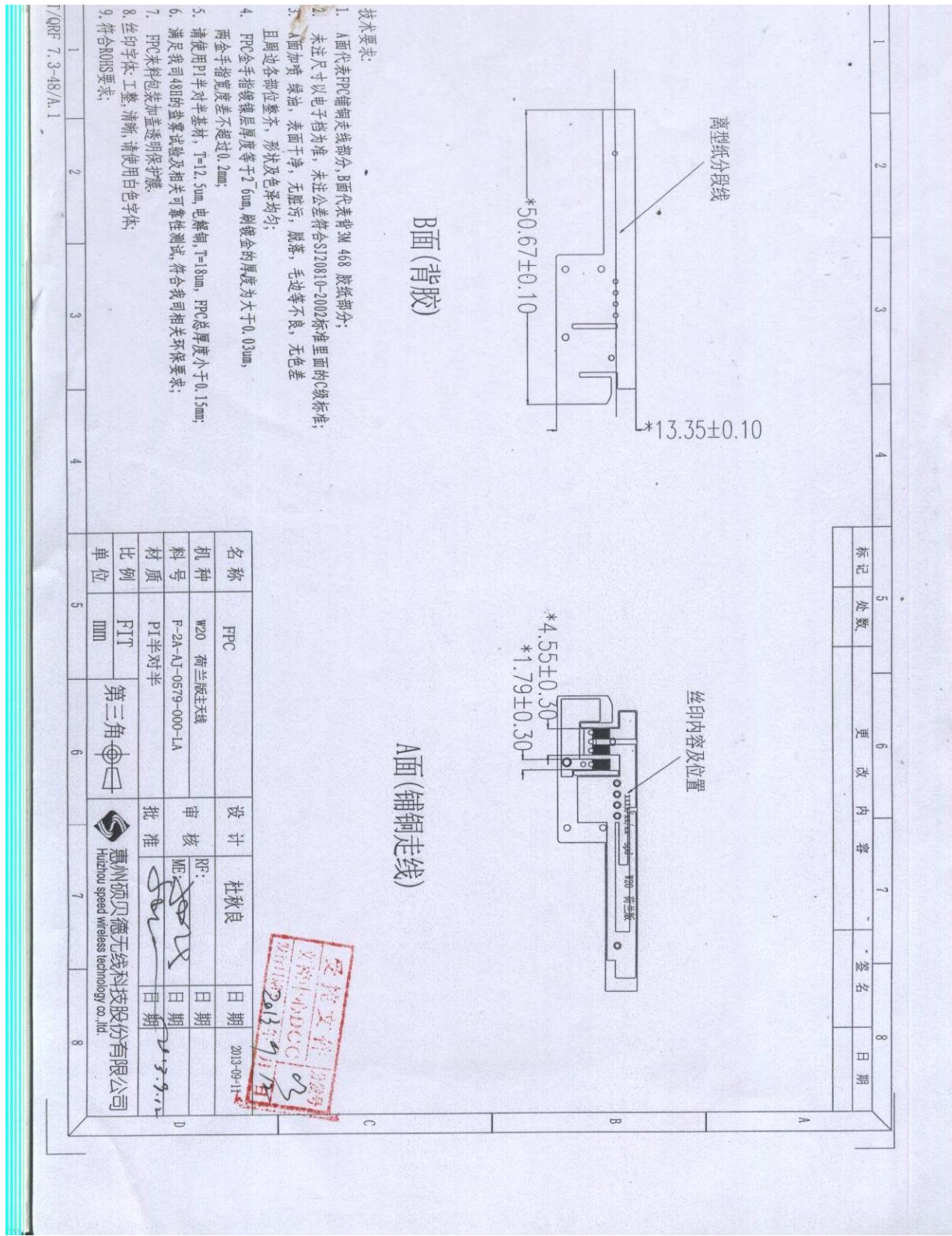


Return Loss, W20 荷兰版 Antenna

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4.2 Appearance Drawing



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Huizhou Speed Wireless Technology Co., Ltd.

可靠性测试报告

客户	围缸	样品来源	A	项目名称	W20荷兰版主天线		成品料号	AJ-0579	送检人	邓润溪	测试日期	2
可靠性测试项目及要												
项目	测试项目	测试仪器	测试条件	判定标准	1	2*	3	4	5	测试结果		
1	高温试验	恒温恒湿箱	将产品放置在温度为85℃±2℃的高温环境下存放48H, 试验完成后在常温环境下放置2H后检查产品外观	部件无裂痕、明显的变形、脱落, FPC金手指无氧化及FPC无起翘、起泡、起皱等不良; RF测试通过为合格	OK	OK	OK	OK	OK	OK	OK	OK
2	低温试验	恒温恒湿箱	将产品放置在温度为-40℃±2℃的低温环境下存放48H, 试验完成后在常温环境下放置2H后检查产品外观	部件无裂痕、明显的变形、脱落, FPC金手指无氧化及FPC无起翘、起泡、起皱等不良; RF测试通过为合格	OK	OK	OK	OK	OK	OK	OK	OK
3	盐雾试验	盐雾试验机	将产品放于盐雾试验机中, 在35℃±2℃的密闭环境中, PH值在6.5-7.2范围内, 用5%±1%的NaCl溶液连续24H盐水喷雾后, 将样品用清水冲洗干净后检查天线弹片、FPC金手指等五金电镀件的外观	表面无锈蚀、镀层剥落、变色、起泡等不良现象, FPC金手指无氧化及FPC无起翘、起泡、起皱等不良; RF测试通过为合格	OK	OK	OK	OK	OK	OK	OK	OK
4	冷热冲击试验	冷热冲击试验机	将天线放入温度冲击试验箱中; 先在-40℃±2℃的低温环境下保持1h, 在3min内将温度切换到+85℃±2℃的高温环境下并保持1h, 共做30个循环。试验完成后在常温环境下放置2H以上后检查产品外观	部件无裂痕、明显的变形、脱落, FPC金手指无氧化及FPC无起翘、起泡、起皱等不良; RF测试通过为合格	OK	OK	OK	OK	OK	OK	OK	OK
试验结果判定												

可靠性试验合格

备注: 样品来源分为以下五种: A、新品开发 B、5MIE变更项目 C、量产产品 D、客户提供样品 E、竞争对手产品
SCT/QRF 8.4-01/A.4

审批: *[Signature]* 测试人: *[Signature]* 制作日期: 6/9-13

4.4 TRP&TIS

Modulation	850			E900		
Channel	128	190	251	975	37	124
TRP(dBm)	25.86	26.46	26.81	27.43	27.32	27.36
TIS(dBm)	-105.21	-104.86	-104.35	-104.23	-103.85	-103.56

Modulation	DCS			PCS		
Channel	512	698	885	512	661	810
TRP(dBm)	24.18	25.52	26.45	25.49	25.6	25.31
TIS(dBm)	-104.86	-105.23	-104.37	-104.48	-104.32	-104.22

Modulation	WCDMA Band I		
Channel	9612	9750	9887
TRP(dBm)	18.63	18.84	18.49
Channel	10562	10700	10838
TIS(dBm)	-106.25	-106.07	-105.68

Modulation	WCDMA Band V I I 1		
Channel	2713	2788	2862
TRP(dBm)	18.69	18.98	18.65
Channel	2938	3013	3087
TIS(dBm)	-106.35	-106.2	-105.8

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