

Antenna Specifications

CUSTOMER		Trackimo China	
CS P/N		UB12	
HX P/N		<u>A53-034-UB12</u>	
Checked by(RF)	Checked by(ME)	Checked by(QA)	Approval led by
Customer Approval			

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1. General Description

This document provides the antenna specifications on electric, mechanic and reliability. The testing conditions and related pictures are also included.

1.1 Print Acceptance

Samples and Antenna Specifications are to be sent to customer. When they are approved, the approval form should be completed, signed, and sent back to HX before further mass production batches can be delivered.

1.2 Coordinate System

The coordinate system for the phone is defined as follows:

- Origin in center of gravity.
- Positive X axis is perpendicular to, and directed from, front plane.
- Positive Y axis is perpendicular to, and directed from, right side plane (as seen from front).
- Positive Z axis is perpendicular to, and directed from, top plane.

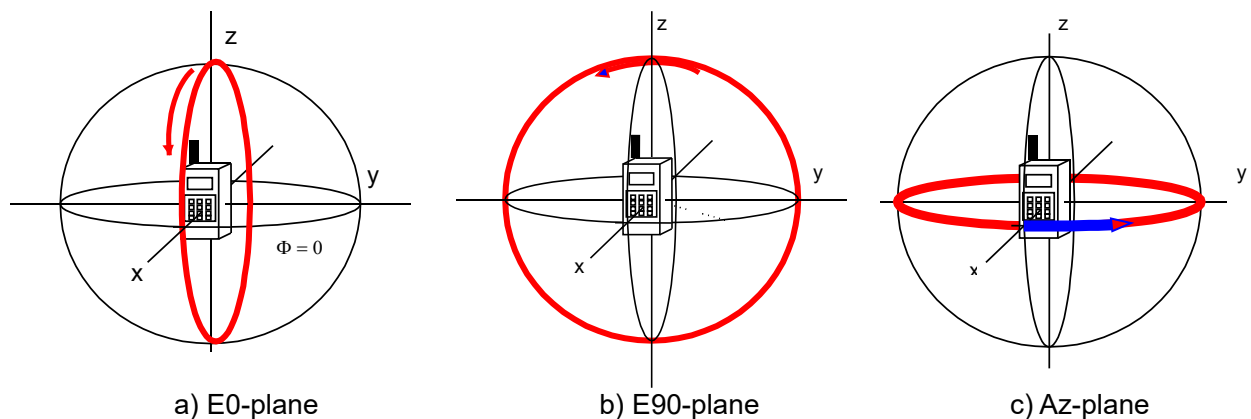


Figure 1-1 The coordinate system for the phone

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2. Specifications

This report mainly provides the testing conditions of various electric and structural performance parameters for cell phone antenna ---UB12 Figure 2-1 shows the antenna designed by HX & The fixturing of UB12

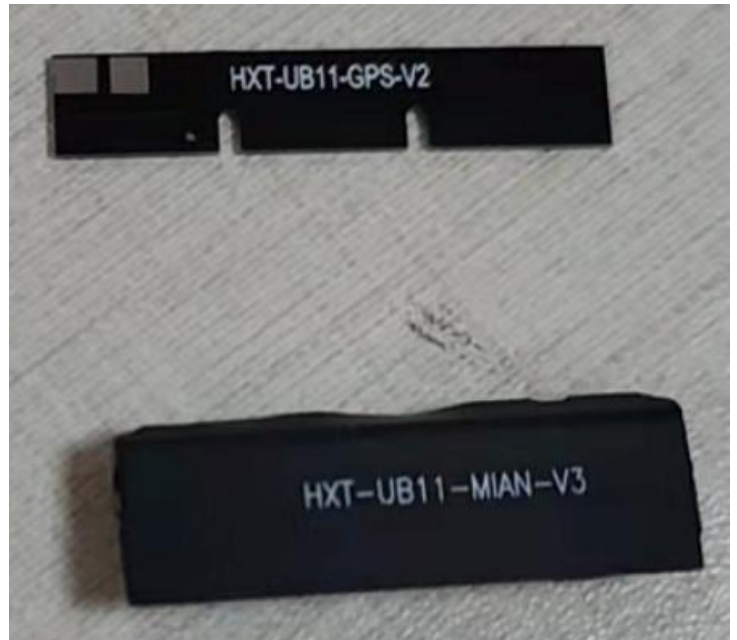


Figure 2-1 The antenna designed by HX & The fixturing of UB12

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2.1 Frequency Band

Band	Frequency(MHz)
GSM850/GSM900	824-960
DCS1800/PCS1900	1710-1990
W850/900	824-960
W2100/1900	1850-2167
LTE1/2/3/4/7/25/41	1710-2690
LTE5/8/12/13/17/18/ 19/20/26	703-960
WIFI/BT	2400-2500
GPS	1575

2.2 Impedance

2.2.1 Nominal

Nominal Impedance(including matching circuit) : 50 ohms

2.2.2 Matching Circuit

The GSM matching circuit is as Figure 2-2.GSM

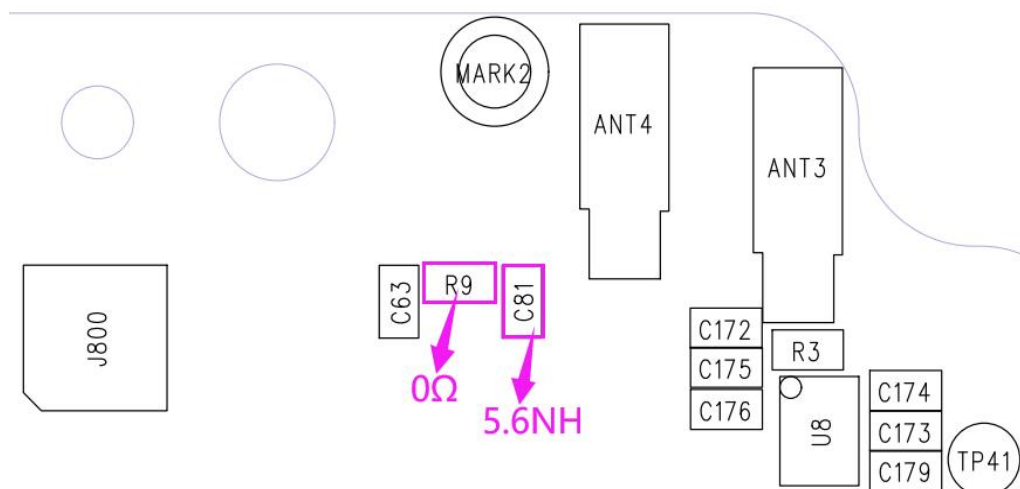


Figure 2-2: Matching circuit

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2.3 Passive Measurements

2.3.1 Active Measurements Data TRP&TIS

2G	CH	TRP	TIS
GSM850	128	19.46	-93.27
	190	18.65	
	251	18.16	-92
GSM900	1	14.47	-91.64
	62	14.2	
	124	13.58	-89.84
DCS1800	512	22.39	-100.16
	698	22.13	
	855	21.88	-100.73
PCS1900	512	22.08	-96.05
	661	22.41	
	810	22.08	-97.37

3G	CH	TRP	TIS
WCDMA 1	9612	13.58	
	9750	13.53	
	9888	13.36	-100.07
WCDMA 2	9262	14.14	
	9400	13.98	
	9538	13.91	-100.29
WCDMA 5	4132	6.92	
	4185	5.89	
	4233	5.15	-91.84
WCDMA 8	2712	3.46	
	2788	2.79	
	2863	2.07	-90.87

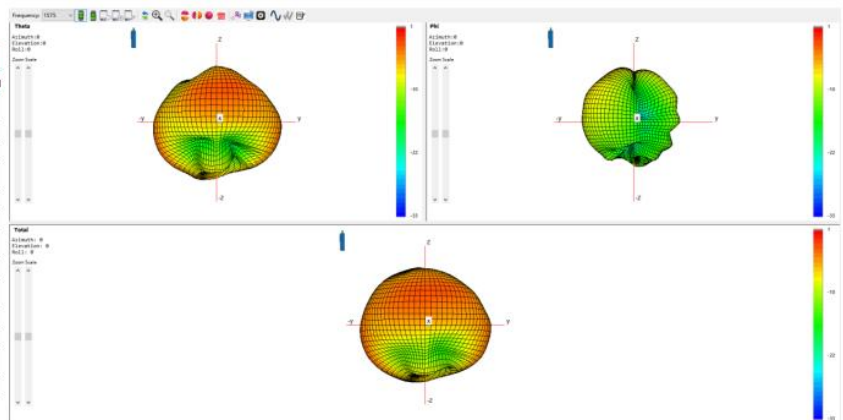
4G	CH	TRP	TIS
FDD-1	18050	16.32	
	18300	16.54	
	18550	16.41	-89.42
FDD-2	18650	16.81	
	18900	16.26	
	19150	16.17	-89.36
FDD-3	19250	15.64	
	19575	15.68	
	19900	16.73	-89.43
FDD-4	20000	16.23	
	20175	16.02	
	20350	16.16	-89.59
FDD-5	20450	7.46	
	20525	6.52	
	20600	5.37	-77.66
FDD-7	20800	12.92	
	21100	12.25	
	21400	12.32	-83.25
FDD-8	21500	3.97	
	21625	3.47	
	21750	3.06	-77.57
FDD-12	23060	6.01	
	23095	6.96	
	23130	7.67	-82.24

4G	CH	TRP	TIS
FDD-13	23205		
	23230	10.39	-85.64
	23255		
FDD-17	23780	6.57	
	23790	6.76	
	23800	7.14	-83.5
FDD-18	23900	7.24	
	23925	6.55	
	23950	6.34	77.39
FDD-19	24050	7.08	
	24075	6.77	
	24100	6.83	79.24
FDD-20	24200	7.07	
	24300	6.42	
	24400	6.09	-83.47
FDD-25	26090	16.79	
	26365	16.24	
	26640	16.18	-88.69
FDD-26	26740	8.42	
	26865	7.45	
	26990	7.14	-81.74
TDD-41	40340	10.42	
	40620	12.97	
	41140	11.32	-73.43

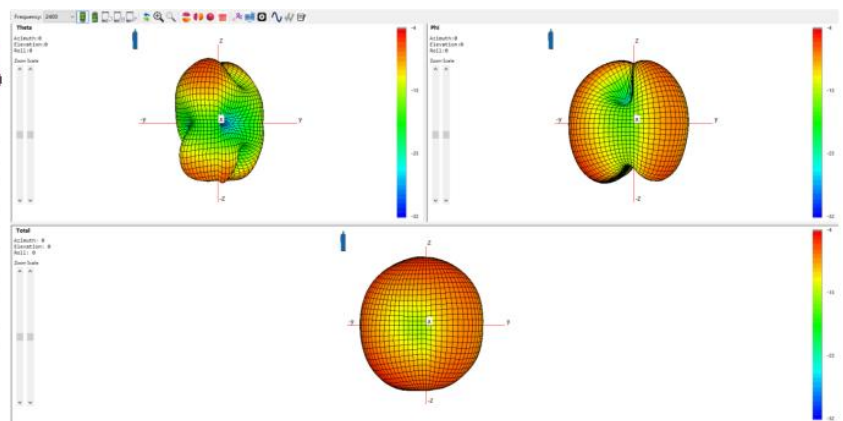
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2.3.2 Effi.& Gain Test Data&Radiation Patterns

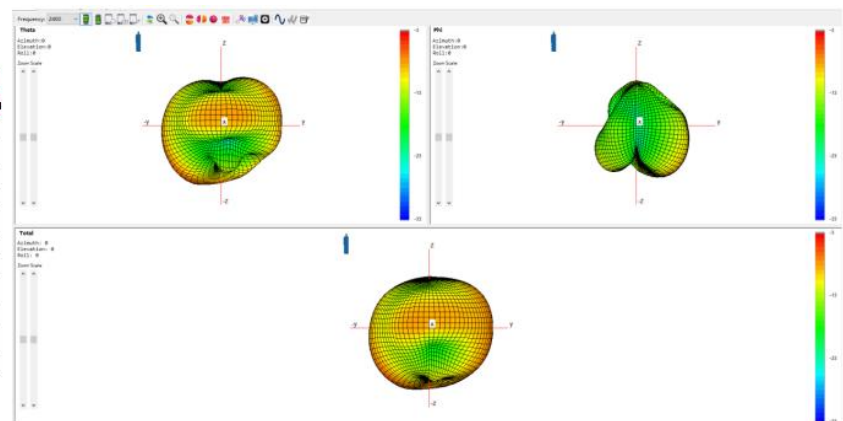
Passive Test For GPS			
Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
1555	0.36	-3.82	41.47
1560	0.48	-3.70	42.63
1565	0.58	-3.58	43.81
1570	0.60	-3.50	44.64
1575	0.59	-3.48	44.87
1580	0.60	-3.47	44.93
1585	0.56	-3.50	44.71
1590	0.48	-3.55	44.12
1595	0.42	-3.65	43.18
1600	0.28	-3.79	41.76
1605	0.14	-3.93	40.50
1610	0.04	-4.04	39.48
1615	-0.10	-4.19	38.12



Passive Test For BT			
Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
2400	-1.74	-4.56	35.01
2410	-1.62	-4.55	35.10
2420	-2.03	-4.79	33.16
2430	-1.40	-4.28	37.30
2440	-0.69	-3.76	42.08
2450	-0.62	-3.65	43.16
2460	-1.14	-3.95	40.23
2470	-1.87	-4.45	35.93
2480	-1.84	-4.56	34.99
2490	-1.74	-4.46	35.85
2500	-2.45	-5.09	31.01



Passive Test For WiFi			
Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
2400	-0.51	-4.33	36.94
2410	-0.19	-3.99	39.90
2420	0.04	-3.76	42.05
2430	0.21	-3.57	43.93
2440	0.33	-3.44	45.26
2450	0.40	-3.43	45.38
2460	0.39	-3.46	45.09
2470	0.31	-3.61	43.59
2480	0.17	-3.84	41.28
2490	-0.03	-4.11	38.79
2500	-0.41	-4.53	35.21

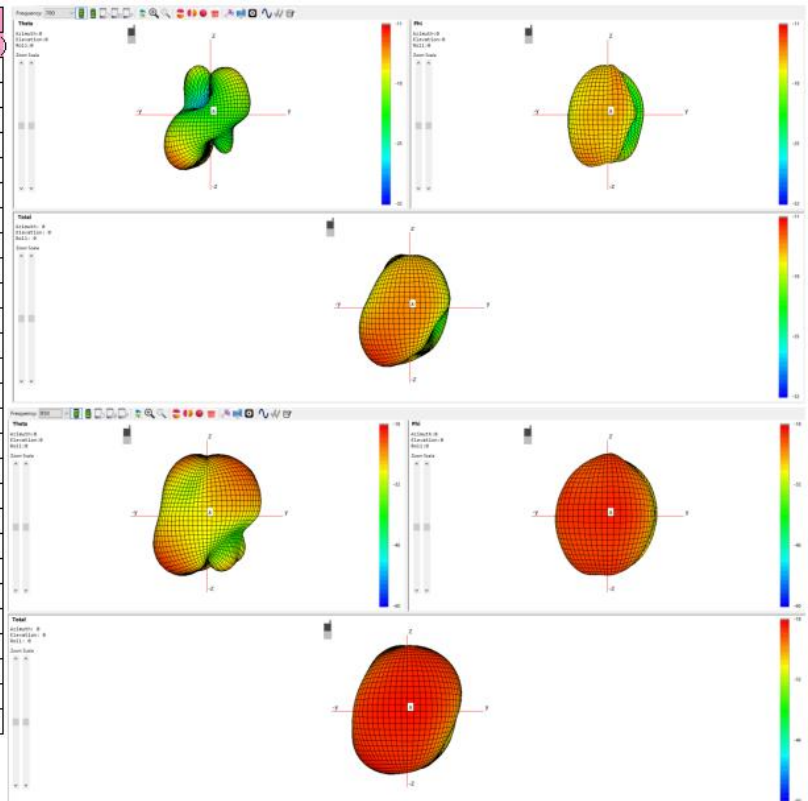


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Passive Test For 主天线低频			
Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
700	-11.96	-16.14	2.43
710	-10.64	-14.60	3.47
720	-8.88	-12.99	5.02
730	-7.81	-11.94	6.40
740	-6.93	-11.09	7.78
750	-5.89	-10.13	9.70
760	-5.61	-9.85	10.35
770	-5.90	-10.01	9.98
780	-6.86	-10.92	8.09
790	-7.97	-11.97	6.35
800	-9.00	-13.08	4.92
810	-9.69	-13.75	4.22
820	-10.82	-14.88	3.25
830	-11.97	-16.12	2.45
840	-12.88	-17.00	2.00
850	-13.27	-17.53	1.77
860	-14.11	-18.47	1.42
870	-14.69	-18.73	1.34
880	-15.30	-19.20	1.20
890	-16.04	-19.91	1.02
900	-16.69	-20.45	0.90
910	-16.84	-20.63	0.86
920	-17.57	-21.17	0.76
930	-17.89	-21.31	0.74
940	-18.03	-21.35	0.73
950	-18.68	-21.71	0.67
960	-19.16	-22.11	0.61



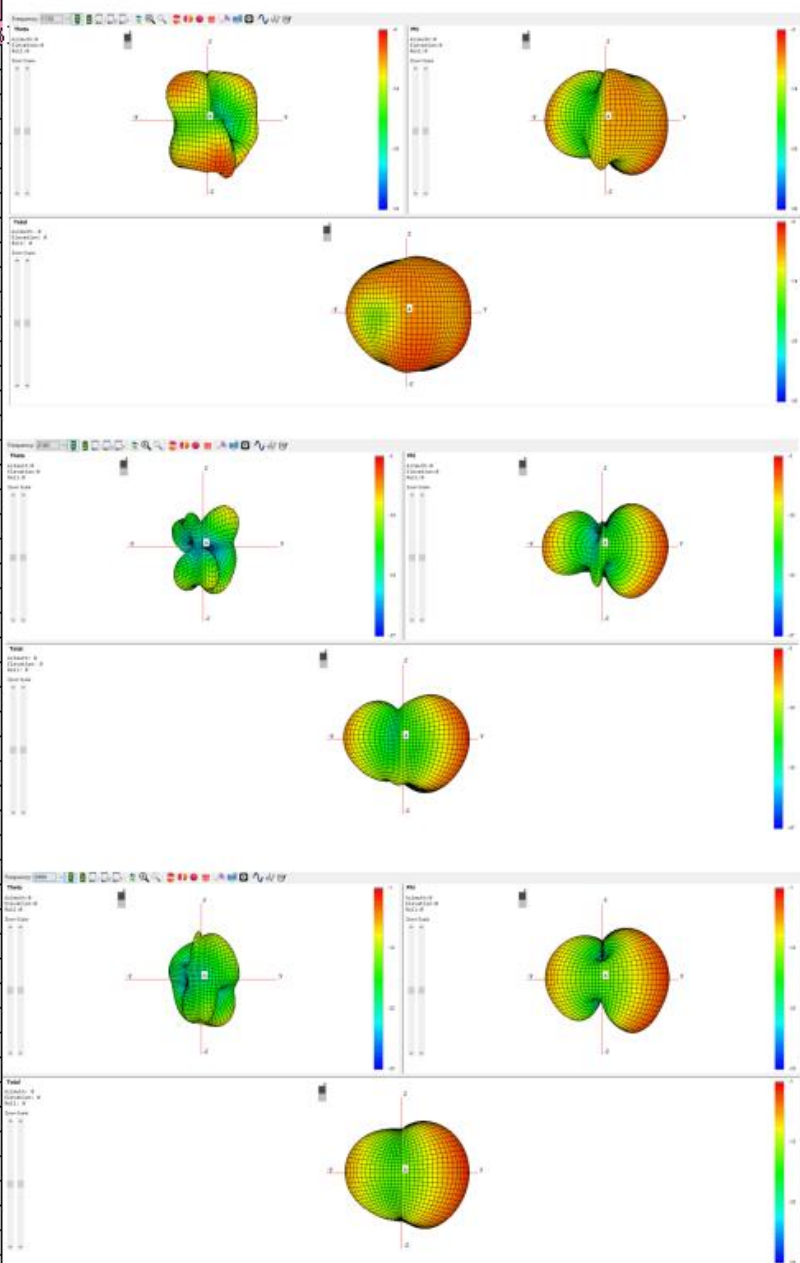
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Passive Test For 主天线高频			
Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
1700	-4.22	-8.06	15.64
1720	-4.34	-8.15	15.31
1740	-4.33	-8.07	15.61
1760	-4.30	-7.97	15.94
1780	-4.47	-8.08	15.55
1800	-4.42	-8.14	15.36
1820	-4.22	-8.02	15.78
1840	-4.39	-8.11	15.46
1860	-4.57	-8.12	15.42
1880	-4.45	-8.34	14.66
1900	-4.62	-8.39	14.49
1920	-4.53	-8.35	14.61
1940	-3.87	-7.96	16.00
1960	-3.57	-7.92	16.16
1980	-3.30	-7.57	17.50
2000	-3.23	-7.57	17.49
2020	-3.30	-7.81	16.56
2040	-3.14	-7.66	17.12
2060	-2.92	-7.65	17.18
2080	-3.36	-8.00	15.85
2100	-3.37	-8.20	15.14
2120	-3.20	-8.34	14.66
2140	-2.92	-8.46	14.26
2160	-2.82	-8.44	14.34
2180	-2.66	-8.37	14.55
2200	-2.87	-8.58	13.86
2220	-2.46	-8.43	14.35
2240	-2.21	-8.28	14.86
2260	-1.90	-7.94	16.06
2280	-1.83	-7.73	16.87
2300	-1.67	-7.47	17.90
2320	-1.25	-7.20	19.06
2340	-0.71	-6.51	22.33
2360	-0.57	-6.05	24.81
2380	-1.42	-6.37	23.08
2400	-2.52	-6.95	20.18
2420	-3.88	-8.21	15.11
2440	-4.78	-9.49	11.26
2460	-5.57	-10.23	9.49
2480	-4.04	-9.92	10.19
2500	-3.16	-9.35	11.61
2520	-2.42	-8.90	12.87
2540	-2.36	-8.52	14.08
2560	-2.57	-8.56	13.93
2580	-2.24	-8.48	14.19
2600	-1.90	-8.19	15.17
2620	-1.87	-7.97	15.96
2640	-1.96	-8.14	15.36
2660	-1.93	-8.12	15.42
2680	-1.75	-8.07	15.61

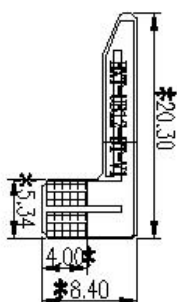


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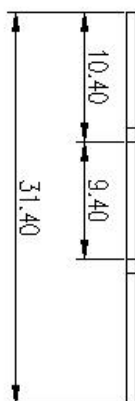
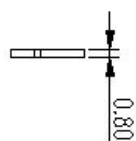
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1. 初磨, 各組磨盤分別用粗細砂紙打磨, 磨盤尺寸 $10.0 \pm 0.02 \text{ mm}$ (不含磨盤柄), 2 尺寸及公差, 新“磨”的磨盤尺寸, 磨盤柄所有尺寸公差不得超過 ± 0.05 , 磨盤柄外表面尺寸公差不得超過 ± 0.1 , 未注尺寸以圖形為準;
2. 3 號磨, 磨盤 $\text{IN} < 1.5 - 5 \text{ mm} > + 0.1 \text{ mm}$, $\text{OUT} < 0.25 - 0.075 \text{ mm} >$;
3. 可溶性測試: 造水機等磨盤/磨皮機磨盤測試/磨盤性能測試/恒溫恒濕試驗/冷熱沖打試驗
4. 所用物料滿足環保要求

对于“设备”以

1. 表面油墨漏铜, 划伤, 凹凸点;
2. 线路无开路, 短路等不良.



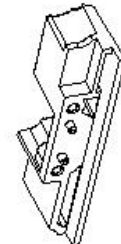
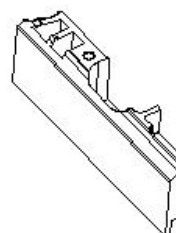
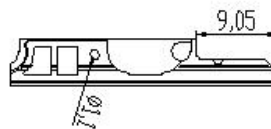
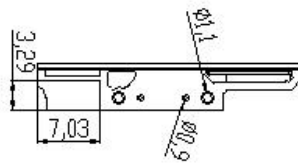
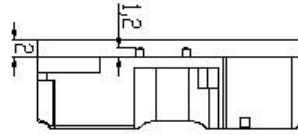
深圳市恒祥通网络技术有限公司

 深圳市宝安区西乡阳光工业区新维米工业园4楼4C
 Tel: (0755) 27657751 Fax: (0755) 27595900 Postal Code: 518126

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- 技术要求
1. 表面无批锋，缩水，凹凸点；
 2. 具体尺寸参照3D.

 深圳市恒祥通天线技术有限公司 深圳市宝安区西乡街道阳光工业区新德兴工业园4栋3楼C Tel: (0755)27657751 Fax: (0755)27599500 Postal Code: 518126		产品名称	支架图	客户	数量	01	检验	2017.03-14
		PRODUCT NAME		材料	ABS(黑色)	01	检验	
		ITEM NO.	A53-001	material			CHECKED BY	
				QTY.			APPROVED BY	

Third Angle	0.02	0.03	0.04
0~10	±0.05	±0.06	±0.08
10~18	±0.06	±0.07	±0.09
18~30	±0.08	±0.09	±0.10
30~40	±0.09	±0.10	±0.11
40~	±0.10	±0.11	±0.12

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4. Environmental Characteristic

Test Item	Test description
1. Low Temperature	Temp.: -20 °C Time: 24 hours
2. High Temperature	Temp.: 80°C Time: 24 hours
3. Salt Fog	5±0.1% Nad salt fog PH Value: 6.5-7.2 Temp: 35±1°C Time:24 hours