7. Antenna Approval

1) A100(Main) INTENNA

Revision Sheet

MODEL	A100

NO	Dated	Department / Person in charge	Contents of Revision (Page / Contents)	Valid Dated

(REMARK)

SB TELCOM CO., LTD

Product Specification

	Mechanical Engineer	RF Engineer	Check by	Approve by
				
	2008-10-8		2008-10-8	2008-10-8

PART NAME	INTENNA(Main)
MODEL	A100
CODE	-

Attached Documents

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4	Electrical measured Data	5
5	Drawing	1
6	RoHS	3
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9		
10		
11		
	TOTAL	19

Please approve this product with specifications.

2008. 10. 8

Address : #25-49 Juan5-Dong Nam-Ku, Inchon Korea
Trade Name : SB TELCOM,. LTD.
Substitute : President Eung - Soon, Chang

SB TELCOM CO., LTD

Antenna Specifications

MODEL : A100(Main)

(INTENNA)

#25-49 Juan5-Dong, Nam-Ku, Inchon, Korea

(주) 에 스 비 텔 콤

SB TELCOM CO. ,LTD.

- Table of Contents -

1. Technical Properties

1.1 General Properties

MODEL	A100
ANTENNA TYPE	INTENNA
APPLICATIONS	US_CDMA, US_PCS, AWS

1.2 Electrical Properties

FREQUENCY RANGE	US_CDMA	824 ~ 894 MHz
	US_PCS	1850 ~ 1990 MHz
	AWS	1710 ~ 2115 MHz
IMPEDANCE(NOMINAL)		50Ω
V.S.W.R		LESS THAN 2.0 : 1
RADIATION PATTERN		OMNI-DIRECTIONAL
POLARIZATION		VERTICAL
SAR(Specific Absorption Rate)		LESS THAN 1.6

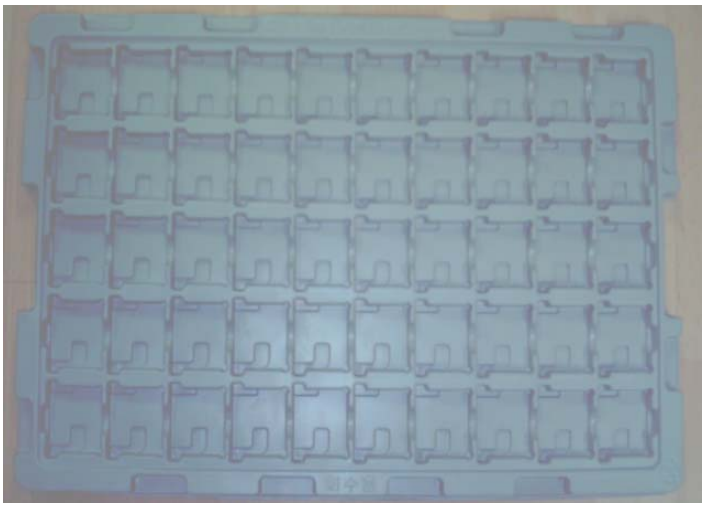
1.3 Mechanical Properties

SIZE	43.5mm × 28.4mm ×6.75mm
TEMPERATURE	-40 ℃ ~ +85℃
CONNECTOR TYPE	PIN CONTACT TYPE

1.4 Packing

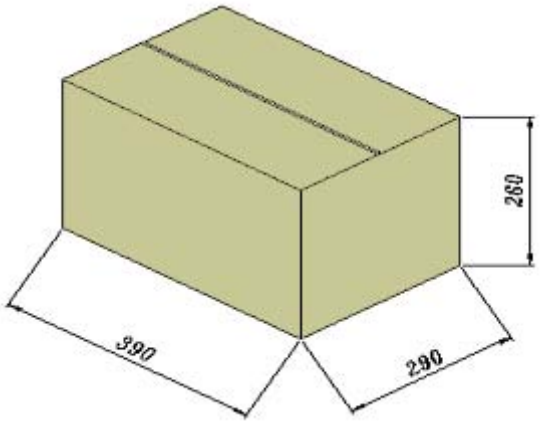
1) Packing Condition

50ea of antennas are placed on a pad (375 x 270 x 17) according to FIG. 1



(FIG. 1)

A box contains 20 PAD and 1,000 antennas be packing(20 x 50 = 1,000) according to FIG .2



(FIG. 2)

2) Remarks

A change of packing material shall be executed with mutual approval between buyer and supplier.

2. Electrical Properties

2.1 Frequency Range

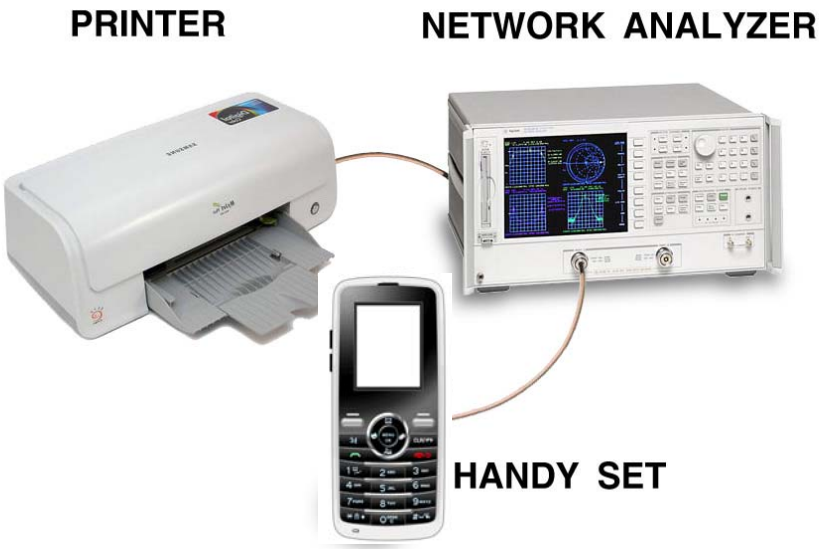
defined in section 1.2

2.2 Impedance

1) Nominal Value : 50 Ω

2) Method

To measure the appropriate impedance with the frequency desired after connecting a handset with the antenna installed to the reflection point from the network analyzer to FIG 3.



(FIG.3)

3. Mechanical Properties

3.1 Dimensions

The device dimensions shall conform to "DRAWINGS"

3.2 Drop Test

The antenna is attached to the handset or an equivalent test fixture. The handset is dropped with the antenna downward from the height of 1.5m onto a steel panel with thickness of 10mm prepared on the ground.

(FIG.4)

4. Environmental Resistance Properties

4.1 Examination Environmental Condition

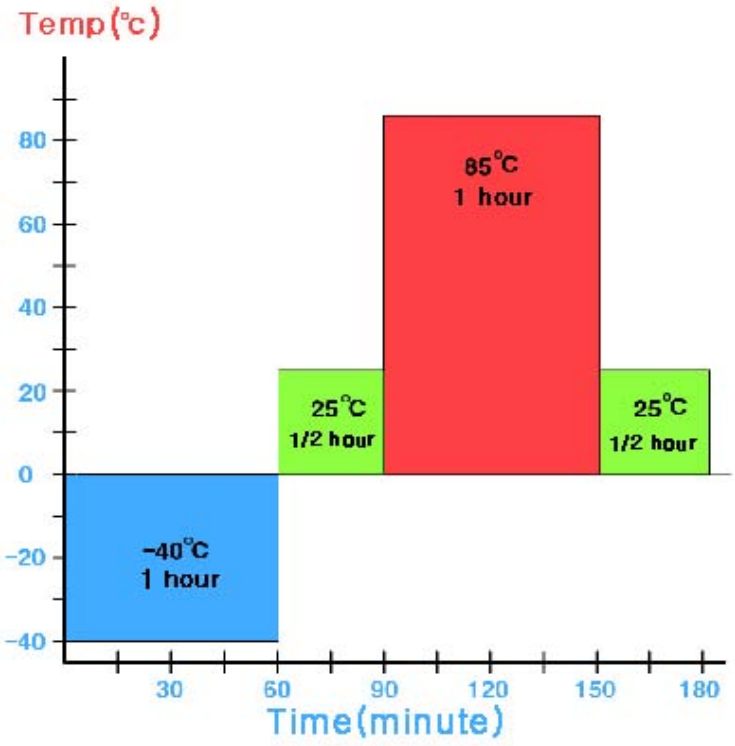
The antenna is placed at temperature 20C ± 5℃ and humidity 25%~80%(Under 55% RH) for executing all testes (Electrical, Mechanical and Environmental Tests).

4.2 Humidity

Temperature : 85C ± 2℃
Humidity : 85%RH ± 2
The antenna is placed in a climatic chamber for 120 hours.
It not must be above in appearance and function.

4.3 Temperature Cycling

The antenna is placed in a climate chamber. The temperature is cycled as follows: The temperature is kept constant at -40C for 1 hour, kept constant at +25C for 1/2 hour, kept constant at +85C for 1 hour, kept at +25C for 1/2 hour. This procedure is repeated 5 times. The procedures are executed based on KSC-0222.



(FIG.5)

4.4 Acid proof examination

Acidity : PH-4.6

Time : 48 Hr Leaving alone

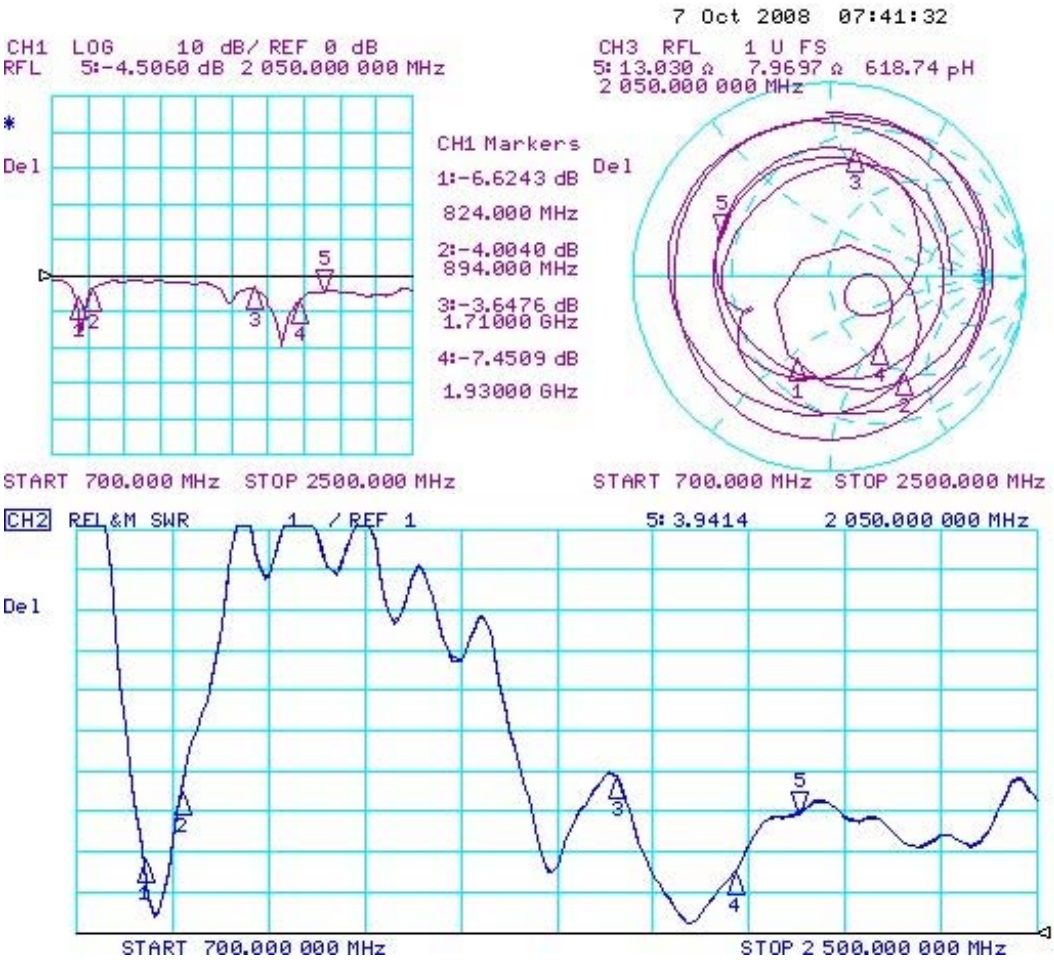
It not must be above in appearance and function.

4.5 Salt spray test

Temperature : 35℃ ±2℃

Salinity : with 5% 72Hr it examines

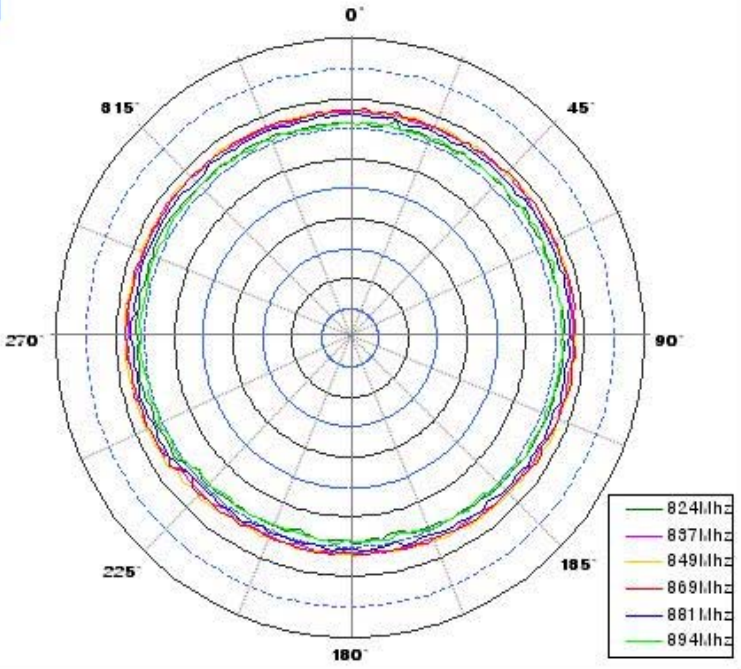
It not must be above in appearance and function.


7 Oct 2008 07:41:32
CH1 LOG 10 dB/ REF 0 dB
RFL 5:-4.5060 dB 2 050.000 000 MHz
CH1 Markers
1:-6.6243 dB
824.000 MHz
2:-4.0040 dB
894.000 MHz
3:-3.6476 dB
1.71000 GHz
4:-7.4509 dB
1.93000 GHz
START 700.000 MHz STOP 2500.000 MHz
CH3 RFL 1 U FS
5: 13.030 Ω 7.9697 Ω 618.74 pH
2 050.000 000 MHz
START 700.000 MHz STOP 2500.000 MHz
CH2 REL&M SWR 1 / REF 1
5: 3.9414 2 050.000 000 MHz
CH2 Markers
1: 2.7895
824.000 MHz
2: 4.4479
894.000 MHz
3: 4.8328
1.71000 GHz
4: 2.4752
1.93000 GHz
START 700.000 000 MHz
STOP 2 500.000 000 MHz

Gain & Radiation Pattern

Model Name:	A100
Test Band :	CDMA
Test Date :	
Tester Name:	
User Name :	
Memo :	

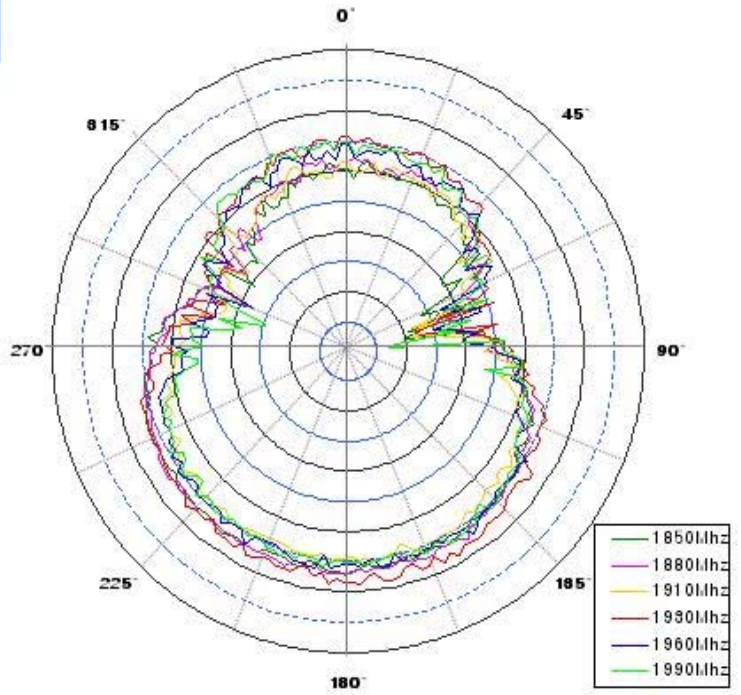
Frequency	Max.	Min.	Avg.	Beam Peak
824Mhz	-3.05	-6.72	-4.38	12'
837Mhz	-1.52	-4.63	-2.61	280'
849Mhz	-1.35	-4.24	-2.26	78'
869Mhz	-1.32	-4.33	-2.41	76'
881Mhz	-2.13	-5.29	-3.22	74'
894Mhz	-3.35	-6.38	-4.57	60'



Gain & Radiation Pattern

Model Name:	A100
Test Band :	USPCS
Test Date :	
Tester Name:	
User Name :	
Memo :	

Frequency	Max.	Min.	Avg.	Beam Peak
1850Mhz	-2.94	-29.77	-6.99	182'
1880Mhz	-2.93	-24.57	-6.65	198'
1910Mhz	-4.84	-28.65	-8.67	172'
1930Mhz	-1.28	-28.10	-5.24	186'
1960Mhz	-3.19	-25.20	-7.35	146'
1990Mhz	-3.79	-33.22	-7.34	152'

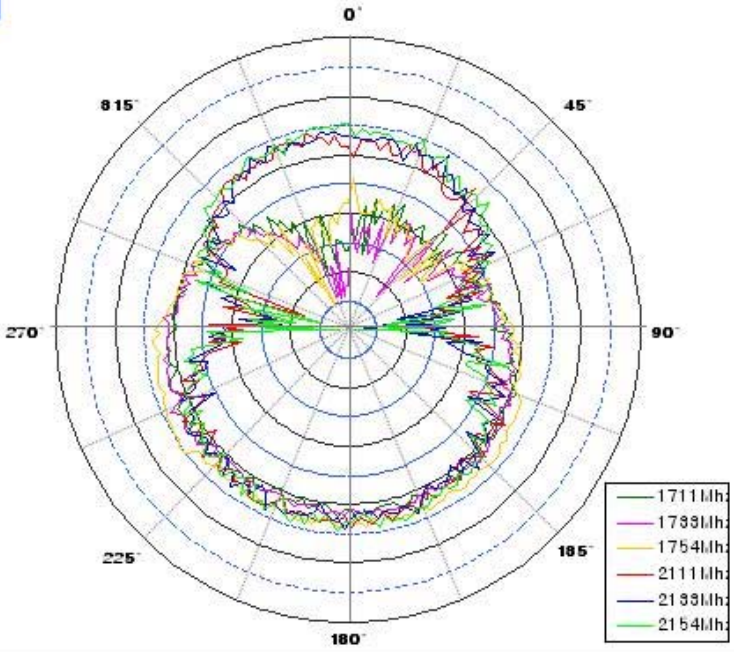


Antenna Characteristic Data	MODEL	A100		
H-Plan	REV	00	PAGE	3/5

Gain & Radiation Pattern

Model Name:	A100
Test Band :	AWS
Test Date :	
Tester Name:	
User Name :	
Memo :	

Frequency	Max.	Min.	Avg.	Beam Peak
1711Mhz	-7.04	-30.06	-11.30	178'
1733Mhz	-6.61	-34.58	-11.20	246'
1754Mhz	-4.89	-35.51	-9.44	236'
2111Mhz	-5.76	-36.22	-9.77	350'
2133Mhz	-5.61	-37.24	-9.72	338'
2154Mhz	-4.72	-39.17	-8.95	352'



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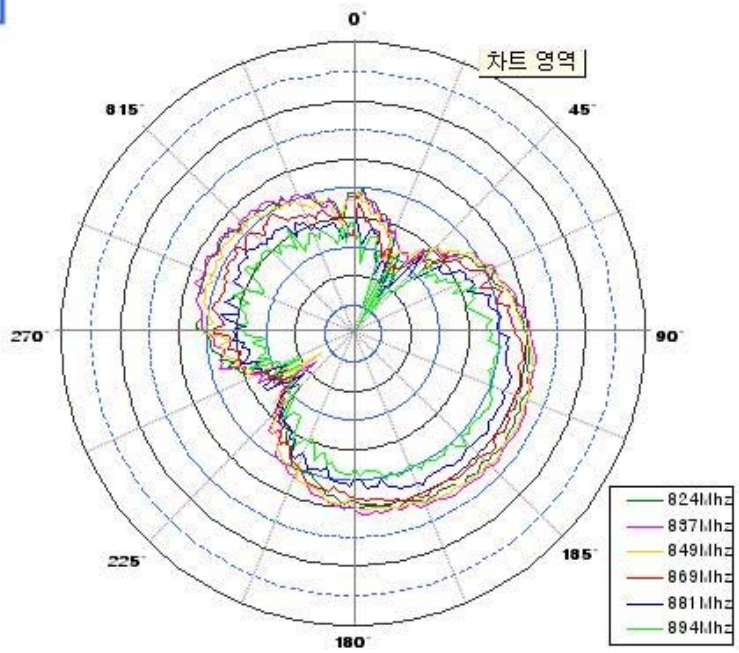
Gain & Radiation Pattern

Model Name:	A100
Test Band :	CDMA
Test Date :	
Tester Name:	
User Name :	
Memo :	

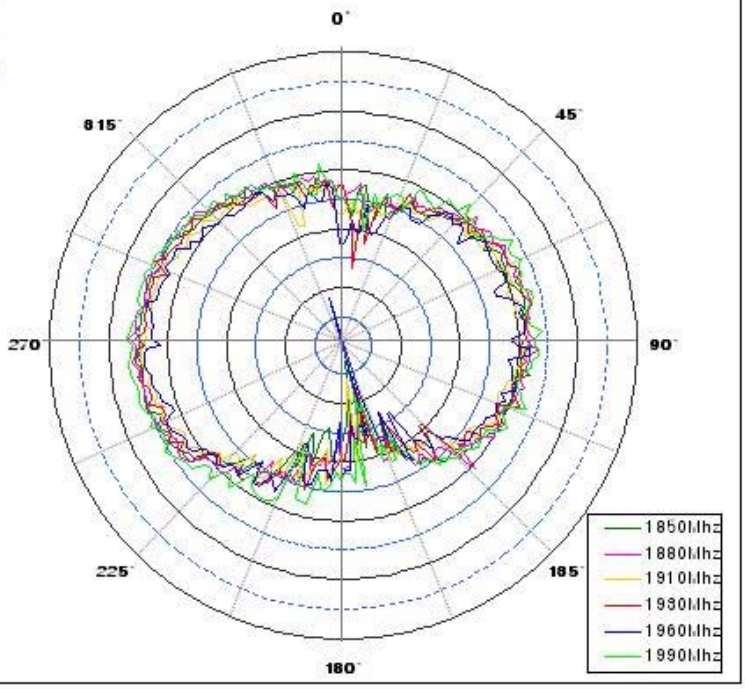
Frequency	Max.	Min.	Avg.	Beam Peak
824Mhz	-8.00	-28.13	-12.60	126'
837Mhz	-6.96	-32.14	-11.80	132'
849Mhz	-7.44	-33.53	-12.40	138'
869Mhz	-8.75	-30.05	-14.00	130'
881Mhz	-11.26	-32.47	-16.30	128'
894Mhz	-12.98	-39.71	-18.40	136'



Gain & Radiation Pattern

Model Name:	A100
Test Band :	USPCS
Test Date :	
Tester Name:	
User Name :	
Memo :	

Frequency	Max.	Min.	Avg.	Beam Peak
1850Mhz	-4.81	-37.19	-9.63	276'
1880Mhz	-3.61	-29.58	-9.03	274'
1910Mhz	-5.53	-34.41	-10.70	266'
1930Mhz	-4.71	-33.18	-9.83	266'
1960Mhz	-5.80	-48.31	-11.00	284'
1990Mhz	-3.14	-31.42	-8.34	274'

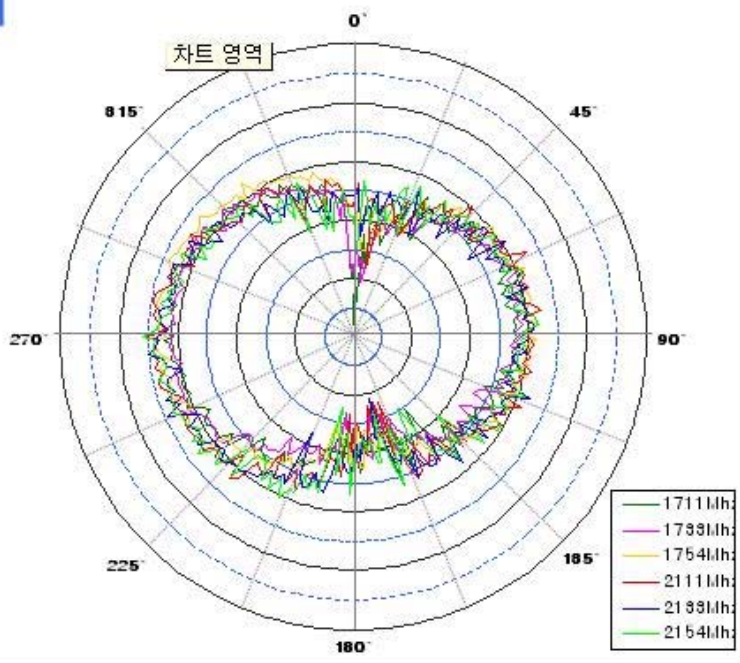


Antenna Characteristic Data	MODEL	A100		
V-Plan	REV	00	PAGE	5/5

Gain & Radiation Pattern

Model Name:	A100
Test Band :	AWS
Test Date :	
Tester Name:	
User Name :	
Memo :	

Frequency	Max.	Min.	Avg.	Beam Peak
1711Mhz	-7.75	-37.75	-12.80	290'
1733Mhz	-7.52	-30.79	-12.70	274'
1754Mhz	-6.06	-26.48	-10.80	282'
2111Mhz	-4.65	-28.30	-10.70	272'
2133Mhz	-5.20	-29.16	-11.40	266'
2154Mhz	-4.06	-27.91	-11.20	272'



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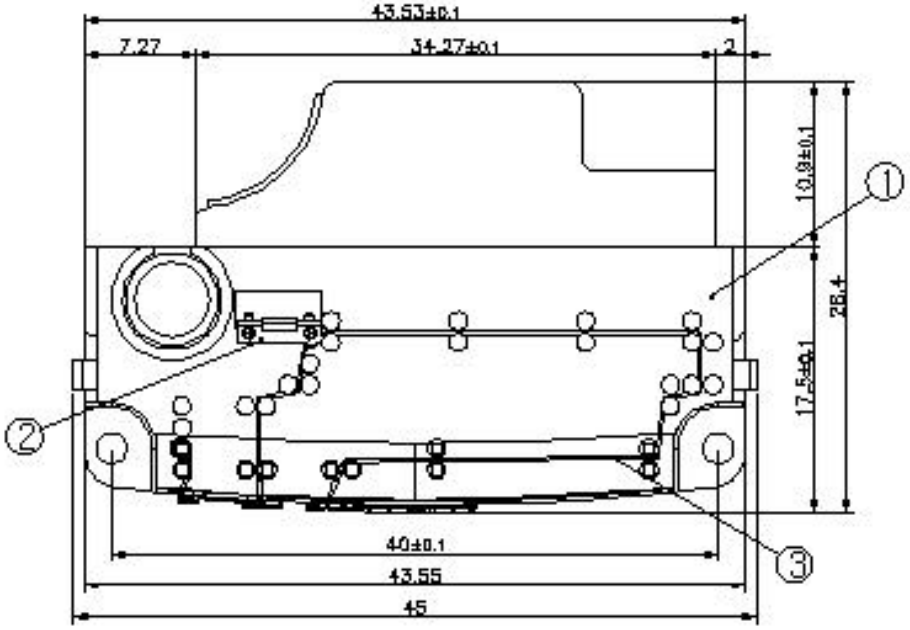
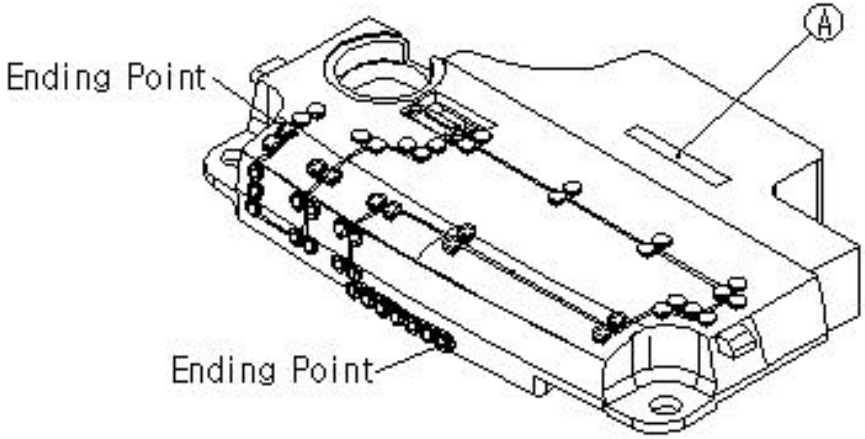
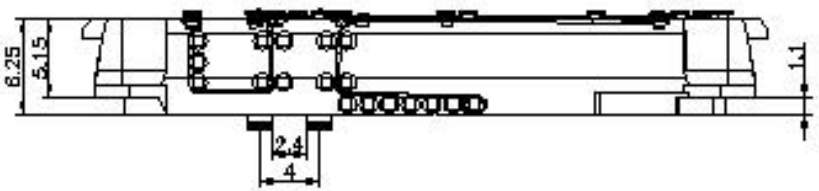
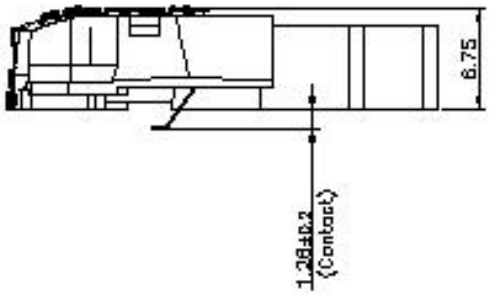
개정ID	NR.	DATE	REVISION	SIGN

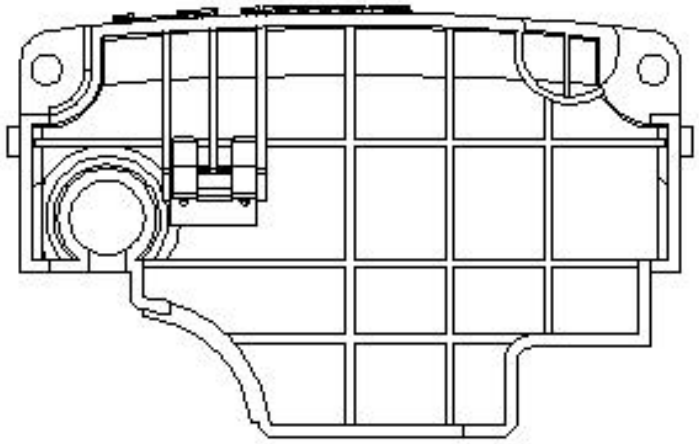




"A" text marking
A100/production year
ex) A100/081006







Note
1. 도면에 지시하지 않은 치수의 공차는 +/-0.05로 한다.
2. 동박두께 0.5mm이상으로 한다.
3. CONTACT PIN 도금사양.

	ID
SPEC	무전해 1.0 ~ 3.0㎛

NO.	PARTS ID.	NAME	MATERIAL	Q'TY.	REMARKS
3	001-0001	RADIATOR	COIL(±0.2mm)	1	-
2	PIN-0001	CONTACT PIN	SUS301 1/2H(0.15t)	1	Ni PLATED
1	INS-0001	INTERNAL BASE	POMHF-1038 NT	1	-

DRAWN BY	CHECK BY	APPROVE BY	SCALE	UNIT
			3/1	mm

BUYER NAME	MODEL ID.	MODEL NAME
ACTScom	A100 (Main Intenna)	A100

A4 (420 x 297)

SB TELCOM,CO.,LTD

RoHS	MODEL	A100		
BASE / HF-1023IM(K2261)	REV	00	PAGE	1/3

ECO-022466

SAMSUNG 제일모직 starex

유해물질 성적서

업체명 슈푸테고
Grade/Color HF-1023IM/K2261
사용용도 컴파운PC RESIN
분석기관 제일모직 종합연구팀

시 료 명

구분	시료명	비고
수지	HF-1023IM	
칼라	K2261	B707.DK03

시 험 결 과

시험항목		전처리방법	시험장비	단위(ppm)	M.D.L	함유량
중금속	Cd	EN 1122	ICP-AES	mg/kg	0.5	N.D
	Pb	US EPA 3050B	ICP-AES	mg/kg	5	N.D
	Hg	US EPA7473	Hg Analyzer	mg/kg	0.03	N.D
	Cr^{6+}	USEPA 3060A	UV/VIS	mg/kg	1	N.D
난연제	PBB	Cheil Method	GC/MS	mg/kg	5	N.D
	PBDE	Cheil Method	GC/MS	mg/kg	5	N.D

* 이 수치는 Eu 규정에 위배되지 않음 * M.D.L : Method Detection Limit * ND : Not Detected

시험담당자 : 최수범 Choi Sumun 승인자 : 한연종 Y. J. Han

발행일자 : 2007년 12월 26일

승인일자 : 2007년 07월 01일

품 질 경 영 팀

SB TELCOM CO., LTD

SGS

Test Report No. F690501/LF-CTSAYU07-09577 Date: April 23, 2007 Page 1 of 3

To: CNI CABLE CO., LTD
312-16
Deuksan-dong
Asan-city
CHUNGNAM
Korea

The following merchandise was submitted and identified by the client as :

Product name	:UEW(Polyurethane Enamelled Wires)
SGS File No.	: AYU07-09577
Received Date	: April 16, 2007
Test Performing Date	: April 17, 2007
Test Performed	: SGS Testing Korea tested the sample(s) selected by applicant with following results
Test Results	: For further details, please refer to following page(s)

SGS Testing Korea Co., Ltd. / Ulsan Laboratory

Sharpless Park /Testing Person

Thomas Hwang / Ulsan Lab. Mgr

SGS Testing Korea Co., Ltd. | 1002-2, Hwaam-ri, Onsan-eub,Ulju-gun,Ulsan,Korea 689-890 | t +82 (0)52 239 6909~10 f +82 (0)52 239 6913 www.sgsgb.co.kr www.kr.sgs.com/greenlaw

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Test Report No. F690501/LF-CTSAYU07-09577 Date: April 23, 2007 Page 2 of 3

Sample No. : AYU07-09577.001
Sample Description : UEW(Polyurethane Enamelled Wires)
Item No./Part No. : N/A

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	1	N.D.
Lead (Pb)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	5	6.30
Mercury (Hg)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	2	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	US EPA 3060A(1996), US EPA 7196A(1992), UV	1	N.D.

Flame Retardants: PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Monobromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.

NOTE: (1) N.D. = Not detected.(<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit
(4) - = No regulation
(5) ** = Qualitative analysis (No Unit)
(6) Negative = Undetectable / Positive = Detectable

SGS Testing Korea Co., Ltd. | 1002-2, Hwaam-ri, Onsan-eub,Ulju-gun,Ulsan,Korea 689-890 | t +82 (0)52 239 6909~10 f +82 (0)52 239 6913 www.sgsgb.co.kr www.kr.sgs.com/greenlaw

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Test Report No. F690501/LF-CTSAYU07-09577 Date: April 23, 2007 Page 3 of 3

Picture of Sample as Received:

Sample Color : Copper

*** End ***

NOTE: (1) N.D. = No detected.(<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit
(4) - = No regulation
(5) ** = Qualitative analysis (No Unit)
(6) Negative = Undetectable / Positive = Detectable

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LAB 100

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SGS

Test Report No. PS05001/LF-CTSAYU07-11049 Date May 14, 2007 Page 2 of 4

Sample No. : AYU07-11049.001
Sample Description : STS301
Style/Item No. : N/A
Comments : Material is stainless

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	1	N.D
Lead (Pb)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	5	N.D
Mercury (Hg)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	2	N.D
Hexavalent Chromium (Cr VI)	mg/kg	US EPA 3060A(1996), US EPA 7196A(1992), UV	1	N.D

Phase Retardants/Brominated

Test Items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D
Tribromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D
Tetrabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D
Pentabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Monobromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D

NOTE: (1) N.D. = Not detected.(<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit
(4) - = No regulation
(5) ** = Qualitative analysis (No Unit)
(6) Negative = Undetectable / Positive = Detectable

SGS

Test Report No. DRAFT REPORT Date: January 11, 2007 Page 1 of 2

To: PYEONG HWA METAL CO.,LTD.
643-7
Gupo-dong
Gumi-city
GYEONGBUK
Korea

The following merchandise was submitted and identified by the client as :

Product name : CAN(Electroness Ni)
SGS File No. : ULK07-00008
Received Date : January 04, 2007
Test Performing Date : January 05, 2007
Test Performed : SGS Testing Korea tested the sample(s) selected by applicant with following results
Test Results : For further details, please refer to following page(s)
Buyer(s) : TI KOREA

SGS Testing Korea Co. Ltd.

Sharpless Park /Testing Person

Thomas Hwang / Lab. Manager

SGS

Test Report No. DRAFT REPORT Date: January 11, 2007 Page 2 of 2

Sample No. : ULK07-00008.001
Sample Description : CAN(Electroness Ni)
Item No./Part No. : N/A

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	US EPA 3052, ICP-AES	1	N.D.
Lead (Pb)	mg/kg	US EPA 3052, ICP-AES	5	N.D.
Mercury (Hg)	mg/kg	US EPA 3052, ICP-AES	2	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	US EPA 3060A, UV-vis	1	N.D.

Picture of Sample as Received:

*** End ***

NOTE: (1) N.D. = Not detected.(<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit
(4) - = No regulation
(5) ** = Qualitative analysis (No Unit)
(6) Negative = Undetectable / Positive = Detectable

2) A100(GPS) INTENNA

Revision Sheet

MODEL	A100

NO	Dated	Department / Person in charge	Contents of Revision (Page / Contents)	Valid Dated

(REMARK)

SB TELCOM CO., LTD

Product Specification

	Mechanical Engineer	RF Engineer	Check by	Approve by
				
	2008-10-8		2008-10-8	2008-10-8

PART NAME	INTENNA(GPS)
MODEL	A100
CODE	-

Attached Documents

NO.	Table of Contents	REMARK (PAGE)
1	Revision sheet	1
2	Product Specification	1
3	Specifications	8
4	Electrical measured Data	3
5	Drawing	1
6	RoHS	3
7		
8		
9		
10		
11		
	TOTAL	17

Please approve this product with specifications.

2008. 10. 7

Address : #25-49 Juan5-Dong Nam-Ku, Inchon Korea
Trade Name : SB TELCOM,. LTD.
Substitute : President Eung - Soon, Chang

SB TELCOM CO., LTD

Antenna Specifications

MODEL : A100(GPS)

(INTENNA)

#25-49 Juan5-Dong, Nam-Ku, Inchon, Korea

(주) 에 스 비 텔 콤

SB TELCOM CO. ,LTD.

- Table of Contents -

1. Technical Properties

1.1 General Properties

MODEL	A100
ANTENNA TYPE	INTENNA
APPLICATIONS	GPS

1.2 Electrical Properties

FREQUENCY		GPS	1575.42 MHz
IMPEDANCE(NOMINAL)			50Ω
V.S.W.R			LESS THAN 2.0 : 1
RADIATION PATTERN			OMNI-DIRECTIONAL
POLARIZATION			VERTICAL
SAR(Specific Absorption Rate)			LESS THAN 1.6

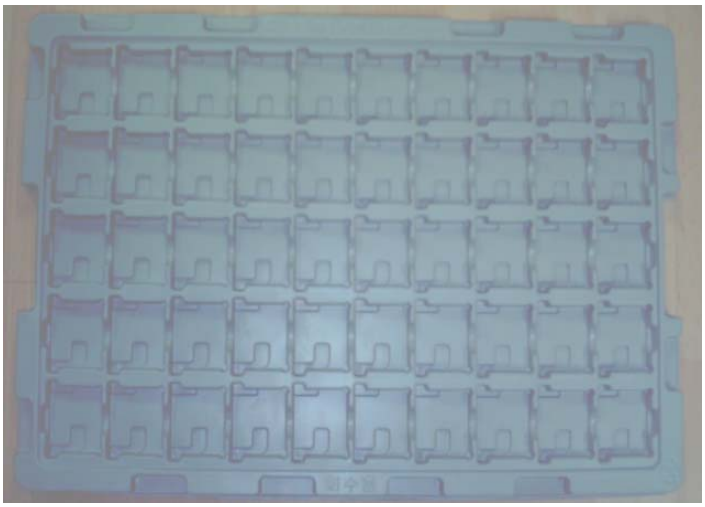
1.3 Mechanical Properties

SIZE	43.5mm × 11.9mm ×5.54mm
TEMPERATURE	-40 ℃ ~ +85℃
CONNECTOR TYPE	PIN CONTACT TYPE

1.4 Packing

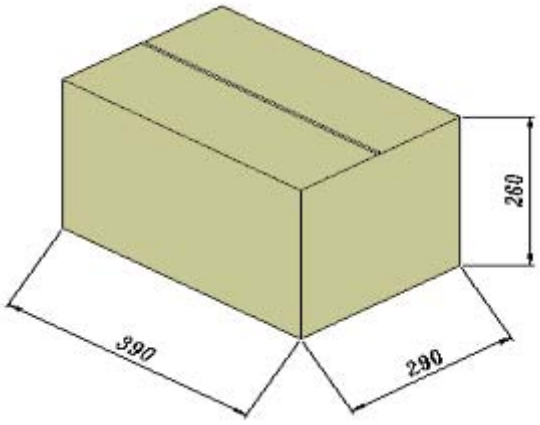
1) Packing Condition

50ea of antennas are placed on a pad (375 x 270 x 17) according to FIG. 1



(FIG. 1)

A box contains 20 PAD and 1,000 antennas be packing(20 x 50 = 1,000) according to FIG .2



(FIG. 2)

2) Remarks

A change of packing material shall be executed with mutual approval between buyer and supplier.

2. Electrical Properties

2.1 Frequency Range

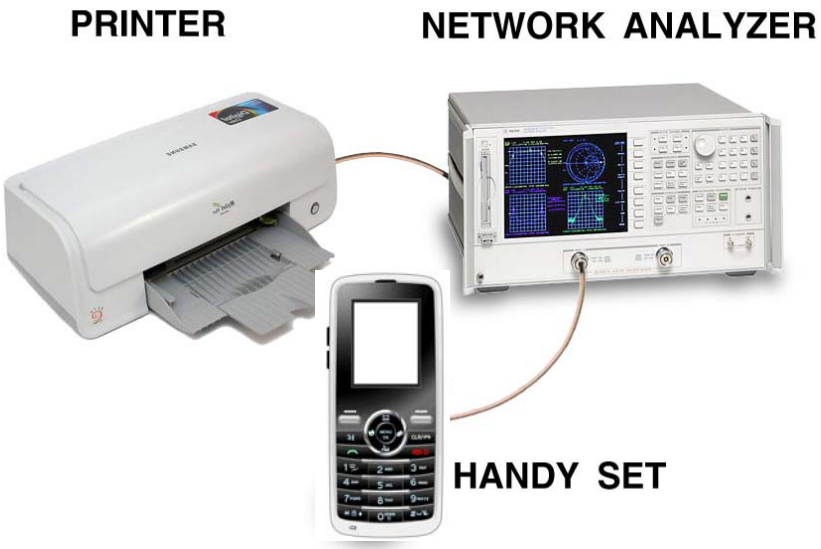
defined in section 1.2

2.2 Impedance

1) Nominal Value : 50 Ω

2) Method

To measure the appropriate impedance with the frequency desired after connecting a handset with the antenna installed to the reflection point from the network analyzer to FIG 3.



(FIG.3)

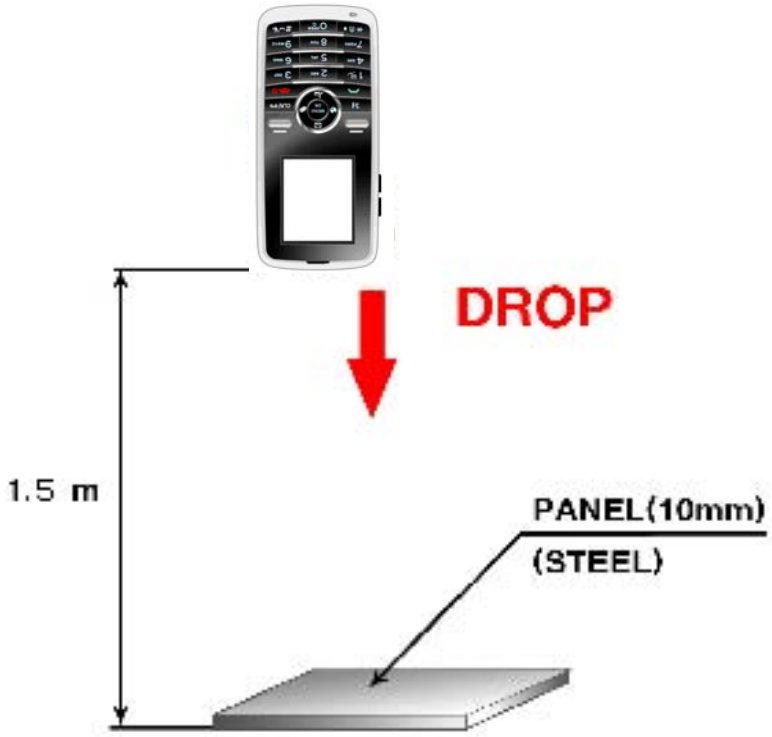
3. Mechanical Properties

3.1 Dimensions

The device dimensions shall conform to "DRAWINGS"

3.2 Drop Test

The antenna is attached to the handset or an equivalent test fixture. The handset is dropped with the antenna downward from the height of 1.5m onto a steel panel with thickness of 10mm prepared on the ground.



(FIG.4)

4. Environmental Resistance Properties

4.1 Examination Environmental Condition

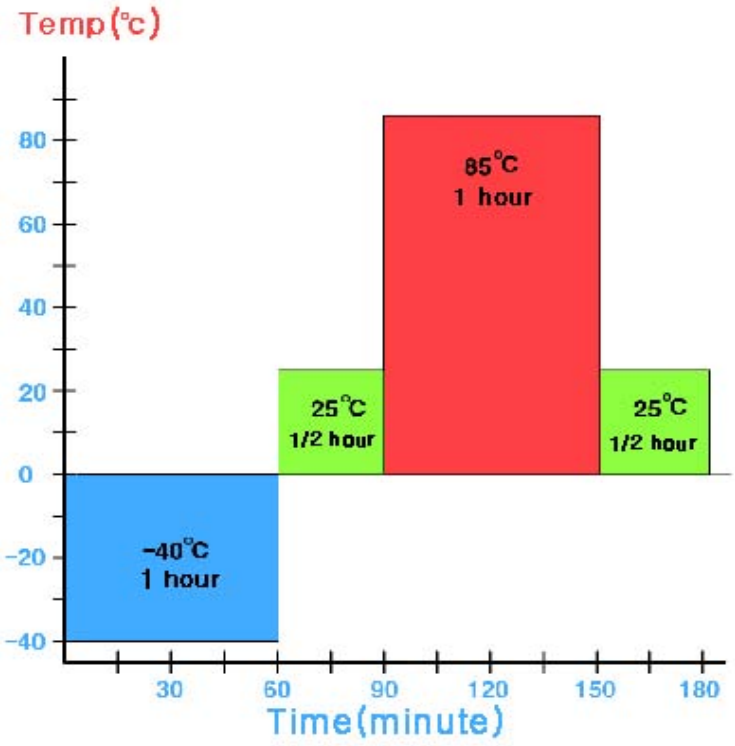
The antenna is placed at temperature 20C ± 5℃ and humidity 25%~80%(Under 55% RH) for executing all testes (Electrical, Mechanical and Environmental Tests).

4.2 Humidity

Temperature : 85C ± 2℃
Humidity : 85%RH ± 2
The antenna is placed in a climatic chamber for 120 hours.
It not must be above in appearance and function.

4.3 Temperature Cycling

The antenna is placed in a climate chamber. The temperature is cycled as follows: The temperature is kept constant at -40C for 1 hour, kept constant at +25C for 1/2 hour, kept constant at +85C for 1 hour, kept at +25C for 1/2 hour. This procedure is repeated 5 times. The procedures are executed based on KSC-0222.



(FIG.5)

4.4 Acid proof examination

Acidity : PH-4.6

Time : 48 Hr Leaving alone

It not must be above in appearance and function.

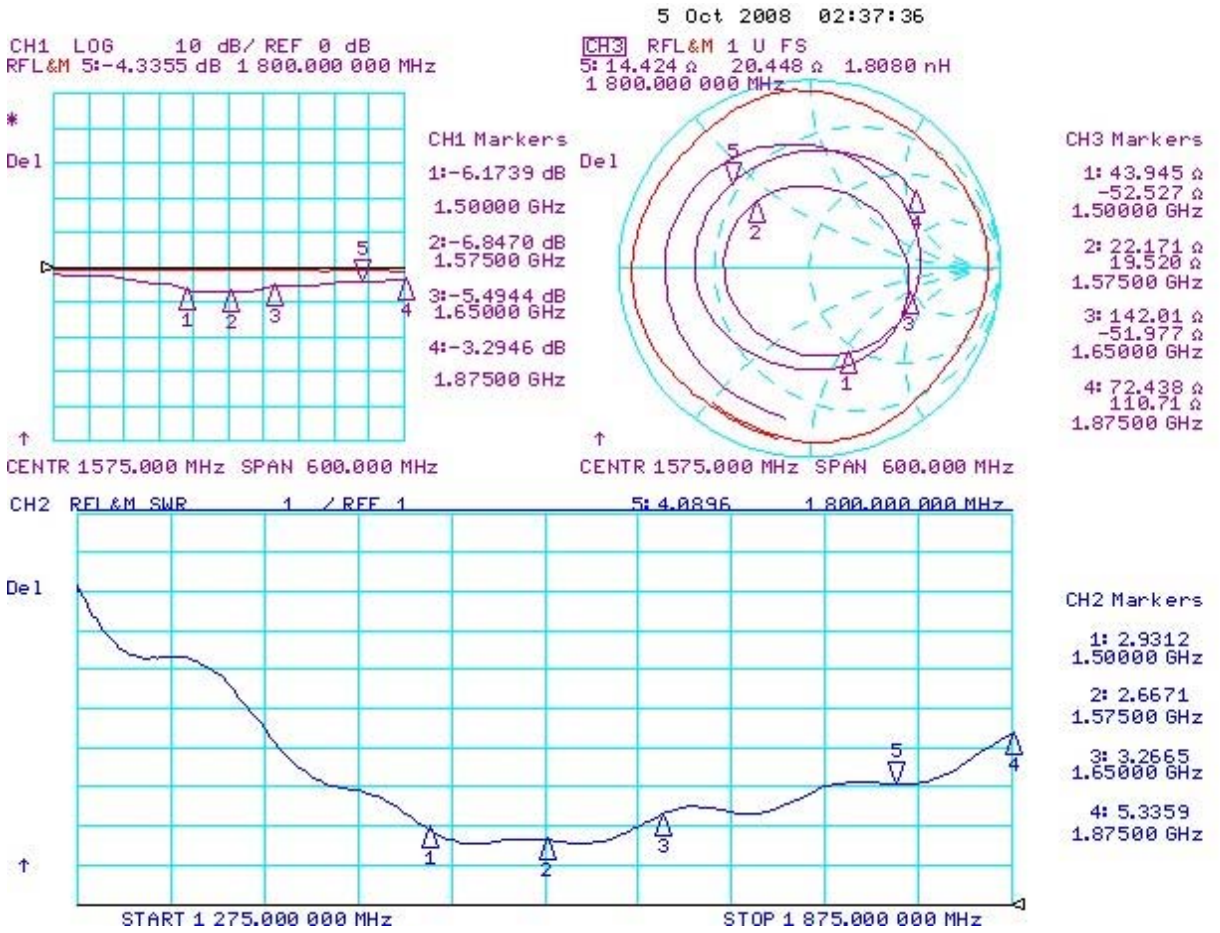
4.5 Salt spray test

Temperature : 35℃ ±2℃

Salinity : with 5% 72Hr it examines

It not must be above in appearance and function.

Antenna Characteristic Data	MODEL	A100		
Data	REV	00	PAGE	1/3

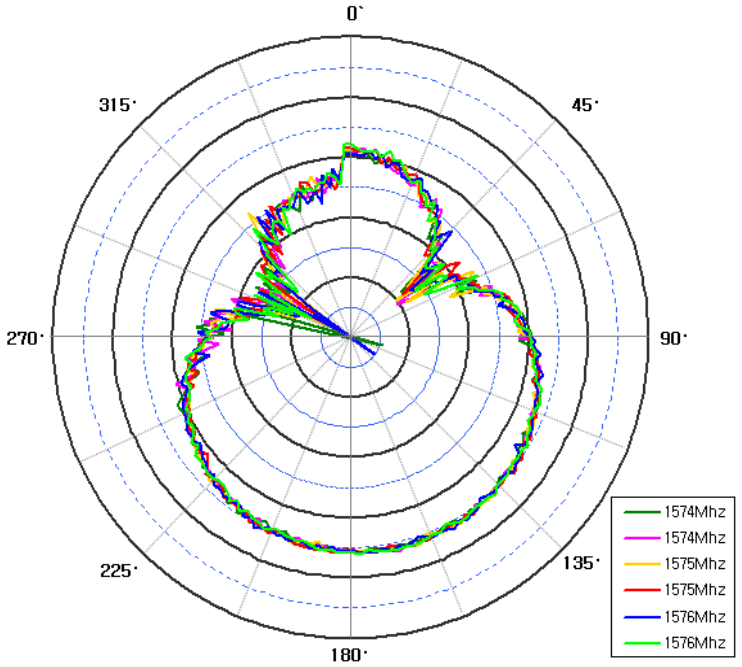


SB TELCOM CO., LTD

Gain & Radiation Pattern

Model Name:	A100
Test Band :	GPS
Test Date :	
Tester Name:	
User Name :	
Memo :	

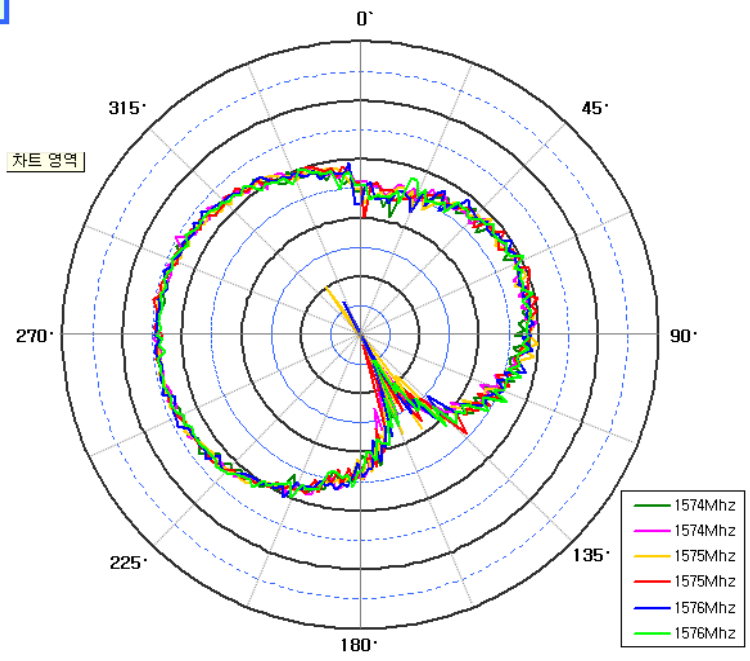
Frequency	Max.	Min.	Avg.	Beam Peak
1574Mhz	-4.01	-45.50	-8.74	160`
1574Mhz	-3.51	-31.97	-8.65	168`
1575Mhz	-3.79	-36.87	-8.58	162`
1575Mhz	-3.84	-39.32	-8.53	164`
1576Mhz	-3.78	-44.99	-8.57	170`
1576Mhz	-3.93	-32.36	-8.59	168`



Gain & Radiation Pattern

Model Name:	A100
Test Band :	GPS
Test Date :	
Tester Name:	
User Name :	
Memo :	

Frequency	Max.	Min.	Avg.	Beam Peak
1574Mhz	-5.62	-36.60	-10.30	272`
1574Mhz	-4.92	-35.47	-10.10	300`
1575Mhz	-5.44	-50.06	-10.10	272`
1575Mhz	-4.95	-38.25	-10.00	282`
1576Mhz	-5.22	-46.27	-10.00	266`
1576Mhz	-5.64	-35.00	-10.20	294`

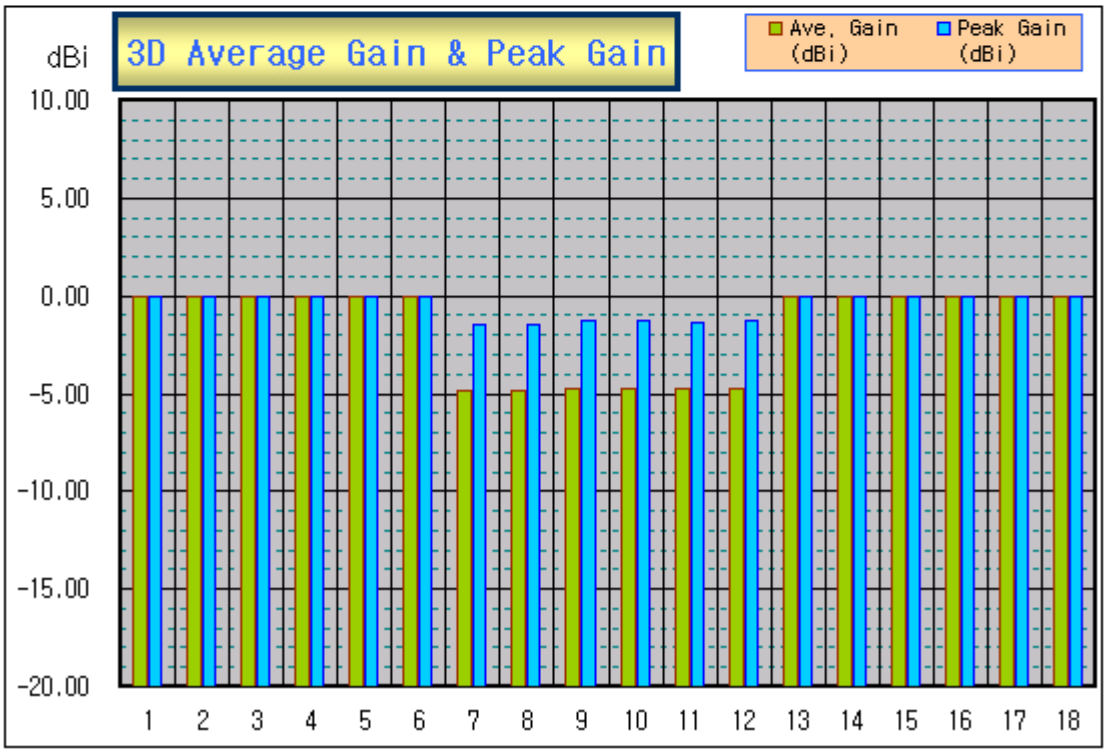


SB TELCOM CO., LTD

Airlink 3D Antenna Measurement Results

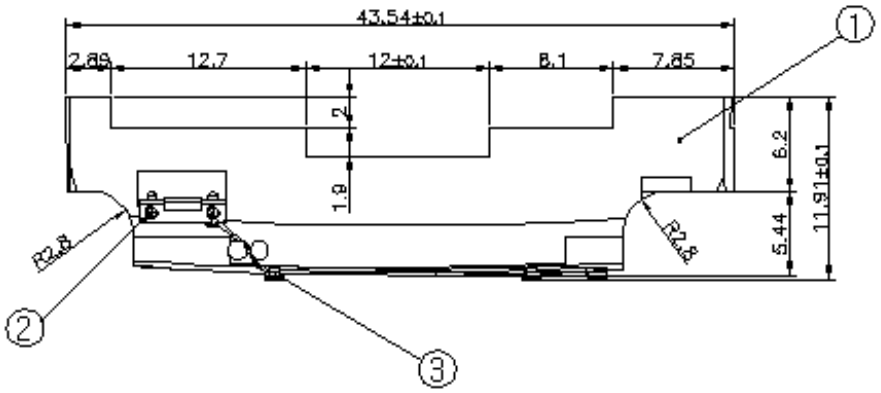
Model Name : Model Name	Memo : Sample Ver.

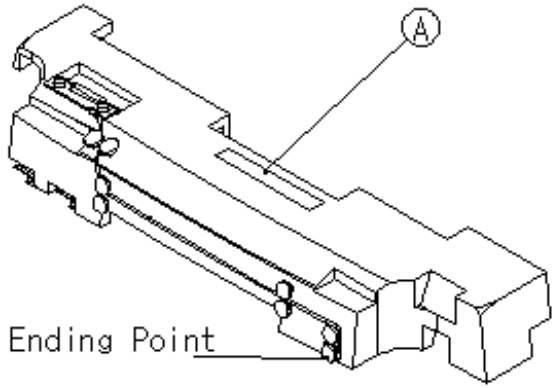
Frequency	Eff. (%)	Ave. Gain (dBi)	Peak Gain (dBi)	Directivity (dBi)
1574 MHz	33	-4.86	-1.43	3.43
1574 MHz	33	-4.88	-1.49	3.39
1575 MHz	33	-4.75	-1.28	3.47
1575 MHz	34	-4.71	-1.31	3.40
1576 MHz	33	-4.78	-1.39	3.39
1576 MHz	33	-4.75	-1.31	3.44



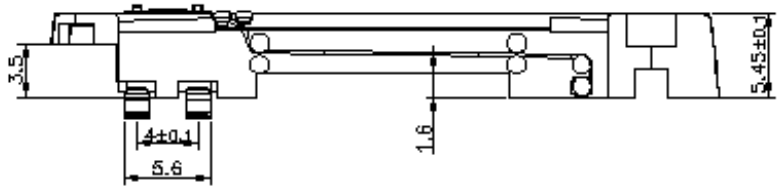
SB TELCOM CO., LTD

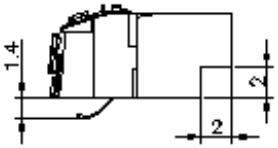
AMEND	NAME	DATE	REVISION	SIGN

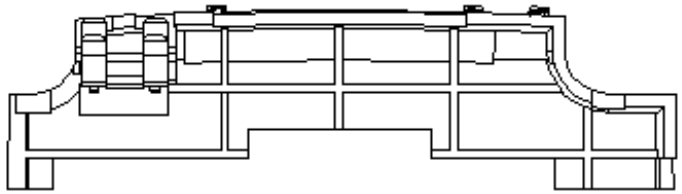




"A" text marking
A100/production year
ex) A100/081006







Note
1. 도면에 지시하지 않은 치수의 공차는 +/-0.05로 관리.
2. 용착부 높이 0.5mm이하로 관리.
3. CONTACT PIN 도금사양.

	Ni
SPEC	무전해 1.0 - 9.0㎛

NO.	PARTS NO.	NAME	MATERIAL	Q'TY.	REMARKS
3	COL-0001	RADIATOR	COIL(t=0.3mm)	1	-
2	PRS-0801	CONTACT PIN	SUS301 1/2H(0.15t)	1	Ni PLATED
1	INS-0801	INTENNA BASE	PC(HF-1023IM)	1	-

DRAWN BY	CHECK BY	APPROVE BY	SCALE	UNIT
			3/1	mm

BUYER NAME	MODEL NO.	MODEL NAME
ACTScom	A100 (GPS Intenna)	A100

RoHS	MODEL	A100		
BASE / HF-1023IM(K2261)	REV	00	PAGE	1/3

ECO-022455

SAMSUNG 제일모직 starex

유해물질 성적서

업체명	승우테크
Grade/Color	HF-1023IM/K2261
사용용도	하드폰PC RESIN
분석기관	제일모직 종합연구팀

시 료 명

구분	시료명	비고
수지	HF-1023IM	
칼라	K2261	B707,DK03

시 험 결 과

시험항목		전처리방법	시험장비	단위(ppm)	M.D.L	결과값
중금속	Cd	EN 1122	ICP-AES	mg/kg	0.5	N.D
	Pb	US EPA 3050B	ICP-AES	mg/kg	5	N.D
	Hg	US EPA7473	Hg Analyzer	mg/kg	0.03	N.D
	Cr^{6+}	USEPA 3060A	UV/VIS	mg/kg	1	N.D
난연제	PBB	Cheil Method	GC/MS	mg/kg	5	N.D
	PBDE	Cheil Method	GC/MS	mg/kg	5	N.D

* 이 수치는 Eu 규정에 위배되지 않음 * M.D.L : Method Detection Limit * ND : Not Detected

시험담당자 : 최수안 Choi Suan 승인자 : 한년용 Y. J. Han

발행일자 : 2007년 12월 26일

승인일자 : 2007년 07월 01일

품 질 경 영 팀

SB TELCOM CO., LTD

SGS

Test Report No. F690501/LF-CTSAYU07-09577 Date: April 23, 2007 Page 1 of 3

To: CNI CABLE CO., LTD
312-16
Deuksan-dong
Asan-city
CHUNGNAM
Korea

The following merchandise was submitted and identified by the client as :

Product name	:UEW(Polyurethane Enamelled Wires)
SGS File No.	: AYU07-09577
Received Date	: April 16, 2007
Test Performing Date	: April 17, 2007
Test Performed	: SGS Testing Korea tested the sample(s) selected by applicant with following results
Test Results	: For further details, please refer to following page(s)

SGS Testing Korea Co. Ltd. / Ulsan Laboratory

Sharpless Park /Testing Person

Thomas Hwang / Ulsan Lab. Mgr

SGS Testing Korea Co., Ltd. | 1002-2, Hwaam-ri, Dnyeon-eub,Ulju-gun,Ulsan,Korea 689-890 | t +82 (0)52 229 6999~10 f +82 (0)52 229 6913 www.sgslab.co.kr www.kr.sgs.com/greenlab

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Member of SGS Group (Société Générale de Surveillance)

SGS

Test Report No. F690501/LF-CTSAYU07-09577 Date: April 23, 2007 Page 2 of 3

Sample No. : AYU07-09577.001
Sample Description : UEW(Polyurethane Enamelled Wires)
Item No./Part No. : N/A

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	1	N.D.
Lead (Pb)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	5	6.30
Mercury (Hg)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	2	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	US EPA 3060A(1996), US EPA 7196A(1992), UV	1	N.D.

Flame Retardants: PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Monobromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.

NOTE: (1) N.D. = Not detected.(<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit
(4) - = No regulation
(5) ** = Qualitative analysis (No Unit)
(6) Negative = Undetectable / Positive = Detectable

SGS Testing Korea Co., Ltd. | 1002-2, Hwaam-ri, Dnyeon-eub,Ulju-gun,Ulsan,Korea 689-890 | t +82 (0)52 229 6999~10 f +82 (0)52 229 6913 www.sgslab.co.kr www.kr.sgs.com/greenlab

LAB 100

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SGS

Test Report No. F690501/LF-CTSAYU07-09577 Date: April 23, 2007 Page 3 of 3

Picture of Sample as Received:

Sample Color : Copper

*** End ***

NOTE: (1) N.D. = No detected.(<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit
(4) - = No regulation
(5) ** = Qualitative analysis (No Unit)
(6) Negative = Undetectable / Positive = Detectable

SGS Testing Korea Co., Ltd. | 1002-2, Hwaam-ri, Dnyeon-eub,Ulju-gun,Ulsan,Korea 689-890 | t +82 (0)52 229 6999~10 f +82 (0)52 229 6913 www.sgslab.co.kr www.kr.sgs.com/greenlab

LAB 100

Member of SGS Group (Société Générale de Surveillance)

SGS

Test Report No. PS05001/LF-CTSAYU07-11049 Date May 14, 2007 Page 2 of 4

Sample No. : AYU07-11049.001
Sample Description : STS301
Style/Item No. : N/A
Comments : Material is stainless

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	1	N.D
Lead (Pb)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	5	N.D
Mercury (Hg)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	2	N.D
Hexavalent Chromium (Cr VI)	mg/kg	US EPA 3060A(1996), US EPA 7196A(1992), UV	1	N.D

Phase Retardants/Halogens

Test Items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D
Tribromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D
Tetrabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D
Pentabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Monobromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D

NOTE: (1) N.D. = Not detected.(<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit
(4) - = No regulation
(5) ** = Qualitative analysis (No Unit)
(6) Negative = Undetectable / Positive = Detectable

SGS

Test Report No. DRAFT REPORT Date: January 11, 2007 Page 1 of 2

To: PYEONG HWA METAL CO.,LTD.
643-7
Gupo-dong
Gumi-city
GYEONGBUK
Korea

The following merchandise was submitted and identified by the client as :

Product name : CAN(Electroness Ni)
SGS File No. : ULK07-00008
Received Date : January 04, 2007
Test Performing Date : January 05, 2007
Test Performed : SGS Testing Korea tested the sample(s) selected by applicant with following results
Test Results : For further details, please refer to following page(s)
Buyer(s) : TI KOREA

SGS Testing Korea Co. Ltd.

Sharpless Park /Testing Person

Thomas Hwang / Lab. Manager

SGS

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Sample No. : ULK07-00008.001
Sample Description : CAN(Electroness Ni)
Item No./Part No. : N/A

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	US EPA 3052, ICP-AES	1	N.D.
Lead (Pb)	mg/kg	US EPA 3052, ICP-AES	5	N.D.
Mercury (Hg)	mg/kg	US EPA 3052, ICP-AES	2	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	US EPA 3060A, UV-vis	1	N.D.

Picture of Sample as Received:

*** End ***

NOTE: (1) N.D. = Not detected.(<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit
(4) - = No regulation
(5) ** = Qualitative analysis (No Unit)
(6) Negative = Undetectable / Positive = Detectable