

# SPECIFICATION

## APPLICATION FOR APPROVAL

CUSTOMER : SIMCOM  
CS P/N : S5  
PART NAME : INTERNAL ANTENNA  
DEVE NO. : AUKE833  
AUDEN NO. : N/A  
DATE : Sep. 06, 2007

CUSTOMER APPROVED

Auden Techno(KUNSHAN)CO.LTD			
RF ENGINEER CHECKED	MECHANICAL ENGINEER CHECKED	R&D MANAGER CHECKED	PRODUCT MANAGER CHECKED



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## REVISION

REV.NO.	DATE	DESCRIPTION
0	Sep. 06. 2007	APPROVAL



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SPECIFICATION FOR DUAL BAND ANTENNA

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## 0. DEFINITIONS

dB <sub>i</sub>	Decibel relative isotropic antenna
T <sub>x</sub>	Transmit frequency
R <sub>x</sub>	Receive frequency
VSWR	Voltage Standing Wave Ratio
GSM	Global Service for Mobile communication
DCS	Digital Communication System
PCS	Personal Communication System
CDMA	Code Division Multiple Access
WCDMA	Wideband Code Division Multiple Access
PHS	Personal Handy-phone System
SAR	Specific Absorption Rate
PCB	Printed Circuit Board
TBD	To Be Defined
P	Parallel connection
S	Series connection

## 1. ELECTRICAL SPECIFICATIONS

### 1-1 FREQUENCY BAND

Freq. Band	T <sub>x</sub> (MHz)	R <sub>x</sub> (MHz)
<b>GSM850</b>	<b>824~ 849</b>	<b>869~894</b>
<b>PCS</b>	<b>1850~1910</b>	<b>1930~1990</b>

### 1-2 IMPEDANCE

Nominal Impedance(including matching circuit) : 50 ohms

### 1-3 MATCHING REQUIREMENTS

The matching circuit on the PCB of the handset is according to Figure 1-3.

Optimum matching circuit is highly dependent on the handset and thus.

Final matching circuit layout and values will be defined when handset is available.

N/A

Figure 1-3



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## 1-4 VSWR

### FREE SPACE

<i>Freq.Band</i>	<i>spec</i>
<b>824MHz</b>	<b><math>\leq 3.270</math></b>
<b>894 MHz</b>	<b><math>\leq 5.622</math></b>
<b>1850MHz</b>	<b><math>\leq 2.425</math></b>
<b>1990MHz</b>	<b><math>\leq 7.402</math></b>

※Measuring a  $50\Omega$  test jig is connected to a network analyzer to measure the VSWR.

※※All test value is done in customer approval fixture.

## 1-5 GAIN

Typical value( Peak Gain):

Freq. Band	SPEC
<b>N/A</b>	

## 2. MECHANICAL SPECIFICATIONS

### 2-1 MECHANICAL CONFIGURATION

The appearance of the antenna is according to Figure 2-1

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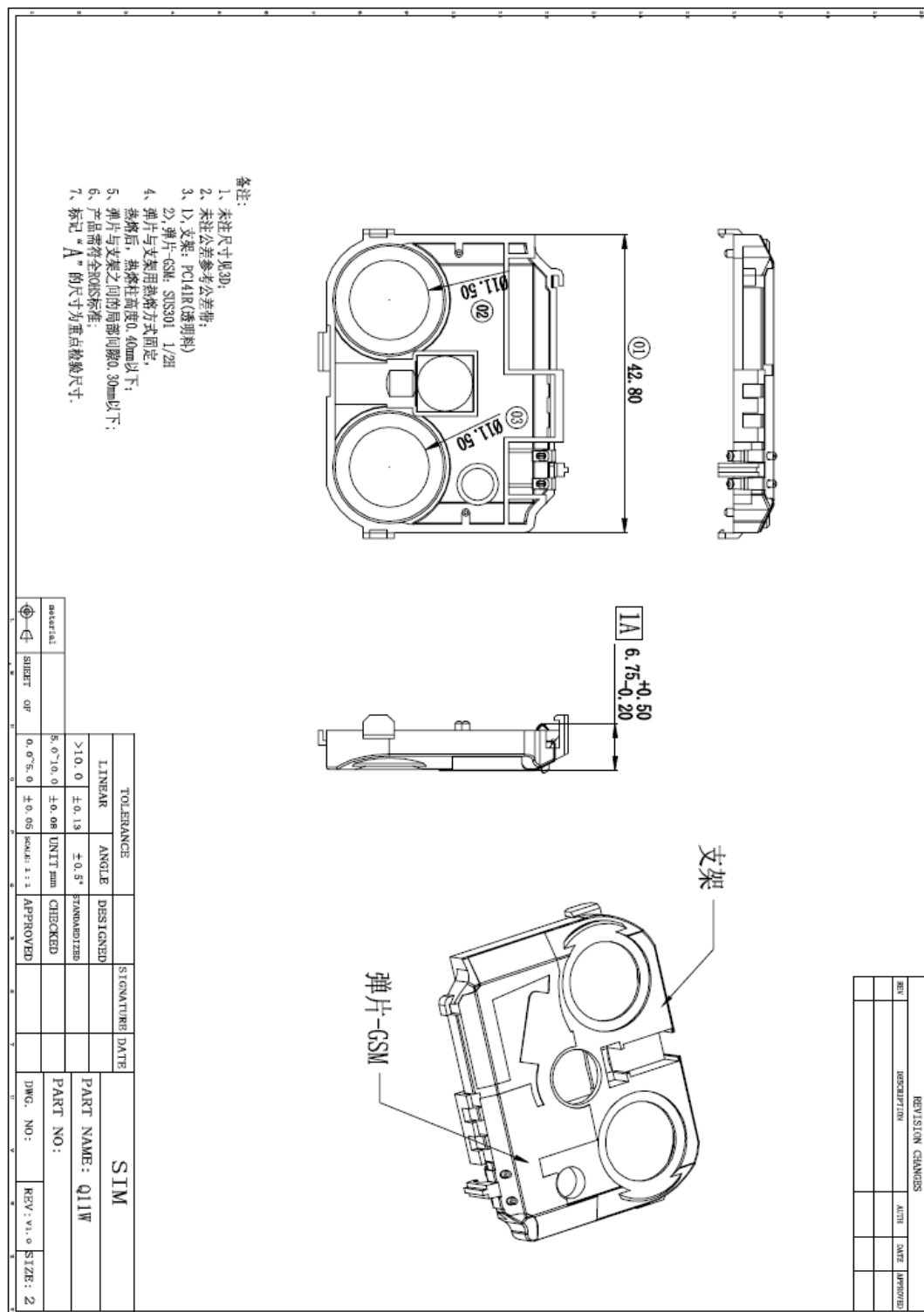


Figure 2-1



# Auden Techno(KUNSHAN)CO.LTD ANTENNA SPECIFICATION

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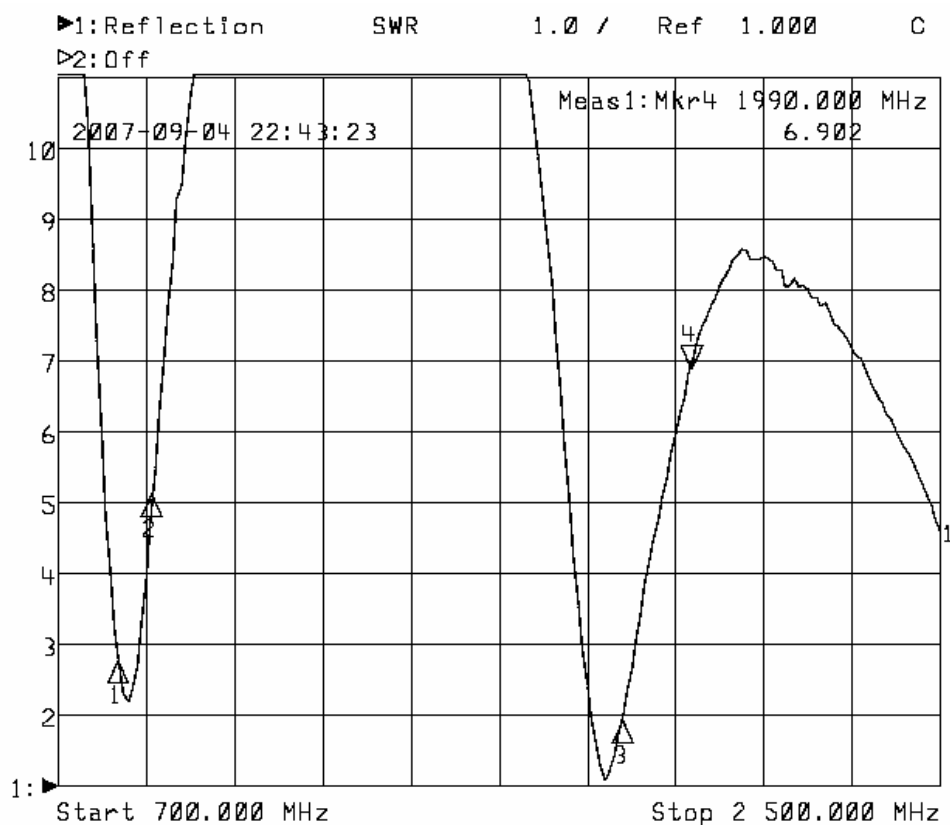
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Model No:S5	File: 2007-9-5
Deve No:AUKE833	Note: VSWR
Sample No:	
Test Condition:	
FREE SPACE	Matching: N/A
Confirmation:	Engineer:



1: Mkr (MHz)	2: Mkr (MHz)	dB
1: 824.0000	2.770	
2: 894.0000	5.122	
3: 1850.0000	1.925	
4: 1990.0000	6.902	



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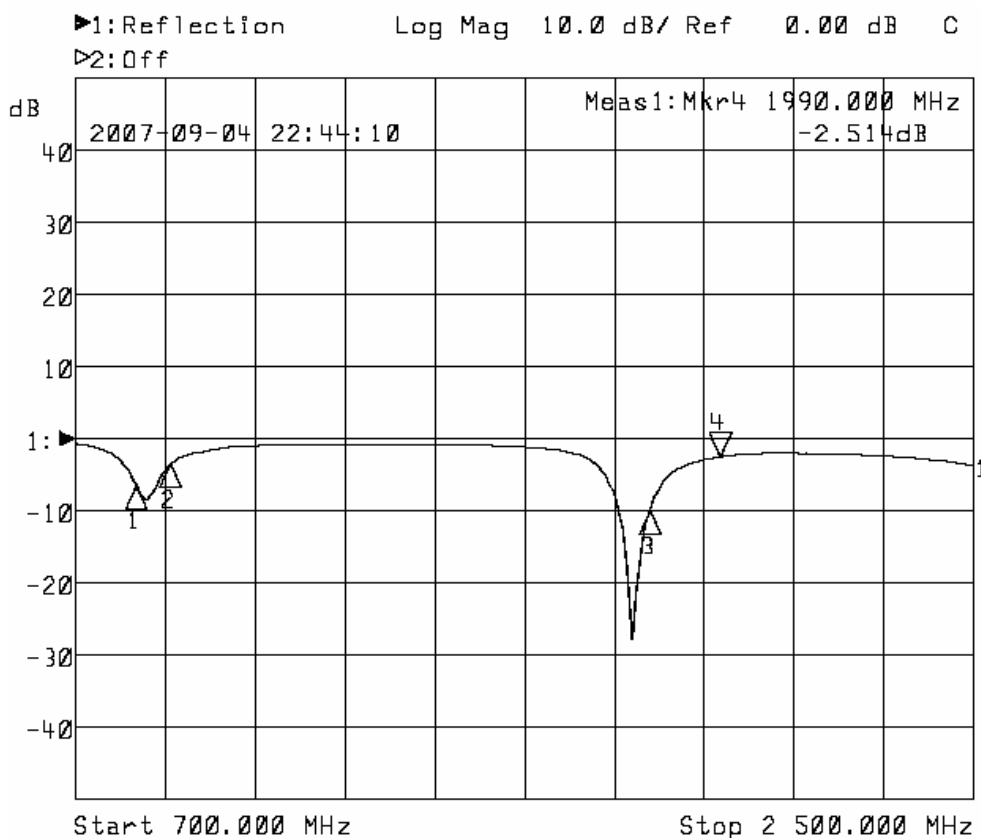
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Model No:Q11W	File: 2007-9-05
Deve No:S5	Note: RL
Sample No:	
Test Condition:	
FREE SPACE	Matching: N/A
Confirmation:	Engineer:



1: Mkr (MHz)	dB	2: Mkr (MHz)	dB
1: 824.0000	-6.581		
2: 894.0000	-3.401		
3: 1850.0000	-10.061		
4: 1990.0000	-2.514		

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## 3D Test Report



Customer : SIMCOM      Deve. No. : AUKE833      Test Date : 20070903  
 Model No.:S5      Operating Mode : GSM850/PCS      Note :

System  
 Channel or Frequency  
 Ant. Port Input Pwr. (dBm)  
 Tot. Rad. Pwr. (dBm)  
 Peak EIRP (dBm)  
 Directivity (dBi)  
 Efficiency (dB)  
**Efficiency (%)**  
 Gain (dBi)  
 Average Gain (dB)  
**Mobile Efficiency (%)**

GSM850			PCS					
128	190	251	512	660	810			
33.0	33.0	33.0	30.0	30.0	30.0			
28.95	28.28	28.09	25.34	25.38	25.83			
31.578	30.97	30.663	28.531	28.88	29.84			
2.6236	2.69	2.5687	3.1887	3.51	4.00			
-4.0461	-4.72	-4.906	-4.6575	-4.62	-4.17			
0.3939	0.34	0.3232	0.3422	0.35	0.38			
-1.4225	-2.03	-2.3372	-1.4687	-1.12	-0.16			
28.954	28.28	28.094	25.343	25.38	25.83			
39.39%	33.73%	32.32%	34.22%	34.50%	38.32%	#####	#####	#####

Communication System		Ant. Port Input Pwr. (dBm)
Passive	ALL	0
Active	EGSM	33
	DCS /PCS	30
	WCDMA	24

## Sensitivity Test Report

Customer: SIMCOM      Model: GSM850/PCS      Deve.NO.:AUKE833  
 Operation Mode: S5      Test Data:2007/09/03      Note:

H-Plane			Angle	0	60	120	180	240	300	Avg	Min
Channel	Rx.Freq	Bs.Offse									
128	869.20	30	Bs.Power	-102.40	-102.50	-103.10	-103.80	-103.50	-103.10	-105.83	-106.59
			Sensitivity	-105.19	-105.29	-105.89	-106.59	-106.29	-105.89		
190	881.60	30	Bs.Power	-102.60	-102.70	-103.60	-104.30	-103.80	-102.90	-106.39	-107.42
			Sensitivity	-105.72	-105.82	-106.72	-107.42	-106.92	-106.02		
251	893.80	30	Bs.Power	-99.30	-99.30	-100.30	-100.40	-100.50	-99.50	-103.01	-103.66
			Sensitivity	-102.46	-102.46	-103.46	-103.56	-103.66	-102.66		
512	1930.20	37	B.S Power	-93.30	-96.40	-90.80	-105.30	-106.80	-102.60	-95.92	-107.07
			Sensitivity	-93.57	-96.67	-91.07	-105.57	-107.07	-102.87		
660	1959.80	37	B.S Power	-86.80	-97.40	-92.80	-106.30	-107.00	-102.30	-93.47	-107.31
			Sensitivity	-87.11	-97.71	-93.11	-106.61	-107.31	-102.61		
810	1989.80	37	B.S Power	-90.70	-91.70	-91.60	-104.20	-105.10	-101.80	-94.20	-105.24
			Sensitivity	-90.84	-91.84	-91.74	-104.34	-105.24	-101.94		