SPECIFICATION

Part No. : **GSA.8821**

Product Name : I-Bar Penta-band GSM Antenna
Works with GSM / CDMA / PCS / DCS /UMTS/ WCDMA

Features : Low profile for easy installation
Fully customized cable and connector
RoHS Compliant

Photo :

Top View

Side View

REVISION STATUS

Version	Date	Page	Revision Description	Prepared	Approved
01	Mar 4th 2007	All	New product	TW Product Centre	Zita Lin
02	Jun 6th 2008	All	Return Loss added New Format	TW Product Centre	Zita Lin

1.0 Introduction

The **GSA.8821** I-Bar Penta-band GSM Antenna is flexible and robust. Its slim-line design allows for covert and convenient installation in automotive vehicles, its omni-directional gain across all bands ensures constant reception and transmission. It is a high gain, high efficiency solution which complies with AT&T standards for high efficiency antennas. Cables and connectors are fully customizable. It comes with strong 3M double-sided adhesive for a permanent and secure fix to your vehicle interior.

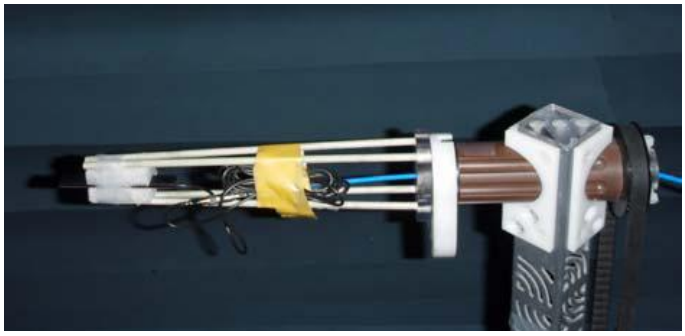
2.0 Antenna Specifications

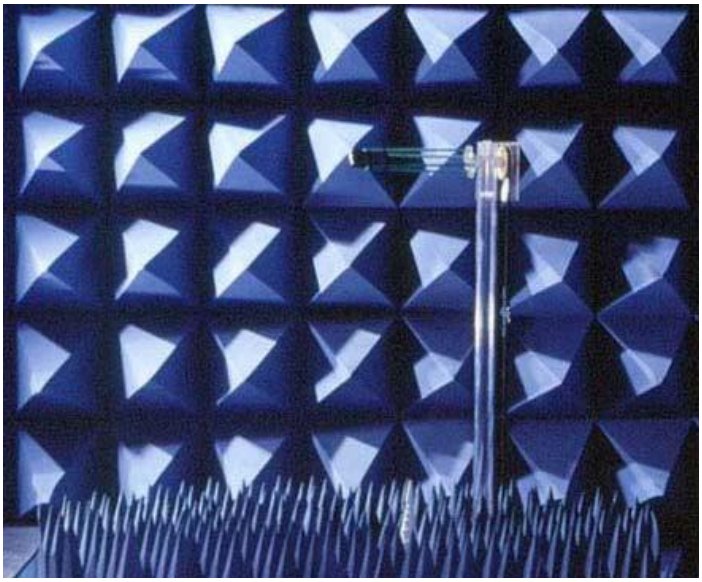
Communication System	Penta-band Cellular				
	AMPS	GSM	DCS	PCS	UMTS
Frequency (MHz)	824 ~ 896	880~960	1710~1880	1850~1990	1710~2170
Average Efficiency	47%	67%	59%	54%	57%
Average Gain (dBi)	2.1	3.9	4.1	3.2	3.2
Impedance	50 Ohm				
Radiation Pattern	Omni-directional				
Polarization	Linear (Vertical)				
Input Power	10 watts				
Input Connection	Coaxial Cable - RG174 Standard, Fully customizable				
VSWR	< 2.0 : 1				
Dimensions (mm)	106.7 x 14.7 x 5.3mm				
Weight	40g				
Casing	UV Resistant TPE				
Waterproofing	Sealing Film				
Waterproof	IP-65				
Temperature Range	-40°C to +85°C				
Thermal Shock	100 cycles -40°C to +80°C				
Humidity	Non-condensing 65°C 95% RH				
Shock (Drop Test)	1m drop on concrete 6 axes				
Cable Pull	8 KGf				

3.0 Antenna Electrical Characteristics

3.1Test Setup

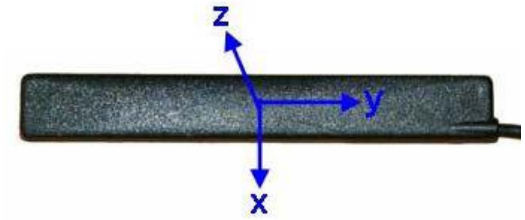
GSA.8821 is tested in the CTIA 3D chamber for the free space radiation in a certification laboratory in Taiwan.

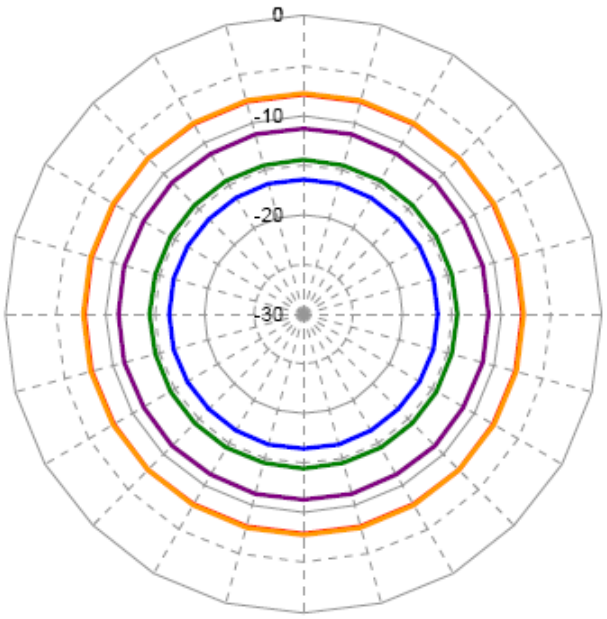




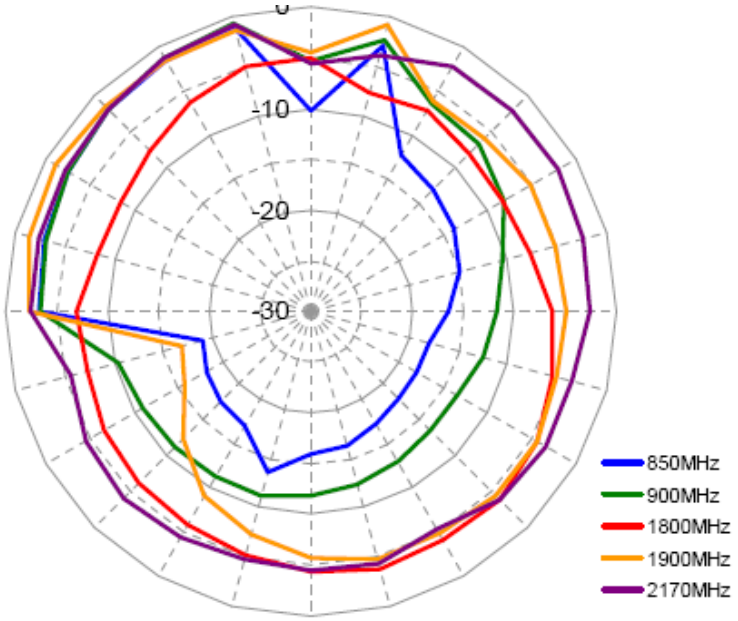
Antenna Setup in CTIA 3D Chamber

3.2Radiation Pattern





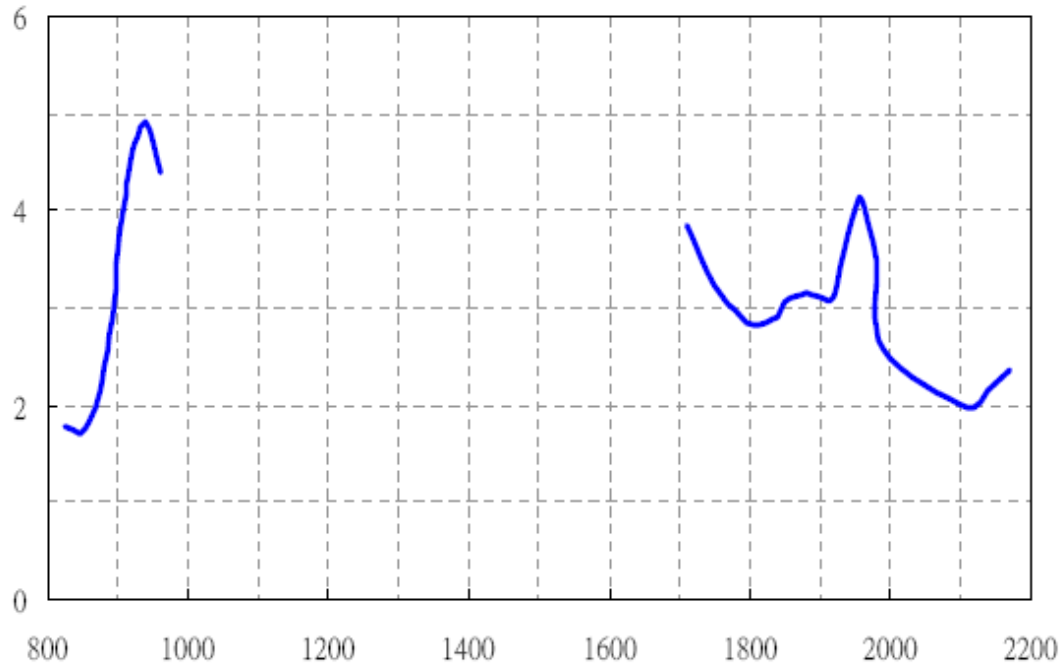
x-y plane radiation pattern



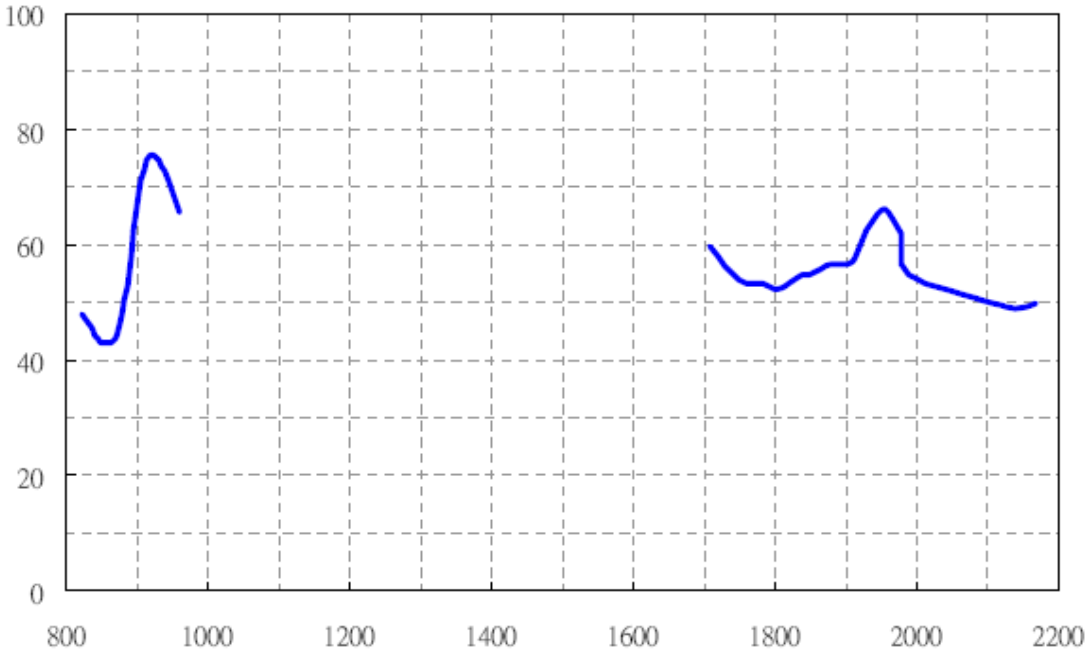
x-z plane radiation pattern

3.3Gain & Efficiency Plot vs Frequency

Gain



Efficiency

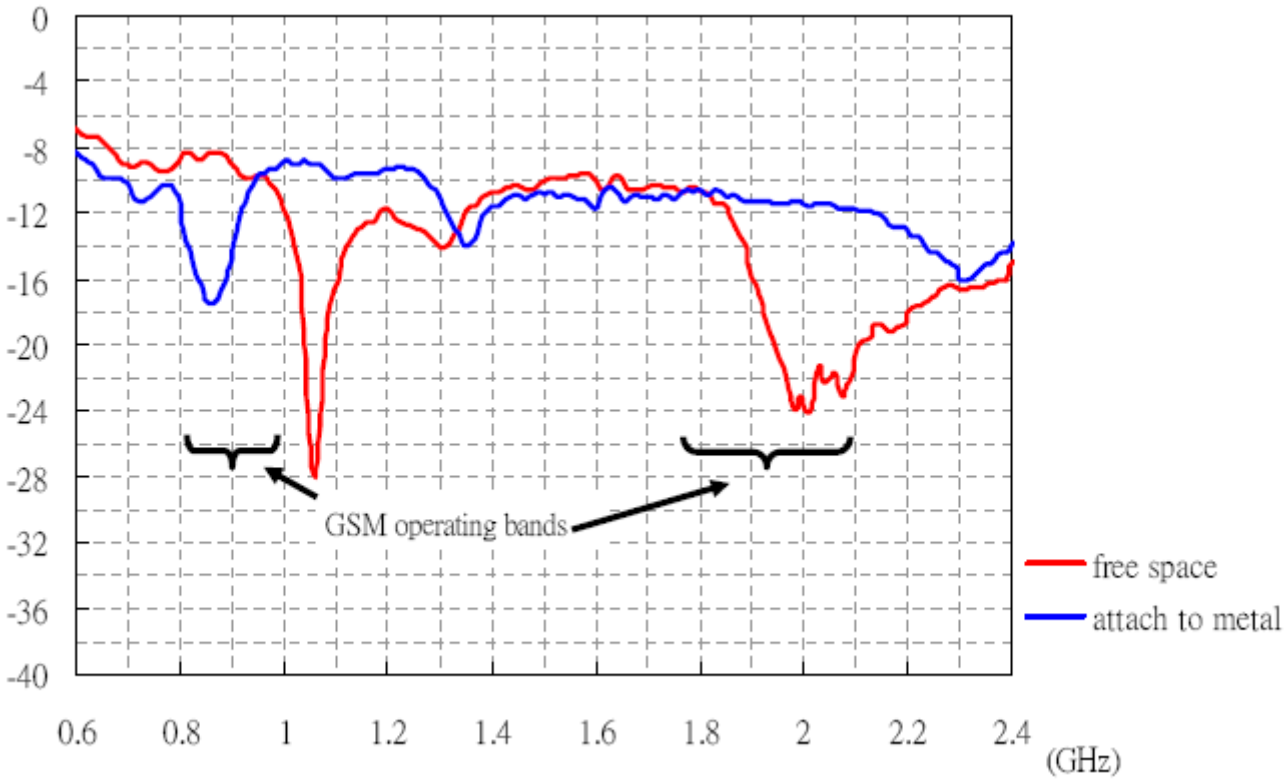


Return Loss

GSA.8821 is placed on a piece of Styrofoam on an empty carton for measuring free space return loss. Since **GSA.8821** is designed to mount in a car, it also adheres directly on the test instrument metal box to simulate the application environment. Agilent 8753SE Network Analyzer is used for the S11 measurement.

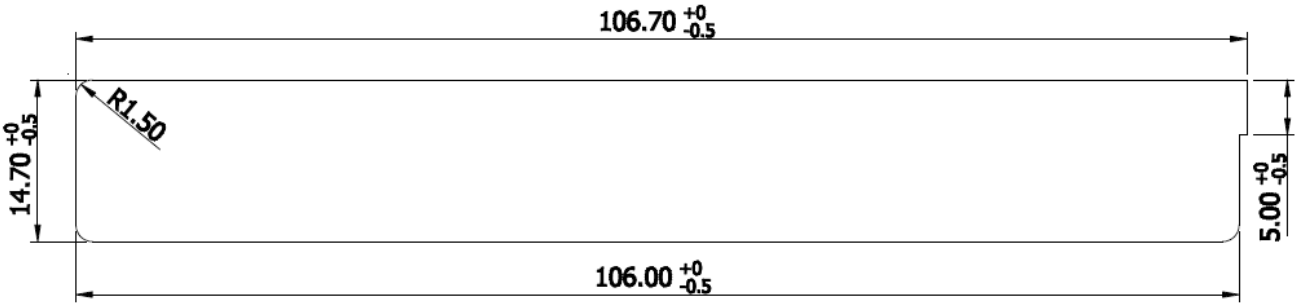
Free space Return Loss measurement setup

GSA.8821 Adhered to Metal

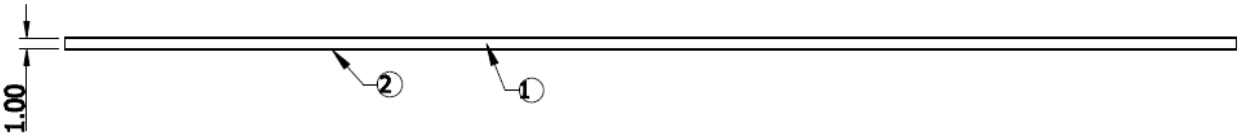


GSA.8821 Return Loss in Free Space and adhered to Metal. The oscillation introduced by the 3m cable is smoothed with a factor of 1%.

4.0 Mechanical Drawing (unit:mm)



Antenna Cover - Top



3M Tape ① L:106.7, W:14.7, T:1
②L:106.7, W:14.7