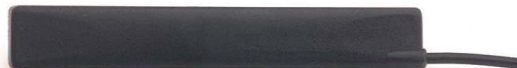




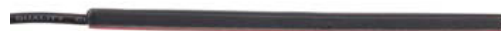
Specification

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 4 th 2007 | All | New product | TW Product Centre | Zita Lin |
| 02 | Jun 6th 2008 | All | Return Loss added New Format | TW Product Centre | Zita Lin |

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Specification

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

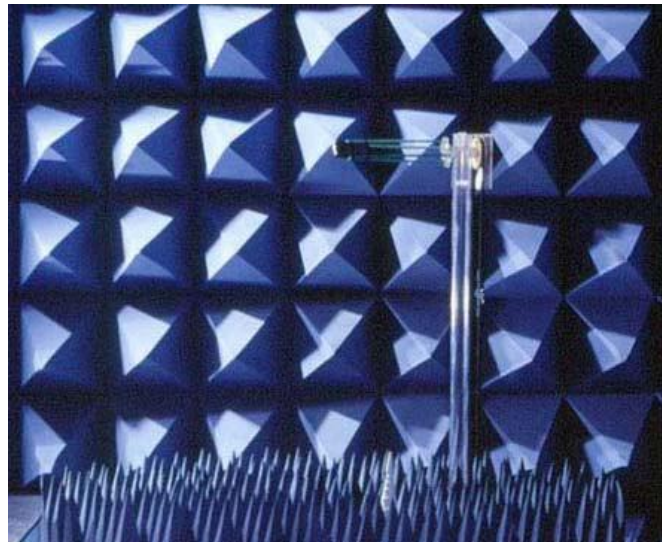
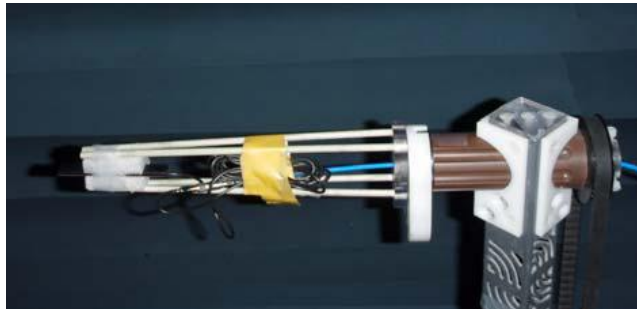
| Communication System | Penta-band Cellular | | | | |
|----------------------|--|---------|-----------|-----------|-----------|
| | AMPS | GSM | DCS | PCS | UMTS |
| Frequency (MHz) | 824 ~ 896 | 880~960 | 1710~1880 | 1850~1990 | 1710~2170 |
| Average Efficiency | 47% | 67% | 59% | 54% | 57% |
| Average 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

3.1 Test Setup

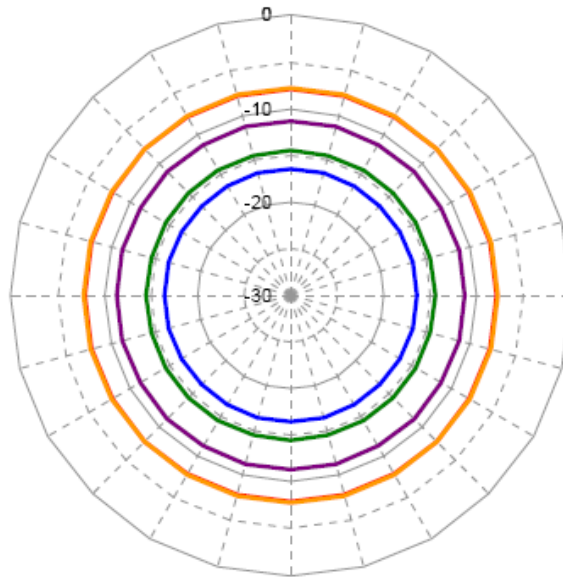
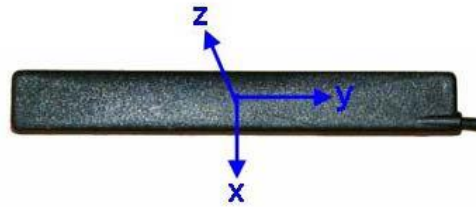
GSA.8821 is tested in the CTIA 3D chamber for the free space radiation in a certification laboratory in Taiwan.



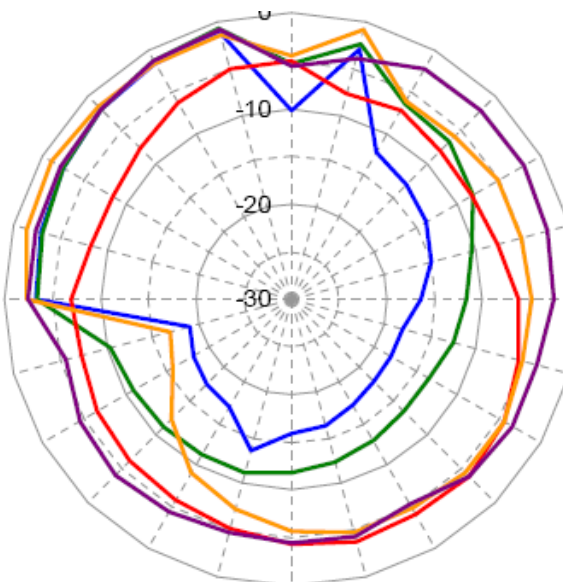
Antenna Setup in CTIA 3D Chamber



3.2 Radiation Pattern



x-y plane radiation pattern

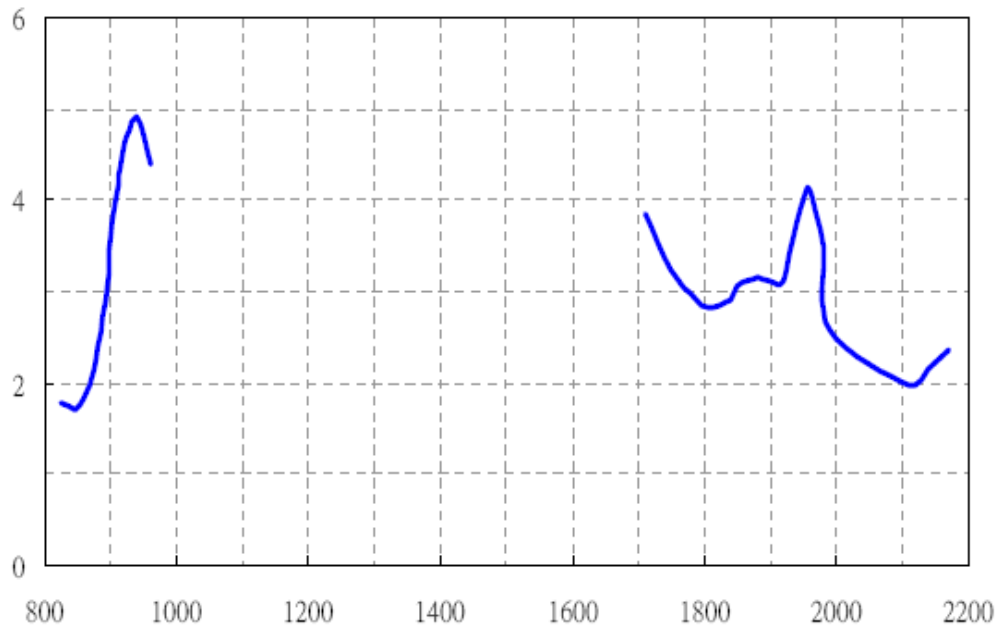


x-z plane radiation pattern

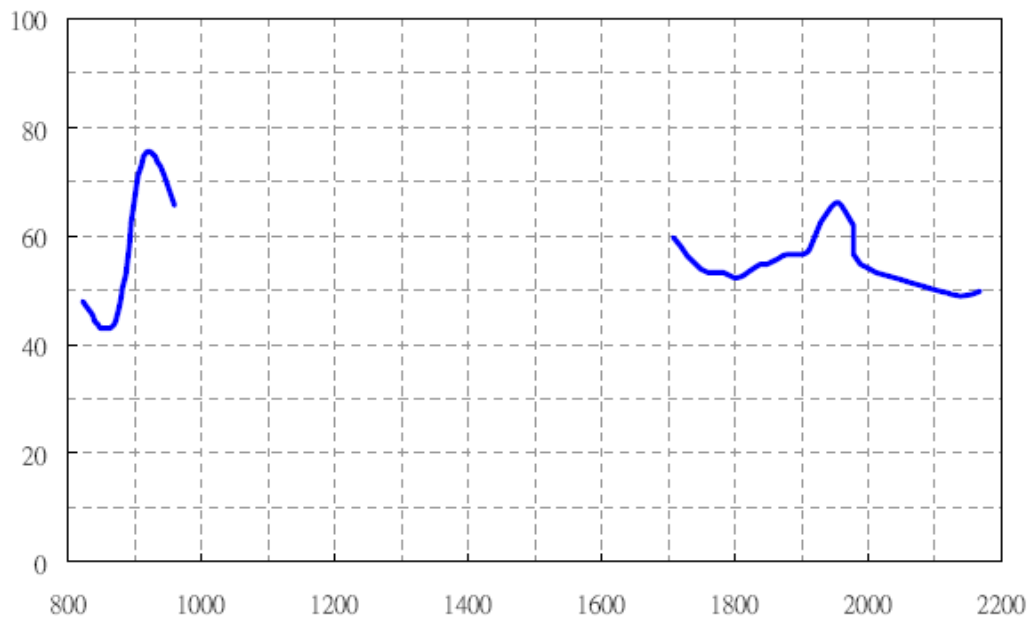


3.3 Gain & Efficiency Plot vs Frequency

Gain



Efficiency





Specification

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

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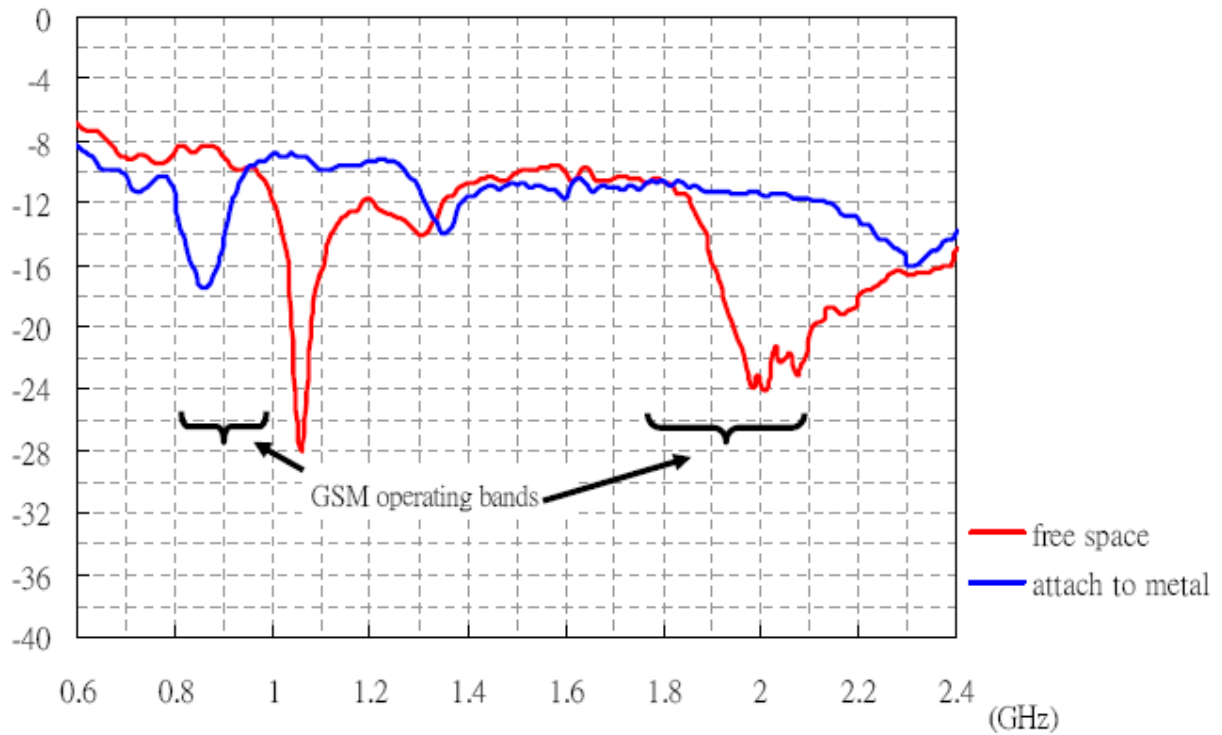
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Specification

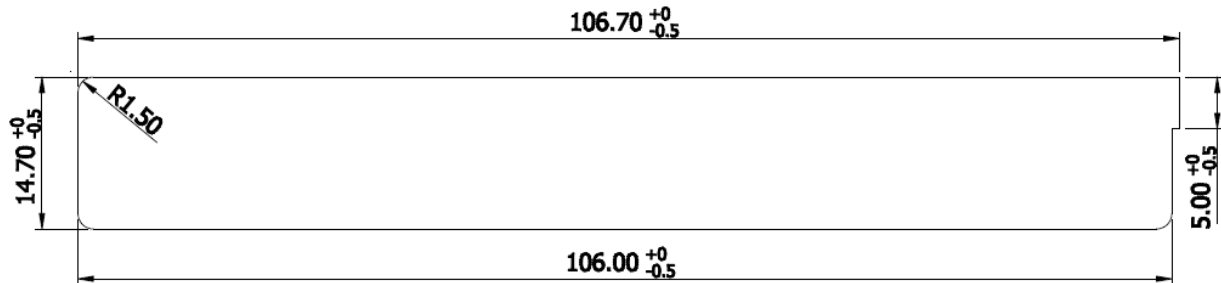


GSA.8821 Return Loss in Free Space and adhered to Metal. The oscillation introduced by the 3m cable is smoothed with a factor of 1%.

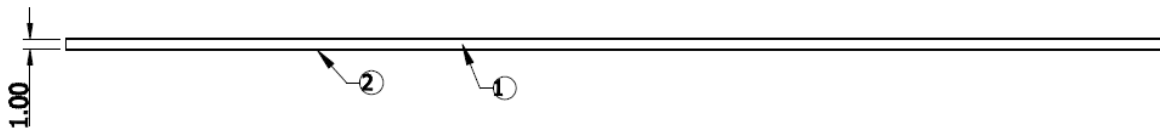


Specification

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