

# **SPECIFICATION**

Part No. : **GSA.8821.B301721** 

Product Name : I-Bar Penta-band GSM Antenna

Works with GSM / CDMA / PCS / DCS /UMTS/ WCDMA

Features : Low profile for easy installation

3M RG-174 Fakra Code D Violet Connector

**RoHS Compliant** 

Photo:





#### 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.

The **GSA.8821** is first tier automotive approved and the part GSA.8821.301721 (with Fakra Code D connectors) is listed in the global automotive IMDS databases, it has gone through full PPAP design, reliability and quality audits, including audits at the production facility.

## 2.0 Antenna Specifications

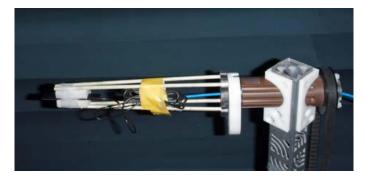
Communication					
System	Penta-band Cellular				
	AMPS	GSM	DCS	PCS	UMTS
Frequency (MHz)	824 ~ 896	880~960	1710~1880	1850~1990	1710~2170
Average Efficiency	47%	67%	59%	54%	57%
Average Gain (dBi)	2.1	3.9	4.1	3.2	3.2
Impedance	50 Ohm				
Radiation Pattern	Omni-directional				
Polarization	Linear (Vertical)				
Input Power	10 watts				
Input Connection	Coaxial Cable - RG174 Standard, Fully customizable				
VSWR	<3.0:1				
Dimensions (mm)	106.7 x 14.7 x 5.8mm				
Weight	40g				
Casing	ABS POLYLAC PA-757				
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				

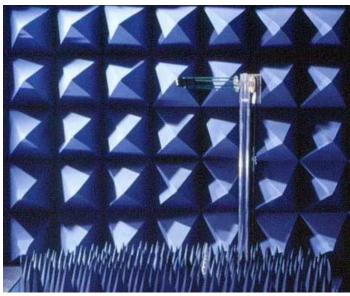


### 3.0 Antenna Electrical Characteristics

## 3.1Test Setup

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

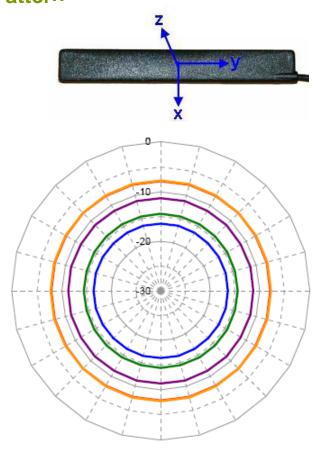




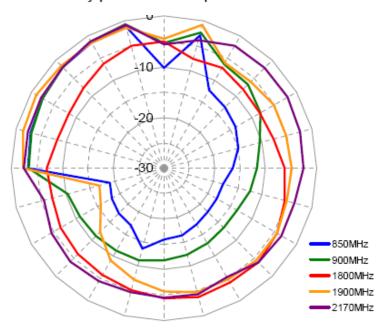
Antenna Setup in CTIA 3D Chamber



#### 3.2Radiation Pattern



#### x-y plane radiation pattern

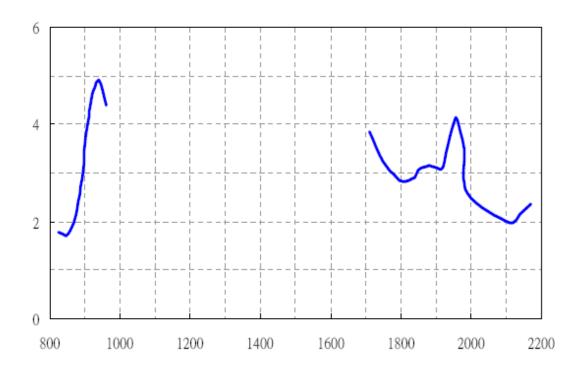


x-z plane radiation pattern

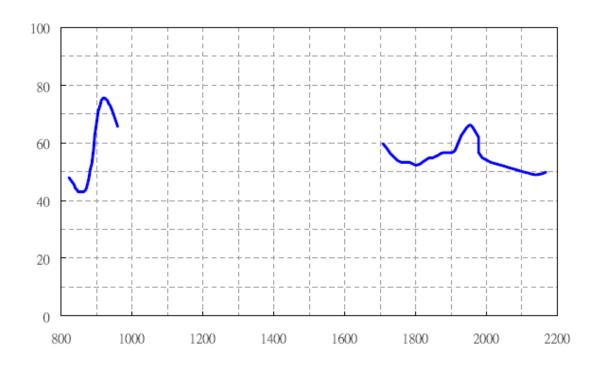


## 3.3Gain & Efficiency Plot vs Frequency

### Gain



## Efficiency



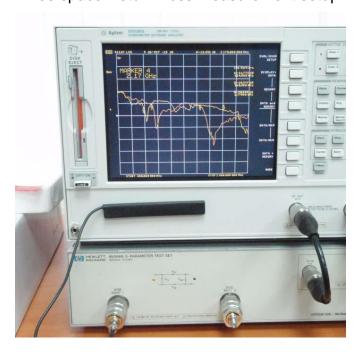


#### **Return Loss**

**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.

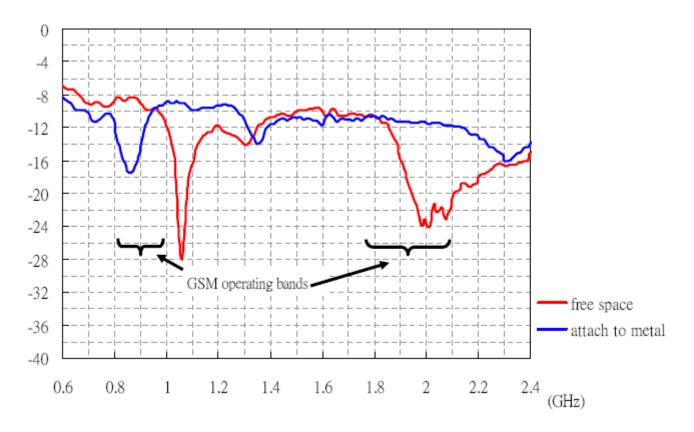


Free space Return Loss measurement setup



**GSA.8821** Adhered to Metal

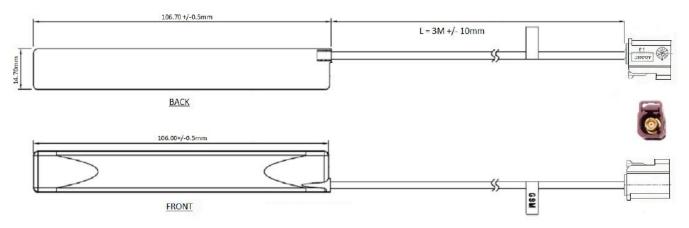




**GSA.8821** Return Loss in Free Space and adhered to Metal. The oscillation introduced by the 3m cable is smoothed with a factor of 1%.



## 4.0 Mechanical Drawing (unit:mm)



## 5.0 Packing

