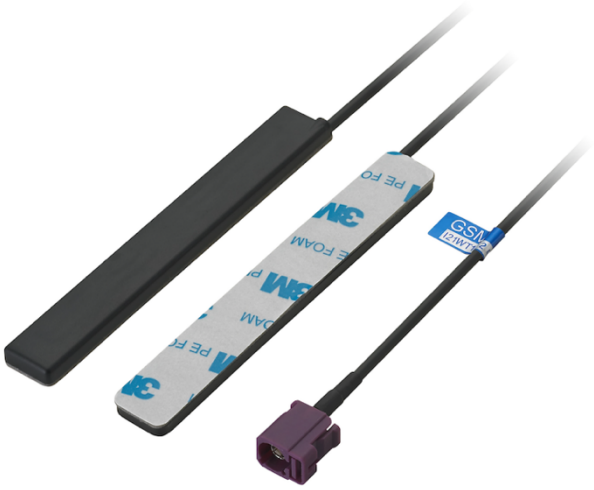
Specification

Part No.	:	**GSA.8821.A.301721**
Product Name	:	I-Bar Penta-Band Cellular Antenna GSM/CDMA/PCS/DCS/UMTS/WCDMA
Feature	:	Penta-Band Cellular GSM/CDMA/PCS/DCS/UMTS/WCDMA Low profile for Covert Installations Adhesive Mounting Omni Directional Radiation Pattern First Tier Automotive Approved Cable: 3000mm RG-174 Connector: Fakra Code D Violet Cables & Connectors Customizable Dimensions: 105 * 15 * 6mm **RoHS & REACH Compliant**



1. Introduction

GSA.8821 I-Bar Penta-band Cellular Antenna is flexible and robust. The slim-line design is ideal for covert and convenient installation in automotive vehicles.

Its omni-directional gain across all bands ensures constant reception and transmission. This dipole antenna is designed to be mounted on glass or plastic (not on metal). The GSA.8821 is first tier automotive approved and the part GSA.8821.A301721 (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.

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. Specification

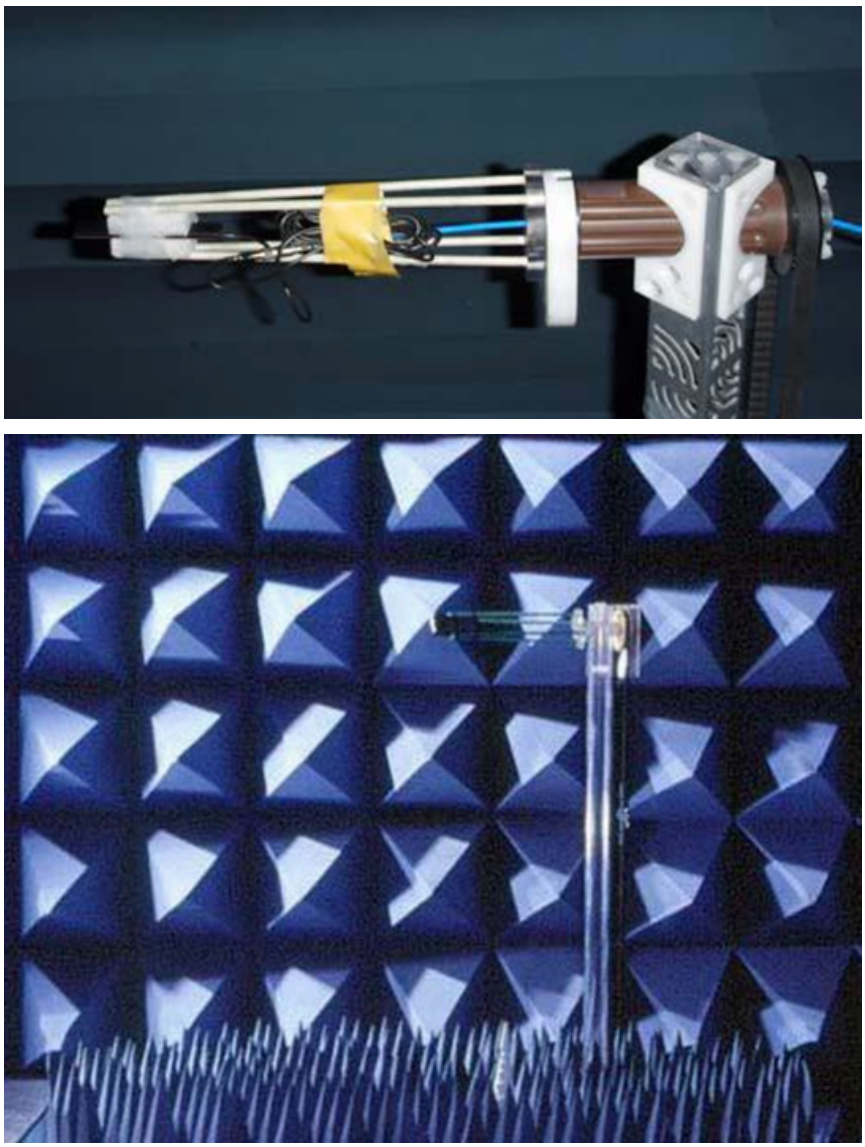
ELECTRICAL					
System	AMPS	GSM	DCS	PCS	UMTS
Band (MHz)	824-896	880-960	1710-1880	1850-1990	1710–2170
Average Efficiency	47%	67%	59%	54%	57%
Average Gain	2.1	3.9	4.1	3.2	3.2
Polarization	Linear				
Impedance	50 ohms				
Input Power	10W max				
MECHANICAL					
Dimensions	106.7 x 14.7 x 5.8mm				
Cable	RG 174 Standard, Fully customizable				
Connector	Fakra Code D Violet, Fully customizable				
Casing	ABS POLYLAC PA-757				
Weight	40g				
ENVIRONMENTAL					
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	8kgf				

*Electrical properties are measurement of GSA.8821 with 3M RG174 Fakra Code D Violet in free space.

3. Antenna Electrical Characteristics

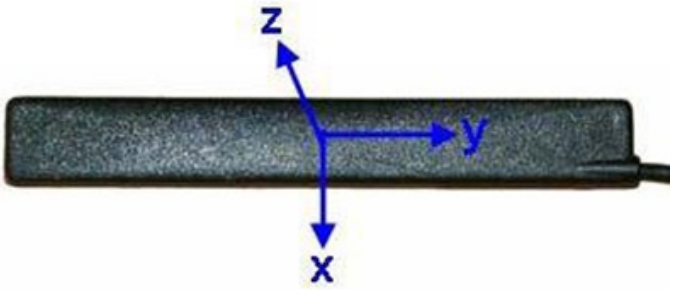
3.1. Test Setup

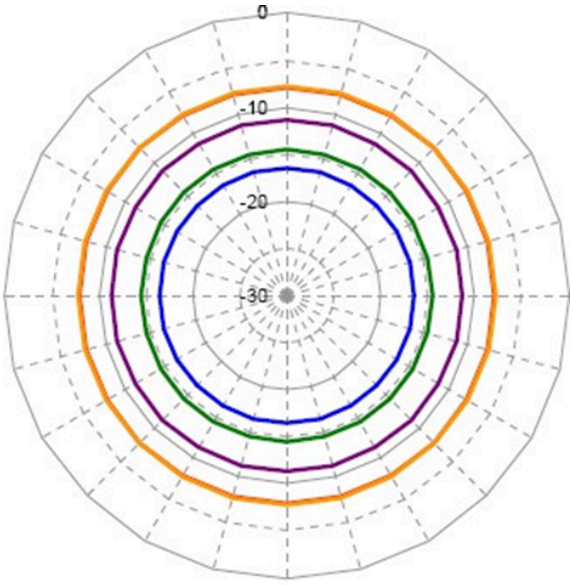
The Taoglas GSA.8821 is tested in the CTIA 3D chamber for the free space radiation in a certification laboratory in Taiwan.



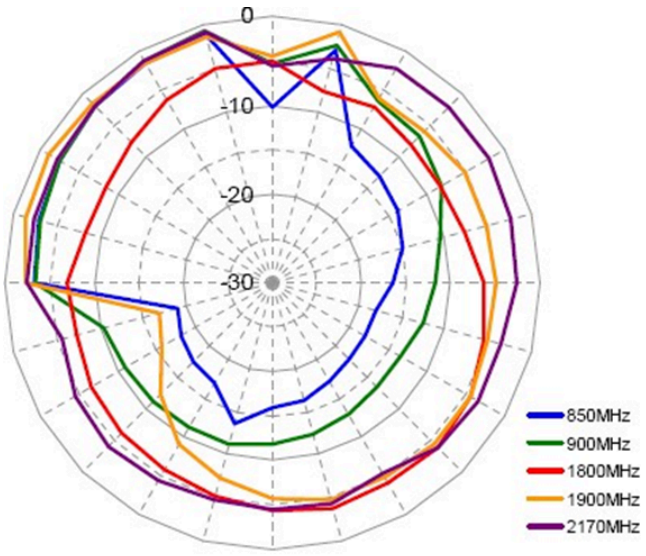
Antenna Setup in CTIA 3D Chamber

3.2. Radiation Pattern



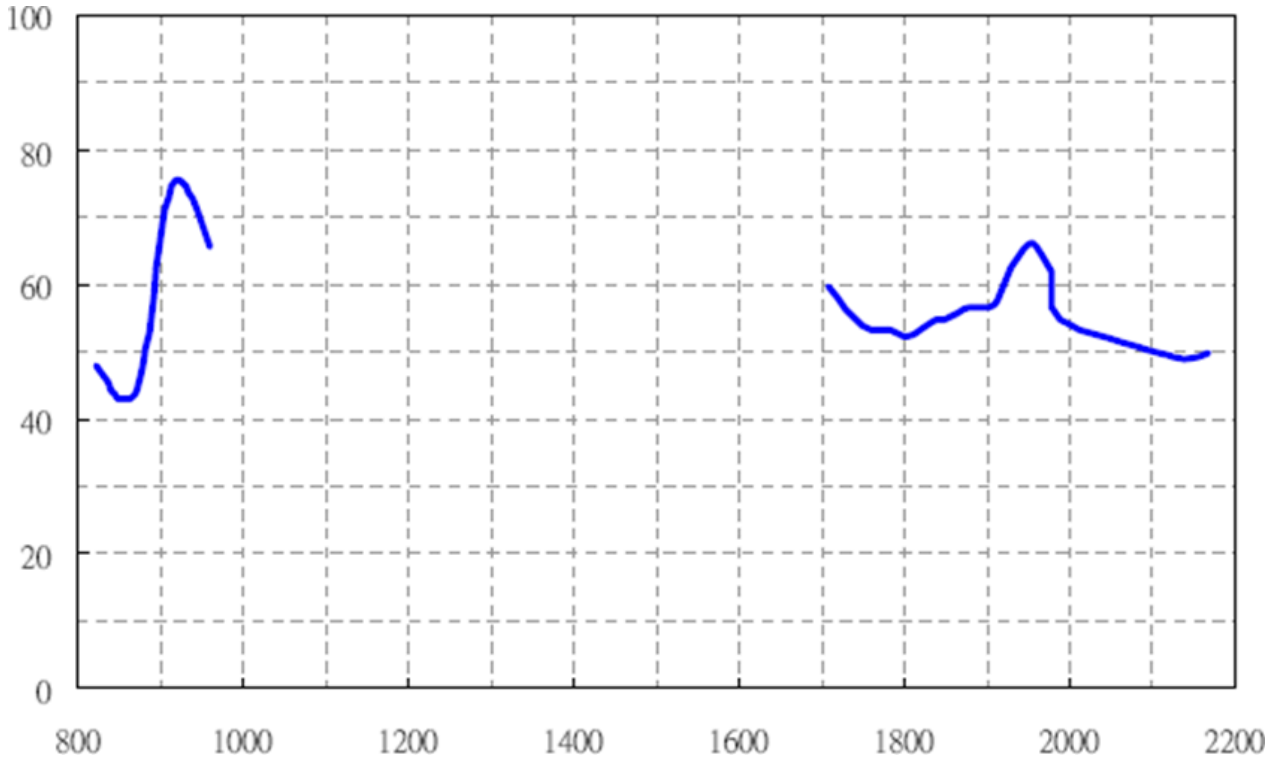


x-y plane radiation pattern

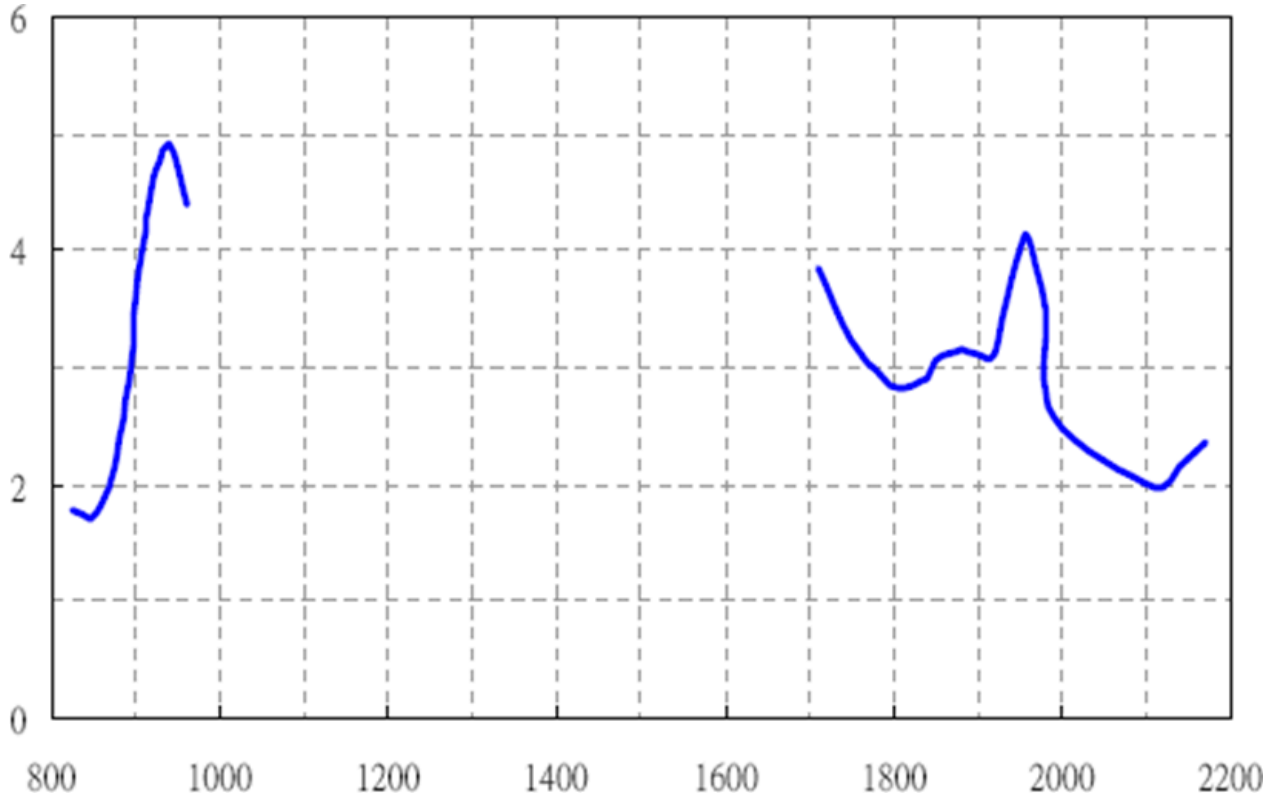


x-z plane radiation pattern

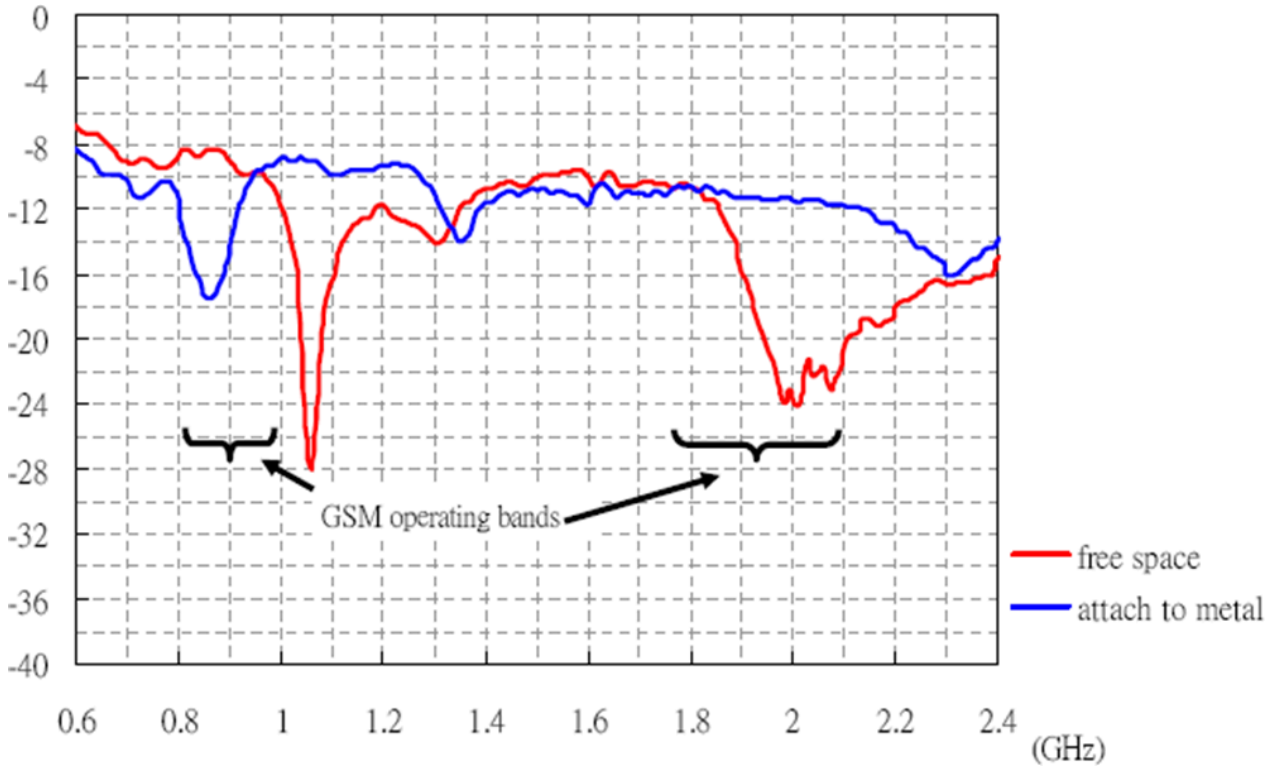
3.3. Frequency



3.4. Gain



3.5. Return Loss



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%.

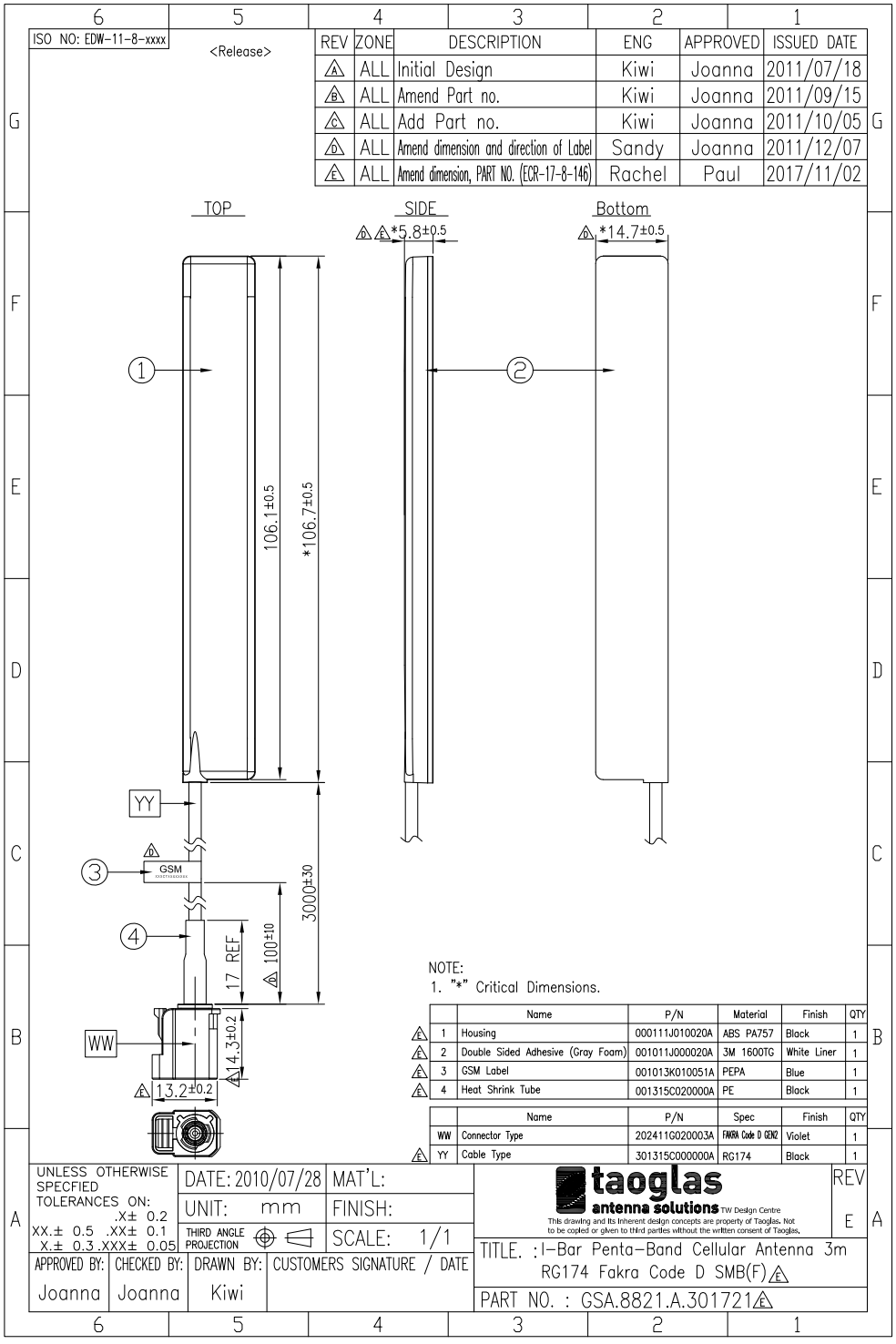
3.6. Test Setup

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

4. Mechanical Drawing (Unit: mm)



5. Packaging