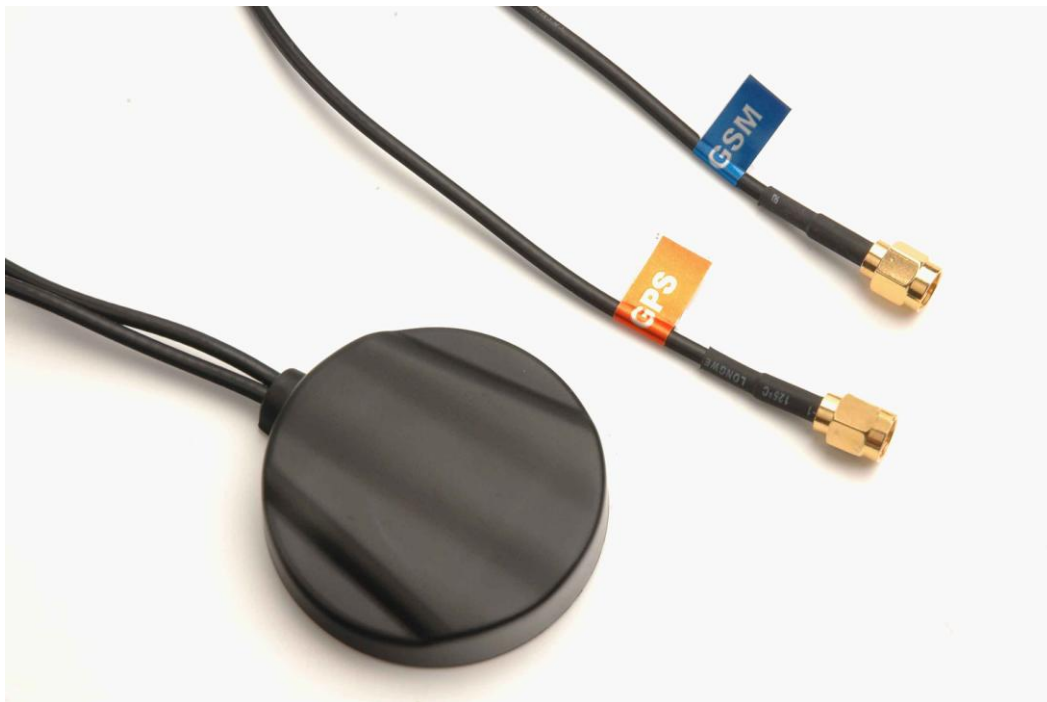


# SPECIFICATION

Part No. : **MA.203.A.A301111.B301111**

Product Name : GPS/Penta-band Cellular Adhesive Antenna

Feature : High gain LNA up to 32dB  
 (GSM/CDMA/PCS/DCS/UMTS/GPRS/EDGE/ HSPA)  
 Height 10.8mm Diameter 55.1mm  
 RoHS Compliant



3D view



top view  
 (this side faces the sky)



underside view  
 (this side faces the passenger)

## I. Introduction

This is a combination high performance GPS and Penta-band Cellular (GSM/CDMA/PCS/DCS/ / UMTS / GPRS / EDGE/ HSPA) antenna to simplify AVL or Fleet management antenna systems worldwide. Its high quality low profile covert housing can be attached onto the glass or even out of sight under the dashboard. This combination of a high gain GPS antenna and a leading edge penta band cellular antenna is ideal for those applications that require durability, small size and covert installation, and reliable reception and transmission crossing through different mobile networks.

### Features

#### GPS

- High LNA Gain up to 32 dB
- Antenna Gain  $30 \pm 2$  dB
- Miniaturized to 55.15x12mm
- Low Noise 1.5 dB max

#### Cellular

- Advanced penta-band cellular antenna (GSM/CDMA/PCS/DCS/UMTS/GPRS/EDGE/ HSPA)

#### Other

- Water Resistant IP 65 (IP 67 MA.203w version also available)
- Quality textured covert design. Low profile
- UV resistant ABS housing
- Comes with high grade 3M double sided tape for quick and easy mounting
- Optional cables and connectors

## II. Specification

Performance Specifications		
Items	GPS Antenna	Cellular Antenna
Features	High performance GPS ceramic patch antenna with cutting edge low noise amplifier	800MHz to 2200MHz
Frequency	1575.42 MHz $\pm$ 2MHz	As above
Gain	30 dB typ.	As patterns
	Gain at Zenith: 2.0 dBi min	
	Gain at 10°elevation : -4.0dBi min	
	Axial Ratio :2.0 dB max	
Noise Figure	1.5 dB max.	-
Polarization	RHCP	-
Out band Attenuation (LNA)	30dB min fo $\pm$ 50MHz (fo=1575.42MHz)	-
Bandwidth	10 MHz min	-
VSWR	$\leq$ 2.0	$\leq$ 2.5
Impedance	50 $\Omega$	50 $\Omega$
Cable / Connector	Standard 1/2/3/5/10mRG-174 Cables and Connectors Fully Customizable	Standard 1/2/3/5/10mRG-174 Cables and Connectors Fully Customizable
Operating Temperature	-40°C ~ +85°C	-40°C ~ +85°C
Storage Temperature	-40°C ~ +95°C	-40°C ~ +95°C
Size	55mm * 10.8mm	
Housing	UV resistant ABS	

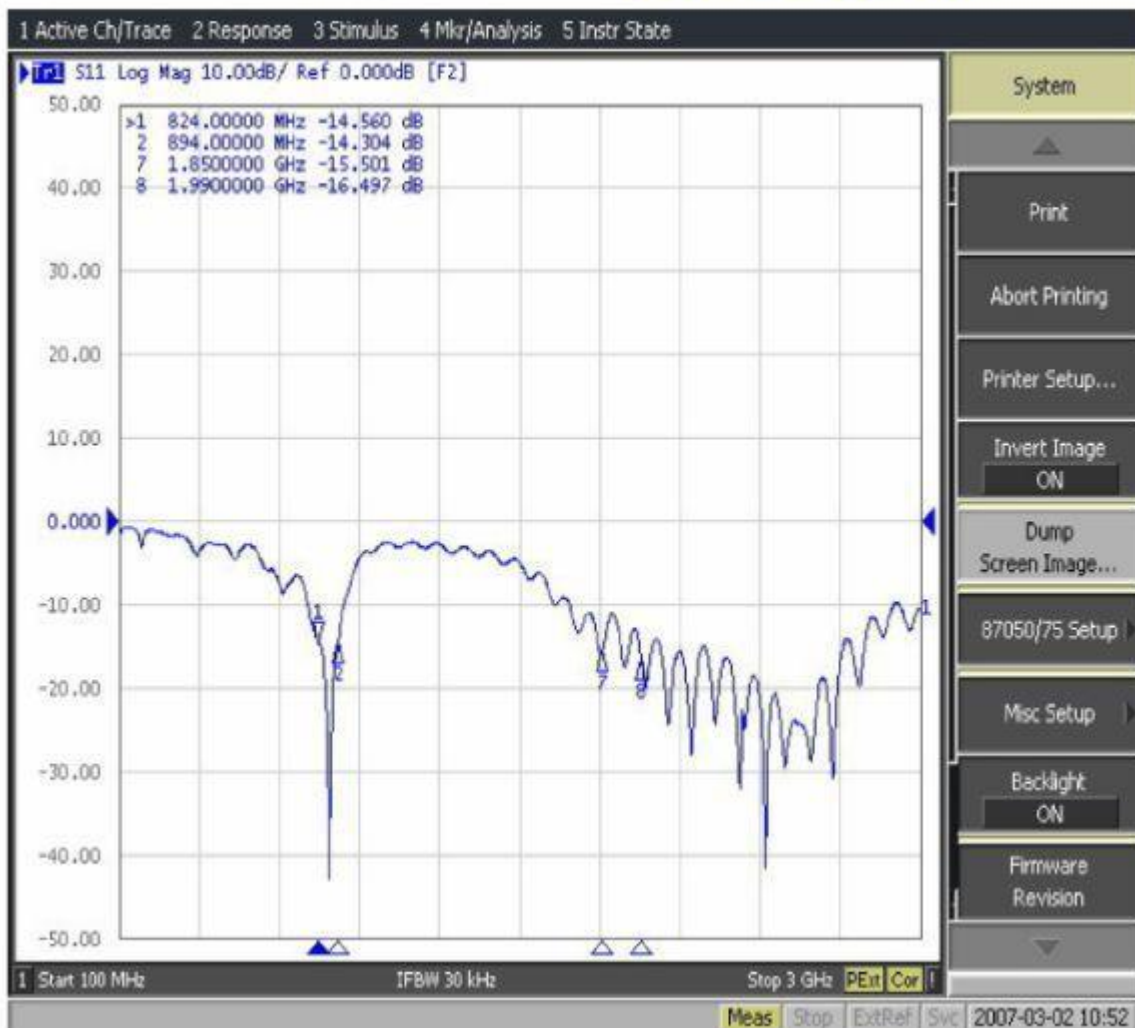
**\*note: specifications may be subject to change**

### III. High Performance LNA (saw filter)

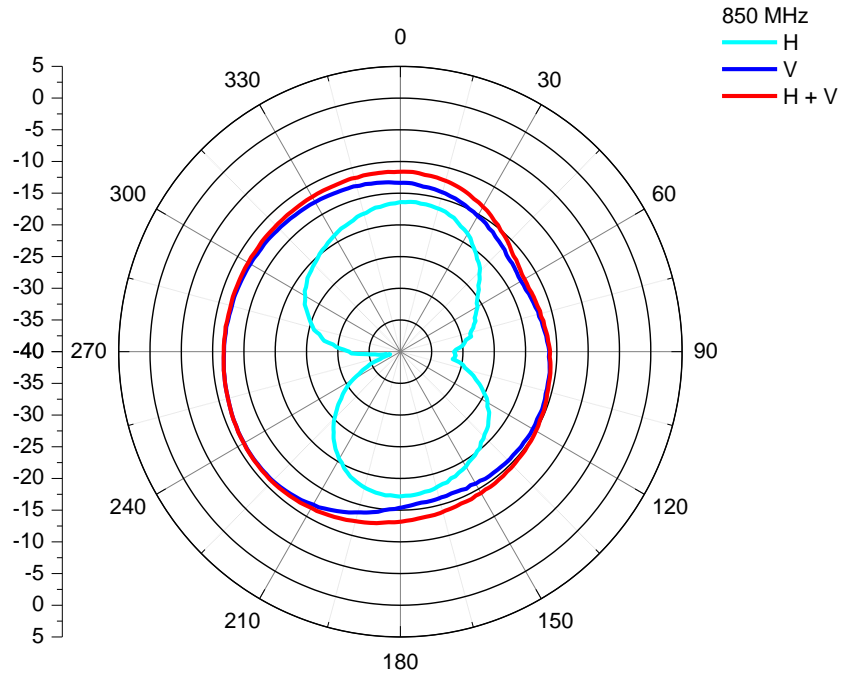
		2V	2.5V	3V	5V	6.5V
Saw Filter	Power Consumption	8mA	9mA	10mA	19mA	31mA
	Gain	30dB	31dB	32dB	35dB	36dB

#### Return Loss

With Housing, Glass Mount (RG-174, length=1M)

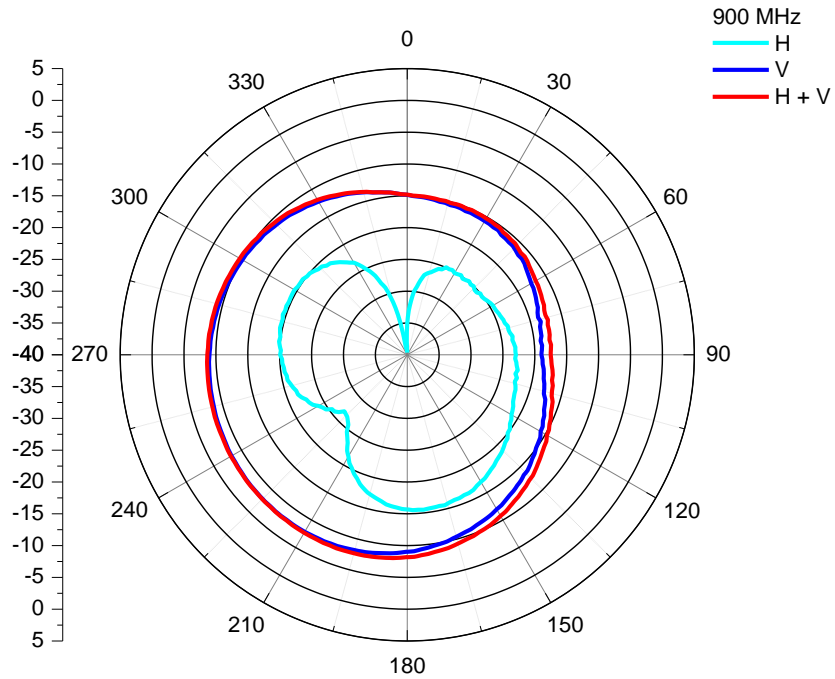


### 850 MHz



Center Frequency	<b>850</b>	Center Frequency	<b>850</b>
Horizontal (dBi)	<b>-16.30</b>	Horizontal (dBi)	<b>-20.60</b>
Vertical (dBi) peak	<b>-11.10</b>	Vertical (dBi)	<b>-13.68</b>
Horiz.+Vert. (dBi)	<b>-10.99</b>	Horiz.+Vert. (dBi)	<b>-12.88</b>

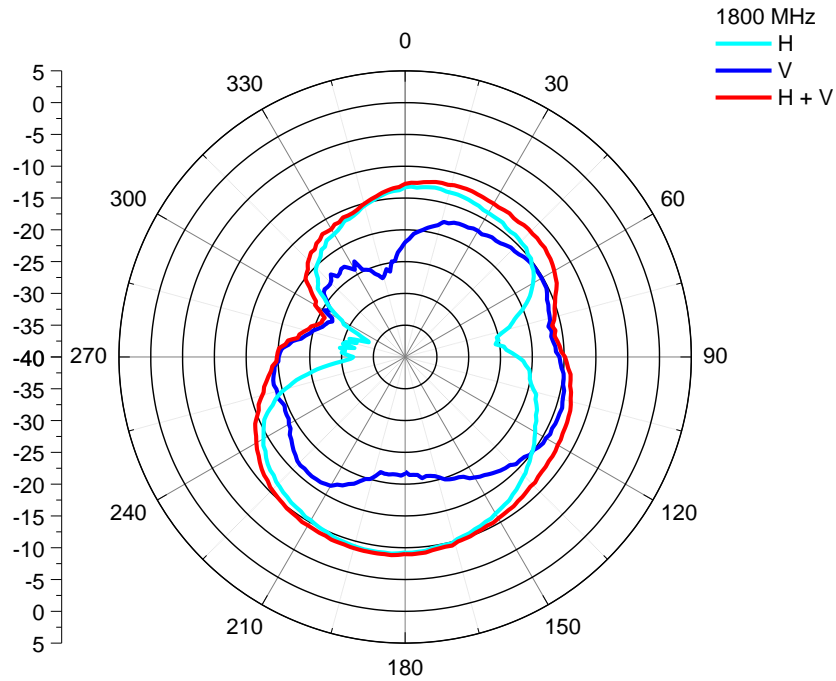
## 900 MHz



Center Frequency	<b>900 MHz</b>
Horizontal (dBi) peak	<b>-15.51</b>
Vertical (dBi) peak	<b>-7.85</b>
Horiz.+Vert. (dBi) peak	<b>-7.61</b>

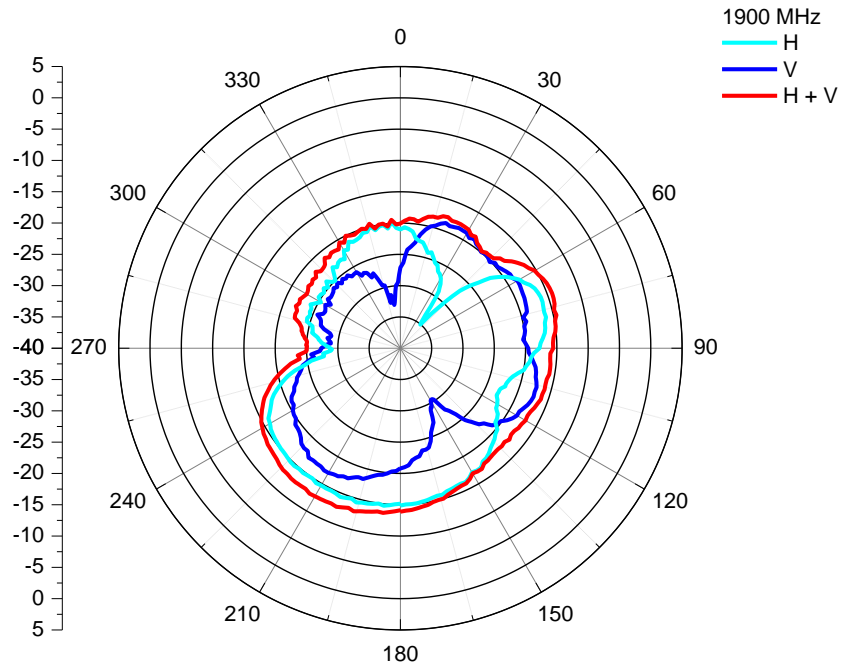
Center Frequency	<b>900 MHz</b>
Horizontal (dBi) average	<b>-20.63</b>
Vertical (dBi) average	<b>-11.23</b>
Horiz.+Vert. (dBi) average	<b>-10.75</b>

# 1800 MHz



Center Frequency	<b>1800 MHz</b>	Center Frequency	<b>1800 MHz</b>
Horizontal (dBi) peak	<b>-9.00</b>	Horizontal (dBi) average	<b>-13.95</b>
Vertical (dBi) peak	<b>-14.04</b>	Vertical (dBi) average	<b>-18.04</b>
Horiz.+Vert. (dBi) peak	<b>-8.76</b>	Horiz.+Vert. (dBi)	<b>-12.52</b>

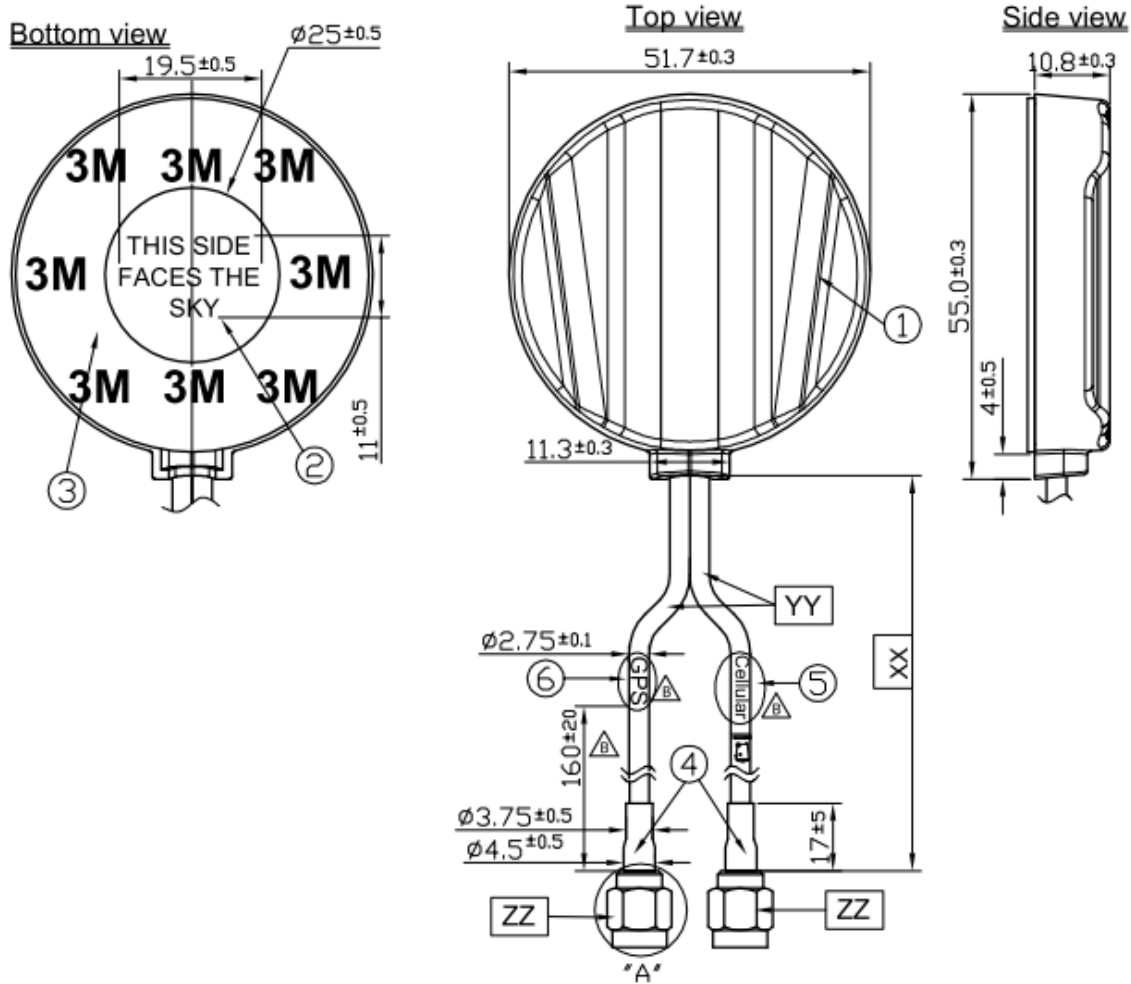
# 1900 MHz



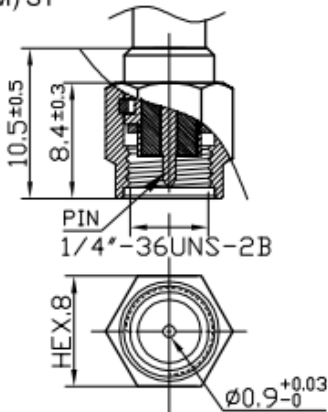
Center Frequency	<b>1900 MHz</b>	Center Frequency	<b>1900 MHz</b>
Horizontal (dBi) peak	<b>-14.38</b>	Horizontal (dBi) average	<b>-18.49</b>
Vertical (dBi) peak	<b>-16.99</b>	Vertical (dBi) average	<b>-20.86</b>
Horiz.+Vert. (dBi) peak	<b>-14.38</b>	Horiz.+Vert. (dBi) average	<b>-16.51</b>



## IV. Drawings



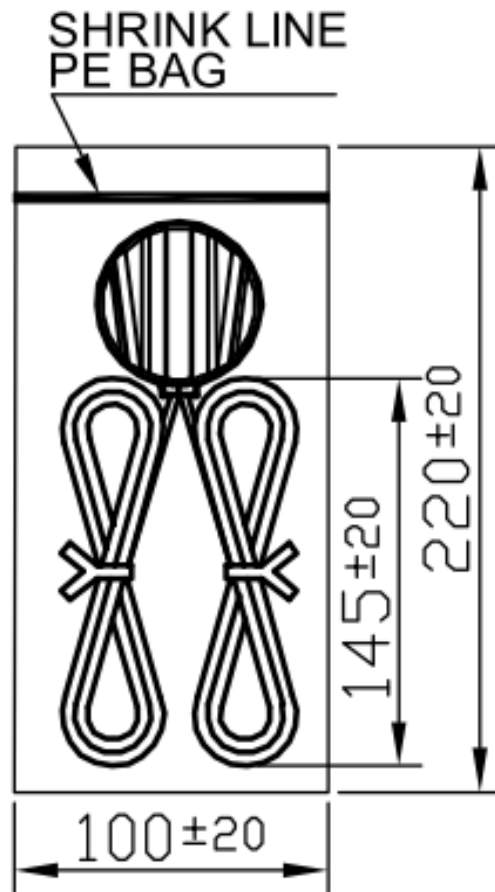
SMA(M) ST



	Name	P/N	Material	Finish	QTY
1	Housing	000111I0200XXA	ABS	Black	1
2	Round Label	001011I0100XXA	Art Paper	White	1
3	Scotch Brand Acrylic Foam Tape	001011I0200XXA	3M 4612	White Liner	1
4	Heat Shrink tube	001311F0000XXA	PE	Black	2
5	Cellular Label	001011F0200XXA	Coated Paper	Blue	1
6	GPS Label	001011F0000XXA	Coated Paper	Orange	1
	Name	P/N	Spec	Finish	QTY
XX	Cable Length		3000mm $\pm 30$ mm		1
YY	Cable Type	301311F0000XXA	RG174	Black	2
ZZ	Connector Type	200211L000015A	SMA(M) ST	Gold	2



## V. Packaging



PACKING:1PCS/BAG