

SPECIFICATION

Part No.	: MA.203.A.A301111.B301111
Product Name	: MA.203 Stingray GPS/Cellular Adhesive Antenna
Features	: GPS - High gain LNA up to 32dB Penta-band Cellular – 800MHz to 2200MHz 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)

1. 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.

The standard version has 3 metres RG174 cable and SMA(M) connector on both GPS and Cellular. The cables and connectors are completely customizable according to customer request.

Features

GPS

- High LNA Gain up to 32 dB
- Antenna Gain 30 ± 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
- Customizable cables and connectors

2. 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	≤ 2.0	≤ 2.5
Impedance	50 Ω	50 Ω
Cable / Connector	Standard 1/2/3/5/10m RG-174 Cables and Connectors Fully Customizable	Standard 1/2/3/5/10m RG-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	

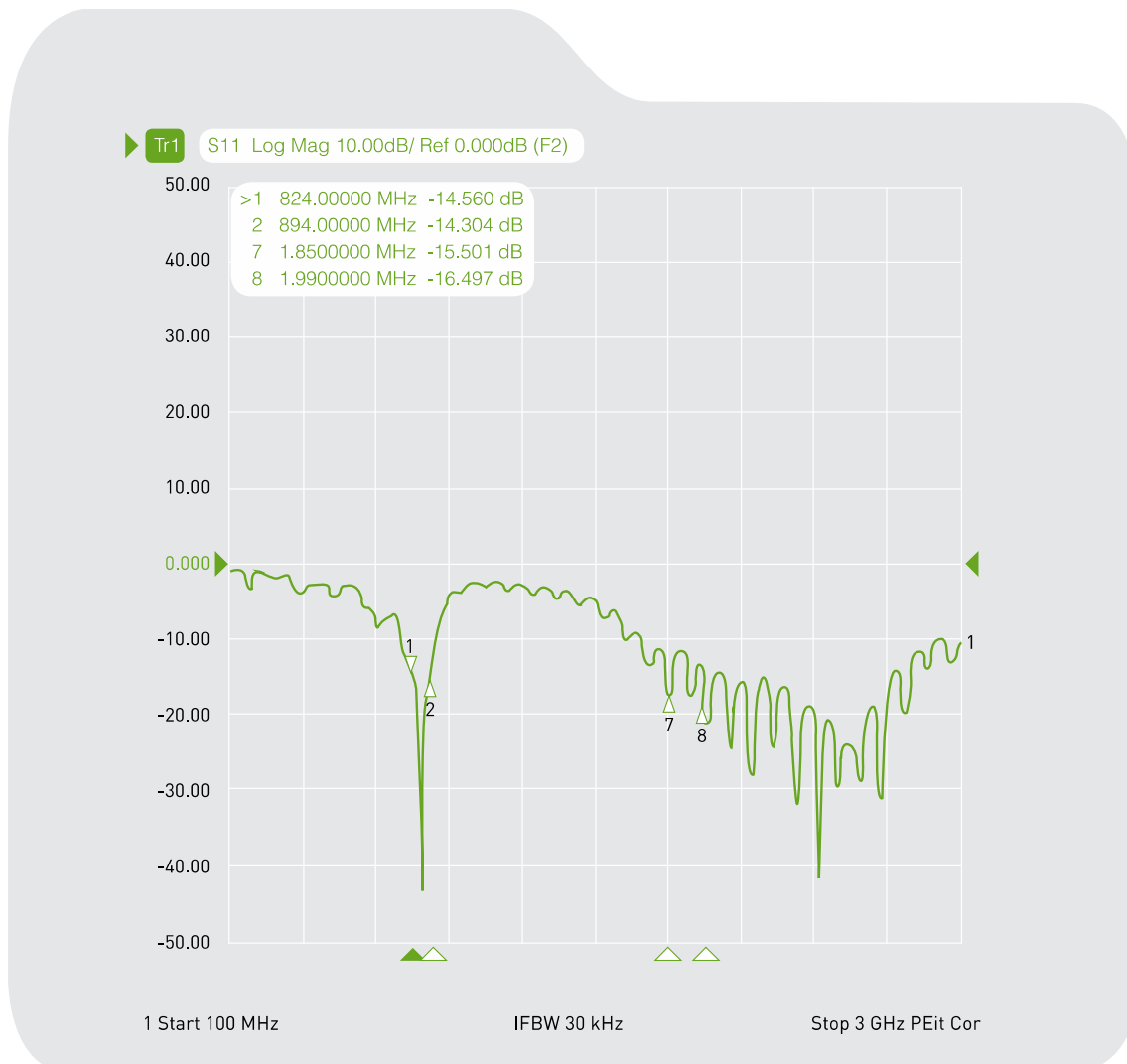
***note: specifications may be subject to change**

3. High Performance LNA (saw filter)

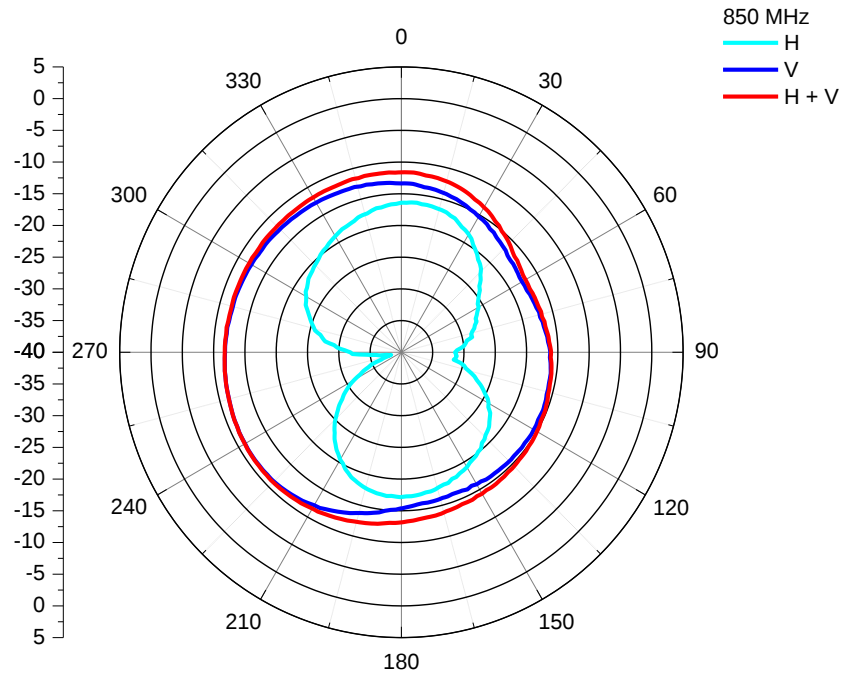
		2V	2.5V	3V	5V	6.5V
Saw Filter	Power Consumption	8mA	9mA	10mA	19mA	31mA
	Gain	30dB	31dB	32dB	35dB	36dB

3.1 Return Loss

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



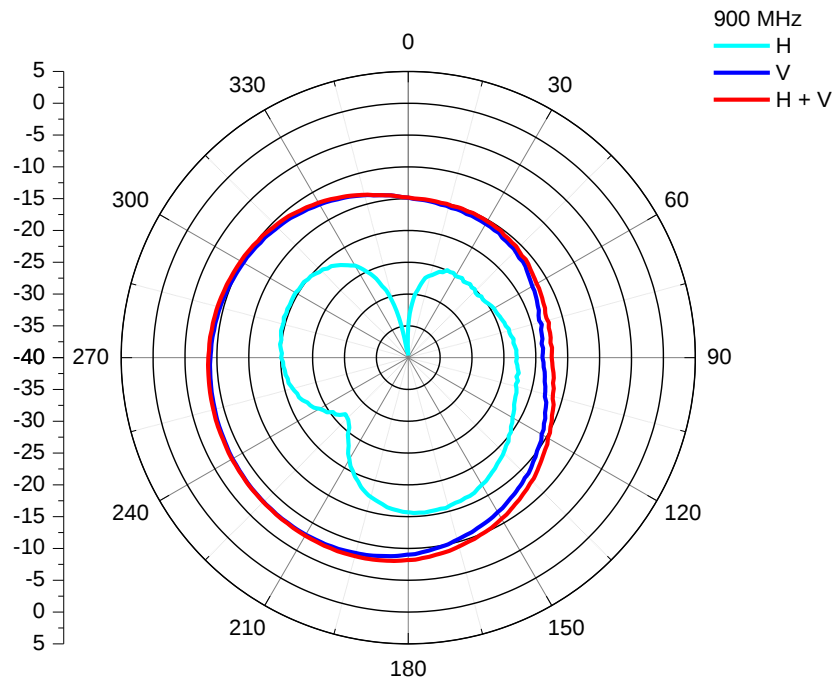
3.2 850 MHz



Center Frequency	850 MHz
Horizontal (dBi) peak	-16.30
Vertical (dBi) peak	-11.10
Horiz.+Vert. (dBi) peak	-10.99

Center Frequency	850 MHz
Horizontal (dBi) average	-20.60
Vertical (dBi) average	-13.68
Horiz.+Vert. (dBi)	-12.88

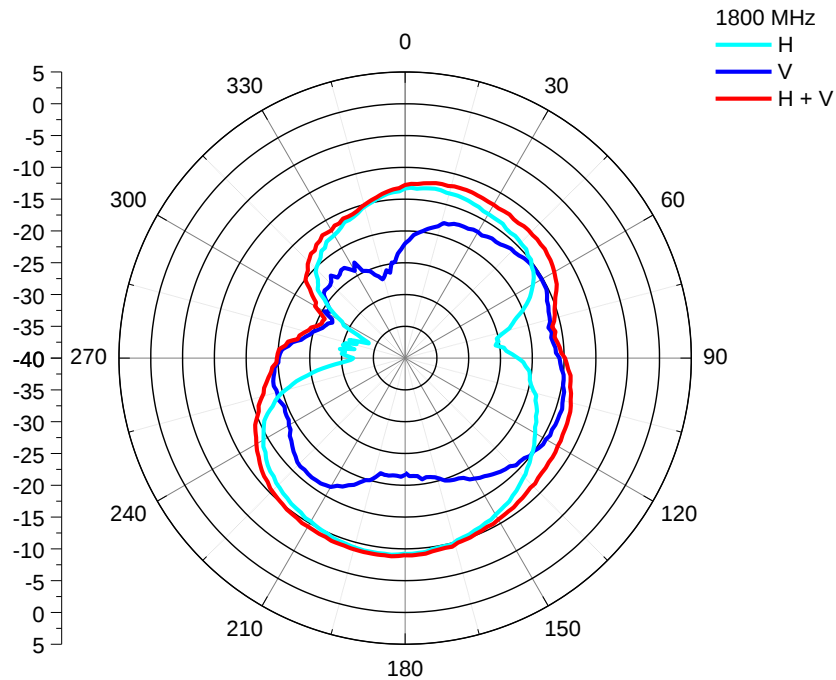
3.3 900 MHz



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

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

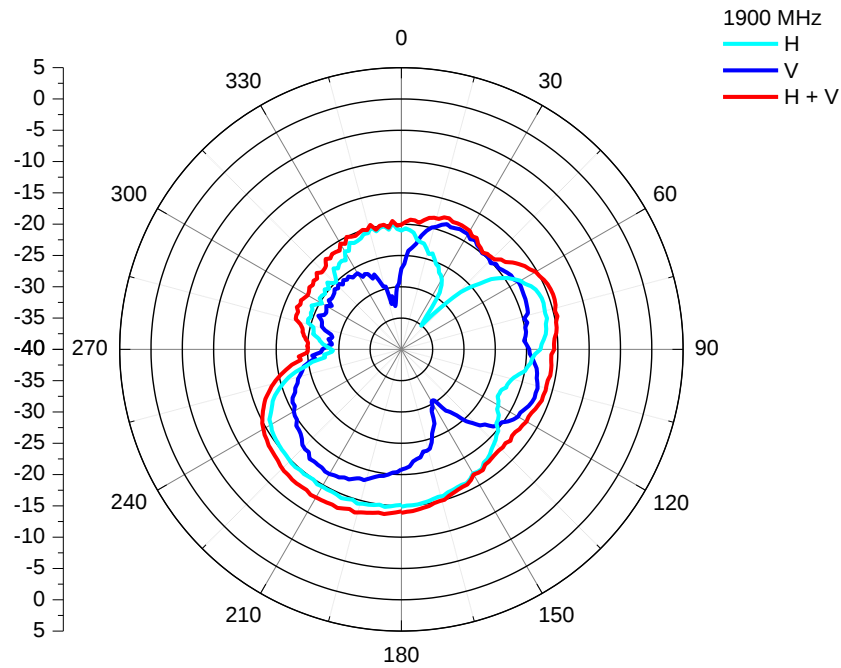
3.4 1800 MHz



Center Frequency	1800 MHz
Horizontal (dBi) peak	-9.00
Vertical (dBi) peak	-14.04
Horiz.+Vert. (dBi) peak	-8.76

Center Frequency	1800 MHz
Horizontal (dBi) average	-13.95
Vertical (dBi) average	-18.04
Horiz.+Vert. (dBi)	-12.52

3.5 1900 MHz



Center Frequency	1900 MHz
Horizontal (dBi) peak	-14.38
Vertical (dBi) peak	-16.99
Horiz.+Vert. (dBi) peak	-14.38

Center Frequency	1900 MHz
Horizontal (dBi) average	-18.49
Vertical (dBi) average	-20.86
Horiz.+Vert. (dBi) average	-16.51

5. Packaging

