

## Active “ Stingray“ GPS Antenna

### Built-In Short Circuit Protections

#### Innovative New Design GPS Antenna

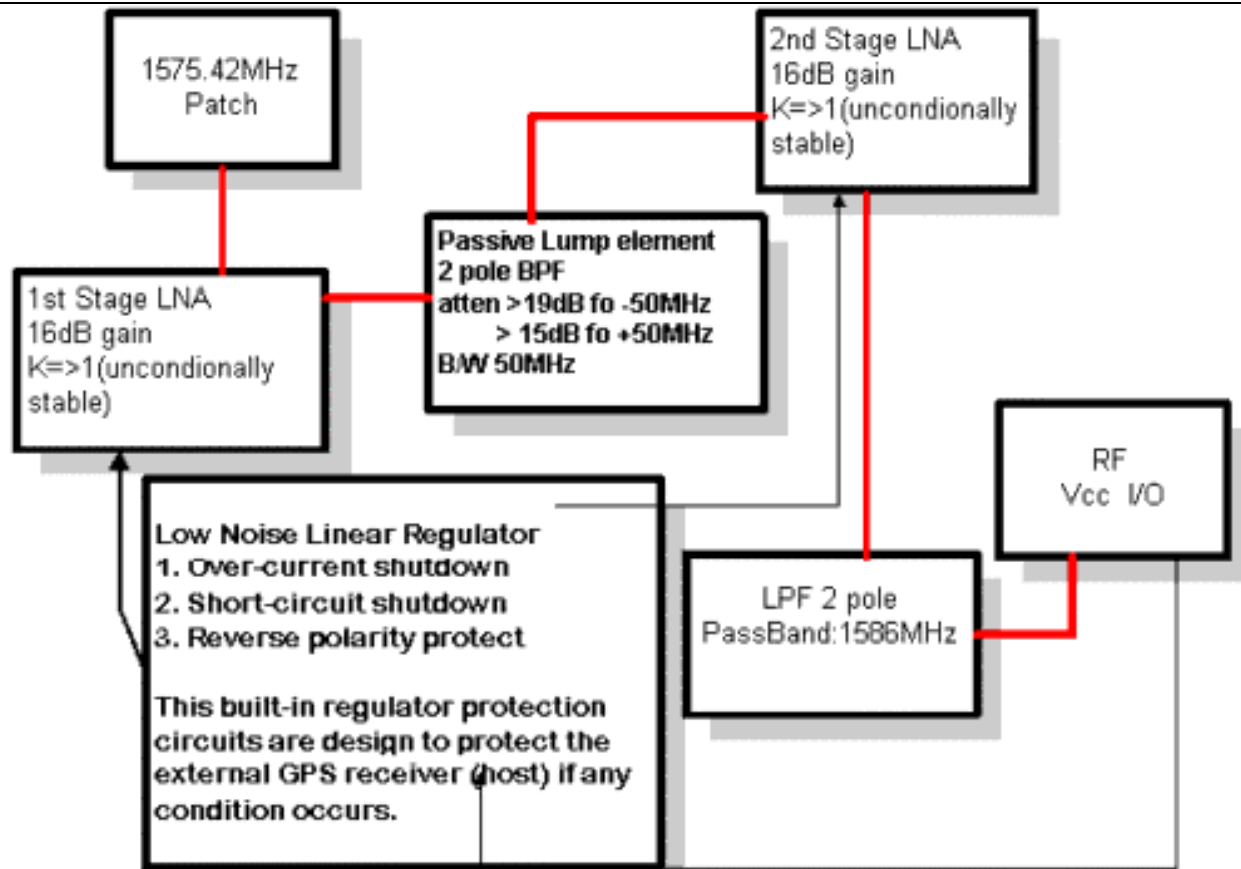


The **Stingray** is a low profile GPS active antenna system for the next generation multi-purpose GPS antenna products for Telemetry, Network Timing & Synchronization, Fleet Management, Navigations and AVL applications. This small print size of the antenna design does not reflect over-all performance, since the antenna itself needs no ground plane aid to deliver the L1 band small signal carrier that originates from the 24 orbiting USA satellites located thousands of miles over-head. The **Stingray**-antenna is also design as a standard power input voltages in range from +3Vdc to +12Vdc with reverse polarity shutdown, over-current sense shutdown and an EMI power line suppression.

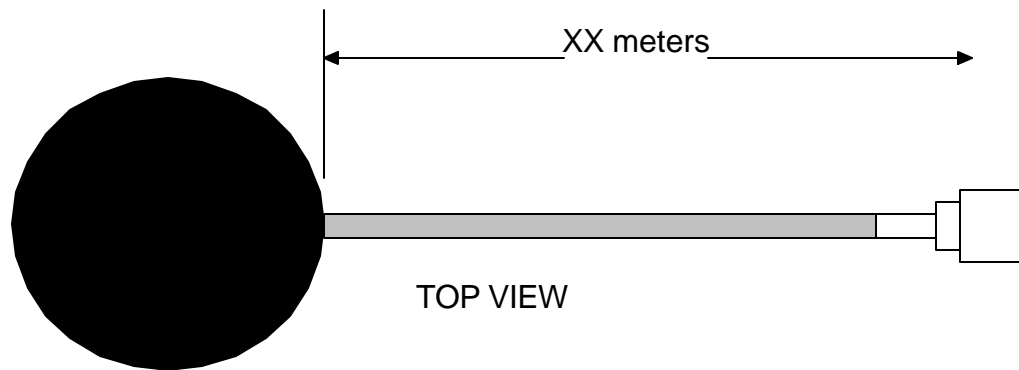
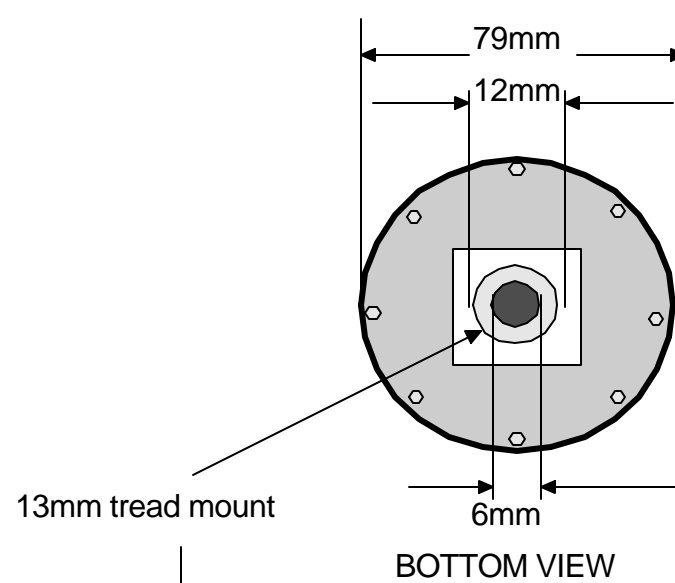
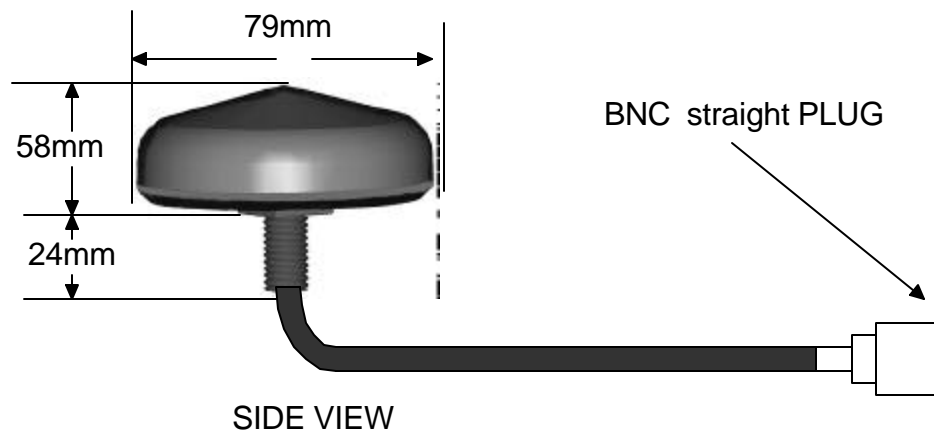
**The most important over-all design concept of the Stingray active antenna is the complete protections of the host sensitive GPS receiver made from any manufacturer that it serve and can also be destroy or degrade using an improper design antenna.**

		<b>Stingray Antenna Specifications</b>
<b>General</b>	Architecture Design	2 Stages active LNA
		Dual Filters, (HPF & LPF(lump element))
		+28dB gain
		Dielectric Patch antenna
		Low Noise Low drop-out, Linear Regulator
		GPS receiver short circuit protect
		Low Loss RG/174 Coax cable
		PC+ Radome Plastic
<b>Performance</b>	Receiving Frequency	L1 Band(1575MHz)
	Output Impedance	50 ohms
	Polarization's	Right Hand Circular (RHC)
	Bandwidth	<50MHz @ -3dB point
	VSWR	1.8Typical @ 1575MHz
	Elev. Angle Coverage	5~90 degree
	Az. Bearing Coverage	360 degree
	Filtering	Dual(BPF <50 Mhz B/W

<b>Electrical</b>	Over-all Gain	28dB (typical including 4dB cable loss & Filters)
	IP3	5dBm (Input intercept point)
	Over-all NF	<1.8dB @fo, 2dB max.
	LNA Characteristic	K=>1 Un-conditionally Stable
	RF Insertions loss	0.1dB, leakage power 100mW /1 watt input
	Power Input	+3Vdc to +12Vdc input, AutoSwitch
	Power Consumption	25mA
<b>Physical</b>	Power Input Sensor	Reverse Polarity Short Circuit shutdown
	Over-Current Sensor	Thermal Over-current shutdown >+150degreeC
	Dimensions	79d x 58h x 13mm
	Mount	13mm treaded (1/2inch)
	Radome Color	Black
Environmental	Coax Connector	BNC,SMA,TNC
	Coax Cable	RG-58
	Operating Temperature	-30 to + 85 degreeC
	Storage	-40 to + 90 degreeC



## ANTENNA SYSTEMS LAY-OUT



**Material**

GPS active antenna: Model MAR-XX  
 Cable harness: RG58 double shield low loss  
 Connector: BNC male 180degree  
 Magnet mount: 13mm tread mount  
 Cable length: sfandard 5meter  
 Material: PC+  
 Waterproof: Silicon filled

Project:	Active GPS antenna-MARINE
Title:	
DWG No.	MAR-00
Date:	OCT, 2003
Approval:	CHAI
Project Engineer:	JIANG