

## SPECIFICATION

Part No. : **AP.25F.07.0078A**

Spec No. : **AP.25F**

Product Name : **25mm Two Stage GPS Active Patch  
Antenna Module with front-end Saw Filter**

Features : Industry leading GPS antenna performance  
25mm\*25mm\*8mm (Ground Plane)  
78mm Ø1.13 I-PEX MHFI (U.FL)  
28dB LNA  
Wide Input Voltage 1.8V to 5.5V  
Low Power Consumption  
ROHS Compliant

Photo :

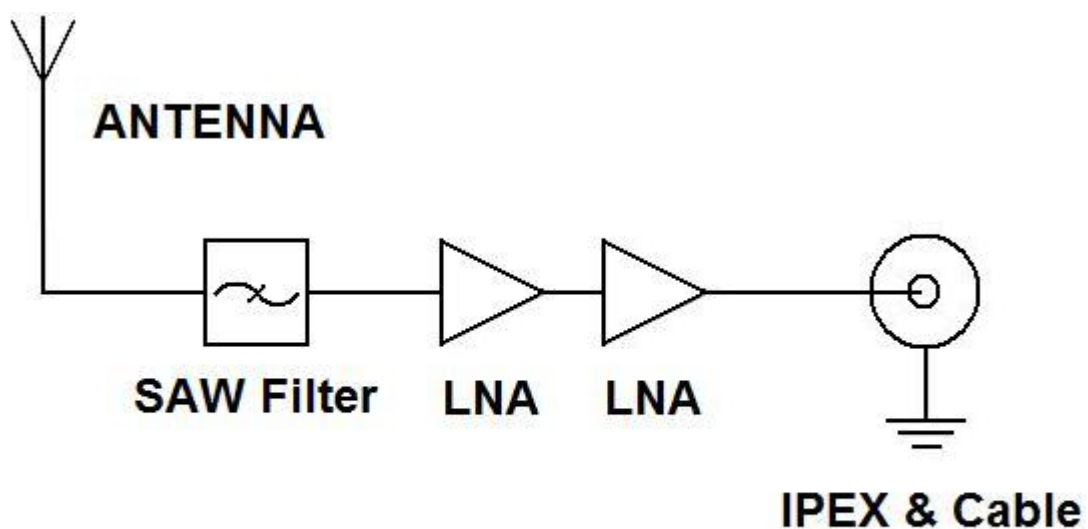


## 1.0 Introduction

The AP.25F has been designed specifically for embedded (inside device) integration with GPS receiver modules where there is a GSM transmitter nearby and risk of interference and saturation.

The AP.25F combines a 25\*25\*4mm advanced low profile ceramic patch antenna with a two stage LNA and a front-end SAW filter, with ultra thin coaxial cable.

Taoglas active antenna modules utilise XtremeGain™ technology for the highest sensitivity in the industry. The AP.25F consists of 2 functional blocks – the LNA and also the patch antenna.



The AP.25F has a SAW filter on the front of it. The main use of the AP.25F would be for small devices where the GSM transmitter is close to the GPS antenna, it helps avoid burn-out of the LNA or the module due to interference from the GSM transmitter at out band frequencies.

## 2.0 Specification

### Patch Antenna

Parameter	Specification
Frequency	1575.42 ± 1.023MHz
Gain @ Zenith	+2.0 dBic Typ. @ Zenith
Polarization	RHCP
Axial Ratio	3.0dB max. @Zenith
Patch Dimension	25*25*4mm

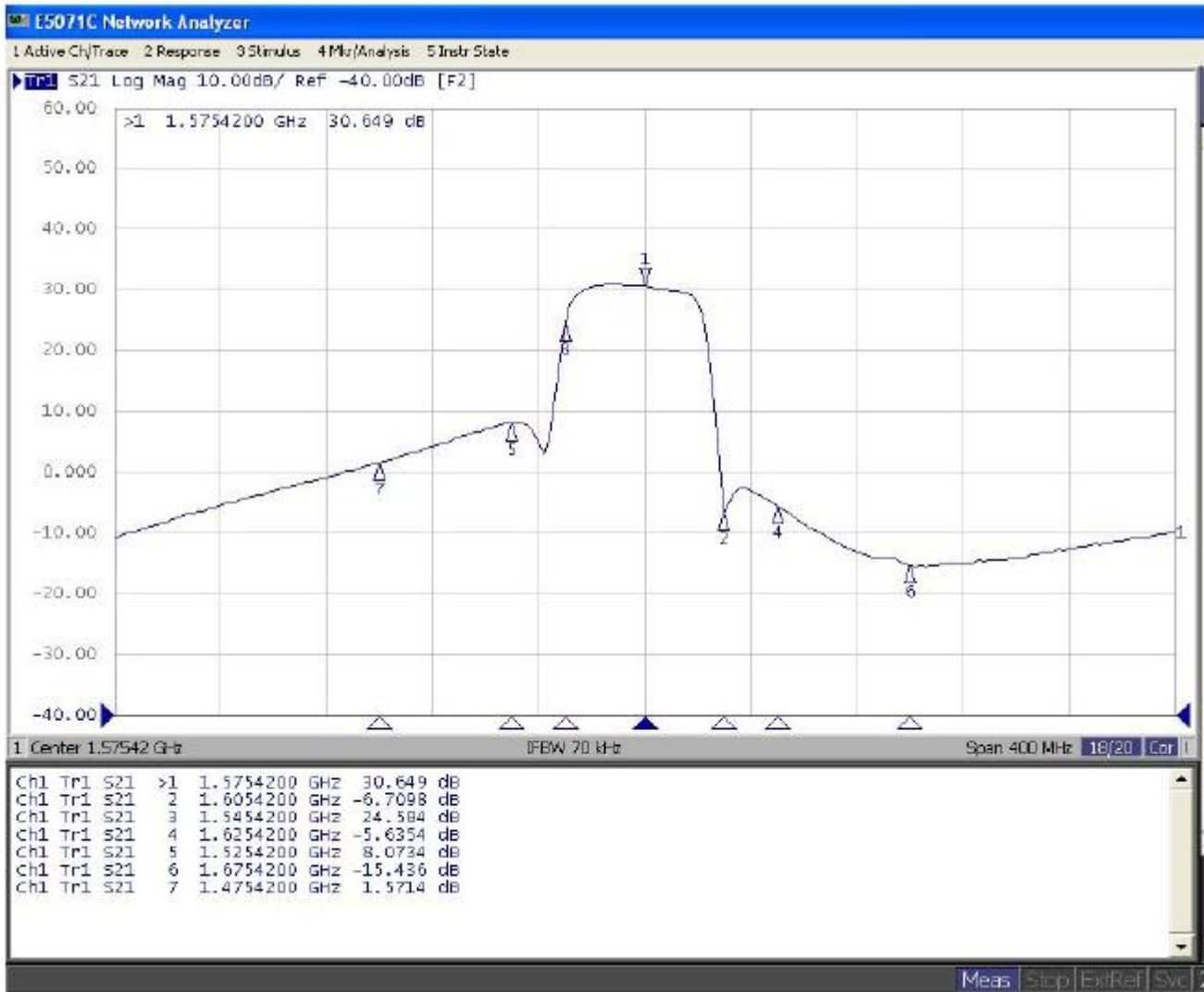
### LNA

Parameter	Specification		
Frequency	1575.42 ± 1.023MHz		
Outer Band Attenuation	F0=1575.42MHz		
	F0±30MHz 5dB min.		
	F0±50MHz 20dB min.		
	F0±100MHz 25dB min.		
Output Impedance	50Ω		
Output VSWR	2.0 Max		
Pout at 1dB Gain	Typ. -2dBm		
Compression point	Min. -6dBm		
LNA Gain, Power Consumption and Noise Figure			
	LNA Gain	Power Consumption (mA) Typ	Noise Figure
Voltage	(Typ)		Typ
Min. 1.8V	23dB	Min. 3mA - Max. 10mA	2.7dB
Typ. 3.0V	28dB	Min. 8mA – Max. 20mA	3.0dB
Max. 5.5V	30dB	Min. 30mA – Max. 40mA	3.7dB

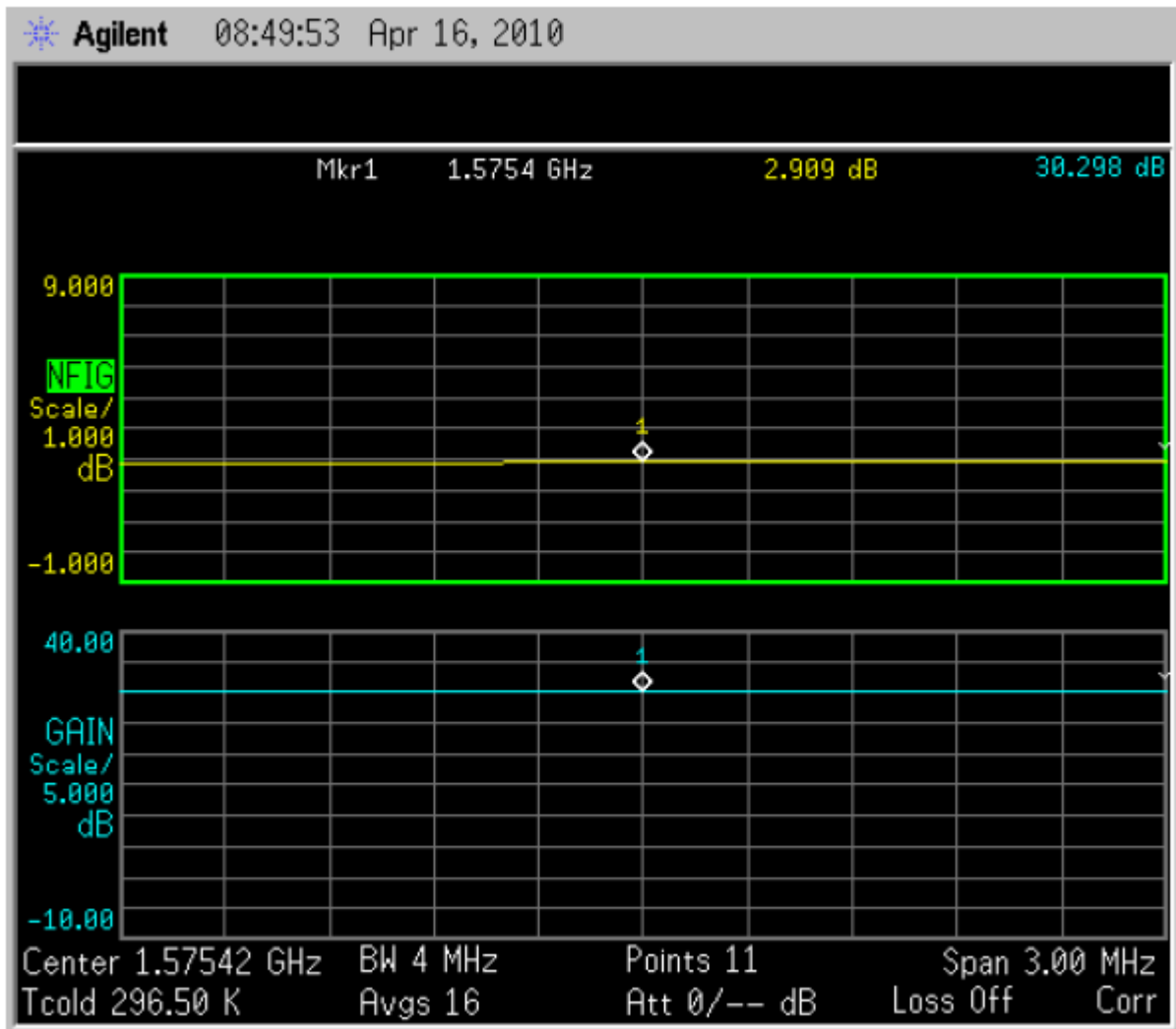
### Cable\* & Connector

Parameter	Specification
RF Cable	Coaxial Cable $\varnothing 1.13 \pm 0.1\text{mm}$ , length $80 \pm 2.0\text{mm}$
Connector	IPEX MHFI (U.FL)

### 3.0 LNA Gain and Out Band Rejection @3.0V



## 4.0 LNA Noise Figure @3.0V

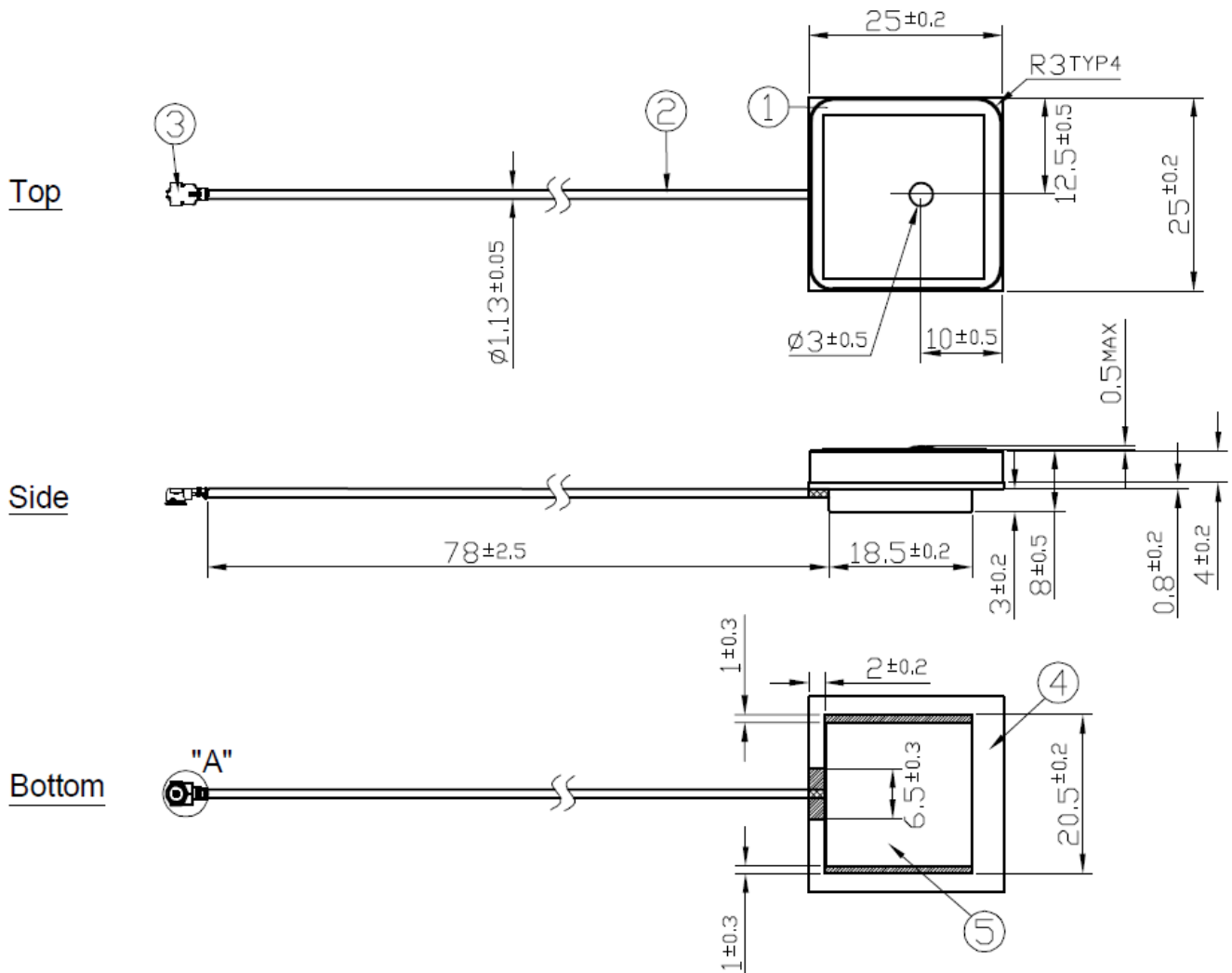


## 5.0 Total Specification

### (through Antenna, LNA, Cable and Connector)

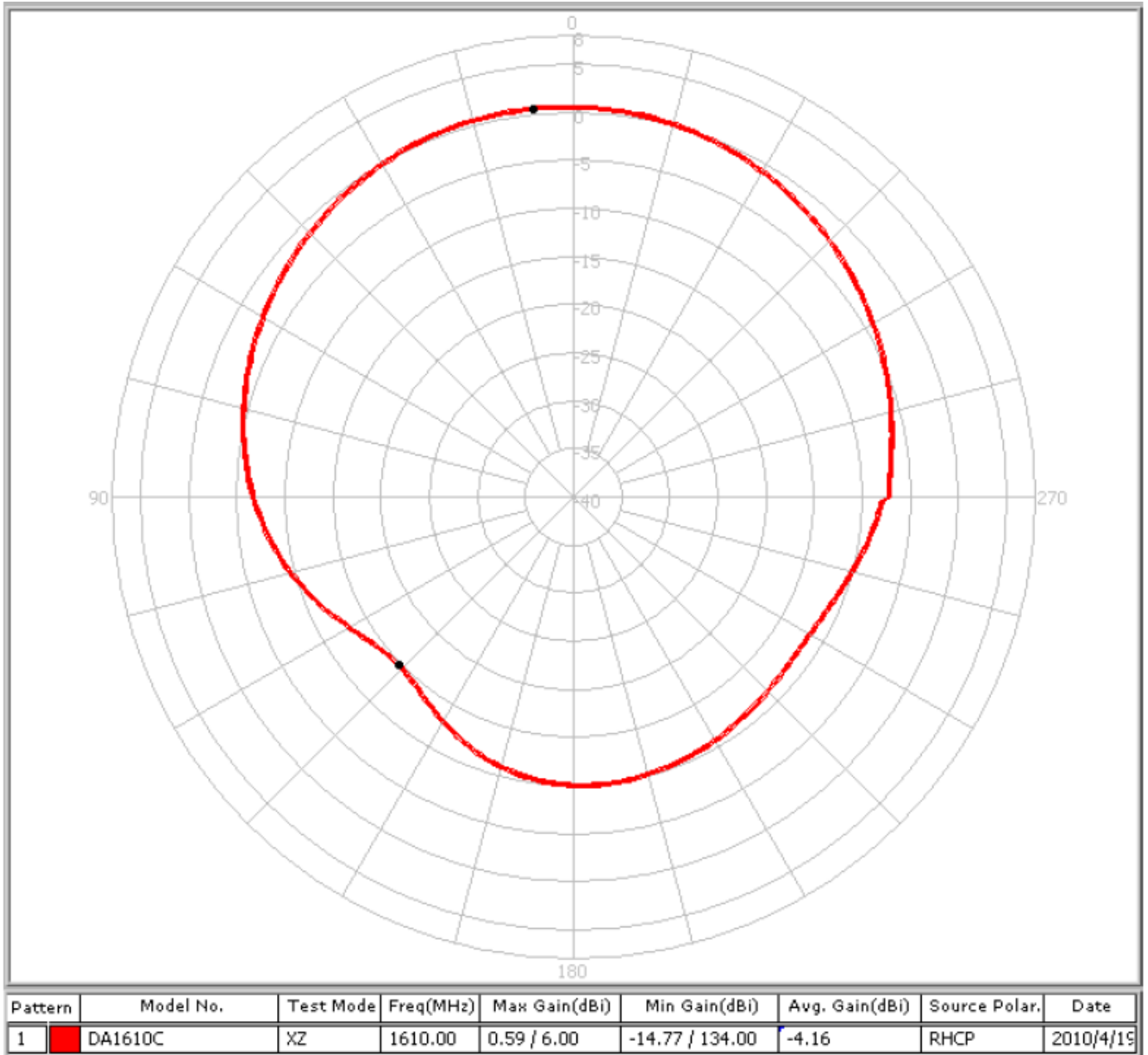
Parameter	Specification
Frequency	1575.42 ± 1.023MHz
Gain	At 3V: 30 ± 3dBi
Output Impedance	50Ω
Polarization	RHCP
Output VSWR	Max 2.0
Operation Temperature	-40°C to + 85°C
Storage Temperature	-40°C to + 85°C
Relative Humidity	40% to 95%
Input Voltage	Min:1.8V Typ. 3.0V Max:5V
Antenna	25*25*8mm

## 6.0 Technical Drawing



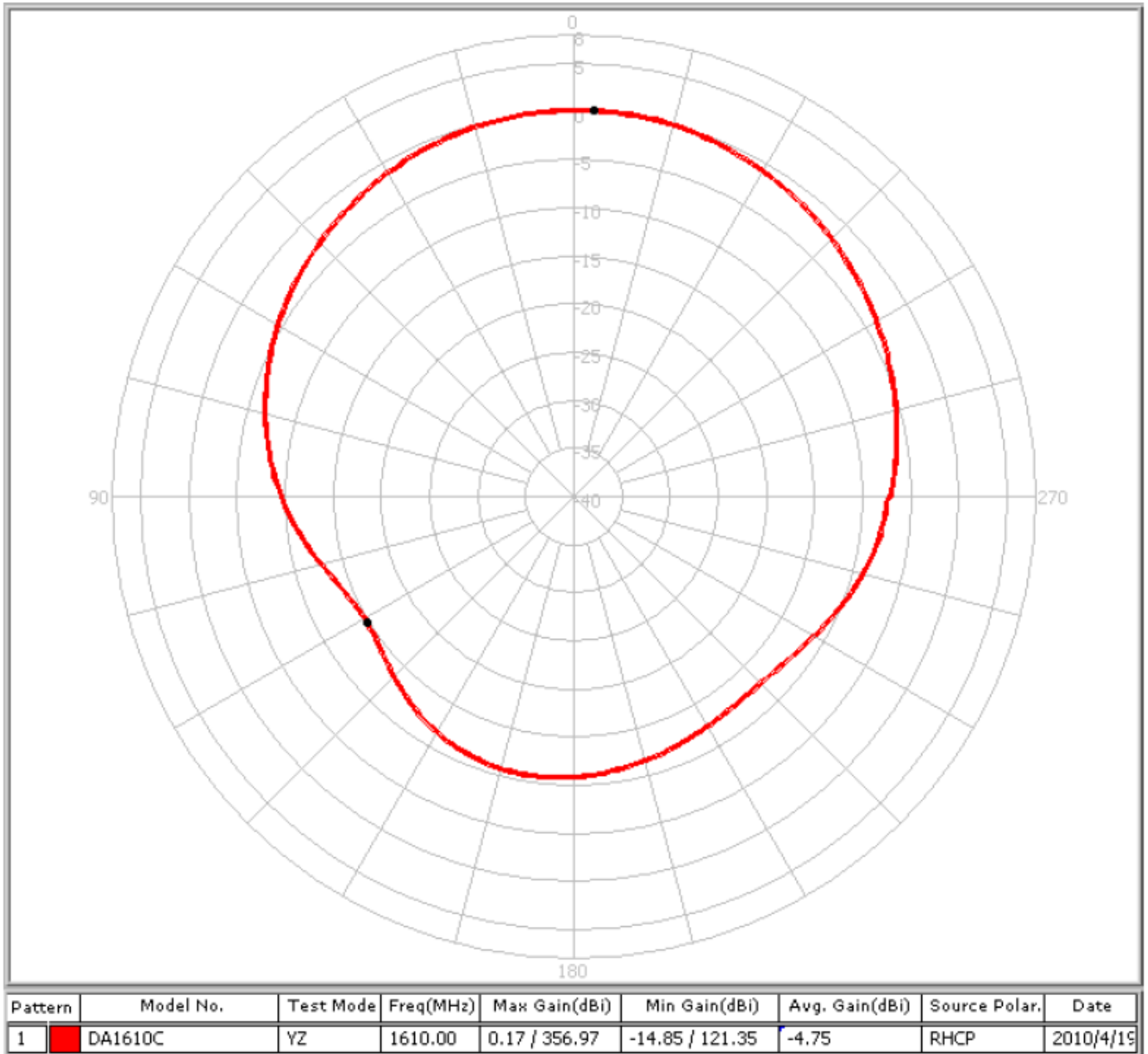
## 7.0 Radiation Patterns

### 7.1 XZ Plane

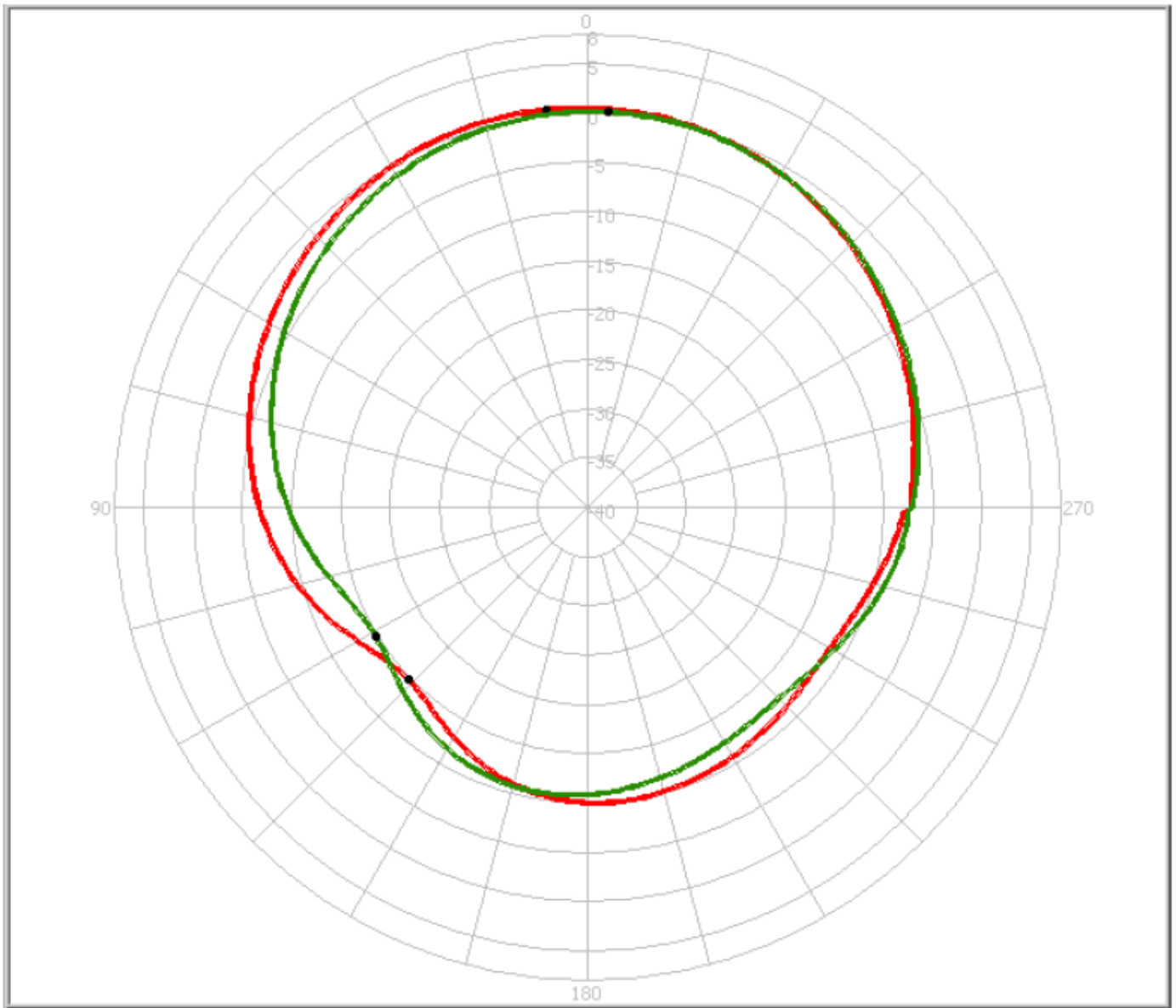




## 7.2 YZ Plane



### 7.3 XY Plane



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	DA1610C	XZ	1610.00	0.59 / 6.00	-14.77 / 134.00	-4.16	RHCP	2010/4/19
2	DA1610C	YZ	1610.00	0.17 / 356.97	-14.85 / 121.35	-4.75	RHCP	2010/4/19