

SPEC NO.	SP03BE15750-1790	ISSUED DATE	2021/04/14	PUBLISHED BY
PRODUCT NAME	GNBA-107AB	VERSION	01	
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# SPECIFICATION

SPEC NO. : SP03BE15750-1790

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PART NO. : 03V015071EM010T

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PRODUCT NAME : GNBA-107AB

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DESCRIPTION : 3V/25dB/49mm/ I-PEX

ROHS Compliant Product

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## REVISION STATUS

VERSION	DATE	PAGE	REVISION DESCRIPTION	PREPARED	CHECKED	APPROVED
01	2021/04/14	Whole	New Issued.	楊昆霖	楊昆霖	張敦信

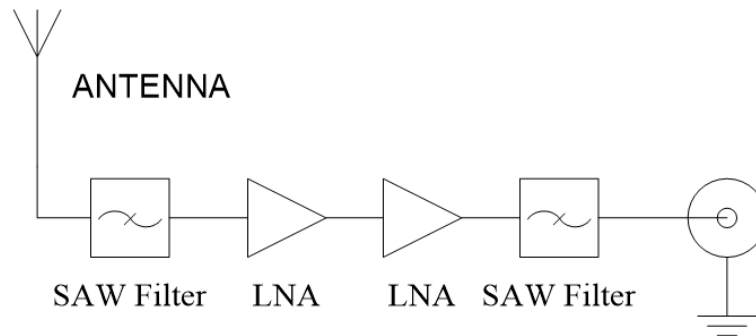
Prepared By	Checked By	Approved By
楊昆霖	楊昆霖	張敦信

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## SPECIFICATION FOR GPS ANTENNA WITH LOW NOISE AMPLIFIER

### 1.0 SYSTEM:

This antenna system consists of two functional blocks, the LNA portion and the patch antenna.



### 2.0 GENERAL

#### 2.1 ENVIRONMENTAL CONDITIONS

2.1.1	Operation Temperature	- 40°C to + 85°C
2.1.2	Storage Temperature	- 40°C to + 105°C
2.1.3	Relative Humidity	40% to 95%

#### 2.2 ELECTRICAL SPECIFICATIONS

2.2.1	Input Voltage	Min:1.8 V	Typ: 3.0V	Max:5.5V
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#### 2.3 CABLE & CONNECTOR

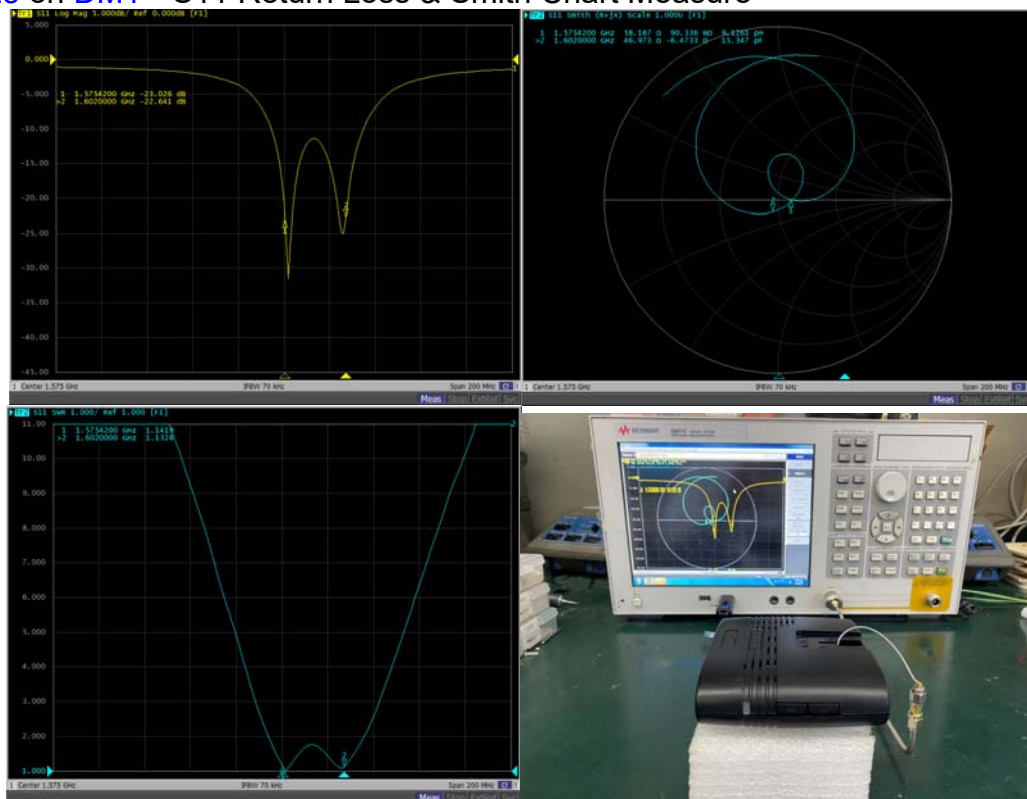
2.3.1	RF Cable	RF Coaxial Cable, $\varphi 1.13 \pm 0.1\text{mm}$ , $L = 49 \pm 2\text{ mm}$
2.3.2	RF Connector	I-PEX

### 3.0 ANTENNA

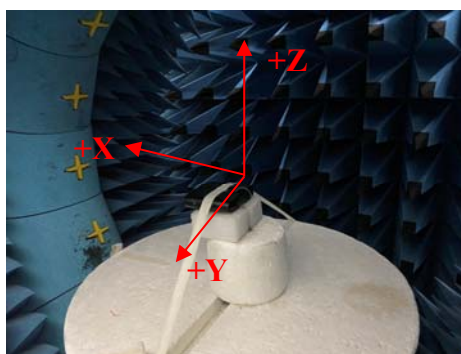
3.1	Antenna Dimensions	25mm*25mm*4mm
3.2	Frequency Range	1574~1610 MHz
3.3	Gain	1575.42MHz: 2 dBic Typ. @zenith 1602MHz: 1 dBic Typ. @zenith
3.4	Polarization	RHCP

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### DA25 on DM1 S11 Return Loss & Smith Chart Measure

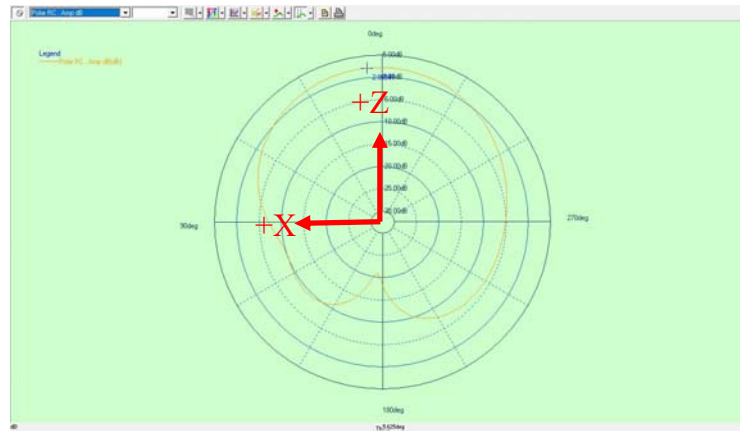


DA25	Return Loss(dB)	Impedance(Ohm )	VSWR
1575.42MHz	-23.02	58.16-j9.03	1.14
1602MHz	-22.64	46.97-j6.47	1.13

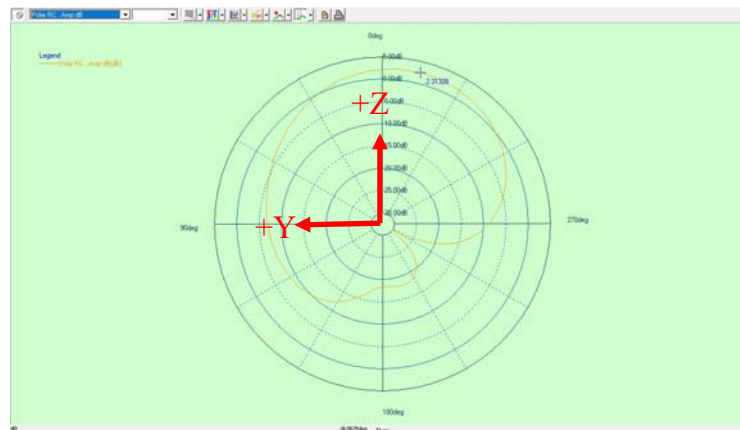


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## XZ-Plane 1575.42MHz



## YZ-Plane 1575.42MHz

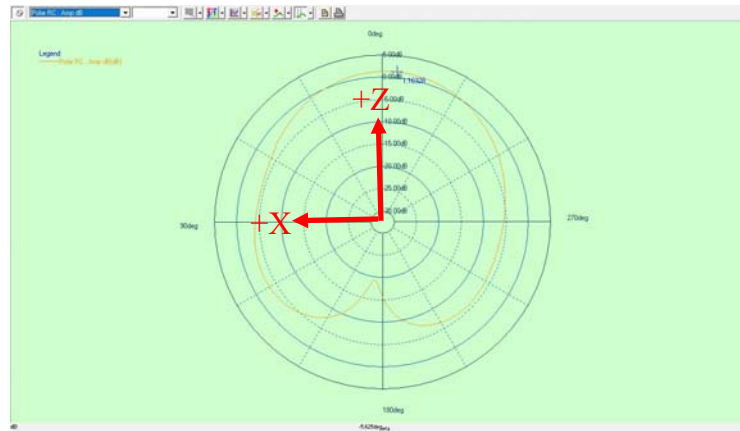


1575.42MHz	Peak Gain	Zenith Gain
XZ-Plane	2.06	2.02
YZ-Plane	2.31	2.02

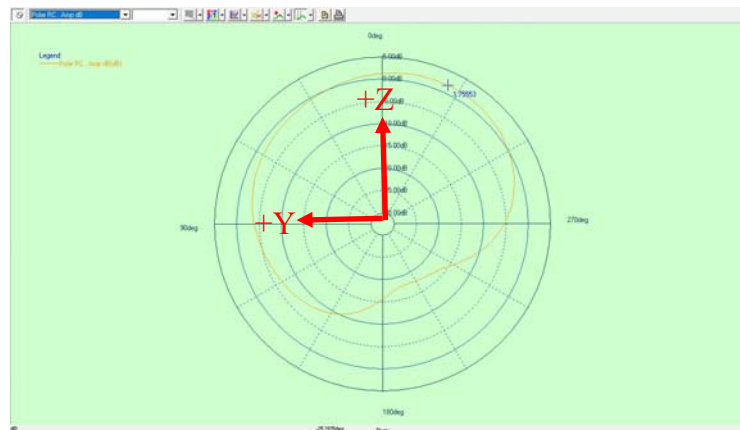
(Unit : dBic)

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## XZ-Plane 1602MHz



## YZ-Plane 1602MHz



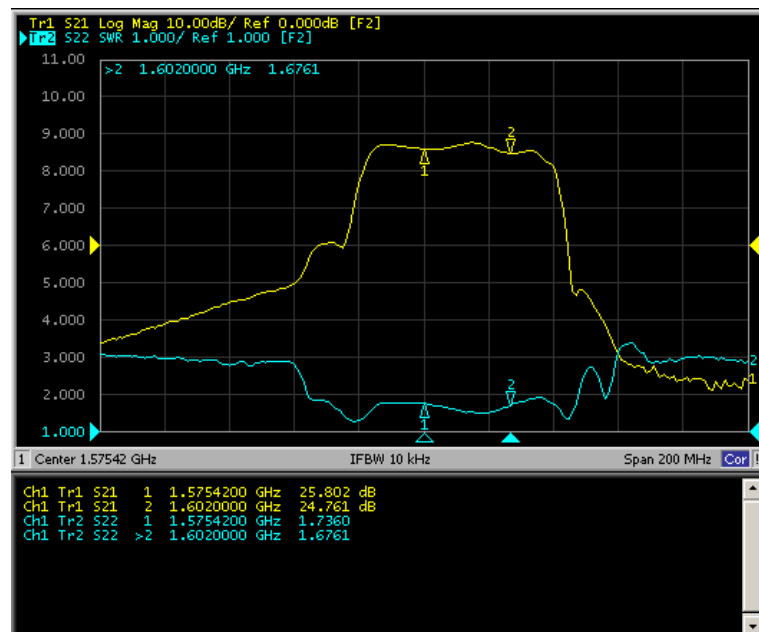
1602MHz	Peak Gain	Zenith Gain
XZ-Plane	1.16	1.16
YZ-Plane	1.75	1.16

(Unit : dBic)

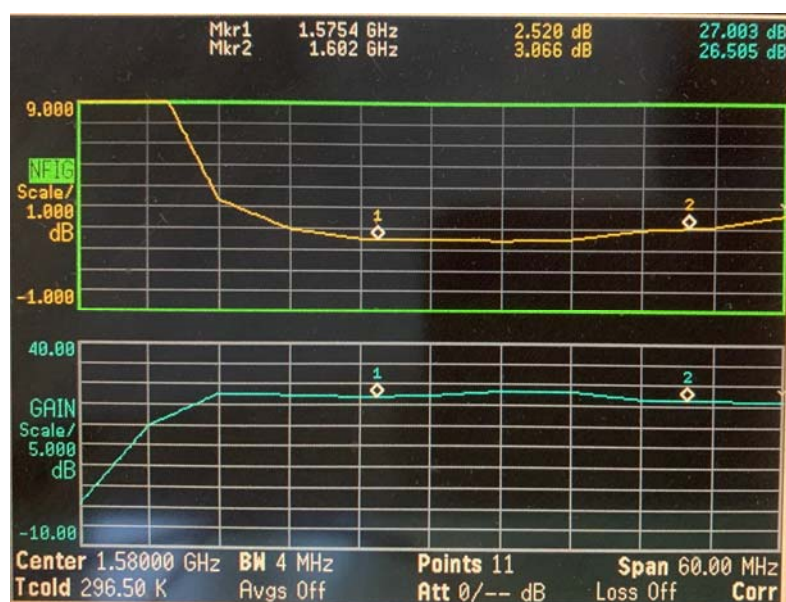
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#### 4.0 LNA

4.1	Frequency Range	1575.42 ± 1.023 MHz 1602 ± 8 MHz
4.2	Gain	25 dB Typ.( + 25 °C± 5°C)
4.3	Noise Figure	1575.42 MHz: 2.5 dB Typ. ( + 25 °C ± 5°C) 1602 MHz: 3 dB Typ. ( + 25 °C ± 5°C)
4.4	Output Impedance	50 Ω
4.5	Output VSWR	2.0 Max



LNA Gain @3.0V



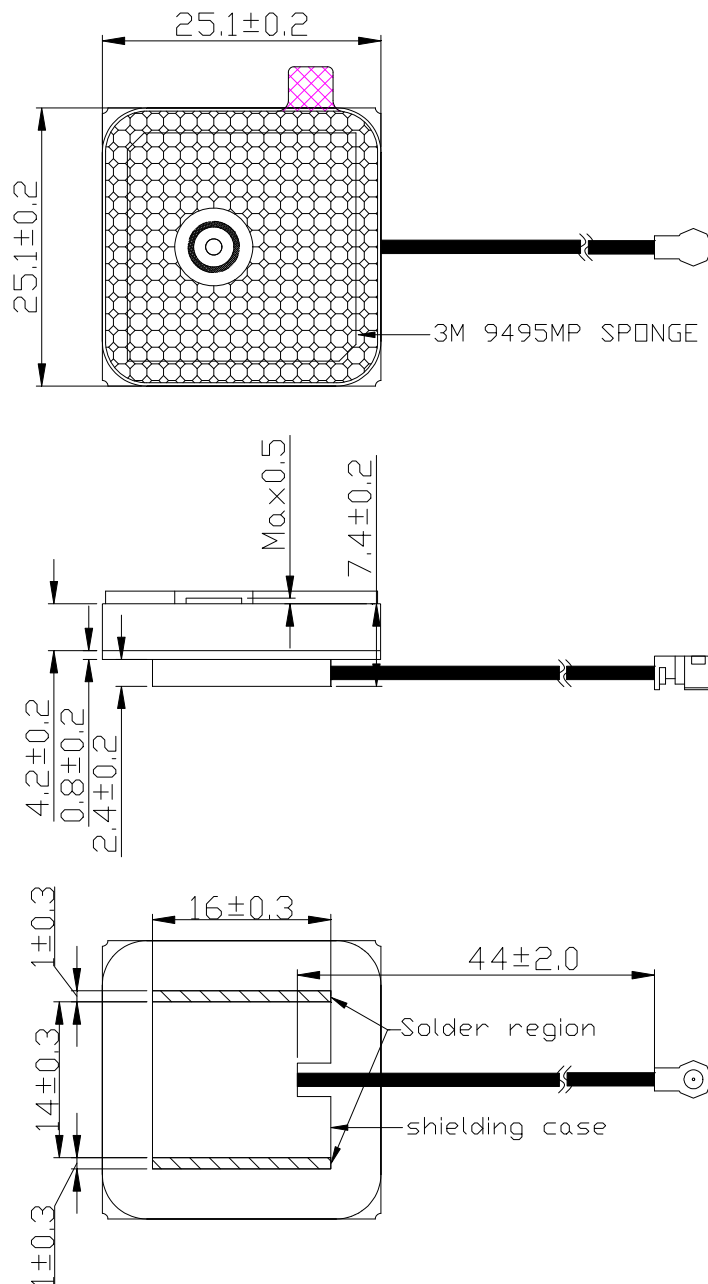
LNA Noise Figure @3.0V

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## 5.0 TOTAL SPECIFICATIONS (Through Antenna, LNA, Cable and Connector)

5.1	Frequency Range	1574~1610 MHz
5.2	Gain	At 90° 1575.42MHz: $27 \pm 3$ dBic 1602MHz: $26 \pm 3$ dBic
5.3	Output Impedance	$50 \Omega$

## 6.0 OUTLINE

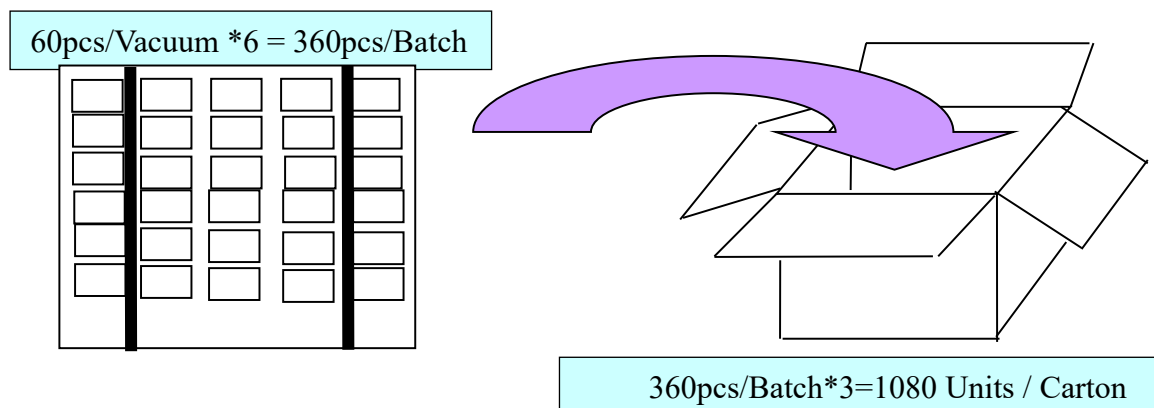


Unit: mm

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## 7.0 Package

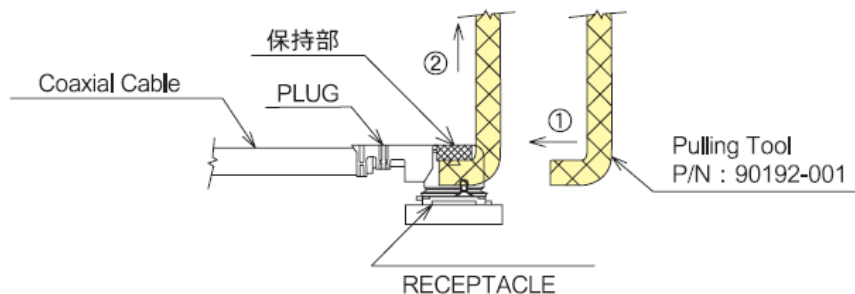
### 7.1 1080 Units / Carton



## 8.0 Plugs Usage Precautions

### 8.1 Mating / unmating

- (1) To disconnect connectors, insert the end portion of I-PEX under the connector flanges and pull off vertically, in the direction of the connector mating axis.
- (2) To mate the connectors, the mating axes of both connectors must be aligned and the connectors can be mated. The "click" will confirm fully mated connection. Do not attempt to insert on an extreme angle.



### 8.2 Pull forces on the cable after connectors are mated

After the connectors are mating, do not apply a load to the cable in excess of the values indicated in the diagram below.

