

Antenna Test Report

Report No. : STRF2021100732

Project No. : RF60G-ANT01

Applicant Name : StreamTeck Scientific Inc.

Address : 7F-1, No.266, Sec. 2, Beixin Road Xindian Dist., New Taipei City 231,
Taiwan

Manufacturer : StreamTeck Scientific Inc.

Address : 7F-1, No.266, Sec. 2, Beixin Road Xindian Dist., New Taipei City 231,
Taiwan

Product No. : StreamTeck Radar Antenna

Model No. : Series Fed Patch Array Antenna

Sample Receive Date : 2021/9/27

Test Date : 2021/10/04

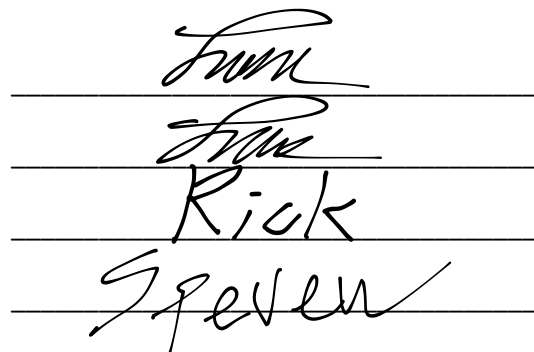
Issued Date : 2021/10/07

Tested by : Frank Hsieh

Compiled by : Frank Hsieh

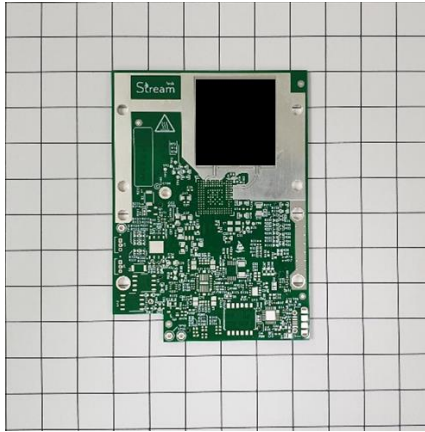
Supervised by : Rick Su

Approved by : Steven Su

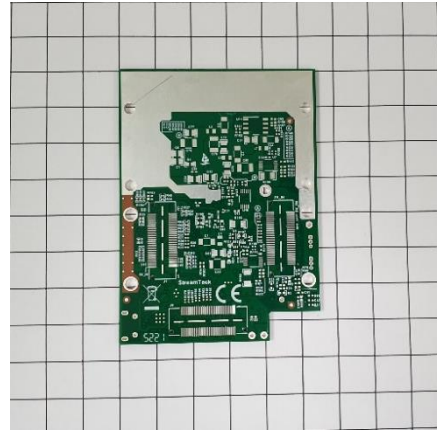
Four horizontal lines with handwritten signatures above them. The signatures are: Frank Hsieh (top), Frank Hsieh (second), Rick Su (third), and Steven Su (bottom).

1. General Information

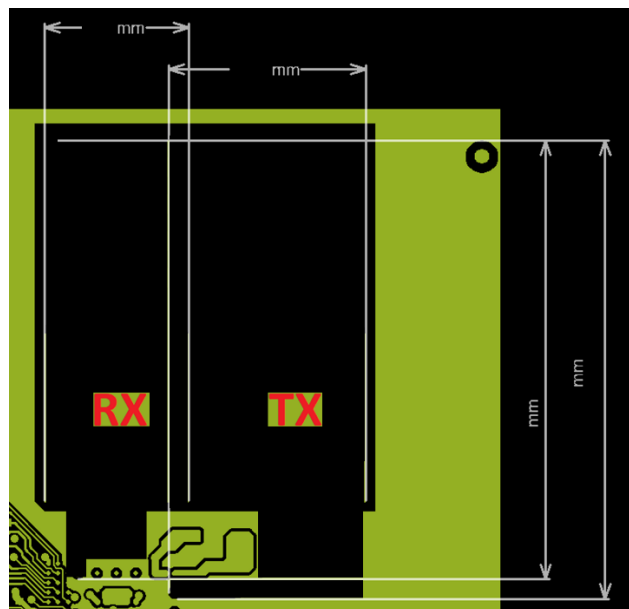
1.1 Antenna Photographs and Dimension:



Front View



Back View



Antenna Dimension

1.2 Antenna Description:

Product No.:	StreamTeck Radar Antenna
Model No.	Series Fed Patch Array Antenna
Manufacturer:	StreamTeck Scientific Inc.
Frequency Range:	60GHz ~ 64GHz
Type:	PCB
Max Gain:	RX: 15.7 (dBi) / TX: 15.8 (dBi)

1.3 Testing Lab Information:

- Lab Name: Wireless Communications & Applied Electromagnetics LAB
- Address: No.43, Keelung Rd., Sec.4, Da'an Dist., Taipei City 106335, Taiwan
- Certification: None
- Size (LxWxH): 3m x 2.9m x 3m
- Normal Applications: Antenna Radiation Pattern Measurement
- Measurement Distance: 55cm

1.4 Testing Condition:

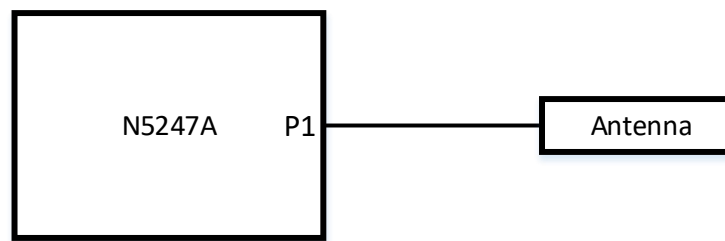
- Temperature: 25±1°C
- Humidity: <50%

2. Return Loss

2.1 Test Equipment:

Equipment Description	Model	Manufacturer	Current Calibration Date	Next Calibration Date
Network Analyzer	N5247A	Keysight	2020/11/10	-
Calibration Tool	85033E	Keysight	-	-

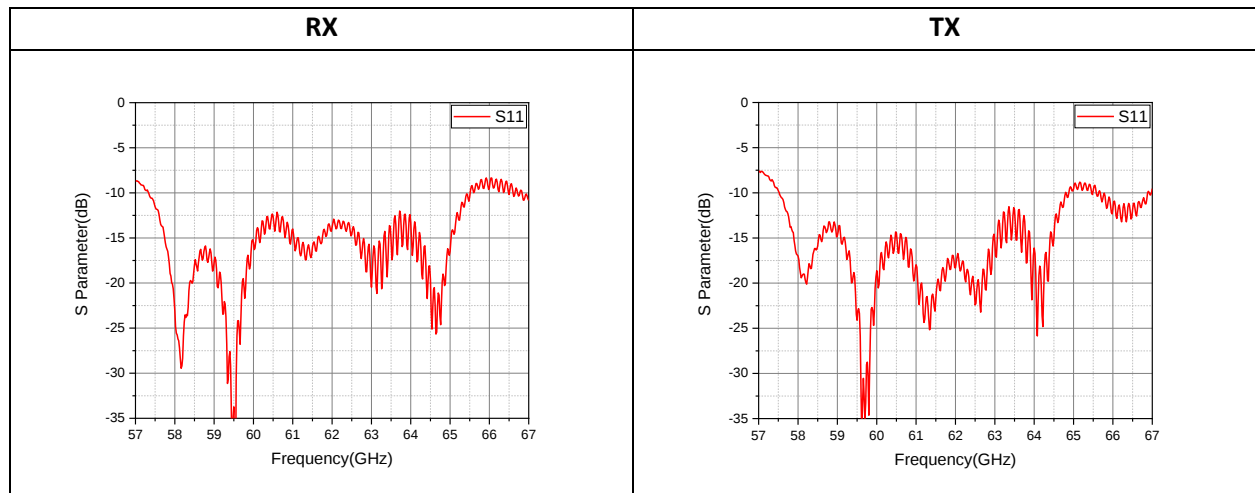
2.2 Test Setup:



Test Setup

2.3 Test Procedure:

1. Set Frequency, sweep setup, the frequency range is from 57GHz to 67GHz.
2. Using SOL (short, open, and load) calibration tool (85033E) to calibrate PNA with connecting cable.
3. After calibration, PNA shows the result of DUT and ignores the effect of connecting cable
4. Start measurement of AUT
5. Export data

2.4 Test Result:**2.4.1 Return Loss Plot:****2.4.2 Return Loss Summary:**

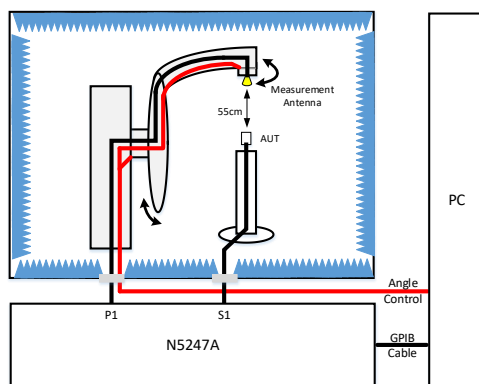
Antenna \ Frequency	60GHz	62GHz	64GHz
RX	-15.6dB	-13.7dB	-14.9dB
TX	-18.8dB	-18.1dB	-16.1dB

3. Gain & Patterns

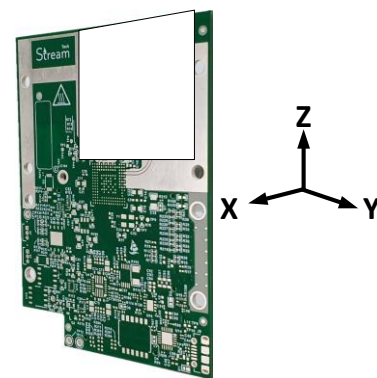
3.1 Test Equipment:

Equipment Description	Model	Manufacturer	Current Calibration Date	Next Calibration Date
Network Analyzer	N5247A	Keysight	2020/11/10	-
Horn Antenna	WR15	Fei Teng Wiress	-	-
Spherical Far Field Antenna Measurement Anechoic Chamber	AMS936SA	WaveFidelity	-	-
Measurement Software	NSI2000	NSI MI		

3.2 Test Setup:



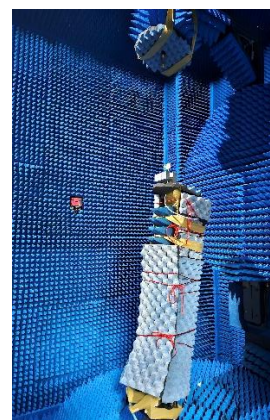
Test Setup



AUT Coordinate System



Instruments View



Inside View

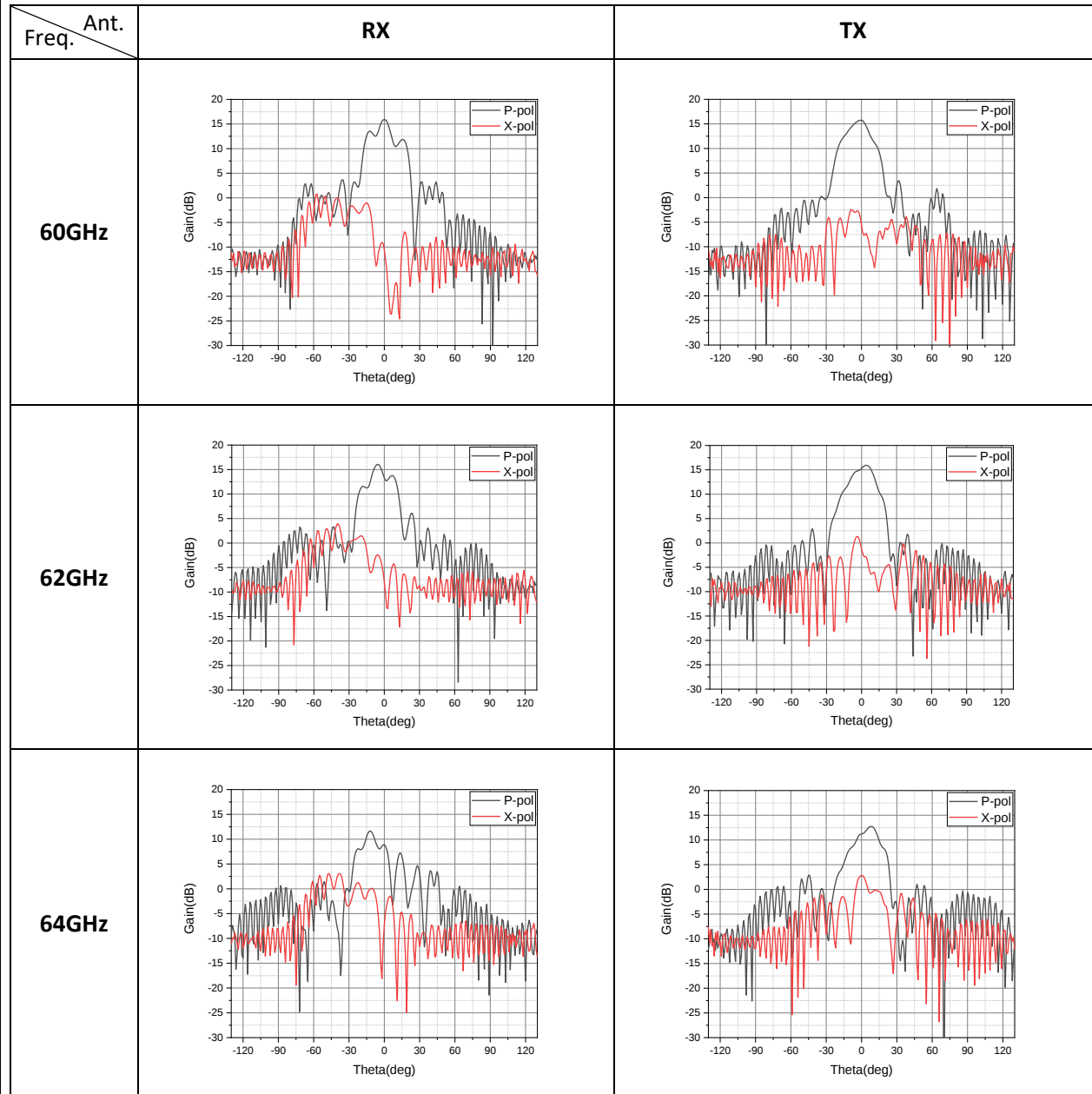
3.3 Test Procedure:

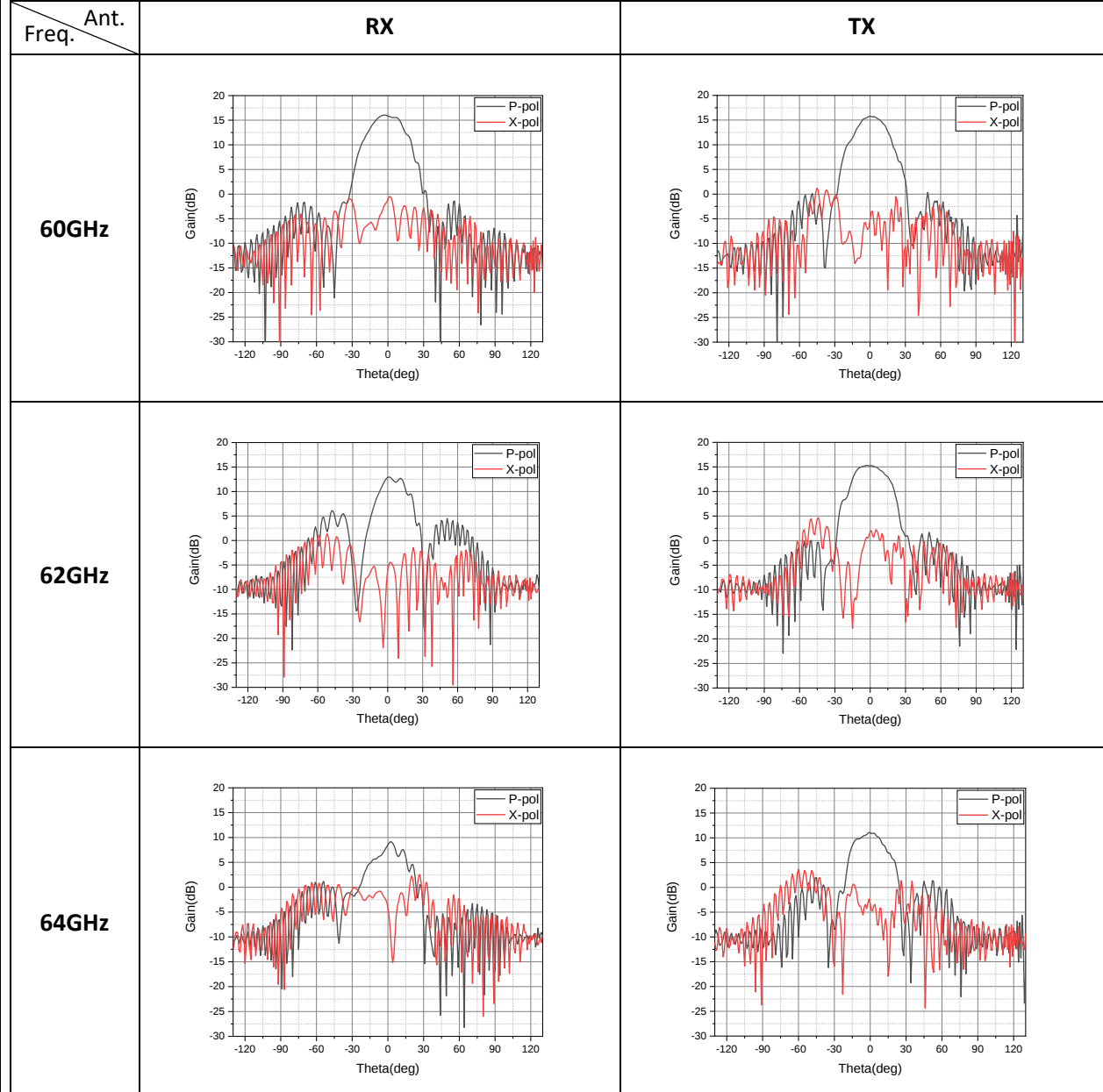
1. Equipment setup
2. Measure standard antenna, and set the result as a cal. file
3. Measure AUT
4. While measuring antenna pattern. The test bench is fixed. Scanning arm with measurement probe antenna scan $\pm 180^\circ$ referred to center of bench. With every scan angle, the measurement probe antenna rotates 360° and collects data at each rotation angle.
5. After Measure standard antenna and AUT, using standard antenna as cal. file and its own gain table to calculate the gain of AUT.
6. Export radiation pattern

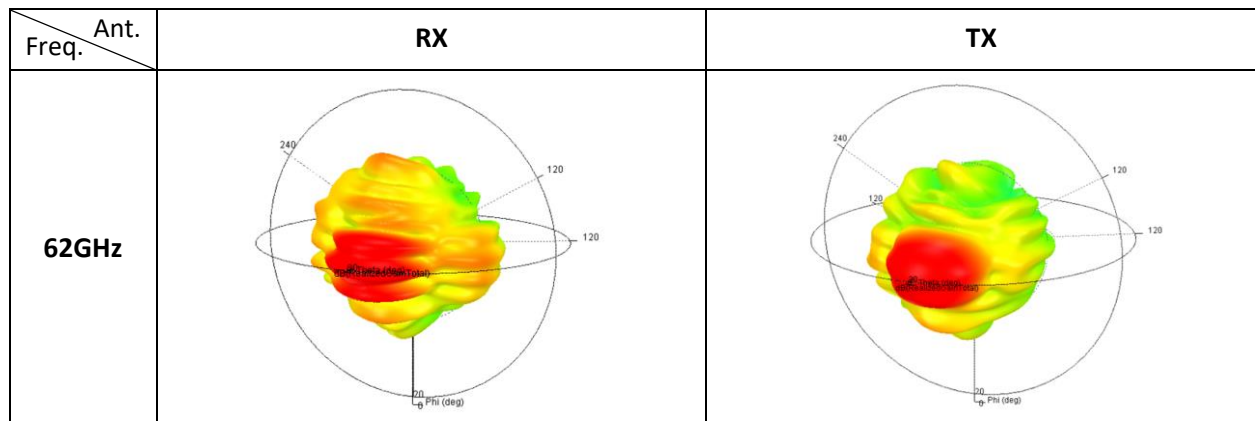
3.4 Test Result

3.4.1 2D Plot:

3.4.1.1 XZ Cut:



3.4.1.2 YZ Cut

3.4.2 3D Plot:**3.4.3 Peak Gain Summary:**

Ant.	RX	TX
Peak Gain		
62GHz	15.7dBi	15.5dBi