

Document NO.	STA-0811-MTA03P
Maker Code	ST3100FP9WiFi
DATE	2025. 08. 11
Page	1 / 10

Model	Type	Rev.	Startellabs	IR
RG3100	FPCB		Franklin Technology	IR

APPROVAL SHEET

Customer : Franklin Technology

Company : Startellabs

Item : RG3100 ANT9 Antenna

Model : RG3100

Customer P/N :

Maker Code : ST3100FP9WiFi



Department	Design	Check	Approval
Franklin Technology			
STARTELLABS		<i>Daniel</i>	<i>Ar</i>

STARTELLABS CO.,LTD
 #A-451,Gwangmyeong G Tower
 Soha-ro 190, Gwangmyeong-si, Gyeonggi-do,Korea(ZIP:14322)
 TEL:02)6498-6961
 FAX:02)6499-6961

Document NO.	STA-0811-MTA03P
Maker Code	ST3100FP9WiFi
DATE	2025. 08. 11
Page	2 / 10

Model	Type	Rev.	Startellabs	IR
RG3100	FPCB		Franklin Technology	IR

► Contents ◀

1. Revision History of Product Specification	03/10
1.1 History List of Approval Sheet	03/10
2. Circuit Specification	04/10
2.1 Test Setting	04/10
2.1.1 Test Environment (Condition/Method)	04/10
2.2 Electrical Specification	06/10
2.2.1 Electrical Spec. of SET (With VSWR)	07/10
2.2.2 Passive Gain & 3D Pattern	08/10
3. Mechanical Specification	09/10
3.1 Material Certificate	09/10
3.2 Assy Drawing	10/10

1. Revision History of Product Specification

1.1 History List of Approval Sheet

[illegible]

Document NO.	STA-0811-MTA03P
Maker Code	ST3100FP9WiFi
DATE	2025. 08. 11
Page	4 / 10

Model	Type	Rev.	Startellabs	IR
RG3100	FPCB		Franklin Technology	IR

2. Circuit Specification

2.1 Test Setting

2.1.1 Test Environment (Condition+A338/Method)

① VSWR

Step 1. Connect ANT port with cable included adaptor to port1 of Network analyzer

Step 2. Point out markers on network analyzer display at target frequencies.

Step 3. Inspect VSWR



Document NO.	STA-0811-MTA03P
Maker Code	ST3100FP9WiFi
DATE	2025. 08. 11
Page	5 / 10

Model	Type	Rev.	Startellabs	IR
RG3100	FPCB		Franklin Technology	IR

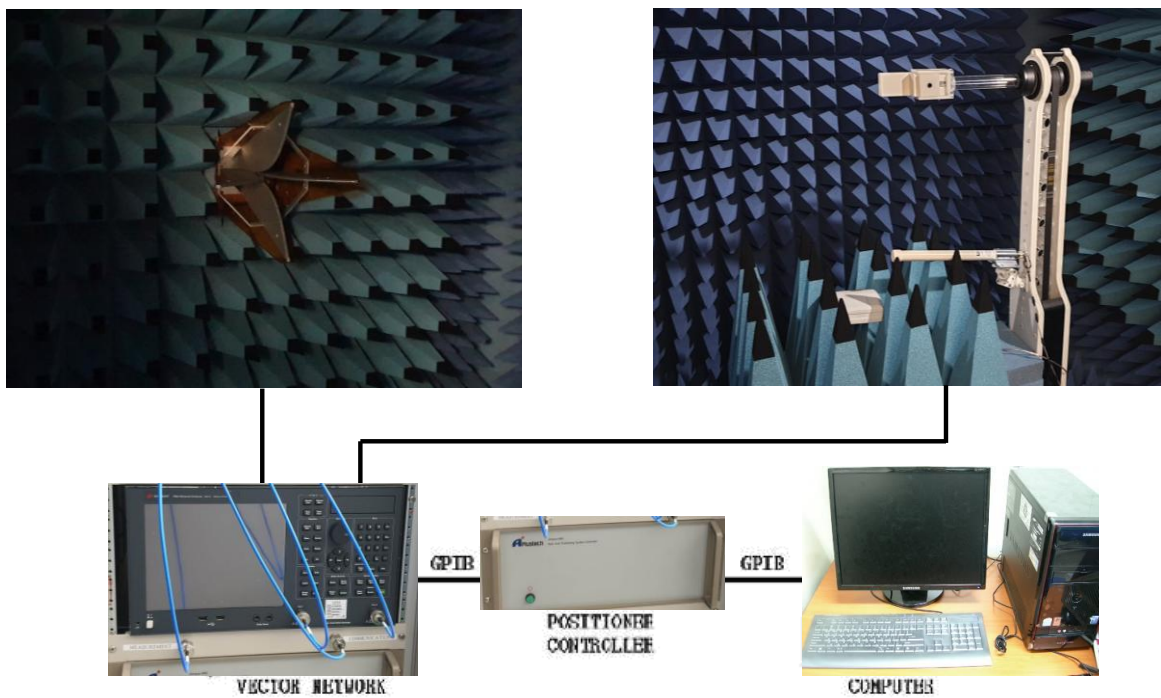
② Radiation Pattern and Gain

Step 1. Calibrate chamber system for gain measurement using horn antenna.

At the same time set up software program for chamber system control.

Step 2. Change over from a horn antenna to measuring antenna on target positioner

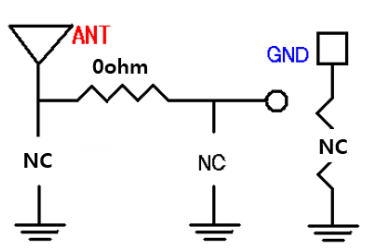
Step 3. Start a software program for chamber system control & measuring.



Document NO.	STA-0811-MTA03P
Maker Code	ST3100FP9WiFi
DATE	2025. 08. 11
Page	6 / 10

Model	Type	Rev.	Startellabs	IR
RG3100	FPCB		Franklin Technology	IR

2.2 Electrical Specification

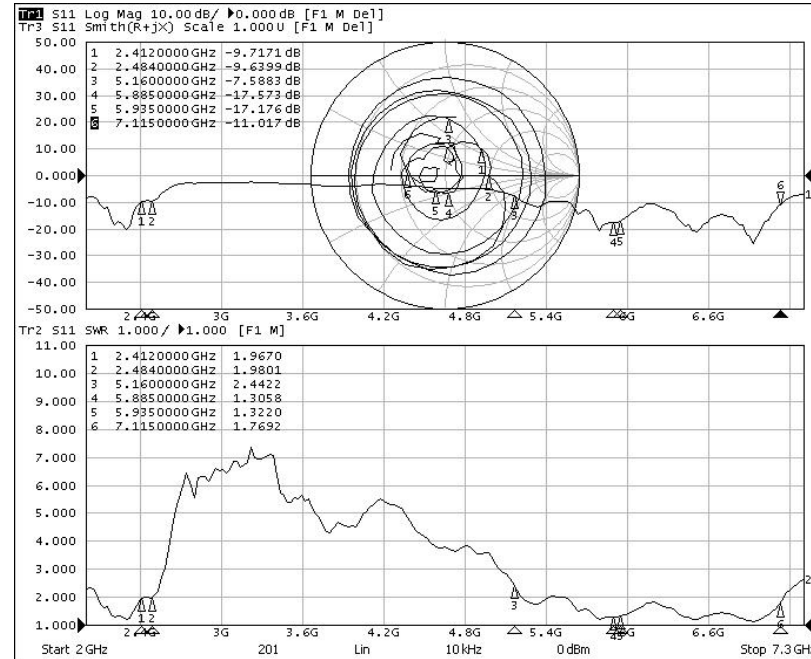
ANT9 Antenna			
Frequency[MHz]	2.4G (2412~2484)	5G (5160~5885)	6G (5935~7115)
VSWR	≤ 2.9	≤ 3.4	≤ 2.7
Peak Gain[dBi]	+2.8	+2.4	+2.7
Avg Gain[dBi]	-5.3	-4.3	-4.6
Directivity	Omni-directional		
Polarization	Linear		
Feed Impedance	50 Ohms		
Power Handling	2Watt		
Matching Value			

Document NO.	STA-0811-MTA03P
Maker Code	ST3100FP9WiFi
DATE	2025. 08. 11
Page	7 / 10

Model	Type	Rev.	Startellabs	IR
RG3100	FPCB		Franklin Technology	IR

2.2.1 Electrical Spec. of Set (With VSWR)

ANT9

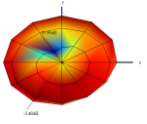
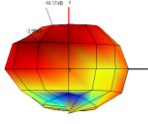
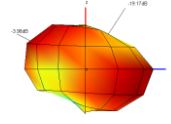
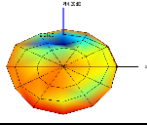
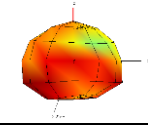
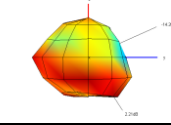
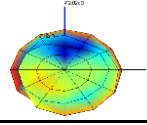
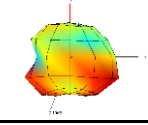
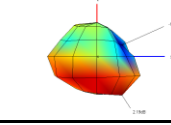


Document NO.	STA-0811-MTA03P
Maker Code	ST3100FP9WiFi
DATE	2025. 08. 11
Page	8 / 10

Model	Type	Rev.	Startellabs	IR
RG3100	FPCB		Franklin Technology	IR

ANT9

Frequency[MHz]	Peak Gain[dBi]	Efficiency[dBi]	Efficiency[%]
2412	2.08	-4.36	30.0
2432	2.49	-3.85	35.4
2452	2.82	-3.45	41.6
2484	2.02	-3.60	39.2
5160	2.08	-3.36	38.0
5260	1.82	-3.51	36.2
5320	2.03	-3.20	39.1
5745	2.46	-2.84	40.3
5885	1.54	-2.84	37.4
5935	2.10	-2.81	43.0
6375	2.75	-3.65	38.4
6635	2.42	-2.89	41.5
6855	2.79	-3.06	38.4
7115	2.11	-3.63	38.7

3D Radiation Pattern			
Band[MHz]	XY	XZ	YZ
2.4G (2412~2484)			
5G (5160~5885)			
6G (5935~7115)			

Document NO.	STA-0811-MTA03P
Maker Code	ST3100FP9WiFi
DATE	2025. 08. 11
Page	9 / 10

Model	Type	Rev.	Startellabs	IR
RG3100	FPCB		Franklin Technology	IR

3. Mechanical Specification

3.1 Material Certificate

Product Name		RG3100		
Ant Type		FPCB		
No	Part Name	Raw Material	FINISH/COLOR	REMARKS
1	Radiator	FPCB	COVERLAY/BLACK	-