Date :2022.06.30

SPECIFICATION

Product Name	**BT ANTENNA**
Customer	**솔티드**
Model Name	**ST-BTIN003R** **ST-BTIN003L**
Customer Code	
Provider	**RadiAnt**
Part Code	**9200000-00191** **9200000-00192**

Buyer	**Submitted**	**Checked**		**Approved**
RadiAnt	**Submitted**	**Checked**	**Checked**	**Approved**
				

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1. Product History

LIST					
NO	Data	Front	After	Change	REV
1	2022.06.30			Approval	0
2					
3					
4					
5					
6					
7					
8					
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10					
11					
12					
13					
14					
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2. Electrical Feature

2.1. Frequency Band

BAND	BT
FREQUENCY	2400~ 2485MHz

2.2 Impedance

2.2.1 Input Impedance

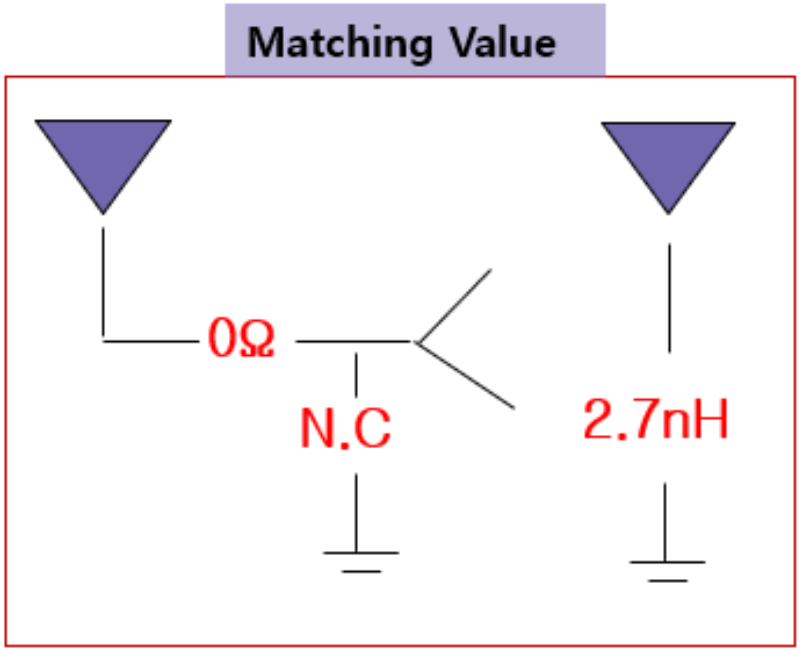
- R =50Ω

2.2.2 Measuring Method

By using Network Analyzer, connect the antenna installed ST-BTIN003 SET to the reflection point of Analyzer and measure the impedance value within the designated frequency band.

2.3 Matching circuit

Matching Circuit is composed in free space of 2.1 frequency band while satisfying customer's requirements.



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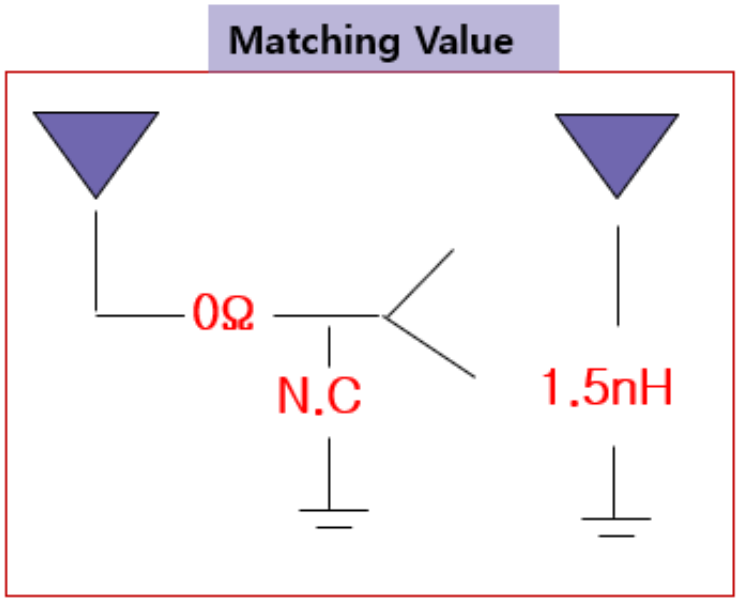


<ST-BTIN003L>

2.4 VSWR

Impedance Matching optimization is performed under the below mentioned environment.

2.3.1 Free Space Environment

<BT ant_ST-BTIN003R>

BAND	BT			
FREQ.	2400MHz	2425MHz	2450MHz	2485MHz
VSWR	1.27 : 1 under	1.30 : 1 under	1.36 : 1 under	1.21 : 1 under

<BT ant_ST-BTIN003L>

BAND	BT			
FREQ.	2400MHz	2425MHz	2450MHz	2485MHz
VSWR	1.24 : 1 under	1.07 : 1 under	1.49 : 1 under	1.97 : 1 under

2.3.1 Measuring Method

Connect (soldering) 50Ω semi-rigid coaxial cable to the 50Ω spot in ST-BTIN003 set. To minimize the loss of transmission, semi-rigid coaxial cable is used. Including PCB, the Set BT terminal shouldn't be different from the one, which will be used for mass production. Specification should be the same for all frequency bands. Free Space means that Set BT terminal is put on the surface of no conducting plastic.

2.5 Directivity

Omni-directional (SUM)

<ST-BTIN003R>

	1	2	3	4
Frequency [MHz]	2400	2425	2450	2485
Avg.Gain [dBi]	-2.13	-2.06	-2.33	-2.80
Efficiency [%]	61.2	62.2	58.5	52.5
Peak Gain [dBi]	2.13	1.98	1.74	1.80

<ST-BTIN003L>

	1	2	3	4
Frequency [MHz]	2400	2425	2450	2485
Avg.Gain [dBi]	-2.23	-2.40	-2.85	-3.40
Efficiency [%]	59.8	57.5	51.9	45.7
Peak Gain [dBi]	3.18	2.90	2.15	1.84

2.6 Maximum Power

- **P=2W Under**

3. Environment Test

3.1 Operating Temperature Test

3.1.1 Test Condition

Temperature = -30℃, +80℃

Duration time = 1 hour

3.1.2 Requirements

After the test, the antenna must not have an outer damage, and also it must pass requirement shown in 2.4.

3.1.3 Measuring Method

Antenna is kept at -30℃ for 1 hour and +80℃ for 1 hour and than passed test of 2.4

3.2 Temperature Cycling Test

3.2.1 Test Condition

- Low cycling Temperature TLC = -40℃
- High cycling Temperature THC = +80℃
- 1Cycle = 4 hours
- Test number = 10Cycle

3.2.2 Requirements

After the test, the antenna must not have an outer damage, and also it must pass requirement shown in 2.4.

3.2.3 Measuring Method

Antenna is kept at low temperature -40℃ for 2 hours and increase the temperature up to +80℃ within 2 hour and kept for another 2 hours at the same temperature will be 1 cycle. As shown in Figure 3.2.1 repeat 10 cycle and kept for 2 hour in normal temperature.

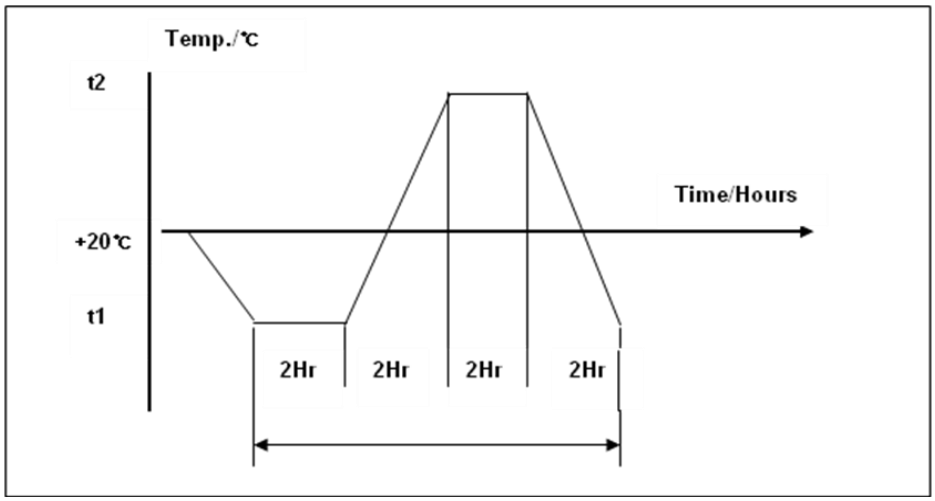


Figure 3.2.1 Temperature Cycling

3.3 Corrosion Resistance Test

3.3.1 Test Condition

- NaCl = 90%
- Water Temperature = 60℃
- Duration Time = 96 hours

3.3.2 Requirements

After the test, the antenna must not have an outer damage, and also it must pass requirement shown in 2.4.

3.3.3 Measuring Method

Antenna is soaked in sodium chloride solution at temperature +60℃ and 90%(NaCl) for 96 hours and dry out.

4. Electric Performance Data

4.1. Smith Chart & VSWR

<ST-BTIN003R>

<2.400~2.485GHz>

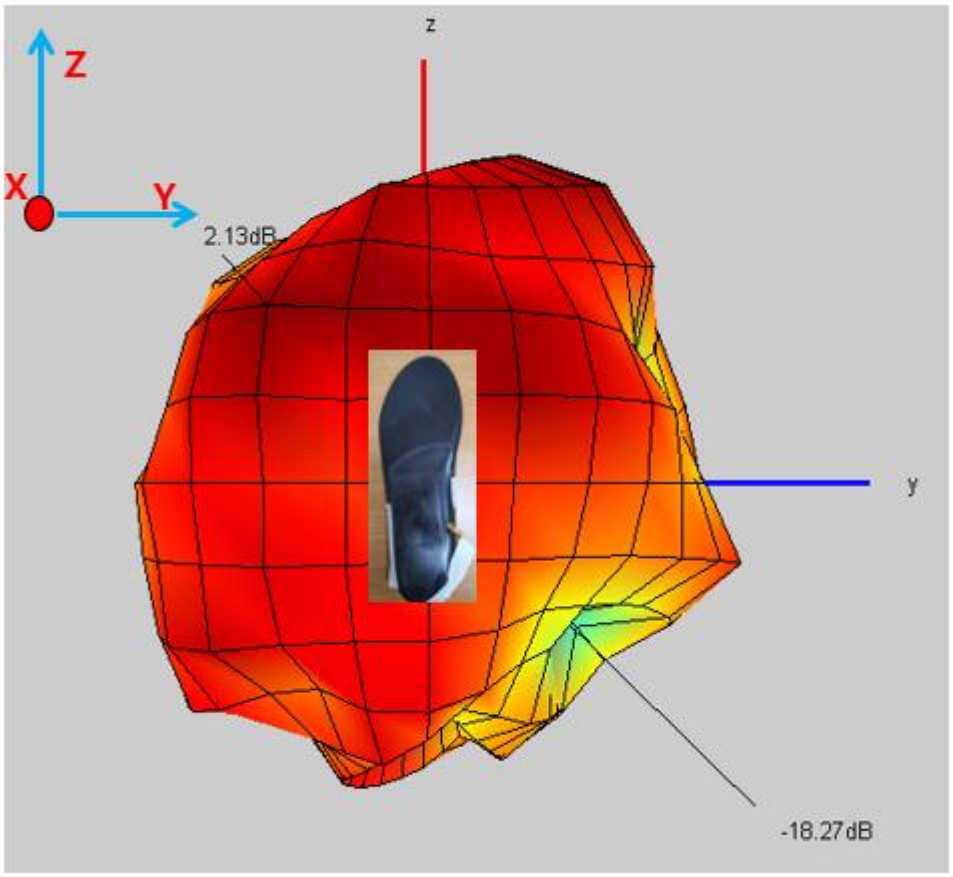
<ST-BTIN003L>

<2.400~2.485GHz>

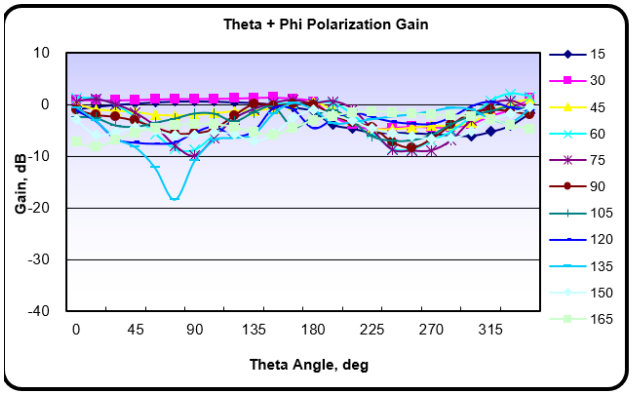
4.2. GAIN DATA

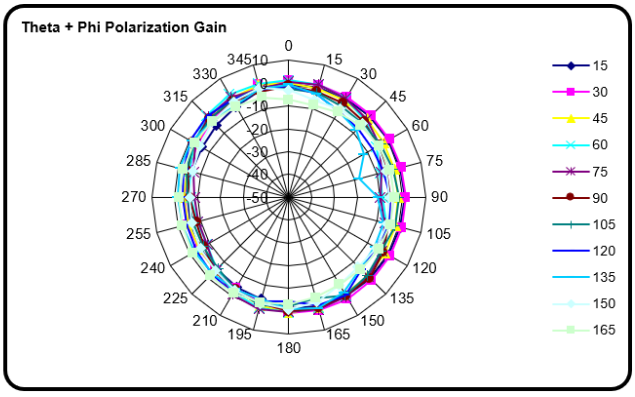
4.2.1 ST-BTIN003R

-3D Radiation Pattern



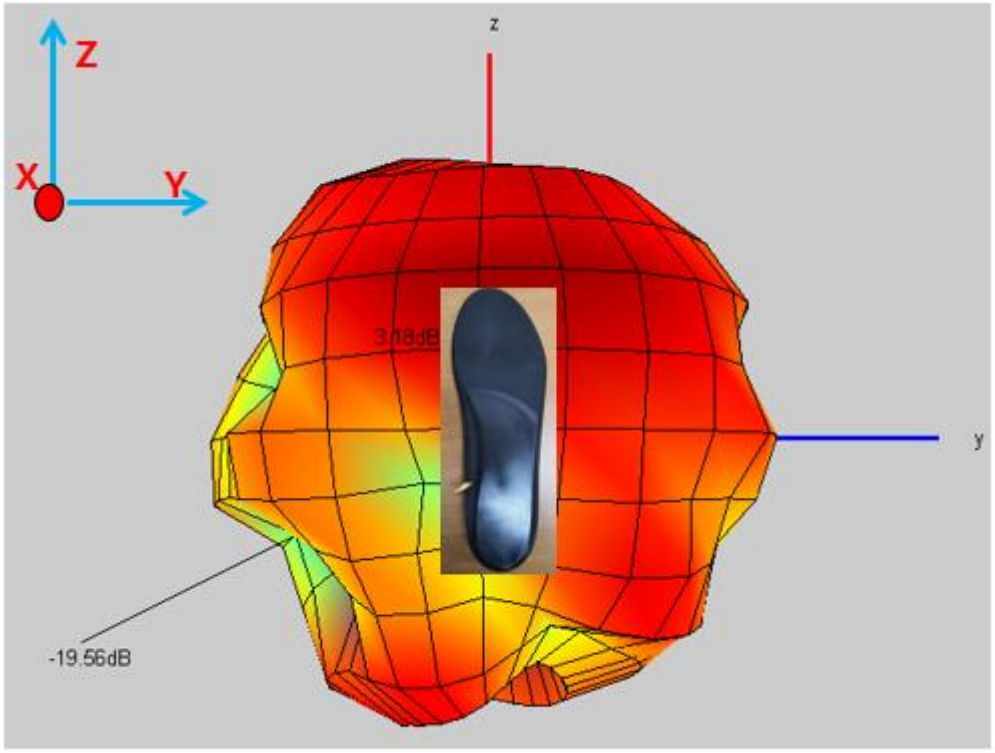
-2D Radiation Pattern(Theta + Phi total Polarization Gain)



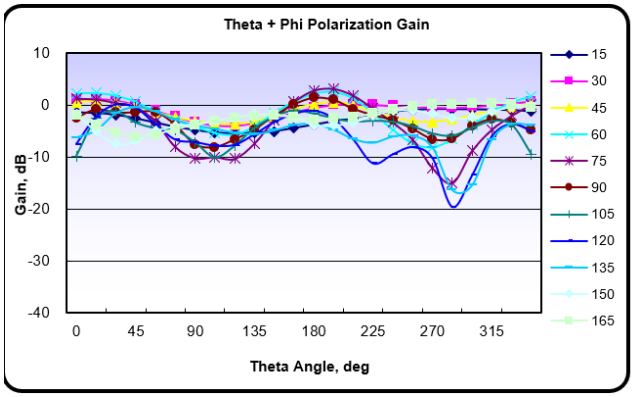


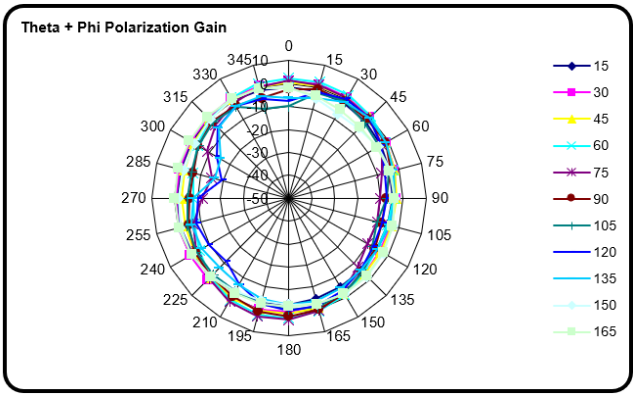
4.2.2 ST-BTIN003L

-3D Radiation Pattern



-2D Radiation Pattern(Theta + Phi total Polarization Gain)





5. Drawing

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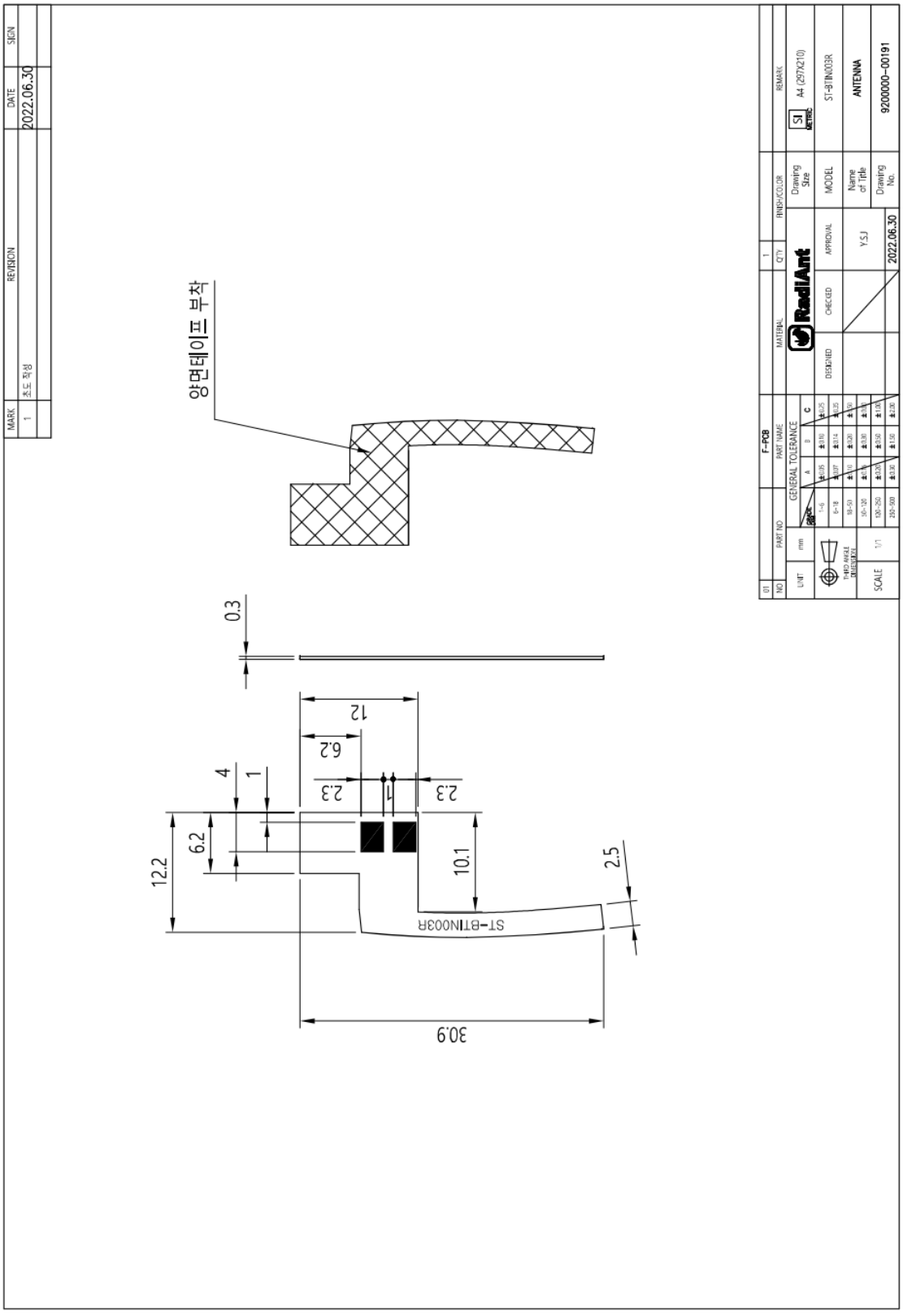

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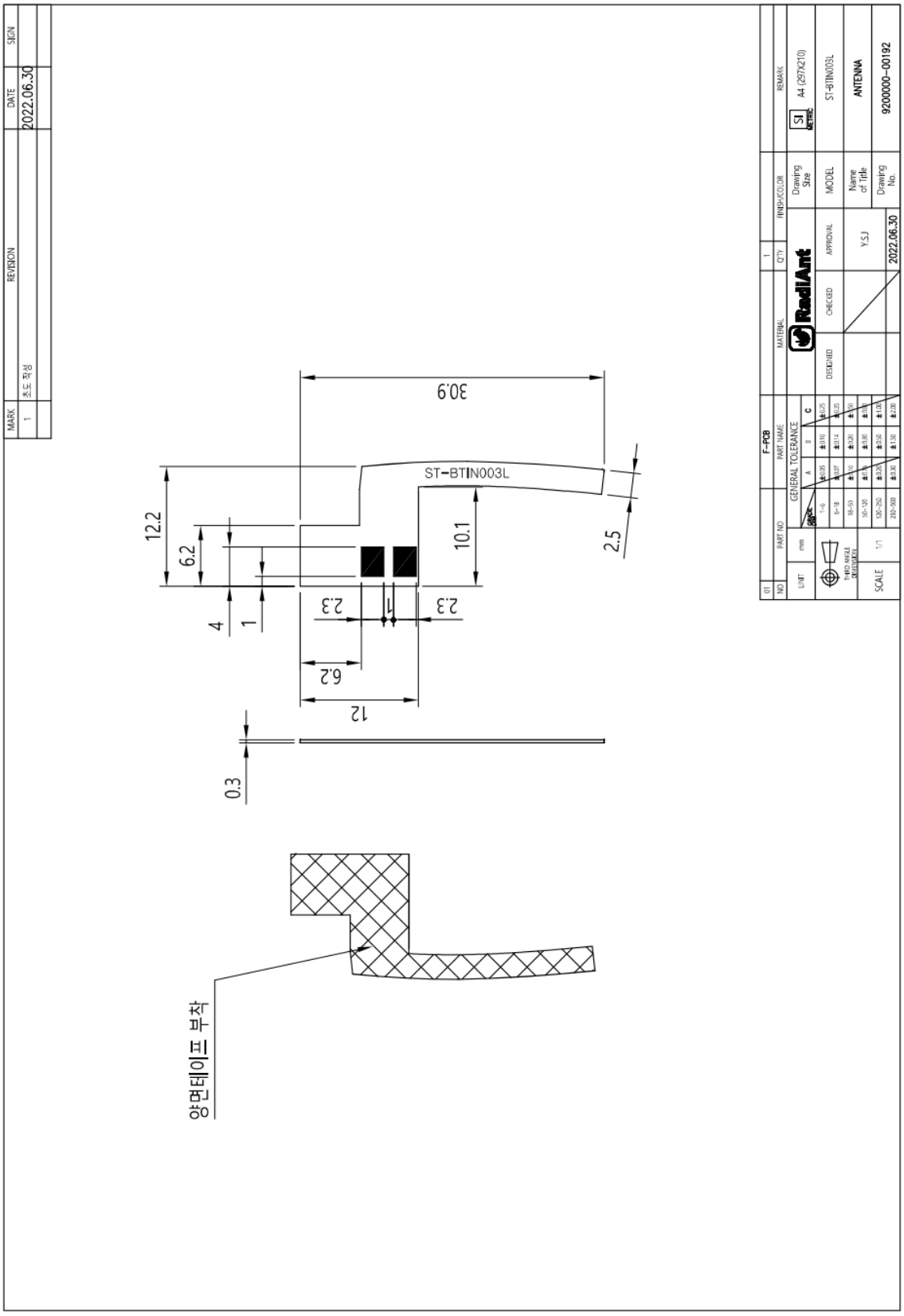
30.9
ST-BTIN003L
12.2
6.2
10.1
2.5
4
1
2.3
2.3
1
6.2
12
0.3
양면테이프 부착
REVISION
MARK
DATE
SIGN
1
초도 작성
2022.06.30
F-PCB
MATERIAL
FINISH/COLOR
QTY
REMARK
PART NO
PART NAME
GENERAL TOLERANCE
UNIT
mm
SCALE
1/1
DESIGNED
CHECKED
APPROVAL
Y.S.J
2022.06.30
Drawing Size
A4 (297X210)
MODEL
ST-BTIN003L
Name of Title
ANTENNA
Drawing No.
9200000-00192