



APPROVAL SHEET

Z7			
NO	MODEL	FREQUENCY	
1	HWI-WiFi-Z7	WIFI Dual	2412 ~ 2484 MHz
			5200 ~ 5800 MHz

SUPPLIER			CUSTOMER		
Engineer	Review	Approved	Engineer	Review	Approved
					



HANWOOL TECHNOLOGY CO., LTD
 #1002 IT303-DONG, PUCHONTECHNOPARK III 36-1
 SAMJUNG-DONG, OHJUNG-GU, KYOUNG GI-DO, KOREA
 TEL: 032) 624-2555
 FAX: 032) 624-2559

ANTENNA SPECIFICATION

1. MODEL: HWI-WiFi-Z7

2. APPLICATION:

This specification is provided for WIFI Dual Band ANTENNA.

3 ANTENNA used condition

■Portable ■Fixing ■Movement ■Out-door ■In-door ■Etc()

4. ANTENNA Drawing

#3. Attached : Drawing paper

5. Electrical specification and performance

Satisfied next data with real used or similar environment conditions.

No.	ELECTRICAL DATA	SPECIFICATIONS		REMARK
5. 1	FREQUENCY RANGE	2412 ~ 2484 MHz		
		5200 ~ 5800 MHz		
5. 2	IMPEDANCE	50 Ω NOMINAL		
5. 3	V. S. W. R	2412~2484 MHz	Less than 3.5 : 1	#1. Attached
		5200~5800 MHz	Less than 4.0 : 1	
5. 4	PEAK GAIN(Min)	2412~2484 MHz	0.3 dBi	#2. Attached
		5200~5800 MHz	-0.9 dBi	
5. 5	RADIATION PATTERN	OMNI - DIRECTIONAL		
5. 6	POLARIZATION	LINEAR		

6. Hardware specification and mechanical

No.	MECHANICAL	SPECIFICATIONS	REMARK
6. 1	FPCB	CCL	
6. 2	COVERLAY	Black	
6. 3	TAPE	TESA 4982	
6. 5	PET	0.188 T	
6. 6	Dimension	40.0 X 15.15 X 0.5T	

7. SINUSOIDAL VIBRATION

Vibration Frequencies : 5- 55 Hz (1 cycle)
Sweep Rate : 1 cycle/min
Maximum Amplitude : A - 1 mm
Maximum Acceleration : 2 g

Measuring method

Antenna is combined in the test equipment.

The vibration is done X and Y direction (left, right, up and down) according to below image.

It continued for 2 hours each direction.

8. OPERATING TEMPERATURE

Temperature : - 30℃ / +70℃

Demands : Set Antenna and Cable for 48 hours each temperature.

No visual and mechanical changes.

The fitting and mold will be unchanged mechanically during the test.

The antenna shall satisfy the electrical data

9. HUMIDITY

Condition : 90% ~ 95% / +40℃

Measuring method

Antenna is placed in climatic chamber for 48 hours.

Antenna is taken out from the chamber and measured after another 24 hours in room temperature

Demands : No visual and mechanical changes.

The fitting and mold will be unchanged mechanically during the test.

The antenna shall satisfy the electrical data.

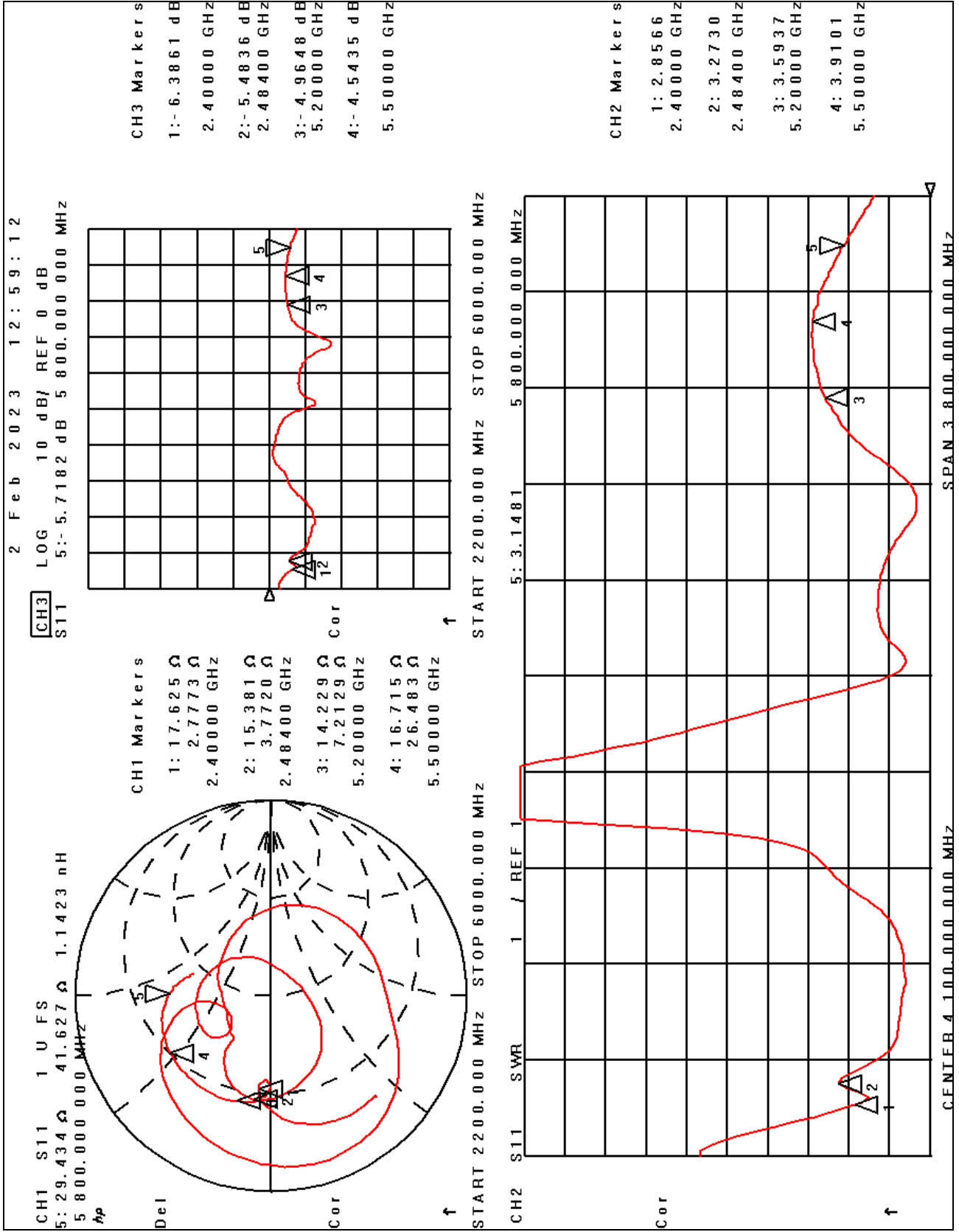
10. TEST and Q/C

This specification is according to fixed demands and suitable Hanwool technology Q/C provision.

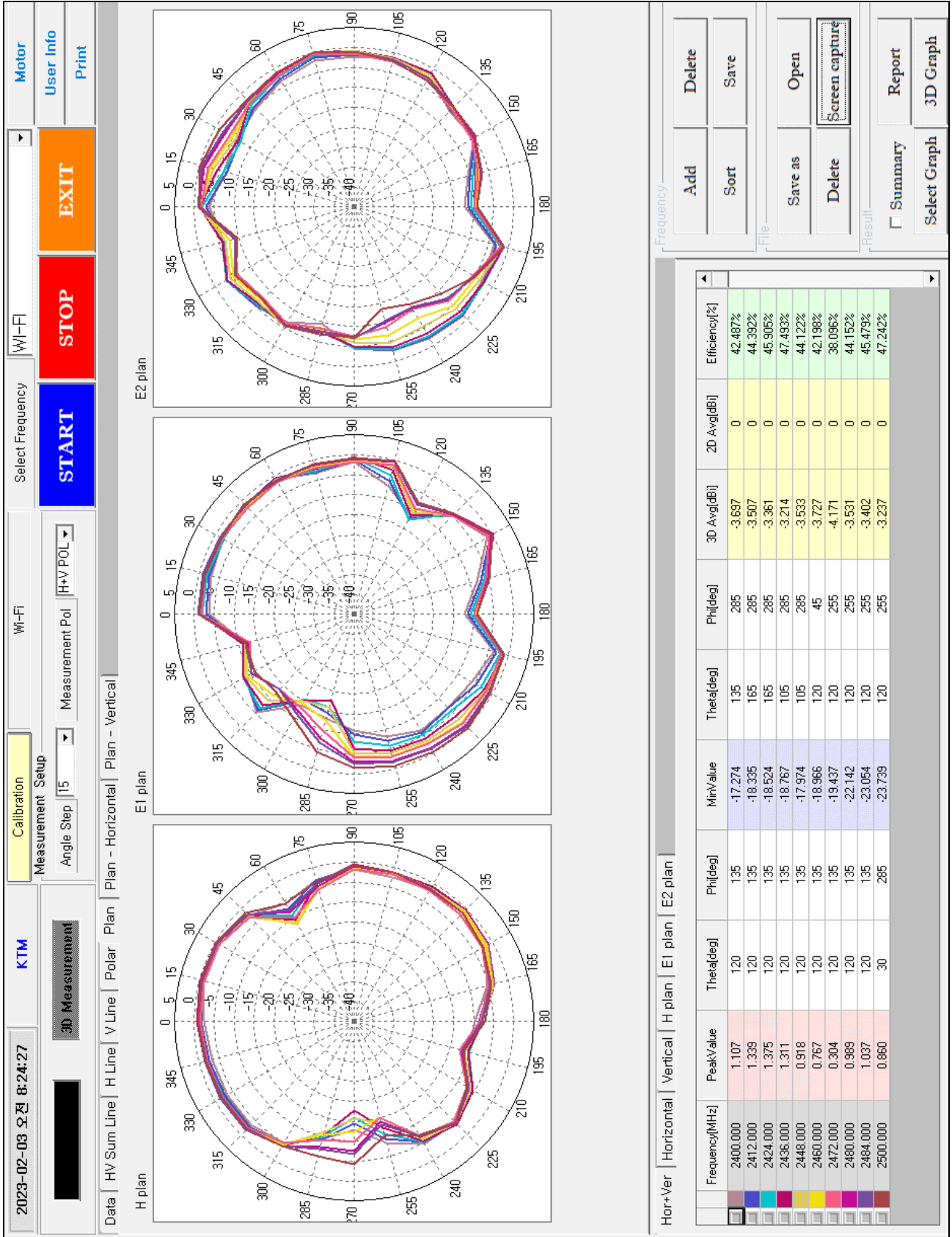
But it is possible to skip No. 7~9 demands, after consultation with buyer.

DQ No.	HW-230306-70	Modify No.		Write	Taehyeon. Nam
Supply to	POINT MOBILE CO., LTD	Date	2023-03-06	Approval	Chang-gi. Nam

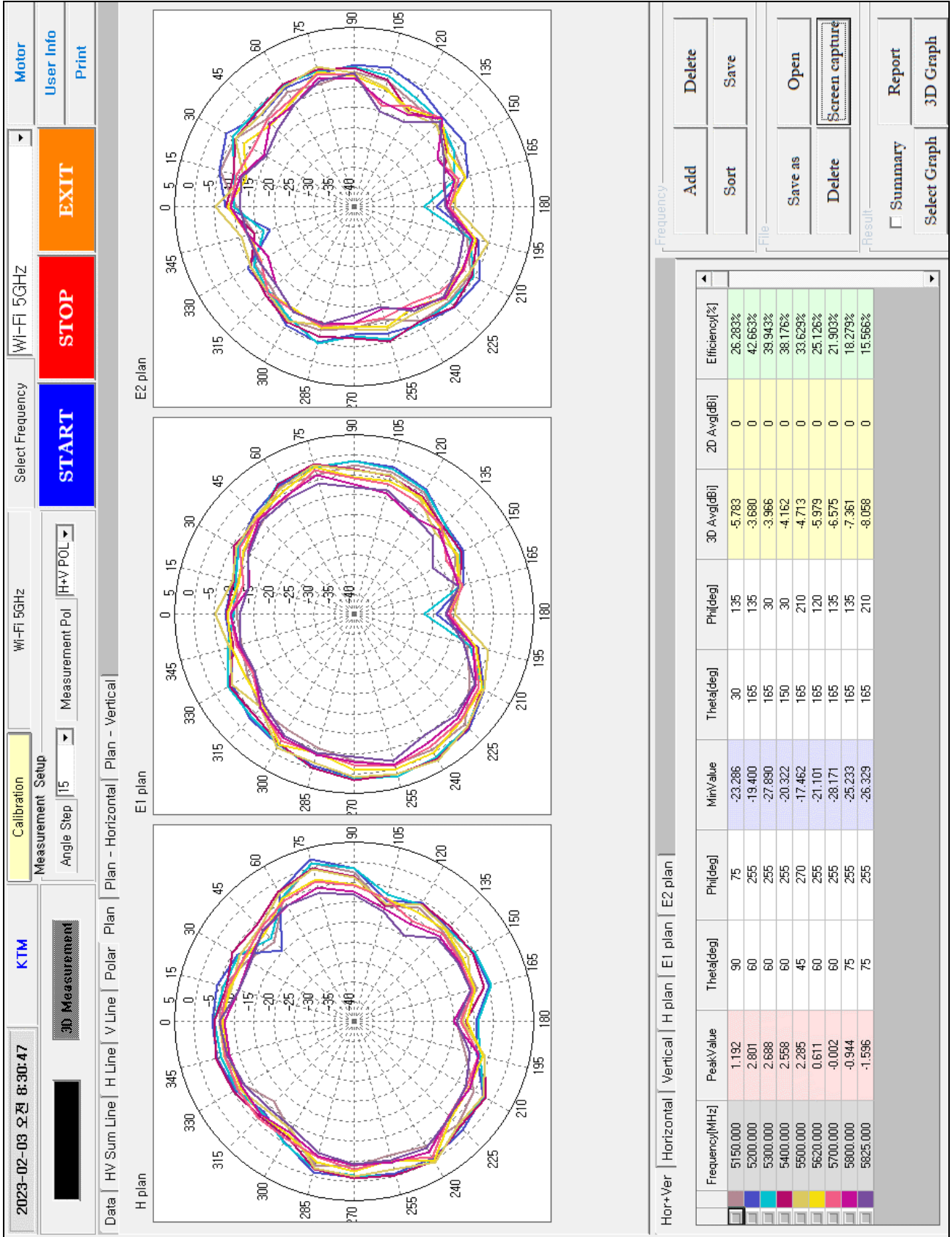
- #1. Attached : VSWR



- #2. Attached : RADIATION PATTERN(GAIN)_ 2412~2484 MHz



- RADIATION PATTERN(GAIN)_ 5200~5800 MHz

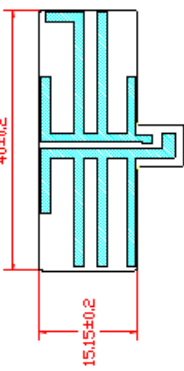


- #3. Attached : Drawing paper

No	▲	Revision Note	Checked	Date
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Pattern :

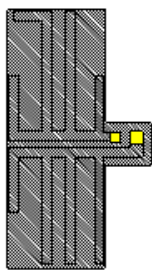
TOP



BOTTOM

INK : Black INK

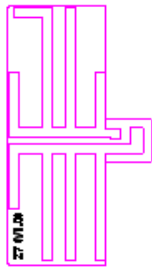
TOP



BOTTOM

Silk print : White Color

TOP



BOTTOM

1. 표시는 패턴 Area임.

2. 표시는 OSP Area임.

3. 표시는 무광 INK 영역임.

4. 표시는 TESA4982 영역임.



5. 1/2 OZ, 1/2 MIL 적용.

6. 보강판 FR-4 0.2T 적용.

1		1		
No	Part Name	Material	Description	Qty
Scale	Unit	FPCB		Finish
1/1	mm	Checked by	Approved by	Model
Deciml	Angle	J.D.LIM	H.CHOI	File Name
X ±0.1	N/A	230209-50		Z7-WIFI
XX ±0.05				포인드모바일
Hanwool Technology				

APPROVAL SHEET


PM560		
NO	MODEL	FREQUENCY
1	HWI-NFC-Z7	13.56 MHz

SUPPLIER			CUSTOMER		
Engineer	Review	Approved	Engineer	Review	Approved
					



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HISTORY SHEET

Item	NFC F-PCB ANTENNA	Developed by	Taehyeon. Nam	
Part Name	HWI-NFC-Z7	Director		
Rev. No.	Date	Description		Etc.
0	2023-02-09	Initial Version		

ANTENNA SPECIFICATION

1. MODEL: HWI-NFC-Z7

2. APPLICATION:

This specification is provided 13.56MHz Band ANTENNA.

3 ANTENNA used condition

Portable Fixing Movement Out-door In-door Etc()

4. ANTENNA Drawing

#2. Attached : Drawing paper

5. Electrical specification and performance

Satisfied next data with real used or similar environment conditions.

No.	ELECTRICAL DATA	SPECIFICATIONS	REMARK
5. 1	FREQUENCY RANGE	13.56 MHz	
5. 2	IMPEDANCE	50 Ω NOMINAL	
5. 3	V. S. W. R	Less than 5.0 : 1	#1. Attached
5. 4	POLARIZATION	LINEAR	

6. Hardware specification and mechanical

No.	MECHANICAL	SPECIFICATIONS	REMARK
6. 1	FPCB	CCL	
6. 2	COVERLAY	Black	
6. 3	TAPE	TESA 4982	
6. 4	FERRITE	0.06T	
6. 5	STIFF	FR-4	
6. 6	Dimension	57.0 X 44.0 X 0.6T	

7. SINUSOIDAL VIBRATION

Vibration Frequencies : 5- 55 Hz (1 cycle)
Sweep Rate : 1 cycle/min
Maximum Amplitude : A - 1 mm
Maximum Acceleration : 2 g

Measuring method

Antenna is combined in the test equipment.

The vibration is done X and Y direction (left, right, up and down) according to below image.

It continued for 2 hours each direction.

8. OPERATING TEMPERATURE

Temperature : - 30℃ / +70℃

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Demands : No visual and mechanical changes.

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The antenna shall satisfy the electrical data.

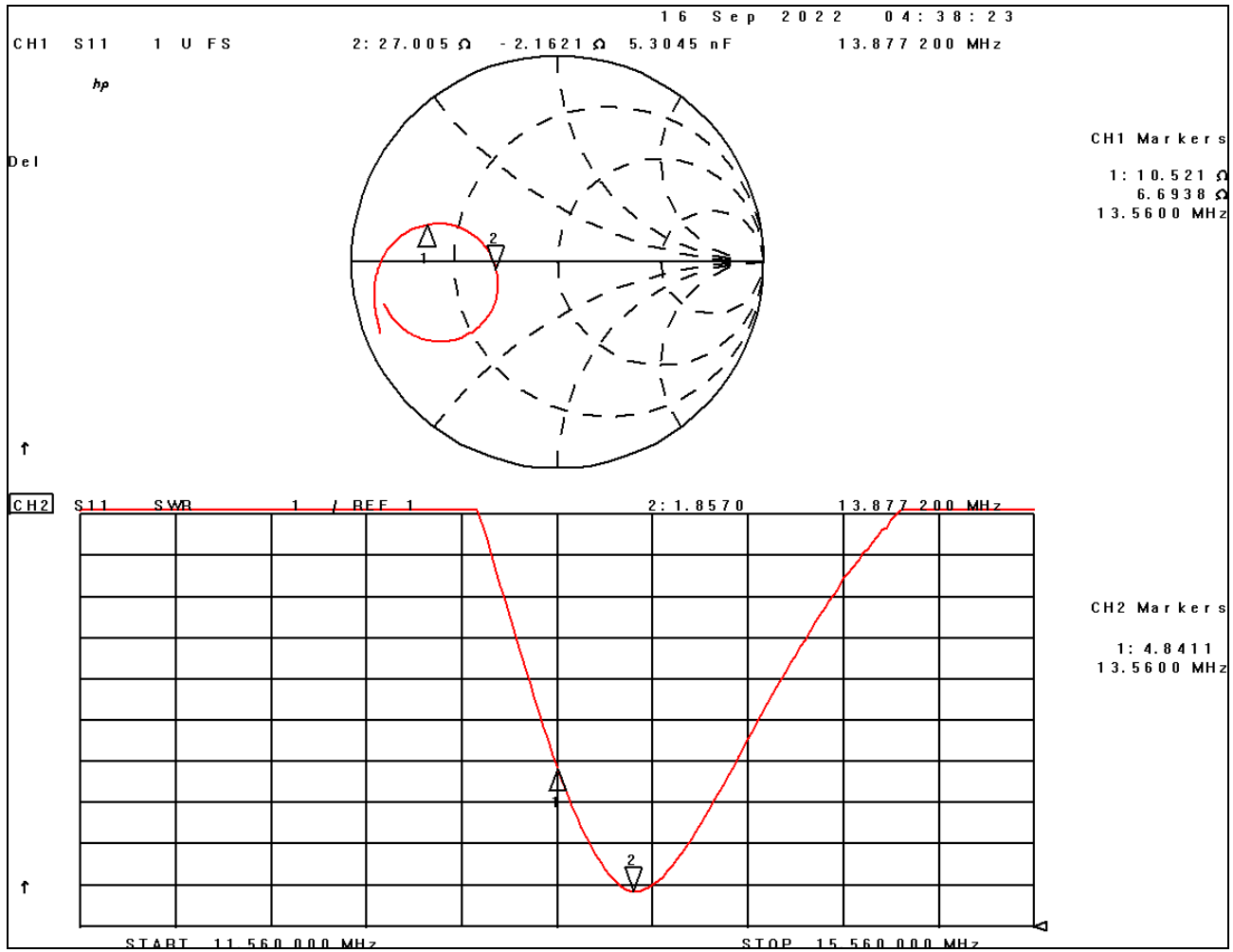
10. TEST and Q/C

This specification is according to fixed demands and suitable Hanwool technology Q/C provision.

But it is possible to skip No. 7~9 demands, after consultation with buyer.

DQ No.	HW-230209-70	Modify No.		Write	Taehyeon. Nam
Supply to	POINT MOBILE CO., LTD	Date	2023-02-09	Approval	Chang-gi. Nam

- #1. Attached : VSWR



Matching Value

C1308 & C1318	NC
C1309 & C1316	82pF
C1311 & C1314	8.2pF

- #2. Attached : Drawing paper

No	Revision Note	Checked	Date
1			

<p style="text-align: center;">PATTERN</p> <p style="text-align: center;">TOP</p> <p style="text-align: center;">BOTTOM</p>	<p style="text-align: center;">Coverlay / White Silk Print</p> <p style="text-align: center;">TOP</p> <p style="text-align: center;">BOTTOM</p>	<p style="text-align: center;">FERRITE</p> <p style="text-align: center;">TOP</p> <p style="text-align: center;">보강판</p> <p style="text-align: center;">TOP</p> <p style="text-align: center;">3M Tape Area :</p> <p style="text-align: center;">BOTTOM</p>
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1.	표시는 패턴 Area임.			
	SOFT ENMG NI:1~3um			
	표시는 금도금 Area임.			
	표시는 TESA 4982 영역임.			
	표시는 FERRITE 영역임.			
	표시는 COVERLAY 영역임.			
	표시는 보강판(0.2T) 영역임.			

No	Part Name	Material Description	Q'ty	Finish
1				

Scale	Unit	Title	FPCB	Material	Model	Finish
Drawn by	Checked by	Approved by	File Name			
J.D.L.M						
Decimal	N/A	0.25	H/CHDI			
Unit	Hanwool Technology					