

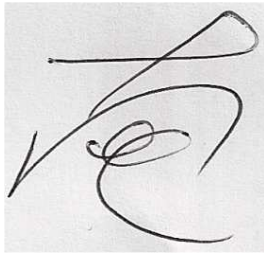
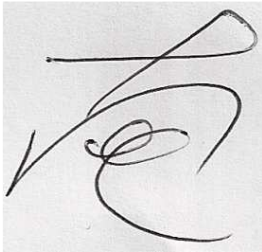
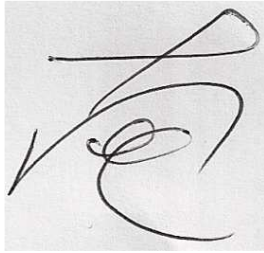
[APPROVAL SHEET]



품명 : NKC-8

Nice Korea Components

[APPROVAL SHEET]

Product	NKC- 8	
Model		
Designed by	Checked by	Approved by
		
/	/	/

2025. 04. 17

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1. Revision History


product	NKC- 8	Model	
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[illegible]

2. Features & Applications

2.1 Features

This ceramic chip antenna is applied to 2.4G ISM band applications, i.e. Bluetooth, Zigbee, Wireless LAN, etc...

형 태	Bulk Ceramic	
재 질	유전 체	Al ₂ O ₃ (Alumina)
	전극	은(Ag)
크기 (mm)	L = 9.8+/- 0.1	
	W = 2.8+/- 0.1	
	T = 1.8+/- 0.1	
Weight	180 mg	

3. Electrical Specifications

3- 1.

- * All item are measured in room temperature (24~ 25 'C).
- * All item are measured at customer set condition.

No.	Items	Typical Data
1	Frequency (MHz)	2400 ~ 2500
2	VSWR	3 : 1
3	Total Gain [dBi]	0.01 / - 6.65
4	Impedance	50 ohm
5	Polarization	Linear

3- 2. ANT condition & matching

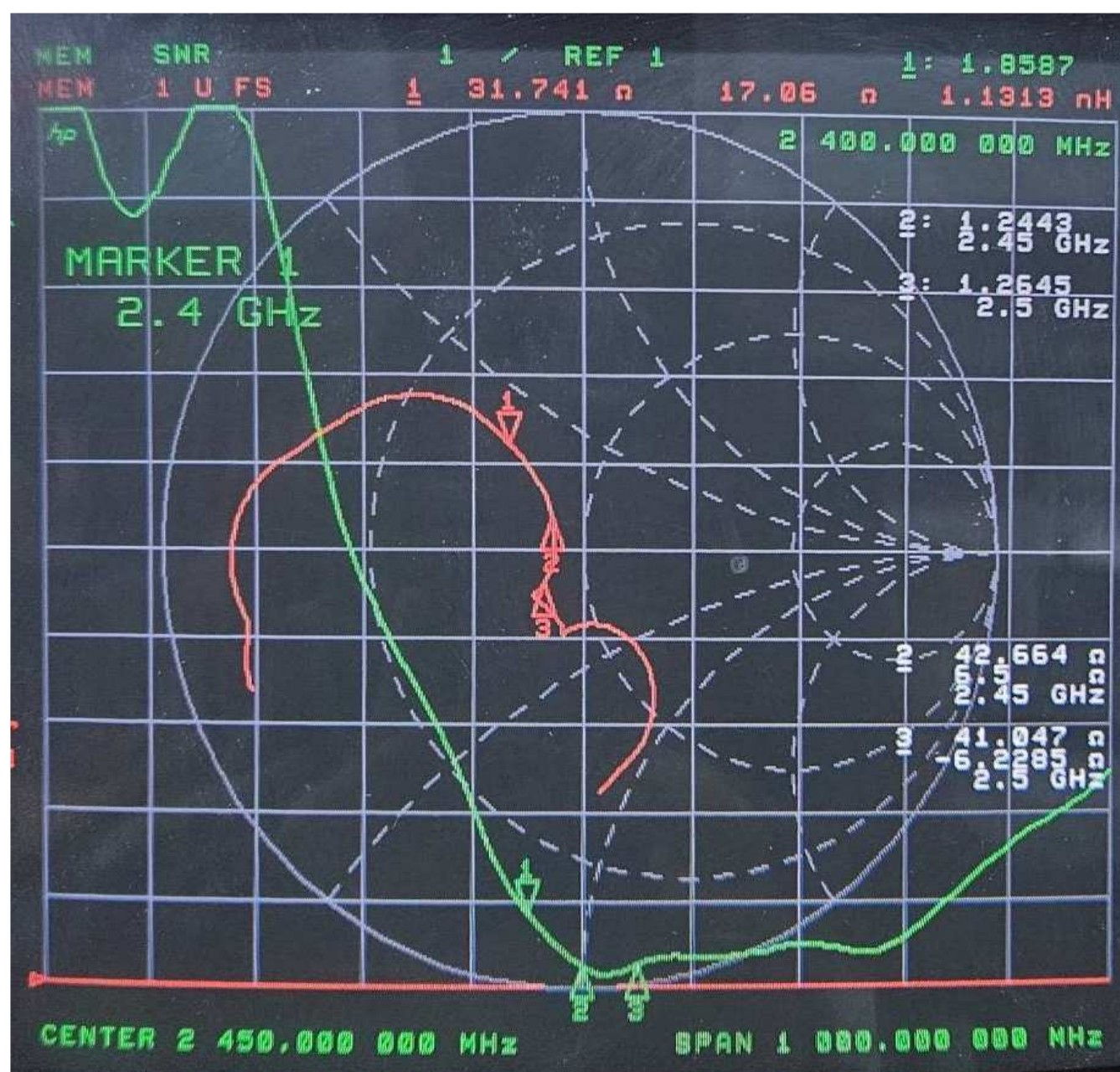
시정수

C28 : DNI

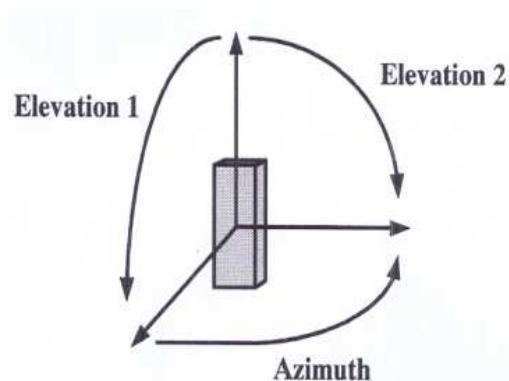
L4 : 1.5nH

C25 : 1pF

3- 3. VSWR (S₁₁)



3- 4. Radiation Patterns (BT 부분)



Theta	Vertical Field of measured plane
Phi	Horizontal Field of measured plane

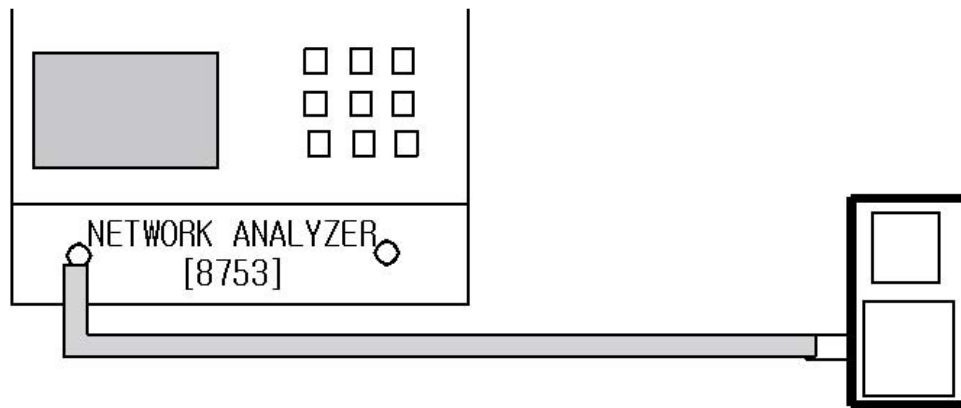
이득[dBi] (Co- Pola)	Azimuth	Phi	Peak	- 1.95
			Avg	- 9.22
	Elevation	Theta	Peak	0.01
			Avg	- 6.65

(V)				(H)			
Avg.[dBi]	Peak[dBi]	θ [deg]	BW[deg]	Avg.[dBi]	Peak[dBi]	θ [deg]	BW[deg]
-8.17	-1.33	100.00	60.52	-11.14	-4.46	-180.00	999.00
-7.52	-0.64	105.00	50.76	-10.53	-3.18	-180.00	999.00
-6.65	0.01	105.00	52.67	-9.22	-1.95	-180.00	999.00

4. Measurements Method & Conditions

The measurement of antenna performance is measurement of gain, radiation pattern using ORBIT/FR apparatus in Anechoic chamber and measurement of VSWR using Network analyzer.

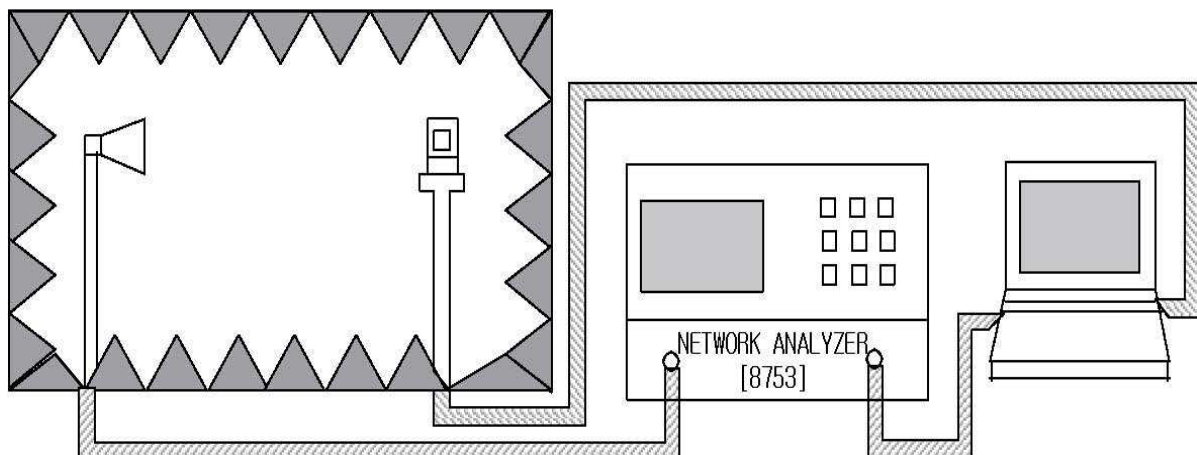
4- 1. The measurement of Frequency and VSWR



[Measurement Method]

1. As seen the above, network analyzer is set up for S11 measurement.
2. The measurement frequency range is to set up from 2 GHz to 3 GHz.
3. Perform S11 one port full calibration.
4. Measure the VSWR of three points of Bluetooth frequency range such as 2.4 GHz, 2.45 GHz, and 2.5 GHz.

4- 2. The measurement of Gain & Radiation Patterns



5. Ag pattern



TOP



S1



BOT



S2

6. Marking View



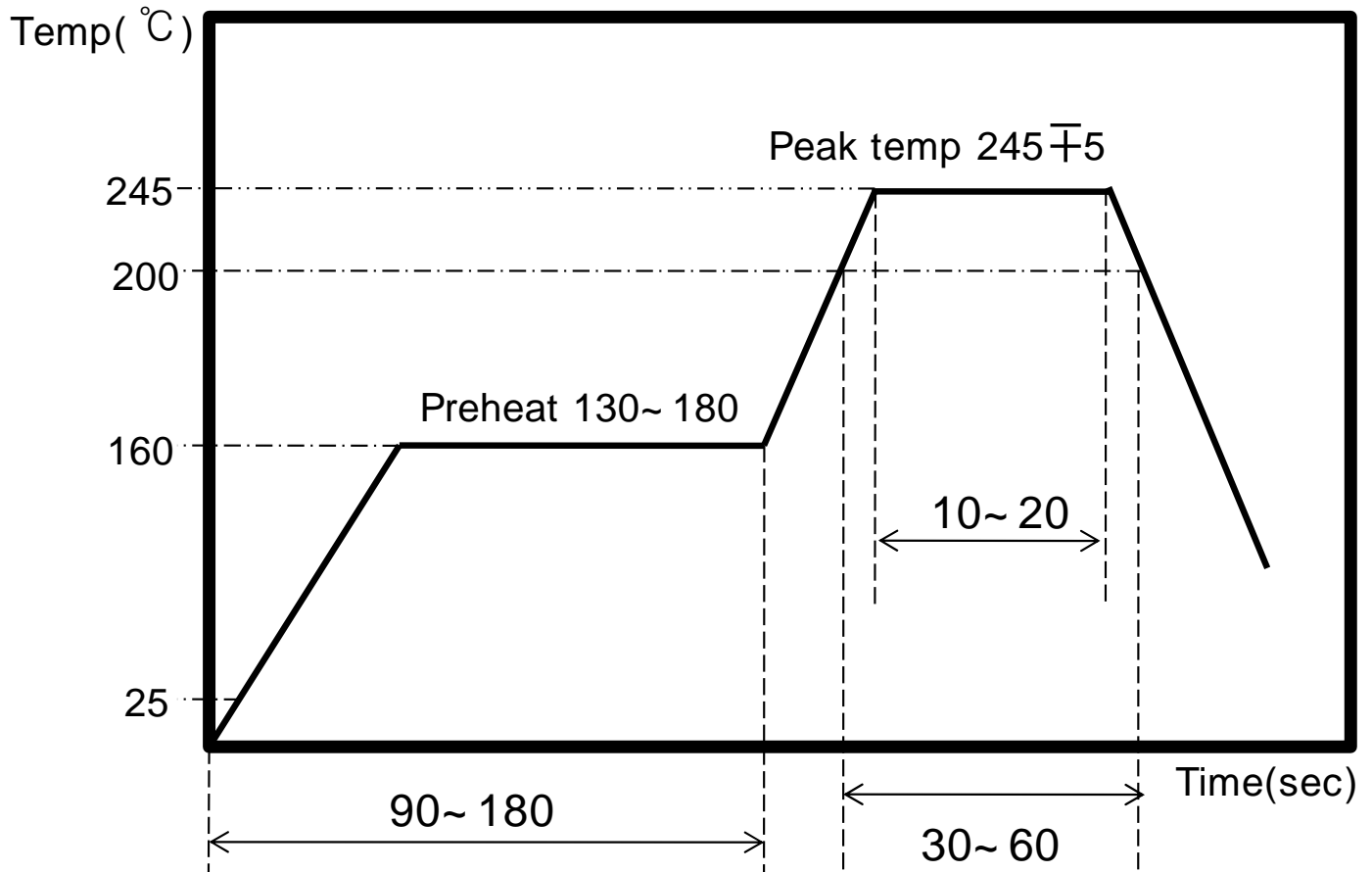
Only TOP part

6- 1. 마킹 종류

* RF용 검정 잉크 사용

7. Reflow Profile (생산처 협의)

7- 1. Standard reflow condition(Pb- free)

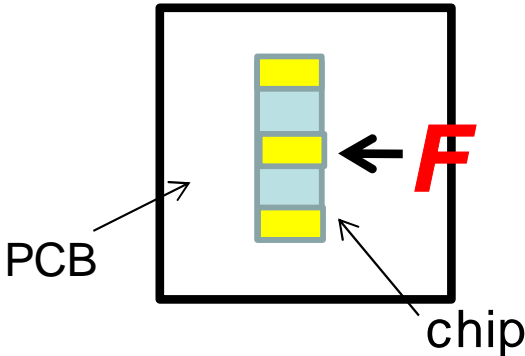


SMD 업체 현황에 따라 peak temp 및 시간은 변경 될 수 있으므로 협의를 요함

7- 2. 수동 납땜 (인두기)을 할 경우(Pb- free)

인두 온도 : 340 'C / 시간 : 각 단 max 3 sec

8. Environmental Tests

No.	ITEM	TEST COND	TEST REQU
1	High Temperature Resistance	1. Temp: $+125 \pm 5^{\circ}\text{C}$ 2. Time: $1000 \pm 24\text{hrs}$ 3. Measure Fc after left for 24hrs min. at room temp	1. Within electric spec(VSWR) 2. No visual damage
2	Low Temperature Resistance	1. Temp: $-40 \pm 5^{\circ}\text{C}$ 2. Time: $1000 \pm 24\text{hrs}$ 3. Measure Fc after left for 48hrs min. at room temp	1. Within electric spec(VSWR) 2. No visual damage
3	Thermal Shock	1. 1cycle/step1:- $40 \pm 3^{\circ}\text{C}$,30min step2: $+125 \pm 3^{\circ}\text{C}$,30min 2. Number of cycle:30 3. Measure after left for 48hrs min. at room temp	1. Within electric spec(VSWR) 2. No visual damage
4	Humidity	1. Humidity:85%RH 2. Temp: $+85 \pm 3^{\circ}\text{C}$ 3. Time: $1000 \pm 24\text{hrs}$ 4. Measure Fc after left for 48hrs min. at room temp	1. Within electric spec(VSWR) 2. No visual damage
5	Adhesive strength of termination	1. Applied force on SMD chip till detached point from PCB. 	1. No mechanical damage by forces applied on the right 2. Strength(F)>3kgf

Safe- keeping conditions : 1 month in 20+/- 15'C & less than 60%