

Approval Sheet

Product Specification

Part Description: **BLUETOOTH MODULE**

Customer Part No:

BIGSOLON Part No: BT-TYPE-A

Acknowledgement of reception

We have received the attached specification

Date 2022. 03. 30

Company

EVERINT

Dept.

BIXOLON R&D LAB

Representative

Dong-gil.Lee

Received by

Revision Record

No	Date	Item	Modifications	Approved
1	2022. 03. 30		First Issued	

1. Module Features

- Complies with Bluetooth Core Specification version 5.0
- Up to 96MHz integrated ARM M3 micro-controller
- Built-in Reference Clock: 24MHz
- RoHS Compliant

2. Applications

- Home automation gateways
- Heart rate monitors
- Wearables
- Thermometers
- Blood pressure monitors
- Mobile

3. Features

- Size (14mm X 13mm X 3mm)
- Surface Mountable

4. Electrical Characteristics

Parameter	Min	Nor	Max	Unit
Supply Voltage (VBAT, VDD_IO)	3.0	3.3	3.6	V
Operation Temperature	-30	25	85	°C

5. External Reset

An External active-low reset signal, RST_N(RESET), can be used to put the BT-TYPE-A in the reset state. An external voltage detector reset IC with 50ms delay is needed on the RST_N(RESET). The RST_N should be released only after the VDD_IO supply voltage level has been stabilized for 50ms.

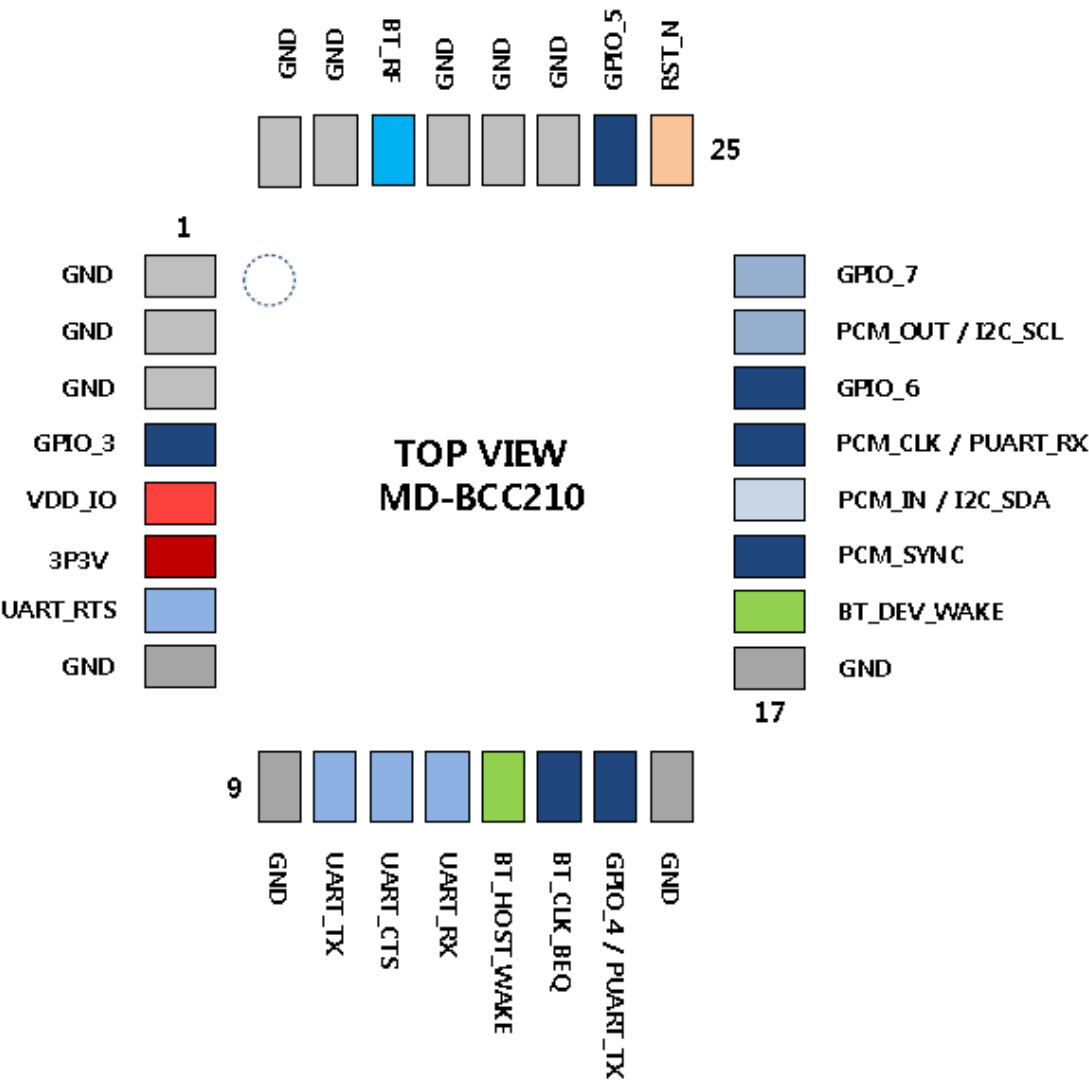
7. Pin Description

PIN No.	Pin Name	Description	Pad Type
1	GND	Ground connection	
2	GND	Ground connection	
3	GND	Ground connection	
4	GPIO_3	General_purpose I/O	
5	VDD_IO	VDDIO	
6	3P3V	MAIN POWER	
7	UART_RTS	UART request to send output	
8	GND	Ground connection	
9	GND	Ground connection	
10	UART_TX	UART transmit data	
11	UART_CTS	UART clear to send input	
12	UART_RX	UART receive data	
13	BT_HOST_WAKE	General_purpose I/O	
14	BT_CLK_REQ	General_purpose I/O	
15	GPIO_4 PUART_TX	General_purpose I/O, PUART_TX	
16	GND	Ground connection	
17	GND	Ground connection	
18	BT_DEV_WAKE	General_purpose I/O	
19	PCM_SYNC	General_purpose I/O	
20	I2C_SDA PCM_IN	General_purpose I/O	
21	PCM_CLK PUART_RX	General_purpose I/O, PUART_RX	
22	GPIO_6	General_purpose I/O	
23	I2C_SCL PCM_OUT	General_purpose I/O	
24	GPIO_7	General_purpose I/O	
25	RST_N	Active-low reset input	
26	GPIO_5	General_purpose I/O	
27	GND	Ground connection	
28	GND	Ground connection	

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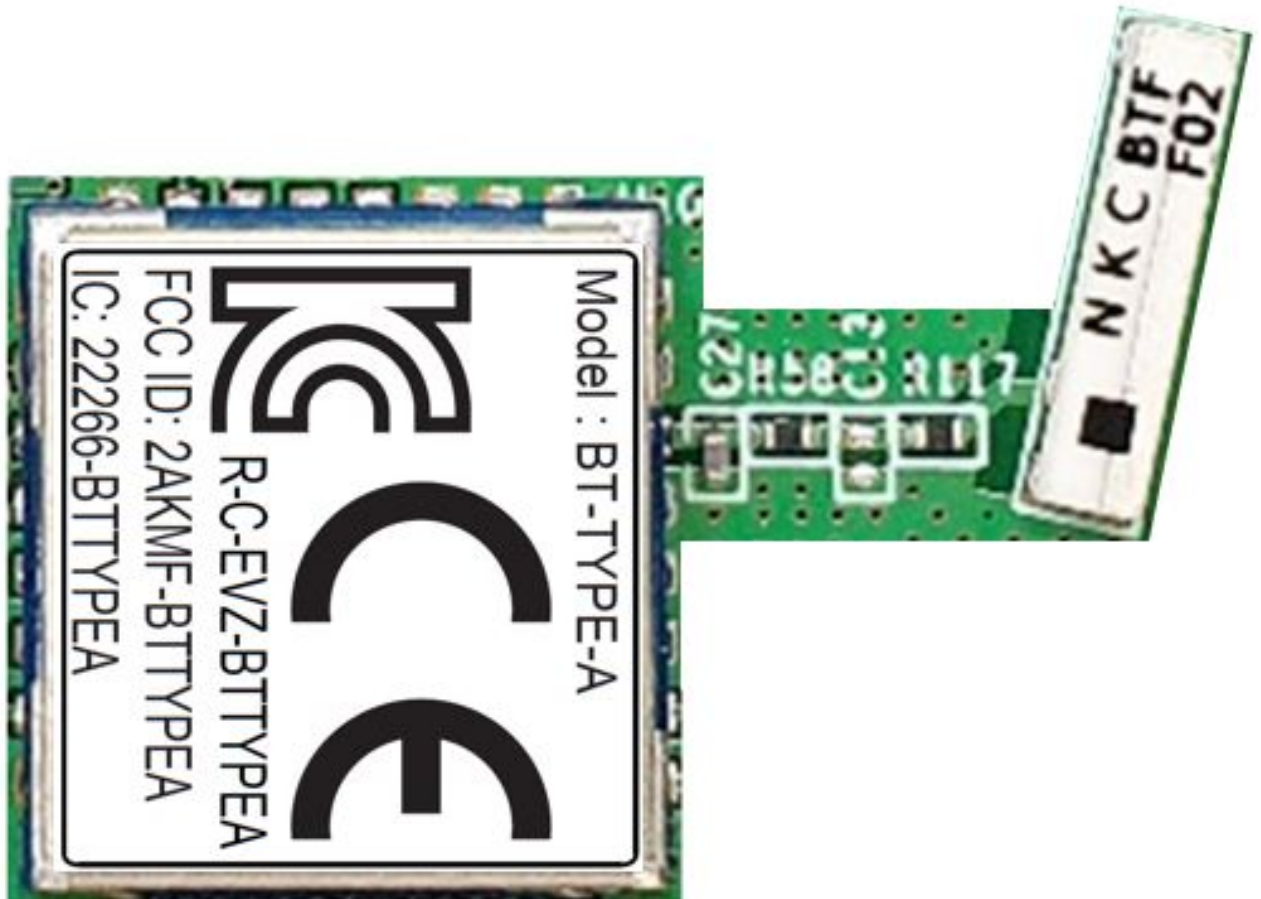
29	GND	Ground connection	
30	BT_RF	RF I/O antenna port	
31	GND	Ground connection	
32	GND	Ground connection	

8. PIN MAP



<Top View>

9. Installation instructions



- 1) U10 : MD-BCC210
- 2) C27 : 2pF
- 3) R58 : 0ohm
- 4) C13 : Open
- 5) R117 : 0ohm
- 6) ANT1 : NKCBTF-F02

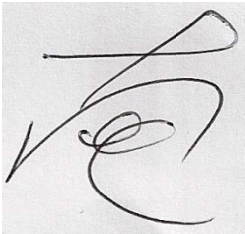
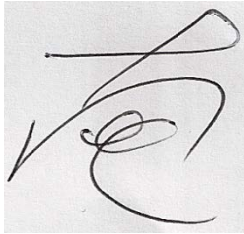
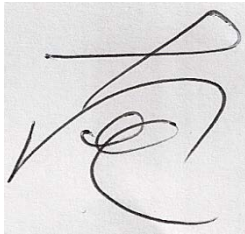
[APPROVAL SHEET]

(BLUETOOTH)



Nice Korea Components Co., Ltd

[APPROVAL SHEET]

Product	NKCBTF-F02	
Model	BT-TYPE-A	
Designed by	Checked by	Approved by
		

2022. 03. 30

Nice Korea Components Co., Ltd

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1. Revision History

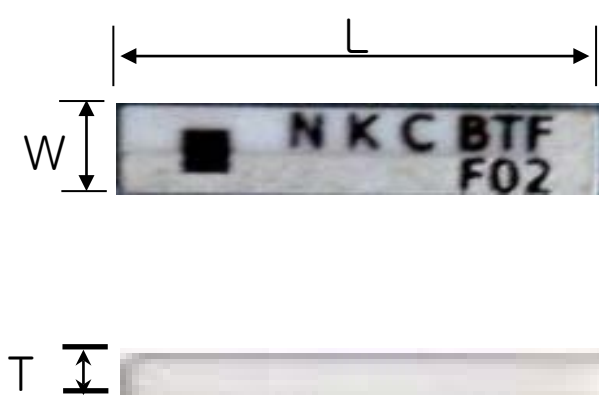
product	NKCBTF-F02	Model	BT-TYPE-A
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2. Features & Applications

2.1 Features

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

형태	Bulk Ceramic	
재질	유전체	Al ₂ O ₃ (Alumina)
	전극	은(Ag)
크기 (mm)	L = 10+/- 0.1	
	W = 2+/- 0.1	
	T = 1.2+/- 0.1	
Weight	97~100 mg	

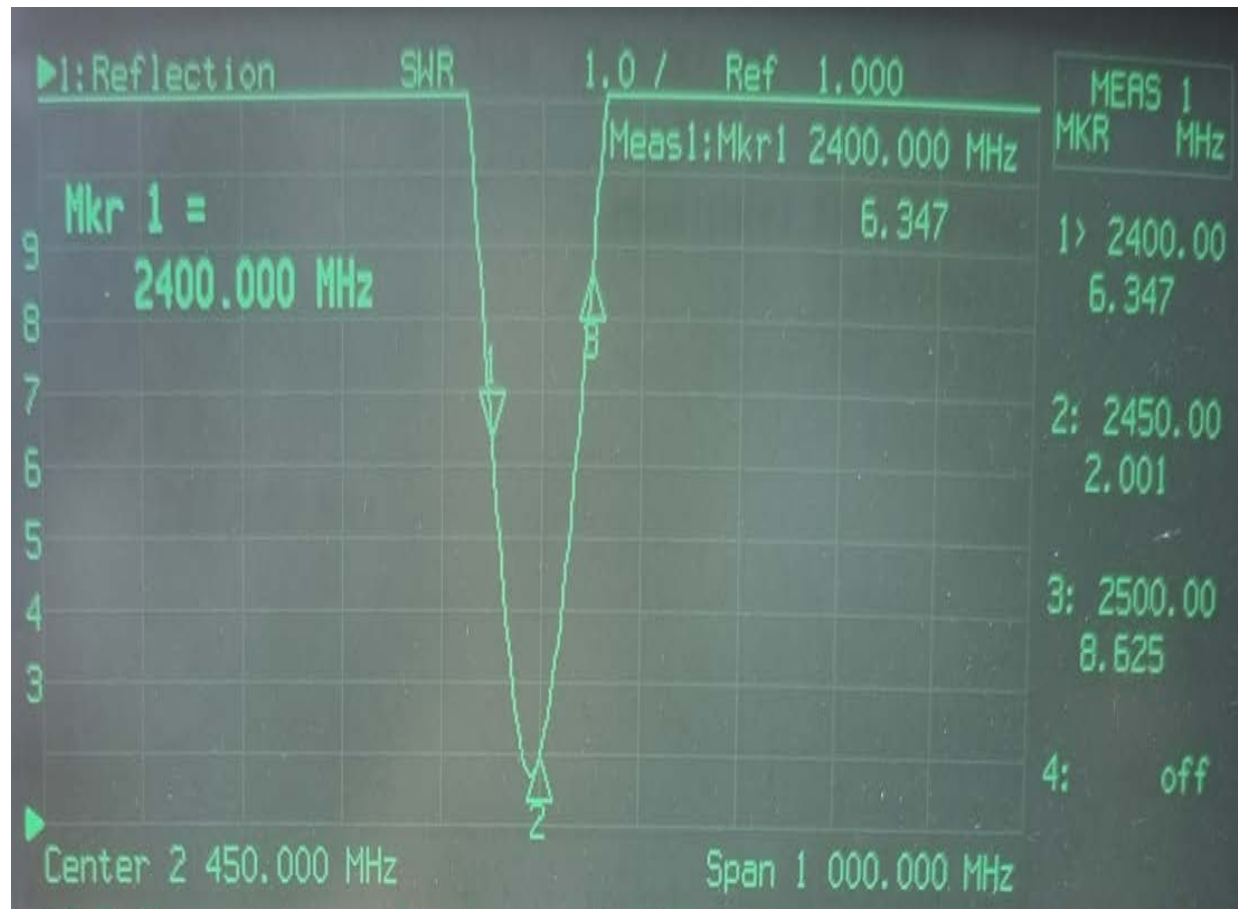
3. Electrical Specifications

3-1.

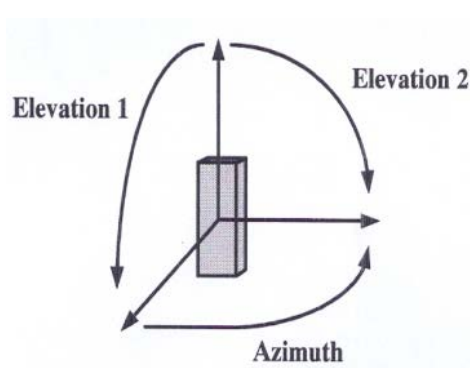
- * All item are measured in room temperature (24~26 ‘C).
- * All item are measured at customer set condition.

No.	Items	Typical Data
1	Frequency (MHz)	2400 ~2500
2	VSWR	9 : 1
3	Total Gain (Peak/AVG.) [dBi]	0.85 / -0.34
4	Impedance	50 ohm
5	Polarization	Linear

3-2. VSWR (S11)of USER SET condition



3-2. Radiation Patterns



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

Gain(dBi)	Total Gain (Peak/Avg) [dBi]		0.85 / -0.34	
	Azimuth	H-pole	Peak	0.85
			Avg	-0.34
	Elevation	V-pole	Peak	0.34
			Avg	-3.92

4. Matching Circuits & ANT Position



매칭 소자 내용

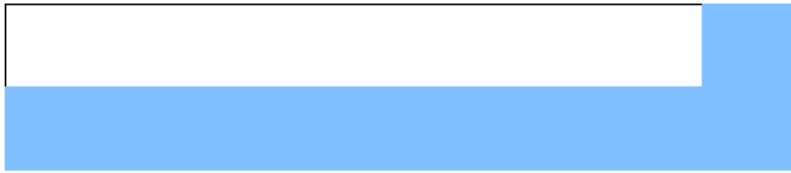
R117 : 0 옴

C13 : OPEN

R58 : 0 옴

C27 : 2 pF

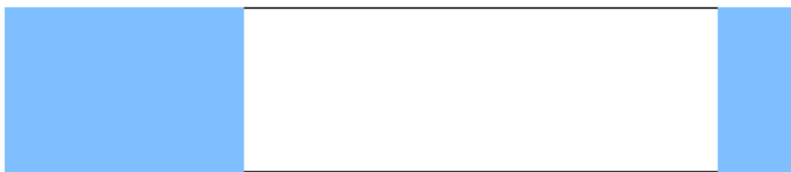
5. Ag pattern



TOP



Side1

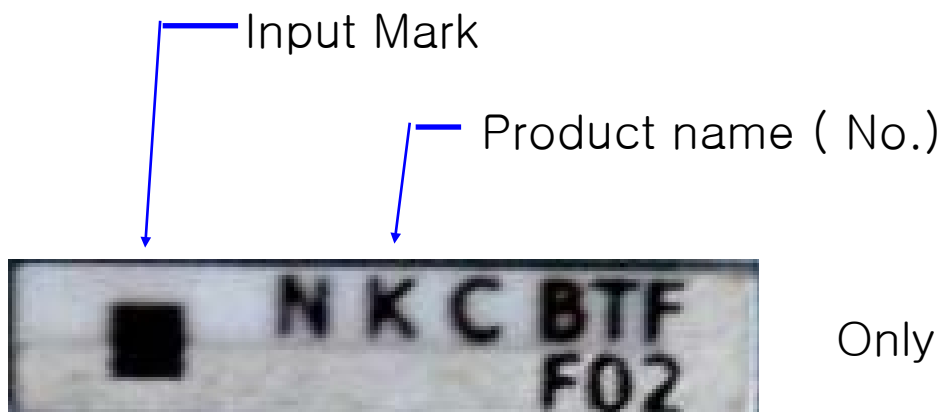


Bottom



Side2

6. Marking View



Only TOP part

6-1. 마킹 종류

* RF용 검정 잉크 사용

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION : Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

RF Radiation Exposure Statement:

This equipment complies with FCC/ISED radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the ISED radio frequency (RF) Exposure rules as this equipment has very low levels of RF energy.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

RSS-102 RF Exposure

L'antenne (ou les antennes) doit être installée de façon à maintenir à tout instant une distance minimum de au moins 20 cm entre la source de radiation (l'antenne) et toute personne physique.

Cet appareil ne doit pas être installé ou utilisé en conjonction avec une autre antenne ou

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émetteur.

IMPORTANT NOTE

This device complies with FCC & ISED radiation exposure limits set forth for an uncontrolled environment. This device should be installed and must not be co-located or operating in conjunction with any other antenna or transmitter.

This device is intended only for OEM integrators under the following conditions:

- 1) This module may not be co-located with any other transmitters or antennas.
- 2) The antenna must be installed such that 20cm is maintained between the antenna and users.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements with this module installed.

In the event that these conditions cannot be met, then the FCC & IC authorizations are no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product including this module and obtaining separate FCC & IC authorizations.

- End Product Labeling

To satisfy FCC exterior labeling requirements, the following text must be placed on the exterior of the end product.

Contains Transmitter module FCC ID: 2AKMF-BTTYPEA

IC: 22266-BTTYPEA

- Manual Information to the End User

The OEM integrator is responsible for ensuring the end-user has no manual instruction to remove or install module.

The end user manual shall include all required regulatory information/warning as show in this manual.