

USER'S MANUAL
for 2.4GHz GFSK module

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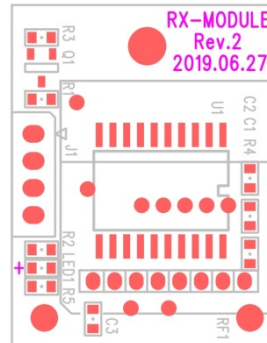
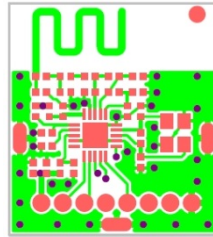
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A. Basic Features

1. Outlook

GFSK board size : 21.4mm * 19.5mm

Control board size : 31.4mm * 24.9mm



GFSK board Control board

2. Performance

Nordic's nRF24L01 with GFSK.

Low cost GFSK

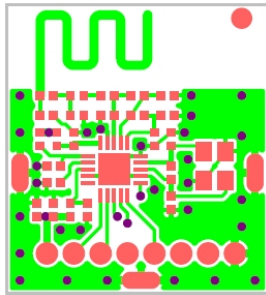
High power(0dbm) and high performance pattern Antenna(-0.7dB)

SPI Interface between GFSK board and Control board.

3. This module is complied with FCC Part15.247

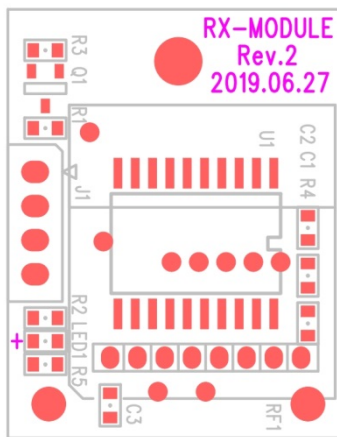
B. Shape & Pin Map

GFSK board



1 2 3 4 5 6 7 8 CN1

Control board



1
2
3
4
CN2

1 2 3 4 5 6 7 8 CN1

Pin #	NAME
1	VCC
2	CE
3	CSN
4	SCK
5	MOSI
6	MISO
7	IRQ
8	GND

CN1

Pin #	NAME
1	VCC(+3.3V)
2	Serial interface
3	Pairing
4	GND

CN2

C. GFSK board

1. nRF24L01

Nordic's 2.4GHz GFSK chip.

Used frequency

2.402 GHz, 2.422 GHz, 2.432 GHz, 2.449 GHz, 2.462 GHz

2. Controls

This board is controlled by Control board via SPI

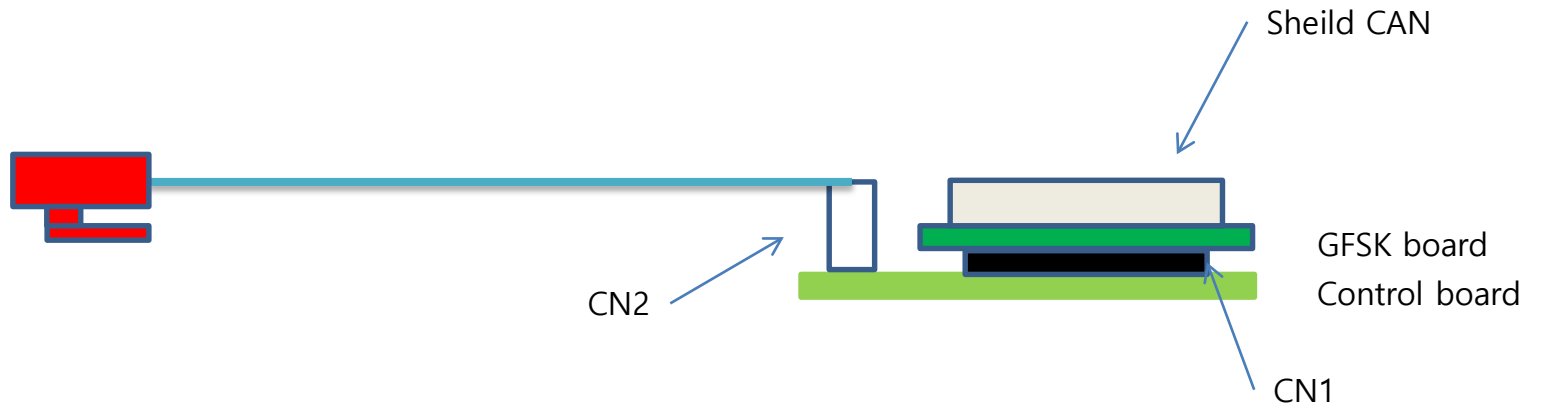
D. Control board

1. S3F94C4

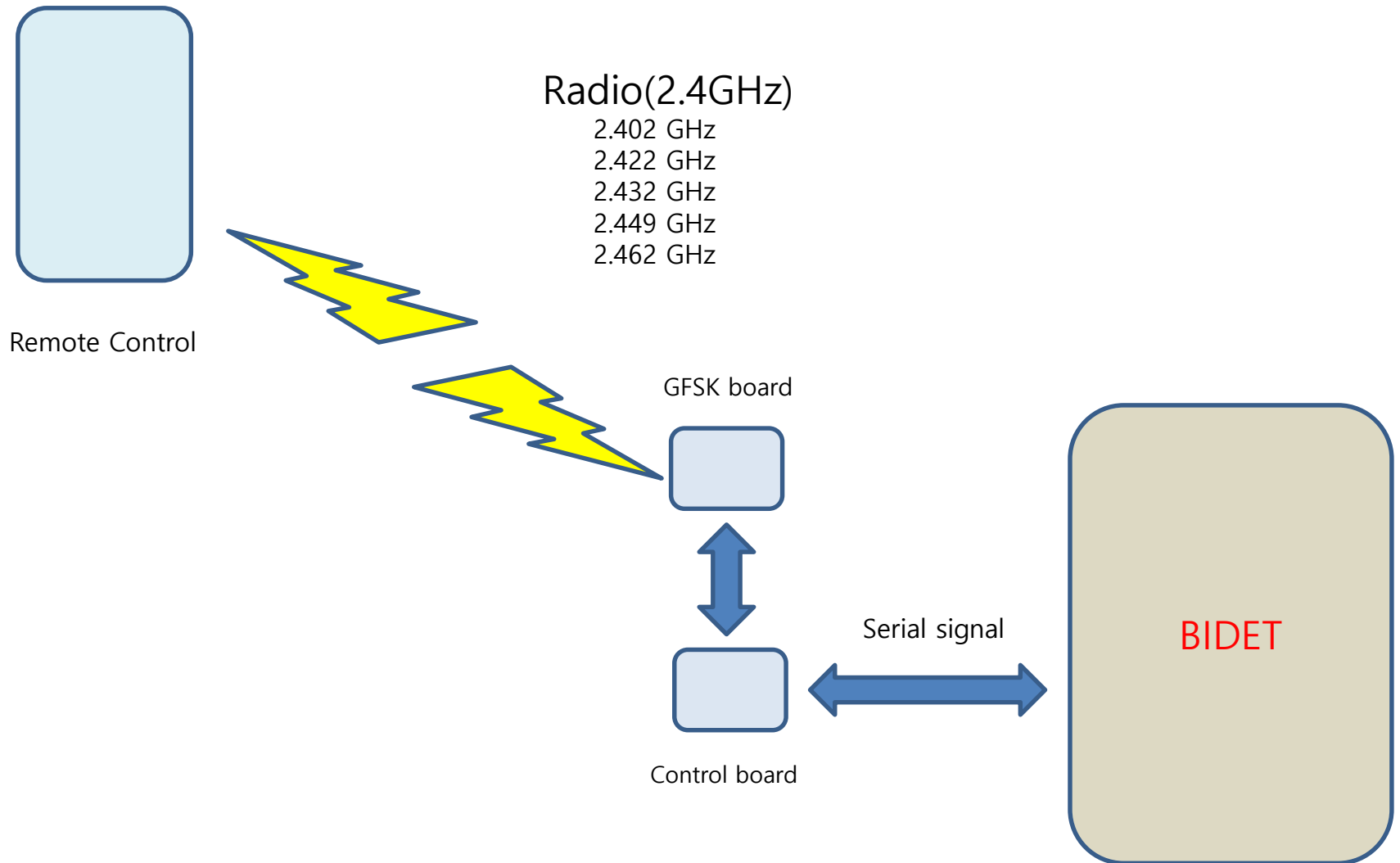
The MCU(S3F94C4) controls GFSK board and send data received from GFSK board to the BIDEET.

This board is pairing to Remote Control when received pairing signal from BIDEET via <PAIRING>pin on CN2.

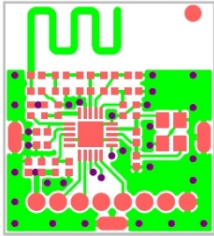
E. Complete Shape



F. Block Diagram



G. Antenna List



Pattern Antenna

MODEL	Type	Gain[dBi]	Impedance
GFSK module	PCB pattern	-0.7	50

H. Notice.

Information on test modes and additional testing requirements

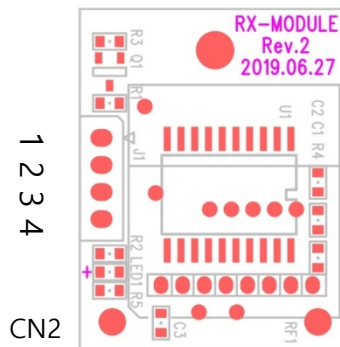
a) The modular transmitter has been fully tested by the module grantee on the required number of channels, modulation types and modes, it should not be necessary for the host installer to re-test all the available transmitter modes or settings. It is recommended that the host product manufacturer installing the modular transmitter, perform some investigative measurements to confirm that the resulting composite system does not exceed the spurious emissions limits or band edge limits (e.g., where a different antenna may be causing additional emissions).

b) The testing should check for emissions that may occur due to the intermixing of emissions with the other transmitter, digital circuitry, or due to physical properties of the host product (enclosure). This investigation is especially important when integrating multiple modular transmitters where the certification is based on testing each of them in a stand-alone configuration. It is important to note that host product manufacturers should not assume that because the modular transmitter is certified that they do not have any responsibility for final product compliance.

H. Notice.

c) If the investigation indicates a compliance concern the host product manufacture is obligated to mitigate the issue. Host products using a modular transmitter are subject to all the applicable individual technical rules as well as to the general conditions of operation in Sections 15.5, 15.15, and 15.29 to not cause interference. The operator of the host product will be obligated to stop operating the device until the interference has been corrected.

Below are steps for on test mode:



Pin #	NAME
1	VCC(+3.3V)
2	Serial interface
3	Pairing
4	GND

This board is controlled by Control board via SPI.

The MCU(S3F94C4) controls GFSK board and send data received from GFSK board to the BIDEET.

This board is pairing to Remote Control when received pairing signal from BIDEET via <PAIRING>pin on CN2.

H. Notice.

Additional testing, Part 15 subpart B disclaimer

The final host/module combination need to be evaluated against the FCC Part 15B criteria for unintentional radiators in order to be properly authorized for operation as a Part 15 digital device.

The host integrator installing this module into their product must ensure that the final composite product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operation and should refer to guidance in KDB 996369.

H. Notice.

FCC Statement

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 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.

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.

H. Notice.

This appliance and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter.

FCC CAUTION:

Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

FCC ID: 2AT7X-RXMODULE

H. Notice.

Information to user : RSS-247

This device complies with Industry Canada's licence-exempt RSSs. Please be cautioned the changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice: 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.

This Class B digital apparatus complies with Canadian ICES-003.

IC: 25425-RXMODULE

H. Notice.

IC Radiation Exposure Statement

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

End Product Labeling

The module is labeled with its own FCC ID and IC Certification Number. If the FCC ID and IC Certification Number are not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. In that case, the final end product must be labeled in a visible area with the following:

"Contains FCC ID: 2AT7X-RXMODULE"

"Contains IC: 25425-RXMODULE"

H. Notice.

Énoncé FCC

Cet équipement a été testé et déclaré conforme aux limites pour appareils numériques de classe B, selon la section 15 des Règles de la FCC. Ces limites sont destinées à assurer une protection raisonnable contre les interférences nuisibles dans une installation résidentielle. Cet équipement génère, utilise et émet de l'énergie de fréquences radio et peut, en cas d'installation ou d'utilisation non conforme aux instructions, engendrer des interférences nuisibles pour les communications radio. Toutefois, il n'existe aucune garantie qu'une installation particulière sera à l'abri des interférences. Si cet équipement cause des interférences nuisibles à la réception radiophonique ou télévisuelle, ce qui peut être vérifié en mettant l'équipement hors, puis sous tension, l'utilisateur peut tenter de résoudre le problème de l'une des façons suivantes :

- Réorienter ou déplacer l'antenne de réception.
- Augmenter la distance entre l'équipement et le récepteur.
- Brancher l'équipement sur un circuit électrique différent de celui où le récepteur est branché.
- Consulter le fournisseur ou un technicien expérimenté dans le domaine de la radio ou de la télévision.

Cet appareil est conforme à la partie 15 des Règles de la FCC. Son utilisation est assujettie aux deux conditions suivantes : (1) Cet appareil ne doit causer aucune interférence nuisible et (2) cet appareil doit accepter toutes les interférences reçues, y compris celles qui pourraient provoquer un fonctionnement non souhaitable.

H. Notice.

Cet appareil et son antenne ne doivent pas être placés à proximité de toute autre antenne ou de tout autre émetteur, ni être utilisés conjointement avec ceux-ci.

MISE EN GARDE DE LA FCC :

Tout changement ou toute modification à l'équipement qui n'a pas fait l'objet d'une autorisation expresse par la partie responsable d'assurer sa conformité pourrait annuler votre droit à utiliser l'équipement.

Code FCC : 2AT7X-RXMODULE

H. Notice.

Information pour l'utilisateur : CNR-247

Cet appareil est conforme aux exigences des CNR d'Innovation, Sciences et Développement économique Canada pour les dispositifs exempts de licence. Cet appareil est conforme aux exigences des CNR d'Innovation, Sciences et Développement économique Canada pour les dispositifs exempts de licence.

Avis : L'utilisation est assujettie aux deux conditions suivantes : (1) Cet appareil ne doit causer aucune interférence et (2) cet appareil doit accepter toutes les interférences, y compris celles qui pourraient provoquer un fonctionnement non souhaité.

Cet appareil numérique de classe B est conforme à la norme canadienne NMB-003.

ISDEC : 25425-RXMODULE

H. Notice.

Avis d'Industrie Canada sur l'exposition aux rayonnements

Cet appareil est conforme aux limites d'exposition aux rayonnements d'Industrie Canada pour un environnement non contrôlé.

REMARQUE : LE FABRICANT N'EST PAS RESPONSABLE DES INTERFÉRENCES RADIOÉLECTRIQUES CAUSÉES PAR DES MODIFICATIONS NON AUTORISÉES APPORTÉES À CET APPAREIL. DE TELLES MODIFICATIONS POURRAIENT ANNULER L'AUTORISATION ACCORDÉE À L'UTILISATEUR DE FAIRE FONCTIONNER L'APPAREIL.

Étiquetage du produit final (IC)

Le module BT111 est étiqueté avec sa propre identification FCC et son propre numéro de certification IC. Si l'identification FCC et le numéro de certification IC ne sont pas visibles lorsque le module est installé à l'intérieur d'un autre dispositif, la partie externe du dispositif dans lequel le module est installé devra également présenter une étiquette faisant référence au module inclus.

Dans ce cas, le produit final devra être étiqueté sur une zone visible avec les informations suivantes:

« Contient module émetteur identification FCC ID : 2AT7X-RXMODULE »

« Contient module émetteur IC : 25425-RXMODULE »

I. US representative Contacts

Company name : Coway USA Inc

Address : 4221 Wilshire Blvd. #210, Los Angeles, CA 90010

Telephone number : +1 213-480-1600

E-mail : kevin@coway.co.kr

J. Canadian representative Contacts

Company name : Canadian Certification Consulting, Inc.

Street Address : 2210 Horizon Drive, Suite 17

City/Province/Zip : West Kelowna, BC V1Z 3L4, Canada

Telephone number : 1-250-575-1719

Facsimile number : 1-250-769-0045

E-mail : info@can-cert.com