

## 2.4GHz frequency hopping GFSK Transceiver Module User Manual

### Functions and features:

The 2.4GHz RF RC module is a two-way radio frequency (RF) module that utilizes 2.4GHz Industrial Scientific Medical (ISM) frequency bands to communicate with other corresponding devices.

The module transmits RF signal to one or more corresponding devices (after pairing), and enable real time controlling to its LEDs.

### Specifications:

The table below is a summary of specifications for the 2.4GHz RF module:

<b>SPECIFICATION</b>	<b>DETAILS</b>
Power requirements	0.4W (3.3V @ 121mA)
Operating Frequency	2402MHz to 2478MHz
Operating Ranges	
- Minimum distance	2 meters
- Maximum distance	30 meters
Available Channels	39
RF Output Power	10dBm +/- 3dBm
Dimensions	
- Width	24mm
- Height	27.73mm
- Depth	0.7mm
Antenna	Monopole
- Gain	1.5dBi max
- Type	¼ wave antenna, center frequency 2.45GHz
- Construction	Coaxial post and strip

## INTEGRATION INFORMATION FOR THE OEM

The module is subject to the following FCC rule parts: 15.207, 15.209, 15.247

FCC Label: The FCC ID is on the front of the device. It is easily visible.

The device FCC ID is 2ATBKDSMPSDR.

A label with the following statements must be attached to the host end-product:

This device contains FCC ID: 2ATBKDSMPSDR.

Or “Contains transmitter module FCC ID: 2ATBKDSMPSDR “

The manual provides guidance to the host manufacturer will be included in the documentation that will be provided to the OEM.

The module is limited to installation in mobile or fixed applications.

The separate approval is required for all other operating configurations, including portable configurations and different antenna configurations.

The OEM integrators are responsible for ensuring that the end-user has no manual or instructions to remove or install module.

The module is limited to OEM installation ONLY.

Module grantee (the party responsible for the module grant) shall provide guidance to the host manufacturer for ensuring compliance with the Part 15 Subpart B requirements.

The host manufacturer is responsible for additional testing to verify compliance as a composite system. When testing the host device for compliance with the Part 15 Subpart B requirements, the host manufacturer is required to show compliance with the Part 15 Subpart B while the transmitter module(s) are installed and operating. The modules should be transmitting and the evaluation should confirm that the module's intentional emissions are compliant (i.e. fundamental and out of band emissions) with the Radio essential requirements. The host manufacturer must verify that there are no additional unintentional emissions other than what is permitted in the Part 15 Subpart B or emissions are complaint with the Radio aspects.

**ISED statement:**

Label of the end-product: The final end-product must be labeled in a visible area with the following:

"Contains IC: 25067-DSMPDR"

Or "Contains transmitter module IC: 25067-DSMPDR"

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

**CAN ICES-3 (\*)/NMB-3(\*)**

CAUTION: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

FCC RF Exposure Requirements

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## **RSS-247**

*This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:*

*(1) This device may not cause interference.*

*(2) This device must accept any interference, including interference that may cause undesired operation of the device.*

*"This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device."*

*"Caution: To maintain the compliance with the RF exposure guideline, place the unit at least 20 cm from nearby persons."*

*L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;*
- 2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

## **FCC PART 15**

The module is limited to installation in mobile or fixed applications.

The separate approval is required for all other operating configurations, including portable configurations and different antenna configurations.

The OEM integrators are responsible for ensuring that the end-user has no manual or instructions to remove or install module.

The module is limited to OEM installation ONLY.

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

**NOTE:** 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.

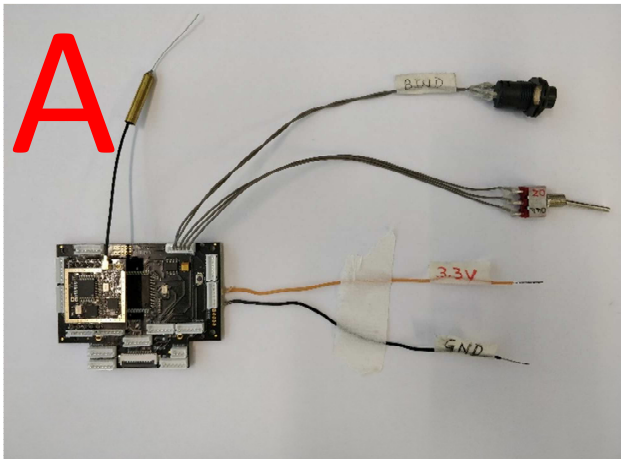
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one 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.

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.



Functional Device: module showing on the left  
2.4Ghz frequency hopping GFSK (Device A)



### Function procedure

1. Provide 3.3V power to device A and 5V power to device B (corresponding device)
2. When switch on device A on, LED on device B light up, vice versa.

