

Module MBN52832 Regulatory Statements for FCC and IC

The following statements are required on the regulatory guide provided to the end-user and OEM:

Applicable models:	MBN52832
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1. Product Information

This product is designed to be compliant with rules and regulations in the country it is sold to and therefore is marked as required. These marking signify the countries the device is approved in. Operating the product without regulatory approvals is illegal.

Please make sure you use the latest revision of this document which is available at <https://TBD>.
Local language translation of this guide are obtained at: <https://TBD>

Country Approvals: The product usage is subject to approval obtained in countries per marking on the device. For DoC, please refer to: <https://TBD>

Antenna: The product is provided with an approved antenna. Use only supplied or approved antenna by AMIMON. Any changes or modifications to the Antenna may void the regulatory approvals obtained for the product.

Modifications: Any changes or modifications not expressly approved by AMIMON or *the party responsible for compliance* could void the user's authority to operate the equipment.

1.1.1 RF Modules:

These devices contain the following approved radio modules:

Device	Description	IC	FCC ID
MBN52832	BLE module	7680A-2832	VQS2832

The module complies with FCC rules Part 15 C and ISSED rules RSS-247.

The module MBN52832 has a single modular approval and functions as BLE module in the 2.4GHz band.

1.1.2 Antenna Information

The product is provided with an approved antenna.

Use only supplied or approved antenna by AMIMON.

Any changes or modifications to the Antenna may void the regulatory approvals obtained for the product.

FCC STATEMENT

The Antenna Information table lists the approved antennae for the module.

INDUSTRY CANADA (IC) STATEMENT

The radio transmitter 7680A-2832 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.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication

Les présent émetteur radio 7680A-2832 a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

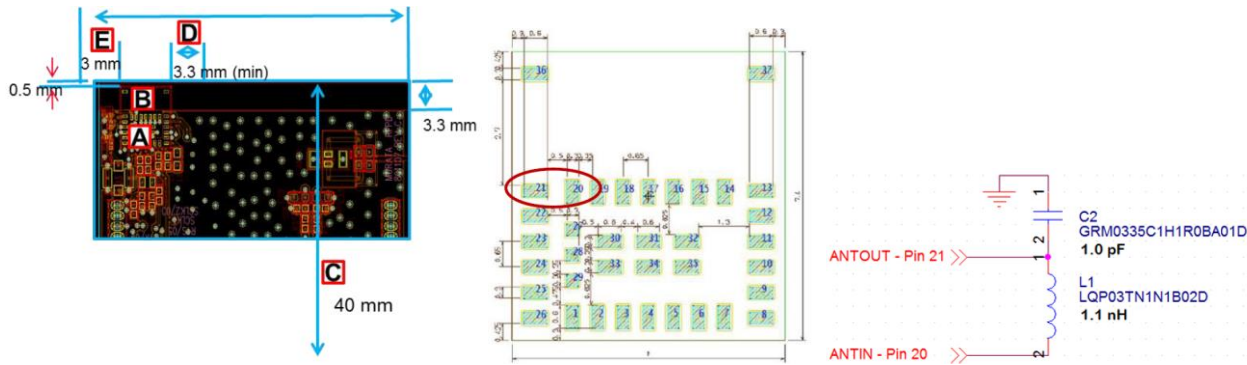
Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Module	Antenna	Antenna P/N	Gain	Location	Antenna Impedance
MBN52832	printed dipole	Guidelines below	-2.5 dBi Typical	Internal	50Ω
MBN52832	dipole	LCom HG2407RD-RSP	7 dBi omni antenna	External	50Ω
MBN52832	patch	CUSHCRAFT S2406PL	6 dBi patch antenna.	External	50Ω
MBN52832	printed dipole	RHT-639-0878	3 dBi peak/1dBi Ave	External	50Ω
MBN52832	printed dipole	AMN_ANT_1031-1	3 dBi peak	External	50Ω

Internal Antenna guidelines:

The MBN52832 module is certified with an internal PCB antenna physically located on the module. For optimum EIRP (Effectively Isotropically Radiated Power) when use the on-board antenna, please follow the following recommendations in the customer host circuit board design.

- The module is recommended is be placed on top left corner of the host circuit board.
- Around the antenna area, all layers of the customer circuit board should be free of any metal objects. Specifically, there should be no ground plane, traces or metal shield case
- Host circuit PCB length is longer than 40mm to get optimal performance by using ground plane.
- Right side of antenna area also should be free of grounds.
- Metal and plastic materials should be away from the module. (more than 3mm)
- To use this internal antenna, the integrator must provide a simple two-component matching circuit between pins 20 and 21 of the module. This circuit will connect the RF I/O of the module directly to the PCB antenna. The picture below shows the location of pins 20 and 21.



The Integrator must place the matching circuit shown below between Pins 20 and 21 of the Module to duplicate the structure used during FCC/IC testing of the MBN52832. Use the exact PNs provided for L1 and C2 to meet regulatory requirements.

On the integrator's support board, place L1 between Pin 20 and Pin 21 of the Module. Place C2 adjacent to Pin 21. The other side of C2 should be attached to RF Ground.

Any technical implementation questions regarding the layout or design of this circuit should be directed to Murata module technical support.

External Antenna guidelines:

Antenna should be connected to the MBN module using 50 ohm microstrip and a U.FL RF connector as shown below. This microstrip and U.FL connector are placed on the customer's PCB and are external to the MBN module. The antenna is then connected to this UFL Connector via a 50 ohm RF adapter cable. The microstrip trace lengths between 7 mm and 25 mm.

1.1.3 RF Exposure

The product complies with internationally recognized standards covering human exposure to electromagnetic fields from radio devices.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter. If co-location with other transmitters that operate simultaneously is required, the host manufacturer needs to evaluate the FCC multi-transmitter procedures.

MBN52832 with 6dBi or 7dBi Antenna

To satisfy local RF exposure regulation requirements, the transmitting product must operate with a minimum separation distance of 20 cm or more from a person's body.

Host manufacturer are required to add the following text in the manual provided to the end user:

FCC RF Exposure Statement

This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Industry Canada Statement

IMPORTANT NOTE:
Radiation Exposure Statement: This equipment complies with IC radiation exposure limits set forth for uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.
NOTE IMPORTANTE:
Déclaration d'exposition aux radiations: Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

MBN52832 with printed Antenna

FCC RF Exposure Statement

This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment.

Body-Worn: This equipment should be installed and operated with a minimum distance of 0.5 centimeters between the radiator and your body.

Hand-Held: This equipment should be installed and operated with a minimum distance of 0.5 centimeters between the radiator and your body.

Industry Canada Statement

IMPORTANT NOTE:
Radiation Exposure Statement: This equipment complies with IC radiation exposure limits set forth for uncontrolled environment. This equipment should be installed and operated with distance of 0.5 cm between the radiator and your body or your hand.
NOTE IMPORTANTE:
Déclaration d'exposition aux radiations: Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé 0.5 cm de distance entre la source de rayonnement et votre corps ou votre main.

1.1.4 Unintentional Radio Interference

Host manufacturers are responsible to comply with any other FCC rules that apply not covered by the modular transmitter grant. Host manufacturers are also required to verify compliance to Part 15 Subpart B and ICES-003.

FCC Statement

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.

IC Statement

CAN ICES-003 (B) / NMB-003 (B)

1.1.5 Radio Transmitters

FCC Statement

Radio Transmitters (Part 15) – Class B Digital Devices

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

Industry Canada Statement

This device complies with RSS-247 of the Industry Canada 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.

Ce dispositif est conforme à la norme CNR-247 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.
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1.1.6 Safety Instructions



- When operating this equipment, read and follow all the instructions in this manual.
- Do not open unit.
- Do not block the air ventilation openings.
- Use only accessories/batteries/chargers specified or recommended by AMIMON.
- People with pacemakers should ALWAYS keep the device at the listed distance from their pacemaker when turned ON. Should you have any reason to suspect that interference is taking place, you should turn your device OFF.
- Do not expose to moisture, excessive heat or fire
- Keep away from water and other liquids
- Do not charge the device when it is wet or damp
- Use the mains plug to disconnect the apparatus.
- Clean with a dry cloth only.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.
- Please avoid electrostatic discharge from the antenna ports for proper operation
- WARNING – do not touch. Please beware of hot surfaces of the devices and wait until it cools off.
- Please avoid electrostatic discharge from the antenna ports for proper operation
- Keep these instructions in a safe and accessible place for future use.
- Declared maximum operating temperature: +TBD°C



1.1.7 OEM Labeling Requirements

Notice: The OEM of final integrator must ensure that FCC and IC labeling requirements are met.

For a host using this module, if

(1) the module's FCC ID and IC are not visible when installed in the host, or

(2) if the host is marketed so that end users do not have straightforward commonly used methods for access to remove the module so that the FCC ID and/or IC of the module are visible;

then an additional permanent label referring to the enclosed module should be used, with the following contents:

Contains FCC ID: VQS2832 IC: 7680A-2832

The host OEM user manual must also contain clear instructions on how end users can find and/or access the module and the FCC ID and IC.

Notice for OEM to include in their user documentation:

This module in its final integration requires the end-product to continue to comply with FCC and ISSED requirements including DFS requirements.

A class II permissive change may be required for operation not already described in the FCC Grant filing.

Basic compliance information statement

For products using SDoC, a compliance information statement shall be supplied with the product at the time of marketing or importation, containing the following information:

- a) Identification of the product, e.g., name and model number;
- b) A statement that the product complies with the rules; and
- c) The identification, by name, address, and telephone number, or internet contact information, of the responsible party as defined in Part 15 Section 2.909. The responsible party must be located within the United States.

Compliance information statement for end products assembled from separately authorized components /modules the following applies:

(1) assembled from components (e.g., enclosures, power supplies, and CPU boards) that, by themselves, are authorized under SDoC or a grant of certification or both; and
(2) where the assembled product is also subject to authorization under SDoC but, in accordance with the applicable regulations, does not require additional testing. Such products shall be supplied, at the time of importation or marketing, with a compliance information statement containing the following information.

a) Identification of the end product, e.g., name and model number.

b) Identification of the authorized components/modules used in the assembly. A component authorized under SDoC shall be identified by name and model. A component authorized under a grant of certification shall be identified by name and model number (if applicable) along with the FCC Identifier number.

c) A statement that the product complies with the rules.

d) The identification, by name, address, and telephone number, or internet contact information, of the responsible party who assembled the product from modular components. The responsible party for an SDoC must be located within the United States.

e) Copies of the compliance information statements for each authorized component used in the system that is authorized under SDoC.