

INSTALLATION GUIDE

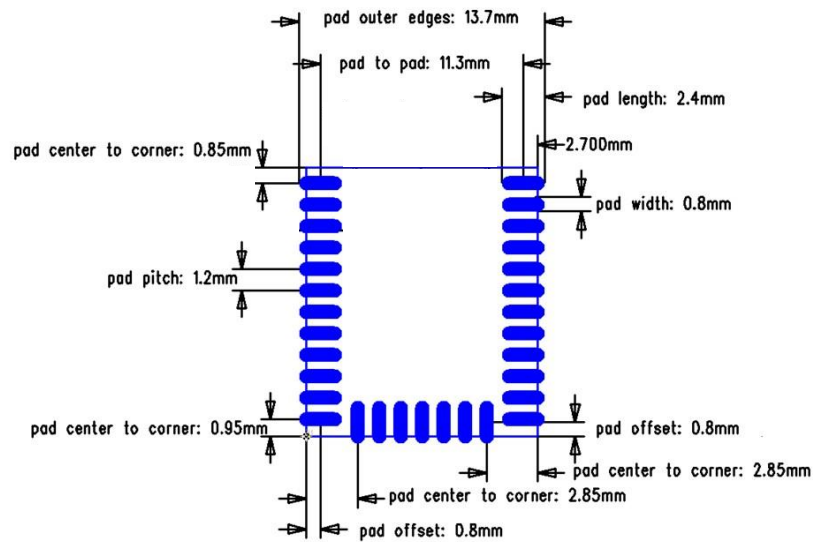


Figure 1: Recommended PCB land pattern of BGM111E

Because BGM111E is using an external antenna through the embedded u.fl connector, the radiated performance does not depend on the PCB layout. The module can be placed freely in the application board. It is recommended to use good engineering practices in the layout to avoid RF noise coupling and EMI issues.

QUALIFIED ANTENNA TYPES FOR BGM111E

BGM111E module is approved with a standard 2.14 dBi dipole antenna. Any antenna of the same type, similar in-band out of band characteristics and with the same or less gain can be used without reassessment. In case using antenna of a different type and/or higher gain reassessments and notification to the particular certification authority is required.

Japan

BGM111E is certified in Japan with certification number 209-J00240.

It is recommended that a manufacturer who integrates a radio module in their host equipment will place the certification mark and certification number (the same marking/number as depicted on the label of the radio module) on the outside of the host equipment. The certification mark and certification number must be placed close to the text in the Japanese language which is provided below. This change in the Radio Law has been made in order to enable users of the combination of host and radio module to verify if they are actually using a radio device which is approved for use in Japan.

当該機器には電波法に基づく、技術基準適合証明等を受けた特定無線設備を装着している。

Translation:

“This equipment contains specified radio equipment that has been certified to the Technical Regulation Conformity Certification under the Radio Law.”

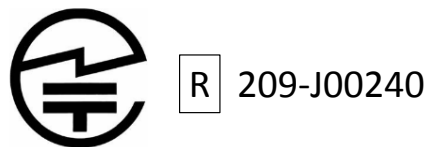


Figure 2: GITEKI mark and ID

FCC

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 undesirable operation.

Any changes or modifications not expressly approved by Silicon Labs could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter meets both portable and mobile limits as demonstrated in the RF Exposure Analysis.

OEM Responsibilities to comply with FCC Regulations

The BGM111 Bluetooth Smart Module has been certified for integration into products only by OEM integrators under the following condition:

- The transmitter module must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

As long as the conditions above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

Note:

In the event that this condition cannot be met (for certain configurations or co-location with another transmitter), then the FCC authorization is 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 the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

The BGM111 Bluetooth Smart Module is labeled with its own FCC ID. If the FCC ID is 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 Transmitter Module FCC ID: QOQBGM111"

Or

"Contains FCC ID: QOQBGM111"

The OEM integrator must not provide information to the end user regarding how to install or remove this RF module or change RF related parameters in the user manual of the end product.

ISED

IC (English)

This radio transmitter has been approved by Industry Canada to operate with a standard 2.14 dBi dipole antenna. Other antenna types are strictly prohibited for use with this device.

This device complies with Industry Canada's license-exempt RSS standards. 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.

RF Exposure Statement

Exception from routine SAR evaluation limits are given in RSS-102 Issue 5. BGM111E Bluetooth Smart Module meets the given requirements when the minimum separation distance to human body is 15 mm. RF exposure or SAR evaluation is not required when the separation distance is 15 mm or more. If the separation distance is less than 15 mm the OEM integrator is responsible for evaluating the SAR.

OEM Responsibilities to comply with IC Regulations

The BGM111 Bluetooth Smart Module has been certified for integration into products only by OEM integrators under the following conditions:

- The antenna(s) must be installed such that a minimum separation distance of 15 mm is maintained between the radiator (antenna) and all persons at all times.
- The transmitter module must not be co-located or operating in conjunction with any other antenna or transmitter.

As long as the two conditions above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

Note:

In the event that these conditions cannot be met (for certain configurations or co-location with another transmitter), then the IC authorization is no longer considered valid and the IC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate IC authorization.

End Product Labeling

The BGM111 Bluetooth Smart module is labeled with its own IC ID. If the IC ID is 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 Transmitter Module IC: 5123A-BGM111"

Or

"Contains IC: 5123A-BGM111"

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module or change RF related parameters in the user manual of the end product.

IC (Français)

Cet émetteur radio (IC : 5123A-BGM111) a reçu l'approbation d'Industrie Canada pour une exploitation avec l'antenne puce incorporée. Il est strictement interdit d'utiliser d'autres types d'antenne avec cet appareil. 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;
2. L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Déclaration relative à l'exposition aux radiofréquences (RF)

Les limites applicables à l'exemption de l'évaluation courante du DAS sont énoncées dans le CNR 102, 5e édition. L'appareil BGM111 répond aux exigences données quand la distance de séparation minimum par rapport au corps humain est inférieure ou égale à 15 mm. L'évaluation de l'exposition aux RF ou du DAS n'est pas requise quand la distance de séparation est de 15 mm ou plus. Si la distance de séparation est inférieure à 15 mm, il incombe à l'intégrateur FEO d'évaluer le DAS.

Responsabilités du FEO ayant trait à la conformité avec les règlements IC

Le module BGM111 a été certifié pour une intégration dans des produits uniquement par les intégrateurs FEO dans les conditions suivantes:

- La ou les antennes doivent être installées de telle façon qu'une distance de séparation minimum de 15 mm soit maintenue entre le
- radiateur (antenne) et toute personne à tout moment.
- Le module émetteur ne doit pas être installé au même endroit ou fonctionner conjointement avec toute autre antenne ou émetteur.

Dès lors que les deux conditions ci-dessus sont respectées, d'autres tests de l'émetteur ne sont pas obligatoires. Cependant, il incombe toujours à l'intégrateur FEO de tester la conformité de son produit final vis-à-vis de toute exigence supplémentaire avec ce module installé (par exemple, émissions de dispositifs numériques, exigences relatives aux matériels périphériques PC, etc).

Note:

S'il s'avère que ces conditions ne peuvent être respectées (pour certaines configurations ou la colocation avec un autre émetteur), alors l'autorisation IC n'est plus considérée comme valide et l'identifiant IC ne peut plus être employé sur le produit final. Dans ces circonstances, l'intégrateur FEO aura la responsabilité de réévaluer le produit final (y compris l'émetteur) et d'obtenir une autorisation IC distincte.

Étiquetage du produit final

L'étiquette du module BGM111 porte son propre identifiant IC. Si l'identifiant IC n'est pas visible quand le module est installé à l'intérieur d'un autre appareil, l'extérieur de l'appareil dans lequel le module est installé doit aussi porter une étiquette faisant référence au module qu'il contient. Dans ce cas, une étiquette comportant les informations suivantes doit être collée sur une partie visible du produit final.

"Contient le module émetteur IC: 5123A-BGM111"

or

"Contient IC : 5123A-BGM111"

L'intégrateur FEO doit être conscient de ne pas fournir d'informations à l'utilisateur final permettant d'installer ou de retirer ce module RF ou de changer les paramètres liés aux RF dans le mode d'emploi du produit final.

CE

The Declaration of Conformity may be consulted at www.silabs.com.

Please note that every application using the BGM111 will need to perform the radio EMC tests on the end product according to EN 301 489-17.

The conducted test results can be inherited from the modules test report to the test report of the end product using BGM111. EN300328 radiated spurious emission test must be repeated with the end product assembly. Test documentation and software for the EN 300 328 radiated spurious emissions testing can be requested from the Silicon Labs support.