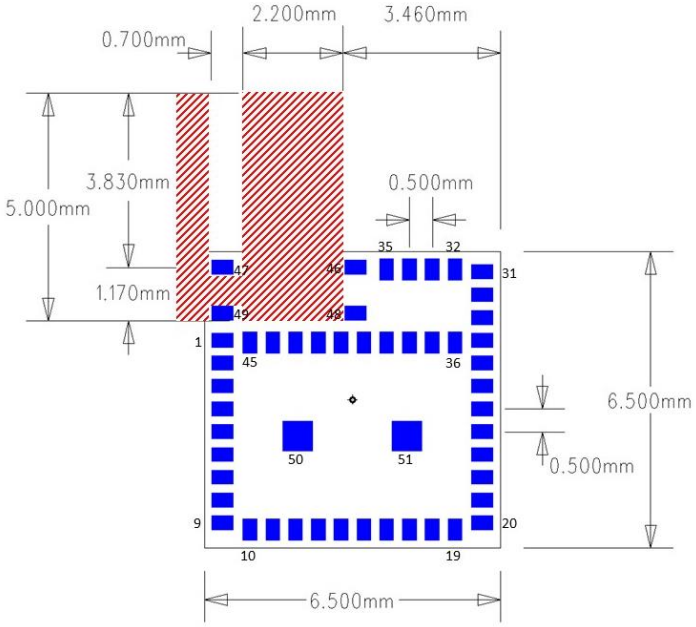
INSTALLATION GUIDE



PIN NO.	PAD DIMENSIONS	COORDINATES
1	(0.32x0.48)mm	X=-2.85mm, Y=1.30mm
10	(0.32x0.48)mm	X=-2.25mm, Y=-2.85mm
20	(0.32x0.48)mm	X=2.85mm, Y=-2.70mm
35	(0.32x0.48)mm	X=0.75mm, Y=2.85mm
45	(0.32x0.48)mm	X=-2.25mm, Y=1.25mm
46	(0.32x0.48)mm	X=0.07mm, Y=2.90mm
47	(0.32x0.48)mm	X=-2.85mm, Y=2.90mm
48	(0.32x0.48)mm	X=0.07mm, Y=1.90mm
49	(0.32x0.48)mm	X=-2.85mm, Y=1.90mm
50	(0.67x0.67)mm	X=1.20mm, Y=-0.80mm
51	(0.67x0.67)mm	X=1.20mm, Y=-0.80mm

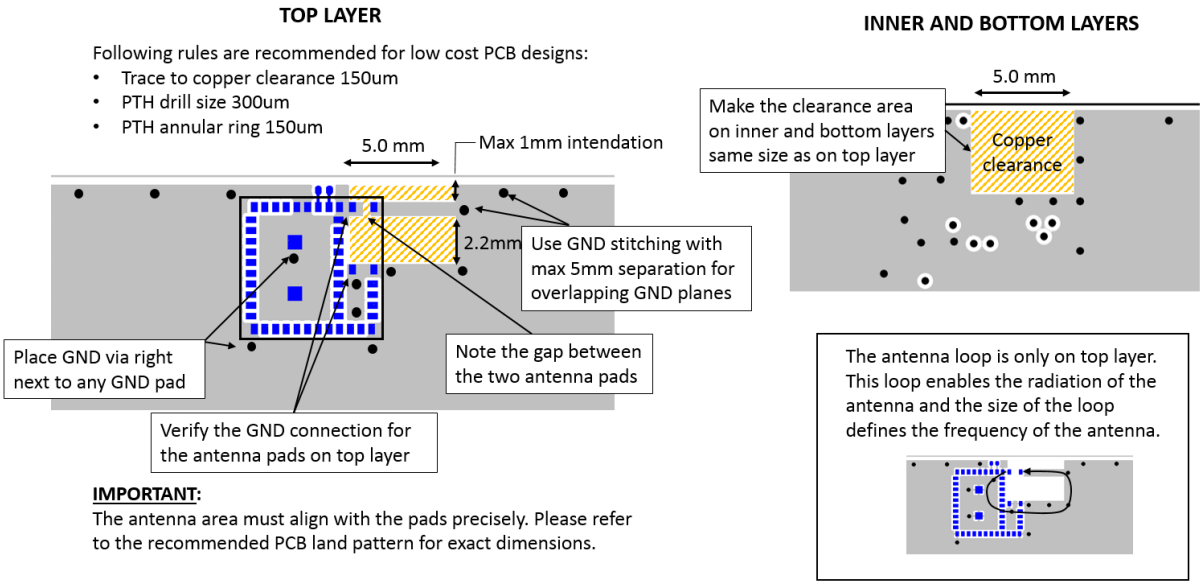


Figure 1:Layout guide for using the internal antenna

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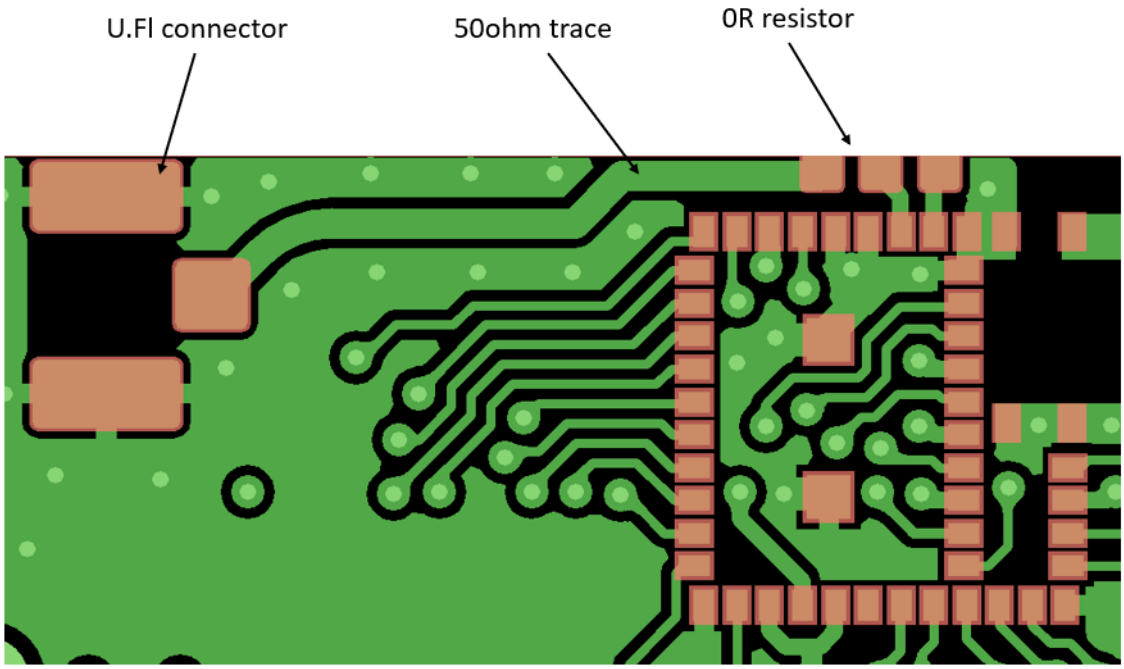

Figure 2: Layout guide for using external antenna

Qualified Antenna Types

This device has been designed to operate with a standard 2.14 dBi dipole antenna. Any antenna of a different type or with a gain higher than 2.14 dBi is strictly prohibited for use with this device. Using an antenna of a different type or gain more than 2.14 dBi will require additional testing for FCC, CE and IC. The required antenna impedance is 50 Ω.

Antenna type	Maximum gain
Dipole	2.14 dBi

Table 1: Qualified antennas for BGM13Px

Note: if an installer wishes to deviate from the detailed instructions of layout with an external antenna, a Class 2 Permissive Change will be necessary

Japan

BGM13S22A and BGM13S22E models are certified in Japan with certification number 209-J?????.

Since September 1, 2014 it is allowed (and highly recommended) that a manufacturer who integrates a radio module in their host equipment can 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.

Certification Text to be Placed on the Outside Surface of the Host Equipment:

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

The "Giteki" marking shown in the figure below must be affixed to an easily noticeable section of the specified radio equipment. Note that additional information may be required if the device is also subject to a telecom approval.

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Figure 3: GITEKI mark and ID

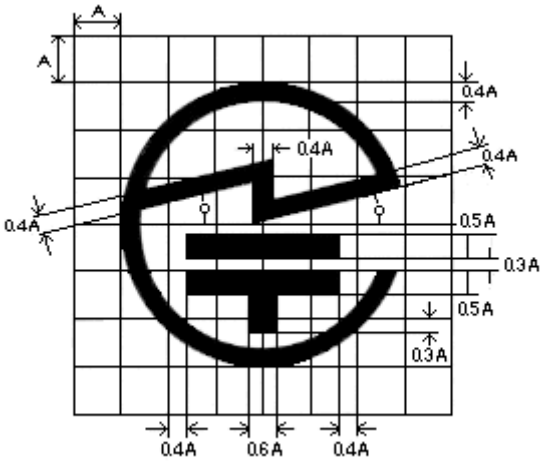

Figure 4:GITEKI mark

CE

The BGM13S22 modules are in conformity with the essential requirements and other relevant requirements of the Radio Equipment Directive(RED). Please note that every application using the BGM13S will need to perform the radio EMC tests on the end product according toEN 301 489-17. Separate RF testing is not required provided that the customer follows the module manufacturer's recommendations and instructions and does not make modifications e.g. to the provided antenna solutions or requirements. A formal DoC is available via www.silabs.com

BGM13S32 module is in conformity with the essential requirements and other relevant requirements of the Radio Equipment Directive(RED) at nominal 10 dBm transmit power. The transmit power of the module is not limited and when an end product is using BGM13S32, the end product manufacturer is responsible that the end product is in inconformity of all relevant requirements of the RED.

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

OEM Responsibilities to comply with FCC Regulations

OEM integrator is 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.).

- With BGM13S32 the antenna(s) must be installed such that a minimum separation distance of 50.5 mm is maintained between the radiator (antenna) and all persons at all times.
- With BGM1SP22 the antenna(s) must be installed such that a minimum separation distance of 0 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 except in accordance with FCC multi-transmitter product procedures.

IMPORTANT NOTE: In the event that the above conditions 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 variants of BGM13P Modules are labeled with their 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 product must be labeled in a visible area with the following:

"**Contains Transmitter Module FCC ID: QOQ13**"

or

"**Contains FCC ID: QOQ13"**

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.

ISED Canada

This radio transmitter (IC: 5123A-13) has been approved by Industry Canada to operate with the antenna types listed above 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

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.

The models BGM13P32E and BGM13P32A meet the given requirements when the minimum separation distance to human body is 40 mm.

The models BGM13P22A and BGM13P22E meet the given requirements when the minimum separation distance to human body is 20 mm.

RF exposure or SAR evaluation is not required when the separation distance is same or more than stated above. If the separation distance is less than stated above the OEM integrator is responsible for evaluating the SAR.

OEM Responsibilities to comply with IC Regulations

The BGM13P modules 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 as stated above 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.).

IMPORTANT NOTE: In the event that these conditions cannot be met (for certain configurations or co-location with another transmitter), then the ISEDC 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 ISEDC authorization.

End Product Labeling

The BGM13P modules are labeled with their 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-13**”

or

“**Contains IC: 5123A-13**

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

ISEDC (Français)
Industrie Canada a approuvé l’utilisation de cet émetteur radio (IC: 5123A-13) en conjonction avec des antennes de type dipolaire à 2.14dBi ou des antennes embarquées, intégrée au produit. L’utilisation de tout autre type d’antenne avec ce composant est proscrite. Ce composant est conforme aux normes RSS, exonérées de licence d'Industrie Canada. Son mode de fonctionnement est soumis aux deux conditions suivantes :

1. Ce composant ne doit pas générer d’interférences
2. Ce composant doit pouvoir est soumis à tout type de perturbation y compris celle pouvant nuire à son bon fonctionnement.

Déclaration d'exposition RF
L'exception tirée des limites courantes d'évaluation SAR est donnée dans le document RSS-102 Issue 5. Les modules BGM13P32GA et BGM13P32GE répondent aux exigences requises lorsque la distance minimale de séparation avec le corps humain est de 40 mm. Les modules BGM13P22GA et BGM13P22GA répondent aux exigences requises lorsque la distance minimale de séparation avec le corps humain est de 20 mm.
La déclaration d’exposition RF ou l'évaluation SAR n'est pas nécessaire lorsque la distance de séparation est identique ou supérieure à celle indiquée ci-dessus. Si la distance de séparation est inférieure à celle mentionnées plus haut, il incombe à l'intégrateur OEM de procédé à une évaluation SAR.

Responsabilités des OEM pour une mise en conformité avec le Règlement du Circuit Intégré
Le module BGM13P a été approuvé pour l'intégration dans des produits finaux exclusivement réalisés par des OEM sous les conditions
suivantes:

• L'antenne (s) doit être installée de sorte qu'une distance de séparation minimale indiquée ci-dessus soit maintenue entre le radiateur
(antenne) et toutes les personnes avoisinante, ce à tout moment.
• Le module émetteur ne doit pas être localisé ou fonctionner avec une autre antenne ou un autre transmetteur que celle indiquée plus haut.

Tant que les deux conditions ci-dessus sont respectées, il n’est pas nécessaire de tester ce transmetteur de façon plus poussée. Cependant, il incombe à l’intégrateur OEM de s’assurer de la bonne conformité du produit fini avec les autres normes auxquelles il pourrait être soumis de fait de l’utilisation de ce module (par exemple, les émissions des périphériques numériques, les exigences de périphériques PC, etc.).

REMARQUE IMPORTANTE: dans le cas où ces conditions ne peuvent être satisfaites (pour certaines configurations ou co-implantation avec un autre émetteur), l'autorisation ISEDC n'est plus considérée comme valide et le numéro d’identification ID IC ne peut pas être apposé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera responsable de

la réévaluation du produit final (y compris le transmetteur) et de l'obtention d'une autorisation ISEDC distincte.

Étiquetage des produits finis
Les modules BGM13P sont étiquetés avec leur propre ID IC. Si l'ID IC n'est pas visible lorsque le module est intégré au sein d'un autre produit, cet autre produit dans lequel le module est installé devra porter une étiquette faisant apparaitre les référence du module intégré. Dans un tel cas, sur le produit final doit se trouver une étiquette aisément lisible sur laquelle figurent les informations suivantes :

"Contient le module transmetteur : 5123A-13"

ou

"Contient le circuit: 5123A-13”

L'intégrateur OEM doit être conscient qu’il ne doit pas fournir, dans le manuel d’utilisation, d'informations relatives à la façon d'installer ou de d’enlever ce module RF ainsi que sur la procédure à suivre pour modifier les paramètres liés à la radio.