

User Manual for 5-200-0081 Radio Module

Note: *The final assemblies using this module would each have an appropriate User Manual specific to their features/functions.*

Features

- Built in CC2541 single-chip *Bluetooth Smart* (BLE 4.0) System-On-Chip (SOC).
- Memory: 256kB FLASH, 8kB RAM
- RF Output Power: -12.23 dBm
- RF Receive Sensitivity: -94 dBm
- Size: 11.6mm x 17.9 mm x 2.3 mm
- Operating Voltage: 2.0V to 3.6V
- Operating Temperature: -40 to +85° C
- Complete power-optimized stack, including Controller and Host
 - GAP – Central, Peripheral, Observer, or Broadcaster (Including Combination Roles)
 - ATT/GATT – Client and Server
 - SMP – AES-128 Encryption and Decryption
 - L2CAP
- Multiple Configuration Options
 - Single-Chip Configuration, Allowing Applications to Run on CC2541
 - Network Processor Interface for Applications Running on an External Microcontroller

FCC:**Compliance Statement**

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.

Warning

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

FCC Interference 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 portable transmitter with its antenna complies with FCC and Industry Canada RF exposure limits for general population / uncontrolled exposure.

Cet émetteur portable avec son antenne est conforme aux limites d'exposition RF de la FCC et d'Industrie Canada pour la population générale / exposition non contrôlée.

Industry Canada:

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.

En vertu de la réglementation d'Industrie Canada, cet émetteur radio risquera uniquement à l'aide d'une antenne de type et de gain maximum (ou moins) pour l'émetteur approuvé par Industrie Canada. Pour réduire les interférences radio potentielles à d'autres utilisateurs, le type d'antenne et son gain doivent être choisis que la puissance isotrope rayonnée équivalente (p.i.r.e.) n'est pas plus que celui nécessaire à une communication efficace.

This Device complies with Industry Canada License-exempt RSS standard(s). 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.

Cet appareil est conforme aux normes d'Industrie Canada exemptes de licence RSS (s). L'opération est soumise aux deux conditions suivantes: (1) cet appareil ne peut pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement de l'appareil.

OEM Responsibilities to comply with FCC and Industry Canada Regulations

The 5-200-0081 Radio Module has been certified for integration into products only by OEM integrators under the following conditions:

To comply with FCC and Industry Canada RF exposure limits for general population / uncontrolled exposure, the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 5mm from all persons and operating in conjunction with any other antenna or transmitter. If the module is used in a multi-transmitter or simultaneous transmission host then the module must be evaluated and approved to one of the host platform exposure conditions. (Mobile exposure, Portable exposure or Mixed Mobile and Portable exposure).

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 this condition cannot be met (for certain configurations or co-location with another transmitter), then the FCC and Industry Canada authorizations are no longer considered valid and the FCC ID and IC Certification Number 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 and Industry Canada authorization.

Responsabilités OEM se conformer aux règlements de la FCC et Industrie Canada

Le Module Radio 5-200-0081 a été certifié pour l'intégration dans des produits que par les intégrateurs OEM dans les conditions suivantes:

Pour se conformer aux limites d'exposition aux RF de la FCC et d'Industrie Canada pour la population générale / exposition non contrôlée, l'antenne (s) utilisé pour cet émetteur doit être installé pour fournir une distance de séparation d'au moins 5mm de toutes les personnes et opérant en conjonction avec une autre antenne ou émetteur.

Si le module est utilisé dans un environnement multi-émetteur ou hôte de la transmission simultanée alors le module doit être évaluée et a approuvé l'une quelconque des conditions d'exposition de la plate-forme d'accueil. (Exposition mobile, l'exposition portable ou l'exposition mobile et portable mixte).

Toutefois, l'intégrateur OEM est toujours responsable de tester leur produit final pour toutes les exigences de conformité supplémentaires nécessaires avec ce module installé (par exemple, les émissions de périphériques numériques, les exigences périphériques de PC, etc.).

NOTE IMPORTANTE: Dans le cas où cette condition ne peut être respectée (pour certaines configurations ou co-location avec un autre émetteur), les autorisations de la FCC et d'Industrie Canada ne sont plus considéré comme valide et la FCC ID et IC Nombre de certification ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte FCC et d'Industrie Canada.

End Product Labeling

The 5-200-0081 Radio 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 Transmitter Module FCC ID: 2AF4M-5-200-0081

"Contains Transmitter Module IC: 20691-52000081

or

"Contains FCC ID: 2AF4M-5-200-0081

"Contains IC: 20691-52000081

The OEM of the 5-200-0081 Radio Module must only use the approved antenna(s) listed above, which have been certified with this module. 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.

The user manual for the end product must include the following information in a prominent location:

To comply with FCC and Industry Canada RF exposure limits for general population / uncontrolled exposure, the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 5mm from all persons and operating in conjunction with any other antenna or transmitter. If the module is used in a multi-transmitter or simultaneous transmission host then the module must be evaluated and approved to one of the host platform exposure conditions. (Mobile exposure, Portable exposure or Mixed Mobile and Portable exposure).

Pour se conformer aux limites d'exposition aux RF de la FCC et d'Industrie Canada pour la population générale / exposition non contrôlée, l'antenne (s) utilisé pour cet émetteur doit être installé pour fournir une distance de séparation d'au moins 5mm de toutes les personnes et opérant en conjonction avec une autre antenne ou émetteur.

Si le module est utilisé dans un environnement multi-émetteur ou hôte de la transmission simultanée alors le module doit être évaluée et a approuvé l'une quelconque des conditions d'exposition de la plate-forme d'accueil. (Exposition mobile, l'exposition portable ou l'exposition mobile et portable mixte).