

CC3135MOD OEM Integrator's Guide

User's Guide



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Manual Information to the End User

The OEM integrator must be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product that integrates this module. The end user manual must include all required regulatory information and warnings as shown in this document.

1 RF Function and Frequency Range

The CC3135MODRNMMOB device is designed to operate in the WLAN 2.4-GHz and 5-GHz band. The CC3135MODRNMMOB device supports the following channels dependent on the region of operation:

- FCC and IC: Ch 1 to 11 (2142 MHz to 2462 MHz) and 36 to 165 (5180 MHz to 5825 MHz)
- EU: Channels 1 through 13 (2142 MHz to 2472 MHz) and 36 to 136 (5180 MHz to 5680 MHz)
- JP: Channels 1 through 13 (2142 MHz to 2472 MHz) and 36 to 136 (5180 MHz to 5680 MHz)

Note that the CC3135MOD device does not support determination of its region through any external mechanism. The region is set by the application SW, or at the time of programming of the device. The end user is unable to change the region of operation at any time.

NOTE: The maximum RF power transmitted in each WLAN 2.4-GHz band is 19 dBm (EIRP power).

The maximum RF power transmitted in each WLAN 5-GHz band is 18.8 dBm (EIRP power).

Indoor Usage Restrictions:

The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

	AT	BE	BG	HR	CY	CZ	DK
	EE	FI	FR	DE	EL	HU	IE
	IT	LV	LT	LU	MT	NL	PL
	PT	RO	SK	SI	ES	SE	UK

2 FCC and IC Certification and Statement

This device is intended for OEM integrators under the following conditions:

- The antenna must be installed so 20 cm of space is maintained between the antenna and the users.
- The transmitter module may not be colocated with any other transmitter or antenna.
- To comply with FCC and IC regulations limiting maximum RF output power and human exposure to RF radiation, the maximum antenna gain including cable loss in a mobile exposure condition must not exceed:
 - +2.5 dBi in WLAN 2.4 GHz
 - +4.5 dBi in WLAN 5 GHz

In the event that these conditions cannot be met (for example, certain laptop configurations or colocation with another transmitter), then the FCC and IC authorization is no longer considered valid and the FCC and 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 FCC and IC authorization.

2.1 FCC

The CC3135MOD modules from TI are certified for the FCC as a single-modular transmitter. The modules are FCC-certified radio modules that carries a modular grant.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation of the device.

CAUTION

FCC RF Radiation Exposure Statement:

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

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 the one the receiver is connected to.
- Consult the dealer or an experienced radio or TV technician for help.

The antennas listed in [Table 1](#) of this document were verified in the compliance testing. Use only the antennas listed in [Table 1](#). A separate approval is required for all other operating configurations, including different antenna configurations.

2.2 CAN ICES-3(B) and NMB-3(B) Certification and Statement

The TI CC3135MOD modules are certified for IC as a single-modular transmitter. The TI CC3135MOD modules meet IC modular approval and labeling requirements. The IC follows the same testing and rules as the FCC regarding certified modules in authorized equipment.

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

Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation of the device.

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:

- L'appareil ne doit pas produire de brouillage.
- L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CAUTION

IC RF Radiation Exposure Statement:

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

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.

This radio transmitter (451I-CC3135MOD) has been approved by Industry Canada to operate with the antenna types listed in [Table 1](#) of this document 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.

The antennas listed in [Table 1](#) of this document were verified in the compliance testing. Use only the antennas listed in [Table 1](#). A separate approval is required for all other operating configurations, including different antenna configurations.

2.3 End Product Labeling

This module is designed to comply with the FCC single modular FCC grant, FCC ID: Z64-CC3135MOD. The host system using this module must display a visible label indicating the following text:

Contains FCC ID: Z64-CC3135MOD

This module is designed to comply with the IC single modular IC grant, IC: 451I-CC3135MOD. The host system using this module must display a visible label indicating the following text:

Contains IC: 451I-CC3135MOD

This module is designed to comply with the JP statement, 201-190034. The host system using this module must display a visible label indicating the following text:

Contains transmitter module with certificate number: 201-190034.

2.4 Device Classifications

Because host devices vary widely with design features and configurations, module integrators shall reference the following guidelines regarding device classification and simultaneous transmission, and seek guidance from their preferred regulatory test lab to determine how regulatory guidelines will impact the device compliance. Proactive management of the regulatory process will minimize unexpected schedule delays and costs due to unplanned testing activities.

The module integrator must determine the minimum distance required between their host device and the body of the user. The FCC provides device classification definitions to assist in making the correct determination. Note that these classifications are guidelines only; strict adherence to a device classification may not satisfy the regulatory requirement as near-body device design details may vary widely. The user-preferred test lab will be able to assist in determining the appropriate device category for the host product and if a KDB or PBA must be submitted to the FCC.

Note, the module that the user is using has been granted modular approval for mobile applications. Portable applications may require further RF exposure (SAR) evaluations. It is also likely that the host and module combination will need to undergo testing for FCC Part 15, regardless of the device classification. The preferred test lab of the user will be able to assist in determining the exact tests which are required on the host and module combination.

2.5 FCC Definitions

Portable: (§2.1093)— A portable device is defined as a transmitting device designed to be used so that the radiating structures of the device is or are within 20 centimeters of the body of the user.

Mobile: (§2.1091) (b)— A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structures and the body of the user or nearby persons. Per §2.1091d(d)(4) In some cases (for example, modular or desktop transmitters), the potential conditions of use of a device may not allow easy classification of that device as either Mobile or Portable. In these cases, applicants are responsible for determining minimum distances for compliance for the intended use and installation of the device based on evaluation of either specific absorption rate (SAR), field strength, or power density, whichever is most appropriate.

2.6 Simultaneous Transmission Evaluation

This module has not been evaluated or approved for simultaneous transmission as it is impossible to determine the exact multi-transmission scenario that a host manufacturer may choose. Any simultaneous transmission condition established through module integration into a host product must be evaluated per the requirements in KDB447498D01(8) and KDB616217D01,D03 (for laptop, notebook, netbook, and tablet applications).

These requirements include, but are not limited to:

- Transmitters and modules certified for mobile or portable exposure conditions can be incorporated in mobile host devices without further testing or certification when:
 - The closest separation among all simultaneous transmitting antennas is > 20 cm
 - or
 - Antenna separation distance and MPE compliance requirements for ALL simultaneous transmitting antennas have been specified in the application filing of at least one of the certified transmitters within the host device. In addition, when transmitters certified for portable use are incorporated in a mobile host device, the antennas must be > 5 cm from all other simultaneous transmitting antennas
- All antennas in the final product must be at least 20 cm from users and nearby persons.

3 EU Certification and Statement

3.1 RF Exposure Information (MPE)

This device has been tested and meets applicable limits for Radio Frequency (RF) exposure. To comply with the RF exposure requirements, this module must be installed in a host platform that is intended to be operated in a minimum of 20-cm separation distance to the user.

3.2 Simplified DoC Statement

Hereby, Texas Instruments declares that the radio equipment type CC3135MODRNMMOB is in compliance with Directive 2014/53/EU.

The full text of the EU declarations of conformity is available at:

- [CC3135MODRNMMOB EC Declaration of Conformity \(DoC\)](#)

3.3 Waste Electrical and Electronic Equipment (WEEE)

	Waste Electrical and Electronic Equipment (WEEE) This symbol means that according to local laws and regulations your product and/or battery shall be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. Proper recycling of your product will protect human health and the environment.
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3.4 OEM and Host Manufacturer Responsibilities

OEM and host manufacturers are ultimately responsible for the compliance of the host and module. The final product must be reassessed against all of the essential requirements of the RED before it can be placed on the EU market. This includes reassessing the transmitter module for compliance with the radio and EMF essential requirements of the RED. This module must not be incorporated into any other device or system without retesting for compliance as multi-radio and combined equipment.

3.5 Antenna Specifications

In all cases, assessment of the final product must be met against the Essential requirements of RE Directive Article 3.1(a) and (b), safety and EMC respectively, as well as any relevant Article 3.3 requirements.

1. The antennas listed in [Table 1](#) were verified in the conformity testing, and for compliance the antenna shall not be modified. A separate approval is required for all other operating configurations, including different antenna configurations.
2. If any other simultaneous transmission radio is installed in the host platform together with this module, or above restrictions cannot be kept, a separate RF exposure assessment and CE equipment certification is required.

4 CC3x35MOD Approved Antennas

[Table 1](#) lists the antennas approved for use with the CC3135MOD module.

Table 1. CC3x35MOD Approved Antennas

Antenna Information					
	Brand	Antenna Type	Model	2.4-GHz Gain	5-GHz Gain
1	Pulse	Chip	W3078	1.7	4.3
2	Yageo		ANT5320LL04R2455A	2.17	3.51
3	Ethertronics		M830520	1	2.6
4	Laird	PCB	1000423	-0.6	4.5
5			CAF94504	2	4
6			CAF94505	2	4
7	LSR	Dipole	001-0012	2	2
8			080-0013	2	2
9			080-0014	2	2
10		PIFA	001-0016	2.5	3
11			001-0021	2.5	3

Revision History

Date	Revision	Notes
August 2019	*	Initial release

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