

Regulatory Module Integration Instructions for Module PN 576253.

This module has been granted modular approval for mobile applications. OEM integrators for host products may use the module in their final products without additional FCC / IC (Industry Canada) certification if they meet the following conditions. Otherwise, additional FCC / IC approvals must be obtained. **(Note: This module is not being sold commercially to any OEM, Bosch Automotive Service Solutions will exclusively utilize this module within our products.)**

- The host product with the module installed must be evaluated for simultaneous transmission requirements.
- The users manual for the host product must clearly indicate the operating requirements and conditions that must be observed to ensure compliance with current FCC / IC RF exposure guidelines.
- To comply with FCC / IC regulations limiting both maximum RF output power and human exposure to RF radiation, the maximum antenna gain including cable loss in a mobile-only exposure condition must not exceed 3.2dBi at 2.4GHz and 3.4dBi at 5.8GHz (Peak Gain).
- A label must be affixed to the outside of the host product with the following statements:

This device contains FCCID: 2AHLA-576253.

This equipment contains equipment certified under ICID: 4811A-576253.

The final host / module combination may also need to be evaluated against the FCC Part 15B criteria for unintentional radiators in order to be properly authorized for operation as a Part 15 digital device.

If the final host / module combination is intended for use as a portable device (see classifications below) the host manufacturer is responsible for separate approvals for the SAR requirements from FCC Part 2.1093 and RSS-102.

UNII Band Operation:

UNII devices that operate within 5.15-5.25 GHz are to be restricted to indoor operations to reduce any potential for harmful interference to co-channel MSS operations.

FCC 15.407(c) states: The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

Meeting FCC 15.407(c):

Data transmission is always initiated by software, which is then passed down through the MAC, through the digital and analog baseband, and finally to the RF transceiver. Several special packets (ACKs, CTS, PSpoll, etc) are initiated by the MAC. These are the only ways the digital baseband portion will turn on the RF transmitter, which it then turns off at the end of the packet. Therefore, the transmitter will be on only while one of the aforementioned packets are being transmitted.

Module/Device Security:

All firmware within the module is controlled by Broadcom Ltd. There is no external access to program the firmware into this module. Therefore unauthorized access to modify firmware is not possible.

Industry Canada Statement:

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.

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 permitted for successful communication.

This device has been designed to operate with the antenna(s) listed below, and having a maximum gain of 2.5 dBi (Taoglas monopole) and 3.4 dBi (Yageo monopole). Antennas not included in this list or having a gain greater than 2.5 dBi and 3.4 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

List of all Antennas Acceptable for use with the Transmitter

- 1) Taoglas Antenna Solutions - Part Number: FXP840.07.0155B monopole antenna, dual-band, to U.FL compatible connector.
- 2) Yageo Phycomp - Part Number: ANT-X150P111B24553. monopole antenna, dual-band, U.FL compatible connector.

Device Classifications

Since host devices vary widely with design features and configurations module integrators shall follow the guidelines below 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 user's body. 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. Your preferred test lab will be able to assist in determining the appropriate device category for your host product and if a KDB or PBA must be submitted to the FCC.

Note, the module you are 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 / module combination will need to undergo testing for FCC Part 15 regardless of the device classification. Your preferred test lab will be able to assist in determining the exact tests which are required on the host / module combination.

FCC Definitions

Portable: (§2.1093) — A portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is / 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 structure(s) 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.

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 antenna(s) 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.

OEM Instruction Manual Content

Consistent with §2.909(a), the following text must be included within the user's manual or operator instruction guide for the final commercial product.

Operating Requirements and Conditions:

The design of *WiFi/BT Module Card* complies with U.S. Federal Communications Commission (FCC) guidelines respecting safety levels of radio frequency (RF) exposure for *Mobile* devices.

FCC ID:

This product contains FCCID: 2AHLA-576253

Note: In the case where the Host / Module combination has been re-certified the FCC ID shall appear in the product manual as follows:

FCC ID: 2AHLA-576253

Mobile Device RF Exposure Statement:

RF Exposure - This device is only authorized for use in a mobile application. At least 20 cm of separation distance between the *WiFi/BT Module Card* device and the user's body must be maintained at all times.

Caution Statement for Modifications:

CAUTION: Any changes or modifications not expressly approved by Bosch Automotive Service Solutions could void the user's authority to operate the equipment.

FCC Part 15 Statement (Only Include if FCC Part 15 is Required on the End Product):

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

OEM Labeling Requirements

WARNING! The Original Equipment Manufacturer (OEM) must ensure that FCC labeling requirements are met. This includes a clearly visible label on the outside of the final product enclosure that displays the contents shown below.

FCC:

Contains FCC ID: 2AHLA-576253. The enclosed 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.
2. This device must accept any interference received, including interference that may cause undesired operation.

CANADA (IC):

Contains Model WiFi/BT Module Card, IC: 4811A-576253