

USA FCC / Canada IC Compliance Information

Notices for Original Equipment Manufacture (OEM):

This equipment is certified for mobile and base radio applications. If the equipment is used for portable applications, it must undergo SAR testing.

The equipment has been certified by the FCC / IC for use with other products without any further certification of equipment (as per FCC section 2.1091). Modifications not expressly approved by BK Electronic Design Inc. could void FCC / IC certification and authority to use this equipment.

Final product, which includes this equipment shall be tested to comply with unintentional radiators (FCC section 15.107 & 15.109) before declaring compliance to Part 15 of the FCC Rules. Other compliance testing may also apply.

This FCC and IC certification is not valid and the FCC ID or IC number cannot be used on the final product, when requirements outlined below are not met or if the module is colocated with other transmitters. In these circumstances, the OEM integrator is responsible for reevaluation of the end product, which includes this transmitter reevaluation for obtaining a separate FCC and IC authorizations.

USA FCC Approval

This equipment complies with Part 15 of the FCC rules and regulations. Limits of FCC rules are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If this Equipment is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. 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 taking following measures: reorient or relocate antenna; increase the separation distance between this 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 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.



Canada IC Approval (English)

The radio transmitter (IC: 25136-WL18DBMOD) has been approved by Industry Canada to operate with the antenna types listed with the maximum permissible gain for each antenna type indicated. It is strictly prohibited to operate Equipment with antenna types not included in this list or having a gain greater than the maximum gain indicated for that type. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotopically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

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.

Canada IC Approval (French)

Le présent émetteur radio (IC: 25136-WL18DBMOD) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés et ayant un gain admissible maximal requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

OEM Labeling Requirements

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

Contains: FCC ID: 2ATLD-WL18DBMOD and (LTE Module ID)
IC: 25136-WL18DBMOD and (LTE Module ID)

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.



USA FCC/ Canada IC Requirements:

If following “WiFi/ Bluetooth Antenna Requirements” (with or without colocated LTE module) and “Colocated LTE Antenna Requirements” (when final product is equipped with colocated LTE module) cannot be met, the FCC/IC authorization will not be considered valid and it is prohibited to use current FCC ID/IC ID on the final product. In these circumstances, the OEM integrator is responsible for reevaluation of the end product, including the transmitter to obtain a separate FCC/IC authorization.

WiFi/Bluetooth Antenna Requirements:

- Final product shall operate only using antenna of a type and maximum (or lesser) gain listed in Table 1. Antenna types not included in the list or having a gain greater than the maximum indicated are strictly prohibited for use with this transmitter.
- When WiFi/Bluetooth transmitter module is not colocated with LTE cellular module, the antenna must be installed so that the minimum separation distance of 20 cm is maintained between the antenna and users.
- When WiFi/Bluetooth transmitter module is colocated with LTE cellular module, the antenna must be installed so that the minimum separation distance of 22 cm is maintained between the antenna and users.

Antenna Type	Brand	2.4 GHz	4.9 to 5.9 GHz	Unit
PCB	Ethertronics	-0.600	4.50	dBi
Dipole	LSR	2.00	2.00	
PCB	Laird	2.00	4.00	
Chip	Pulse	3.20	4.20	
PIFA	LSR	2.00	3.00	
Chip	TDK	2.27	3.96	

Table 1. Approved Antenna Types and Maximum Gain Values for WiFi/Bluetooth Antenna



Colocated LTE Antenna Requirements:

- If the final product contains LTE Cellular Module, the maximum Effective Isotropic Radiated Power (EIRP) of LTE Module (which combines maximum conducted power of transmitter, transmission line losses, connector, cable losses and antenna gain) must not exceed the power levels specified in the Table 2.
- Antenna gains for each bands shall not exceed gains, which are specified in the specific LTE module Grants/certificates issued by USA FCC and ISED Canada.
- The antenna must be installed so that the minimum separation distance of 22 cm is maintained between the antenna and users.

Cellular Bands	Frequency Band (MHz)	EIRP= Max. Conducted Power + Maximum Antenna Gain (mW)
GSM	836.2-848.8	1330.36*
GSM	1850.2-1909.8	997.63*
UMTS	1850-1907.6	1995.26
UMTS	1710-1752.6	1000.00
UMTS	824-846.6	1318.26
LTE	1850-1910	1995.26
LTE	1710-1755	1000.00
LTE	824-849	1288.25
LTE	2500-2570	1000.00
LTE	704-716	1174.90

*Power after applying 50% duty cycle

Table 2. Maximum Effective Isotropic Radiated Power for LTE cellular Module and Antenna



Requirements for OEM Documentation

All the CAUTION statement below must be included in OEM manuals and product documentation in order to alert user about FCC and IC compliance requirements. Omission of these statements in OEM manuals invalidates OEM leveraged certifications.

RF Exposure Warning for FCC and IC when LTE module is not installed:

WARNING: To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. The antenna used for this transmitter must not be colocated in conjunction with any other antenna or transmitter.

AVERTISSEMENT: Pour satisfaire IC RF exigences d'exposition pour les appareils mobiles de transmission, une distance de séparation de 20 cm ou plus doit être maintenue entre l'antenne de cet appareil et des personnes pendant le fonctionnement de l'appareil. L'antenne utilisée pour cet émetteur ne doit pas être situé en conjonction avec une autre antenne ou émetteur.

RF Exposure Warning for FCC and IC when colocated with LTE Module:

WARNING: To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 22 cm or more should be maintained between the antenna of this device and persons during device operation. The antenna used for this transmitter must not be colocated in conjunction with any other antenna or transmitter.

AVERTISSEMENT: Pour satisfaire IC RF exigences d'exposition pour les appareils mobiles de transmission, une distance de séparation de 22 cm ou plus doit être maintenue entre l'antenne de cet appareil et des personnes pendant le fonctionnement de l'appareil. L'antenne utilisée pour cet émetteur ne doit pas être situé en conjonction avec une autre antenne ou émetteur.

FCC Part 15 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.

