Regulatory information

This section includes FCC and ISED regulatory information.

Antenna regulatory information: FCC and ISED

The equipment can be installed using antennas and cables constructed with non-standard connectors (RPSMA, RPTNC, and so forth). An adapter cable may be necessary to attach the XBee connector to the antenna connector.

The modules are approved by FCC and ISED for fixed base station and mobile applications for the channels indicated in the tables below. If the antenna is mounted at least 21 cm from nearby persons, the application is considered a mobile application.

The antennas below have been approved for use with this module. Digi does not carry all of these antenna variants. Contact Digi Sales for available antennas.

Bluetooth antennas

The following antennas are approved for use with the Bluetooth radio by the FCC and by ISED.

Part number	Type (description)	Gain	Application
31000022-01	Integral antenna	-0.67 dBi	Fixed/Mobile
A24-HASM-450	Dipole (Half-wave articulated RPSMA-4.5")	2.1 dBi	Fixed/Mobile
A24-HABUF-P5I	Dipole (Half-wave bulkhead mount U.FL w/ 5" pigtail)	2.0 dBi	Fixed/Mobile
A24-HASM-525	Dipole (Half-wave articulated RPSMA-5.25")	2.0 dBi	Fixed/Mobile
FXP74.07.0100A	Taoglas FXP74 Black Diamond 2.4GHz Band Antenna	4.0 dBi	Fixed/Mobile

Cellular antennas

Per cellular module grant, antenna gain must be below:

Frequency band	Maximum Antenna Gain		
	Global variant (55002112-03	North American variant (55002112-02	
		FCC limit	ISED limit
GSM/GPRS 850	5.00 dBi	N/A	
PCS1900	5.00 dBi	N/A	
WCDMA/LTE Band 2	5.00 dBi	8.01 dBi	
WCDMA/LTE Band 4	5.00 dBi	5.00 dBi	
WCDMA/LTE Band 5	5.00 dBi	9.40 dBi	6.10 dBi
LTE Band 7	5.00 dBi	8.01 dBi	
LTE Band 8	5.00 dBi	N/A	
LTE Band 12	5.00 dBi	8.70 dBi	5.61 dBi
LTE Band 13	5.00 dBi	9.16 dBi	5.93 dBi
LTE Band 14	N/A	9.23 dBi	N/A
LTE Band 26	5.00 dBi	9.30 dBi	6.10 dBi
LTE Band 38	5.00 dBi	N/A	
LTE Band 41	5.00 dBi	N/A	
LTE Band 66	5.00 dBi	5.00 dBi	
LTE Band 71	N/A	8.48 dBi	5.45 dBi

Par subvention de module cellulaire, le gain d'antenne doit être inférieur à:

Bande de fréquence	Gain d'antenne maximal		
	Variante globale (55002112-03)	Variante nord-américaine (55002112-02)	
		Limite FCC	Limite ISED
GSM/GPRS 850	5.00 dBi	N/A	
PCS1900	5.00 dBi	N/A	
WCDMA/LTE Band 2	5.00 dBi	8.01 dBi	
WCDMA/LTE Band 4	5.00 dBi	5.00 dBi	
WCDMA/LTE Band 5	5.00 dBi	9.40 dBi	6.10 dBi

Bande de fréquence	Gain d'antenne maximal		
LTE Band 7	5.00 dBi	8.01 dBi	
LTE Band 8	5.00 dBi	N/A	
LTE Band 12	5.00 dBi	8.70 dBi	5.61 dBi
LTE Band 13	5.00 dBi	9.16 dBi	5.93 dBi
LTE Band 14	N/A	9.23 dBi	N/A
LTE Band 26	5.00 dBi	9.30 dBi	6.10 dBi
LTE Band 38	5.00 dBi	N/A	
LTE Band 41	5.00 dBi	N/A	
LTE Band 66	5.00 dBi	5.00 dBi	
LTE Band 71	N/A	8.48 dBi	5.45 dBi

FCC publication 996369 related information

In publication 996369 section D03, the FCC requires information concerning a module to be presented by OEM manufacturers. This section assists in answering or fulfilling these requirements.

2.1 General

No requirements are associated with this section.

2.2 List of applicable FCC rules

This module conforms to FCC Parts 15C (Bluetooth Low Energy).

This module conforms to FCC Parts 90 (cellular).

This module conforms to FCC Parts 22H (cellular).

This module conforms to FCC Parts 24E (cellular).

This module conforms to FCC Parts 27(cellular).

2.3 Summarize the specific operational use conditions

Certain approved antennas require attenuation for operation. For the XBee Smart Modem, see Antenna regulatory information: FCC and ISED.

Host product user guides should include the antenna table if end customers are permitted to select antennas. Host products where the user can access the antenna connector are required to meet the requirements of FCC 15.203

2.4 Limited module procedures

Not applicable.

2.5 Trace antenna designs

While it is possible to build a trace antenna into the host PCB, this requires at least a Class II permissive change to the FCC grant which includes significant extra testing and cost. If an embedded trace or chip antenna is desired contact a Digi sales representative for information on how to engage with a lab to get the modified FCC grant.

2.6 RF exposure considerations

For RF exposure considerations see RF exposure.

Host product manufacturers need to provide end-users a copy of the "RF Exposure" section of the manual: RF exposure.

2.7 Antennas

A list of approved antennas is provided for the XBee Smart Modem. See Antenna regulatory information: FCC and ISED.

2.8 Label and compliance information

Host product manufacturers need to follow the sticker guidelines outlined in Labeling requirements for the host device: FCC and ISED.

2.9 Information on test modes and additional testing requirements

Contact a sales representative for information on how to configure test modes for the XBee Smart Modem.

2.10 Additional testing, Part 15 Subpart B disclaimer

All final host products must be tested to be compliant to FCC Part 15 Subpart B standards. While the XBee Smart Modem was tested to be complaint to FCC unintentional radiator standards, FCC Part 15 Subpart B compliance testing is still required for the final host product. This testing is required for all end products, and XBee Smart Modem Part 15 Subpart B compliance does not affirm the end product's compliance.

See FCC notices.

Labeling requirements for the host device: FCC and ISED

The device shall be properly labeled to identify the product within the host device. For more information, see the Regulatory Approvals table.

The certification labels of the module shall be clearly visible at all times when installed in the host device, otherwise the host device must be labeled to display the FCC ID and IC of the module, preceded by the words "Contains transmitter module", or the word "Contains", or similar wording expressing the same meaning, as follows:

Global variant	North American variant
Contains FCC ID: MCQ-XB3C2	Contains FCC ID: MCQ-XB3C2
Contains FCC ID: QIPPLS63-W	Contains FCC ID: QIPPLS63-X
Contains IC: 1846A-XB3C2	Contains IC: 1846A-XB3C2
Contains IC: 7830A-PLS63W	Contains IC: 7830A-PLS63X

This Class B digital apparatus complies with Canadian ICES-003.

L'appareil hôte doit être étiqueté comme il faut pour permettre l'identification des modules qui s'y trouvent. Pour plus d'informations, reportez-vous au tableau des approbations réglementaires.

L'étiquettes de certification du module donné doit être posée sur l'appareil hôte à un endroit bien en vue en tout temps. En l'absence d'étiquette, l'appareil hôte doit porter une étiquette donnant le FCC ID et le IC du module, précédé des mots « Contient un module d'émission », du mot « Contient » ou d'une formulation similaire exprimant le même sens, comme suit:

Global variant	North American variant
Contains FCC ID: MCQ-XB3C2	Contains FCC ID: MCQ-XB3C2
Contains FCC ID: QIPPLS63-W	Contains FCC ID: QIPPLS63-W
Contains IC: 1846A-XB3C2	Contains IC: 1846A-XB3C2
Contains IC: 7830A-PLS63-W	Contains IC: 7830A-PLS63-W

Cet appareil numérique de classe B est conforme à la norme canadienne ICES-003.