BALLUFF

BF-IDU07
BIS U-620-068-1X1-00-SX
Ultra High Frequency Passive Radio Frequency, Identification Processor

INSTALLATION GUIDE

This document provides instructions and information designed to assist users in the hardware setup of the BIS U-620-068-1x1-00-Sx Processor. For configuration details see the BIS U-62_ Processor Manual.

PACKAGE CONTENTS	
Qty	Description
1	BIS U-620-068-1x1-00-Sx Processor
1	UHF Series Configuration Tag
1	This Installation Guide

TECHNICAL DATA

ELECTRICAL FEATURES		
Power Supply	19.2…28.8 V DC	
DC Input Current	1 A	
Communication Interface	RS232	
Baud Rate	9600 (default) … 115200	
RADIO FEATURES	EU	US
Frequency (MHz)		
ETSI EN 302 208	865…868	-
FCC part 15.247	-	902…928
Number of Channels	4 fixed	50 hopping
Frequency Tolerance	± 10 ppm over entire temp range	
Air Interface	EPC C1G2	
Conducted Output Power	500 mW (27 dBm) max	
Antenna Connector	Reverse TNC	
ENVIRONMENTAL FEATURES		
Operating Temperature	-20…+50 °C (-4…+122 °F)	
Storage Temperature	-20…+70 °C (-4…+158 °F)	
Humidity max.	90 % non condensing	
Vibration Resistance EN 60068-2-6	14 mm @ 2…10 Hz; 1.5 mm @ 13…55 Hz; 2 g @ 70…200 Hz; 2 hours on each axis	
Shock Resistance EN 60068-2-27	30 g; 11 ms; 3 shocks on each axis	
Protection Class EN 60529	IP65*	
PHYSICAL FEATURES		
Dimensions	164 x 112 x 48 mm (6.46 x 4.41 x 1.88 in)	
Weight	560 g (19.8 oz)	
Enclosure	Powder Coated Aluminum	
USER INTERFACE		
LED Indicators	READY, RF, COM	

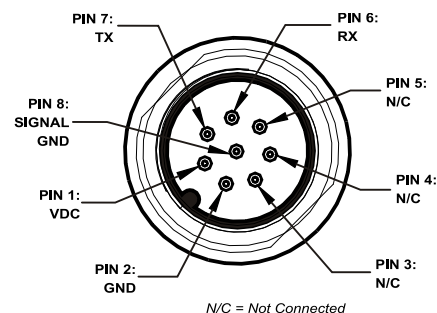* When all connectors and antenna are correctly installed.

The BIS U-620-068-1x1-00-Sx Processor and its antenna are intended for indoor use only.
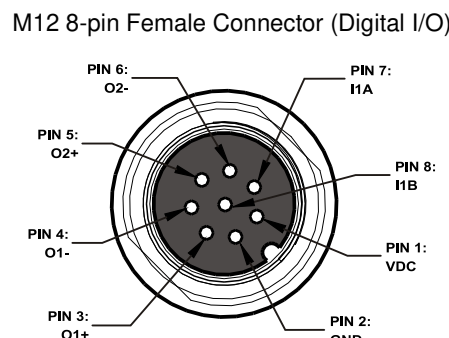
GENERAL VIEW

CONNECTIVITY

M12 8 pin Male Connector (Data and Power Supply)

PIN 7: TX
PIN 6: RX
PIN 8: SIGNAL GND
PIN 5: N/C
PIN 1: VDC
PIN 4: N/C
PIN 2: GND
PIN 3: N/C

N/C = Not Connected

DIGITAL I/O (-12 MODELS)

M12 8-pin Female Connector (Digital I/O)

PIN 6: O2-
PIN 7: I1A
PIN 5: O2+
PIN 8: I1B
PIN 4: O1-
PIN 1: VDC
PIN 3: O1+
PIN 2: GND

This connector is available on models BIS U-620-068-1x1-00-S29.
See the BIS U-62_ Processor Manual for details

LED INDICATORS

green	READY	The READY LED is ON after the power up sequence has completed.
amber	RF	The RF LED illuminates when RF power is being transmitted by the antenna.
amber	COM	The COM (communications) LED flashes ON and OFF when data is being transmitted between the antenna and a tag. When in Continuous Read mode, the COM LED will remain ON and will turn OFF briefly only while data is being read from or written to a tag.

Typical Layout

BIS U-30x… antenna
BCC0ETJ
BIS U-620-068-1x1-
Host
Vdc (red)
GND (black)
Power Supply

See the BIS U-62_ Processor Manual for a complete list of accessories including alternative cables and connectors.

DIMENSIONS

mm
in

* Digital I/O (-ST29 models only)

INSTALLATION GUIDELINES

- RF performance and read/write range can be negatively impacted by the proximity of metallic objects and liquids. Avoid mounting the BIS U-3x… antenna within 15 cm (6 inches) of any metallic object or wet surface.
- Do not route cables near other unshielded cables or near wiring carrying high voltage or high current. Cross cables at perpendicular intersections and avoid routing cables near motors and solenoids.
- Avoid mounting the Processor near sources of EMI (electro-magnetic interference) or near devices that generate high ESD (electro-static discharge) levels. Always use adequate ESD prevention measures to dissipate potentially high voltages.
- If electrical interference is encountered (as indicated by a significant reduction in read/write performance), relocate the Processor to an area free from potential sources of interference.

INSTALLATION

The BIS U-620-068-1x1-00-Sx RFID Processor is designed for point-to-point RFID applications, where the distance from host to Processor is less than 15 meters (50 feet). The Processor connects directly to a serial communications port on a host computer via an RS232-compatible serial interface cable.

1. Select a suitable location for the BIS U-62… Processor and BIS U-30… Antenna.
2. Mount the BIS U-30… Antenna (within the cable distance of the Processor) and attach the BIS U-30… Antenna cable as described in the installation guide included with the antenna.
3. Fasten the Processor to your mounting fixture using two **M5 (#10)** diameter screws (*not included*) and secure them with appropriate washers and nuts. Tighten screws to **1.7 Nm or 15 lbs per inch ± 10%**. Connect the antenna cable to the UHF Processor.
4. Connect the BCC0ETJM12 8-pin female connector to the M12 8-pin male interface connector on the BIS U-620-068-1x1-00-Sx Processor. Connect the BCC0ETJ9-pin female D-sub connector to an RS232 COM port on the host computer. Tighten the cable's two locking thumbscrews.
5. Connect the power supply to the VDC (red) and GND (black) wires on the BCC0ETJcable.
6. Apply power to the Processor after all cable connections have been made. The LEDs on the unit will flash. The READY LED is ON after the power up sequence has completed.
7. On the host computer, set the COM port parameters to: 9600 baud, 8 data bits, 1 stop bit, no parity and no handshaking.
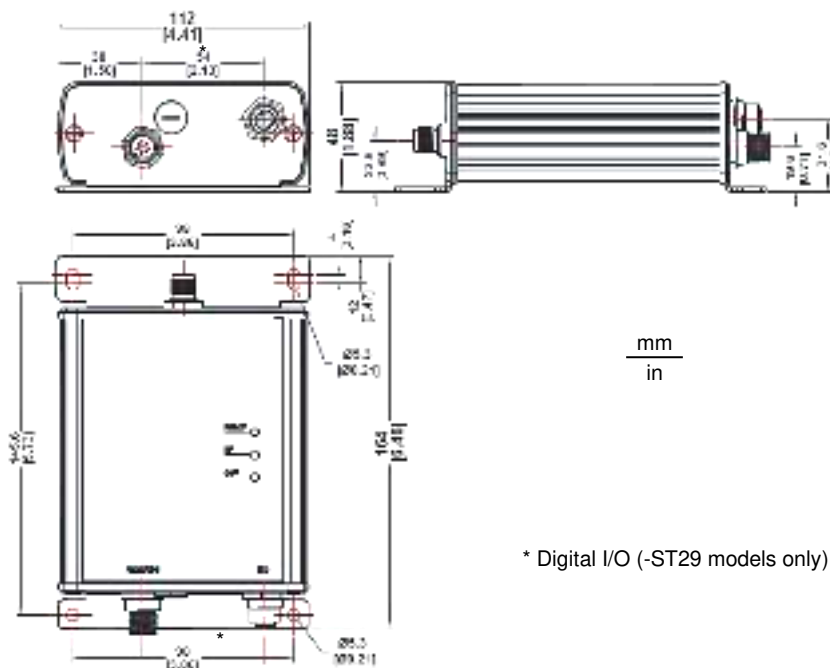
To verify operations, download the Balluff Dashboard™ Configuration Tool from www.balluff.com. The Balluff Dashboard™ Configuration Tool allows users to configure and control their BIS U-620-068-1x1-00-Sx Processors and send RFID commands for testing purposes.
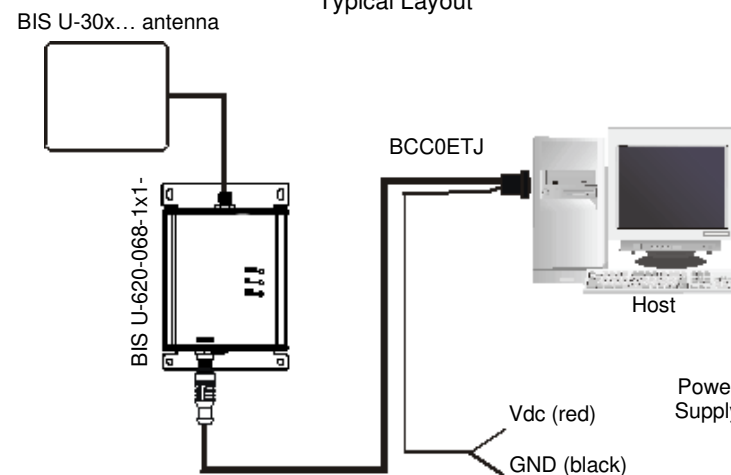
COMPLIANCE

Only BIS U-30… family antennas are certified for use with the BIS U-620-068-1x1-00-Sx Processors.

This product is intended to be installed by Qualified Personnel only.

This product must not be used in explosive environments.

Power Supply

This device is intended to be supplied by a UL Listed or CSA Certified Power Unit with «Class 2» or LPS power source.

BIS U-620-068-101-00-Sx: CE ①

Note: 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 that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

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

This device complies with part 15 of the FCC Rules and Innovation, Science and Economic Development Canada's licence-exempt RSS(s). 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.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Radiofrequency radiation exposure Information:
This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
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.
Ce transmetteur ne doit pas être place au même endroit ou utilise simultanément avec un autre transmetteur ou antenne.

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BF-IDU07

BIS U-626-069-1X1-06-S3X

Ultra High Frequency Passive Radio Frequency, Identification Processor

INSTALLATION GUIDE

This document provides instructions and information designed to assist users in the hardware setup of the BIS U-626-069-1x1-06-S3x Processor . For configuration details see the BIS U-62_ Processor Manual.

PACKAGE CONTENTS	
Qty	Description
1	BIS U-626-069-1x1-06-S3x Processor
1	UHF Series Configuration Tag
1	This Installation Guide
1	BCC06ZF Power Connector

TECHNICAL DATA

ELECTRICAL FEATURES		
Power Supply	19.2…28.8 V DC	
DC Input Current	1 A	
Communication Interface	Industrial Ethernet, TCP/IP, MODBUS TCP	
Baud Rate	10/100 Mbps	
RADIO FEATURES	EU	US
Frequency (MHz) ETSI EN 302 208 FCC part 15.247	865…868 -	- 902…928
Number of Channels	4 fixed	50 hopping
Frequency Tolerance	± 10 ppm over entire temp range	
Air Interface	EPC C1G2	
Conducted Output Power	500 mW (27 dBm) max	
Antenna Connector	Reverse TNC	
ENVIRONMENTAL FEATURES		
Operating Temperature	-20…+50 °C (-4…+122 °F)	
Storage Temperature	-20…+70 °C (-4…+158 °F)	
Humidity max.	90% non condensing	
Vibration Resistance EN 60068-2-6	14 mm @ 2…10 Hz; 1.5 mm @ 13…55 Hz; 2 g @ 70…200 Hz; 2 hours on each axis	
Shock Resistance EN 60068-2-27	30 g; 11 ms; 3 shocks on each axis	
Protection Class EN 60529	IP65	
PHYSICAL FEATURES		
Dimensions	164 x 112 x 48 mm (6.46 x 4.41 x 1.88 in)	
Weight	560 g (19.8 oz)	
Enclosure	Powder Coated Aluminum	
USER INTERFACE		
LED Indicators	READY, RF, COM, DEFAULT IP, CUSTOM IP	

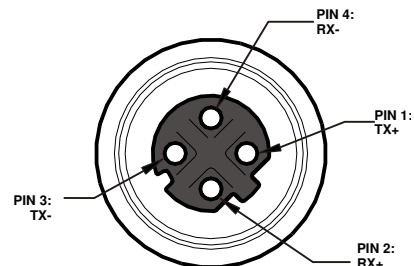* When all connectors and antenna are correctly installed.

The BIS U-626-069-1x1-06-S3x Processor and its antenna are intended for indoor use only
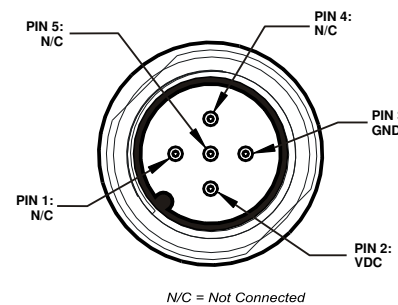
GENERAL VIEW

CONNECTIVITY

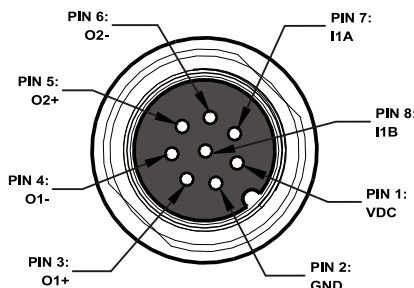M12 4-pin D-Coded Female Connector (for Ethernet)

PIN 4: RX-
PIN 1: TX+
PIN 3: TX-
PIN 2: RX+

M12 5-pin Male Connector (for Power Supply)

PIN 5: N/C
PIN 4: N/C
PIN 3: GND
PIN 1: N/C
PIN 2: VDC

N/C = Not Connected

DIGITAL I/O (-12 MODELS)

M12 8-pin Female Connector (Digital I/O)

PIN 6: O2-
PIN 7: I1A
PIN 5: O2+
PIN 8: I1B
PIN 4: O1-
PIN 1: VDC
PIN 3: O1+
PIN 2: GND

This connector is available on models BIS U-620-067-1x1-04-S32.
See the BIS U-62_ Processor Manual for details.

LED INDICATORS

green	READY	The READY LED is ON after the power up sequence has completed.
amber	RF	The RF LED illuminates when RF power is being transmitted by the antenna.
amber	COM	The COM (communications) LED flashes ON and OFF when data is being transmitted between the antenna and a tag. When in Continuous Read mode, the COM LED will remain ON and will turn OFF briefly only while data is being read from or written to a tag.
amber	DEFAULT	Default IP Address enabled **(192.168.253.110)**
amber	CUSTOM	User assigned IP Address enabled

Typical Layout

BIS U-30x… antenna
BIS U-626-069
BCC06ZF
Vdc
GND
to Power Supply
BCC0CT1
Hub
PLC

See the BIS U-62_ Processor Manual for a complete list of accessories including alternative cables and connectors.

DIMENSIONS

mm
in

* Digital I/O (-S32 models only)

INSTALLATION GUIDELINES

- RF performance and read/write range can be negatively impacted by the proximity of metallic objects and liquids. Avoid mounting the BIS U-3x… antenna within 15 cm (6 inches) of any metallic object or wet surface.
- Do not route cables near other unshielded cables or near wiring carrying high voltage or high current. Cross cables at perpendicular intersections and avoid routing cables near motors and solenoids.
- Avoid mounting the Processor near sources of EMI (electro-magnetic interference) or near devices that generate high ESD (electro-static discharge) levels. Always use adequate ESD prevention measures to dissipate potentially high voltages.
- If electrical interference is encountered (as indicated by a significant reduction in read/write performance), relocate the Processor to an area free from potential sources of interference.

INSTALLATION

The BIS U-626-069-1x1-06-S3x Processor is designed for Industrial Ethernet RFID applications, where the Processor is connected in an Industrial Ethernet or TCP/IP network via compatible cables through a hub or directly to an Industrial Ethernet host.

1. Select a suitable location for the BIS U-62… Processor and BIS U-30… Antenna.

2. Mount the BIS U-30… Antenna (within the cable distance of the Processor) and attach the BIS U-30… Antenna cable as described in the installation guide included with the antenna.

3. Fasten the Processor to your mounting fixture using two **M5 (#10)** diameter screws (*not included*) and secure them with appropriate washers and nuts. Tighten screws to **1.7 Nm or 15 lbs per inch ± 10%**. Connect the antenna cable to the UHF Processor .

4. Connect the BCC0CT1 M12 4-pin male connector to the M12 4-pin female interface connector on the BIS U-626-069-1x1-06-S3x Processor. Connect the BCC0CT1 RJ45 male connector to the LAN hub/switch. If connecting directly to the host computer you will need to use an additional crossover cable.

5. Build a power supply cable using the BCC06ZF M12 5-pin female connector. Use minimum 24 AWG wires for connection to the power supply lines according to the Vdc connector pinout. Connect the BCC06ZF M12 5-pin female connector to the M12 5-pin male connector on the Processor . Connect the other end of the cable (wires or user-supplied connectors) to the power supply.

6. Apply power to the Processor after all cable connections have been made. The LEDs on the unit will flash. The READY LED is ON after the power up sequence has completed. Then one of the Industrial Ethernet Address LEDs will remain on either Default or Custom.

To verify operations, download the Balluff Dashboard™ Configuration Tool from www.balluff.com. The Balluff Dashboard™ Configuration Tool allows users to configure and control their BIS U-626-069-1x1-06-S3x Processor s and send RFID commands for testing purposes.
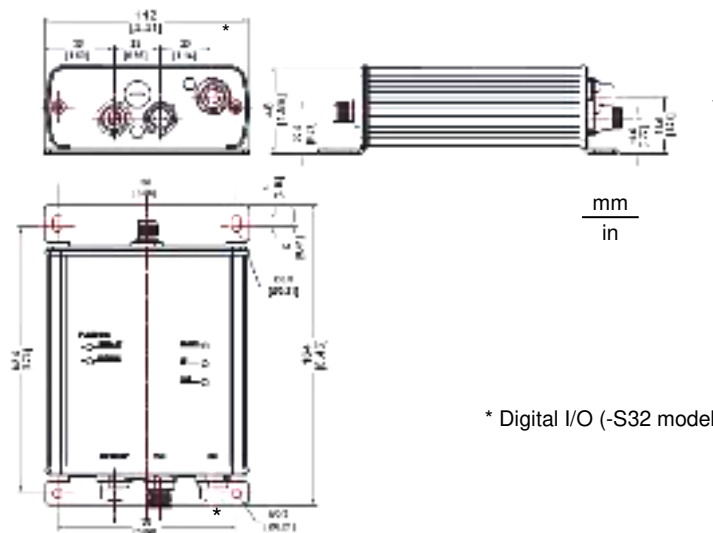
For connection details see the BIS U-62_ Processor Manual and the Balluff Dashboard™ Configuration Tool Manual.
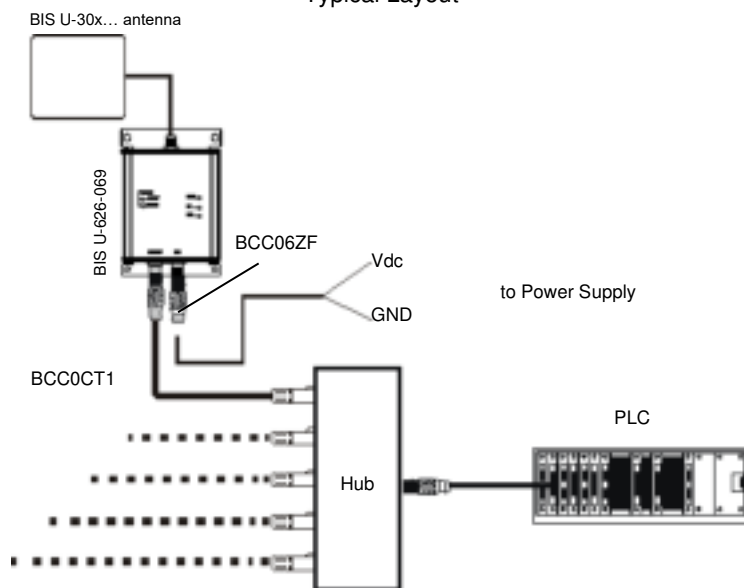
COMPLIANCE

Only BIS U-30… family antennas are certified for use with the BIS U-626-069-1x1-06-S3x Processors.

This product is intended to be installed by Qualified Personnel only.

This product must not be used in explosive environments.

Only connect Ethernet and dataport connections to a network which has routing only within the plant or building and no routing outside the plant or building.

Power Supply

This device is intended to be supplied by a UL Listed or CSA Certified Power Unit with «Class 2» or LPS power source.

BIS U-626-069-101-06-S3x: CE ⓘ

Note: 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 that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

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

This device complies with part 15 of the FCC Rules and Innovation, Science and Economic Development Canada's licence-exempt RSS(s). 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.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Radiofrequency radiation exposure Information:
This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
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.
Ce transmetteur ne doit pas être place au même endroit ou utilise simultanément avec un autre transmetteur ou antenne.