



WLT3266

Dual mode bluetooth module

Product specification V1.2



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1 Summary

WLT3266 is an audio Bluetooth module developed by WLT , and a single chip audio Bluetooth solution based on BK3266.Audioprotocol stack with built-in Bluetooth and various applications profile, It can easily realize the interconnection, data transmission, voice, music and other applications of the user's Bluetooth device

1.1 Functional characteristics

Support Bluetooth HFP , A2DP, HID,AVRCP...
Support transparent / protocol data transfer mode AT + instruction set configuration
Support UART communication interface, UART interface up to 3Mbps.
Built-in 16-bit audio DAC and 16-bit audio
ADC Built-Capless headphone amplifier
Built-in MIC bias and amplifier
Support multiple analog audio input
Onboard PCB antenna, the customer can also be an external antenna
Single-supply operation 2.8~4.2V
Stamp hole pin, easy and reliable welding.
Small size: 13x27.2mm
Flexible software platform to provide customized services

1.2 Application area

Bluetooth Speaker Bluetooth
music transponder Car
Bluetooth hands-free Health
care
Wireless POS
machine
Portable printer



2 Electrical characteristics

2.1 Basic characteristics

Parameter	Description	Min	TYP	Max	Unit
VCC4BAT	Battery regulator supply voltage	-0.3	-	4.2	V
VCC5USB	USB power supply voltage	4.75	-	5.75	V
RX	RX Input power	-	10	-	dBm
TSTR	Storage temperature range	-40	-	150	°C

table 1. Absolute maximum

Parameter	Description	Min	TYP	Max	Unit
VCC4BAT	Battery regulator supply voltage	2.8	3.6	4.2	V
VCC5USB	USB power supply voltage	4.75	5	5.75	V
TOPR	Operation temperature range	-40	-	80	°C

table 2. Recommended working conditions

Wireless Standard	Bluetooth BR/EDR/LE	
Frequency	2.402GHz~2.480GHz	
TX power	4dBm	
Antenna	external: RF_PIN	
	internal: PCB antenna	High gain as external antenna

table 3. Antenna characteristics



2.2 Radio frequency performance

Parameter	Condition	Min	TYP	Max	Unit
Operate Frequency	2402~2480	2402	-	2480	MHz
RXSENS-1 Mbps	BER=0.001	-	-88	-	dBm
RXSENS-2 Mbps	BER=0.0001	-	-91	-	dBm
RXSENS-3 Mbps	BER=0.0001	-	-83	-	dBm
Maximum received signal	BER=0.001	0	-	-	dBm
Maximum RF transmit power		-	8	-	dBm
RF Power Control Range		30	-	-	dBm

table 4.Radio frequency performance

2.3 Audio characteristics

Parameter	Condition	Min	TYP	Max	Unit
DAC Diff. Output	With 600ohm loading	-	-	1.1	Vrms
	With 32ohm loading	-	-	-	Vrms
	With 16ohm loading	-	-	0.9	Vrms
DAC Diff. Output THD	With 1.1Vrms@600ohm loading	-	75	-	dB
	With 0.8Vrms@16ohm loading	-	75	-	dB
DAC output SNR	1 kHz sine wave	-	98	-	dB
DAC Sample Rate		8	-	48	kHz
ADC SNR	1 kHz sine wave	-	96	-	dB
ADC Sample Rate		8	-	48	kHz

table 5. Audio performance



3 Hardware introduction

3.1 Functional block diagram

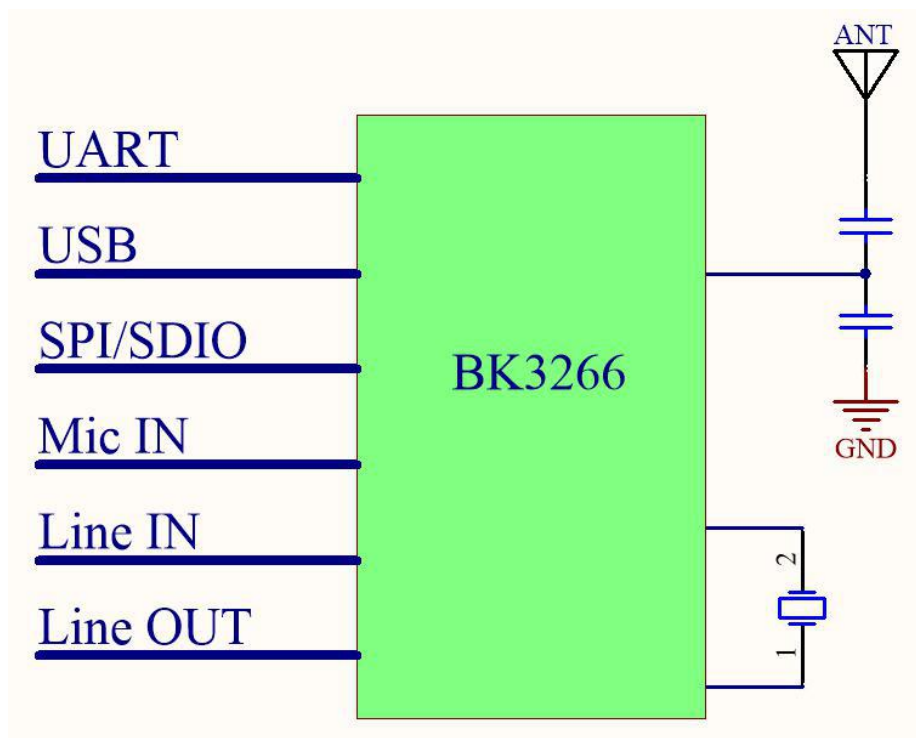


figure 1. WLT3266Block diagram of the module

WLT3266 There are two main parts inside the module:

1. Bluetooth part: Contains the Bluetooth chip BK3266, 2.4GHzPCB Antenna and external interface.
2. Audio section: WLT3266integrated Audio Codec, Provides analog audio input and output, Digital audio input and output, Headphone amplifier and so on, Support for Bluetooth HFP, A2DP (Source 和 Sink) Other audio applications.



3.2 Module size and pin arrangement

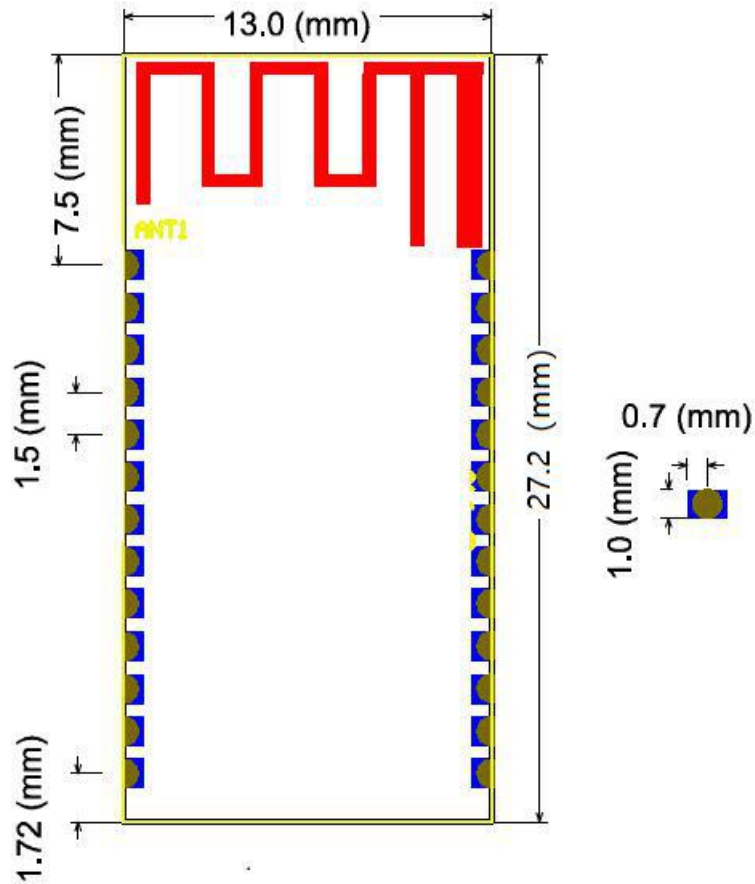


figure2. WLT3266Module Dimensions (Front)



figure3. WLT3266Module thickness



3.3 Pin definition

Pin #	Name	Type	Description
1	UART_TX	I/O	UART_TXD/I2C_SCL, Download port
2	UART_RX	I/O	UART_RXD/I2C_SDA, Download port
3	GND	POWER	Ground
4	LINEIN_L	I	Line in L
5	LINEIN_R	I	Line in R
6	P15	I/O	SPI_SCK/ADC2/CLKOUT Soft shut down and wake up (active high)
7	NC		
8	SD_CMD	I/O	JTAG_TMS/PWM3/PCM_CLK/SD_CMD/SPI2_MOSI
9	SD_CLK	I/O	JTAG_TCK/PWM2/ADC4/PCM_SYNC/SD_CLK/SPI2_SCK
10	SD_DAT	I/O	JTAG_TDI/PWM4/ADC6/PCM_DIN/SD_DATA0/SPI2_MISO
11	RESET	-	External reset input, active low
12	VDD	POWER	Battery power supply
13	GND	POWER	Ground
14	VCC5USB	POWER	USB charge power input
15	USBDN	I/O	PWM1 / USBN
16	USBDP	I/O	PWM0 / USBP
17	AUDRP	O	Audio right channel positive
18	AUDRN	O	Audio right channel negative
19	AUDLN	O	Audio left channel negative
20	AUDLP	O	Audio left channel positive
21	MICREF	POWER	Microphone reference voltage
22	MICRN	I	Microphone input negative
23	MICRP	I	Microphone input positive
24	GPIO14	I/O	Digital input and output
25	ANT	-	External ANT PIN
26	GND	POWER	Ground

table 6. WLT3266Pin definition

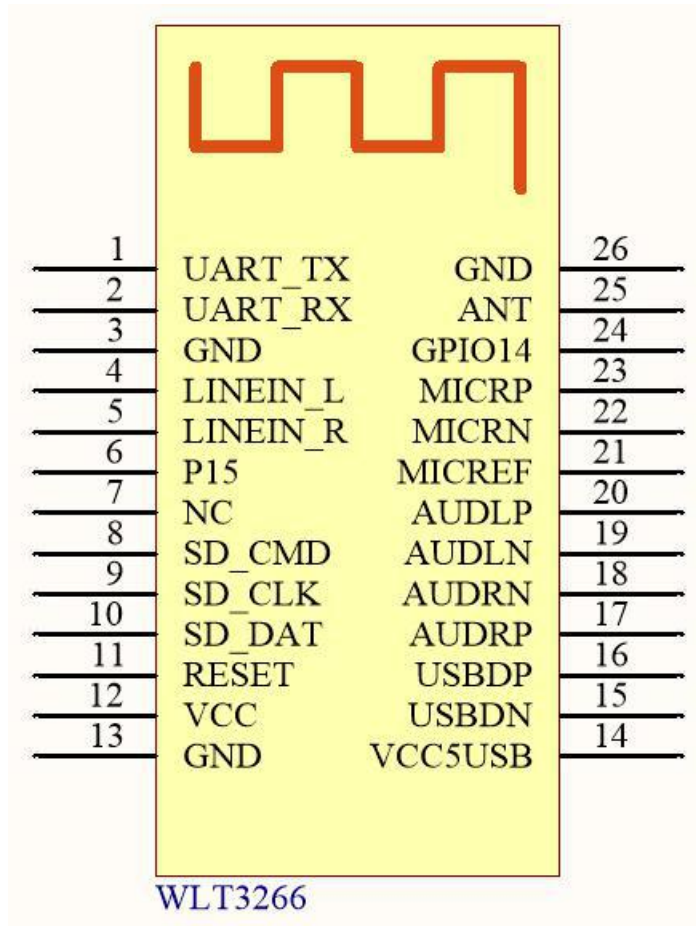


figure 4. Description of 26-Pin Package



3.4Reference design

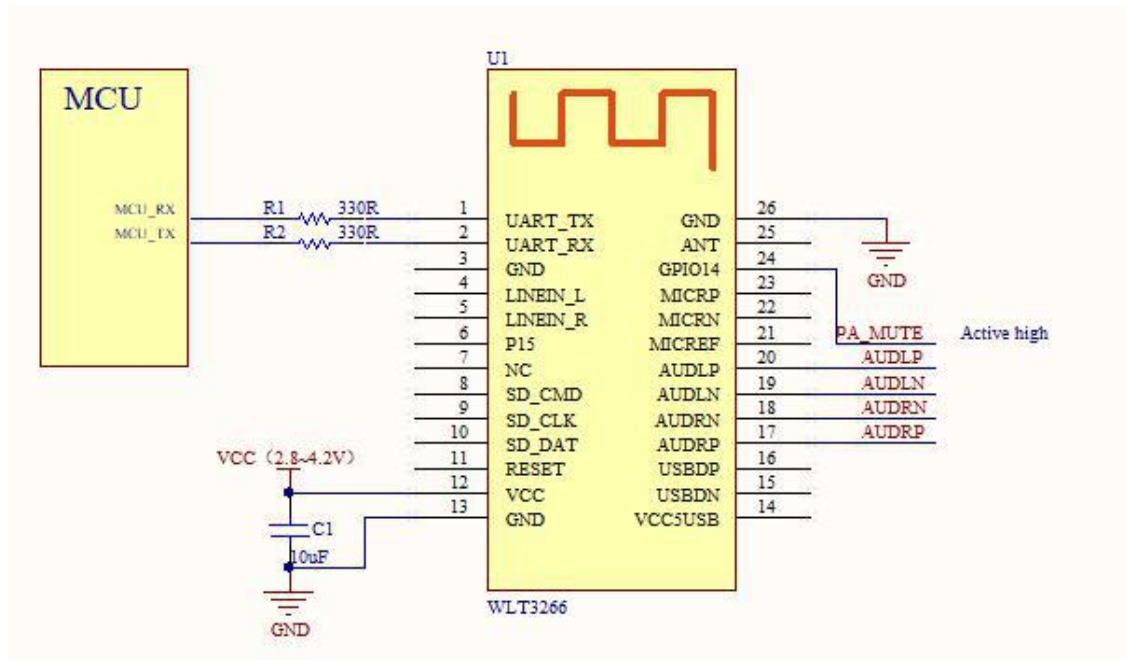


Figure 5. Reference design

Note: GPIO14 as amplifier enable pin, high level effective. When the customer uses the audio power amplifier, the GPIO14 needs to be connected to the enable pin of the chip. Refer to figure 6 below:



Figure 6. GPIO14 Reference design



4 PCB Design

4.1 Recommended weld plate size

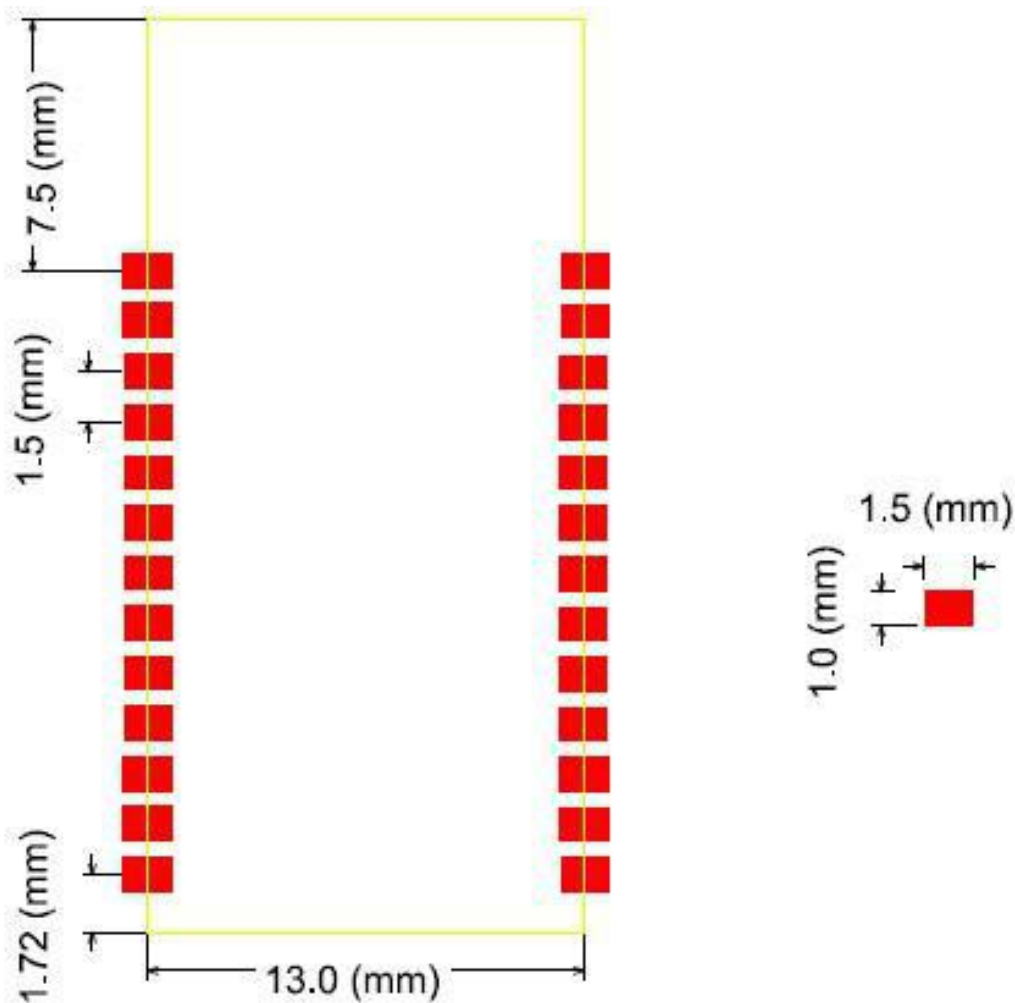


figure 7. WLT3266Package size reference

4.2 PCB layout Matters needing attention

Bluetooth is working 2.4GHz under the frequency, Should try to avoid the impact of various factors on the wireless transceiver, pay attention to the following points:

1. The part of the product enclosure that surrounds the module avoids the use of metal, and if the enclosure is metallic, consider using an external antenna.
2. Metallic screws inside the product should be kept away from the RF part of the module.
3. Module should be placed around the motherboard, the antenna part of the edge or angle, the module antenna below the motherboard area does not allow copper shop or alignment.



5 Reflux parameter recommendation

Reflux parameters can refer to the following settings:

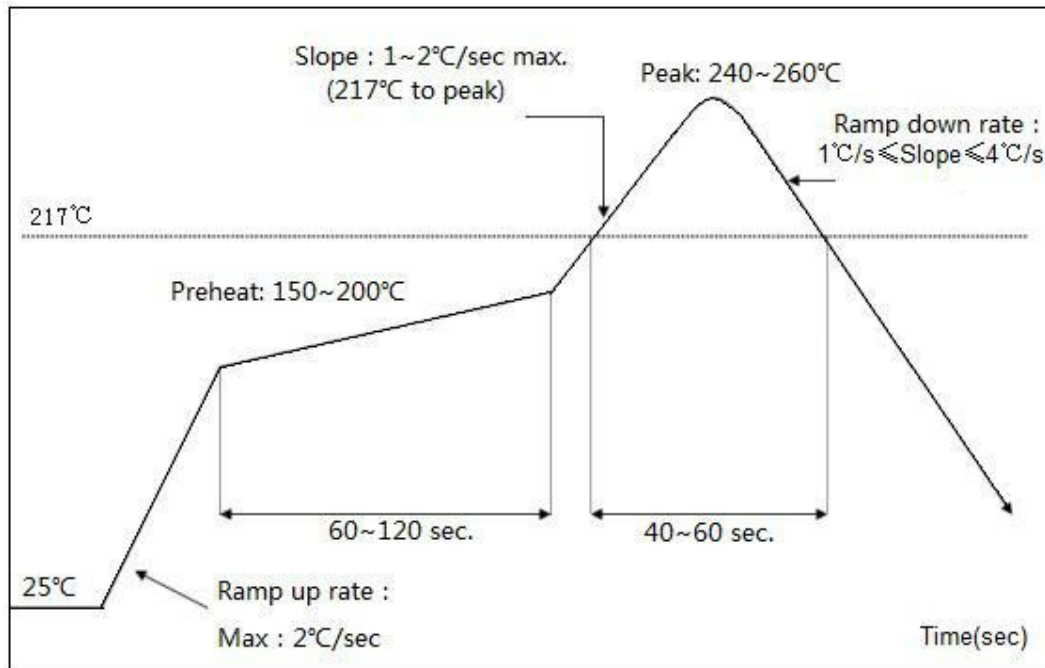


figure 8. Reflow recommended curve

Temperature range	Time	Key parameters
Preheat zone(<150°C)	60-120S	Ramp up rate:≤2S
Uniform temperature zone(150-200°C)	60-120S	Ramp up rate:<1S
Recirculation zone(>217°C)	40-60S	Peak:240-260°C
Cooling zone	Ramp down rate:1°C/s≤Slope≤4°C/s	

table 7. Reflow recommended parameters



6 Software application

WLT3266 is an audio Bluetooth module that supports Audio Codec. The module integrates audio Bluetooth protocol stack, supports a variety of traditional Bluetooth applications and Bluetooth low energy applications. For example: HFP, A2DP, AVRCP and so on.

WLT3266 module supports UART AT + command mode to configure and select the mode of operation, the specific command, please see the relevant WLT3266 module software application documentation.

WLT3266 module to support custom software, please contact our company.

7 Regulatory Module Integration Instructions

List of applicable FCC rules

This device complies with part 15 of the FCC Rules.

Limited module procedures

Not applicable

Summarize the specific operational use conditions

This module can be applied in remote Bluetooth Speaker, Bluetooth music transponder Car and Bluetooth hands-free Health , Wireless POS , Portable printer as well as smart home. The input voltage to the module should be nominally 2.8-4.2 V DC , typical value 3.3V DC and the ambient temperature of the module should not exceed 80°C.

RF exposure considerations

Module is limited to OEM installation ONLY.

That OEM integrators is responsible for ensuring that the end-user has no manual instructions to remove or install module.

That module is limited to installation in mobile or fixed applications, according to Part 2.1091(b).



FCC Radiation Exposure Statement

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Label and compliance information

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: “Contains Transmitter Module FCC ID: 2A006-WLT3266 Or Contains FCC ID: 2A006-WLT3266”

When the module is installed inside another device, the user manual of the host must contain below warning statements、

1. 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.

(2) This device must accept any interference received, including interference that may cause undesired operation.

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

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product



Additional testing, Part 15 subpart B disclaimer

The final host / module combination 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 .

The host integrator installing this module into their product must ensure that the final composite product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operation and should refer to guidance in KDB 996369.

Frequency spectrum to be investigated

For host products with certified modular transmitter , the frequency range of investigation of the composite system is specified by rule in Sections 15.33(a)(1) through (a)(3) , or the range applicable to the digital device, as shown in Section 15.33(b)(1), whichever is the higher frequency range of investigation.

FCC Statement

Any 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: (1) This device may not cause harmful interference , and (2) This device must accept any interference received, including interference that may cause undesired operatio.



ISED RSS Warning/ISED RF Exposure Statement

ISED RSS Warning: This device complies with Innovation, Science and Economic Development Canada licence-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.

Le présent appareil est conforme aux CNR d'ISED 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. ISED RF exposure statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 5mm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Le rayonnement de la classe B respecte ISED fixant un environnement non contrôlé. Installation et mise en œuvre de ce matériel devrait avec échangeur distance minimale entre 5 mm et son corps. Lanceurs ou ne peuvent pas coexister cette antenne ou capteurs avec d'autres.