High-End Base Guide for RTX745x

Installation & Configuration
Network Deployment
Operation & Management

Technical Reference Document
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1 About This Document

This document describes the configuration, management, operation and maintenance of the RTX745x headset base which is part of the range of the DECT system. For customer specific modes, please refer to specific customer agreements.

1.1 Audience

This guide is intended for everyday users. Furthermore, network administrators, IT support and anyone who wishes to gain knowledge on the fundamental features of the RTX745x base, can also benefit from this material.

1.2 When Should I Read This Guide

Read this guide before you install the devices and before setting up the DECT connection.

This manual will enable you to set up components in your network to communicate with each other and deploy a fully functionally system.

1.3 What's Inside This Guide

We summarize the contents of this document in the table below:

WHERE IS IT?	CONTENT	PURPOSE
CHAPTER 2	Package overview	Presents the package content and handling
CHAPTER 3	About the device	Provides information on the device specifications and hardware
CHAPTER 4	User interface	Gives an overview of the available icons on the user interface
CHAPTER 5	Call activity on base	Introduces the different type of call scenarios
CHAPTER 6	Features overview	Introduces the supported features on the base
CHAPTER 7	Regulatory compliances	Presents the adherence to the laws and regulations

1.4 What's Not in This guide

The guide is not intended to be as a comprehensive reference to details and specific steps on how to configure other vendor specific components/devices. For such a reference to vendor specific devices, please contact the respective vendor for documentation.

1.5 Abbreviations

For this document, the following abbreviations hold:

DECT:	Digital Enhanced Cordless Telecommunications
MWI:	Message Waiting Indicator
PCBA:	PCB Assembled
MFB:	Multi-Function Button
BT:	Bluetooth

1.6 References/Related Documentation

Pc tool
Headsets guide

1.7 Document History

REVISION	AUTHOR	ISSUE DATE	COMMENTS
1.0	DKO	15.05.2020	First release

1.8 What is new

What new features have been added.

VERSION	FEATURE
V1.0	First release

1.9 Documentation Feedback

We always strive to produce the best and we also value your comments and suggestions about our documentation. If you have any comments about this guide, please enter them through the Feedback link on the RTX website. We will use your feedback to improve the documentation.

2 Package overview

Prior to opening, examine the shipping package for evidence of physical damage. If there is proof of mishandling prior to opening, you must report it to the relevant support center of the regional representative or operator.

2.1 Content

Make sure all relevant components are available in the package before proceeding to the next step. In principle, every shipped headset unit package/box contains the following items:

- 1x headset
- 1x base station (charger)
- 1x PSU fixed
- 1x USB C cable
- 1x 600mAH Li-polymer battery
- 1x 1-page A5 double side B/W print

Customer specific changes may occur.

2.2 Damage inspection

The following steps are recommended to be followed for damage inspection:

1. Examine all relevant components for damage
2. Make a “defective on arrival - DOA” report or RMA to the operator. Do not move the shipping carton until it has been examined by the operator. The operator/regional representative will initiate the necessary procedure to process this RMA. They will guide the network administrator on how to return the damaged package if necessary.
3. If no damage is found, then unwrap all the components and dispose of empty package/carton(s) in accordance with country specific environmental regulations.

3 About the device

The RTX745x device is an EHS/USB wireless base station which provides USB connectivity to PC/laptop/desktop phone and DECT connectivity to RTX725x headsets/DECT speakerphone. It is designed as a Plug & Play solution, meaning that no additional driver installations are needed.

The figure below (*Fig.1)* illustrates the high-level description of the communication possibilities of the device. The RTX745x base is connected to a host (PC or desktop phone) with USB interface. It acts as a DECT base station for RTX725x headset and DECT speakerphone.

Fig.1 Device connections

The RTX745x serves as a base and charger for the RTX725x series headsets. The primary application is within call centers and office environments allowing the user access to internet/VoIP calls, music playback via the PC/mobile phone, and desk phone connectivity.

3.1 Device overview

The drawings below illustrate the dimensions of the device (*Fig. 2)*.

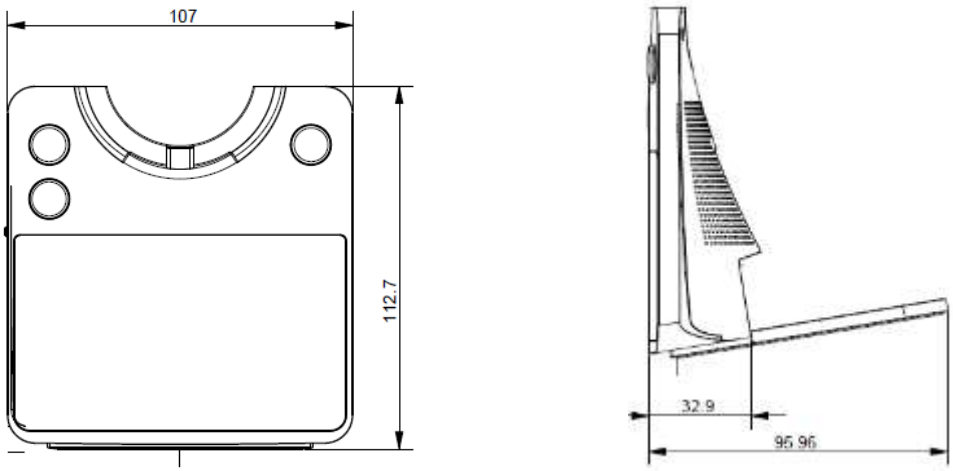

Fig.2 Measurements

The base includes a 2.4-inch 240x320 TFT display for status and configuration. Furthermore, it has 3 keys for call control handling (hook off, hook on and mute), a clickable scroll-wheel and a key for easy menu navigation *(Fig.3)*.

Fig.3 RTX745x front view


Fig. 4 Back view

Further details on the functionality of the keys can be seen on the table below:

Input	Functionality
Hook off	Answer call (short press) Swap between calls (short press) Swap between lines (double press) Hold/Retrieve call (short press) Hold active call and accept incoming call (long press)
Hook on	End call Reject call
Mute	Toggle mute
Back key	Return to the parent menu of the current submenu Leave the settings men
Scroll wheel	Open the settings menu Select an item in the settings menu Scroll to the next item in the settings menu Scroll to the previous item in the settings menu Adjust earphone volume

3.2 Spare battery charging

The base also includes a separate charger for a spare battery. The battery is placed on the back of the base, as shown below (*Fig.5)*.

Fig.5 Spare battery charging

3.3 Ringer configuration

The RTX745x has a built-in ringer for audible alerts for the user. The audio settings of the ringer can be configured via the PC Setup tool or the base menu. The ringer may be muted by selecting “Silent mode” in the PC Setup Tool.

3.4 Connect to VoIP multicell systems

The RTX725x headset and RTX7451 base together can integrate into VoIP multicell and dual cell systems. The base will register on behalf of itself and the headset. The two registrations are independent but will be linked logically as one unit on the VoIP system. The purpose of this integration is to hand over the user’s calls to the VoIP system for the user to be flexible in terms of location.

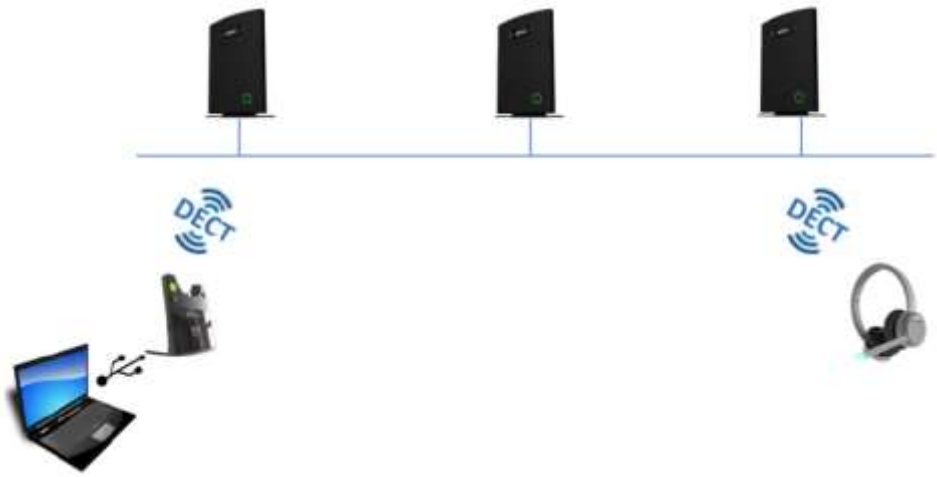

Fig.6 Call Handover

3.5 Configuration tool (PC tool)

The RTX745x and RTX725x parameters can be configured via an external PC configuration tool (PC tool). Moreover, the tool is used to firmware upgrade both devices and do upgrades of the tool itself. The PC tool is available for Windows and MacOS. The screenshots below display an example of the GUI interface of the tool. Logos and colors can be adapted to customer needs. For more information about the tool, please refer to *1.6 References/Related Documentation.*

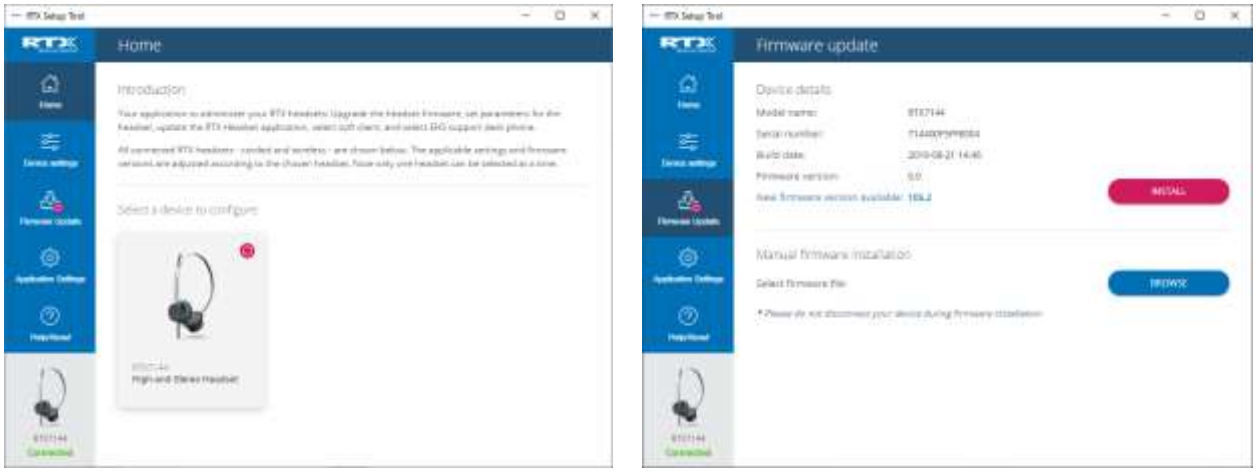

Fig.7 PC tool interface

4 User interface

As mentioned above, the RTX745x base supports a 2.4-inch 240x320 TFT display which has a user-friendly interface (UI). The UI is designed to be operated in an arms distance, meaning that the status bar is large and visible *(Fig.8)*. However, the icons shrink in size when navigating through the device's menu, yet still allowing the user to see the status *(Fig.9).*

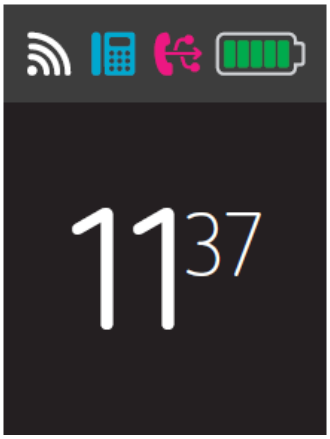

Fig. 8 Large status bar

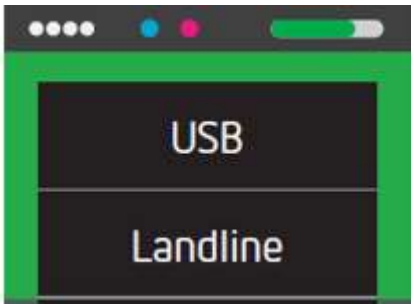

Fig.9 Small status bar

4.1 Icons

The following table aims to introduce you to the available icons on the UI of the device.

Icon	Description	Function
	Signal strength (Default) Signal strength (Collapsed)	informs the user of how good the signal is
	Desktop phone connection (Default) Desktop phone connection (Collapsed)	indicates that RTX745x is connected to a Desktop phone
	PC-USB connection (Default) PC-USB connection (Collapsed)	indicates that RTX745x is connected to the PC
	Battery status (Default) **Battery status (Collapsed)**	Battery full
	Battery status (Default) **Battery status (Collapsed)**	Battery running low
	Battery status (Default) **Battery status (Collapsed)**	Battery critical

	Battery status (Default) Battery status (Collapsed)	No battery, please charge device
	Call icon	animation indicating an incoming call
	Microphone mute	indicates that the microphone state has been changed to mute
	Hold	indicates a call on hold
	Eco mode	indicates enabling/disabling Eco mode for the headsets

4.2 DECT registration status interface

The following screenshots represent the interface during a DECT registration *(Fig.10)*.

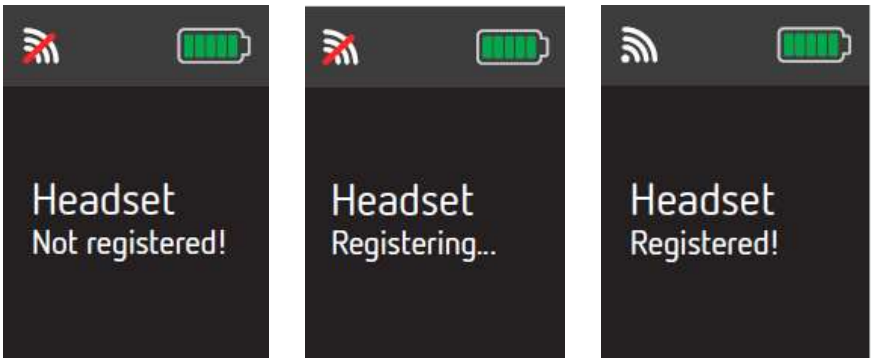

Fig. 10 DECT status registration

5 Call activity on base

To have call activity on the base, a master headset must be registered and locked to the base. If the master headset loses connection during call activity, all the calls will be terminated.

5.1 Incoming call

The base will notify the user with visible and audible indication whether an incoming call is from EHS or USB line. If both lines are in idle state and an incoming call is received to one of the lines, the base rings and displays the call (*Fig.11)*. However, if there are two simultaneous incoming calls from two different lines, the active control is made by the first incoming call (the first that came is served first). The second incoming call cannot be accepted by the base until the first incoming call has been answered or ended, or the line is swapped manually by the user *(Fig. 12)*. In case of having one of the lines occupied (in active call), the new incoming call will be displayed as waiting in a queue *(Fig.13).*

Fig. 11 Incoming call

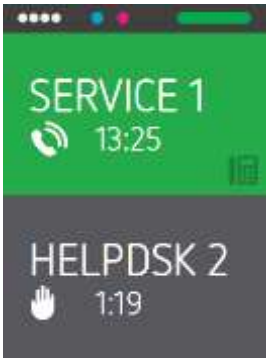

Fig.12 Call swap

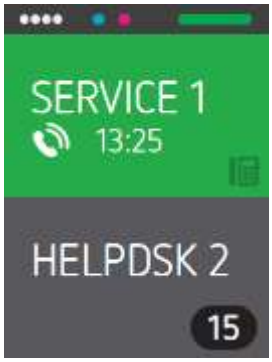

Fig. 13 Call queue (#15)

5.2 Active call

When a call is active, the base displays the active call and the audio path is connected between the far-end party and RTX725x headset. It is not possible to have more than one active call on a single line at the same time.

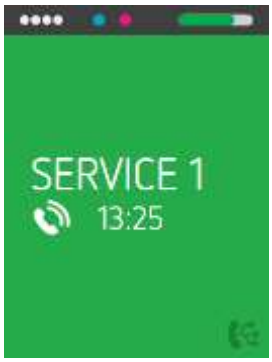

Fig.14 Active call

5.3 On-hold call

When a call is put on-hold, the base displays a hold call status and the audio path is disconnected between the far-end party and the RTX725x headset *(Fig.15 Two calls, one on hold)*. It is not possible to set EHS active call on-hold by the base.

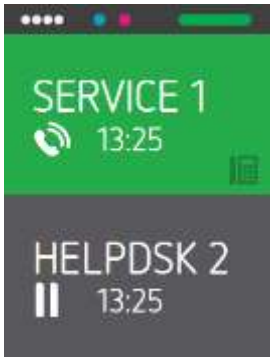

Fig.15 Two calls, one on hold

5.4 Multiple calls

There is more than one call existing in a single line. EHS line does not support multiple call.

Fig.16 Multi call

5.5 Multiple line

There is more than one call existing in different lines.

5.6 Active & Inactive line

When a line is active, the base displays active line and the audio path is connected via the line. It is not possible to have more than one active line at the same time.

When a line is inactive, the base displays inactive line and the audio path is disconnected via the line. It is not possible to have manual call control of the base when the line is inactive.

5.7 Call termination

All calls will be terminated when the master headset loses link or is placed on the cradle.

5.8 Line swapping

In the case two calls are established in two different lines, one of them is being the active call in the active line. To make the line swapping simpler, active line is swapped automatically depending on call activities change. It can be one of the following scenarios:

- User makes an outgoing call by softphone or desktop phone.
- User retrieves USB held call by softphone.
- User swaps USB call by softphone.
- User accepts an incoming call.
- Call from first active line is ended and other call is existed in second inactive line.

The user can also swap the line from the base manually. When a line is swapped successfully, between two different lines, a visible indication is shown on base.

5.9 Microphone muting

Microphone muting control is separated into two muting statuses. Each line has its own microphone muting control. When the line is switched, the related microphone muting control will also be switched.

5.10 Volume control

Similar to the microphone, the volume control is also divided into two sets of volume. This means that, each line has its own volume control. When the line is switched, the related volume control will be also switched.

6 Features overview

This section aims to introduce you to the available features on the RTX745x base. Some of the features will be briefly described through the sections below, whereas the main highlights will be presented via a table with function descriptions.

6.1 Soft client support

The base, combined with one of the RTX725x headsets, supports the audio and USB API of the following applications:

- Skype for Business
- Microsoft Teams
- Customer client support implemented in PC tool

The RTX745x base can be used with both PC Windows and MacOS.

6.2 EHS interface

The RTX7451 supports EHS phones. The base is prepared to be compatible with various EHS standards. This is done by having a slider switch that enables 6 separate HW configurations for the audio routing. The PC Setup tool is used to configure the optimal settings for the SW configuration.
The RTX725x supports 2 active calls, meaning that the 3rd incoming call will be rejected or ignored. If during a call the user receives an incoming call, the call can be rejected by double pressing the Multi-Function key or accepted by long pressing the same key. The long press will answer the incoming call and put on hold the current one.

6.3 Table summary of the features

6.3.1 General features

Requirements	Descriptions
DECT frequency bands:	1880 – 1895 MHz (Taiwan) 1880 – 1900 MHz (EMEA) 1910 – 1920 MHz (Brazil & Uruguay) 1910 – 1930 MHz (LATAM, Argentina, Chile) 1920 – 1930 MHz (USA, Canada)
Narrowband Audio:	G.726, BV16
Wideband Audio (HD):	G.722, BV32
Music	CELT 128 kbit/s
DECT Registration	Possible to store 4 subscriptions, one primary and three secondary

6.3.2 Base features

Requirements	Descriptions
Display	
Size	2.4” 240x320 TFT
Buttons	Scroll wheel (with an embedded key) Four keys
Hardware features	
Speaker	Yes

Headset interface	USB C
Charging terminals	USB C
Operating conditions	0 ◦C to 45 ◦C
Spare battery charger	Yes
Call features	
Call waiting	Yes
Hold / Retrieve	Yes
No. of simultaneous calls	2, only one on hold
Call Conference	Yes
Call Swap	Yes
DECT	
Output Power	250 mW 140 mW (Uruguay, Canada, US, Malaysia, Jordan) 22 dBm (Chile, Australia)
Sensitivity	-92 dBm
Antenna	2 for fast antenna diversity
Range	200m outdoor
Security	Class C
Software update	
Downloadable	Yes
Air-interface	Yes
Update support	PC Setup tool

7 Regulatory compliances

7.1 Safety & Type approvals

The regulatory compliance and measurements reports required are:

Approval	Standard
	GENERAL SAFETY
Safety	CB Test Report IEC62368, EN62368, IEC60950, EN60950 with the national difference
Safety	UL62368, and cUL 62368
Safety	CB Scheme Certificate
	US
FCC	FCC Part 15B
FCC	FCC Part 15D
FCC	FCC SAR evaluation
FCC	FCC ID
	CANADA
IC	ICES-003 Issue 6, 2016
IC	IC RSS-213 Issue 3,March 2015
IC	IC RSS-102 issue 5 SAR evaluation
IC	IC REL Cert and registration
IC	ISED ID
	EUROPEAN
CE	EN55032:2015 EMC-EMI&EMS EN55024:2010 EN55035
CE	EN62479:2010
CE	EN301489-1 V2.2.0 (2017-03) EN301489-6 V2.2.0 (2017-03)
CE	IEC61000-4-2 Level 3 criteria B (Contact+/-8KV,Air +/-15K EN61000- 4-3 Level 3 criteria A
CE	EN301406V2.2.2(2016-09)
CE	SAR-EN62209-1:2006/EN62209-2:2010 ; EN50360 :2001+A1:2012 EN 50566:2013/AC:2014
CE	AOC certificate
	AUSTRALIA/NZ
RCM	AS/NZS CISPR 32:2015
RCM	EMC-AS/NZS CISPR 22:2009+A1:2010
RCM	RF-AS/NZS 4268:2017
RCM	SAR-AS/NZS 2772.1; AS/NZS 2772.2:2011
RCM	Acoustic AS/CA S004
RCM	HAC AS/ACIF S040

7.2 Environmental compliances

RoHS
Per Directive 2011/65/EU on the Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment

REACH
Per Directive 1907/2006 on Registration, Evaluation and Authorization of Chemicals

WEEE
Per Directive 2012/19/EU on Waste Electrical and Electronic Equipment
(RTX will add waste bin information on product labels).
Packaging: EU Directive 97/129/EC establishing the identification system for packaging materials pursuant to European Parliament and Council Directive 94/62/EC on packaging and packaging waste

8 Declaration of compliance

8.1 FCC warning

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 to this equipment 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 operation.

8.1.1 For Headset

SAR tests are conducted using standard operating positions accepted by the FCC with device transmitting at its highest certified power level in all tested frequency bands, although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value. Before a new model device is an available for sale to the public, it must be tested and certified to the FCC that it does not exceed the exposure limit established by the FCC, tests for each device are performed in positions and locations as required by the FCC. For body worn operation, this model device has been tested and meets the FCC RF exposure guidelines when used with an accessory designated for this product or when used with an accessory that contains no metal.

8.1.2 For Base

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter located or operating in conjunction with any other antenna or transmitter.

8.2 ISEDC Warning

This device contains licence-exempt transmitter(s)/receiver(s) that comply with 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 interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est compatible avec la licence de l'Innovation, la Science et le développement conomique du Canada à l'exemption des normes RSS. Le fonctionnement est sujet aux deux (2) conditions suivantes :

(1) Cet appareil peut ne pas causer de l'interférence, et
(2) Cet appareil doit accepter l'interférence, incluant de l'interférence qui peut causer un mauvais fonctionnement de cet appareil.

8.2.1 For Headset

SAR tests are conducted using standard operating positions accepted by the ISEDC with device transmitting at its highest certifed power level in all tested frequency bands, although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value. Before a new model device is an available for sale to the public, it must be tested and certifed to the ISEDC that it does not exceed the exposure limit established by the ISEDC, tests for each device are performed in positions and locations as required by the ISEDC. For body worn operation, this model device has been tested and meets the ISEDC RF exposure guidelines when used with an accessory designated for this product or when used with an accessory that contains no metal

8.2.2 For Base

This equipment complies with ISEDC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter located or operating in conjunction with any other antenna or transmitter.

Pour le combiné
Les tests SAR sont faits en utilisant les normes de positions d'opération acceptées par l'ISEDC avec les appareils émettant les plus hauts niveaux de puissance certifiés sur toutes les bandes de fréquences, même si le SAR est déterminé d'être du plus haut niveau de puissance certifié, le niveau SAR actuel de l'appareil peut être sous la valeur maximale de fonctionnement. Avant qu'un nouveau modèle d'appareil ne soit disponible pour la vente au public, celui-ci doit être soumis à des tests de certification par l'ISEDC lesquels n'excèdent aucunement la limite d'exposition issue par l'ISEDC, lesquels sont des tests effectués sur chaque appareil dans des positions et endroits requis par l'ISEDC. Pour l'usure de construction de ce modèle d'appareil, celui-ci a été testé et rencontre les lignes directrices émises par l'ISEDC RF pour l'exposition, lorsqu'il est utilisé avec un accessoire conçu pour ce produit ou utilisé avec un accessoire qui ne contient aucun métal.

Pour la base
Cet équipement est conforme avec les limites d'exposition à la radiation de l'ISEDC émises dans un environnement contrôlé. Cet équipement devrait être installé et fonctionnel avec un minimum de distance entre le radiateur et votre corps d'au moins 20 cm. Ce transmetteur ne doit pas être co-situé près d'une autre antenne ou en conjonction avec un autre transmetteur.

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareille numérique de classe B est conforme aux normes canadiennes ICES-003.