XMRM-ND Remote control user manual

1. Verification content & Requirement

1、 General Items

1.1、 Scope Apply for: RF397B Remote Control

1.2、 Working Environment: 0 ℃ ~ 40 ℃, 8 % ~ 90 % RH

1.3、 Storage Environment: -20 ℃ ~ 70 ℃, 5 % ~ 90 % RH

1.4、 Test Environment: 5 ℃ ~ 35 ℃, 45% ~ 75% RH, 86 ~ 106Kpa

1.5、 Rated voltage: DC3.0V

1.6、 Applicable battery Power: AAA * 2 PCs

1.7、 Weight range: 42g ± 3G (without battery)

1.8、 Product size: 153.00 * 37.00 * 14.35mm

2、 Visible Test Item

Test Conditions

A: Put the top face under the standard light source and test by sight from the 30cm distance for 10 seconds under the standard light source seconds

B: Put other sides under the standard light source and test by sight from the 50cm distance for 5 seconds under the standard light source seconds

No.	Item	Test Requirements
2.1	Scratch, stain, split and deformation Scratches, Stain and distortion of the Unit	None of the above phenomena No described situations
2.2	Printed graphics and text Hot Stamped Graphics and Letters	Contents are correct, clear, even and tidy Correct, in focus and comply with the drawing
2.3	Match of top case and bottom case	No upwarping, deformation, cracking and break difference. (Clearance: 0.05 mm; Hand scraping: bottom scraping < 0.05 mm, no surface scraping, battery cover and rear cover cambered surface break difference is less than 0.05 mm, only surplus is allowed, no deficit is allowed) No distortion and Crack between the twoparts
2.4	Surface Appearance	Correct material and color

3、 Electric Capability

NO.	Project	Test Requirements
3.0	Main control chip IC	TLSR8237F512ET24
3.1	Remote control device name	Xiaomi RC
3.2	Carrier frequency	2400MHz ~ 2483.5MHz frequency hopping
3.3	Operating voltage	2.4v ~3.3v
3.4	Standby current	Under the voltage of 3.0 V, the standby current of the unpaired remote controller is ≤ 7 uA, and the standby current of the paired remote controller jumps between 30 uA and 550 uA.
3.5	Operating current	Working current of RF key ≤ 4 mA; Under the voltage of 3.0 V, press the key for 30 seconds to measure the dynamic current; Voice current ≤ 10 mA.
3.6	Wireless transmission distance (Operating voltage 3.0 V)	The working distance can reach 10m after the Bluetooth is connected to the Mi TV stick.
3.7	Bluetooth output power	-10dBm ≤ Output Power ≤ 0dBm Bluetooth conduction performance test, use equipment IQ2010, fixed channel transmission and reception test, respectively test the transmission and reception sensitivity of three channels, 2402MHz, 2442 MHz and 2480MHz. Test point: Balun output, antenna and its matching network elements are not disconnected (required for continuous
3.8	Initial frequency offset	-75KHz≤fo≤75KHz
3.9	Receive sensitivity	≤-70dBm @ BER≤0.1%
3.10	Voice operation distance	>10m 1. The router is 1 meter away from the TV and the remote control is 4 meters away 2. The microphone hole of the remote controller is facing the mouth, and the front of the remote controller is facing the face. In both cases, correct identification is required: A. At 5cm, 10cm, 15cm, 20cm and 30cm,
3.11	Battery life	AAA Battery. Each key pressing time is 0.5 seconds, 200 times/day, and the service life is 11 months.
3.12	Performance testing	Each key shall be operated effectively.

3.13	Pairing method	A. When the Bluetooth is not paired (there is no Bluetooth pairing record), press any key on the remote controller to enter the code matching mode; B. Press the "HOme key" and "ALL _ APPS key" of the remote controller at the same time to clear the paired remote controller and send the pairing information synchronously;
3.14	Pairing time	≤ 10 seconds; When pairing, place the remote control within 20cm from the host and start approaching the pairing.
3.15	Clear pairing time	Press the "HOME key" and "ALL _ APPS key" of the remote control at 2 to 4 seconds to clear the pairing table stored in the paired remote control.
3.16	Sleep	After any button on the remote controller is released, sleep completely if there is no button within 30s
3.17	Wake up	When the ≤ 500mS remote controller is in sleep state, any key is triggered to start the remote controller
3.18	Voice function	Short press the voice key and release it to record.
3.19	OTA function	Support OTA function;
3.20	ESD test	Air discharge voltage: ± 15KV, contact discharge voltage: ± 6Kv (including metal shrapnel). Normal function, no
3.21	Operating systems are supported	Android 4.0 and above
3.22	Schematic diagram of operation	See the working principle diagram for details

4、 Mechanical Capacity

S/N	Item	Requirement	Test Condition
4.1	Visual inspection	There are no obvious shortcomings	50 cm Check appearance
4.2	Key travel	0.4mm ± 0.3m, specific requirements: crisp hand feeling	Measure when the force point is at the center of the key
4.3	Key force	Direction key and volume plus/minus key force 300 ± 100g, other keys plus/minus key force	Press the product on the test platform, press the key with a needle with a diameter of 4 mm, and measure the force.

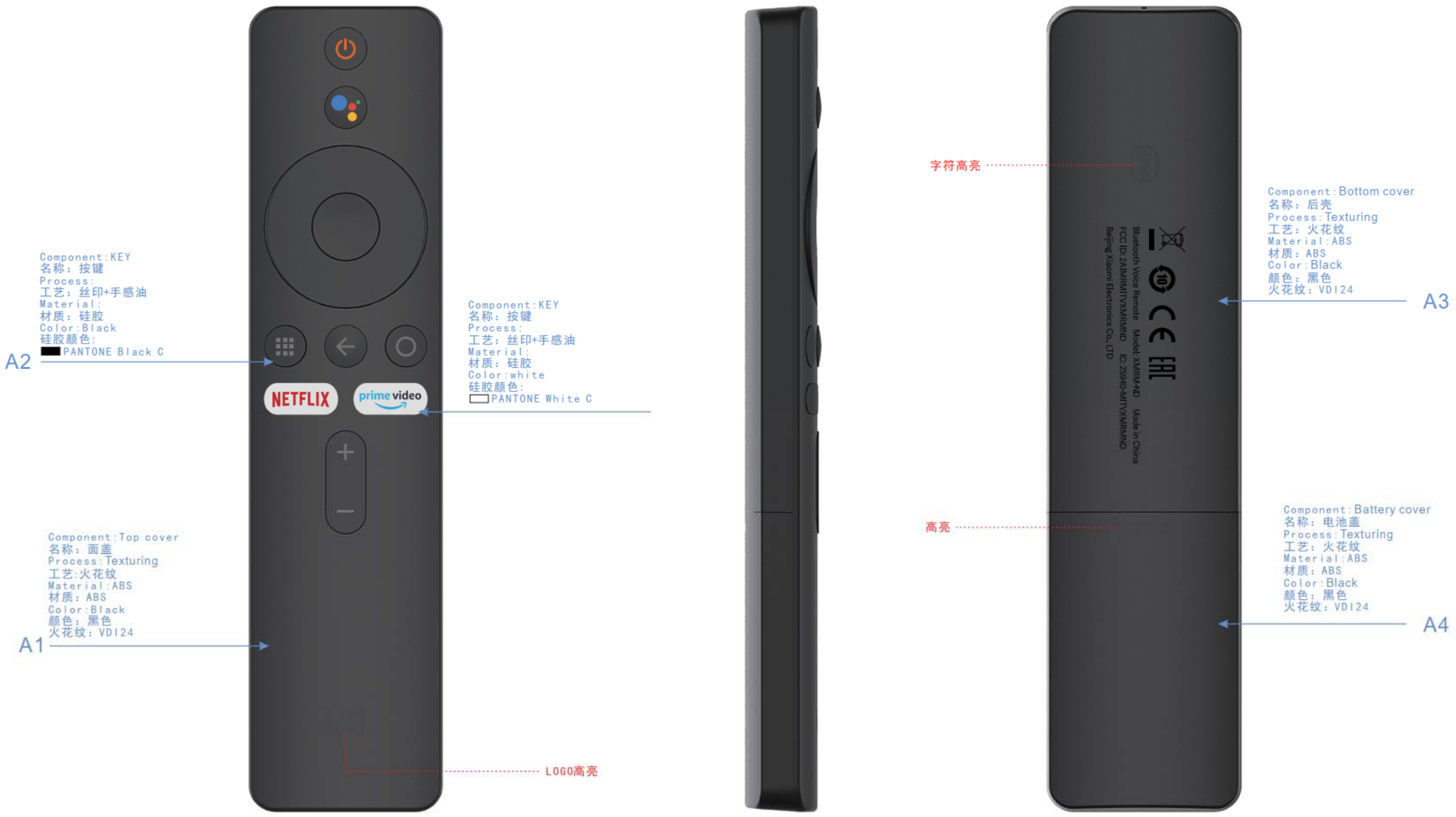
		270 ± 60g	
4.4	Hardness test	There shall be no visible scratches.	Use a Zhonghua pencil (the refill is cylindrical) with a hardness of F ~ 1H (1H) (the actual hardness is determined by ID design), the refill is at an angle of 45 ° to the surface of the remote controller, and apply a force of 10 N to make the pencil move forward 10 mm at a uniform speed on the surface of the remote controller, respectively, on three different parts of the surface (including characters). Graphical symbol area). \n
4.5	Warm water resistance test	Check whether the surface tone of the remote controller changes, and whether the characters and marks are erased.	Use a dropper to drop warm water at 60 ℃ on three different parts of the surface of the remote controller (including characters and graphic symbols), drop 0.1ml on each part, with an area of about 1 cm^2, and then dry it with a soft cloth.
4.6	Gummed paper test	The character mark and the painted part of the remote controller shall not fall off after being pasted with the transparent tape.	Use a transparent adhesive tape with an adhesive force of 2 ~ 3.5 N/cm to flatly press the transparent adhesive tape on the character mark part and the coating part of the remote controller, with an area of at least 1 cm^2. Apply a force perpendicular to the part with the transparent adhesive tape on the surface of the remote controller by hand, and then quickly pull down the adhesive tape. Repeat for 5 times at the same position to check whether the character mark and the coating part fall off.
4.7	Alcohol is wear-resistant	Check whether the appearance of the remote control is abnormal. The character mark shall be clear.	500 GF, 100 times, 20 times per minute, repeat the above test with absolute ethanol instead of saline. (With flannel)
4.8	Rubber is wear-resistant	No visible wear on appearance (housing)	1. Eraser test requirements: load: 500gf/cm^2/speed: 30 times/min/eraser wiping area: 30 mm, 2. Rubber model: # EF74 3. 100 times;
4.9	Saline test	Check the surface hardness according to GB6.1 hardness test standard. Check whether the	Gently wipe the surface of the remote controller (including the key characters) 50 times with a cotton ball or a soft cloth

		appearance of the remote control is abnormal. Character markings shall be clearly visible.	soaked in 20% salt water.
4.10	Edible oil test	Check the surface hardness according to 6.1 (surface hardness) and check whether the appearance of the remote controller is abnormal and whether the character mark is clear by visual inspection.	Drop edible oil (peanut oil, soybean oil or rapeseed oil) on three different parts of the surface of the remote controller (including characters and graphic symbols) with a dropper, drop 0.1mL on each part, with an area of about 1 C ㎡, and dry it with a soft cloth after 1 hour.
4.11	Sticker test requirements	The sticker shall be free from falling off and warping, and there shall be no residue when it is torn off	Check the label test results after vibration, drop, high temperature and humidity.
4.12	OPP bag test requirements	1. Printing ink shall not fall off 2. OPP bags should not be too tight or too loose 3. OPP bags shall not be cracked or damaged.	1. Ambient temperature 30 ± 5 ℃, #EF74 eraser test: load: 500gf/cm^2/speed: 30 times/min, eraser wiping area: 30mm, 15 times 2. In actual assembly, the OPP bag should not be too tight. When the corner of the OPP bag is pinched lightly, the remote controller can slide down from the bag by its own gravity. 3. Repeatedly disassemble and assemble the bag for 5 times, and the OPP bag shall not be cracked or damaged.
4.13	Pressing strength	Check each key and check whether the remote control function of the remote controller is normal according to the relevant provisions in the height of the key and the load force when pressing the key.	Use a dynamometer to measure and press for 3min with a force of 30 N vertically applied in the center of the operation plane of the remote control key. \n
4.14	Stuck key test	The key is not stuck	Any point where a finger presses a key
4.15	Static load of keys	No mechanical, electrical, material and functional failures	Press vertically in the center of the key with a force of 30 N for 3 minutes. \n
4.16	Working life of keys	No mechanical, electrical, material and functional failures	Press the keys at the speed of 60 times/minute with the force of 300g: A: direction key, enter key 500,000 times; Home, return, directory key, volume key 300,000 times

4.17	Opening life of battery cover	The battery cover shall be intact.	Insert/move the battery door 500 times at the speed of 2-3 times per minute, and keep the battery cover closed normally.
4.18	Battery buckle reliability	Do not allow the battery to leak, and keep the remote control connection function normal.	1. Remove the battery back cover; 2. Install the battery; 3. Tap the table top (5 to 10 cm high) 5 times on both sides of the remote control.
4.19	Battery loading and unloading life	1. After the test, the remote controller functions normally; 2. The battery shrapnel shall be free from damage and deformation.	Continuously insert the battery at the speed of 4 ~ 5 times per minute, and check if there is no abnormality after the battery is loaded and taken out for 500 times.
4.20	Sound requirements	When the remote controller shakes, there should be no abnormal noise.	Shake the remote control and listen for any abnormal noise at close range.
4.21	Drop test	No visible damage or malfunction	Drop the remote controller from a height of 120 cm on 6 sides (parallel to the horizontal plane) on a wooden floor with a thickness of not less than 3 cm. Check whether the electronic and mechanical functions meet the requirements of this specification after dropping for 3 times.
4.22	Packaging and transportation test: vibration test	No functional failure or material damage	Vibration test of full box packaging: place the product in the packaging box. Place the box on a vibrating device that meets the following conditions: Frequency: 7 Hz Acceleration: 1.05 G Test in three axes for 30 minutes in each direction.
4.23	Bare metal vibration	A Function is normal B No major mechanical defects C Static dynamic current meets specification	Fix the finished machine on the vibration table, and then test according to the following conditions: * Frequency range: 10 ~ 55Hz * Vibration amplitude: 1.5mm * Vibration cycle: 1 minute (10 ~ 55 ~ 10Hz) * Vibration direction: X, Y & Z * Vibration time: 2 hours in each direction (6 hours total) * After the test, leave it at room

			temperature for 30 minutes, and then check Check the appearance and electrical performance.
4.24	Packaging and transport test: drop test	No functional failure or material damage	Test three axial directions, one side and one corner by dropping the whole box of products from a height of 60 cm to the ground
4.25	Compressive strength	Under the condition that the remote controller is equipped with batteries, the front of the remote controller and The remote controller shall not be damaged when a vertical force of 150N is applied to the bottom surface. \n Bad and the remote control function is normal.	1) Place the remote controller on a board no less than 3cm thick, place a board about 0.5cm thick with the same size and shape as the remote controller on the front and bottom of the remote controller, apply a force of 150N vertically on the board, and press it for 1min. \n 2. Repeat up to five times from the front to the back 3. Then check the keys of the remote controller according to the relevant provisions in 5.1 (appearance), 8.1 (key height) and 8.2 (key load force), and check whether the functions of the keys of the remote controller are normal according to. 4) Human seat pressure test, put the remote control on the sofa, and adults sit on the remote control for 10 minutes. After testing the appearance, the function is normal.
4.26	Compressive strength	The remote control PCBA should not be broken	For the remote controller whose PCB material is weaker than FR-4, cushion the two ends of the remote controller, use a hard object with an area of 1 square centimeter to press the remote controller with a force of 500 N for 30 s, and the PCBA board should not be broken. \n
4.27	Torsional strength	There is no shell explosion, no ″″ sound, no mechanical damage, and the function is normal.	Torque the fuselage 1000 times with a torque of 5 N

5. Product Effect Drawing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■ PANTONE Black C
A2
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硅胶颜色:
□ PANTONE White C
NETFLIX
prime video
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名称：面盖
Process:Texturing
工艺:火花纹
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材质：ABS
Color:Black
颜色：黑色
火花纹：VDI24
A1
LOGO高亮
字符高亮
高亮
Bluetooth Voice Remote Model: XMRM-ND Made in China
FCC ID: 2AIMRMITVXMRMND IC: 25940-MITVXMRMND
Beijing Xiaomi Electronics Co., LTD
Component:Bottom cover
名称：后壳
Process:Texturing
工艺：火花纹
Material:ABS
材质：ABS
Color:Black
颜色：黑色
火花纹：VDI24
A3
Component:Battery cover
名称：电池盖
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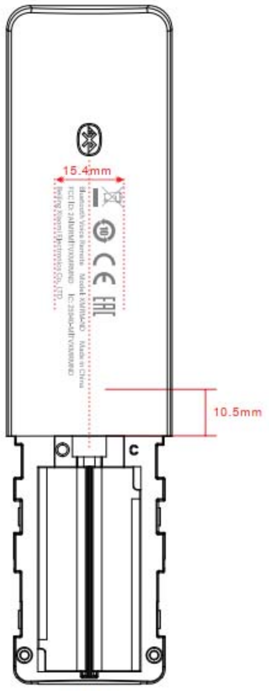
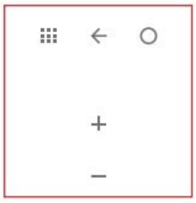
A4

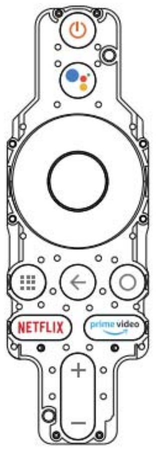

15.4mm
10.5mm

后壳丝印
丝印UV油（全光）
Pantone Black c

丝印 Pantone 1505 C



丝印 Pantone 423 C


NETFLIX
prime video

硅胶按键丝印图

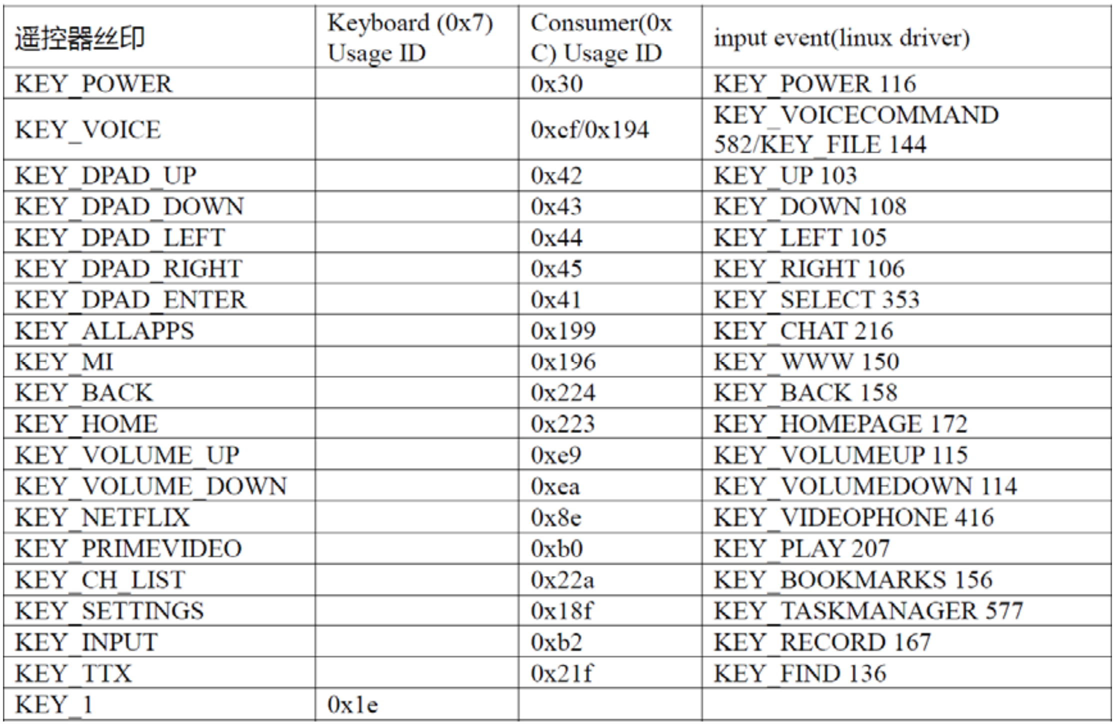
🟦 丝印 Pantone 2173 C
🟥 丝印 Pantone 179 C
🟨 丝印 Pantone 1225 C
🟩 丝印 Pantone 7738 C

丝印 Pantone 1795 C

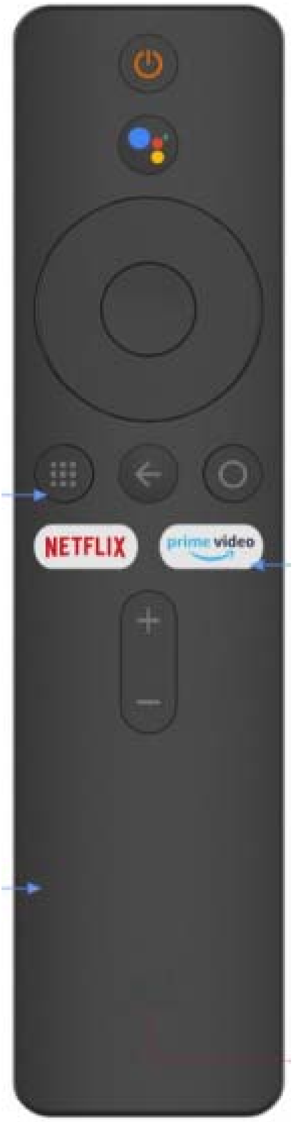
丝印 Pantone 2995 C

丝印 Pantone 432C

The key name and key value are as follows:



遥控器丝印	Keyboard (0x7) Usage ID	Consumer(0xC) Usage ID	input event(linux driver)
KEY_POWER		0x30	KEY_POWER 116
KEY_VOICE		0xcf/0x194	KEY_VOICECOMMAND 582/KEY_FILE 144
KEY_DPAD_UP		0x42	KEY_UP 103
KEY_DPAD_DOWN		0x43	KEY_DOWN 108
KEY_DPAD_LEFT		0x44	KEY_LEFT 105
KEY_DPAD_RIGHT		0x45	KEY_RIGHT 106
KEY_DPAD_ENTER		0x41	KEY_SELECT 353
KEY_ALLAPPS		0x199	KEY_CHAT 216
KEY_MI		0x196	KEY_WWW 150
KEY_BACK		0x224	KEY_BACK 158
KEY_HOME		0x223	KEY_HOMEPAGE 172
KEY_VOLUME_UP		0xe9	KEY_VOLUMEUP 115
KEY_VOLUME_DOWN		0xea	KEY_VOLUMEDOWN 114
KEY_NETFLIX		0x8e	KEY_VIDEOPHONE 416
KEY_PRIMEVIDEO		0xb0	KEY_PLAY 207
KEY_CH_LIST		0x22a	KEY_BOOKMARKS 156
KEY_SETTINGS		0x18f	KEY_TASKMANAGER 577
KEY_INPUT		0xb2	KEY_RECORD 167
KEY_TTX		0x21f	KEY_FIND 136
KEY_1	0x1e		



6. Schematic Diagram of Remote Controller

confidential

FCC

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 operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

ISED 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.

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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.*Cet émetteur ne doit pas être colocalisé ou fonctionner en conjonction avec une autre antenne ou un autre émetteur.*

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

Le matériel a été évalué pour répondre aux exigences générales d’exposition aux radiofréquences.Le dispositif peut être utilisé dans des conditions d ‘exposition portables illimitées.