

User Manual

SOM module

Model: SB30

FCCID: YAISB30

IC : 20480-SB30

SB30 SoM module Basic Info

Getting to Know Wireless console module

Features

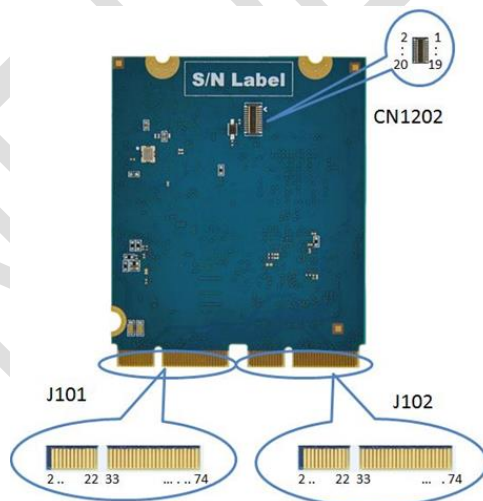
The product under test (EUT) is designed and manufactured a complete all-in-one module, running Android 8 supporting. The module will be mounted to indoor exercise equipments and serve as a system console. The supporting Wireless are 802.11 a/b/g/n/ac 2x2 MIMO and Bluetooth 2.1 EDR, BT 4.2,

It uses MediaTek **MT8362** Application Processor for multimedia enhancement purpose it have a 64-bit Quad-core processor integrated, operation frequency is ARM-A35 @ 1.5GHz, It needs an 26MHz crystal of reference frequency, this crystal also used for RF chip. This chip is responsible to control RF-Baseband Transceiver.

1 SB30 SOM Interfaces and Connectors

SB30 use two M.2 E-key golden finger and one 20-pin Hirose board-to-board headers (Hirose DF40C-20DP-0.4V) to connect with carrier board. Please be noticed that use the same mate height of M.2 E-key connector and 20-pin connector when design the application board.

The tables below detail the pin assignment and functionality of these connectors.



1.1 J101 Connector

Table 3-1 J101 Connector

J101 Pin#	Signal Name	MT8362 Pin #	Voltage	J101 Pin#	Signal Name	MT8362 Pin #	Voltage
1	SYSRSTB	N22	1.8V	2	VBAT	.	VBAT
3	PWRKEY	.	1.8V	4	VBAT	.	VBAT
5	VIO28_PMU	.	2.8V	6	VBAT	.	VBAT

7	GND	.	.	8	VBAT	.	VBAT
9	GND	.	.	10	GND	.	.
11	AUX_IN4	V19	.	12	VBUS	.	5V
13	GPIO15	K25	1.8V	14	VRTC28_PMU	.	2.8V
15	GPIO22	K23	1.8V	16	GPIO51	AD10	1.8V
17	GPIO23	L25	1.8V	18	I2S0_BCK	AE10	1.8V
19	SDA2	M21	1.8V	20	I2S0_LRCK	AD9	1.8V
21	SCL2	M22	1.8V	22	I2S0_DI	AC10	1.8V
23	MICBIAS0	.	.	32	SPI_CS	AB14	1.8V
33	AU_VIN2_N	U23	1.8V	34	SPI_CK	Y14	1.8V
35	AU_VIN0_P	T25	.	36	SPI_MI	AD15	1.8V
37	AU_VIN0_N	T24	.	38	SPI_MO	AD13	1.8V
39	GND	.	.	40	GPIO24	AE13	1.8V
41	AU_HPR	T19	.	42	GPIO20	AE7	1.8V
43	AU_HPL	T20	.	44	GPIO8	AA15	1.8V
45	GND	.	.	46	I2S3_LRCK	AD1	1.8V
47	MICBIAS1	W24	.	48	I2S3_BCK	AD2	1.8V
49	AU_VIN1_P	V24	.	50	I2S3_DO	AE2	1.8V
51	AU_VIN1_N	V23	.	52	KPROW0	AA3	1.8V
53	ACCDET	W23	1.8V	54	URXD1	AB2	1.8V
55	GPIO19	AD7	1.8V	56	UTXD1	AB1	1.8V
57	GND	.	.	58	KPCOL0	AA2	1.8V
59	USB_DM_P0	AD20	.	60	KPROW1	AA15	1.8V
61	USB_DP_P0	AE20	.	62	KPCOL1	Y3	1.8V
63	GND	.	.	64	SDA1	Y2	1.8V
65	USB_DM_P1	AD19	.	66	SCL1	W2	1.8V
67	USB_DP_P1	AE19	.	68	JTDI	V2	1.8V
69	GND	.	.	70	GPIO11	Y15	1.8V
71	SDA0	U8	1.8V	72	GPIO1	AA14	1.8V
73	SCL0	U7	1.8V	74	GPIO0	AC14	1.8V
75	VIO18_PMU	.	.				

1.2 J102 Connector

Table 3-2 J102 Connector

J102 Pin#	Signal Name	MT8362 Pin #	Voltage	J102 Pin#	Signal Name	MT8362 Pin #	Voltage
1	CC2	.		2	VGP2_PMU		
3	CC1	.		4	LCM_RST	U5	1.8V

5	URXD0	AC2	1.8V	6	DISP_PWM	U6	1.8V
7	UTXD0	AC1	1.8V	8	GPIO67	U3	1.8V
9	FCHR_ENB	.		10	JTCK	W3	1.8V
11	IDDIG	J23	1.8V	12	JTDO	V1	1.8V
13	GPIO16	J24	1.8V	14	GPIO100	G3	1.8V
15	JTMS	V3	1.8V	16	GPIO101	G4	1.8V
17	TDN2	T2	1.8V	18	GPIO103	G7	1.8V
19	TDP2	T1	1.8V	20	TDN3	T5	1.8V
21	TDN1	R3	1.8V	22	TDP3	T4	1.8V
23	TDP1	R2	1.8V	32	TCP	N4	1.8V
33	TDN0	P3	1.8V	34	TCN	N5	1.8V
35	TDP0	P2	1.8V	36	VRT	P1	1.8V
37	RDN3	N2	1.8V	38	RDN2	M2	1.8V
39	RDP3	N3	1.8V	40	RDP2	M3	1.8V
41	RDN1	L2	1.8V	42	RCP	M5	1.8V
43	RDP1	L3	1.8V	44	RCN	M4	1.8V
45	RDN0	K1	1.8V	46	GND	.	
47	RDP0	K2	1.8V	48	VGP1_PMU	.	
49	GND	.		50	GPIO38	AF18	1.8V
51	VCAMA_PMU	.		52	GPIO39	AD16	1.8V
53	VCAMD_PMU	.		54	GPIO9	AD12	1.8V
55	VCAM_IO_PMU	.		56	GPIO7	AF14	1.8V
57	GPIO12	AE12	1.8V	58	GND	.	
59	RCP_A	J4	1.8V	60	GPIO18	AC8	1.8V
61	RCN_A	J5	1.8V	62	VMCH_PMU	.	
63	GND	.		64	MSDC1_CMD	E3	1.8V
65	CMMCLK	G6	1.8V	66	MSDC1_DAT3	E2	1.8V
67	GND	.		68	MSDC1_DAT2	F2	1.8V
69	RDN1_A	J2	1.8V	70	MSDC1_DAT1	D3	1.8V
71	RDP1_A	J3	1.8V	72	MSDC1_DAT0	D2	1.8V
73	RDN0_A	H1	1.8V	74	MSDC1_CLK	D1	1.8V
75	RDP0_A	H2	1.8V				

1.3 CN1202 Connector

CN1202 is dedicated for HDMI output signals. The pin definition is shown in Table3-3.

Table 3-3 CN1202 Connector

CN1202 Pin#	Signal Name	MT8362 Pin #	CN1202 Pin#	Signal Name	MT8362 Pin #
1	GND		2	GND	
3	HDMITX_CH1_P	AD23	4	HDMITX_CLK_M	AC21
5	HDMITX_CH1_M	AE23	6	HDMITX_CLK_P	AB21
7	GND		8	GND	
9	HDMITX_CH0_M	AD22	10	HDMISD	AD8
11	HDMITX_CH0_P	AC22	12	GND	
13	GND		14	CEC	AE8
15	HDMITX_CH2_M	AE24	16	HTPLG	AF8
17	HDMITX_CH2_P	AD24	18	GND	
19	GND		20	HDMISCK	AE9

How to Process SB30 :

SB30 is base on Android 8.1 OS , to access SB30, please install display share tools in PC

If you have no ADB driver, You can find ADB driver from web side or download form [android link](#)

There are many APPs you can use, you can download tools from web side:

For example:

1. Google Vyser

Vysor lets you view and control your Android on your computer. Easy peasy.

Please find Vysor App under link: <http://www.vysor.io/download/>

2. Scrcpy APP,

This application provides display and control of Android devices connected on USB (or over TCP/IP). It does not require any *root* access. It works on *GNU/Linux, Windows* and *MacOS*

Please find scrcpy App under link: <https://github.com/Genymobile/scrcpy>

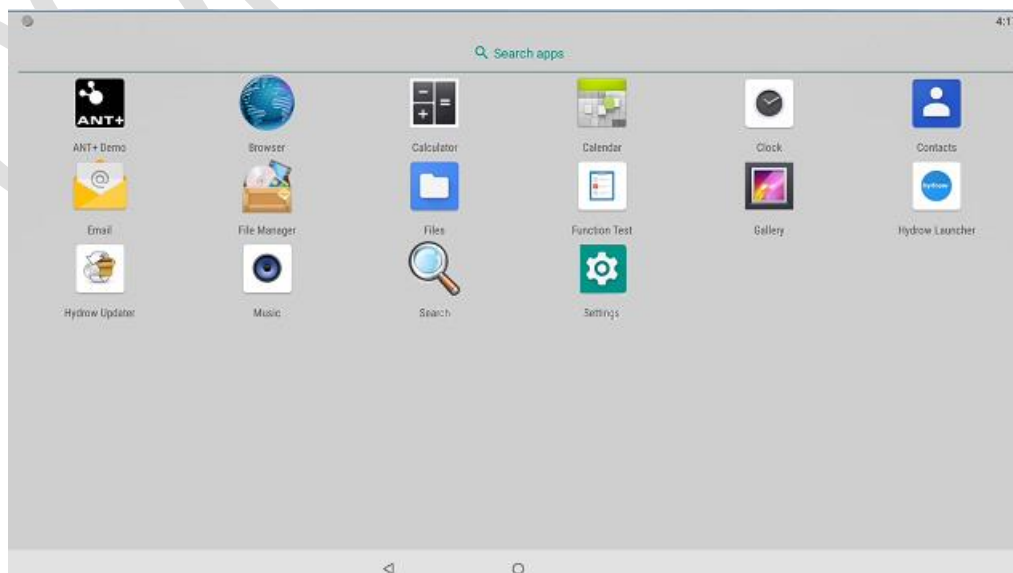
Getting Started

The Module can function with external EVB board and only DC power input only, and no battery included. Once you've plug in the DC adapter, you can turn on your SB30 and start using it.

Set up your SB30 for the first time

Please follow the instruction showed on the SB30.

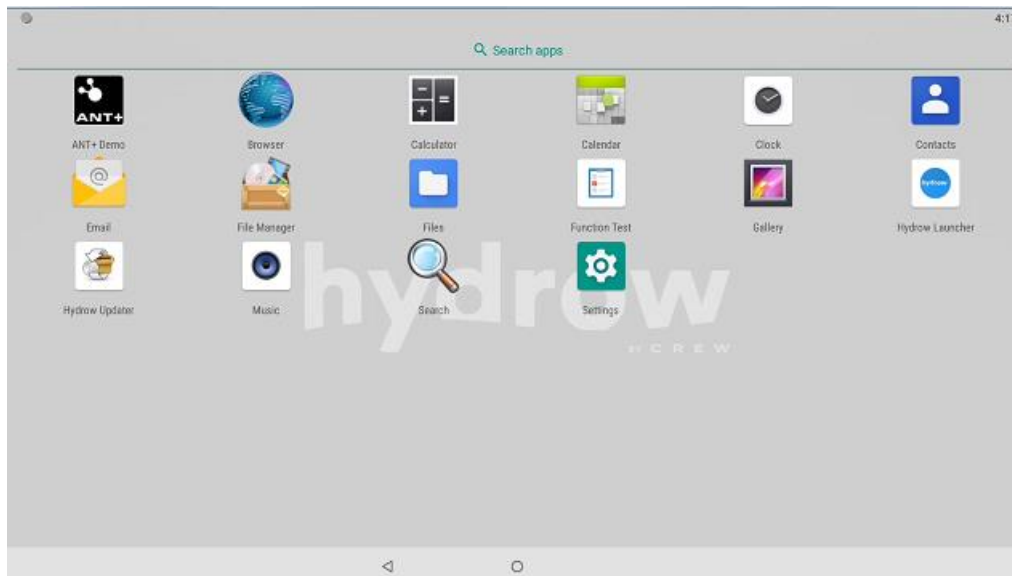
Home



The Home screen is your starting point for using the applications on your SB30.

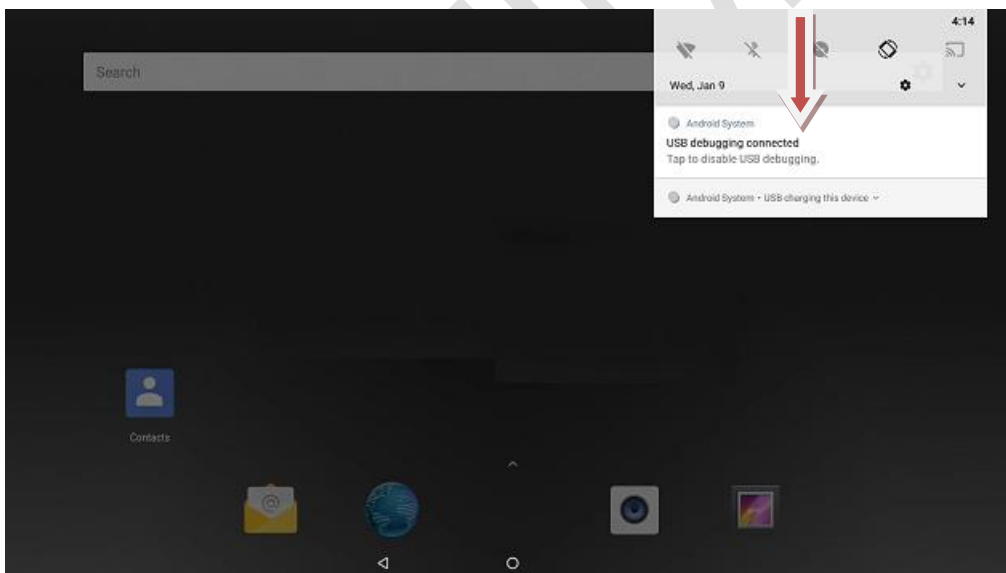
There are many programs on applications ,

Enjoy the SB30 !!

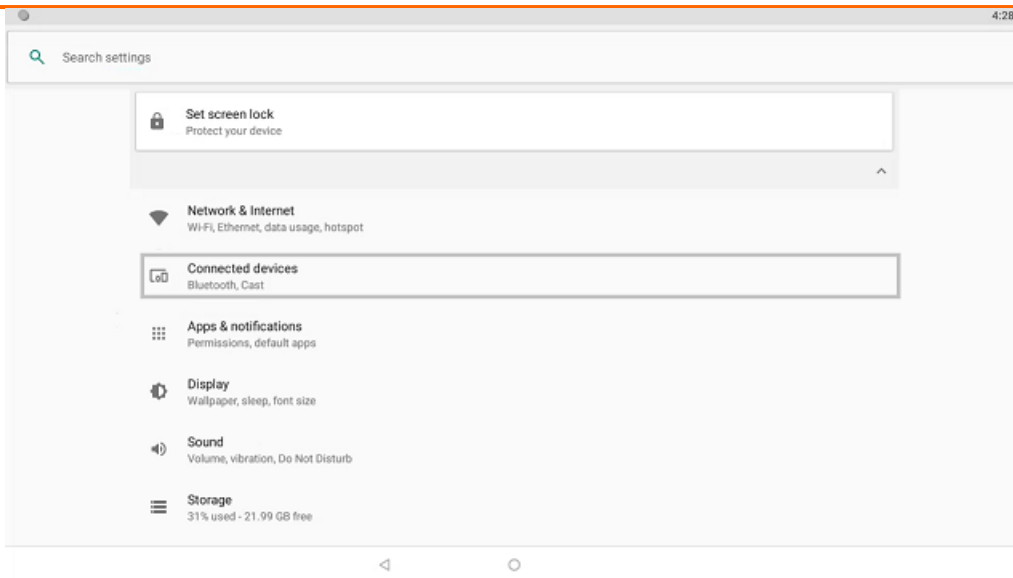


Setting Wireless connection:

1.Quick setting: Swipe down to show quick setup options

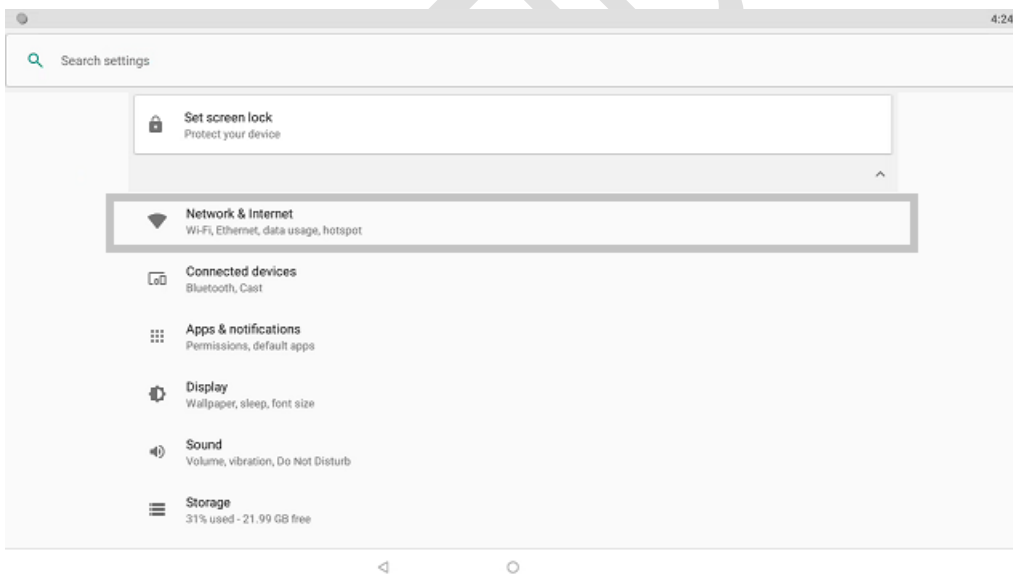


2.1 Normal setting: To have WLAN and BT connection



1. **Make device discoverable:** Under “Settings”, choose “Connected devices”. Tap “Bluetooth” to turn on it and tap “Search for devices”. The Bluetooth indicator then appears in the status bar.
2. **Scan for devices:** After scanning, there will be a list of the IDs of all available Bluetooth devices in range. If the device you want to pair with isn’t in the list, ensure that the other device is turned on and set to be discoverable.
3. **Pair with the Bluetooth device:** Tap the name of an available Bluetooth device to pair with. In the popup “Bluetooth pairing request” dialog, type a PIN. If the pairing is successful, your SB30 connects to the device.

2.2 Normal setting: To have WLAN



1. **Make device discoverable:** Under “Settings”, choose “Network and internet”. Tap “Wi-Fi” to turn on it and Searching Access Point devices.
2. **Scan for devices:** After scanning, there will be a list of the APs SSID of all available APs devices in range. If the device you want to connect with isn’t in the list, ensure that the other device is turned on and set to be discoverable.
3. **Connect to the WLAN APs:** Tap the name of an available Bluetooth device to pair with. In the popup “Bluetooth pairing request” dialog, type a PIN. If the pairing is successful, your SB30 connects to the device.

Federal Communication Commission Interference Statement

15.19

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.

15.105

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.

15.21

Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance. For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible

FCC RF Radiation Exposure Statement:

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module. 20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

END PRODUCT LABELING :

This transmitter module is authorized only for use in devices where the antenna may be installed such that 20 cm may be maintained between the antenna and users (for example access points, routers, wireless ASDL modems, certain laptop configurations, and similar equipment).

The final end product must be labeled in a visible area with the following: **"Contains TX FCC ID: YAISB30"**.

If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.

Industry Canada statement:

This device complies with Industry Canada's licence-exempt RSSs. 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'Industrie 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'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Industry Canada ICES-003 Compliance Label:

CAN ICES-3 (B)/NMB-3(B)

Co-located

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

The transmitter may not be co-located with any other transmitter or antenna

- (i) the device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems; f
- (ii) or devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate; and
- (iii) the worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in Section 6.2.2(3) shall be clearly indicated.

Co-situé

Cet appareil et son antenne (s) ne doivent pas être situés ou fonctionner en conjonction avec une autre antenne ou émetteur.

Le émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

- (i) l'appareil pour fonctionner dans la bande 5150-5250 MHz est réservé à une utilisation en intérieur afin de réduire les risques d'interférences nuisibles à la co-canal systèmes mobiles par satellite;
- (ii) pour les appareils avec antenne (s) détachable, le gain d'antenne maximal autorisé pour les appareils dans la bande 5725-5850 MHz doit être telle que l'équipement satisfait encore la pire limites spécifiées pour le point-à-point et non point-à-point, le cas échéant; opération et
- (iii) l'angle d'inclinaison du pire (s) nécessaire pour rester conforme à la pire exigence de masque d'élévation énoncées dans la section 6.2.2 (3) doit être clairement indiqué.

Radiation Exposure Statement:

OEM integrator is still responsible for testing their end product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the IC authorization is no longer considered valid and the IC No. cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate IC authorization.

Déclaration d'exposition aux rayonnements:

L'intégrateur OEM est toujours responsable du test de son produit final pour toutes les exigences de conformité supplémentaires requises avec ce module installé (par exemple, émissions de périphériques numériques, exigences des périphériques PC, etc.).

REMARQUE IMPORTANTE: Si ces conditions ne peuvent être remplies (par exemple, certaines configurations d'ordinateur portable ou la co-implantation avec un autre émetteur), l'autorisation IC n'est plus considérée comme valide et le numéro IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera responsable de réévaluer le produit final (y compris l'émetteur) et d'obtenir une autorisation IC distincte.

USERS MANUAL OF THE END PRODUCT:

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

LABEL OF THE END PRODUCT:

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains transmitter module IC: 20480-SB30.

ETIQUETTE DU PRODUIT FINAL:

Ce module émetteur est autorisé uniquement pour être utilisé dans un appareil où l'antenne peut être installée de telle sorte que 20 cm puissent être maintenus entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans une zone visible avec les éléments suivants: «Contient le module émetteur IC: 20480-SB30.