



W58

Hardware Design

WIFI Module

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2018-04-10	V1.01	Change the description of BT; Add ESD testing result	Pengcheng.shen
2020-03-30	V1.02	Change document structure	Changwen.wei
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2021-07-20	V1.05	Update WIFI 2.4G&5G consumption data	Meng.Guo
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1 Introduction

This document describes the electronic specifications, RF specifications, interfaces, mechanical characteristics and testing results of the W58 module. With the help of this document, in combination with our application manual and user guide, customers can quickly apply W58 module into wireless applications.

The W58 is a small, low-power, low-cost WIFI and BT module based on Qualcomm QCA-9377-3 chip set. The module can be used in car networking, wireless routing, and other wireless terminals. The module conforms to IEEE Standard protocol of 802.11a/b/g/n/ac+BT. The module is integrated with the baseband, PA and 2.4G/5G RF transceivers, and supports data communications between SIMCom SIM7600 series modules through SDIO3.0 interface. SIM7600 series modules should support SDIO function, and software should support MIFI function.

1.1 W58 Function Diagram

W58 support following features:

- One SDIO3.0 interface
- One WIFI antenna interface
- Two LTE synchronization interface
- One 32KHz clock input
- One PCM interface
- One UART interface
- One WLAN_EN interface
- One BT_EN interface

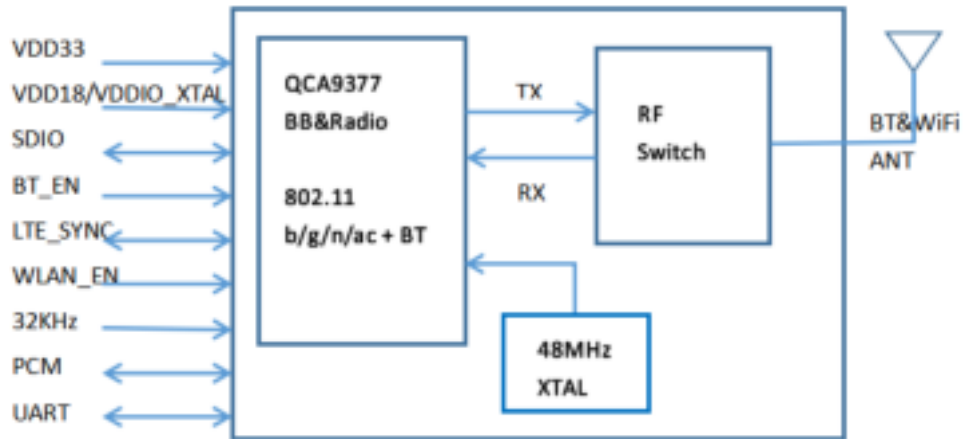


Figure 1: W58 function diagram

1.2 W58 Key Features

Table 1: W58 key features

Feature	Implementation
Power Supply	3.2~3.4V
Max Date Rate	802.11b: 1, 2, 5.5, 11Mbps 802.11g\ a: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n_HT20: MCS0~7 802.11n_HT40: MCS0~7 802.11ac_HT20: MCS0~8 802.11ac_HT40: MCS0~9 802.11ac_HT80: MCS0~9
WLAN Standard	IEEE 802.11b/g/n/a/ac; Bluetooth complies with IEEE 802.15
Modulation Method	DSSS (1/2Mbps), CCK(1/2/5.5/11Mbps), OFDM (6/9/12/18/24/36/48/54Mbps) , HT20 (MCS0~MCS7) OFDM technology combined with BPSK, QPSK, 16-qam and 64-qam,820.11b adopts CCK and DSSS modulation technology; Bluetooth uses GFSK, $\pi/4$ -DQPSK, 8-DPSK
SDIO	Support 4 bit SDIO 3.0, Max 208MHz
Antenna Interface	1x1
Physical characteristics	Size: 16.6* 13* 2.1mm Weight: 1g
Temperature range	Normal operation: -40°C ~ +85°C Storage temperature: -45°C ~ +90°C

2 Package Information

2.1 Pin Out Diagram

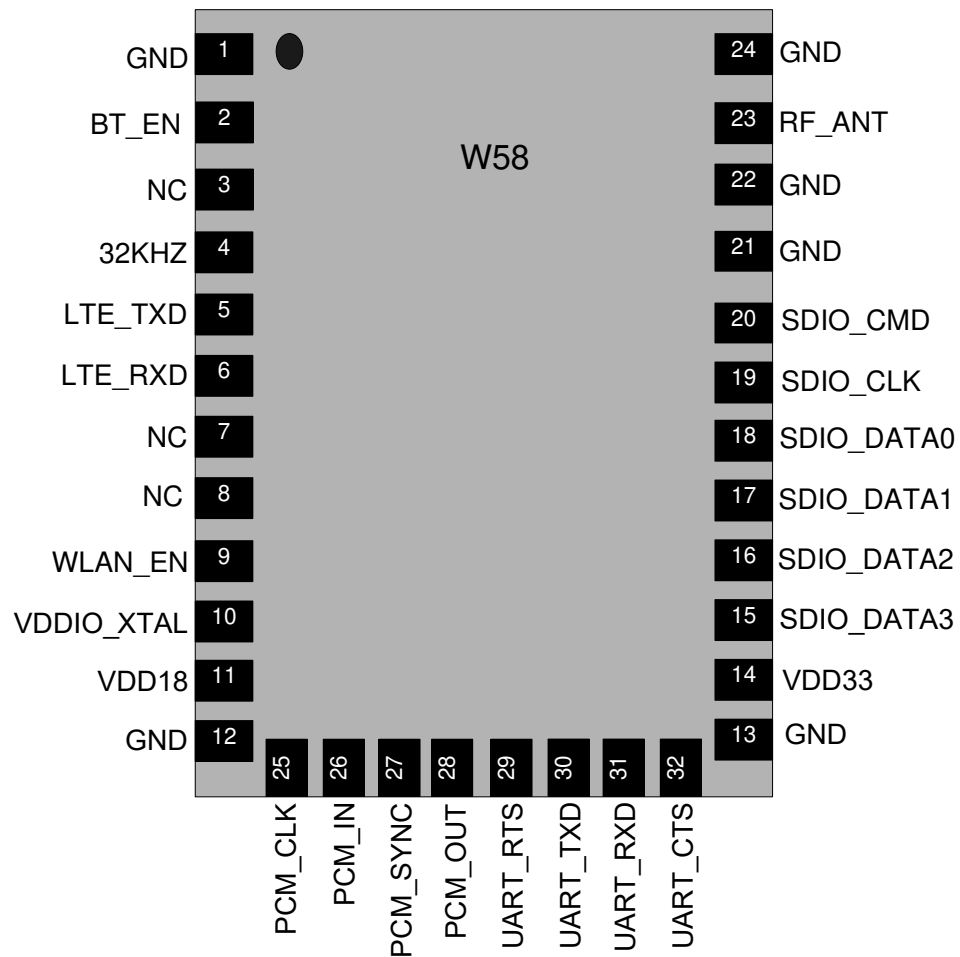


Figure 2: W58 Pin out diagram

2.2 Pin Description

Table 2: Pin Description

Pin name	Pin number	I/O	Description	Comment
Power Supply				
VDD33	14	PI	Main Power supply	
VDD18	11	PI	Power supply for I/O	
VDDIO_XTAL	10	PI	Power supply for clock	
GND	1,12,13,21,22,24		GND	
GPIO				
LTE_TXD	5	DO	LTE TX	
LTE_RXD	6	DI	LTE RX	
BT_EN	2	DI	EN for BT	keep open if unused BT
WLAN_EN	9	DI	EN for WLAN	
SDIO3.0				
SDIO_CLK	19	DI	SDIO CLK	
SDIO_CMD	20	IO	SDIO CMD	
SDIO_DATA0	18	IO	SDIO DATA0	
SDIO_DATA1	17	IO	SDIO DATA1	
SDIO_DATA2	16	IO	SDIO DATA2	
SDIO_DATA3	15	IO	SDIO DATA3	
PCM				
PCM_CLK	25	DI	PCM CLK	keep open if unused BT
PCM_IN	26	DI	PCM IN	
PCM_SYNC	27	DO	PCM SYNC	
PCM_OUT	28	DO	PCM OUT	
UART				
UART_RTS	29	DO	UART RTS	keep open if unused BT
UART_TXD	30	DO	UART TXD	
UART_RXD	31	DI	UART RXD	
UART_CTS	32	DI	UART CTS	
Clock Input				
32KHz	4	I	For BT sleep mode	
RF Antenna				
RF_ANT	23	IO		
Others				
NC	3,7,8			Keep open

2.3 Package Dimensions

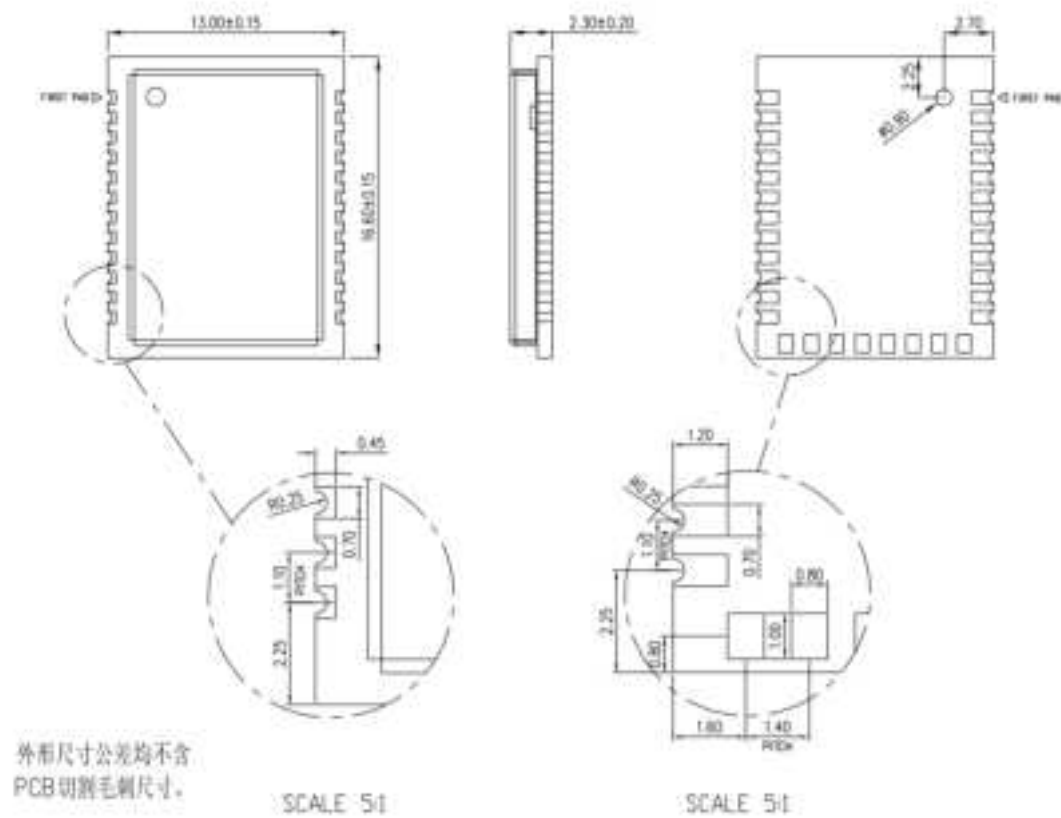


Figure3: Dimensions of W58 (Unit: mm)

3 Application Interface

3.1 Power Supply

There are 3 parts of power supply for W58. VDD33 is main power supply, The transmitting burst will cause voltage drop and the power supply must be able to provide sufficient current up to 700mA; VDD18 is for GPIO and can be supplied by module's VDD_1V8, the routing line of VDD18 needs to meet the width of at least 300mA current, and the parallel capacitance is not greater than 10uF; VDD_XTAL is for XTAL and can be supplied by SIM7600 series module's VDD_1V8. When all power are supplied W58 will work well together with SIM7600 series modules.

Timing of power on\off :

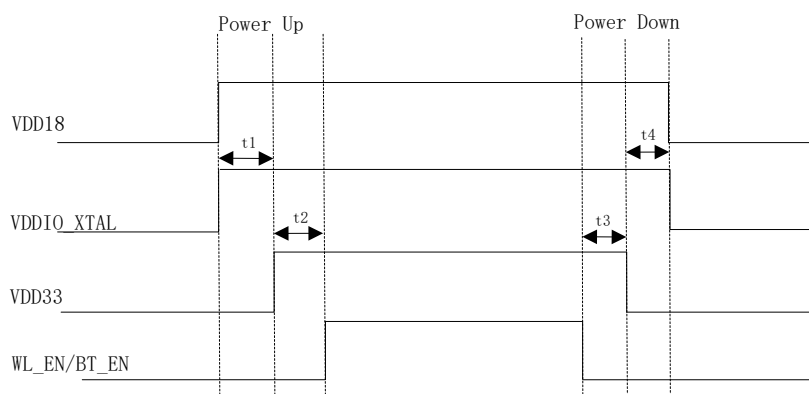


Figure5: Timing of power on\off

Table 3: Parameter on timing of power on\off

Parameter	Description	Min	Type	Max	Unit
t1	1.8V to 3.3V	0	2.2	-	s
t2	3.3V to WLAN_EN	-	244	-	ms
t3	WLAN_EN to 3.3V	-	0	-	ms
t4	3.3V to 1.8V	-	0	-	s

Reference design of VDD33 power supply is as following, PWR_CTL must be connected to pin33 of SIM7600 series modules.

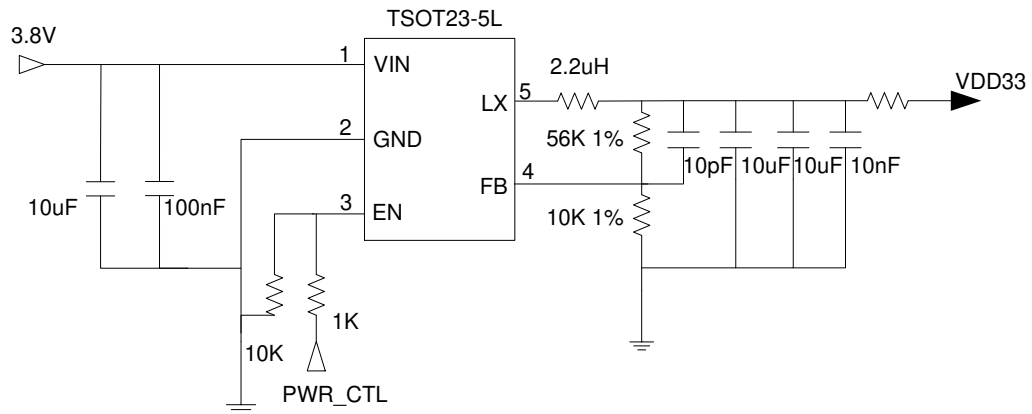


Figure6: Reference design of VDD33

3.2 SDIO

The SDIO3.0 interface supports 208MHz maximum clock frequency. As its speed rate is too high, more sensitive to interference, so need routing GND protection, SDIO go online ground plane for the bottom of the need to continuously complete, and isometric and 50Ω impedance control, the length of SDIO bus should be no more than 8.4 cm long, online capacitance does not exceed 20pf, line spacing for the line width of 2 ~ 3 times, and other devices and lines near SDIO should keep 0.5 mm.

In order to facilitate the commissioning of SDIO, the resistor between W58 and SIM7600 series modules can be concatenated with 0 ohms, and the resistance is close to W58.

The connection between W58 and SIM7600 series modules through SDIO.

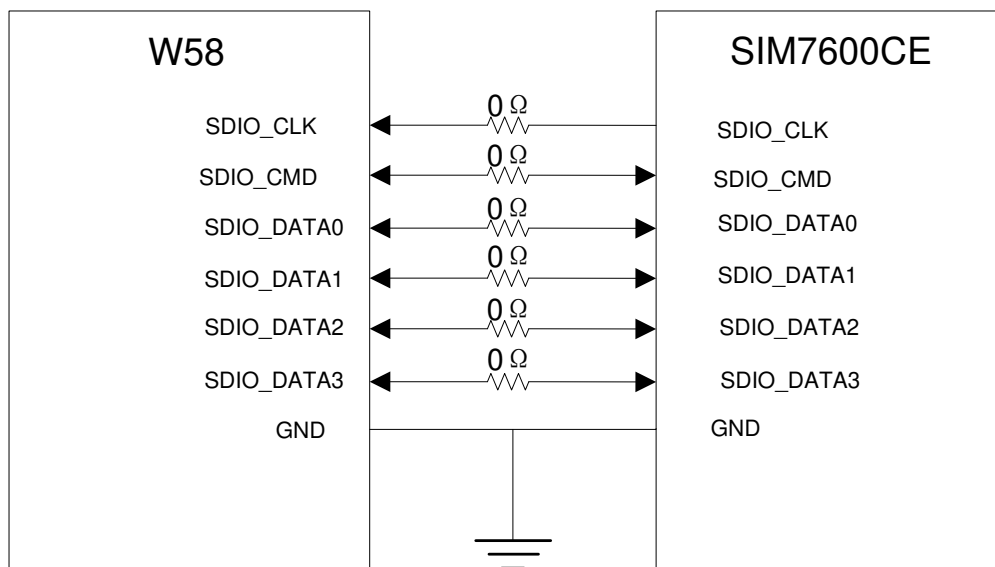


Figure7: SDIO connection

W58 supports 4 bit SDIO3.0 mode:

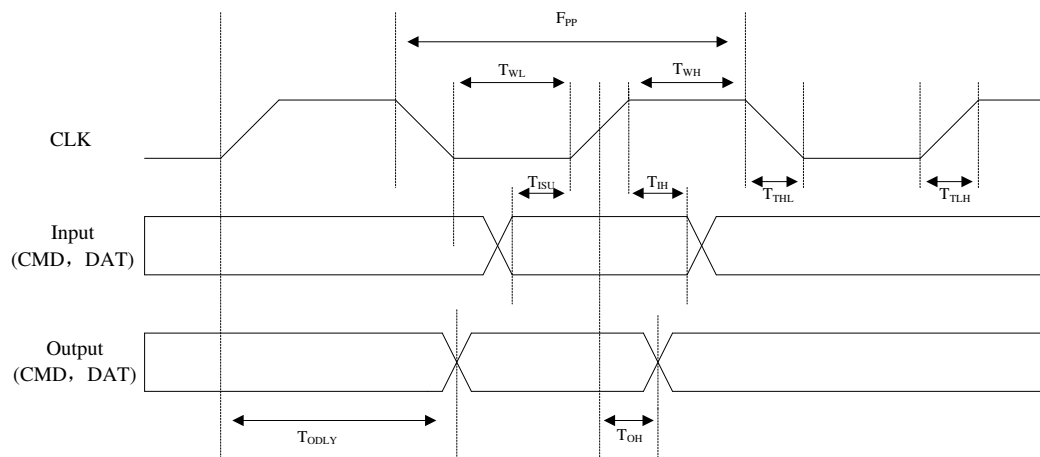


Figure8: SDIO Timing

Table 4: SDIO Timing

Parameter	Description	Min	Max	Unit	Comment
F_{PP}	Clock frequency	0	208	MHz	$C_L \leq 10pF$
T_{WL}	Active low level	2.5	-	ns	$C_L \leq 10pF$
T_{WH}	Active high level	2.5	-	ns	$C_L \leq 10pF$
T_{TLH}	Active low to high	-	1.8	ns	$C_L \leq 10pF$
T_{THL}	Active high to low	-	1.8	ns	$C_L \leq 10pF$

NOTE

In order to enhance the anti-static ability, the parasitic capacitance of TVS should not be greater than 0.5PF at the indirect TVS of the SDIO interface between W58 and SIM7600 series modules.

3.2 32KHz

The 32KHz clock is for sleep mode of Bluetooth, the routing line of it should be as short as possible and also need GND protection.

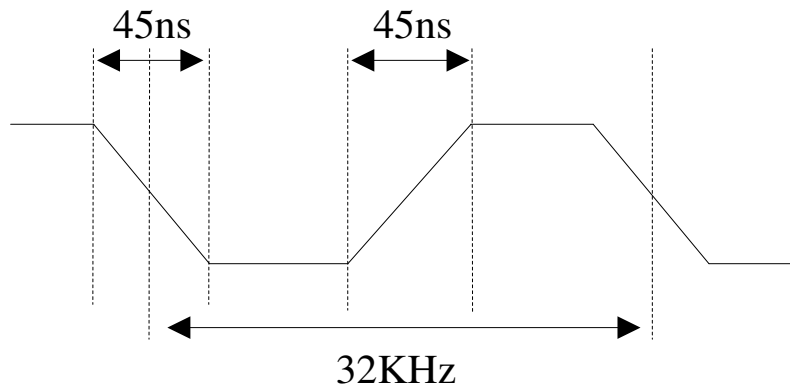


Figure9: Timing of 32KHz

Table 5: 32KHz

Description	Min	Typ	Max	Unit
Frequency	-	32.768	-	KHz
Active low level		15.26	-	us
Active high level		15.26	-	us
Active low to high	--	45	--	ns
Active high to low	--	45	--	ns
Input high voltage	1.44	1.8	2	V
Input low voltage	-0.3	0	0.36	V

3.4 WLAN_EN

WLAN_EN control signal are applied from SIM7600 series modules, effective when high level.

3.5 BT_EN

BT_EN control signal is applied from SIM7600 series modules, effective when high level, under developing now.

3.6 LTE SYNC

To reduce the mutual interference between LTE and WIFI, please connect LTE_TXD to pin85 of SIM7600 series modules, and LTE_RXD to pin50 of SIM7600 series modules.

3.7 PCM

PCM is for audio feature with BT module, under developing now.

3.8 UART

UART is for communication with SIM7600 series modules for BT feature, under developing now.

3.9 Antenna

Pin23 is for antenna, the characteristic impedance is 50Ω.

3.9.1 Frequency band

Table 6: Frequency band

Parameter	Value	Unit
Frequency range	2402~2484	MHz
	5170~5825	

3.9.2 Reference design for RF

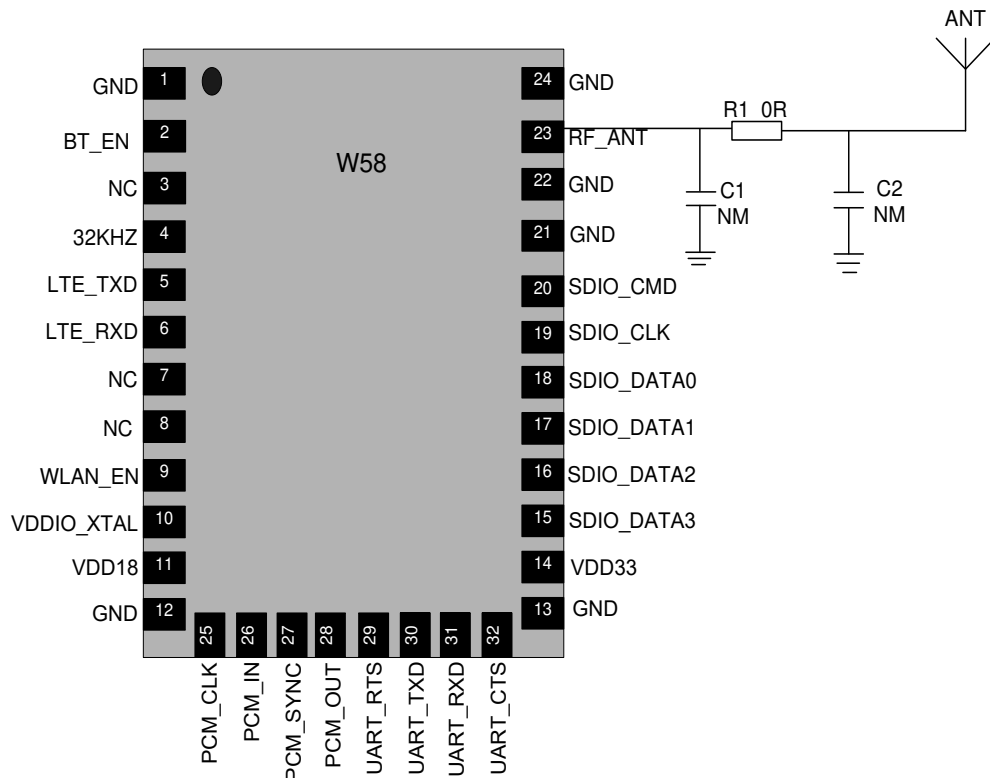


Figure10: Reference design of RF

W58 provides an RF welding disc interface for connecting external antennas. The RF wiring connected to the module RF antenna welding disc is made with a micro-strip line or other type impedance line. The impedance must be controlled at about 50 ohms, and the routing line is as short as possible. In order to obtain better RF performance, two GND pads on each side of the RF interface are needed.

3.9.3 Requirement for antenna installation

Table 7: Requirement for antenna installation

Parameter	Requirement
Antenna Type	External Antenna
Antenna Interface	RP-SMA
Frequency range	600 ~ 7000mhz
SWR	≤ 3:1
Line loss	<1dB
Gain (dBi)	2.4G~2.97dBi; 5G~5.60dBi
Input impedance (Ω)	50
Direction	Vertical

4 Electrical and Radio Characteristics

4.1 Power supply Characteristics

Table 8: Absolute maximum ratings

Parameter	Description	Min	Type	Max	Unit
VDD33	Main power supply	-0.3	-	3.65	V
VDD18	Power for IO	-0.3	-	4	V
VDDIO_XTAL	Power for XTAL	-0.3	-	4	V
VIH	Input high level voltage	-0.3	-	2	V

Table 9: Input range

Parameter	Description	Min	Type	Max	Unit
VDD33	Main power supply	3.2	3.3	3.4	V
VDD18	Power for IO	1.71	1.8	-	V
VDDIO_XTAL	Power for XTAL	1.71	1.8	-	V

4.2 IO Characteristics

Table 10: IO characteristics

Parameter	Description	Min	Type	Max	Unit
VIH	Input high level	1.26	1.8	2.0	V
VIL	Input low level	-0.3	0	0.54	V
VOH	Output high level	1.4	1.8	1.8	V
VOL	Output low level	0	0	0.4	V

4.3 RF Characteristics

Table 11: Conducted output power

Mode	Typical	Unit
2.4G WIFI	<=17	dBm
5G WIFI	<=17	dBm
BT BLE	<=1	dBm
BT EDR	<=9	dBm

Table 12: Receive Sensitivity

Band	Type	Unit
2.4G11b@1Mbps	-95	dBm
2.4G 11b@11 Mbps	-94	dBm
2.4G 11g@6Mbps	-91	dBm
2.4G 11g@54Mbps	-78	dBm
2.4G 11n@HT20-MCS0	-90	dBm
2.4G 11n@HT20-MCS7	-75	dBm
5G 802.11a @6Mbps	-89.4	dBm
5G 802.11n @ HT20-MCS7	-69.7	dBm
5G 802.11n @ HT40-MCS1	-83	dBm
5G 802.11ac @ HT20-MCS1	-82.5	dBm
5G 802.11ac @ HT40-MCS7	-66.7	dBm
5G 802.11ac @ HT80-MCS7	-61.5	dBm
BT BLE	-90	dBm
BT EDR	-90	dBm

4.4 ESD

Table 13: ESD (Temperature: 25°C, humidity: 45%)

Parameter	Connect ($\pm$ kv)	Air ($\pm$ kv)
GND	3	6
Power	2	4
CLK input	1	2
GPIO	1	2
SDIO interface	1	2

RF interface	3	6
--------------	---	---

NOTE

ALL SDIO testing results were added TVS(ESD5301N-2/TR).

4.5 Power consumption

4.5.1 WIFI power consumption

In sleep mode, the power consumption of W58 is 30uA.

Table 14: Power consumption for continuous 2.4 GHz Tx at 3.3 V

2.4G	Rate	Band width	Average current	Tune-up power (dBm)
802.11b	11Mbps	20MHz	251mA	17dBm $\pm$ 2dB
802.11g	54Mbps	20MHz	203mA	14dBm $\pm$ 2dB
802.11n	MCS7	20MHz	220mA	12dBm $\pm$ 2dB
	MCS7	40MHz	176mA	11dBm $\pm$ 2dB

Table15: Power consumption for continuous 5 GHz Tx at 3.3 V

5G Band 1	Rate	Band width	Average current	Tune-up power (dBm)
802.11a	54Mbps	20MHz	276mA	10dBm $\pm$ 2dB
802.11n	MCS7	20MHz	275mA	10dBm $\pm$ 2dB
	MCS7	40MHz	242mA	10dBm $\pm$ 2dB
802.11ac	MCS7	20MHz	276mA	10dBm $\pm$ 2dB
	MCS7	40MHz	243mA	10dBm $\pm$ 2dB
	MCS7	80MHz	219mA	8dBm $\pm$ 2dB
5G Band 2	Rate	Band width	Average current	Tune-up power (dBm)
802.11a	54Mbps	20MHz	276mA	15dBm $\pm$ 2dB
802.11n	MCS7	20MHz	275mA	12dBm $\pm$ 2dB
	MCS7	40MHz	242mA	12dBm $\pm$ 2dB
802.11ac	MCS7	20MHz	276mA	11dBm $\pm$ 2dB
	MCS7	40MHz	243mA	10dBm $\pm$ 2dB
	MCS7	80MHz	219mA	9dBm $\pm$ 2dB
5G Band 3	Rate	Band width	Average current	Tune-up power (dBm)

802.11a	54Mbps	20MHz	276mA	15dBm $\pm$ 2dB
802.11n	MCS7	20MHz	275mA	12dBm $\pm$ 2dB
	MCS7	40MHz	242mA	13dBm $\pm$ 2dB
802.11ac	MCS7	20MHz	276mA	11dBm $\pm$ 2dB
	MCS7	40MHz	243mA	11dBm $\pm$ 2dB
	MCS7	80MHz	219mA	8dBm $\pm$ 2dB
5G Band 4	Rate	Band width	Average current	Tune-up power (dBm)
802.11a	54Mbps	20MHz	276mA	16dBm $\pm$ 2dB
802.11n	MCS7	20MHz	275mA	14dBm $\pm$ 2dB
	MCS7	40MHz	242mA	14dBm $\pm$ 2dB
802.11ac	MCS7	20MHz	276mA	13dBm $\pm$ 2dB
	MCS7	40MHz	243mA	12dBm $\pm$ 2dB
	MCS7	80MHz	219mA	10dBm $\pm$ 2dB

4.5.2 BT power consumption

W58 separately powered 3.3V, Bluetooth power consumption in BLE mode:

Bluetooth off: 0.525uA

Bluetooth on, no terminal connection: 385.2uA

Bluetooth is turned on, and when the terminal is connected, Bluetooth enters standby: 2.199mA

Power consumption of connected instrument:

BLE 1 $\pm$ 2dBm

EDR power consumption:

GFSK 8 $\pm$ 2dBm

π /4-DQPSK 7 $\pm$ 2dBm

8-DPSK 7 $\pm$ 2dBm

5 SMT Production Guide

5.1 Moisture Sensitivity Level (MSL)

Module is qualified to Moisture Sensitivity Level (MSL) 3 in accordance with JEDEC J-STD-033. If the prescribed time limit is exceeded, users should bake module for 192 hours in drying equipment (<5% RH) at 40+5/-0°C, or 72 hours at 85+5/-5°C. Note that plastic tray is not heat-resistant, and only can be baked at 45° C.

Table 16: Moisture Sensitivity Level and Floor Life

Moisture Sensitivity Level (MSL)	Floor Life (out of bag) at factory ambient $\leq 30^{\circ}\text{C}$ /60% RH or as stated
1	Unlimited at $\leq 30^{\circ}\text{C}$ /85% RH
2	1 year
2a	4 weeks
3	168 hours
4	72 hours
5	48 hours
5a	24 hours
6	Mandatory bake before use. After bake, it must be reflowed within the time limit specified on the label.

NOTE

IPC / JEDEC J-STD-033 standard must be followed for production and storage.

5.2 SMT Reflow Profile

SIMCom provides a typical soldering profile. Therefore, the soldering profile shown below is only a generic recommendation and should be adjusted to the specific application and manufacturing constraints.

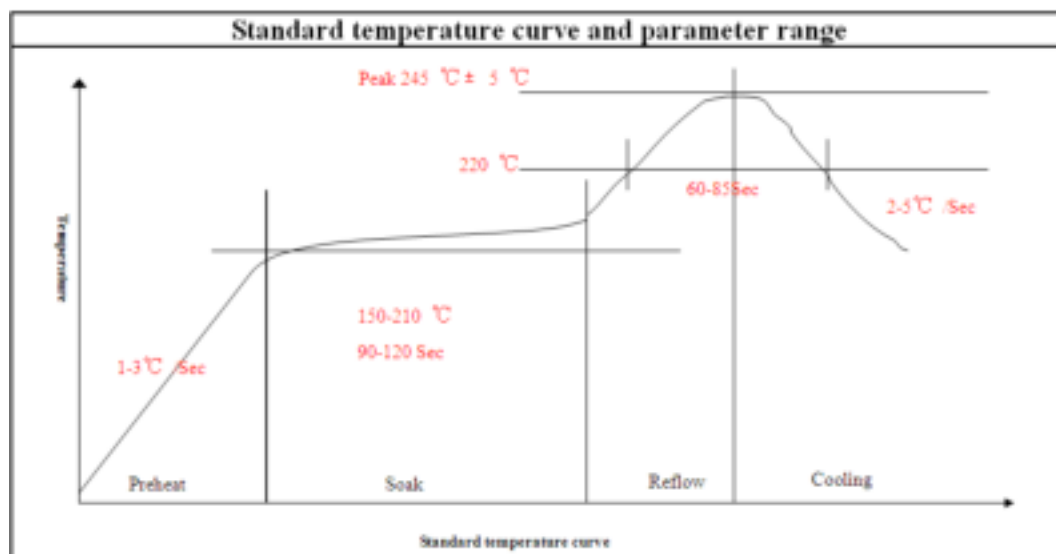


Figure 11: The ramp-soak-spike reflow profile of module

6 Packaging

Module support tray packaging.

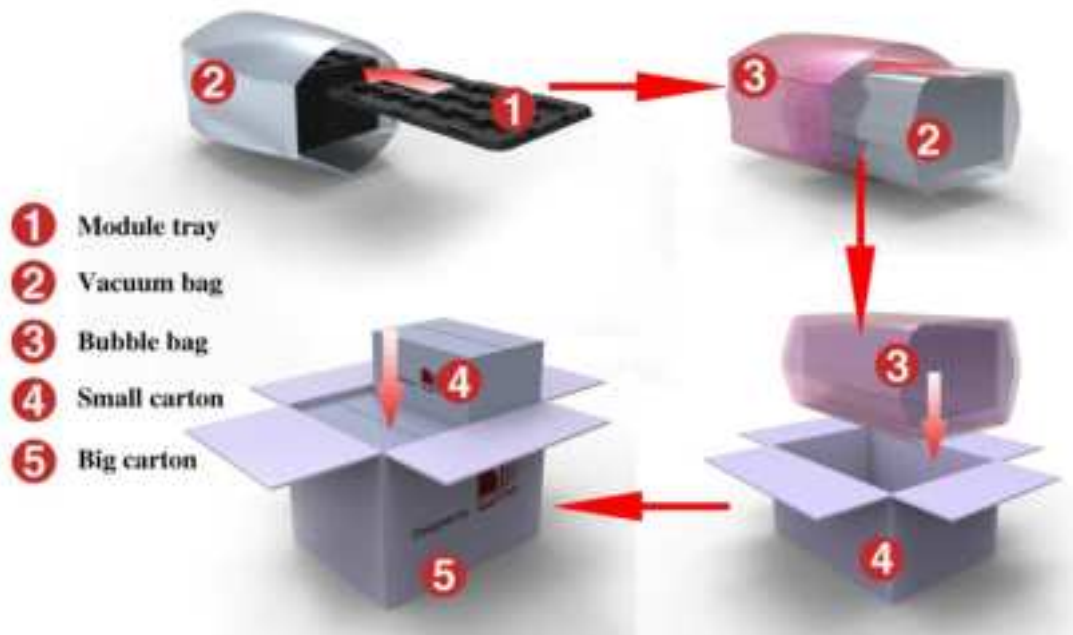


Figure 12: packaging diagram

Module tray drawing:

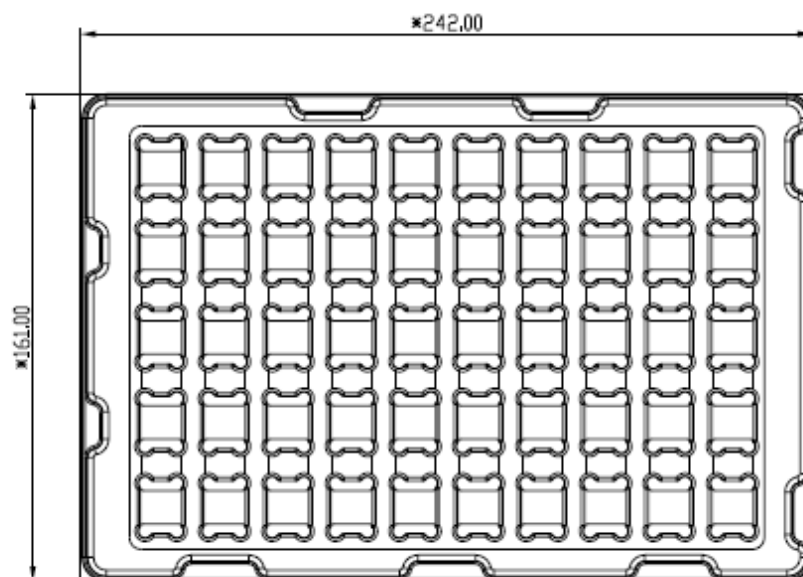


Figure 13: Tray drawing

Table 17: Tray size

Length ($\pm 3\text{mm}$)	Width ($\pm 3\text{mm}$)	Number
242.0	161.0	50

Small carton drawing:

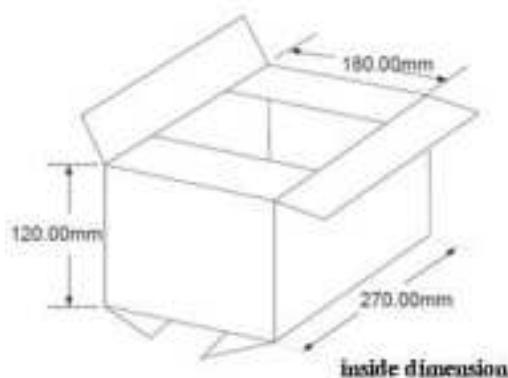


Figure 14: Small carton drawing

Table 18: Small Carton size

Length ($\pm 10\text{mm}$)	Width ($\pm 10\text{mm}$)	Height ($\pm 10\text{mm}$)	Number
270	180	120	50*20=1000

Big carton drawing:

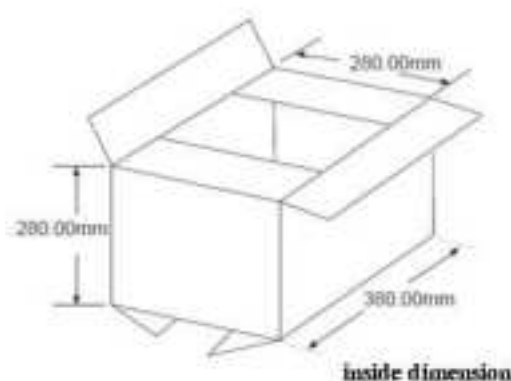


Figure 15: Big carton drawing

Table 19: Big Carton size

Length ($\pm 10\text{mm}$)	Width ($\pm 10\text{mm}$)	Height ($\pm 10\text{mm}$)	Number
380	280	280	1000*4=4000

7 Appendix

7.1 Related Documents

Table 20: Related Documents

NO	Title	Description
[1]	SIM7600+W58Reference Design	

7.2 Terms and Abbreviations

Table 21: Terms and Abbreviations

Abbreviation	Description
BPSK	Binary Phase Shift Keying
B	Bidirectional digital input
CCK	Complementary Code Keying
DSSS	Direct Sequence Spread Spectrum
ESD	Electrostatic Discharge
I/O	Input/Output
LTE	Long Term Evolution
Mbps	Millio n Bits Per Second
MCS	Modulation and Coding Scheme
OFDM	Orthogonal Frequency Division Multiplexing
QAM	Quadrature Amplitude Modulation
QPSK	Quadrature Phase Shift Keying
RF	Radio Frequency
RX	Receive Direction
SDIO	Secure Digital Input and Output Card
TX	Transmitting Direction
VSWR	Voltage Standing Wave Ratio
WLAN	Wireless Local Area Networks

7.3 Items to be covered by Single modular transmitters.

- 1) The module has its own RF shielding.
- 2) The modular has buffered data inputs, it is integrated in chip
- 3) The modular has power supply regulation
- 4) This module is equipped with specified external antenna described in this filling and the antenna connector fulfills the 15.203 requirements.
- 5) The module can be tested in a stand-alone configuration.
- 6) The label is independent fixed

Only antenna(s) tested with this transmitter or similar antenna(s) with equal gain may be used with this transmitter. Separate approval is required for all other operating configurations, including portable configurations with respect to 2.1093 and different antenna configurations.

However, Standalone module approval can be obtained for devices with radar detection capability on a case by case basis.

7.4 Safety Caution and Statements

Table 22: Safety Caution

Marks	Requirements
	When in a hospital or other health care facility, observe the restrictions about the use of mobiles. Switch the cellular terminal or mobile off, medical equipment may be sensitive and not operate normally due to RF energy interference.
	Switch off the cellular terminal or mobile before boarding an aircraft. Make sure it is switched off. The operation of wireless appliances in an aircraft is forbidden to prevent interference with communication systems. Forgetting to think much of these instructions may impact the flight safety, or offend local legal action, or both.
	Do not operate the cellular terminal or mobile in the presence of flammable gases or fumes. Switch off the cellular terminal when you are near petrol stations, fuel depots, chemical plants or where blasting operations are in progress. Operation of any electrical equipment in potentially explosive atmospheres can constitute a safety hazard.
	Your cellular terminal or mobile receives and transmits radio frequency energy while switched on. RF interference can occur if it is used close to TV sets, radios, computers or other electric equipment.
	Road safety comes first! Do not use a hand-held cellular terminal or mobile when driving a vehicle, unless it is securely mounted in a holder for hands free operation. Before making a call with a hand-held terminal or mobile, park the vehicle.
	GSM cellular terminals or mobiles operate over radio frequency signals and cellular networks and cannot be guaranteed to connect in all conditions, especially with a mobile fee or an invalid SIM card. While you are in this condition and need emergent help, please remember to use emergency calls. In order to make or receive calls, the cellular terminal or mobile must be switched on and in a service

area with adequate cellular signal strength.

Some networks do not allow for emergency call if certain network services or phone features are in use (e.g. lock functions, fixed dialing etc.). You may have to deactivate those features before you can make an emergency call.

Also, some networks require that a valid SIM card be properly inserted in the cellular terminal or mobile.

FCC Statement

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.

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

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.

Important Note:

Radiation Exposure Statement

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

Country Code selection feature to be disabled for products marketed to the US/Canada.

This device is intended only for OEM integrators under the following conditions:

1. The antenna must be installed such that 20 cm is maintained between the antenna and users, and
2. The transmitter module may not be co-located with any other transmitter or antenna,
3. For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change. (if modular only test Channel 1-11)

As long as the three conditions above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Important Note:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID 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 FCC authorization.

End Product Labeling

The final end product must be labeled in a visible area with the following "Contains FCC ID: 2AJYU-8PY A00C".

Manual Information to the End User

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.

ISED Statement

-English: This device complies with Industry Canada license-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. The digital apparatus complies with Canadian CAN ICES-3 (B)/NMB-3(B).

- French: 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This radio transmitter (ISED certification number:23761-8PYA010) has been approved by Industry Canada to operate with the antenna types listed with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (ISED certification number:23761-8PYA010) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Radiation Exposure Statement

This equipment complies with Canada 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.

Déclaration d'exposition aux radiations

Cet équipement est conforme Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20cm entre le radiateur et votre corps.

This device is intended only for OEM integrators under the following condition:

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

As long as the condition above is met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes:

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

Tant que les 1 condition ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

Important Note:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC 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 Canada authorization.

Note Importante:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling

The final end product must be labeled in a visible area with the following: Contains IC: 23761-8PYA010.

Plaque signalétique du produit final

Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: Contient des IC: 23761-8PYA010

Manual Information to the End User

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.

Caution:

- (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;

- (ii) (ii) For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the EIRP limit;
- (iii) (iii) For 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 EIRP limits specified for point-to-point and non-point-to-point operation as appropriate; and
Operations in the 5.25-5.35GHz band are restricted to indoor usage only.

Avertissement:

- (i) les dispositifs fonctionnant dans la bande de 5150 à 5250MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
- (ii) pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5250 à 5350MHz et de 5470 à 5725 MHz doit être conforme à la limite de la p.i.r.e.;
- (iii) pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis (pour les dispositifs utilisant la bande de 5725 à 5850 MHz) doit être conforme à la limite de la p.i.r.e. spécifiée pour l'exploitation point à point et l'exploitation non point à point, selon le cas;
Les opérations dans la bande de 5.25-5.35GHz sont limitées à un usage intérieur seulement.