

**VT-TAB185-SKLU
User's Manual**



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Revision History:

No.	Version	Description	Date
1	V1.0	First release	Sep,23, 2017
2	V1.1	Modify description of WLAN	Oct,18, 2017
3	V1.2	Modify picture	Nov,15, 2017
4	V1.3	Modify description of battery LED	Dec,7, 2017
5	V1.4	Update LTE Module description	Feb,5, 2018
6	V1.5	Add light sensor, SIM Card, SD Card description	May,8, 2018
7	V1.6	Add speaker and MIC description	May,25, 2018
8	V1.7	Modify Approvals	Jun,12, 2018

Table of Contents

1	Foreword	5
1.1	Copyright Notice	5
1.2	Notes	6
1.3	Statement	6
1.4	Disclaimer	6
1.5	Limitation of Liability/Non-warranty	6
1.6	Safety Instructions	7
1.7	Precautions	7
1.8	Safety Instructions for Power Cables and Accessories.....	8
2	VT-TAB185-SKLU Hardware Instructions.....	10
2.1	Product Appearance	10
2.2	Product Usage Environment	12
2.3	Product installation method	14
2.4	Specifications	16
2.5	Interface Instructions.....	17
2.6	Interface Instructions.....	19
2.7	Interface Description	20
2.7.1	USB Host Connector	20
3	Software Introduction	22
3.1	About This Manual.....	22
3.2	Windows OS Support	22
3.3	VT-TAB185-SKLU Features.....	23
4	Driver Installation.....	24
4.1	Graphic Card Driver.....	25

4.2	Audio Card Driver.....	27
4.3	Chipset Driver	29
4.4	TXE	33
5	Firmware Update	34
5.1	BIOS Firmware	34
5.2	EC Firmware	34
6	Module function	35
6.1	4G Module	35
6.1.1	Driver Install	37
6.1.2	Dial-Up.....	37
6.2	WIFI Module	41
6.3	Sensor Tool	43
6.4	Fan Control	45
6.5	Bluetooth	46
7	Tips	47

1 Foreword

1.1 Copyright Notice

While all information contained herein have been carefully checked to assure its accuracy in technical details and printing, Vantron assumes no responsibility resulting from any error or features of this manual, or from improper uses of this manual or the software. Please contact our technical department for relevant operation solutions if there is any problem that cannot be solved according to this manual.

Vantron reserves all rights of this manual, including the right to change the content, form, product features, and specifications contained herein at any time without prior notice. The latest version of this manual is at www.vantrontech.com.cn. Please contact Vantron for further information:

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Vantron reserves the right of all publicly-released copies of this manual.

1.2 Notes

Applicable notes are listed in the following table:

Sign	Notice Type	Description
	Notice	Important information and regulations
	Caution	Caution for latent damage to system or harm to personnel

1.3 Statement

It is recommended to read and comply with this manual before operating VT-TAB185-SKLU which provides important guidance and helps decreasing the danger of injury, electric shock, fire, or any damage to the device.

1.4 Disclaimer

Vantron assumes no legal liability of accidents resulting from failure of conforming to the safety instructions.

1.5 Limitation of Liability/Non-warranty

For direct or indirect damage to this device or other devices of Vantron caused by failure of conforming to this manual or the safety instructions on device label, Vantron assumes neither warranty nor legal liability even if the device is still under warranty.

The VT-TAB185-SKLU should be installed, debugged and maintained by professional people.

The unauthorized antennas are not permitted to be installed or to be changed by non-professional people. To run the device normally, only

specific antennas are approved to be assembled together by professional people.

1.6 Safety Instructions

- ✧ Keep and comply with all operation instructions, warnings, and information.
- ✧ Pay attention to warnings on this device.
- ✧ Read the following precautions so as to decrease the danger of injury, electric shock, fire, or any damage to the device.
- ✧ Operations and Service instructions are provided with the equipment.
- ✧ The maximum operation temperature is 45°C.

1.7 Precautions

- ✧ Pay attention to the product labels/safety instructions printed on silk screens.
- ✧ Do not try repairing this product unless declared in this manual.
- ✧ Keep away from heat source, such as heater, heat dissipater, or engine casing.
- ✧ Do not insert other items into the slot (if any) of this device.
 - Keep the ventilation slot ventilated for cooling.
 - System fault may arise if other items are inserted into this device.
- ✧ Installation: ensure correct installation according to instructions from the manufacturer with recommended installation tools.
- ✧ Ensure ventilation and smoothness according to relevant ventilation standard.

1.8 Safety Instructions for Power Cables and Accessories



Proper power source only: Start only with power source that satisfies voltage label and the voltage necessary according to this manual. Please contact technical support personnel of Vantron for any uncertainty about the requirements of necessary power source.



Use tested power source. This product still contains a button lithium battery as a real-time clock after its external power source is removed and therefore should not be short-circuited during transportation or placed under high temperature.



Place cables properly: Do not place cables at any place with extrusion danger.



Cleaning Instructions

- ✧ Please power off before cleaning the device.
- ✧ Do not use spray detergent.
- ✧ Clean with a damp cloth.
- ✧ Do not try cleaning exposed electronic components unless with a dust collector.
- ✧ Support for special fault: Power off and contact technical support personnel of Vantron in case of the following faults:
 - The device is damaged.
 - The temperature is excessively high.
 - Fault is still not solved after the operation according to the manual.

2 VT-TAB185-SKLU Hardware Instructions

2.1 Product Appearance



Front View

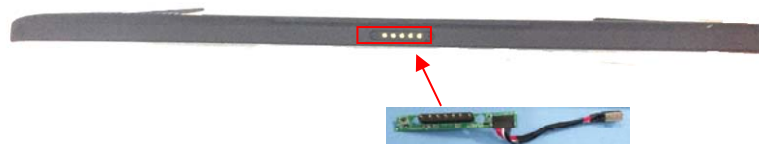




Side view



Back View



Bottom view

2.2 Product Usage Environment

The embedded computer can be used in many occasions with mounting brackets, such as a box with mounting brackets internal, or fixed directly on the wall with mounting brackets, and so on.

Packing in a box can be easy to carry and used in different occasions.



Warning: when using the computer in a box such as a box shown as the above photos, people should keep its body at least 20 centimeter far away from the computer.

Fixed on the wall for indoor environment

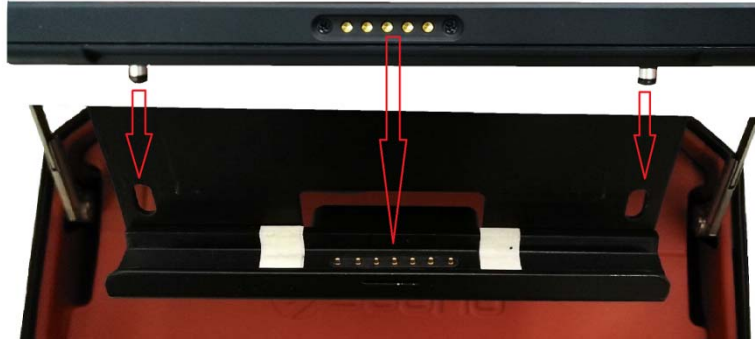


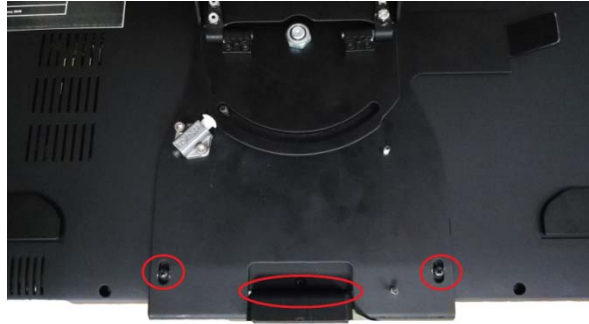
2.3 Product installation method

With its mounting bracket, the embedded computer only can be used in the two environments specified by the manufacturer, and one of the ways we describe is to install it in a box, the other is to be installed on the wall.

How to install in a specific box:

Step 1: we need to install the bottom with its charging socket and two positioning screws of the computer.





Step 2: we need to use one hand to pull the bottom of the computer and the other hand to lift the top of the mounting bracket upward so that it can grip the top of the computer.



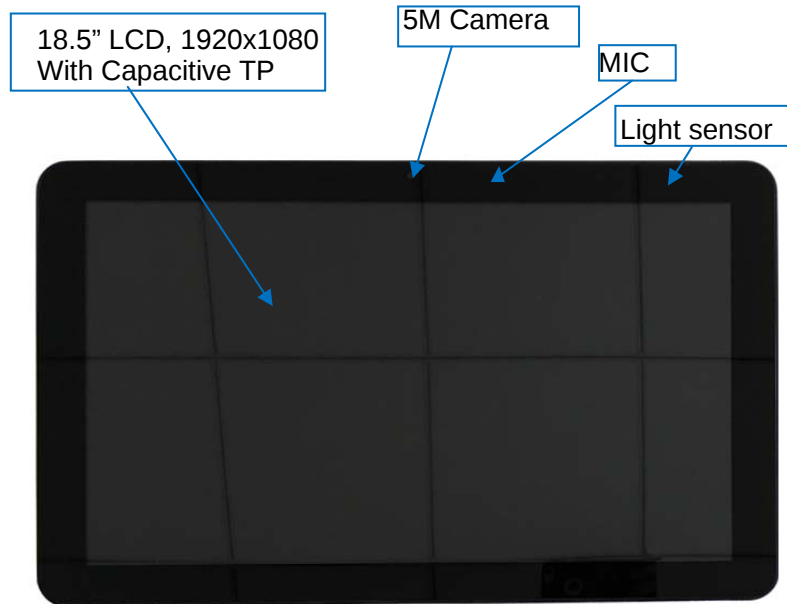
Warning: the installation should be done as above-mentioned, and the installation should be done lightly and without damaging the equipment.

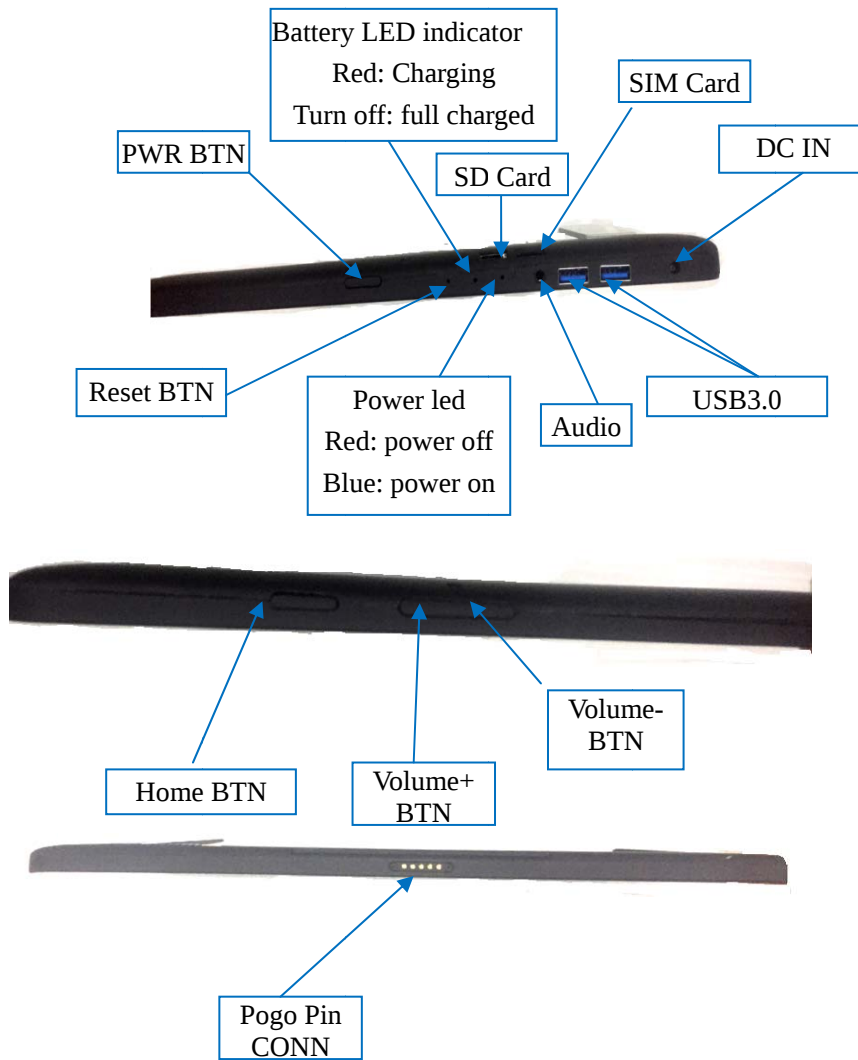
2.4 Specifications

Specifications		
CPU	Processor	Intel®Core™ i5-6300U Base 2.4GHz Turbo 3.0GHz Processor(DUAL CORE)
	On Board RAM	On Board DDR4 1333Mhz up to 8GB
Memory	ROM Internal	M.2 2280 SSD, 1TB
	Display	18.5" 16:9, 2 Channel LVDS LCD, 1920x1080@60Hz LED Back Light, 350cd/ m2
Display	Touch Screen	Capacitive Touch Screen, 10 points
	Camera	Front 5M pixel
Interfaces	Sensor	Ambient light sensor, Accelerometer, magnetometer, gyroscope
	Memory CardReader	MicroSD / micro-SDHC / micro-SDXC(SDXC 3.01)
	USB	2xUSB3.0 Host (Type A)
	Wireless/Bluetooth	802.11 a/b/g/n/ac, 2X M.2 CONN for supporting two WLAN module (PCIE x2 +USB2.0 x2), with 2xMain antenna, and 2xAux Antenna 1x Bluetooth4.2 on 7265 module 1x Bluetooth4.2 on 8265 module(can not work together)
	LTE module	LTE(Band:2/4/5/7/12/13/17/25/26/30/38/41/66) WCDMA/3G(Band:2/4/5)
	RTC	Supported
	Audio	1xline Out 3.5mm(with MIC),1xSpeaker(right channel)
	LED indicators	Power; Charging
	Security	TPM module
	OS	Windows or Linux
Software		

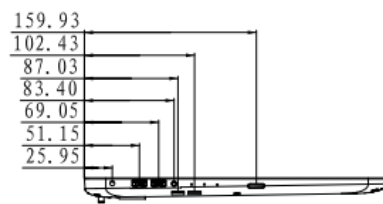
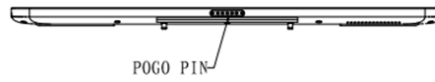
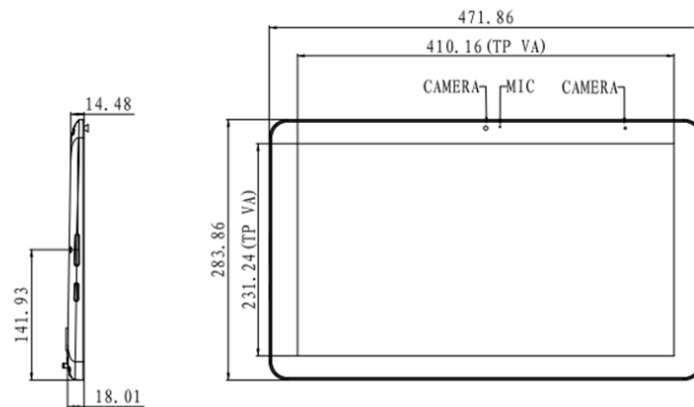
	Applications	SDK Available
Power	Battery	Lithium Ion Battery,4S2P, 15.2V, 3800mAh
	Pogo Pin	DC19V Supply60W(MAX)
	DC Input	DC19V Supply 60W(MAX)
Mechanical	Dimensions	283.86x471.86x18.01mm
	Weight	3.19KG
Environment Condition	Temperature	Operating: 0°C ~ +45°C, Storage: -10~+55°C.
	Humidity	Working 20%~80%, storage 10%~90%
	Approvals	FCC,ISED,CE and UL

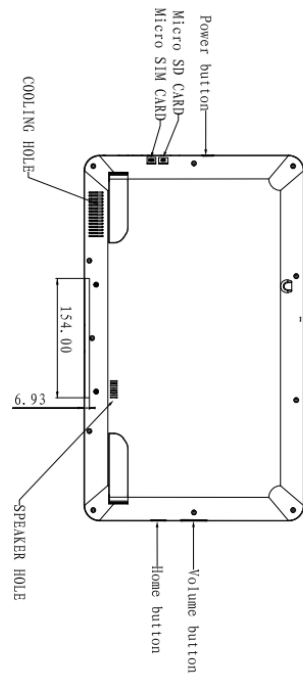
2.5 Interface Instructions





2.6 Interface Instructions

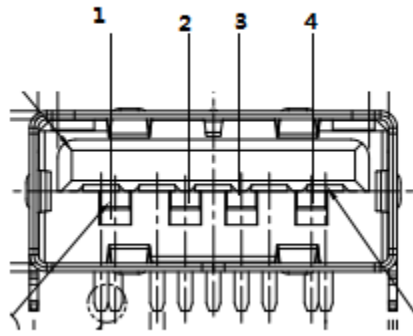




2.7 Interface Description

2.7.1 USB Host Connector

Dual vertical USB A type interface, supporting 2xUSB3.0



Pin	Name	Type	Description
1	AUSB_VCC	P	+5VDC
2	AUSB_DN	IO	USB Data1- Signal
3	AUSB_DP	IO	USB Data1+ Signal
4	AUSB_GND	P	Ground
5	AUSB3.0_RXN	IO	USB3.0 RECEIVE DATA -Signal
6	AUSB3.0_RXP	IO	USB3.0 RECEIVE DATA +Signal
7	AUSB3.0_GND	P	Ground
8	AUSB3.0_TXN	IO	USB3.0 TRANSFER DATA -Signal
9	AUSB3.0_TXP	IO	USB3.0 TRANSFER DATA +Signal

3 Software Introduction

Thank you for choosing Vantron. It is our commitment to provide our valued customers with the embedded devices equipped with the state of the art technology and the best product services.

Vantron's products are based on the Intel Atom processors and have low power consumption and high integration. The products are designed for applications of BT35 in industrials, medicals, financial, retail, vehicle, and transportations etc.

3.1 About This Manual

This manual is for user how to configure and use devices in Windows Win10 system.

3.2 Windows OS Support

The VT-TAB185-SKLU supports the following Windows operating systems, and we just introduce Win10 system in this document.

- Windows* 8 32bit / 64bit
- Windows* Embedded Standard 8 64 bit (WES8)
- Windows 10 Desktop/Windows10 IoT Core

3.3 VT-TAB185-SKLU Features

The below table lists VT-TAB185-SKLU features.

Device Name	Description	
LVDS	Resolution	18.5",2 Channel LVDS TFT, 16:9, 1920x1080,24bit
	Contrast	1000:1
	Brightness	350 cd/ m2
	View Angle	89U/89D,89L/89R
	Touch Screen	Cap Touch Screen
Wireless Communication	2 x 802.11 ac/a/b/g/n Wireless Module with Bluetooth4.0, internal antenna Note: The frequency bands from 5150MHz to 5250MHz for the 2 WLAN modules are designed only for indoor operating.	
USB	2xUSB3.0 Host	
Audio	1xInternal 2W Speaker,1x 3.5mm Combo Jack	
Micro-SD	Support Micro-SD / Micro-SDHC / Micro-SDXC	
Camera	Front 5M	
Sensor	Ambient light sensor, Accelerometer, magnetometer, gyroscope	
LTE module	LN940A9, M.2 CONN	

4 Driver Installation

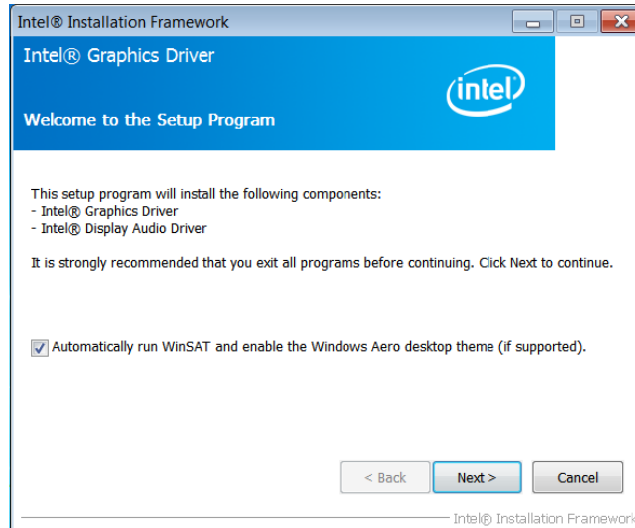
The driver list of WIN10 64bit on VT-TAB185-SKLU as below:

Driver Category	Description/Version	Driver Path
TXE	11.0.6.1194	\Win10 Driver \TXE\ME_Corporate_11.0.6.1194.zip
Chipset	10.1.1.14	\Win10 Driver \Chipset\Chipset_10.1.1.14_Public.zip
Graphic	154028.4501	\Win10 Driver\Graphic \Graphics_win64_154028.4501.zip
Audio	R279	\Win10 Driver\Audio \0006-Win7_Win8_Win81_Win10_R279.zip
BT	20.10.0	\Win10Driver\BT\BT_20.60.0_64_Win10.exe
Wireless	20.10.2	\Win10Driver\ Wireless\WiFi_20.60.0_PROSet64_Win10.exe
SIO Serial	163303	\Win10Driver\ SIO Serial\intel_sio_163303_64_1020n.exe
Sensor Hub	3.1.0.3429	\Win10 Driver\Sensor\intel_iss_3.1.0.3429_w1064.zip
4G	1.0.1.9	\Win10 Driver\4G\Telit Installer_v1.0.1.9.zip

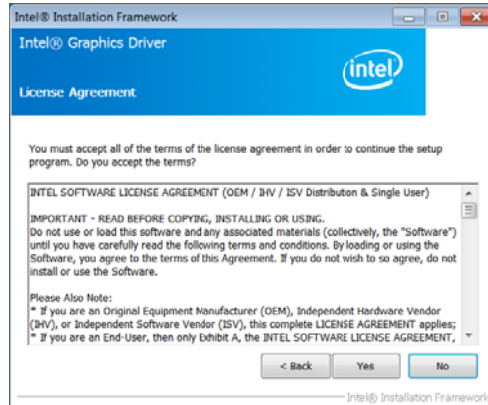
4.1 Graphic Card Driver

Driver Installation:

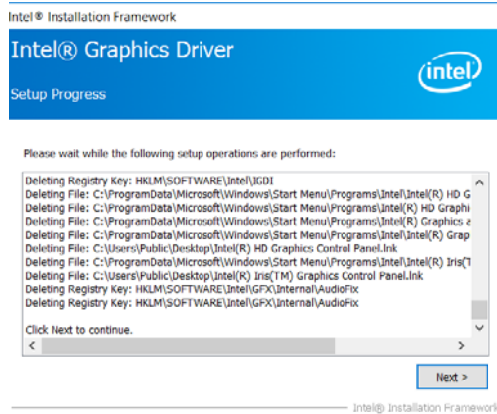
1. Unzip *.zip, Double click setup.exe
2. Show content of driver installation, Then click “Next >”.



3. Read License Agreement carefully, Click “Yes”.



4. Read system requirements and installation information. Then click “Next >”.

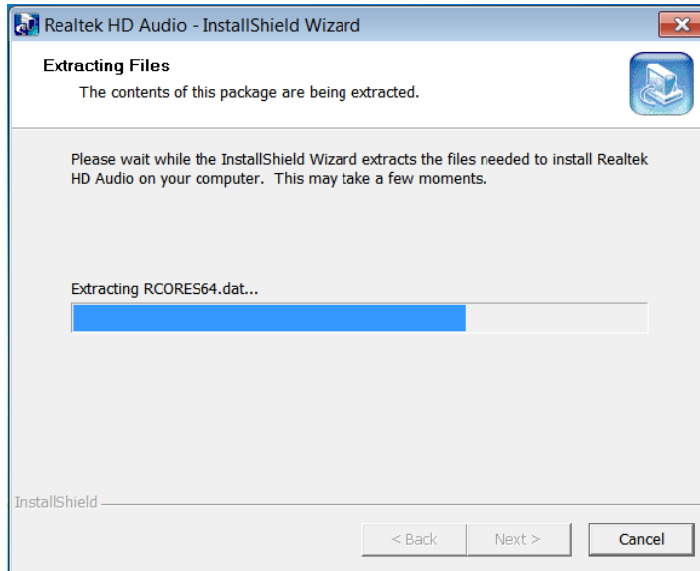


5. Reset system.

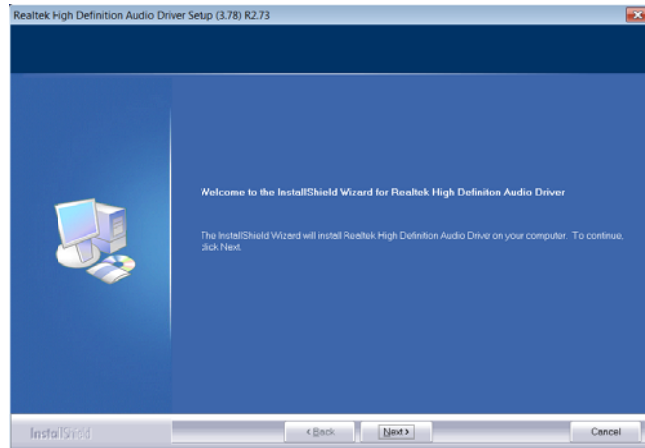
4.2 Audio Card Driver

Driver Installation:

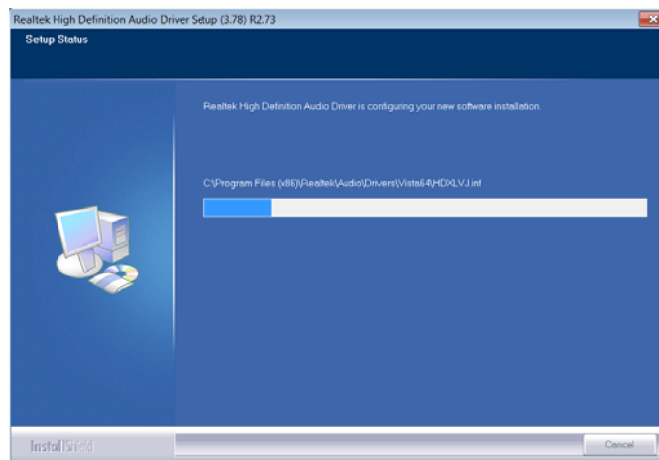
1. Unzip 0006-Win7_Win8_Win81_Win10_R279.zip
2. Double click setup.exe.
3. Extract installation files.

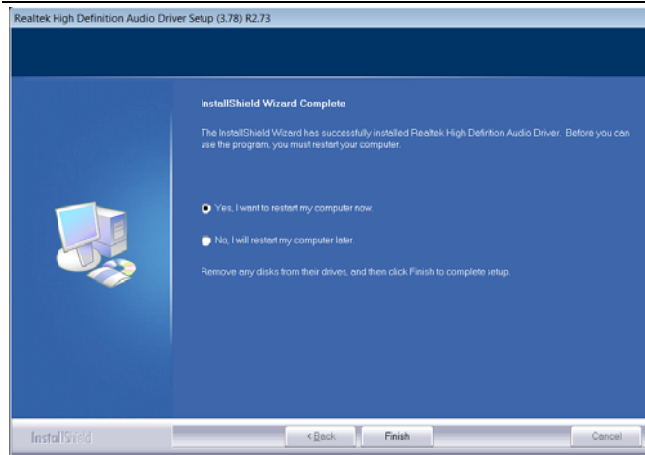


4. Click "Next>"



5. Wait for some while, then finish installation.

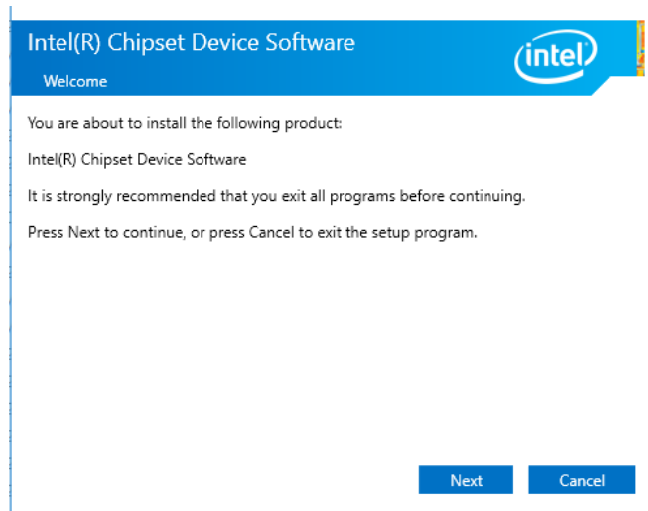




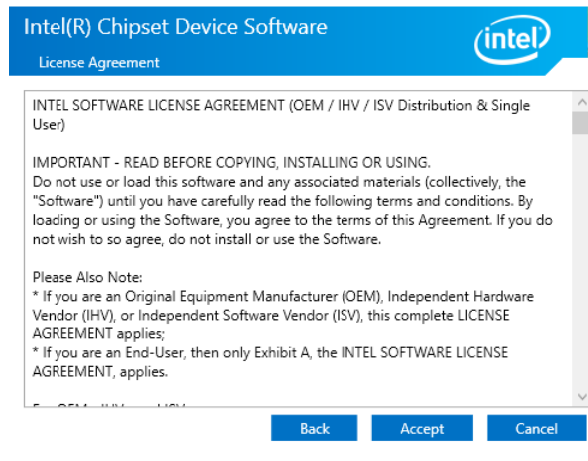
4.3 Chipset Driver

Driver location: \Win10 Driver\Chipset\ chipset_10.1.1.14_public.zip

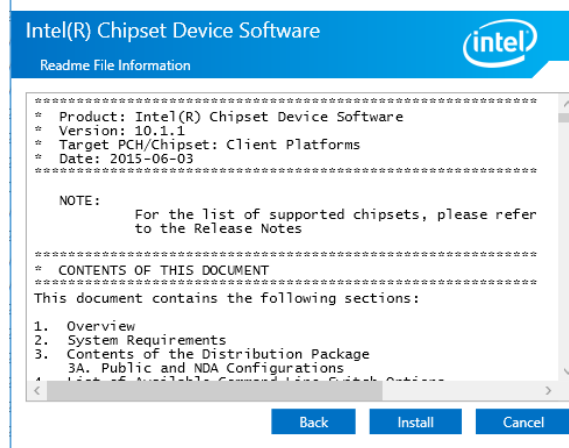
1. Unzip chipset_10.1.1.14_public.zip, Double click "SetupChipset.exe". Then click "Next>"



2. Read License agreement, click “Accept”.



2. Show system requirement and Click "Install".



4. Wait for some minutes, driver is OK.

Intel(R) Chipset Device Software

Completion



You have successfully installed the following product:

Intel(R) Chipset Device Software

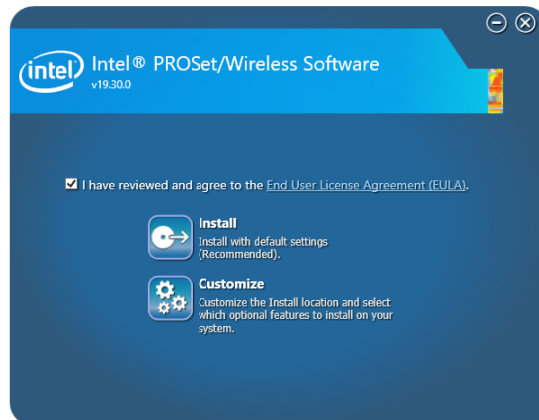
Press Finish to complete the setup process.

[View Log Files](#)

Finish

4.4 TXE

1. Read License agreement, click “Install”.



2. Reset system.



5 Firmware Update

Warning: If Vantron needs to update EC and/or BIOS, please follow the following steps:

1. Upgrade BIOS firmware first
2. Press power button to turn off the machine
3. Press power button to turn on the machine
4. Then upgrade EC firmware
5. Press power button to turn off the machine
6. Press power button to turn on the machine

Otherwise, it may lead to can't boot problem (low probability event).

5.1 BIOS Firmware

For flash details, see \Firmware\BIOS*

5.2 EC Firmware

For flash details, see \Firmware\EC*

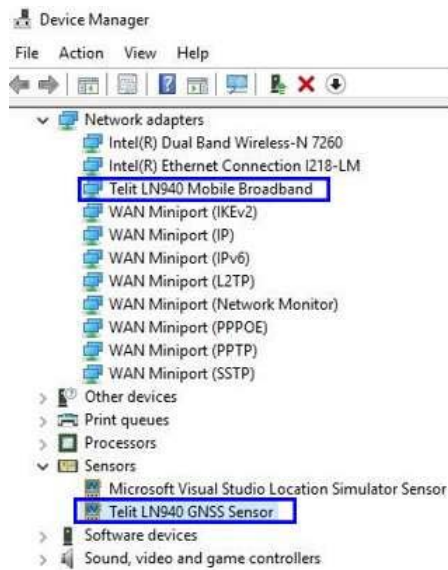
6 Module function

This section describes the use of some modules, such as 4G module and Rotate Screen.

6.1 4G Module

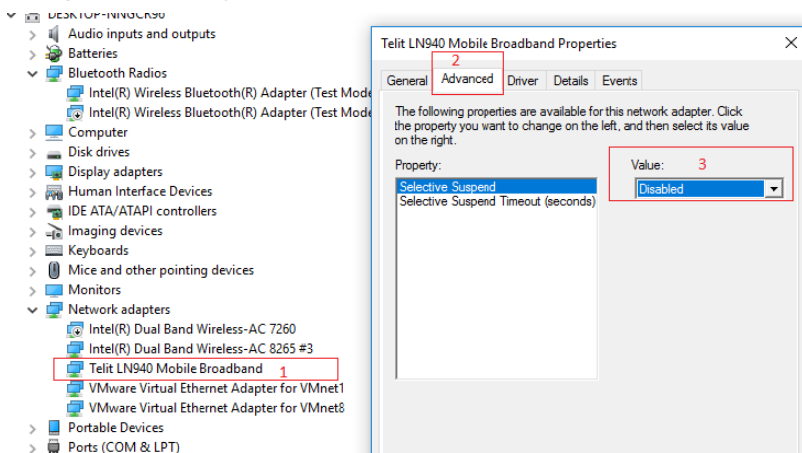
We use LN940A9 module for 4G networking.

How to detect the existence of modules? If we see the following device, the module is installed.





Warning: Please check whether the following configuration is consistent. If not, May cause automatic wake up after sleep.(This configuration is only used for LN940A9)



6.1.1 Driver Install

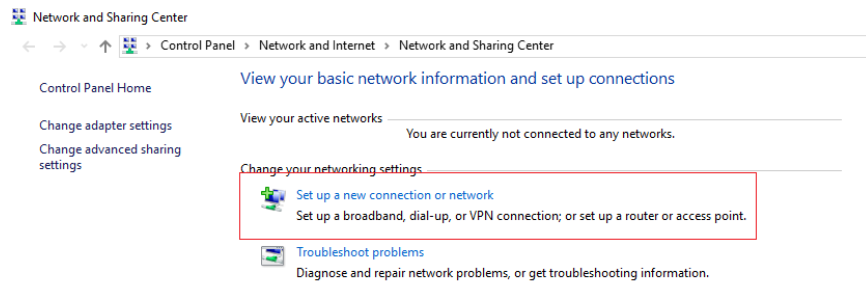
Please refer to \Win10 Driver\4G\LN940Telit
Installer_v1.0.1.9.zip=>LN940 Installer User Guide(Win10).pdf

6.1.2 Dial-Up

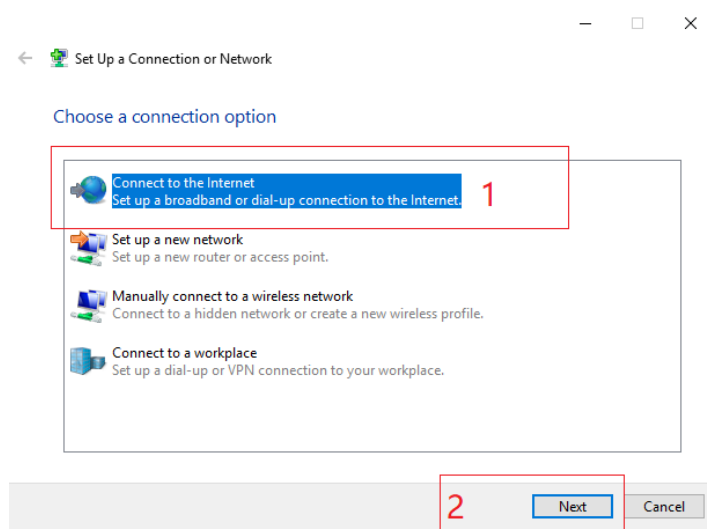
- Insert the SIM card according to the picture below, Pay attention to the direction of the missing angle of SIM card.



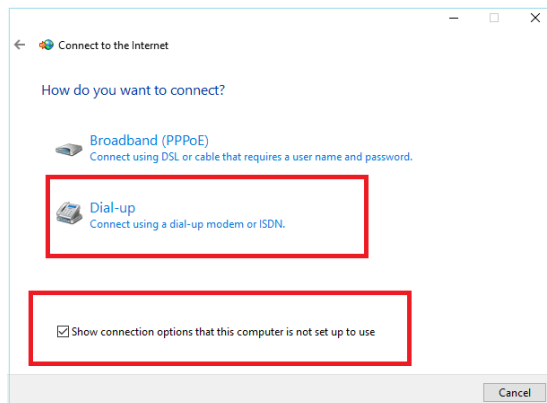
- Open “Network and Sharing Center”, Click “Set up a new connection or network”



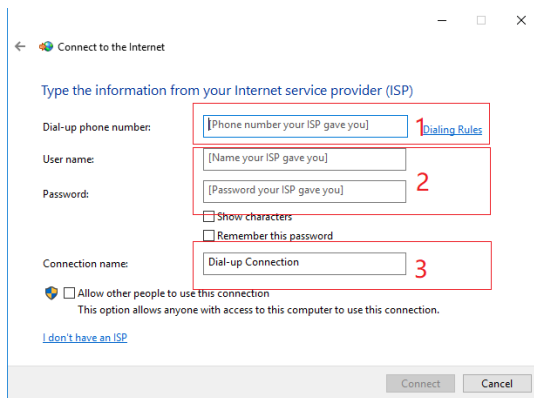
- Select “Connect to the Internet”, then click “Next”



- Click Dial-up to create a dial-up connection, if the option “Dial-up” does not appear, please enable option “Show connection options that this computer is not set up to use”



- Input right phone number, User name and Password according to different telecom operators.



- After completion of the above Settings, Click “Connect”.
If nothing else, the dial-up connection was successfully created,
now, we can surf the Internet.

If dial-up fail, we can check module information by AT command

1. Check module model

AT+GMM

2. Check firmware version

AT+CGMR

3. Check SIM Card if exist

AT+CPIN?

If “+CPIN:READY” is received, SIM card has been inserted into the device.

4. Check signal strength

AT+CSQ

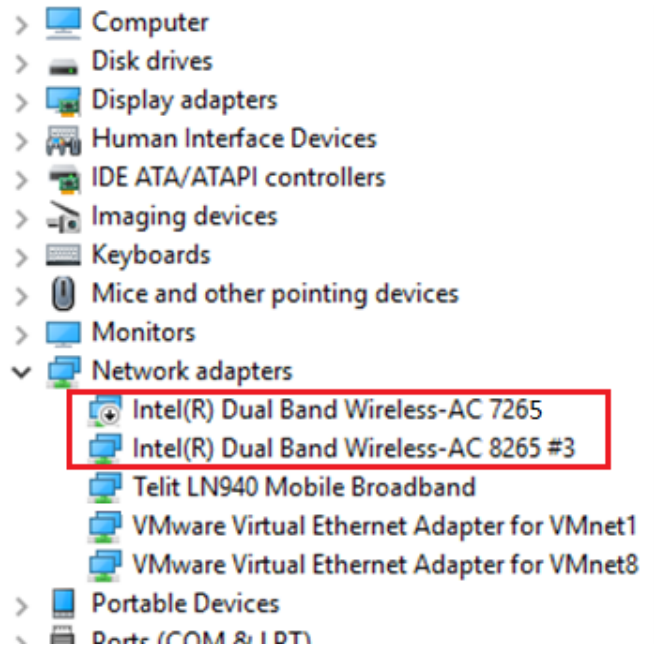
5. Get Serial Number

AT+GSN

6.2 WIFI Module

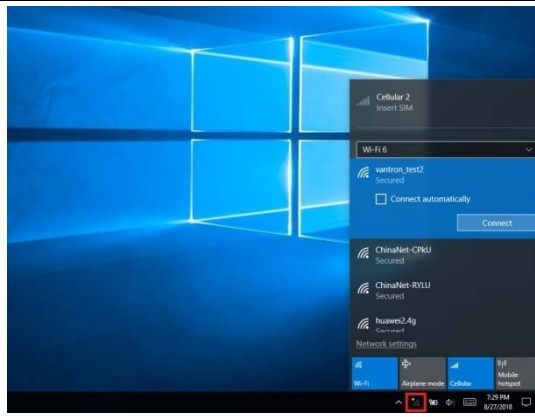
We use Intel 7265 and 8265 for WLAN connecting.

How to detect the existence of modules? If we see the following device, the module is present.

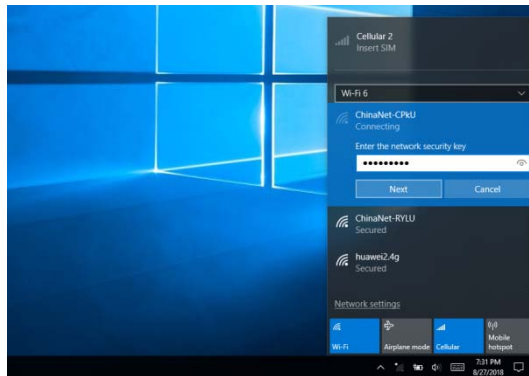


How to connect the network?

Press WIFI button to open available network, then press the network name you want to connect.



Press the Connect button and input the network password, then press the Next button to connect the network.



Warning: 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.

6.3 Sensor Tool

Here we will introduce screen rotation and light sensation.

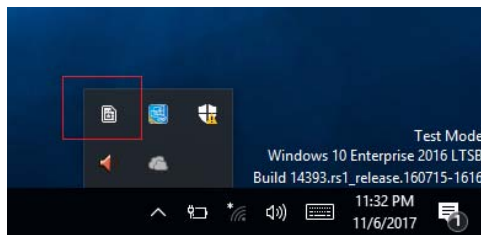
We use LIS3DE as acceleration chip to complete the function of screen rotation and APDS9922 as light sensation chip. They are integrated into sensor tools.

The following is the use of software:

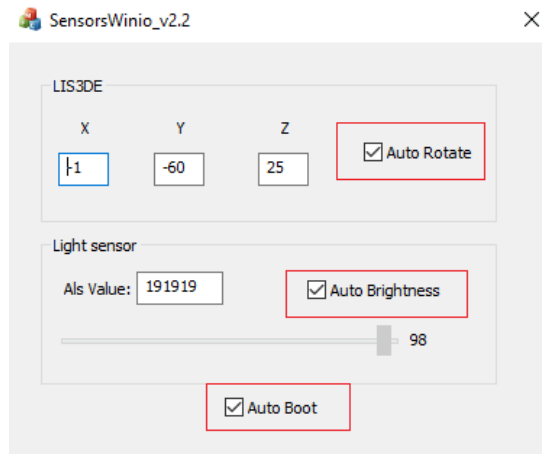
Tool location: \SW Guide\Sensors*

To run this software, install the runtime library “Microsoft Visual C++ 2015 Redistributable Package.exe” first, it is in the directory “\SW Guide”. If we have installed this library, ignore this step.

- Copy SensorsWinio_v[xx].exe and Winio64.sys to “C:\RotateScreen”. If we were the first to enter the system, we need to run “SensorsWinio_v[xx].exe” once with administrator privileges. If the program runs normally, there is a tray icon in the lower right corner of the desktop as below:



- Double click tray icon to open main window as below:



- Setting the default value for the startup configuration according to the red box configuration above.

“Auto Rotate”: If checked, screen rotation according to x, y, z axis data.

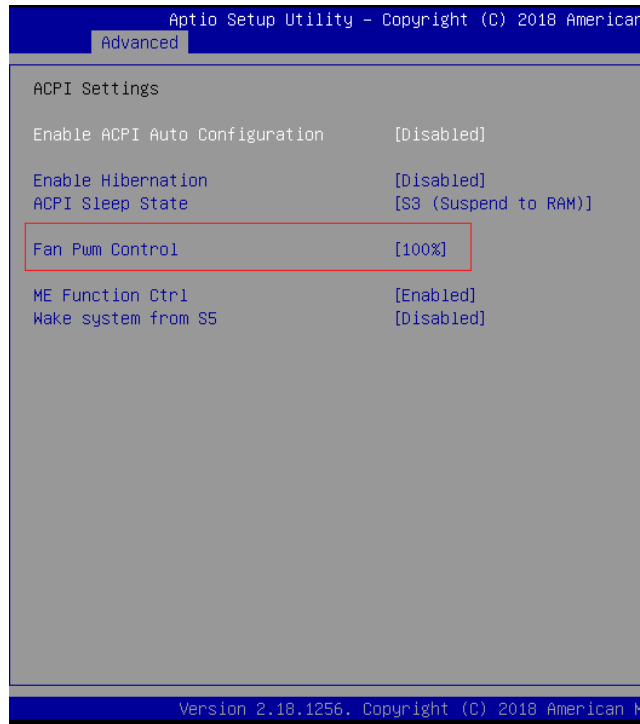
“Auto Brightness”: If checked, adjust screen brightness according to data of light sensor. If unchecked, we can manually adjust the screen brightness by dragging scrollbar.

“Auto Boot”: If checked, driver will be installed automatically and the program will run automatically.

- Finally, reboot PC. The next time we enter the system, Rotate Screen and Light sensor will work properly.

6.4 Fan Control

We can adjust fan speed under the BIOS menu.



6.5 Bluetooth

There are 2 Bluetooth modules from Intel 8265 and Intel 7265, but only one module can work to support Bluetooth at one time, so please disable onemodule's Bluetooth in the device manager after installing new OS.

7 Tips



Waste Disposal

It is recommended to disassemble the device before abandoning it in conformity with local regulations. Please ensure that the abandoned batteries are disposed according to local regulations on waste disposal. Do not throw batteries into fire (explosive) or put in common waste canister. Products or product packages with the sign of “explosive” should not be disposed like household waste but delivered to specialized electrical & electronic waste recycling/disposal center. Proper disposal of this sort of waste helps avoiding harm and adverse effect upon surroundings and people’s health. Please contact local organizations or recycling/disposal center for more recycling/disposal methods of related products.

Comply with the following safety tips:



Do not use in combustible and explosive environment

Keep away from combustible and explosive environment for fear of danger.



Keep away from all energized circuits.

Operators should not remove enclosure from the device. Only the group or person with factory certification is permitted to open the enclosure to adjust and replace the structure and components of the

device. Do not change components unless the power cord is removed. In some cases, the device may still have residual voltage even if the power cord is removed. Therefore, it is a must to remove and fully discharge the device before contact so as to avoid injury.



Unauthorized changes to this product or its components are prohibited.

In the aim of avoiding accidents as far as possible, it is not allowed to replace the system or change components unless with permission and certification. Please contact the technical department of Vantron or local branches for help.



Pay attention to caution signs.

Caution signs in this manual remind of possible danger. Please comply with relevant safety tips below each sign. Meanwhile, you should strictly conform to all safety tips for operation environment.



Notice

Considering that reasonable efforts have been made to assure accuracy of this manual, Vantron assumes no responsibility of possible missing contents and information, errors in contents, citations, examples, and source programs.

Vantron reserves the right to make necessary changes to this manual without prior notice. No part of this manual may be reprinted or publicly released in forms of photocopy, tape, broadcast, e-document, etc.



This device is not used as a portable device and it is intended to use as mobile or fixed equipment.



FCC Warning

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.
- 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.

FCC Caution

This device complies with FCC class B Rules. Operation is subject to the following conditions.

This device may not cause harmful interference.

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

Any modification to the product is not permitted unless authorized by Vantron. It's not allowed to disassemble the product, it is not allowed to replace the system or change components unless with permission and certification. Please contact the technical support department of Vantron or local branches for help.

RF Exposure Statement

This equipment must be installed and operated in accordance with provide instructions and the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operation in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

**ISED statement**

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.

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.*

**RF Exposure Statement**

This equipment must be installed and operated in accordance with provide instructions and the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operation in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

ce matériel doit être installé et exploité conformément à des instructions et l'antenne utilisée pour cet émetteur doit être installé pour fournir une distance d'au moins 20 cm de toutes les personnes et ne doit pas être installé ou opération conjointement avec toute autre antenne ou transmitter.les utilisateurs finals et les installateurs doivent fournir des instructions d'installation et d'antennes - conditions relatives à l'exposition aux champs rf de conformité.



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