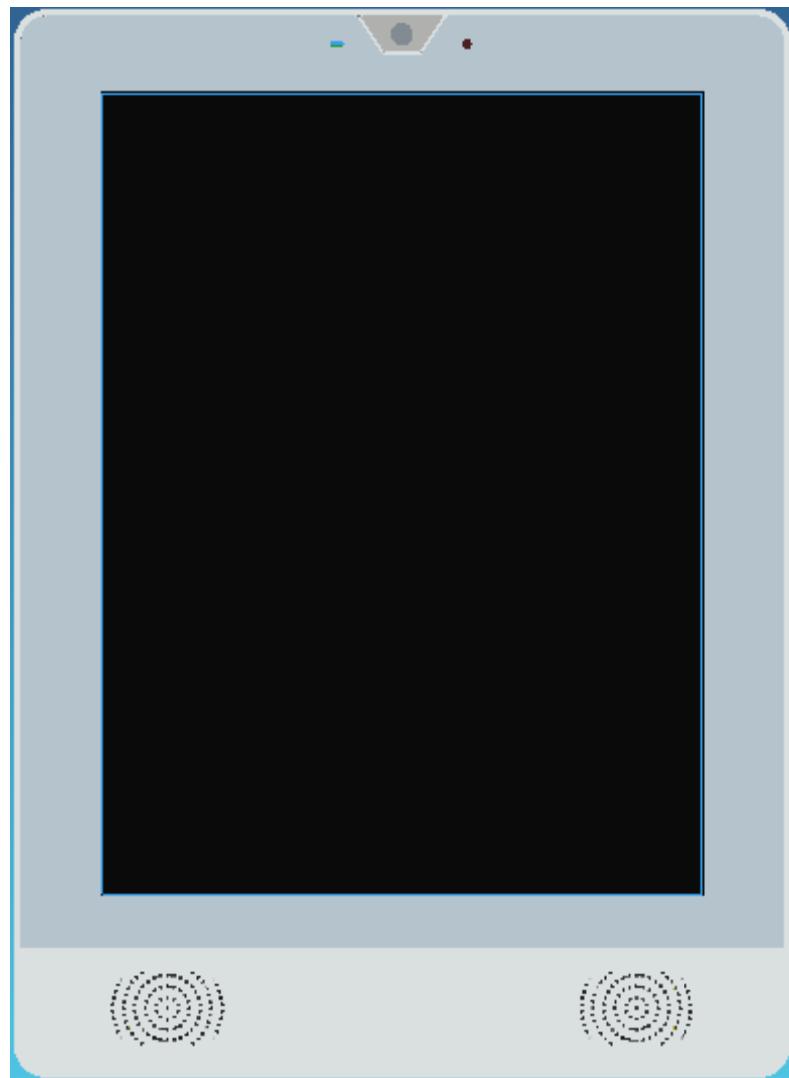

User's Manual



DSG Global Inc.



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Revision History

No.	Version	Description	Date
1	V1.0	First release	2018/01/20
2	V1.1	Revise	2019/04/21
3	V1.2	Update mounted description	2019/06/13

1 Foreword

1.1 Copyright Notice

While all information contained herein have been carefully checked to assure its accuracy in technical details and printing, DSG 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.

DSG 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. Please contact DSG for further information.

The trademarks and registered trademarks in this manual are properties of their respective owners. No part of this manual may be copied, reproduced, translated or sold. No changes or other purposes are permitted without the prior written consent of DSG.

DSG 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-Computer which provides important guidance and helps decreasing the danger



of injury, electric shock, fire, or any damage to the device.

1.4 Disclaimer

DSG 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 DSG caused by failure of conforming to this manual or the safety instructions on device label, DSG assumes neither warranty nor legal liability even if the device is still under warranty.

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.

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 DSG 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 DSG 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 Overview

2.1 Introduction

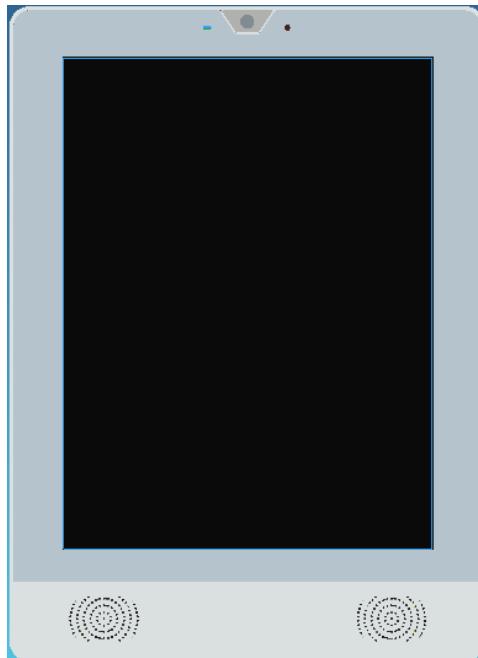
Thank you for choosing DSG. It is our commitment to provide our valued customers with the embedded devices equipped with the state-of-the-art technology and the best product services.

Computer enables the interaction between operators/users and applications, connects industrial control products such as wireless, transducer, battery inside, storage, etc. Computer adopts a display for displaying and input units such as touch screen, keyboard, audio, kind of sensors etc. for writing working parameters or inputting operation commands. As a digital device for realizing information interaction between human and machine, Computer is composed of hardware and software. Based on its ample function interfaces and powerful user operational interface, it is very suitable for control units such as medical device, intelligent transportation, industrial field, etc.

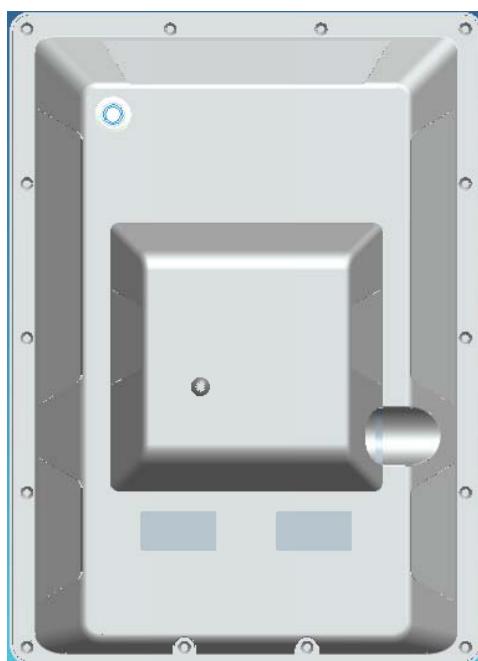
DSG's Embedded Computer products are based on the most advanced ARM and Rockchip processors and have low-power consumption and high integration. The products are designed for applications such as industrials, medicals, and transportations etc.

3 DSG-121-VTHardware Instructions

3.1 Product Appearance



Front View



Back View

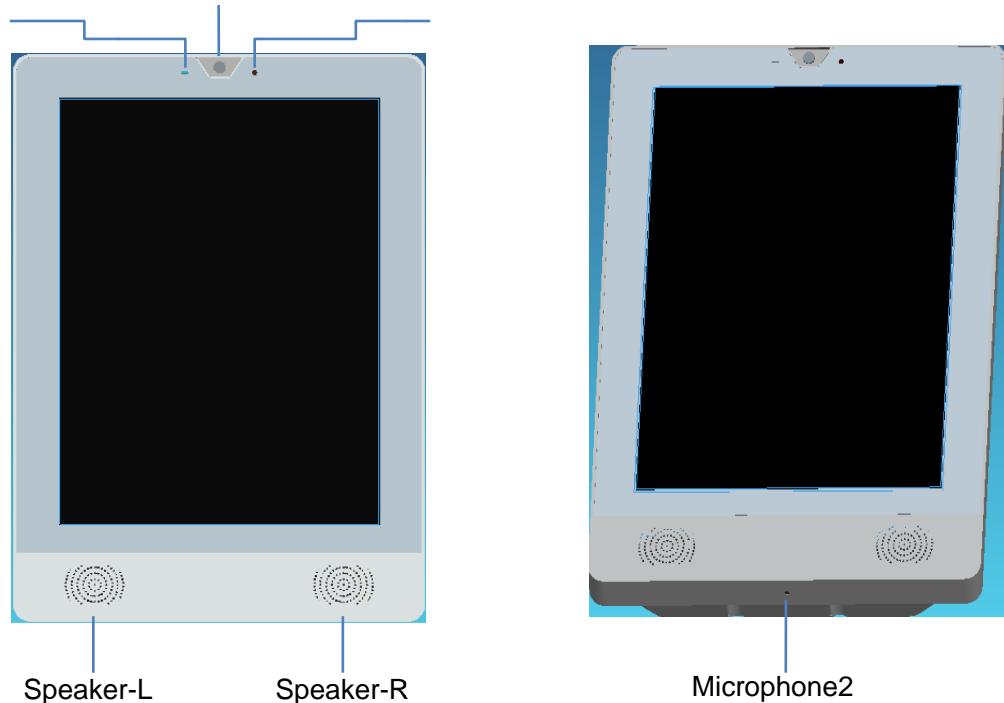
3.2 Specifications

CPU	Processor	RK-3288 , ARM Cortex-A17, Quad Core CPU,1.6GHz
Memory	RAM	2GB DDR3
	Flash	16GB EMMC Flash
Display	LCD	12.1" TFT LCD
	Resolution	1024*768 24bit Color
	Display Colors	262k/16.2M
	Brightness	600cd/m ² (Auto brightness by Light sensor)
	View Angle	85U/85D, 85L/85R
	Touch Screen	Cap-touch, multi-point
Supported format	Audio	MP3, 3GPP, WAV
	Video	MP4, 3GPP
	Picture	BMP, GIF, JPEG, PNG
Interfaces	USB	1X TYPE C USB2.0 OTG
	DEBUG	1X 1x4x2.0mm debug interface with TTL level
	Wireless	1xwifi 802.11a/b/g/n/ac, 1xBluetooth4.2, with inner antenna On Board 4G/LTE module, with internal antenna.
	Sensor	Light sensor, 3-axis Accelerometer, Gyroscope
	RTC	Supported
	NFC	Supported
Software	Camera	1x5M Front Camera(Auto Focus)
	OS	Android 6.0.1
Power	Applications	Provide SDK, support google tool
	Input	10-75V DC power supply
	Battery	7.4V, 5000mAh
Mechanical	Consumption	12W
	Dimensions	238x323x36mm
Environment Condition	Weight	2.1Kg(Panel)
	Temperature	Charge: 0°C ~ +40°C, Discharge: -20°C ~ +60°C,
		Storage: -30°C ~ +70°C
	Humidity	10-85%RH (Non-Condensation), operating and storage
	Vibration	2G, 9-26Hz (10 times in X,Y,Z directions)

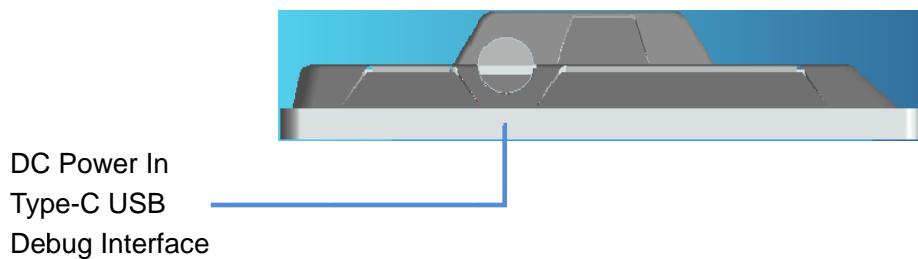
3.3 Interface Instructions

3.3.1 Front View

Light-Sensor 5Mpixs Camera Microphone1



3.3.2 Side View



3.4 Dimension

Whole device Size: 238x323x36mm

3.5 Buttons

Power/Sleep/Wake button

When you are not using Computer, you can lock it to turn off the display and

save the battery.

Lock computer: Press the Power/Sleep/Wake button.

Unlock computer: Press the Power/Sleep/Wake button, then drag the slider.

Turn computer off: Press and hold the Power/Sleep/Wake button greater than 6 seconds.

Turn computer on: Press and hold the Power/Sleep/Wake button until logo appears.



Never apply excessive pressure to a button, because this may cause damage that is not covered under the warranty.

3.6 Interface Description

3.6.1 Internal MIC in Interface

Table with two microphones integration inside. Them work with together to make low noise sounder.

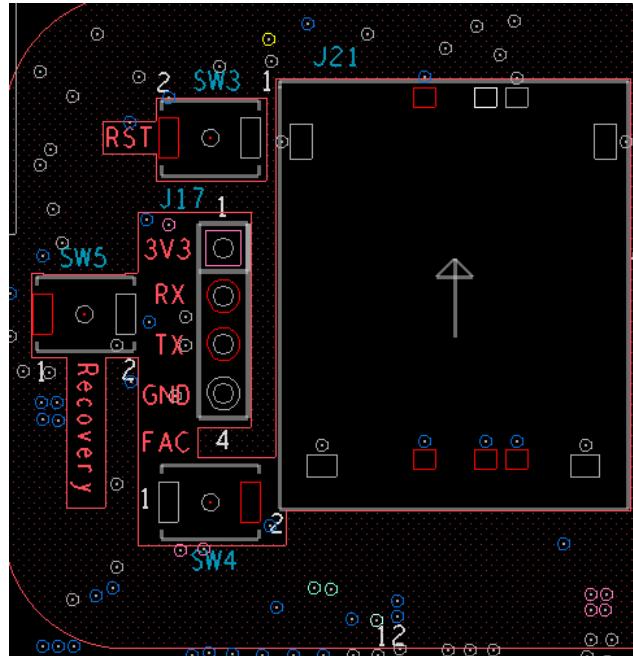
3.6.2 USB OTG(micro USB type)

It is a standard TYPE-C USB port, you can connect to PC as USB client to manage the android device and connect a USB device using USB OTG to HOST adapter cable.

3.6.3 DEBUG INTERFACE

There with a TTL level UART debug interface. It can be connected with a 1x4x2.0mm pin header.

PIN	Name	Description	Type
1	3V3	Power supply for debug tool	Output
2	RXD	Connect with cpu UART_RX	Input
3	TXD	Connect with cpu UART_TX	Output
4	GND	Power ground	POWER GND



SW3/RST: Reset button for reset mcu RT1050 and RK3288;

SW5/RECOVERY: Recovery button for RK3288 recovery mode, when press this key and power on, RK3288 work with recovery mode.

SW4/FAC: Factory button . Press FAC button and power on, MCU RT1050 and RK3288 recovery factory data.

3.6.4 Wireless (WIFI and BT)

The computer supports 802.11 ac WIFI and BT4.2. With a good spec internal antenna, both WIFI and BT can achieve better performance.

3.6.5 Internal Audio

The computer has an internal omni-directional microphone and a 1.5-watt speaker.

3.6.6 Gas Gauge

A gas gauge is used to monitor the capacity of the li-polymer battery so we can figure out the status of it precisely and immediately.

3.6.7 Front Camera

The computer can take beautiful photo and record the high-resolution video.

3.6.8 RTC

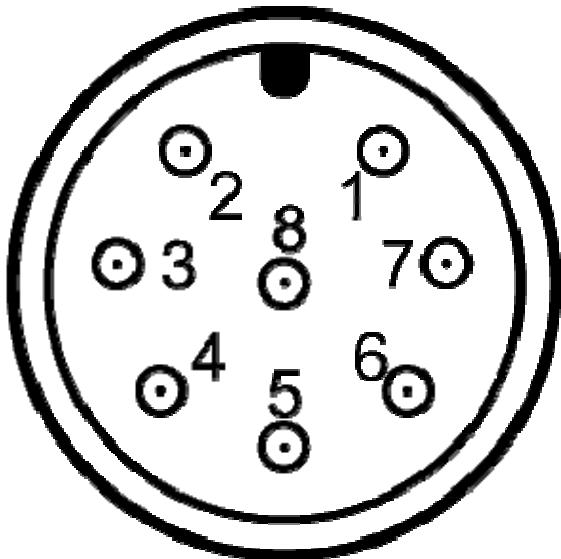
The computer has internal RTC so the system time can keep a long time if we

didn't turn it on.

3.6.9 Power&Signal Interface

There with a M14 Interface contain DC Power IN, Charger control and RS232 communication.

The M14 Interface defined as below:



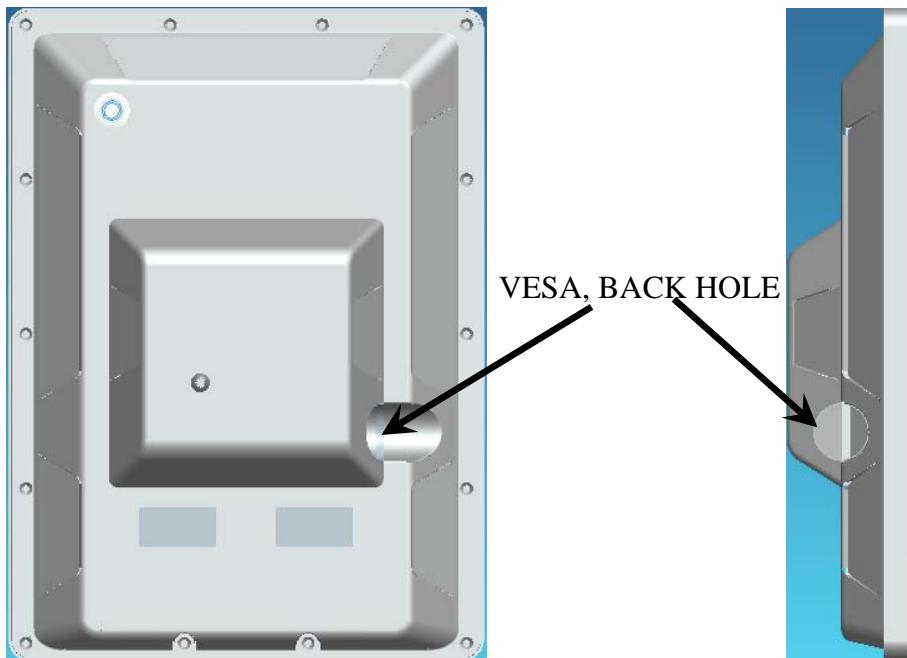
- 1 – GND (RS232)
- 2 – VBat Power (12-75V DC)
- 3 – N/A
- 4 – TXD (RS232)
- 5 – 12 V DC (used to control charging together with Pin 7 for current touch)
- 6 – RXD (RS232)
- 7 – Charging control (OpenDrain to GND). When closed (high impedance) – no charging.
- 8 – PGND (Battery GND)

4 Instructions

4.1 Brief Introduction

DSG-121-VT has been pre-loaded with Android image, so that the system can run MFG tools to update the system image, please reference to SW-UM.

DSG-121-VT has been mounted on the golf vehicle with a VESA through the back hole; supplied by golf vehicle battery.



5. 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 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 DSG 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, DSG assumes no responsibility of possible missing contents and information, errors in contents, citations, examples, and source programs.

DSG 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.



FCC Warning

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.

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.

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

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 DSG 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 provided 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.



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.



DSG-121-VT

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.

Note: 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