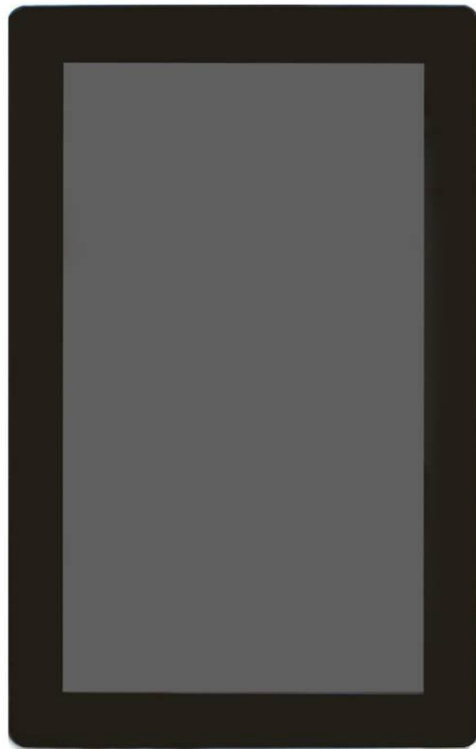


Panel PC User's Manual



NO. G03-PC156-F

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TABLE OF CONTENT

Safety Precautions.....	ii
User's Notice.....	iii
Package Contents.....	iii
Environmental Protection Announcement	iii
Chapter 1 Introduction.....	1
1-1 General Descriptions.....	1
1-2 Specifications.....	1
1-3 I/O Outlets.....	3
1-4 Connector Pin Definition.....	4
Chapter 2 Hardware and Jumper Settings.....	6
2-1 Dimensions and Outlines.....	6
2-2 To Open the Chassis.....	7
2-3 Jumper Settings.....	8
APPENDIX.....	9



CAUTION Safety Precautions

- Operate the product according to the correct installation steps and with great care to make sure safety and comfort using experience. Please refer to the following safety instruction guide to avoid danger of electric shock or fire. Abide by the previous safety instruction guide to use and maintain the product and the hard disk to make sure of safe operating environment.
- Please follow the instruction manual for operation guide.
- The appropriate operating temperature ranges from 0 °C–50 °C.
- The operation humidity for this product is 5% to 80% RH.
- To avoid high temperature, please DO NOT overload the maximum power of the external power supply while the system is consuming high voltage. Be aware of the maximum temperature allowance of the power supply.
- See to it that the product is not working near the water.
- Always unplug power cable and other hardware cables from the system before cleaning.
- Apply only dry cloth for cleansing the product.
- Make sure that there is no heat source nearby when the product is working.
- Make sure that the thermal louver of the product is not blocked.
- Make sure to remove the power plug from the product when there is a thunder storm.
- Please remove the power plug from the product when you are not going to use the product for a long time.
- Make sure to set up or use the product on a stable surface.
- Make sure not to drop the product or strike it by any means.
- Make sure not to move the product when the power is on.
- Make sure not to step on the power cables and other cables or rest anything in them.
- Be sure to ground yourself to prevent static charge when installing any internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
- Disconnect the power cord from the Panel PC unit prior to any installation. Be sure both the system and all external devices are turned off. Sudden surge of power could ruin sensitive components. Make sure the Panel PC unit is properly grounded.
- Do not open the system's back cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:
 - Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on human body.
 - When handling boards and components, wear a grounding wrist strap available from most electronic component stores.
- Please contact qualified technician for maintenance or repair.
- Use only accessories and parts that are made by the qualified manufacturer.

User's Notice

Copyright of this manual belongs to the manufacturer. No part of this manual, including the products and software described in it may be reproduced, transmitted or translated into any language in any form or by any means without written permission of the manufacturer.

This manual contains all information required for the utilization of this product to meet the user's requirements. But it will change, correct at any time without notice. Manufacturer provides this manual "as is" without warranty of any kind, and will not be liable for any indirect, special, incidental or consequential damages (including damages for loss of profit, loss of business, loss of use of data, interruption of business and the like).

Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and they are used only for identification or explanation and to the owner's benefit, without intent to infringe.

Package Contents

AC-DC Adapter	Power Cord	WI-FI antenna
		
(Optional)	(Optional)	
X1	X1	X2

Environmental Protection Announcement

Do not dispose this electronic device into the trash while discarding. To minimize pollution and ensure environment protection of mother earth, please recycle.



Chapter 1

Introduction

1-1 General Descriptions

Thank you for purchasing the system, a new product developed, designed and manufactured under leading technical power and consistent dedication to fine workmanship.

- 15.6" 250 nits TFT LCD with LED backlight
- Rockchip® ARM Cortex A17 RK3288 Quad-core 1.8GHz
- On board 2GB 1333 MHz DDR3L DRAM
- Onboard 8GB Flash ROM
- Strong solid aluminum frame design and Fanless cooling system
- Design for easy Wall mount, Panel Mount, VESA Mount installation
- A true Flat, easy-to-clean front surface with edge-to-edge design
- Front IP65 for protection against water and dust
- 12V DC in (for **HPC-156**)
- PoE input Support (for **HPC-P156**)
- Support 802.11 b/g/n 2.4G, BT-V4.0
- Support Android 5.1/9.0 and Debian 9.0 OS

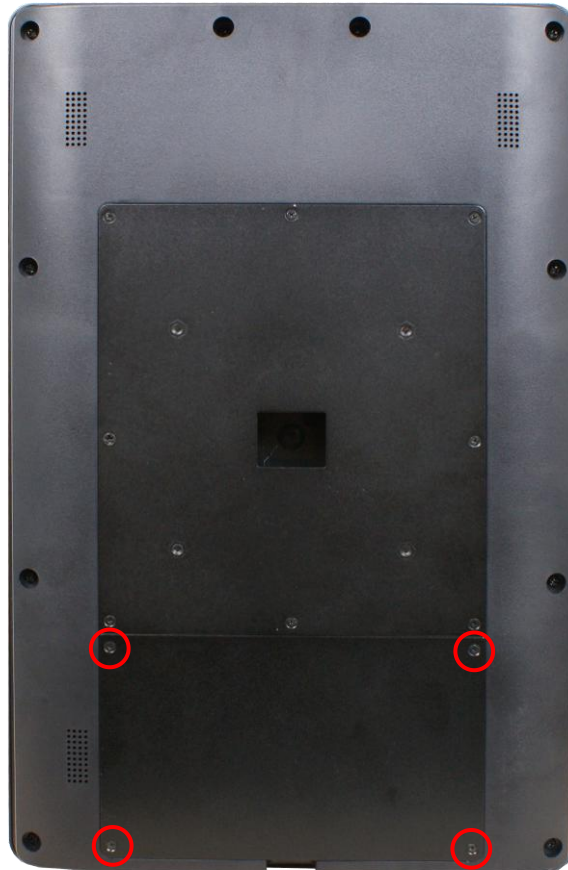
1-2 Specifications

Display	
Front Bezel	IP65, NEMA 4 rugged protection, metal front bezel
Display Type	15.6" with LED Backlight
Brightness (cd/m ²)	250 nits
Display Color	262K
Resolution	1920 x 1080 @ 60Hz
Viewing Angle (H/V)	170°/170°
Pixel Pitch	0.17925 x 0.17925 mm
Aspect Ratio	16:9
Contrast Ratio	800:1
Response Time	35 ms
Touch Screen	
Type	Projected capacitive type
Active Range	372.0 x 244.5 ± 0.2mm
Transparency	≧ 85%
Surface Hardness	≧ 6H (ASTM D3363, pressure 1N/45°)
Glass haze value	≧ 3%
CASE	
Panel Material	Plastic
Case Material	Plastic + Iron

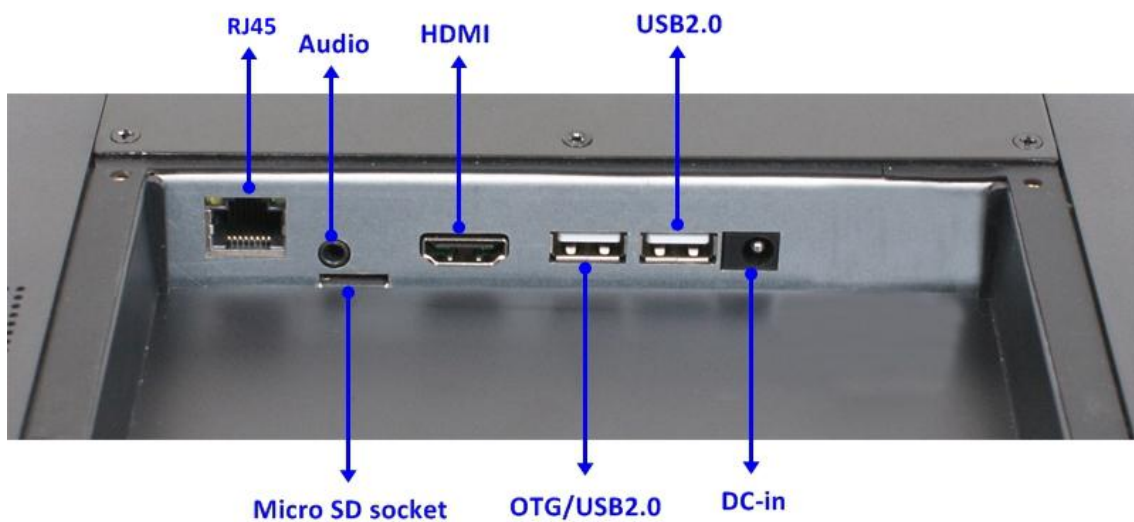
Color	Black	
Coating Requirement	Spray Paint	
Main System		
CPU	Rock Chip® ARM Cortex A17 1.8GHz/QC	
RAM	Onboard 2GB DDR3L1333MHz DRAM	
Flash ROM	Onboard 8GB Flash ROM	
Watchdog Timer	256 levels, 0~255 sec.	
Speaker	2*2W/8Ohm	
Camera	1*500W USB Camera(Optional)	
OS Support	Android 5.1/9.0 or Debian 9.0	
I/O Connector		
I/O Ports & Switches	Common I/O: 2* USB2.0 (USB1 Co-lay OTG) 1*HDMI1.4 1*AUDIO(Line-out +MIC) 1*Micro SD Socket	
	HPC-156: 1*RJ45 1*12V DC Jack	HPC-P156: 1* PoE PD
PoE(HPC-P156)		
Regulatory Compliance	IEEE802.3af (PoE)	
Input Power	44~57V	
Pass Through Data Rates	10/100/1000 Mbps	
Power Consumption	18W	
Dimensions		
Case Dimensions	411.56*260.68*36.4mm	
Certifications		
Certifications	CE, FCC, IP65 -Option	
Environment		
Temperature	Operating: -10°C ~ 50°C	
	Storage: -20°C ~ 60°C	
Shock	Operating: 15G , 11ms duration	
Vibration	Operating: 5~500Hz/1Grms	
Warranty		
Warranty	2 Years Limited Warranty (Panel and Touch is only Warranty 1 Year)	

1-3 I/O Outlets

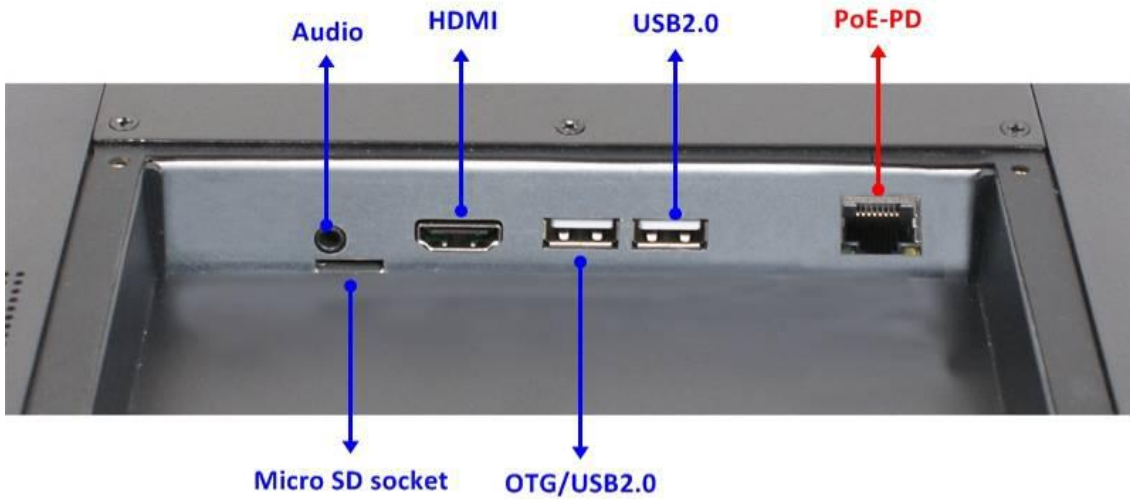
Motherboard I/O connectors are protected from exposure with the back shell IO shield. Please remove the screws in red circles to find IO connectors before making any connections.



HPC-156











HPC-P156



1-4 Connector Pin Definition

(1) Connector Function

Icon	Name	Function
 (HPC-156)	12V DC-in Power Jack	For user to connect compatible power adapter to provide 12V power supply for the system.
 (HPC-P156)	PoE-PD Port	This connector functions as standard RJ-45 LAN jack for Network connection and power-in connector with compatible PoE power cable.
 (HPC-156)	RJ-45 LAN Port	This connector is standard RJ-45 LAN jack for Network connection.
	Top: Audio Jack	Line-out & MIC audio jack.
	Bottom: Micro SD Card Slot	For user to insert compatible micro-SD (TF) card into the socket.
	HDMI Port	To connect display device that support HDMI specification.

	*USB2.0/OTG Port	To connect USB keyboard, mouse or other devices compatible with USB specification, also can function as USB OTG port for software upgrade flash by jumper select.
	USB 2.0 Port	To connect USB keyboard, mouse or other devices compatible with USB specification.

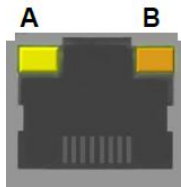
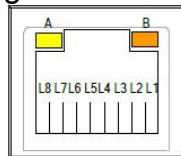
***Note:** *OTG/USB function is selected via OTG_JP jumper.*

(2) I/O Connectors Pin Definition

RJ-45 Ethernet Connector

Ethernet connection can be established by plugging one end of the Ethernet cable into this RJ-45 connector and the other end (phone jack) to a 1000/100/10-Base-T hub.

The pin assignment for RJ-45 Ethernet LAN connectors are listed as follows:

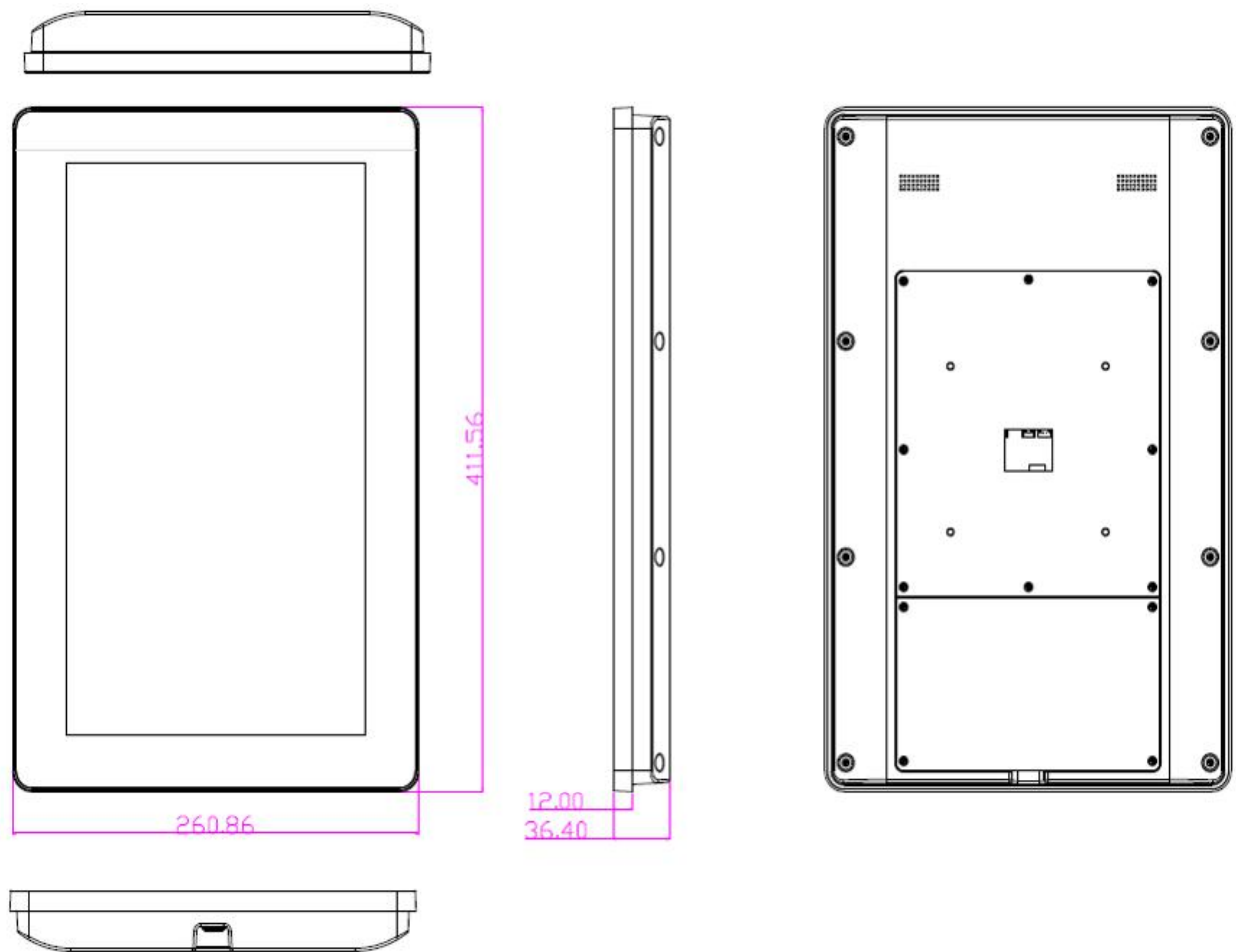


Pin	Definition	Pin	Definition
L1	MDI0+	L5	MDI2+
L2	MDI0-	L6	MDI2-
L3	MDI1+	L7	MDI3+
L4	MDI1-	L8	MDI3-
A	Active LED (Yellow)		
B	100 LAN LED (Green) / 1000 LAN LED (Orange)		

Chapter 2

Hardware and Jumper Settings

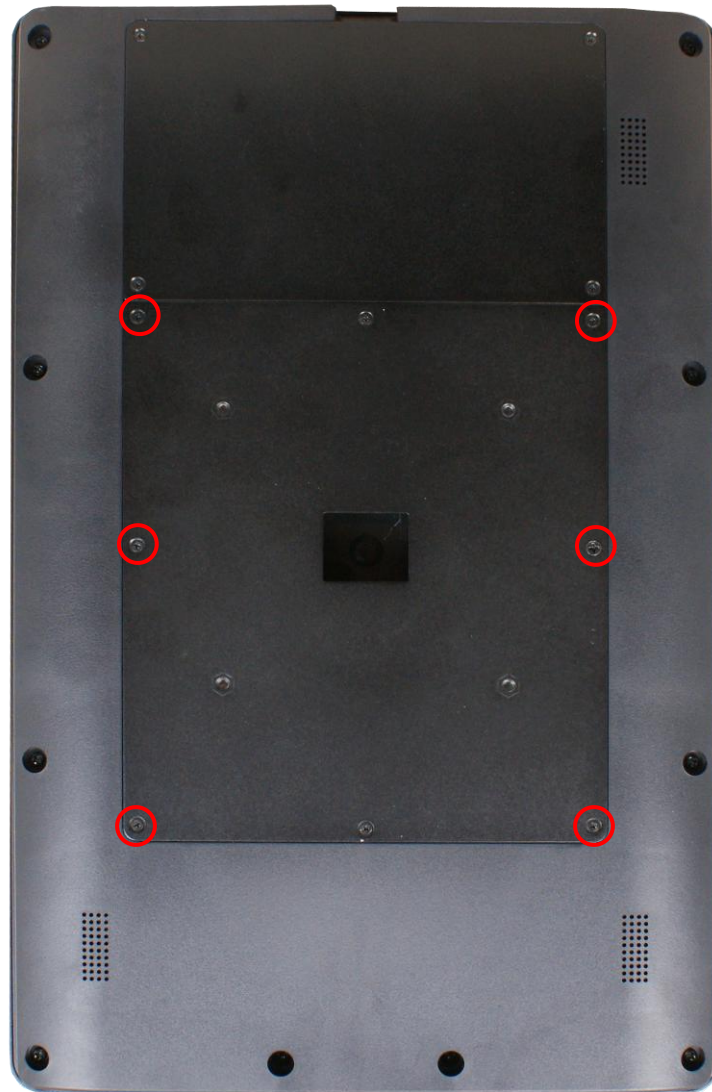
2-1 Dimension and Outlines



** Measure Unit: mm.*

2-2 To Open the Chassis

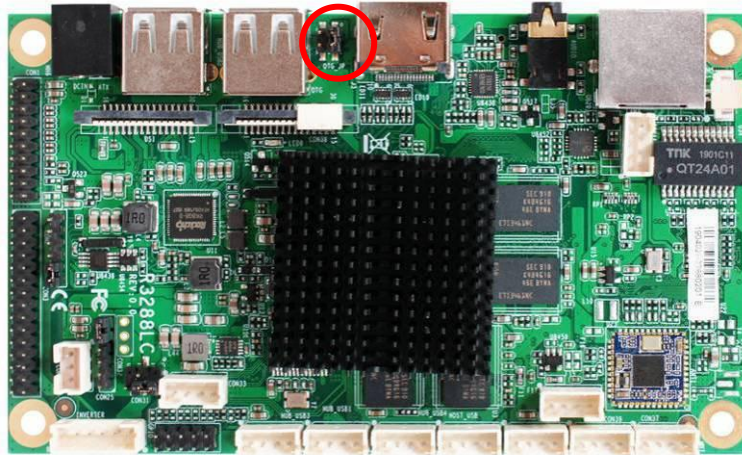
Use a screwdriver to unscrew the screws marked in red circles that lock the back cover (see red circles). Remove them to open the chassis.



Notice: When lifting the cover up to open the chassis for further installation, see to it that the connecting cables are not unplugged. It is very important for the cables connected to their original places for normal functioning.

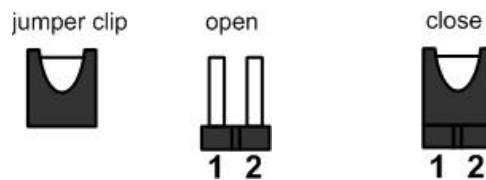
2-3 Jumper Settings

Jumper is a small component consisting of jumper clip and jumper pins. Install jumper clip on 2 jumper pins to close the pins. And remove jumper clip from 2 jumper pins to open the pins.

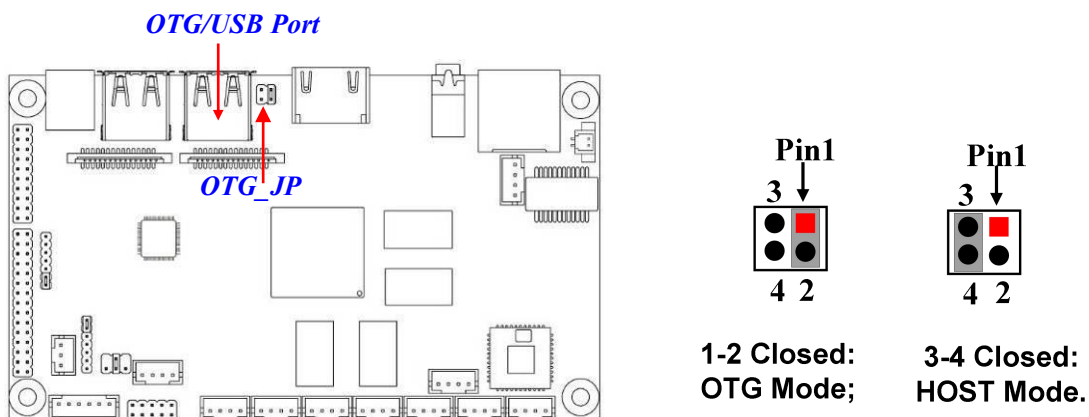


***Note:** *OTG_JP* is in the marked position. User can select OTG or USB 2.0 function by jumper setting.

How to set up a jumper:



OTG_JP (4-pin): USB/OTG Select Jumper



Appendix

General Notices

European Union CE Marking and Compliance Notices

Products intended for sale within the European Union are marked with the Conformity European (CE) Making, which indicates compliance with the applicable Directive and European standards and amendments identified.

Shielded Cables Notice

All connections to other computing devices must be made using shielded cables to maintain compliance with FCC regulations.

Peripheral Devices Notice

Only peripherals (input/out devices, terminals, printers, etc) certified to comply with Class B limits may be attached to this equipment. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

Wireless Related Information

Wireless Interoperability

Wireless LAN PCI Express Mini Card is designed to be interoperable with any wireless LAN product that is based on Direct Sequence Spread Spectrum (DSSS), Complementary Code Keying (CKK), and/or Orthogonal Frequency Division Multiplexing (OFDM) radio technology, and is compliant to:

The IEEE802.11a/b/g/n Standard on Wireless LANs was defined and approved by the Institute of Electrical and Electronics Engineers.

The Wireless Fidelity (WiFi) certification as defined by the Wi-Fi Alliance.

Usage Environment and Your Health

Wireless LAN PCI Express Mini Card emits radio frequency electromagnetic energy like other radio devices. However, the level of energy emitted is far much less than the electromagnetic energy emitted by wireless devices like for example mobile phones.

Due to the fact that Wireless LAN PCI Express Mini Card operates within the guidelines found in radio frequency safety standards and recommendations, we believe the integrated wireless cards are safe for use by consumers. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature.

In some situation or environment, the use of Wireless LAN PCI Express

Mini Card may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may for example include:

Using the integrated wireless cards on board of airplanes, or in hospitals

In any other environment that the risk of interference to other devices and service are perceived or identified to be harmful.

If you are uncertain of the policy that applies on the use of wireless devices in a specific organization (e.g., airport or hospital), you are encouraged to ask for authorization to use Wireless LAN PCI Express Mini Card prior to turning on the computer.

Electronic Emissions Notices

European Union Compliance Statement Class B Compliance

European Union – Compliance to the Electromagnetic Compatibility Directive

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. We cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the installation of option cards from other manufacturers.

This product has been tested and found to comply with the limits Class B Information Technology Equipment according to European Standard EN55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Properly shielded and grounded cables and connectors must be used in order to reduce the potential for causing interference to radio and TV communications and to other electrical or electronic equipment.

FCC Rules and Regulations-Part 15

This device uses, generates and radiates radio frequency energy. The radio frequency energy produced by this device is well below the maximum exposure allowed by the Federal Communications Commission (FCC)

- This device complies with the limits for the Class B digital device pursuant to Part 15 subject to the following two conditions:
- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

The FCC limits are designed to provide reasonable protection against harmful interference when the equipment is installed and used in accordance with the instruction manual and operated in a commercial environment. However, there is no guarantee that interference will not occur in a particular commercial installation, or if operated in a residential area.

If harmful interference with radio or television reception occurs when the device is turned on, the user must correct the situation at the user's own expense. The user is encouraged to try one or more of the following corrective measures:

- Re-orient 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 on which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any changes or modification to said product not expressly approved by Intel could void the user's authority to operate this device.