

WMP-22P

Medical Panel PC



V1.3

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Version Change History

Date	Version	Description	Remark
5/25/2023	1.0	First release	
6/13/2023	1.1	Modify Hotkey information.	
11/23/2023	1.2	Add MDR information.	
1/18/2024	1.3	Add IP54 information.	

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FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 18 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment.

This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with this user manual, it may cause harmful interference to radio communications.

Note that even when this equipment is installed and used in accordance with this user manual, there is still no guarantee that interference will not occur. If this equipment is believed to be causing harmful interference to radio or television reception, this can be determined by turning the equipment on and off. If interference is occurring, 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 the receiver
- Connect the equipment to a power outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Warning:

Any changes or modifications made to the equipment which are not expressly approved by the relevant standards authority could void your authority to operate the equipment.

To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

Do not modify this equipment without authorization of the manufacturer.

Avertissement:

Tous les changements ou modifications apportés à l'équipement qui ne sont pas expressément approuvés par l'autorité de normalisation compétente peuvent annuler votre droit d'utiliser l'équipement.

*Pour éviter tout risque de choc électrique, cet équipement ne doit être connecté qu'à un réseau d'alimentation avec terre de protection.
Ne modifiez pas cet équipement sans l'autorisation du fabricant.*

Warnung:

Jegliche Änderungen oder Modifikationen an diesem Gerät, die nicht ausdrücklich durch die relevante Behörde zugelassen sind, lassen Ihre Berechtigung zum Betrieb des Gerätes erlöschen.

Zur Vermeidung von Stromschlaggefahr darf dieses Gerät nur an eine Stromversorgung mit Schutzerde angeschlossen werden.

Nehmen Sie ohne Zustimmung des Herstellers keine Modifikationen an diesem Gerät vor.

Safety Instructions

Intended use

The WMP-22P is intended to serve as a medical monitor which is designed for general purpose for hospital environment. It shall not be used for life-supporting system.

Intended User profile

The equipment is intended for infant or adults by profession Health care professionals.

Greeting & Setup

Thank you for purchasing the WMP-22P unit. We wish that this unit will be durable and reliable in providing your medical application needs. Please follow the instructions below to ensure the unit continues to have high performance.

Unpacking

After opening the carton, there will be a medical panel PC unit with an accessory box. Examine the contents to see if there are damages to the unit and if all accessories are present.

Setting up

Please read this manual carefully and remember to keep this manual for future reference.

Safety Instructions & Cleaning

The unit has undergone various tests in order to comply with safety standards. Inappropriate use of the open frame unit may be dangerous. Please remember to follow the instructions below to insure your safety during the installation and operating process.

Transporting & Placement of unit

1. When moving the unit on a cart; be very cautious. Quick stops, excessive forces and uneven surfaces may cause the cart to overturn thus risking the unit to fall to the ground.

2. If the medical panel PC unit does fall to the ground, immediately turn the power off and disconnect cords. Then contact a service technician for repairs. Continual use of the unit may result cause a fire or electric shock. Also, do not repair the unit on your own.
3. Having two or more people transporting the display unit is recommended. In addition, when installing the unit by suspending it also requires two or more people.
4. Before suspending the unit, make sure the material used for suspension is sturdy and stable. If not properly suspended, the display unit may fall and cause serious injury to people standing nearby as well as to the unit itself.
5. If you wish to mount the display unit, remember to use only the mounting hardware recommended by the manufacturer.

Electrical and Power Source Related

1. This medical panel PC unit must operate on a power source as shown on the specification label. If you are not sure what type of power supply used in the area, consult your dealer or local power supplier.
2. The power cords must not be damaged. Applied pressure, added heat, and tugging may damage the power cord.
3. The power cord must be routed properly when setup takes place. We advise that this aspect measure is to prevent people from stepping on the cords or while the unit is suspended to prevent flying objects from getting tangled with the unit.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Do not overload the AC outlets or extension cords. Electrical shocks or fires may occur from overloading.
6. Do not touch the power source during a thunderstorm.
7. If your hands are wet, do not touch the plug.

8. Use your thumb and index finger, grip firmly on the power cord to disconnect from the electrical socket. By pulling the power cord, may result in damaging it.
9. If the unit is not going to be in use for an extended period of time, remember to disconnect the unit.
10. The medical panel PC unit uses voltage between 100-240VAC. Connect the unit to a power source with the same numerical value as shown. Please use only the power cord provided by the dealer to ensure safety and EMC compliance.

Various Factors of Environment

1. Do not insert objects into the openings.
2. Do not have liquids seep into the internal areas of the medical panel PC unit.
3. Having liquids seep in or inserting objects into the unit may result in electric shocks from taking and/or short circuiting the internal parts.
4. Do not place the medical panel PC unit in the presence of high moisture areas.
5. Do not install the medical panel PC unit in a wet environment.
6. Do not place near unit near heat generating sources.
7. Do not place the unit in a location where it will come in contact with fumes or steam.
8. Remember to keep the medical panel PC unit away from the presence of dust.
9. If water has flow in or seep in, immediately disconnect the open frame unit. Then contact a service technician for repairs.

Ventilation Spacing

1. Do not cover or block the openings on the top and back sides of the display unit. Inadequate ventilation may cause overheating thus reducing the lifespan of the unit.

2. Unless proper ventilation is present, do not place unit in an enclosed area; such as a built-in shelf. Keep a minimum distance of 10 cm between the display unit and wall.

Operating principle

- A Medical Panel PC has four main components: the arithmetic logic unit (ALU), the control unit, the memory, and the input and output devices (collectively termed I/O). These parts are interconnected by buses, often made of groups of wires.
- The control unit, ALU, and registers are collectively known as a central processing unit (CPU).
- Inside each of these parts are thousands to trillions of small electrical circuits which can be turned off or on by means of an electronic switch. Each circuit represents a bit (binary digit) of information so that when the circuit is on it represents a "1", and when off it represents a "0" (in positive logic representation). The circuits are arranged in logic gates so that one or more of the circuits may control the state of one or more of the other circuits.

Cleaning the unit







1. Remember to turn off the power source and to unplug the cord from the outlet before cleaning the unit.
2. Carefully dismount the unit or bring the unit down from suspension to clean.
3. Please use a dry soft cloth to clean the unit.
4. Take a dry cloth and wipe the unit dry. Remember to avoid having liquids seep into the internal components and areas of the medical panel PC unit.
5. Cleaning unit each time before use.

Error message / Troubleshooting

No power	<ol style="list-style-type: none">1. Connect the AC adapter to the computer, and then plug it into an AC outlet.2. Turn on the computer.
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Servicing, Repairing, Maintenance & Safety Checks

1. If the unit is not functioning properly, observe the performance level of the display closely to determine what type of servicing is needed.
2. Do not attempt to repair the medical panel PC unit on your own. Disassembling the cover exposes users' to high voltages and other dangerous conditions. Notify and request a qualified service technician for servicing the unit.
3. To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
4. If any of the following situations occur turn the power source off and unplug the unit. Then contact a qualified service technician.
 - (a) A liquid was spilled on the unit or objects have fallen into the unit.
 - (b) The unit is soaked with liquids.
 - (c) The unit is dropped or damaged.
 - (d) If smoke or strange odor is flowing out of the operating unit.
 - (e) If the power cord or plug is damaged.
 - (f) When the functions of the unit are dysfunctional.
5. When replacement parts are needed for the medical panel PC unit, make sure service technicians use replacement parts specified by the manufacturer, or those with the same characteristics and performance as the original parts. If unauthorized parts are used it may result in starting a fire, electrical shock and/or other dangers.

	ISO 7000-0434: Caution
	ISO 7010-M002: Refer to instruction manual/ booklet. NOTE: On ME EQUIPMENT “Follow instruction for use”.
	IEC 60417 -5009: STAND-BY.
	IEC 60417-5031: Direct current.
	<p>EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product, or if applicable, follow any agreements made between yourself.</p> <p>The mark on electrical and electronic products only applies to the current European Union Member States.</p>
 YYYY-MM	Date of manufacture

When networking with electrical devices, the operator is responsible for ensuring that the resulting system meets the requirements set forth by the following standards:

– **EN 60601-1 (IEC 60601-1)**

Medical electrical equipment

Part 1: General requirements for safety

– **EN 60601-1-1 (IEC 60601-1-1)**

Medical electrical equipment

Part 1-1: General requirements for safety

Collateral standard: Safety requirements for

Medical electrical systems

– **EN 60601-1-2 (IEC 60601-1-2)**

Medical electrical equipment

Part 1-2: General requirements for safety

Collateral standard: Electromagnetic compatibility; Requirements and tests

Accessory equipment connected to the analog and digital interfaces must be in compliance with the respective nationally harmonized IEC standards (i.e. IEC 60950 for data processing equipment, IEC 60065 for video equipment, IEC 61010-1 for laboratory equipment, and IEC 60601-1 for medical equipment.) Furthermore all configurations shall comply with the system standard IEC 60601-1-1. Everybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 60601-1-1. The unit is for exclusive interconnection with IEC 60601-1 certified equipment in the patient environment and IEC 60XXX certified equipment outside of the patient environment. If in doubt, consult the technical services department or your local representative.

Caution:

DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS MAY DAMAGE THE EQUIPMENT.

This equipment shall not be used in life support systems.

The user is not to touch SIP/SOPs and the patient at the same time.

Caution – Use suitable mounting apparatus to avoid risk of injury.

Caution - Risk of explosion if battery is replaced by an incorrect type.

Dispose of used batteries according to the instructions.

(If battery pack is not used for 1 month, it is recommended to remove the battery pack from equipment.)

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70dB (A).

- A) Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked "Hospital Only" or "Hospital Grade".
- B) Use a power cord that matches the voltage of the power outlet, which has been approved and complies with the safety standard of your particular country.
- C) Caution: This adapter Sinpro HPU101-107 is a forming part of the medical device
- D) Only use the power cord with following specification: 18AWG min., type SJT, 125V/10A, UL/CSA listed, length: Max. 3m, hospital grade if for USA/Canada market.

Mise en garde:

NE LAISSEZ PAS CET ÉQUIPEMENT DANS UN ENVIRONNEMENT NON CONTRÔLÉ OÙ LA TEMPÉRATURE DE STOCKAGE EST INFÉRIEURE À -20 ° C (-4 ° F) OU SUPÉRIEURE À 60 ° C (140 ° F). CELA POURRAIT ENDOMMAGER L'ÉQUIPEMENT.

Cet équipement ne doit pas être utilisé dans les systèmes de survie.

L'utilisateur ne doit pas toucher les SIP / SOP et le patient en même temps.

Attention - Utilisez un appareil de montage approprié pour éviter tout risque de blessure.

Attention - Risque d'explosion si la batterie est remplacée par un type incorrect. Jetez les piles usagées conformément aux instructions.

(Si la batterie n'est pas utilisée pendant 1 mois, il est recommandé de

retirer la batterie de l'équipement.)

Le niveau de pression acoustique au poste de l'opérateur selon CEI 704-1: 1982 n'est pas supérieur à 70 dB (A).

A) La fiabilité de la mise à la terre ne peut être obtenue que lorsque l'équipement est connecté à une prise équivalente marquée «Hospital Only» ou «Hospital Grade».

B) Utilisez un cordon d'alimentation qui correspond à la tension de la prise de courant, qui a été approuvée et conforme aux normes de sécurité de votre pays.

C) Attention: cet adaptateur Sinpro HPU101-107 fait partie intégrante du dispositif médical

D) Utilisez uniquement le cordon d'alimentation avec les spécifications suivantes: 18AWG min., type SJT, 125V / 10A, UL / CSA répertorié, longueur: Max. 3m, qualité hospitalière si pour le marché américain / canadien.

Achtung:

LASSEN SIE DIESES GERÄT NICHT IN EINER UNKONTROLLIERTEN UMGEBUNG, IN DER DIE LAGERTEMPERATUR WENIGER ALS -20 °C ODER MEHR ALS 60 °C BETRÄGT. ANDERNFALLS KÖNNTE DAS GERÄT BESCHÄDIGT WERDEN.

Dieses Gerät darf nicht in lebenserhaltenden Systemen genutzt werden. Der Anwender darf SIP/SOPs und Patienten nicht gleichzeitig berühren. Achtung – Nutzen Sie zur Vermeidung von Verletzungen eine geeignete Montagevorrichtung.

Achtung - Explosionsgefahr, falls der Akku durch einen falschen Typ ersetzt wird. Entsorgen Sie verbrauchte Akkus entsprechend den Anweisungen.

(Falls der Akku voraussichtlich 1 Monat nicht genutzt wird, sollten Sie ihn aus dem Gerät entfernen.)

Der Schalldruckpegel an der Position des Bedieners entsprechend IEC 704-1:1982 beträgt nicht mehr als 70 dB(A).

A) Die Zuverlässigkeit der Erdung kann nur erzielt werden, wenn das Gerät an eine äquivalente Steckdose mit der Kennzeichnung „Nur Krankenhaus“ oder „Krankenhaustauglich“ angeschlossen ist.

- B) Verwenden Sie ein Netzkabel, das mit der Spannung der Steckdose übereinstimmt. Es muss zugelassen sein und dem Sicherheitsstandard Ihres jeweiligen Landes entsprechen.
- C) Achtung: Das Netzteil Sinpro HPU101-107 ist Bestandteil des Medizingerätes.
- D) Verwenden Sie das Netzkabel nur mit folgenden Spezifikationen:
18AWG min., Typ SJT, 125V/10A, UL/CSA gelistet, Länge: Max. 3m, Krankenhausqualität, wenn für den USA/Kanada-Markt.

Contact & Manufacturer information:

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Introduction

Product Description

The WMP-22P Medical Panel PC is based on 12th generation Core i CPU processor, it accommodates one M.2 M.Key 2280 PCIe X 4 SSD and Two up to 64GB DDR5 SODIMM.

The high brightness LCD, Fanless solution, integrated multimedia functions and extensive expansion options make them the perfect platform upon which to build comprehensive lifestyle computing applications.

The WMP-22P includes all the features of a powerful computer into a slim and attractive chassis.

The WMP-22P is compact, Giga LAN and selectable WLAN network compatible PC with full safety and medical approval and features to control a dedicated system with a wide variety of applications. Combining the WMP-22P into your system can achieve both cost-saving and efficient improvements.

Common applications include LIS (Lab Information Systems) and Electronic Medical Record. The WMP-22P are definitely your perfect choices.

Package list

Before you begin installing your Medical Station, please make sure that the following items have been shipped:

- The WMP-22P Medical Panel PC unit
- User's manual, chipset drivers
- Power Adapter x 1 (Mf:Sinpro, type/model: *HPU101-107*)
- Power cord – Hospital grade used (US type), or other type in UK, EU...etc.
- Screw x 8 (VESA 100 mm use)

Features

- *Anti-bacteria (MRSA) plastic housing*
- *21.5" full HD (1920X1080) AHVA Diagnostic Panel*
- *High performance intel 12th generation Core i CPU (U series), 15W max.*
- *Integrated hot-swappable batteries x 3; IP54 rear cover batteries x 1*
- *Support Intel Vpro technology by CPU*
- *Supports PCI-E x4 slot*
- *Easy wipe surfaces with no internal corners*
- *IP65 at front side, IPx1 for whole system*
- *Fanless solution*
- *The newest regulation MDR 2017/745*
- *Optional 2.5" SATA3 SSD up to 2TB*
- *Optional 4K/Full HD capture card*
- *USB/LAN/COM 4KV isolated module (optional order configuration)*
- *IP54 Rear cover (optional order configuration)*

Specifications

Hardware Specifications

Display	21.5" 250 nits 1920 x 1080 (Full HD) TFT LCD
CPU Support	FCBGA1744 package 12 th generation Intel® Core i7/i5/i3/Pentium/Celeron processor (15W max.)
Disk Drive Space	M.2 M.Key 2280 PCIe X 4 SSD (Support NVMe SSD),3.3Vdc, 3A max. Optional 2.5" SATA SSD or HDD drive bay x 1 with doggy door (5Vdc, 1.5A max.)
Expansion	One M.2 Type E slot (optional total loaded 2.277W max.); One PCI-E x 4 slot (Gold finger) (optional loaded 10.65W max.)
Button	Power // Audio adjustment (+)(-) // brightness (+)(-) // LCD on/off // Clean me(auto release after 1 minute)
I/O	<p>Standard version USB 3.2 gen II x 4 RS232/RS422/RS485 x 1, RS232 x 1 LAN RJ-45 x 2 (Gigabit Ethernet) Sound:Line-out x 1, and Mic-in x 1 Video output:DP 1.4a x 1 and HDMI 2.0 x 1 Video input:HDMI x 1 (without audio)</p> <p>Isolated version USB 3.2 gen II x 4 LAN RJ-45 x 2 (Gigabit Ethernet) Sound:Line-out x 1, and Mic-in x 1 Video output:DP 1.4a x 1 and HDMI 2.0 x 1 Video input:HDMI x 1 (without audio) Isolated 4KV USB 2.0 x 1 Isolated 4KV RS232/RS422/RS485 x 1, RS232 x 1 (The isolated ports verified through Dielectric test 4000Vac only) Isolated 4KV LAN RJ-45 x 1 (Gigabit Ethernet)</p>

LCD Specifications

Model Name	WMP-22P
Display Type	21.5" LED
Max. Resolution	1920 x 1080
Contrast Ratio	1000 : 1 (Typ)
Pixel Pitch (um)	247.95(per one triad) ×247.95
Luminance (cd/m2)	250 (TYP)
Viewing Angle	178°(H)
	178°(V)

Cautions:

Continuous displaying fixed pattern may induce image sticking. It's recommended to use screen saver or moving content periodically if fixed pattern is displayed on the screen.

Précautions:

L'affichage continu d'un motif fixe peut provoquer le collage de l'image. Il est recommandé d'utiliser l'économiseur d'écran ou de déplacer régulièrement du contenu si un motif fixe est affiché à l'écran.

Achtung:

Die kontinuierliche Anzeige fester Muster kann zu eingebrannten Bildern führen. Sie sollten gelegentlich einen Bildschirmschoner oder bewegliche Inhalte nutzen, wenn feste Muster am Bildschirm angezeigt werden.

Power Adapter Specifications

Power	Close-frame
MFR	Sinpro
Type	HPU101-107
Input Rating	AC 100 ~ 240 V, 1.2 – 0.5A, 47 ~ 63 Hz
Output Rating	DC 18V, 5.55A
MTBF	100,000 hrs operation at 25°C
Classification	Power by Class I certified power adapter. No applied part.
Mode of operation	Continuous operation
System input rating	DC 18V, 5.55A

Mechanical Specifications

Architecture	Close-frame
Front Bezel	PCT touch screen / PET bezel with resistive touch screen
Color	Medical-white
Mounting / Holder	VESA 100mm
Construction	3mm ABS + PC TYPE Plastic housing
Dimension (WxHxD)	541.0mm x 413.2mm x 56.0mm
Net Weight	7.0 kg (w/o power adapter)
Packing Filler	PE

Environmental Specifications

Temperature	Operating: 0~40 °C (Burn-in, not airtight, W/ Battery 0~35°C) Storage, Transportation: -20°C to 60°C (-4°F ~140°F)
Humidity	Operating: 10% to 90%@ 35°C, non-condensing Storage, Transportation: 10% to 90%, non-condensing
Vibration	Operating: 5 ~ 17 Hz , Amplitude : 0.117 ~ 500Hz , Acceleration : 1.0G Non-operating:10~55Hz/0.15g, 55~500Hz/2.0g
Shock	Operating: 15g/0.53 oz, 11 ms, half sine wave Non-operating: 50g/1.76 oz, 11 ms, half sine wave
Altitudes	Operational: up to 3000 m (9842 feet) Shipping: up to 12192 m (40000 feet)
Pressure	700 – 1060 hPa (Operation) 186 – 1060 hPa (Storage) 186 – 1060 hPa (Transportation)
EMI / Safety	CE / FCC / VCCI Class B/EN 60601-1
IP	IPX0 for whole system.
Noise	Fanless

Touch Screen

P.cap touch

Type	Full flat projective capacitive touch panel
Interface	Controller with USB interface, 5V

Resolution	16384*16384
Light Transmission	≥87%
Life Time	50,000 Hrs

Guidance and manufacturer’s declaration – electromagnetic emissions		
<p>The model WMP-22P is intended for use in the electromagnetic environment specified below. The customer or the user of the model WMP-22P should assure that it is used in such an environment.</p>		
Emissions test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11		The model WMP-22P uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11		The model WMP-22P is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2		
Voltage fluctuations/ flicker emissions IEC 61000-3-3		
Recommended separation distances between portable and mobile RF communications equipment and the model WMP-22P		
<p>The model WMP-22P is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the model WMP-22P can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the model WMP-22P as recommended below, according to the maximum output power of the communications equipment.</p>		
Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m	

	150 kHz to 80 MHz $d = 1,2 \sqrt[3]{P}$	80 MHz to 800 MHz $d = 1,2 \sqrt[3]{P}$	800 MHz to 2.7 GHz $d = 2,3 \sqrt[3]{P}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distanced in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Guidance and manufacturer's declaration – electromagnetic immunity

The model WMP-22P is intended for use in the electromagnetic environment specified below. The customer or the user of the model WMP-22P should assure that it is used in such an environment.


Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.

Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	□ 1 kV line(s) to line(s) □ 2 kV line(s) to earth	±1 kV line(s) to line(s) ±2 kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
interruptions and voltage variations on power supply input lines IEC 61000-4-11	0% <i>UT</i> (100 % dip in <i>UT</i>) for 0.5 cycle 0 % <i>UT</i> (100 % dip in <i>UT</i>) for 1 cycles 70 % <i>UT</i> (30 % dip in <i>UT</i>) for 25 cycles 0 % <i>UT</i> (100 % dip in <i>UT</i>) for 250 cycles	0 % <i>UT</i> (100 % dip in <i>UT</i>) for 0.5 cycle 0 % <i>UT</i> (100 % dip in <i>UT</i>) for 1 cycles 70 % <i>UT</i> (30 % dip in <i>UT</i>) for 25 cycles 0 % <i>UT</i> (100 % dip in <i>UT</i>) for 250 cycles	Mains power quality should be that of a typical commercial or hospital environment. If the user of the model WMP-22P requires continued operation during power mains interruptions, it is recommended that the model WMP-22P be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE *U_T* is the a.c. mains voltage prior to application of the test level.

Guidance and manufacturer's declaration – electromagnetic immunity

The model WMP-22P is intended for use in the electromagnetic environment specified below. The customer or the user of the model WMP-22P should assure that it is used in such an environment.

Immunity	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
<p>Conducted RF IEC 61000-4-6</p> <p>Radiated RF IEC 61000-4-3</p>	<p>3 Vrms 150 kHz to 80 MHz</p> <p>3 V/m 80 MHz to 2.7 GHz</p>	<p>Vrms</p> <p>V/m</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the model WMP-22P, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1,2 \sqrt[3]{P}$ $d = 1,2 \sqrt[3]{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = 2,3 \sqrt[3]{P} \quad 800 \text{ MHz to } 2.7 \text{ GHz}$ <p>where <i>P</i> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <i>d</i> is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, ^a should be less than the compliance level in each frequency range. ^b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption

and reflection from structures, objects and people.

a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the model WMP-22P is used exceeds the applicable RF compliance level above, the model WMP-22P should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the model WMP-22P.

b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Cleaning/Disinfecting

Steps:

1. Wipe the WMP-22P with a dry clean cloth.
2. Operate with manufacturer's instructions or hospital protocol.

Cautions:

- Do not immerse or rinse the WMP-22P and its peripherals. If you accidentally spill liquid on the device, disconnect the unit from the power source. Contact your Biomed regarding the continued safety of the unit before placing it back in operation.
- Do not spray cleaning agent on the chassis.
- Do not use disinfectants that contain phenol.
- Do not autoclave or clean the WMP-22P or its peripherals with strong aromatic, chlorinated, ketone, ether, or Esther solvents, sharp tools or abrasives. Never immerse electrical connectors in water or other liquids.

Précautions:

- Ne plongez pas et ne rincez pas le WMP-22P et ses périphériques. Si vous renversez accidentellement du liquide sur l'appareil, débranchez l'appareil de la source d'alimentation. Contactez votre Biomed concernant la sécurité continue de l'appareil avant de le remettre en service.
- Ne vaporisez pas d'agent de nettoyage sur le châssis.
- N'utilisez pas de désinfectants contenant du phénol.
- Ne pas stériliser à l'autoclave ni nettoyer le WMP-22P ou ses périphériques avec des solvants forts aromatiques, chlorés, cétoniques, éthers ou Esther, des outils tranchants ou des abrasifs. Ne plongez jamais les connecteurs électriques dans l'eau ou d'autres liquides.

Achtung:

- Der WMP-22P und seine Peripherie dürfen nicht in Wasser getaucht oder abgespült werden. Falls Sie versehentlich Flüssigkeiten über dem Gerät verschütten, trennen Sie das Gerät umgehend von der Stromversorgung.

Wenden Sie sich zur Bestätigung der Sicherheit des Gerätes an Biomed, bevor Sie es wieder in Betrieb nehmen.

- Sprühen Sie keine Reinigungsmittel auf das Gehäuse.
- Verwenden Sie keine Desinfektionsmittel, die Phenol enthalten. Der WMP-22P und seine Peripherie dürfen nicht autoklaviert oder mit aggressiven aroma-, chlor-, keton-, ether- oder estherhaltigen Reinigungsmitteln, scharfkantigen Werkzeugen oder Scheuermitteln gereinigt werden. Tauchen Sie die elektrischen Anschlüsse niemals in Wasser oder andere Flüssigkeiten.

Getting Started

System Set Up

The following is a summary of the steps in setting up the system for use.

- (1). You can fix the system to a mounting fixture using the screw holes on the sides of the system, use for the system is landscape mode only
- (2). Make any required external connections such as the display, keyboard, and LAN.
- (3). Plug the appropriate end of the power cord into the power connector on the rear of the system and the plug to an electrical outlet.
- (4). **Waiting for 3 seconds** then press the power switch on the front panel of the system once to turn on the system power.
- (5). If necessary, run the BIOS SETUP programs to configure the system.

Caution:

In order to boot up system from USB-CD/DVD drive, please connect USB-CD/DVD drive, turn on computer power, keep on pressing "F11" key, go into BIOS quick boot menu, select "USB-CD ROM", WAIT FOR 20 SECONDS, then press enter, system OS will boot up from USB-CD/DVD drive directly.

Mise en garde:

Afin de démarrer le système à partir du lecteur USB-CD / DVD, veuillez connecter le lecteur USB-CD / DVD, allumez l'ordinateur, continuez à appuyer sur la touche "F11", allez dans le menu de démarrage rapide du BIOS, sélectionnez "USB-CD ROM", ATTENDEZ 20 SECONDES, puis appuyez sur Entrée, le système d'exploitation démarrera directement à partir du lecteur USB-CD / DVD.

Achtung:

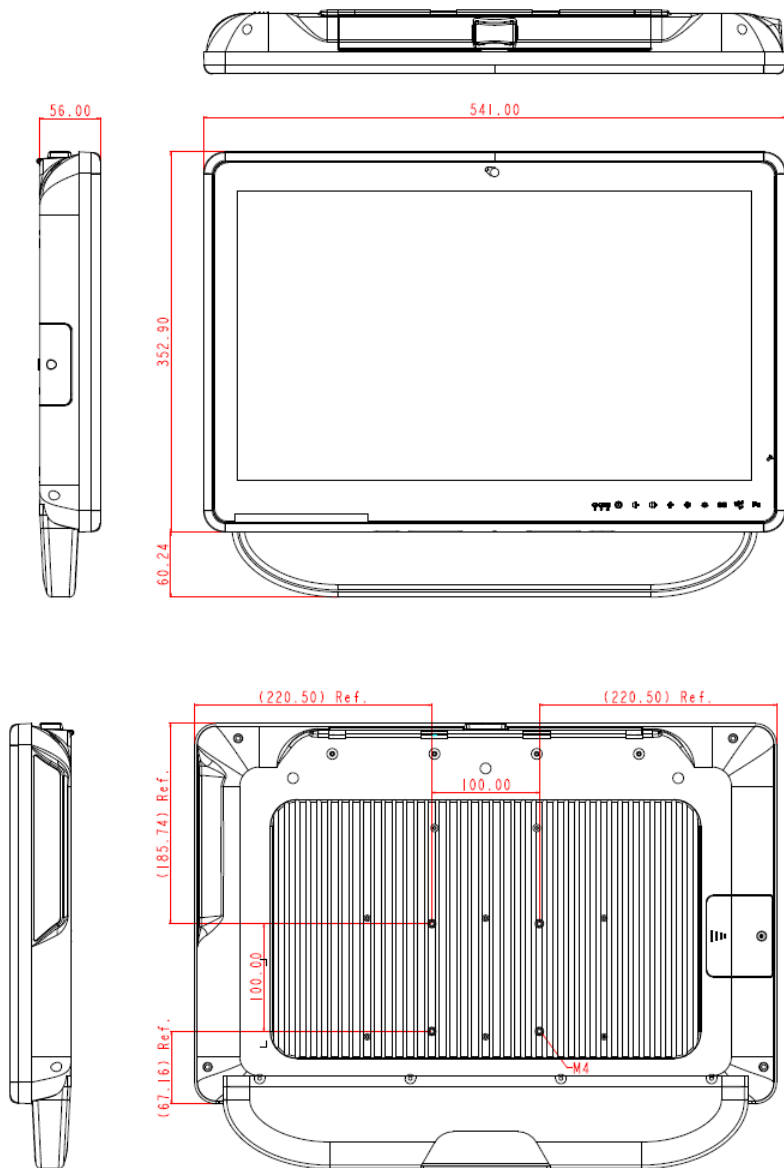
Zum Starten des Systems vom USB-CD/DVD-Laufwerk verbinden Sie bitte das USB-CD/DVD-Laufwerk, schalten den Computer ein, halten „F11“ gedrückt, rufen das BIOS auf, navigieren zum Schnellstartmenü, wählen „USB-CD ROM“, WARTEN 20 SEKUNDEN, drücken dann Enter und das Betriebssystem startet direkt vom USB-CD/DVD-Laufwerk.

Notice:

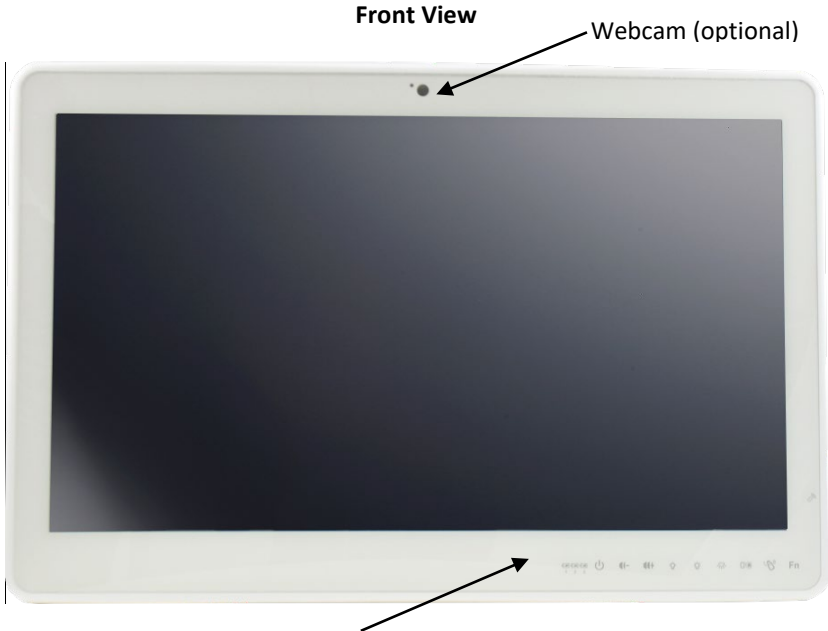
The installation is only to be carried out by manufacturer trained and authorized personnel.

Dimension

WMP-22P (VESA Mount Screw type: M4)



System View



Hotkey and LED definition at front panel



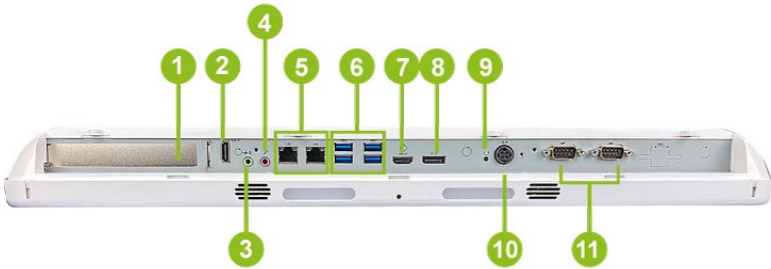
Located on Touch screen bottom side, from left to right, front view

Hotkey Definitions

LED color symbols	Key Functions
LED Off: ○	S: short press
Blue: Ⓟ	H: Hold key
Green: Ⓞ	H3: Hold key for 3 seconds
Blue Blinking: ⓅⓅ	H5: Hold key for 5 seconds
Green Blinking: ⓄⓄ	H10: Hold key for 10 seconds
Fast Blue Blinking: ⓅⓅ	
Fast Green Blinking: ⓄⓄ	
Active Green: Ⓞ	
Fast Green/Blue Toggle: ⓄⓅ	

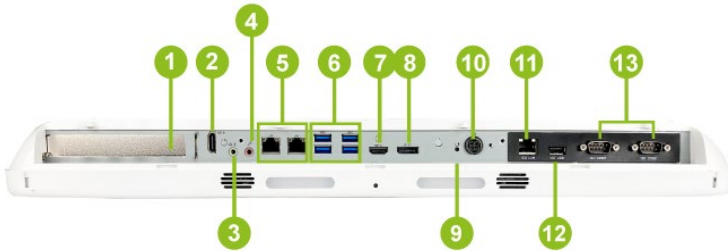
Symbols				Symbols									Fn
Indicator	Battery 1	Battery 2	Battery 3	Key Name	Power	Volume Up	Volume Down	Backlight Down	Backlight Up	Reading Light	Backlight On/Off	Clear Me	Function
AC IN	: No battery presents : Active battery and is charging : Battery is Full : Battery not full and not active battery : Battery is malfunction	PC Mode	PC OFF	S: Power on					S: Reading light On/Off	S: Panel of/off	HS: Clear Me on/off		
			PC ON	S: Power off HS: Force Power off	S: Down 1 step H: Down repeat	S: Up 1 step H: Up repeat	S: Down 1 step H: Down repeat	S: Up 1 step H: Up repeat	S: Reading light On/Off	S: Panel of/off HS: OSD menu toggle (if DICOM not presents)	HS: Clear Me on/off	S: PC/HDMI IN toggle HS: DICOM on/off	
			OSD ON	S: Menu/Enter H1D: Load scaler default	S: Exit H1D: Scaler factory mode	S: Left/Brightness down	S: Right/Brightness up	S: Reading light On/Off	S: Panel of/off HS: OSD menu toggle (if DICOM not presents)	HS: Clear Me on/off	S: PC/HDMI IN toggle HS: DICOM on/off		
AC OUT			HDMI IN	OSD ON	S: Menu/Enter	S: Exit	S: Left/Brightness down	S: Right/Brightness up	S: Reading light On/Off	S: Panel of/off	HS: Clear Me on/off	S: PC/HDMI IN toggle	

Standard type



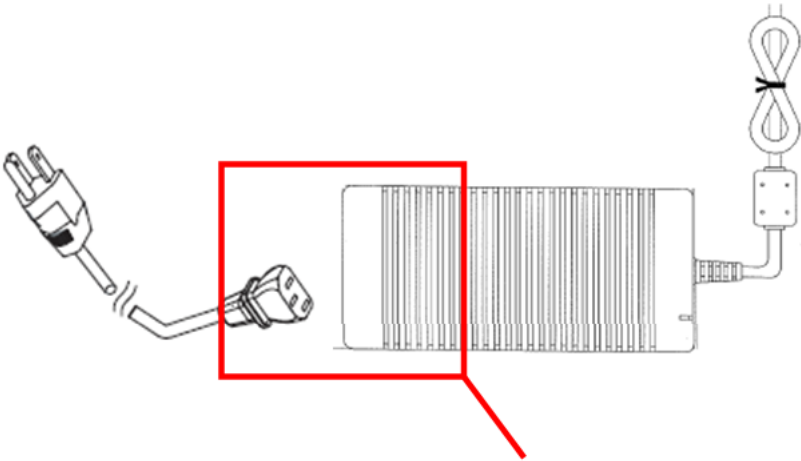
- 1 PCI-E expansion
- 2 Video-in
- 3 Line-out
- 4 Microphone-in
- 5 LAN x 2
- 6 USB3.2 gen II x 4
- 7 HDMI out x 1
- 8 DP out x 1
- 9 Reset
- 10 DC-in
- 11 COM x 2

Isolated type



- 1 PCI-E expansion
- 2 Video-in
- 3 Line-out
- 4 Microphone-in
- 5 LAN x 2
- 6 USB3.2 gen II x 4
- 7 HDMI out x 1
- 8 DP out x 1
- 9 Reset
- 10 DC-in
- 11 iso LAN x 1
- 12 iso USB x 1
- 13 iso COM x 2

Disconnect Device



Unplug the power cord from the power adapter jack to disconnect the device. ↵

Turn off the system:

Turning off WMP-22P properly is important for system reliability.

1. On the start menu, click “Shut down” and select “OK”

Battery Pack Specifications (optional kit)

Battery Model	DR-202-GAL
Battery Type	Lithium-ion 3S-3P
Minimum Capacity	9200 mAh
Nominal Voltage	10.8V
Max. Charge Voltage	12.6 V
Cut Off Voltage	9V
Suggested Charge Current (Max.)	5A
System Continuous Discharging Current (Max.)	10A
The End of Charge Condition	12.6 V
Discharge Protection	16 ± 0.5 A
Charge Protection	6 ± 0.5 A
Self-discharge Rate	< 0.8mA
Dimensions	140mm x 89mm x 19.7mm
Weight	470g
Ambient Temperature	Charge: 0 ~ 45 °C Discharge: -10 ~ 60 °C
Storage Temperature	0 ~ 40 °C
Energy	99.36Wh

Alarm!

The battery mode supports a maximum of 100W.

If the system is in battery mode and its power consumption exceeds 100W, posing a risk of potential shutdown.

BIOS Battery status

Battery Full Charge
Status : Full Charge

Battery in Charge

Status :Charging

Battery in Discharge

Status : Discharge

Nonworking Battery

Status : Stand by

Low power Battery

Status : Low Battery

No battery or Battery in very low power state

Status : N/A

Scrap Computer Recycling

If the computer equipments need the maintenance or are beyond repair, we strongly recommended that you should inform us as soon as possible for the suitable solution. For the computers that are no longer useful or work well, please contact with worldwide distributors for recycling.

The worldwide distributors show on the following website:
<http://www.wincomm.com.tw/contact.aspx>

Note:

Follow the national requirement to dispose unit.

PS1. Expected Service Life: 3.1 years

If the computer has exceeded the Expected Service Life and you want to continue using it, it is recommended to contact the manufacturer/distributors to confirm whether maintenance is required.

PS2.CAUTION:

If any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user is established.

PS3.Notice:

It is recommended to install the appropriate software, if have any question, please contact the manufacturer for further assistance.

Notice: To prevent unauthorized access, it is recommended to install suitable anti-virus software or do not connect to unsafe external networks.

PS4.RTC battery:

The computer is provided with a battery- powered, real-time clock circuit.

There is a danger of explosion if battery is incorrectly replaced.

Replace only with same (CR2032) type recommended by the manufacturer.

Discard used batteries according to the each nation's instructions.

PS5.Battery pack (optional kit):

It is suggest to recharge the battery pack every 6 months if it is not used.

PS6.Display operation:

The panel is only intended to be used with SIP/SOP facing downward.

BIOS Setup

BIOS Introduction

The AMI BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

The AMI BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the AMI BIOS is immediately activated. Pressing the key immediately allows you to enter the Setup utility. If you are a little bit late pressing the key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

Press to Enter Setup

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Main

Aptio Setup - AMI

Main Advanced Chipset Security Boot Save & Exit MEBx

BIOS Information		
BIOS Version		V1.00
Build Date and Time		05/09/2023 13:50:21
Access Level		Administrator
EC Information		V1.0
EC Build Date		May 05 2023 13:49
Hotkey Information		V1.0
Scalar Information		V1.1
DICOM Information		
Controller		V1.0
Build Date		Feb 03 2023 10:28
Status		No CCM Present
Battery1 Status		Not Present
Current		N/A
Voltage		N/A
Capacity(%)		N/A
Temperature		N/A
Cycle Count		N/A
State of Health(SOH)		N/A

▲
 ++: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F9: Optimized Defaults
 F10: Save & Exit
 ESC: Exit
 ▼

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Aptio Setup - AMI

Main Advanced Chipset Security Boot Save & Exit MEBx

Temperature		N/A
Cycle Count		N/A
State of Health(SOH)		N/A
Battery2 Status		Not Present
Current		N/A
Voltage		N/A
Capacity(%)		N/A
Temperature		N/A
Cycle Count		N/A
State of Health(SOH)		N/A
Battery3 Status		Not Present
Current		N/A
Voltage		N/A
Capacity(%)		N/A
Temperature		N/A
Cycle Count		N/A
State of Health(SOH)		N/A
System Language		[English]
System Date		[Wed 05/10/2023]
System Time		[00:51:59]

▲ Set the Time. Use Tab to switch between Time elements.
 ++: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F9: Optimized Defaults
 F10: Save & Exit
 ESC: Exit
 ▼

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This section provides information on the BIOS information, Embedded controller information and Battery information

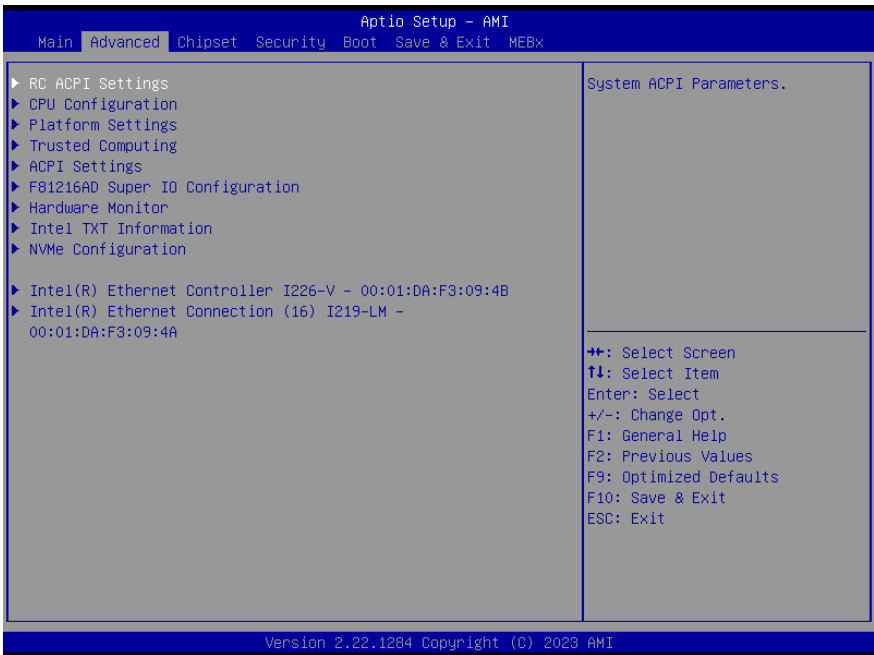
System Date

Set the system date. Use the <Tab> key to switch between data elements.

System Time

Set the system time. Use the <Tab> key to switch between time elements.

Advanced



RC ACPI Settings

System ACPI Parameters.

Wake system from S5

Enable or Disable system wake on alarm event. When enabled, system will wake on the hr::min::sec specified

CPU Configuration

CPU Configuration Parameters

Platform Settings

Platform related settings.

Battery Off Time

Number of seconds of cut off battery output after system shutdowns .0~600 second(s) 0 means disable battery off function

CPU Thermal Trip Point

This value controls the temperature of the ACPI PASSIVE Trip Point - the point in which the OS will begin throttling the processor. Range: 45~100°C

OS WDT Time

Watch dog timer in minute(S) to reset system if OS hangs up. Range:1~250 minute(S) 0 means disable

WDT Timeout Action

Action when WDT time out

Lock key click time

Number of seconds to press lock key to (un) active. 1~10. Default setting is 5 Sec.

Lock status Hold Time

Number of minutes to keep lock status 0 means lick always.1~100 minutes mean lick hold time

ALS

ALS (light sensor) enable/disable

Panel Maximum Brightness

Panel Maximum Brightness Unit: NITS Range:100~2000

ALS Normalize

Unit:% Range:0~500. 100 Means 100%(eg. time1) 225 Means 225% (eg. time 2.25)

Show/hide hidden items

For debug only.

Show / hide hidden items.

Trusted Computing

Trusted Computing settings

Security Device support

Enables or disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

Serial Port Configuration

System Super IO Chip Parameters..

Serial Port 1 Configuration

Set Parameters of Serial Port 1 (COMA).

Serial Port

Select an optimal settings for super IO Device.

Function

Select RS232,RS422,RS485 function

Serial Port 2 Configuration**Serial Port**

Enable or Disable Serial Port (COM).

Serial Port 3 Configuration**Serial Port**

Enable or Disable Serial Port (COM).

Hardware Monitor

Monitor hardware status

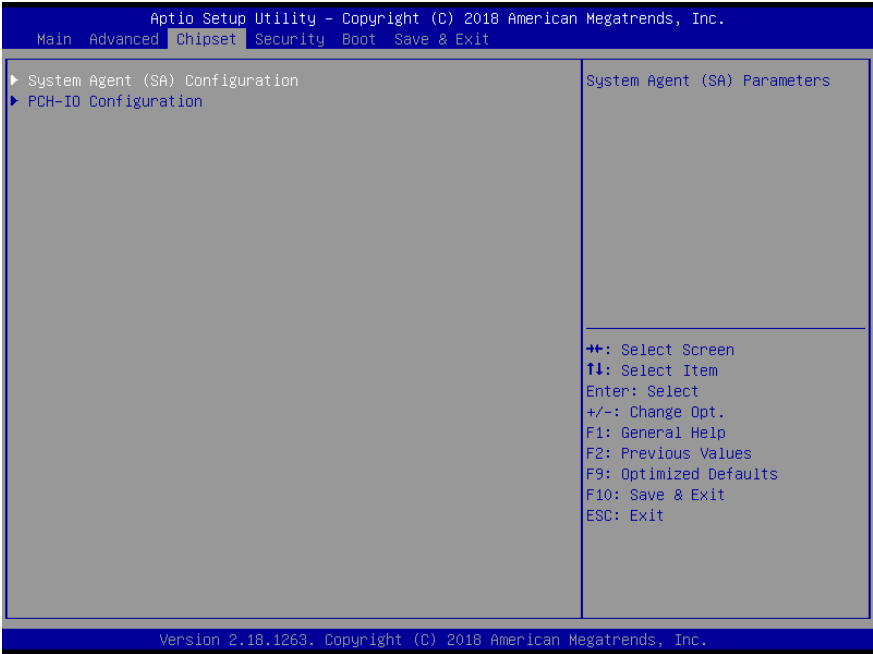
Intel TXT Information

Display Intel TXT information.

NVMe Configuration

NVMe Device Options Settings.

Chipset



System Agent (SA) Configuration

System Agent (SA) Parameters

Memory Configuration

Memory configuration Parameters

Graphics Configuration

Primary Display

Select which of IGFX/PEG/PCI Graphics device should be Primary Display or Select SG for Switchable GFX.

PCI Express Configuration

PCI Express Configuration settings

PCH-IO Configuration

PCI Express Configuration

PCI Express Configuration settings

PCI Express Clock Gating

PCI Express Clock Gating Enable/Disable for each root port.

SATA Configuration

SATA Device Options Settings

SATA Controller(s)

Enable/Disable SATA Device

SATA Mode Selection

Determines how SATA controller(s) operate

SATA Test Mode

Test Mode Enable/Disable (Loop Back)

LAN Wake FromDeepSx

Wake from DeepSX by the assertion of LAN_WAKE# pin

Wake on WLAN Enable

Enable/Disable PCI Express Wireless LAN to wake the system.

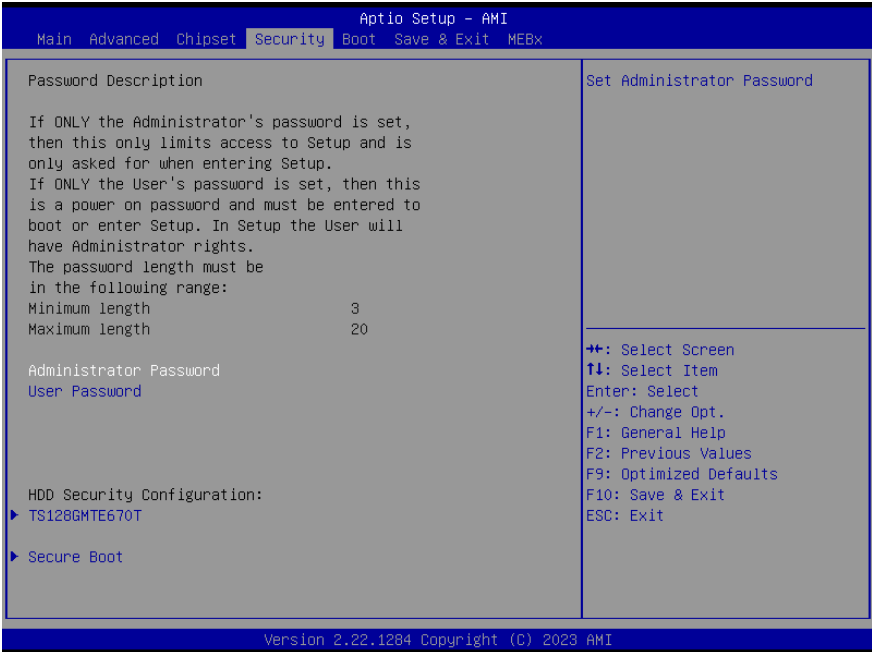
DeepSx Power Policies

Configure the DeepSx mode configuration.

State After G3

Specify what state to go to when power is re-applied after a power failure (G3 state).

Security



Administrator Password

Set Administrator Password.

User Password

Set user Password.

P3 : TS128GMTE670T

HDD Security Configuration for selected drive.

Note: User Password is mandatory to enable HDD Security.

It can also be used to unlock the HDD.

If the 'set User Password ' option is hidden, do power cycle to enable the option again

Secure Boot menu

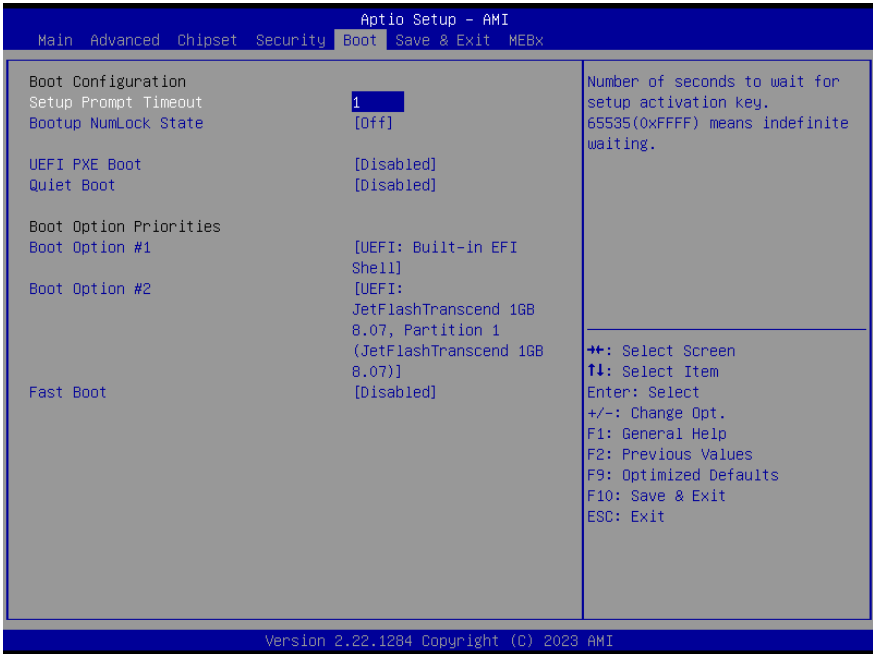
Secure Boot

Secure Boot can be enabled if 1.System running in User mode with enrolled Platform key(PK). 2. CSM function is disabled.

Secure Boot Mode

Secure Boot mode selector. 'Custom' Mode enables users to change Image Execution policy and manage Secure Boot keys.

Boot



Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

Bootup Numlock State

Selects the keyboard NumLock state.

Legacy PXE Boot

Legacy PXE Network Boot Enable / Disable.

UEFI PXE Boot

UEFI PXE Network Boot Enable / Disable.

Boot Option #1

Sets the system boot order.

Boot Option #2

Sets the system boot order.

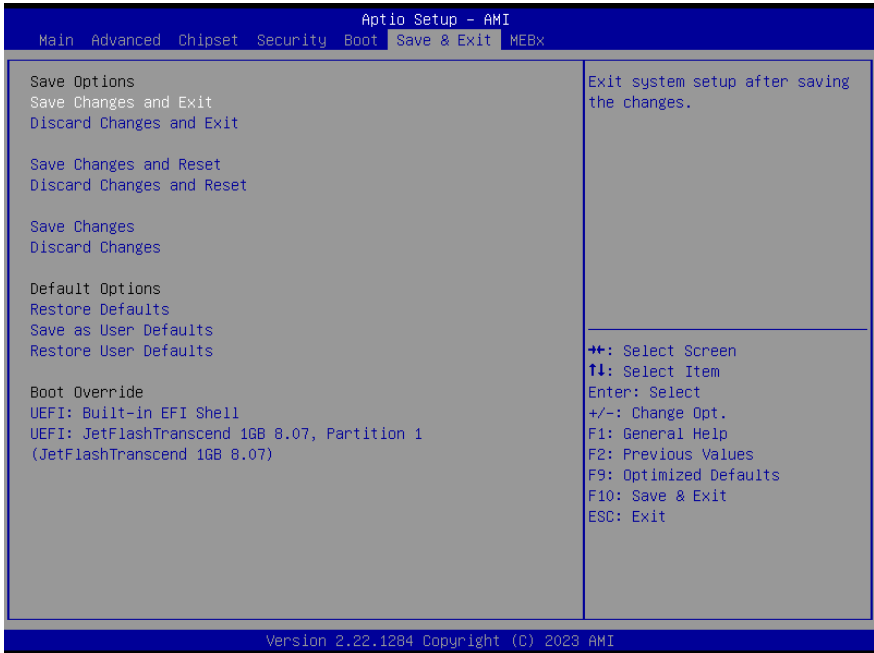
Fast Boot

Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

New Boot Option

Controls the placement of newly detected UEFI boot options

Save & Exit



Save Changes and Exit

Exit system setup after saving the changes.

Discard Changes and Exit

Exit system setup without saving any changes.

Save Changes and Reset

Reset the system after saving the changes.

Discard Changes and Reset

Reset system setup without saving the changes.

Save Changes

Save the changes done so far to any of setup options.

Discard Changes

Discard the changes done so far to any of setup options.

Restore Defaults

Restore/load default values for all the setup options.

Save as User Defaults

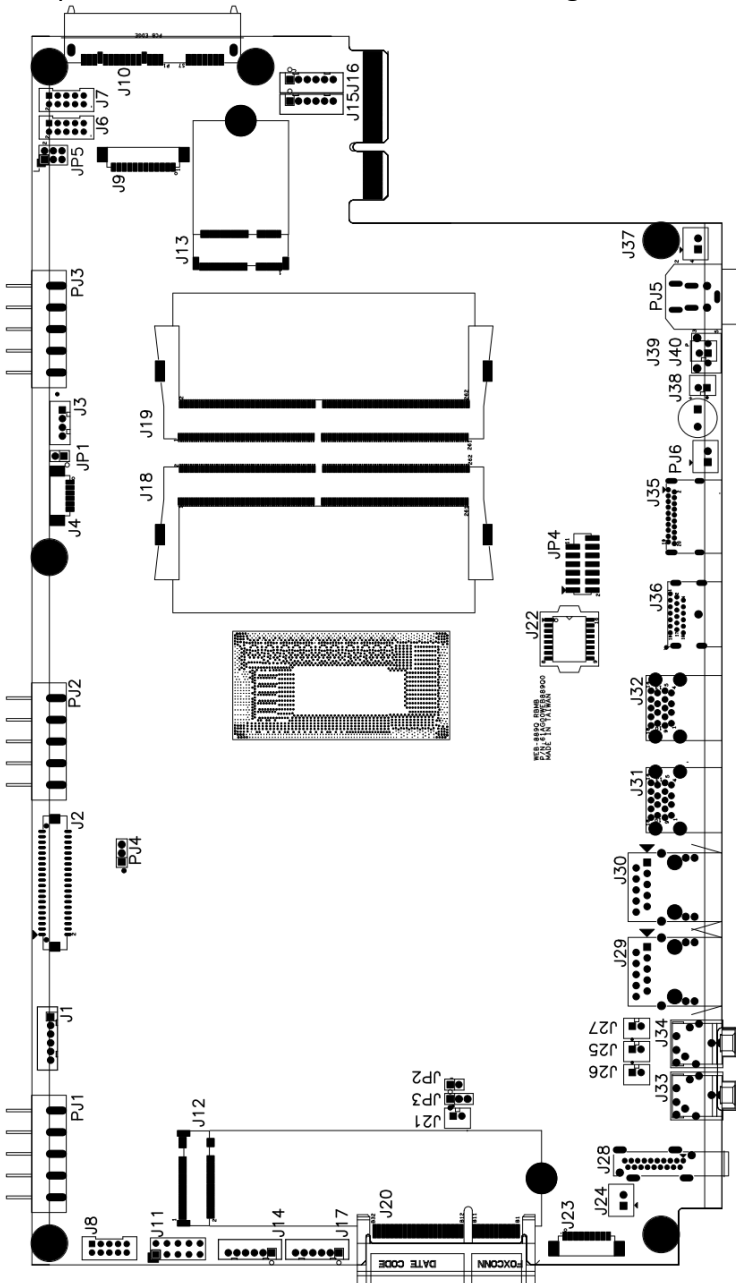
Save the changes done so far as User Defaults.

Restore User Defaults

Restore the User Defaults to all the setup options.

Appendix

Jumper and Connector Definition Block Diagram



This appendix gives the definitions and shows the positions of jumpers, headers and connectors. All of the configuration jumpers on WMP-22P are in the proper position.

JP1 – OSD Position



Description	Jumper Setting
<i>22"OSD</i>	<i>NC (default)</i>
24" OSD	1-2

JP2 – RTC Register Clear Selection



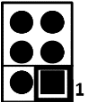
Description	Jumper Setting
<i>Normal</i>	<i>NC (default)</i>
RTC Register Clear	1-2

JP3 – CMOS Clear Selection



Description	Jumper Setting
<i>Normal Open</i>	<i>1-2 (default)</i>
CMOS Clear	2-3

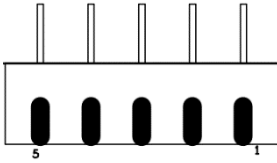
JP5 – PIS/UPS Selection



Description	Jumper Setting
<i>Standard</i>	<i>NC (default)</i>
PIS	1-2
UPS	3-4

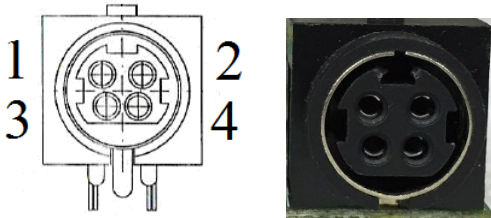
Connector Definition

PJ1 / PJ2 / PJ3 – Battery Connector



Pin #	Signal Description
1	+BAT_V
2	BAT_CLK
3	BAT_DATA
4	BAT_T
5	GND

PJ5 – Power Jack



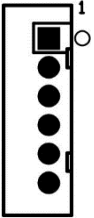
Pin #	Signal Description
1	DC In
2	DC In
3	GND
4	GND

PJ6 – 5V/1A DC OUT



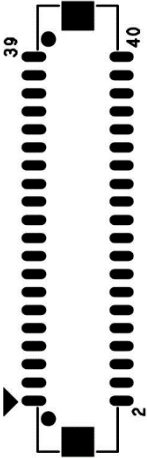
Pin #	Signal Description
1	+5VS
2	GND

J1 – LCD Inverter Wafer Header



Pin #	Signal Description
1	+12VS
2	+12VS
3	Backlight Control
4	Backlight Enable
5	GND
6	GND

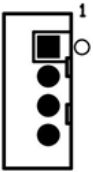
J2 – LVDS Interface



Pin #	Signal Description	Pin #	Signal Description
39	GND	40	GND
37	Ground	38	GND
35	A_TXD3+	36	B_TXD3+
33	A_TXD3-	34	B_TXD3-
31	GND	32	GND
29	A_CLK+	30	B_CLK+
27	A_CLK-	28	B_CLK-

25	GND	26	GND
23	A_TXD2+	24	B_TXD2+
21	A_TXD2-	22	B_TXD2-
19	GND	20	GND
17	A_TXD1+	18	B_TXD1+
15	A_TXD1-	16	B_TXD1-
13	GND	14	GND
11	A_TXD0+	12	B_TXD0+
9	A_TXD0-	10	B_TXD0-
7	GND	8	GND
5	GND	6	GND
3	+LVDS PWR	4	+LVDS PWR
1	+LVDS PWR	2	+LVDS PWR

J3 – EC Debug Pin Header



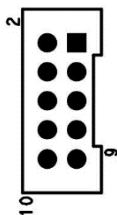
Pin #	Signal Description
1	+3.3VS
2	DBG_SMBCLK
3	DBG_SMBDATA
4	GND

J4 – Light Sensor Connect



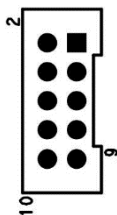
Pin #	Signal Description
1	+3.3V_AWS
2	+5V_AWS
3	Ground
4	SMBCLK
5	LIG_SEN_INT#
6	SMBDATA

J6 – Internal COM1 Serial Port



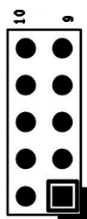
Pin #	Signal Description		
	RS-232	RS-422	RS-485
1	232_DCD#	TX D-	DATA-
2	232_DSR#	--	--
3	232_SIN	TX D+	DATA+
4	232_RTS#	--	--
5	232_SOUT	RX D+	--
6	232_CTS#	--	--
7	232_DTR#	RX D-	--
8	232_RI#	--	--
9	GND	GND	GND
10	NC / +5VS	NC / +5VS	NC / +5VS

J7 – Internal COM2 Serial Port



Pin #	Signal Description	Pin #	Signal Description
2	232_DSR#	1	232_DCD#
4	232_RTS#	3	232_SIN
6	232_CTS#	5	232_SOUT
8	232_RI#	7	232_DTR#
10	NA / +5VS	9	GND

J8 – OSD HOTKEY



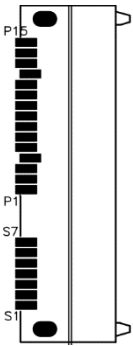
Pin #	Signal Description	Pin #	Signal Description
1	MENU_KEY#	2	LEFT_KEY#
3	POWER_KEY#	4	RIGHT_KEY#
5	UP_KEY#	6	Reserved
7	DOWN_KEY#	8	Reserved
9	AUTO_KEY#	10	GND

J9 – DICOM Connect



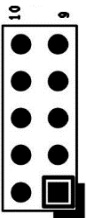
Pin #	Signal Description
1	ASIC_RST#
2	+3.3VS
3	+3.3VS
4	CSC_DET#
5	SCK_OUT
6	SDA_OUT
7	GND
8	SPI_PROG
9	SPI_CLK
10	SPI_DO
11	SPI_DI
12	SPI_CS

J10 – SATA Host Connector



Pin #	Signal Description	Pin #	Signal Description
S1	Ground	P1	+3.3VS
S2	SATA_Tx+	P2	+3.3VS
S3	SATA_Tx-	P3	+3.3VS
S4	Ground	P4	Ground
S5	SATA_Rx-	P5	Ground
S6	SATA_Rx+	P6	Ground
S7	Ground	P7	+5VS
		P8	+5VS
		P9	+5VS
		P10	Ground
		P11	Reserved
		P12	Ground
		P13	+12VS
		P14	+12VS
		P15	+12VS

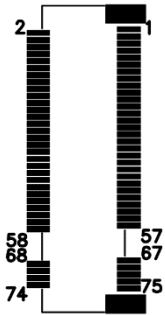
J11 – JTAG For EC



Pin #	Signal Description	Pin #	Signal Description
10	JTAG_5V	9	GND
8	Reserved	7	RST#
6	Reserved	5	+3.3V
4	C2D	3	GND

2	GND	1	+3.3V
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J12 – M.2 SATA SSD Connector



Pin #	Signal Description	Pin #	Signal Description
1	GND	2	+3.3VS
3	GND	4	+3.3VS
5	NC	6	NC
7	NC	8	NC
9	GND	10	RSVD
11	NC	12	+3.3VS
13	NC	14	+3.3VS
15	GND	16	+3.3VS
17	NC	18	+3.3VS
19	NC	20	NC
21	GND	22	NC
23	NC	24	NC
25	NC	26	NC
27	GND	28	NC
29	NC	30	NC
31	NC	32	NC
33	GND	34	NC
35	NC	36	NC
37	NC	38	M2_DVESLP
39	GND	40	NC
41	SATA_RXP	42	NC
43	SATA_RXN	44	NC
45	GND	46	NC
47	SATA_TXN	48	NC
49	SATA_TXP	50	PLT_RST#
51	GND	52	NC
53	NC	54	PCIE_WAKE#
55	NC	56	NC

57	GND	58	NC
59	NA	60	NA
61	NA	62	NA
63	NA	64	NA
65	NA	66	NA
67	NC	68	RSVD / SUS_CLK
69	M2_PEDET	70	+3.3VS
71	GND	72	+3.3VS
73	GND	74	+3.3VS
75	GND		

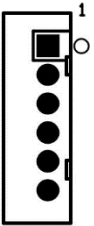
J13 – M.2 E_KEY



Pin #	Signal Description	Pin #	Signal Description
1	GND	2	+3.3V
3	USB_D+	4	+3.3V
5	USB_D-	6	RSVD
7	GND	8	NC
9	NC	10	NC
11	NC	12	NC
13	NC	14	NC
15	NC	16	RSVD
17	NC	18	GND
19	NC	20	NC
21	NC	22	NC
23	NC	24	NA
25	NA	26	NA
27	NA	28	NA
29	NA	30	NA
31	NA	32	NC
33	GND	34	NC
35	PETPO	36	NC
37	PETNO	38	CLINK Reset
39	GND	40	CLINK DATA
41	PERPO	42	CLINK CLK
43	PERNO	44	RSVD

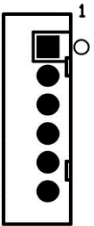
45	GND	46	RSVD
47	REFCLKP0	48	RSVD
49	REFCLKN0	50	NC / SUSCLK
51	GND	52	PERSTO#
53	CLKREQ0#	54	BT_DISABLE2#
55	PEWAKE0#	56	W_DISABLE1#
57	GND	58	NC
59	NC	60	NC
61	NC	62	NC
63	GND	64	NC
65	NC	66	RSVD
67	NC	68	RSVD
69	GND	70	RSVD
71	NC	72	+3.3V
73	NC	74	+3.3V
75	GND		

J14 / J17 – Internal USB 2.0 Pin Header



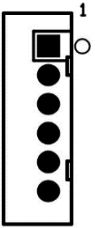
Pin #	Signal Description
1	+5VSB
2	+5VSB
3	Data -
4	Data +
5	GND
6	GND

J15 – Internal USB 2.0 Pin Header for Webcam



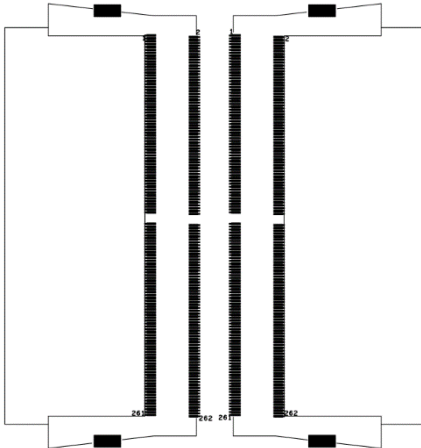
Pin #	Signal Description
1	+5VSB
2	+5VSB
3	Data -
4	Data +
5	GND
6	GND

J16 – Internal USB 2.0 Pin Header for PCT Touch



Pin #	Signal Description
1	+5VSB
2	+5VSB
3	Data -
4	Data +
5	GND
6	GND

J18 / J19 – DDR5 SO-DIMM Interface

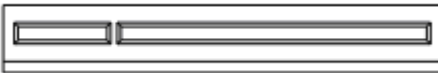


J18 → REV

J19 → STD

262-Pin DDR5 SODIMM Front						262-Pin DDR5 SODIMM Back					
Pin	Symbol	Pin	Symbol	Pin	Symbol	Pin	Symbol	Pin	Symbol	Pin	Symbol
1	VIN_BULK	89	V _{SS}	175	CB3_B	2	HSA	90	V _{SS}	176	CB2_B
3	VIN_BULK	91	DQ30_A	177	V _{SS}	4	HSL	92	DQ31_A	178	V _{SS}
5	RFU	93	V _{SS}	179	DQ0_B	6	HSDA	94	V _{SS}	180	DQ1_B
7	PWR_GOOD	95	CB0_A	181	V _{SS}	8	PWR_EN	96	CB1_A	182	V _{SS}
9	V _{SS}	97	V _{SS}	183	DQ2_B	10	V _{SS}	98	V _{SS}	184	DQ3_B
11	DQ0_A	99	CB2_A	185	V _{SS}	12	DQ1_A	100	DQ54_A_c	186	V _{SS}
13	V _{SS}	101	V _{SS}	187	DM0_B_n	14	V _{SS}	102	DQ54_A_t	188	DQ50_B_c
15	DQ2_A	103	CB3_A	189	V _{SS}	16	DQ3_A	104	V _{SS}	190	DQ50_B_t
17	V _{SS}	105	V _{SS}	191	DQ4_B	18	V _{SS}	106	CS0_A_n	192	V _{SS}
19	DM0_A_n	107	CA0_A	193	V _{SS}	20	DQ50_A_c	108	ALERT_n	194	DQ5_B
21	V _{SS}	109	CA1_A	195	DQ6_B	22	DQ50_A_t	110	CS1_A_n	196	V _{SS}
23	DQ4_A	111	V _{SS}	197	V _{SS}	24	V _{SS}	112	V _{SS}	198	DQ7_B
25	V _{SS}	113	CA2_A	199	DQ8_B	26	DQ5_A	114	CA3_A	200	V _{SS}
27	DQ6_A	115	CA4_A	201	V _{SS}	28	V _{SS}	116	CA5_A	202	DQ9_B
29	V _{SS}	117	V _{SS}	203	DQ10_B	30	DQ7_A	118	V _{SS}	204	V _{SS}
31	DQ8_A	119	CA6_A	205	V _{SS}	32	V _{SS}	120	CA7_A	206	DQ11_B
33	V _{SS}	121	CA8_A	207	DQ51_B_c	34	DQ09_A	122	CA9_A	208	V _{SS}
35	DQ10_A	123	V _{SS}	209	DQ51_B_t	36	V _{SS}	124	V _{SS}	210	DM1_B_n
37	V _{SS}	125	CA10_A	211	V _{SS}	38	DQ11_A	126	CA11_A	212	V _{SS}
39	DQ51_A_c		KEY	213	DQ12_B	40	V _{SS}		KEY	214	DQ13_B
41	DQ51_A_t	127	CA12_A	215	V _{SS}	42	DM1_A_n	128	RFU	216	V _{SS}
43	V _{SS}	129	V _{SS}	217	DQ14_B	44	V _{SS}	130	V _{SS}	218	DQ15_B
45	DQ12_A	131	CK0_A_t	219	V _{SS}	46	DQ13_A	132	CK1_A_t	220	V _{SS}
47	V _{SS}	133	CK0_A_c	221	DQ16_B	48	V _{SS}	134	CK1_A_c	222	DQ17_B
49	DQ14_A	135	V _{SS}	223	V _{SS}	50	DQ15_A	136	V _{SS}	224	V _{SS}
51	V _{SS}	137	CK0_B_t	225	DQ18_B	52	V _{SS}	138	CK1_B_t	226	DQ19_B
53	DQ16_A	139	CK0_B_c	227	V _{SS}	54	DQ17_A	140	CK1_B_c	228	V _{SS}
55	V _{SS}	141	V _{SS}	229	DM2_B_n	56	V _{SS}	142	V _{SS}	230	DQ52_B_c
57	DQ18_A	143	RFU	231	V _{SS}	58	DQ19_A	144	CA12_B	232	DQ52_B_t
59	V _{SS}	145	CA11_B	233	DQ20_B	60	V _{SS}	146	CA10_B	234	V _{SS}
61	DM2_A_n	147	V _{SS}	235	V _{SS}	62	DQ52_A_c	148	V _{SS}	236	DQ21_B
63	V _{SS}	149	CA9_B	237	DQ22_B	64	DQ52_A_t	150	CA8_B	238	V _{SS}
65	DQ20_A	151	CA7_B	239	V _{SS}	66	V _{SS}	152	CA6_B	240	DQ23_B
67	V _{SS}	153	V _{SS}	241	DQ24_B	68	DQ21_A	154	V _{SS}	242	V _{SS}
69	DQ22_A	155	CA5_B	243	V _{SS}	70	V _{SS}	156	CA4_B	244	DQ25_B
71	V _{SS}	157	CA3_B	245	DQ26_B	72	DQ23_A	158	CA2_B	246	V _{SS}
73	DQ24_A	159	V _{SS}	247	V _{SS}	74	V _{SS}	160	V _{SS}	248	DQ27_B
75	V _{SS}	161	CS0_B_n	249	DQ53_B_c	76	DQ25_A	162	CA1_B	250	V _{SS}
77	DQ26_A	163	RESET_n	251	DQ53_B_t	78	V _{SS}	164	CA0_B	252	DM3_B_n
79	V _{SS}	165	CS1_B_n	253	V _{SS}	80	DQ27_A	166	V _{SS}	254	V _{SS}
81	DQ53_A_c	167	V _{SS}	255	DQ28_B	82	V _{SS}	168	CB0_B	256	DQ29_B
83	DQ53_A_t	169	DQ54_B_c	257	V _{SS}	84	DM3_A_n	170	V _{SS}	258	V _{SS}
85	V _{SS}	171	DQ54_B_t	259	DQ30_B	86	V _{SS}	172	CB1_B	260	DQ31_B
87	DQ28_A	173	V _{SS}	261	V _{SS}	88	DQ29_A	174	V _{SS}	262	V _{SS}

J20 – PCIe x4 Connector



Pin #	Side B	Side A	Pin #	Side B	Side A
1	+12VS	RSVD	17	RSVD	RXN0

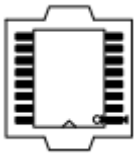
2	+12VS	+12VS	18	GND	GND
3	RSVD	+12VS	19	TXP1	RSVD
4	GND	GND	20	TXN1	GND
5	SMBCLK	RSVD	21	GND	RXP1
6	SMBDATA	RSVD	22	GND	RXN1
7	GND	RSVD	23	TXP2	GND
8	+3.3VS_PCIE	RSVD	24	TXN2	GND
9	RSVD	+3.3VS_PCIE	25	GND	RXP2
10	+3.3VSB	+3.3VS_PCIE	26	GND	RXN2
11	PCIE_WAKE#	PLT_RST#	27	TXP3	GND
12	PCIE_CLKRQ#	GND	28	TXN3	GND
13	GND	CLKP	29	GND	RXP3
14	TXP0	CLKN	30	RSVD	RXN3
15	TXN0	GND	31	RSVD	GND
16	GND	RXP0	32	GND	RSVD

J21 – Battery Socket



Pin #	Signal Description
1	+BAT
2	GND

J22 – BIOS Socket



Pin #	Signal Description	Pin #	Signal Description
1	HOLD	9	WP
2	+3.3VSB	10	GND
3	RESET#	11	Reserved
4	Reserved	12	Reserved
5	Reserved	13	Reserved
6	Reserved	14	Reserved
7	CS0#	15	MOSI
8	MISO	16	SCLK

J23 – CAP Front Bezel Button



Pin #	Signal Description
1	+5VS_ALWAYS
2	+3.3V_ALWAYS
3	KP_SCL
4	KP_SDA
5	PWR_LED#
6	KP_P_LED#
7	SATA_LED#
8	GND
9	GND

J24, J37 – Reading Light Connector



Pin #	Signal Description
1	+12VSB
2	GND

J25, J26 – RIGHT / LEFT CH for Speaker.



Pin #	Signal Description	
	J26 (LEFT CH)	J25 (RIGHT CH)
1	LOUT+	ROUT+
2	LOUT-	ROUT-

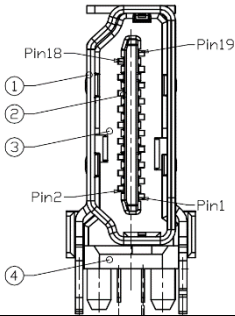
J27 – Internal MIC Connect



Pin #	Signal Description
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1	MIC_R/ MIC_L
2	GND

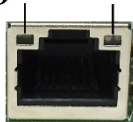
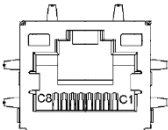
J28 – HDMI Output CON



Pin #	Signal Description	Pin #	Signal Description
1	HDMI_TMDSP2	2	GND
3	HDMI_TMDSN2	4	HDMI_TMDSP1
5	GND	6	HDMI_TMDSN1
7	HDMI_TMDSP0	8	GND
9	HDMI_TMDSN0	10	HDMI_TMDS_CLKP
11	GND	12	HDMI_TMDS_CLKN
13	HDMI_CRLS_CEC	14	HDMI_CRLS_RSV
15	HDMI_CRLS_SCL	16	HDMI_CRLS_SDA
17	GND	18	+5V_CRLS_HDMI
19	HDMI_CRLS_HPD		

J29 / J30 –External RJ45 Ethernet Port

Activity/Link LED *Speed LED*



Activity/Link LED

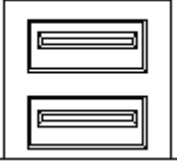
Status	Description
OFF	No Link
Blinking	Data Activity
ON	Link

Speed LED

Status	Description
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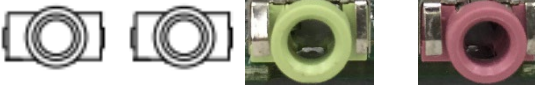
OFF	10 Mbps
Green	100 Mbps
Orange	1 Gbps

J31,J32 – USB3.0 Port



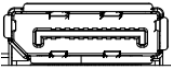
Pin #	Signal Description	Pin #	Signal Description
1	+5V	10	+5V
2	Data1-	11	Data2-
3	Data1+	12	Data2+
4	GND	13	GND
5	SSRX1-	14	SSRX2-
6	SSRX1+	15	SSRX2+
7	GND	16	GND
8	SSTX1-	17	SSTX2-
9	SSTX1+	18	SSTX2+

J33 / J34 – External Audio Phone Jack



Audio Jack	Signal Description
J33	Line Out (stereo) Green
J34	Microphone (stereo) Pink

J35 – DisplayPort Interface



Pin #	Signal Description	Pin #	Signal Description
1	ML_LANE0+	11	GND
2	GND	12	ML_LANE3-
3	ML_LANE0-	13	CONFI G1
4	ML_LAN1+	14	CONGI G2
5	GND	15	AUX_CH+
6	ML_LAN1-	16	GND
7	ML_LANE2+	17	AUX_CH-

8	GND	18	HOT PLUG
9	ML_LANE2-	19	RETURN
10	ML_LANE3+	20	+3.3VS

J38 – Power Switch connect



Pin #	Signal Description
1	Power ON
2	GND

J39 – Reset Connector



Pin #	Signal Description
1	SYS_RESET#
2	GND

J40 – Reset Button



Pin #	Signal Description
1	SYS_RESET#
2	GND
3	GND
4	GND

JP4 –TPM2.0



Pin #	Signal Description	Pin #	Signal Description
1	SPI_TPM_CS#	2	+3.3VSB
3	SPI_TPM_INT#_R	4	PLT_RST#
5	NC	6	NC
7	GND	8	NC

9	SPI_TPM_CLK	10	NC
11	SPI_TPM_MOSI	12	SPI_TPM_MISO
NA	NA	14	NC

PCIE X4 Golden Finger for ISO Interface

Pin #	Side B	Side A	Pin #	Side B	Side A
1	ISOUSB_SELECT	GND	17	GND	LPC_FRAME#
2	GND	GND	18	GND	LPC_AD0
3	PCIE1_RXN	NC	19	+3.3VSB	LPC_AD1
4	PCIE1_RXP	NC	20	+3.3VSB	LPC_AD2
5	GND	GND	21	+5VSB	LPC_AD3
6	PCIE1_TXN	NC	22	+5VSB	USB_OC#
7	PCIE1_TXP	NC	23	+5VSB	COM_GPO1
8	GND	GND	24	+5VSB	COM_GPO2
9	PCIE1_CLKN	USBPP	25	+5VSB	COM_GPO3
10	PCIE1_CLKP	USBPN	26	GND	GND
11	GND	GND	27	GND	+3.3VS
12	PCIE_WAKE#	USB_PWREN	28	GND	+3.3VS
13	PCIE1_CLKRQ#	GND	29	GND	GND
14	PLT_RST#	LPC_UART24M	30	GND	GND
15	GND	GND	31	GND	GND
16	GND	SERIRQ	32	ISO_DET#	GND