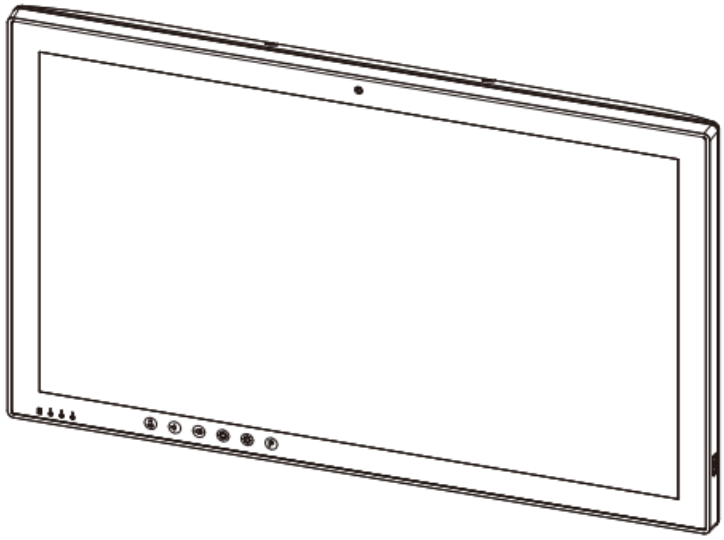
FLYTECH K95A Panel PC Hardware System User Manual

Contents

USER MANUAL

VERSION 1.0 September 2023

Panel PC Hardware System



Manual Version 1.0

TRADEMARK

Safety

IMPORTANT SAFETY INSTRUCTIONS

1. To disconnect the machine from the electrical power supply, turn off the power switch and remove the power cord plug from the wall socket. The wall socket must be easily accessible and in close proximity to the machine.
2. Read these instructions carefully. Save these instructions for future reference.
3. Follow all warnings and instructions marked on the product.
4. Do not use this product near water.
5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
6. Slots and openings in the cabinet and the back or bottom are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register or in a built-in installation unless proper ventilation is provided.
7. This product should be operated from the type of power indicated on the marking label. If you are not sure of

the type of power available, consult your dealer or local power company.

8. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
9. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
10. To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
11. No modification of this equipment is allowed.
12. Power supply is specified as part of medical equipment.
13. The medical PC can be cleaned in accordance with normal clinical cleaning practices, including wiping with water or medical grade wipes, provided no substance containing acids or cleaning alkali liquids is used.
14. Medical grade wipes must not contain more than 80% alcohol content measured against the total content of the wipe.
15. Operator shall not contact patient simultaneously when in use with the medical computer.

CE MARK

This device complies with the requirements of the EEC directive 2014/30/EU with regard to “Electromagnetic compatibility” and 2014/35/EU “Low Voltage Directive”.

FCC

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

MEDICAL-GENERAL MEDICAL EQUIPMENT WITH RESPECT TO ELECTRICAL SHOCK,FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH ANSI/AAMI ES60601-1 (2005 and Amendment 1), CAN/CSA-C22.2 NO.60601-1(2014)

CAUTION ON LITHIUM BATTERIES

There is a danger of explosion if the battery is replaced incorrectly. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer’s instructions.

Battery Caution
Risk of explosion if battery is replaced by an incorrectly type. Dispose of used battery according to the local disposal instructions.

Safety Caution
Note: To comply with IEC60950-1 Clause 2.5 (limited power sources, L.P.S) related legislation, peripherals shall be 4.7.3.2 “Materials for fire enclosure” compliant.

4.7.3.2 Materials for fire enclosures
For MOVABLE EQUIPMENT having a total mass not exceeding 18kg.the material of a FIRE ENCLOSURE, in the

thinnest significant wall thickness used, shall be of V-1 CLASS MATERIAL or shall pass the test of Clause A.2. For MOVABLE EQUIPMENT having a total mass exceeding 18kg and for all STATIONARY EQUIPMENT, the material of a FIRE ENCLOSURE, in the thinnest significant wall thickness used, shall be of 5VB CLASS MATERIAL or shall pass the test of Clause A.1

LEGISLATION AND WEEE SYMBOL

2012/19/EU Waste Electrical and Electronic Equipment Directive on the treatment, collection, recycling and disposal of electric and electronic devices and their components.

The crossed dust bin symbol on the device means that it should not be disposed of with other household wastes at the end of its working life. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure.
To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.

This product should not be mixed with other commercial wastes for disposal.

IEC Standards

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 606 01-1. Anyone who connects additional equipment to the signal input part or signal output part is configuring a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 60601-1.
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.

Troubleshooting

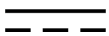
For your own safety and that of your equipment, always take the following precautions.
Disconnect the power plug (by pulling the plug, not the cord), from your computer if any of the following conditions exists:

- The power cord or plug becomes frayed or otherwise damaged.
- You spill something into the system.
- Your computer has been dropped or damaged.
- You suspect that your computer needs service or repair.
- You want to clean the computer or screen.
- You want to remove/install any parts.

Repair of the device may only be carried out by the manufacture.
We recommend that a service contract be obtained with supplier and that all repairs also be carried out by them. Otherwise the correct functioning of the device may be compromised.

- In case of serious incident that has occurred, please contact the manufacturer and local authorities immediately.
- Please use suitable mounting apparatus to avoid risk of injury. It shall be mounted by trained and authorized personnel on adequate allowances for quality of materials used to make the connection.
- It is recommended to install the appropriate software, if have any question, please contact the manufacturer for further assistance.
- To prevent unauthorized access, it is recommended to install suitable anti-virus software or do not connect to unsafe external networks.

Symbol Definition

Symbol	Definition
	ISO 7010-M002: Follow instructions for use
	IEC 60417-5031: Direct Current
	IEC 60417-5032: Alternating Current
	IEC 60417 -5009: STAND-BY
	ISO 7000 – 2497: Data of manufacture
	ISO 15223-1:2021: Medical Device

EMC Table

Emission **EN 60601-1-2:2015 / IEC 60601-1-2:2014**				
Standard(s)	**Test Item**	**Limit**	**Results**	**Remark**
CISPR 11:2009+A1:2010 (Group 1)	Mains terminal disturbance voltages	Class B	Complied	–
	Electromagnetic radiation disturbance	Class B	Complied	–

Standard(s)	Test Item	Limit	Judgment	Remark
EN 61000-3-2: 2014	Harmonic current emissions	Class D	Complied	–
EN 61000-3-3: 2013	Voltage changes, voltage fluctuations and flicker	–	Complied	–

Immunity EN 60601-1-2:2015 / IEC 60601-1-2:2014			
Basic Standards	**Environmental phenomenon**	**Pass/Fail criteria**	**Results**
EN 61000-4-2: 2009	Electrostatic discharge		Complied
EN 61000-4-3: 2006 +A1: 2008 +A2: 2010	Radiated RF EM fields and Proximity fields from RF wireless communications equipment		Complied
EN 61000-4-4: 2012	Electrical fast transients / bursts		Complied
EN 61000-4-5: 2014 +A1: 2017	Surges	Refer to clause 5.2.	Complied
EN 61000-4-6: 2014 +AC: 2015	Conducted disturbances induced by RF fields		Complied
EN 61000-4-8: 2010	RATED power frequency magnetic fields		Complied
EN 61000-4-11: 2004	Voltage dips and Voltage		Complied

NOTE:
(1) “N/A” denotes test is not applicable in this Test Report.
(2) For equipment with a rated power of 75 W or less, limits are not specified.
(3) Keep the device away from other Peripheral devices for at least 0.1m in order to prevent EMC disruption to other medical devices.

Fail criteria	• Malfunction • Non-operation when operation is required; unwanted operation when no operation is required • Deviation from normal operation that poses an unacceptable RISK to the PATIENT or OPERATOR • Component failures • Change in programmable parameters • Reset to factory default (MANUFACTURER's presets) • Change of operating mode • a FALSE POSITIVE ALARM CONDITION • a FALSE NEGATIVE ALARM CONDITION (failure to alarm) • Cessation or interruption of any intended operation, even if accompanied by an ALARM SIGNAL • Initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an ALARM SIGNAL • Error of a displayed numerical value sufficiently large to affect diagnosis or treatment • Noise on a waveform in which the noise would interfere with diagnosis, treatment or monitoring • Artefact or distortion in an image in which the artefact would interfere with diagnosis • Treatment or monitoring • Failure of automatic diagnosis or treatment ME EQUIPMENT or ME SYSTEM to diagnose or treat, even if accompanied by an ALARM SIGNAL.

Revision History

Changes to the original user manual are listed below:

Revision	Description	Date
1.0	• Initial release	September 2023

1. Intended Use

The Medical Computer is a computing device capable of storing, retrieving and sending data electronically. This Medical Computer, including its user interface, RTC battery, PCB and power supply, is intended to be fixed to a VESA wall mount in medical care environment. This Medical Computer Hardware System must be operated by professional personnel (i.e., doctor, nurse…).

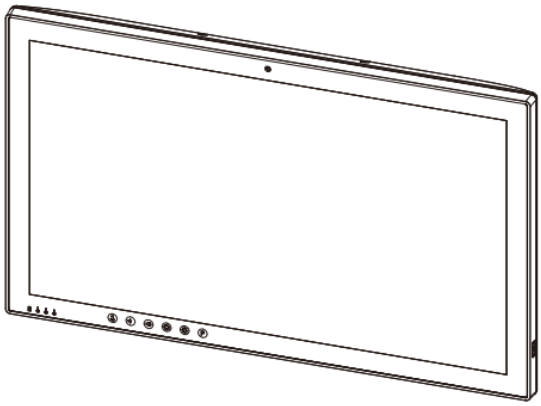
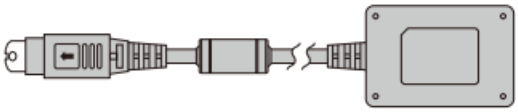
Application: Access to patient records / Hospital administration system / Bed management.

Cleaning method

- Turn off the system and disconnect the power cord and remove batteries before cleaning the system.
- The monitor can be cleaned by wiping external surface of enclosure with ethanol (not more than 75%) solution, 2 times a week.
- Spread the cleaning liquid onto a sponge or cloth and then wipe the touch screen gently.
- When wiping, avoid any openings and gaps and be careful not to allow liquid to seep into the place.

2. Packing List

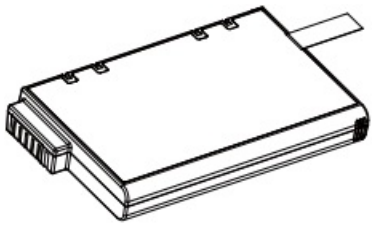
2-1. Standard Items

a. 	b. 
c. 	

a. System
b. Power adapter
c. Power cord

Note: Power cord will be supplied differently according to various region or country.

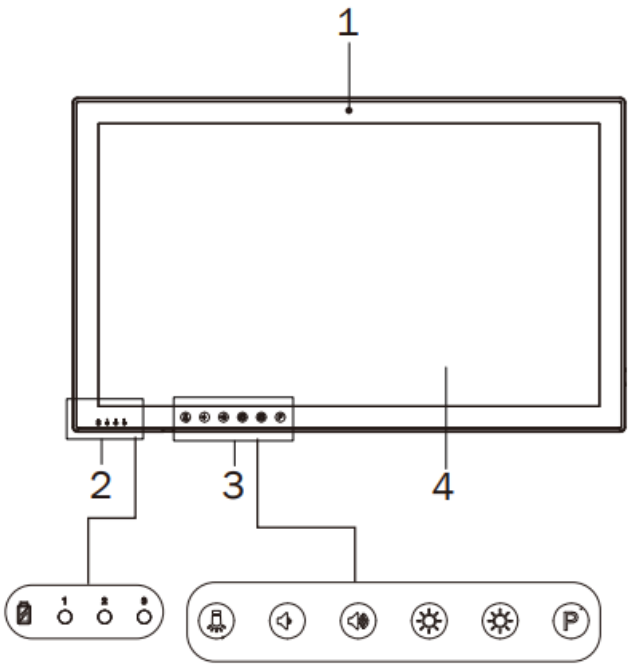
2-2. Optional Items

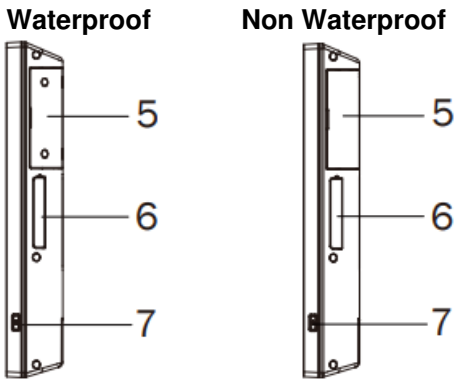
a. 

a. Battery

3. System View

3-1. Front & Side View

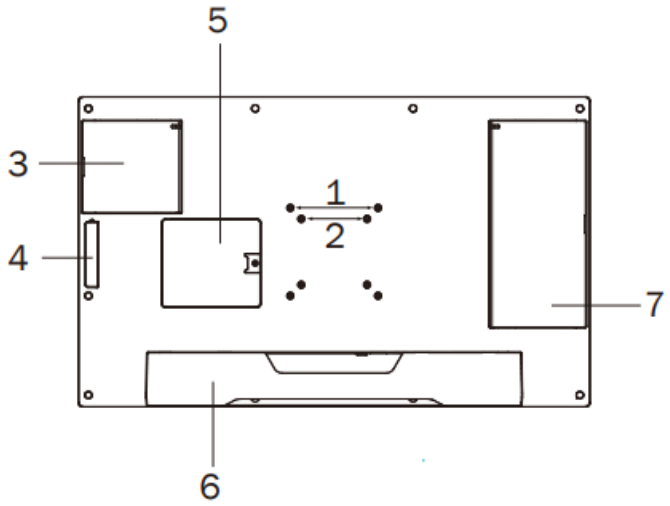




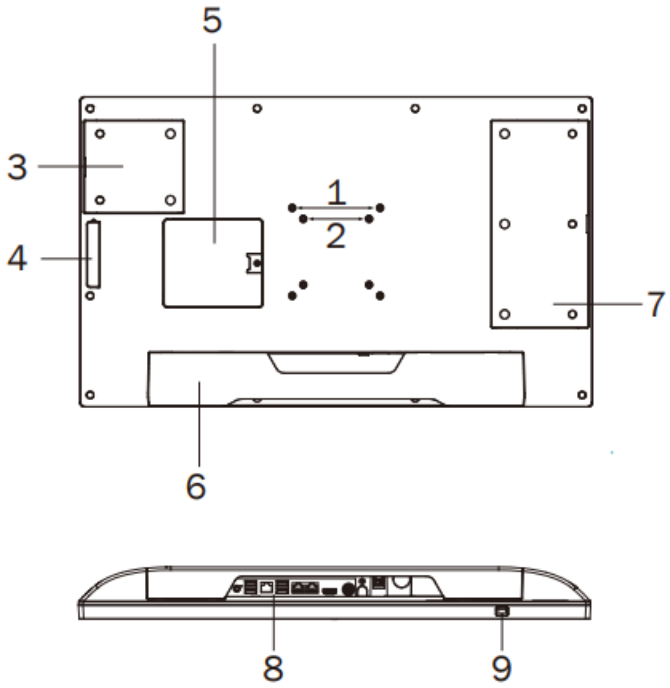
Item No.	Description
1	5M front camera (option)
2	batteries status
3	capacitive sensor touch function keys (from left to right: LED reading light/ Volume down/ Volume up/ Brightness down/ Brightness up/ Programmable function key)
4	23.8” true flat PCAP multi-touch
5	Battery cover
6	Dummy cover of smart card reader
7	Power button

3-2. Rear & Bottom View

Non Waterproof



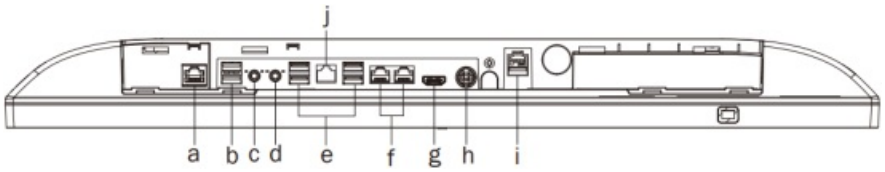
Waterproof



Item No.	Description
1	100 x 100 VESA mounting holes
2	75 x 75 VESA mounting holes
3	Single battery cover
4	Dummy cover of smart card reader
5	Service door
6	Cable cover
7	Double battery cover
8	I/O ports
9	LED reading light

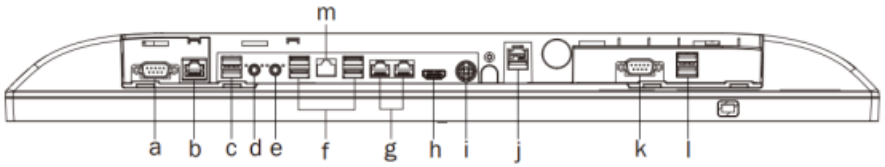
3-3. I/O View

3-3-1. Standard



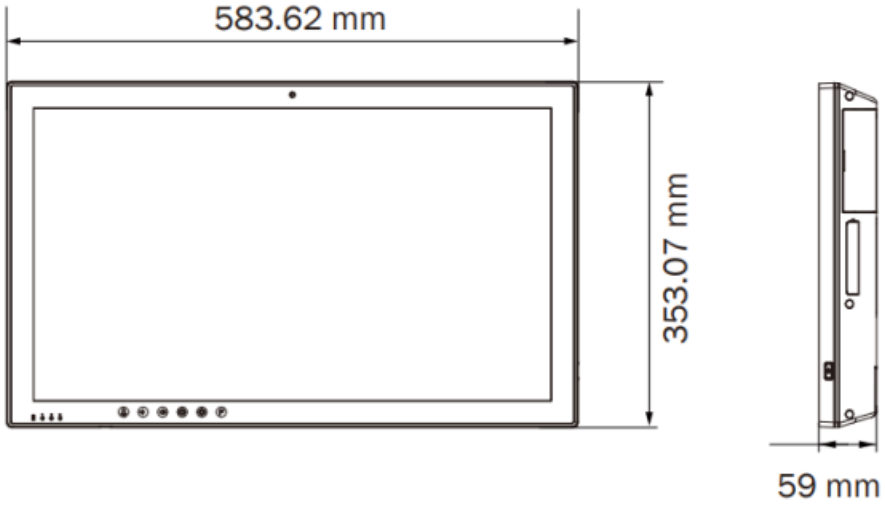
Item No.	Description
a	2nd LAN
b	USB 2.0 (x2)
c	Mic in
d	Line out
e	USB 3.0 (x4)
f	COM 1, 2
g	HDMI
h	DC in
i	Powered USB 24V
j	LAN

3-3-2. Full Function



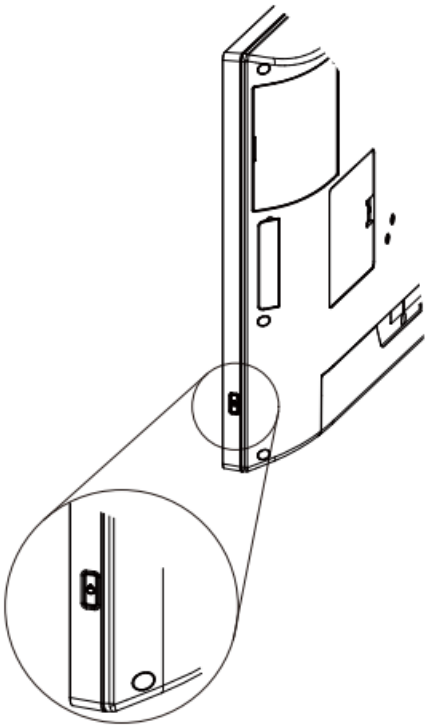
Item No.	Description
a	COM 3
b	2nd LAN
c	USB 2.0 (x2)
d	Mic in
e	Line out
f	USB 3.0 (x4)
g	COM 1, 2
h	HDMI
i	DC in
j	Powered USB 24V
k	COM 4
l	USB 2.0 (x2)
m	LAN

3-4. Dimensions



4. Basic Operation

4-1. Power ON & OFF



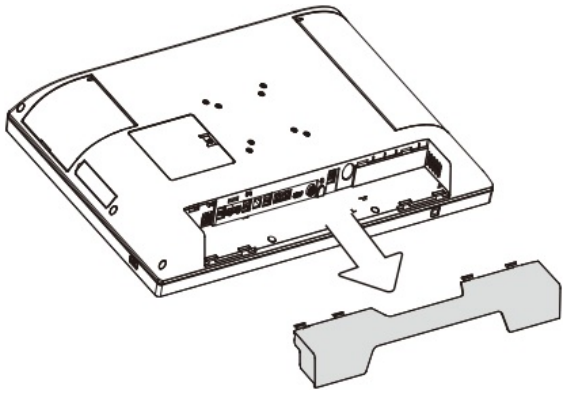
To activate the system, push and quickly release the power button and the display will come on in a few seconds.
NOTE: The system must be plugged into power adapter or battery charged before turning on for the first time.

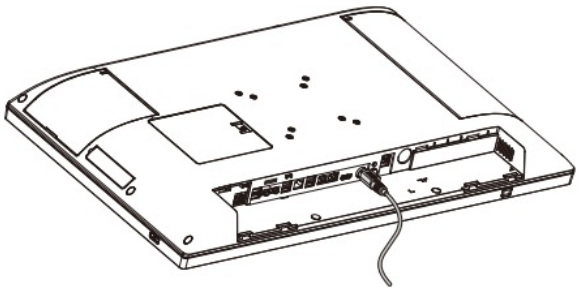
To turn off the system, power off the device safely using software function that “shuts down computer” provided in the operating system.

4-2. Charge the Battery

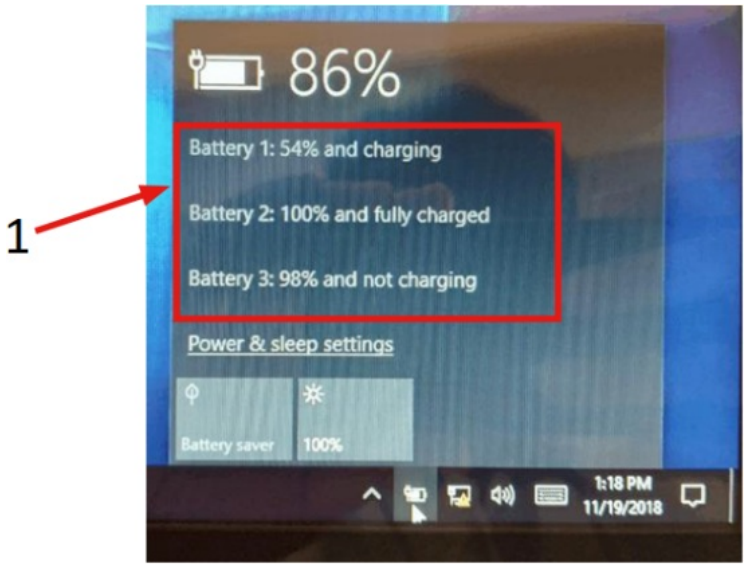
The system is equipped with 3 hot-swappable batteries.

1. The batteries may be charged by connecting the supplied power adapter directly to the DC-in port on the system.
2. Open the cable cover and plug the cable directly into the connector. Then plug the adapter directly into the power outlet.





The system will charge in the order of battery 1 to battery 3.



1. Status will show the capacity of each battery.

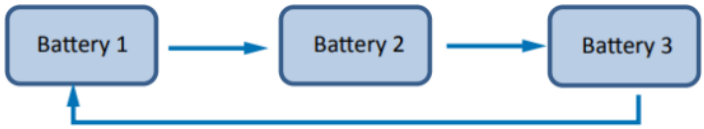
4-3. Battery Level Indication

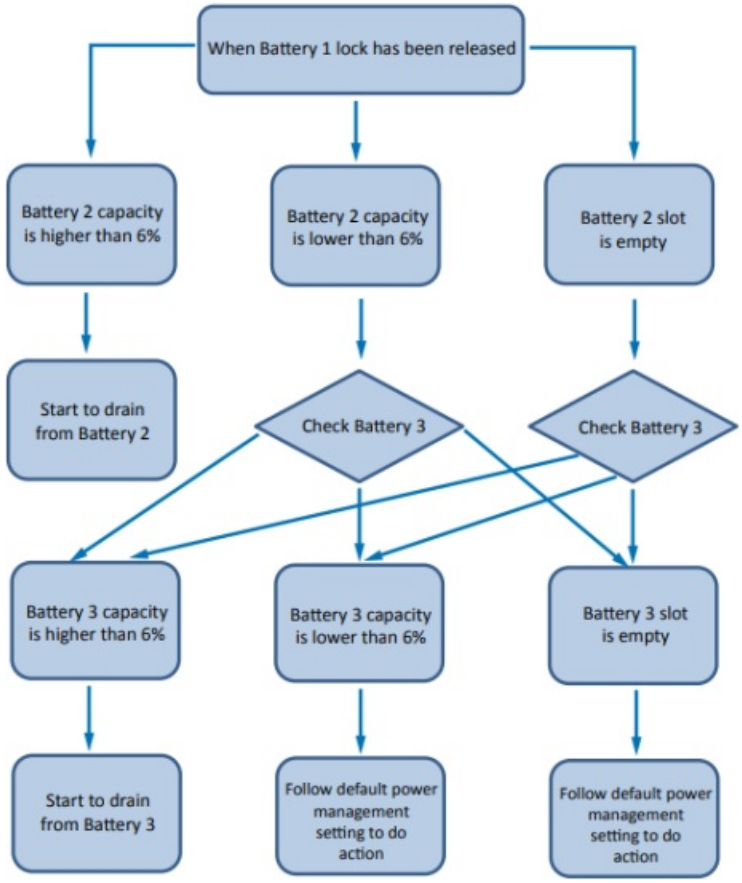
Each battery provides an battery level indicator LED on the front of the system. The signals charge status are as follows:

DC in Mode	Battery	Battery full charged	GREEN
		Battery charging	GREEN blinks slowly
		Battery standby	GREEN
		Battery error	AMBER blinks quickly
	Without battery	No signal	
	Battery / Power off	Battery full charged	GREEN
		Battery charging	GREEN blinks slowly
		Battery standby	GREEN
Battery Mode	Battery	Battery discharging	ORANGE blinks slowly
		Battery standby	GREEN
		Battery lower than 12%, higher than 6%	AMBER blinks slowly
		Battery lower than 6%	AMBER
		Battery error	AMBER blinks quickly
	Without battery	No signal	
	Battery / Power off	No signal	
	Battery / Power off	All batteries lower than 6%	AMBER lights up for 6 seconds

4-4. Battery Discharging Mode Flowchart

When the battery cover is closed, the system will adjust the charging and discharging process which starts from battery 1 each time.



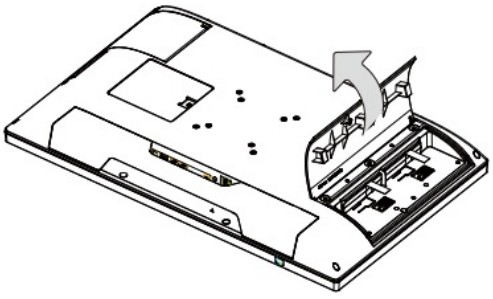


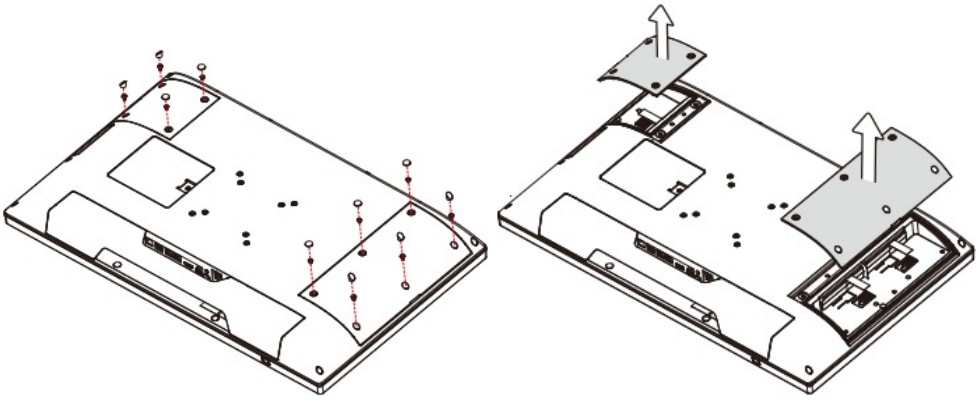
1. If all batteries capacity is lower than 3%, the system will be forced to shut down after 5 seconds.
2. If battery capacity in power management setting is higher than default capacity, the system will be followed the power management setting.

5. System Assembly

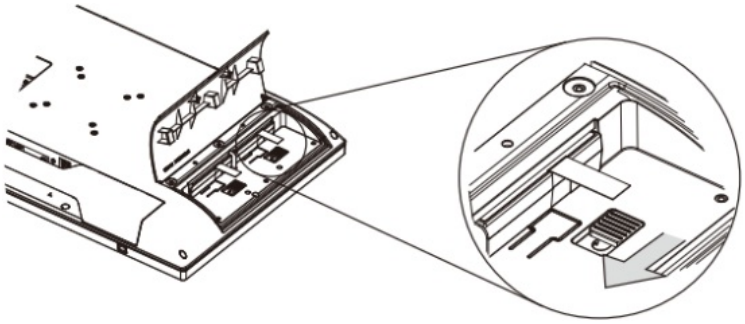
5-1. Replace the Battery

1. Place the system face down, make sure not to scratch the screen.
2. Lift the battery cover.



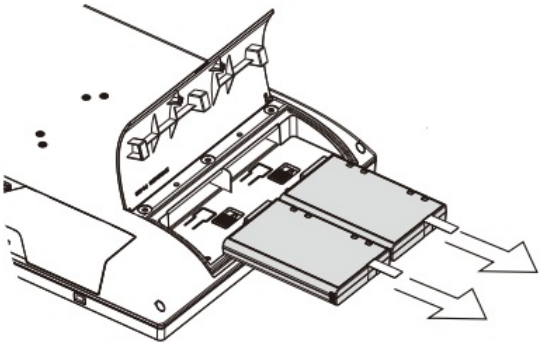


***If you are using a K95A waterproof system, the battery covers are secured by screws. Remove the rubber pads (x10) and screws (x10) to release the battery covers.**

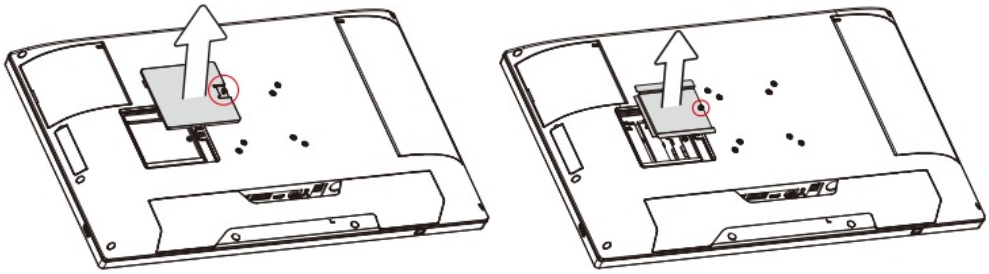


3. Slide the latch down as shown to unlock.

4. Pull the plastic puller (see picture) to release the battery out of the system.

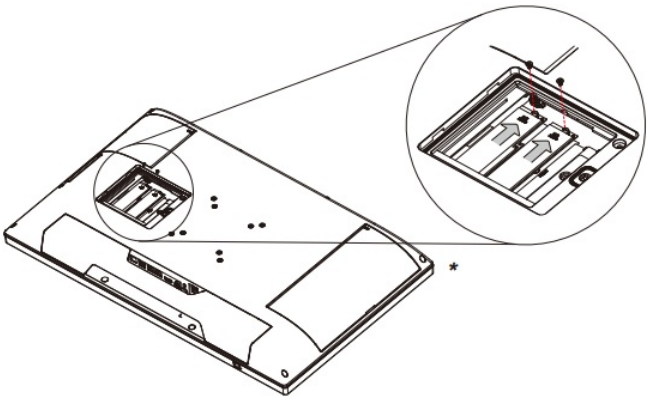


5-2. Replace the M.2 SSD Card



1. Loosen the screw (x1) to release the service door.
2. Loosen the screw (x1) to release the metal bracket.

3. Remove one or two screws and pull the M.2 SSD card(s) outwards as shown in the picture.



*** You may use only one M.2 SSD card**

6. Specification

Model Name	**K95A**
Mainboard	**F87U**
CPU	Intel® Core™ i5-1145G7E
System memory	2 x SO-DIMM, DDR4 3200MHz (32GB Max)
Graphic memory	Intel® Iris® Xe Graphics
TPM 2.0	NUVOTON 750 (option)
LAN controller (GigaLAN)	Intel WG I219 LM (1st LAN); Intel WG I225 IT (2nd LAN)
LCD/Touch Panel	
LCD size	23.8″ LED (LVDS)
Brightness	250 nits
Maximal resolution	1920 x 1080
Touch screen type	True flat projected capacitive touch
Storage	
Flash memory	M.2 SATA SSD or NVMe SSD
Peripherals (option)	
Web cam	1 x 5M (USB)
RFID (front)	1 (USB)
RFID (rear)	1 (USB)
Smart card reader	1 (USB)
SIM Slot (SKU2)	1
Isolation board (SKU2)	2 x USB2.0 ; 1 x DB9
Expansion	

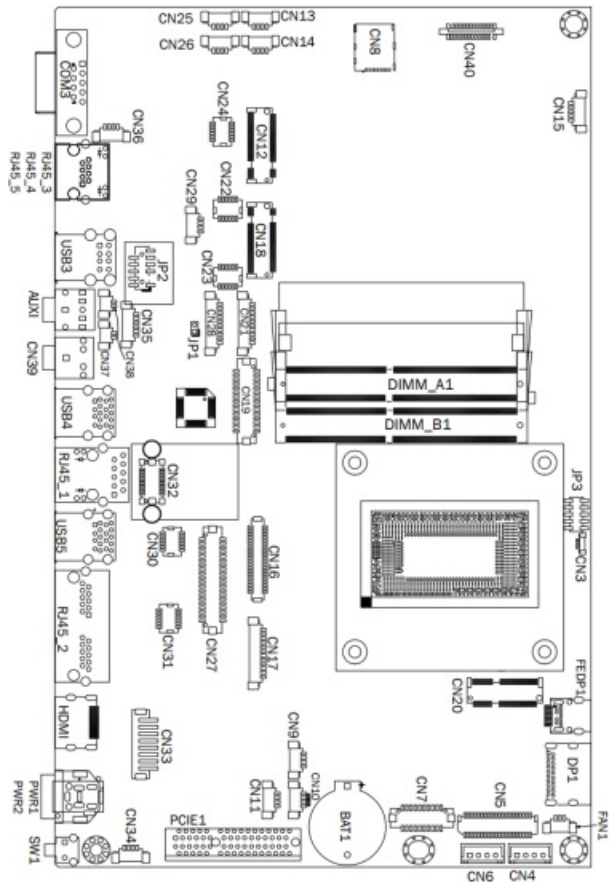
M.2	SKU1: E-key 2230 for WLAN / M-key 2280 for storage / B-key 2280 for storage (RAID) SKU2: E-key 2230 for WLAN / M-key 2280 for storage / B-key 2280 for storage either one 3052 for USB (4G/5G module)
External I/O Ports	
USB	2 x USB 2.0 / 4 x USB 3.0 (Standard) 4 x USB 2.0 / 4 x USB 3.0 (Full function)
Serial / COM	2 x RJ45
Mic-in	1
Line-out	1
HDMI	1
LAN	2 x RJ45
DC jack	1 x Latch type (4pin)
Powered USB	1 x 24V
Isolated COM DB9	2 (Full function)
Equipotential port	Blind hole (option)
Control/ Indicate	
Power button	1 (w/ LED indicator ; blue on the side)
LED indicator	3 (dual color LED indicators for 3 battery status)
Audio	
Speaker	1 x 3W
Power	
Wide range voltage	12V ~ 48V
Power adapter	DC 19V / 120W
Battery	
Battery	3 x hot swappable battery
Battery life	10.2 hours base on normal usage with 3 battery
Charging time	5 hours with 1 battery (Validated charging from 6% to 99%)
Communication	
Wireless LAN+Bluetooth	802.11 A/B/G/N/AC/AX, 2.4G/5/6GHz, BT4.2
Certificate	
EMC & Safety	FCC / CE Class B, LVD, UL
ESD	8kV Contact discharge, 15kV Air discharge

Certification	IEC / EN 60601-1 IEC / EN60601-1-2:2015 RoHS WEEE REACH
Color	Snow white
Environment	
Dust & Water proof	IP65 compliant front panel IPX1 (back enclosure) (option)
Operating temperature	0°C ~ 35°C (32°F ~ 95°F) charge 0°C ~ 40°C (32°F ~ 104°F) discharge
Storage/Transportation temperature	-20° ~ 60°C (-4°F ~ 140°F)
Operating /Storage/ Transportation humidity	10% – 90% RH non-condensing
Operating /Storage/ Transportation altitude range	0-2000m
Operating /Storage/ Transportation pressure range	800-1060hPa
Dimensions (W x H x D)	583 x 59 x 353 mm
Weight (N.W.)	8.3 KG (w/o option)
Mounting	75mm x 75mm /100mm x 100mm standard VESA / panel mount *Wall mount screw: M4 x 4pcs (Min. 12 mm in screw length)
OS support	UEFI: Windows IOT 10 2021 H2 / Windows 11 (64-bit) Linux:vUbuntu, Fedora

***This specification is subject to change without prior notice.**

7. Configuration

7-1. F87U Motherboard Layout



7-2. Connectors & Functions

Connector	**Function**
CN4/CN6	SATA power connector
CN5	DP/HDMI 40P connector
CN7	Charger BD connector
CN8	Micro-SD card socket
CN9/CN10/CN11/CN13/ CN14/CN25/CN26	Internal USB 2.0 connector
CN12	M.2 slot, B-Key for storage
CN15	EC debug connector
CN16	40Pin eDP Connector
CN17	LVDS connector (power)
CN18	M.2 slot, M-Key for storage
CN19	Bedside connector
CN20	M.2 slot, E-Key for wireless card
CN21	COM5 connector
CN22/CN30	USB to LAN connector (option)
CN23	USB to COM4/COM5 connector (option)
CN24	USB to COM3 connector (option)

CN27	LVDS connector
CN28	COM4 connector
CN29/CN36	LAN2 LED connector
CN31	USB to COM1/COM2 connector (option)
CN32	OOB connector
CN33	Charger battery BD connector
CN34	4Pin power button w/2 LED connector
CN35	Speaker & MIC connector
CN37	Speaker L connector
CN38	Speaker R connector
CN39	Audio jack
CN40	Power sequence test connector
DIMM_A1/DIMM_B1	SO-DIMM socket
PCIE1	PCI-E X4 slot
BAT1	RTC battery connector
FAN1	FAN connector
DP1	DP connector
FEDP1	2nd FeDP connector
SW1	Power button
PWR1/PWR2	DC-In connector
HDMI	HDMI connector
AUXI	MIC-In connector
RJ45_1	LAN connector
RJ45_2	COM1/COM2 connector
RJ45_3/RJ45_4/RJ45_5	LAN2 connector
COM3	COM3 connector
USB3	USB 2.0 connector
USB4/USB5	USB 3.0 connector
JP1	Speaker selection jumper
JP2	TPM connector
JP3	LCD ID jumper

Note: Connectors and jumpers will be different according to product difference, the real object should be considered as final. Contact your POS Systems authorized distributor or reseller for technical information or specific device configuration.

7-3. Jumper Setting

Speaker Selection Jumper

Function	JP1
Stereo	1 2
▲ Rserved (Line-out)	1 2

LCD ID Jumper

Panel#	Resolution	LVDS		Output Interface	JP3
		Bits	Channel		
13	SSC function use			LVDS Panel	1 3 5 7 9 2 4 6 8 10
15	1920 x 1080	24	Dual	LVDS Panel	1 3 5 7 9 2 4 6 8 10

1 2 Jumper open 1 2 Jumper short ▲ = Manufacturer Default Setting

COM1/COM2 Power Setting

COM1, COM2 can be set to provide power to your serial device. The voltage can be set to +5V or +12V in the BIOS.

1. Power on the system, and press the <DEL> key when the system is booting up to enter the BIOS Setup utility.
2. Select the Advanced tab.
3. Select **MISC. Power Configuration** Ports and press <Enter> to go to display the available options.
4. To enable the power, select COM1 ,COM2 Power setting and press <Enter>.
   Select Power and press <Enter>. Save the change by pressing F10.

Documents / Resources

	FLYTECH K95A Panel PC Hardware System [pdf] User Manual K95A Panel PC Hardware System, K95A, Panel PC Hardware System, Hardware System, System

References

- User Manual