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NCR VOYIX AX5 Display

NCR VOYIX AX5 Display User Manual

Contents

NCR V⦾YIX

NCR VOYIX AX5 Display

Product Information

Specifications

- **Product:** NCR VOYIX AX5 All-in-One POS (7748)
- **User Manual Version:** 01.01
- **Product Types:** 15 PCAP Head, Stand-base, Wall-mount Bracket, and IO Hub
- **Serial Number Format:** 11 characters starting with "23-" followed by an 8-digit number

Product Usage Instructions

Warranty

All warranty claims must be directed to local AX5 contractual partners. Warranty terms vary by region and country. Damages due to improper maintenance, unauthorized modifications, or inadequate installation are not covered. Refer to the NCR CX7 All-in-One POS Site Preparation Guide and the NCR Workstation and Peripheral AC Wiring Guide for installation guidelines.

Returning Defective Hardware for Service

1. Contact NCR Voyix Customer Care Center at 1-800-262-7782.
2. Provide Class/Model number, Serial Number, Equipment location, and problem description.
3. Receive a work order number (RMA) for Return Material Authorization.
4. Label the shipping box with the RMA before returning.

Labeling

The labeling includes certifications, standards, product descriptions, and manufacturer specifications.

Serial Number

The AX5 serial number starts with "23-" followed by an 8-digit number. It can be found on the packaging label

(SERIAL NO) and the model plate on the back of the unit. Use this serial number for all RMAs and help desk requests.

Frequently Asked Questions (FAQ)

- **Q: How do I find the serial number of my AX5 unit?**
  A: The serial number starts with "23-" followed by an 8-digit number. You can locate it on the packaging label (SERIAL NO) or on the model plate on the back of the unit.
- **Q: What should I do if my hardware is defective?**
  A: Contact NCR Voyix Customer Care Center at 1-800-262-7782 to report the issue. Provide the necessary information for a work order number (RMA) and follow the instructions for returning the defective hardware.

The contents of this manual are subject to changes, which can be implemented without prior notice. The product described in this document is a licensed product of NCR Voyix. This guide does not constitute part of a contract.

It is the policy of NCR Voyix (NCRV) to improve products as new technology, components, software, and firmware become available. NCR Voyix, therefore, reserves the right to change specifications without prior notice. NCR Voyix may not market all features, functions, and operations described herein in all parts of the world. In some instances, photographs are of equipment prototypes. Therefore, before using this document, consult with your NCR Voyix representative or NCR Voyix office for information that is applicable and current.

Note:
For further questions about operating the device, contact your partner.

Preface

This manual applies to the NCR AX5 all-in-one POS terminal. It includes a 15" PCAP Head, Stand-base, Wall-mount Bracket, and the IO Hub for units. Two product types are planned:

- POS – One Head assembly with MSR, Stand-base, and IO Hub
- Kitchen – One Head assembly w/out MSR, Wall-mount Bracket, and IO Hub

Explanation of symbols
Icons and signal words indicate the degree of danger that will result unless actions to reduce damage are taken.

- Caution means that minor property damage can occur. Caution is highlighted by horizontal lines above and below the text.

- A warning means that minor personal injury or serious property damage can occur. Warnings are highlighted by horizontal lines above and below the text.
- Danger means that serious personal injury can occur. In particularly serious cases, there is danger to life. The danger is highlighted by horizontal lines above and below the text.
- Notes are indicated in the text by the adjoining icon. Notes contain important information in cases in which there are no imminent dangers for personnel or equipment. Notes are highlighted by horizontal lines above and below the text.

Warranty

All warranty claims must be addressed to your local AX5 contractual partners. Warranty terms vary by region and country. All parts of this product that are subject to normal wear and tear are not included in the warranty. In general, damages due to the following are not covered by the warranty.

- Improper or insufficient maintenance
- Improper use or unauthorized modifications of the product.
- Inadequate location or surroundings. Site installation must conform to guidelines listed in the NCR CX7 All-in-One POS (7772) Site Preparation Guide (BCC5-0000-5364) and the NCR Workstation and Peripheral AC Wiring Guide (BST0-2115-53).

For detailed warranty arrangements please consult your contract documents. Returning Defective Hardware for Service Use the following procedure to report/return defective hardware. Call the NCR Voyix Customer Care Center at 1-800-262-7782 and have the following information available when you place the call.

- Class/Model number of the defective equipment
- Serial Number of the defective equipment
- Equipment location in the store
- Description of the problem, including any system error codes, error condition, or guidance to the area of failure

The NCR Agent will provide you with a work order number, which serves as your Return Material Authorization (RMA). Please provide the RMA on the outside of the shipping box.

Labeling

The labeling provides information on certifications, standards, product descriptions, and manufacturer specifications.

Serial number
AX5 has an 11-character NCR serial number that starts with "23-" followed by an 8-digit number. You'll find the serial number on the packaging label (SERIAL NO) and on the model plate on the back of the unit. Please use only this NCR serial number for all RMAs and help desk requests.

- The serial number is used to uniquely identify the unit.
- You will find the serial number on the AX5 model plate.

Safety Notices

Caution

- Never expose the unit to extreme weather conditions such as rain, hail, or continual strong sunlight. In the event of damage, the unit must be examined by the after-sales service for possible faults.
- When interacting with the touchscreen, use only a finger or a soft capacitive stylus. Pencils, ballpoint pens, or other hard-pointed objects will damage the device's touch screen.
- The device could be damaged by a heavy mechanical load. Do not place heavy items on top of the POS or touchscreen.

Note:

- The terminal unit does not comprise any parts that have to be serviced by the user, and the user is therefore not allowed to open it.
- If opened, the warranty is rendered null and void.

Danger:
The terminal is equipped with a Bluetooth interface for wireless communication. Never use the terminal in environments where Bluetooth could cause interference (airplanes, hospitals, etc.).

Safety information for battery
The terminal may contain a lithium battery. Observe the following instructions for safe handling:

- Improper use of lithium batteries (cutting, breaking, overheating) can cause the batteries to explode or start fires.
- Lithium-ion batteries contain flammable and/or corrosive solutions and lithium salts. In the event of leakage, these can lead to irritation of the skin, eyes and mucous membranes.
- If lithium-ion batteries vent, the escaping vapors may pose a health risk.
- The battery contains lithium. To avoid possible explosion, do not burn or charge the battery.

Note:
Lithium batteries must be disposed of in line with valid disposal guidelines. If a lithium-ion battery is to mechanical damage (breakage, cracking, etc.), this be disposed of as hazardous waste (local guidelines).

Lithium Battery Warning

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

EMC and Radio Statement

European Union
This device complies with Directive 2014/53/EU and UK Radio Equipment Regulations 2017 SI 2017/1206. issued by the Commission of the European Community.

Hereby, NCR Voyix Corporation declares that the radio equipment type AX5 complies with Directive 2014/53/EU and UK Radio Equipment Regulations 2017 SI 2017/1206. The full text of the EU Declaration of conformity is available at the following internet address: **https://onlinehelp.ncr.com/Content/eHW.htm**.

The frequency and maximum transmitted power in the EU are listed below.

- 2400-2483.5 MHz (Bluetooth EDR): 16.55 dBm EIRP
- 2400-2483.5 MHz (Bluetooth Low Energy): 3.42 dBm EIRP
- 2412-2472 MHz (WLAN 802.11b/g/n/ac/ax): 19.86 dBm EIRP
- 5180-5250 MHz, 5260-5320 MHz, 5500-5720 MHz and 5725-5850 MHz (WLAN 802.11a/n/ac/ax): 20.68 dBm and 13.85 dBm(5G B4) EIRP
- 5955- 7115 MHz (WLAN 802.11a/n/ac/ax): 22.32 dBm EIRP

Operations in the 5.15-5.35GHz band are restricted to indoor usage only.

Federal Communication Commission Interference Statement
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, according to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used under the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- Operations in the 5.15-5.25GHz band are restricted to indoor usage only.
- This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.
- Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.

Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body.

COUNTRY CODE SELECTION USAGE (WLAN DEVICES):
The country code selection is for non-US models only and is not available to all US models. Per FCC regulation, all WiFi products marketed in the US must fixed to US operation channels only.

Canada

Industry Canada statement
This device complies with ISED's license-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution:

1. the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.
2. where applicable, antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 shall be clearly indicated.

Radiation Exposure Statement:
This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 20cm between the radiator & your body.

Devices shall not be used for control of or communications with unmanned aircraft systems.

AX5 Overview

Product Description
The NCR AX5 terminal is a purpose-built all-in-one POS terminal designed to operate on the Android OS. The AX5 will be used as a point-of-sale terminal and as a kitchen device.
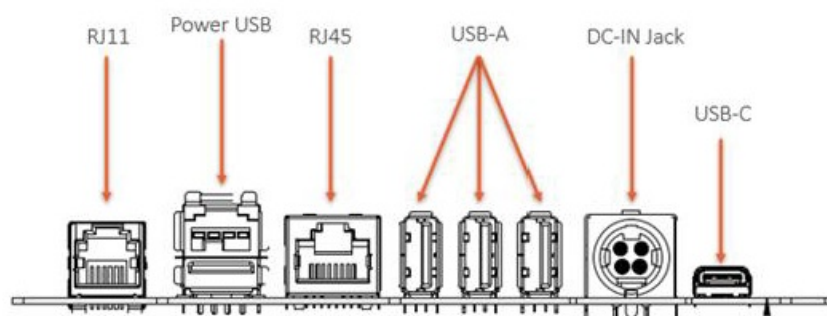
AX5 Views

I/O Hub

Wall-mount Bracket
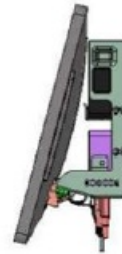
NCR AX5 Features

Terminal Feature	Specification Requirement
Operating System	Android 13
Processor	Qualcomm Snapdragon SoC, QCS5430
Memory / Storage	LPDDR5 8GB / UFS2.2 64GB
Display	15.6" FHD (1920×1080) 16:9 TFT color LCD Display with eDP cable • eDP1.2 interface • 300nits (typ.)
Touch screen	Capacitive multi-finger touch panel, USB2.0 interface, 10-finger touch support
Button	Power button
LED Notification	One 2-die chip LED (R, G) to identify power status 2 chip LEDs(R,G) on main board to diagnose boot status
MSR (Option)	USB2.0 MSR support Monetra: Encryption
Audio	1W speaker (8ohm)
I/O Port	External I/O: • One 3.5mm audio jack with CTIA standard • One USB 3.1 type A connector (Data: host; Power: 5V/1A output) (USBA) • One USB 3.1 type C connector (Data: host; Power: 24V input for AX5 head's power source from IO Hub) for IO Hub (USBC1) • One USB 3.1 type C connector (Data: host; Power: 5V/1.1A, 12V/1.1A output) support DP over type C for NCR's 2nd display (USBC2) Internal reserved I/O on the main board: • 2 x USB 2.0 connectors (Do Not Populate (DNP))
PD 2.0/3.0	Support 5V/3A and 12V/3A for NCR's 2nd display request

Terminal Feature	Specification Requirement

WLAN	Standard Conformance: 802.11a/b/g/n/ac/ax RF Frequency Range: • 2.4G band: 2.4 ~ 2.496GHz • 5G and 6G bands: 4.9 ~ 7.125GHz • WiFi-6E UNII-4 5.85-5.895 GH does not support Modulation Technique : • DSSS with CCK, DQPSK, DBPSK • OFDM with BPSK, QPSK, 16QAM, 64QAM,128QAM, 256QAM, 1024QAM Data Rate: • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps • 802.11b: 1, 2, 5.5, 11Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps • 802.11n 2.4G: MCS0 ~ MCS7 with 20/40MHz bandwidth • 802.11ac 2.4G: MCS0 ~ MCS9 with 20/40MHz bandwidth • 802.11ax 2.4G: MCS0 ~ MCS11 with 20/40MHz bandwidth • 802.11n 5G: MCS0 ~ MCS7 with 20/40MHz bandwidth • 802.11ac 5G: MCS0 ~ MCS9 with 20/40/80MHz bandwidth • 802.11ax 5G: MCS0 ~ MCS11 with 20/40/80/160MHz bandwidth • 802.11ax 6G: MCS0 ~ MCS11 with 20/40/80/160MHz bandwidth
Bluetooth	Standard Conformance: BT 5.2 + EDR/LE RF Frequency Range: 2.402 ~ 2.48GHz Modulation Technique: GFSK, pi/4-DQPSK, 8DPSK Data Rate: • BT basic: 1Mbps • BT EDR: 1, 2, 3Mbps • LE: 2Mbps
Antenna	Supporting Wi-Fi 2×2 MIMO Antennas. • 2.4G band: 1.3dBi • 5G and 6G bands: 2.8dB
Ruggedness	Operating temperature: 0℃~45℃ Storage temperature: -20℃~+60℃

I/O Hub Feature	Specification Requirement
USB-C	Provide 24V to the head unit and receive a USB 3.0 downstream port signal from the head unit, too.
USB 3.0	Support 3x USB 3.0 ports · Three USB3.0 ports on vertical Type-A connector · Three USB3.0 host USB current limiting: 900mA/per-port
Power USB 2.0 (For Thermal Printer Device)	Support USB 2.0 ports · One USB2.0 port with 24V power supply on vertical Type- A connector · One USB2.0 host · USB current limiting: 500mA/per-port 24V DC OUT includes a resettable Fuse <table><tr><td rowspan="2">24V</td><td>RMS value:</td><td>2.6A</td></tr><tr><td>Peaks value:</td><td>6.5A</td></tr></table>
RJ11 (Cash Drawer Port)	Support One Cash Drawer connector with dual 24V/12V cash drawer based on NCR CXIO (USB) cash drawer design. · Power supply with e-Fuse protection current limiting: 2A
Power Supply	· DC Adapter(+24V+/-5%) with AC power cord, AC input: 100V – 240V Rated Current: 24V/ 6.25A (150W)

Rear I/O Placement at IO Hub

SW Operating System special requirements

| Terminal Feature	Specification Requirement
Operating System	Android 13 Pure AOSP (no GMS (Google Mobile Services) and no Google Play integration)
Display	· NCR Voyix Boot-screen · NCR Voyix Boot-Animation · A customized Wallpaper · The default lock screen after boot and ON is configured to "Screen lock" -> "None" · Android standard Sleep timer default setting is NEVER · Developer-Options – enable ADB debugging via TCP (Wi-Fi and Ethernet)
System Info	· The device name from the "Settings/About phone" dialog must be set to "NCR7748" and the device serial number after the initial boot and factory reset. E.g. to "NCR7748 125- 12345678" (for AX5). · Support the readout of the device serial number. · Support the readout of the PID number. · Support the readout of the BA PART number. · Support the readout of the BA Serial number. · Support the readout of PCB reversion. · Support the readout of the MFG date. · Support the readout of Product UUID. · Vital-Device-Data – Permanently stored device data – Data shall be displayed in the regular Android "Settings/About phone" screen and includes below: ♦ PID – Product identification number ♦ SN – Serial number ♦ Wi-Fi MAC address ♦ Bluetooth MAC address

Button	· The power button must trigger "power on", "go to suspend mode" and "resume from suspend mode" with a brief press. · The power button must perform a hardware reset by long pressing 10 secs. · The power button must provide controlled power off the pop-up menu by long-press after ~2 sec. The pop-up menu must offer the following options: – Power off – Restart – Screenshot Ø The image must be saved to a standard screenshot location.
LED Notification	· The status LED follows the color scheme as below. · Status LED (2-color, Green and Red) : · Power-on –> Green – Sleep –> Green + Red (= orange) – Power-off –> Red · Diagnostic LED (2-color, Green and Red): – Bootloader –> Red – Linux Kernel –>Green + Red (= orange) – Android –> Green
Bluetooth	· During Bluetooth pairing, the device must be visible to other devices with the Android device name. The default device name includes the serial number e.g. "NCR7748 125-12345678"… · Bluetooth tethering must be supported. · Audio transmission should be possible, by using a Bluetooth-connected headset for voice communication.
Firmware-Update	· The OTA image update procedure must update all components (bootloader, kernel, boot-logo) · An example app can select the OTA image on the USB drive and start the OTA update from the USB drive. · Firmware versions of different controllers shall be shown in an "SW components" section of the "Settings/About phone" screen. · "fast boot" support – flash the firmware image with the fast boot tool for Repair.
Log	· Logging – kernel and logcat logs

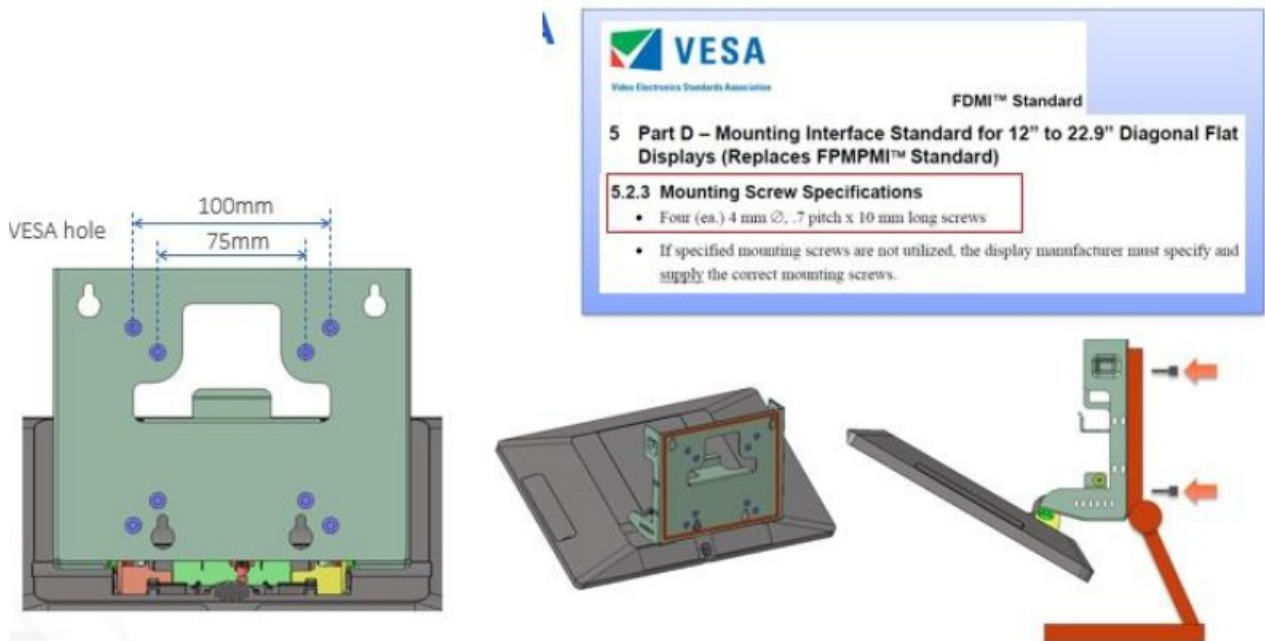**Mounting Configurations**

Wall Mount

Wall Mount Assembly

- **Step 1:** Attach paper with the screw position on the wall, and then install the four screws on the wall
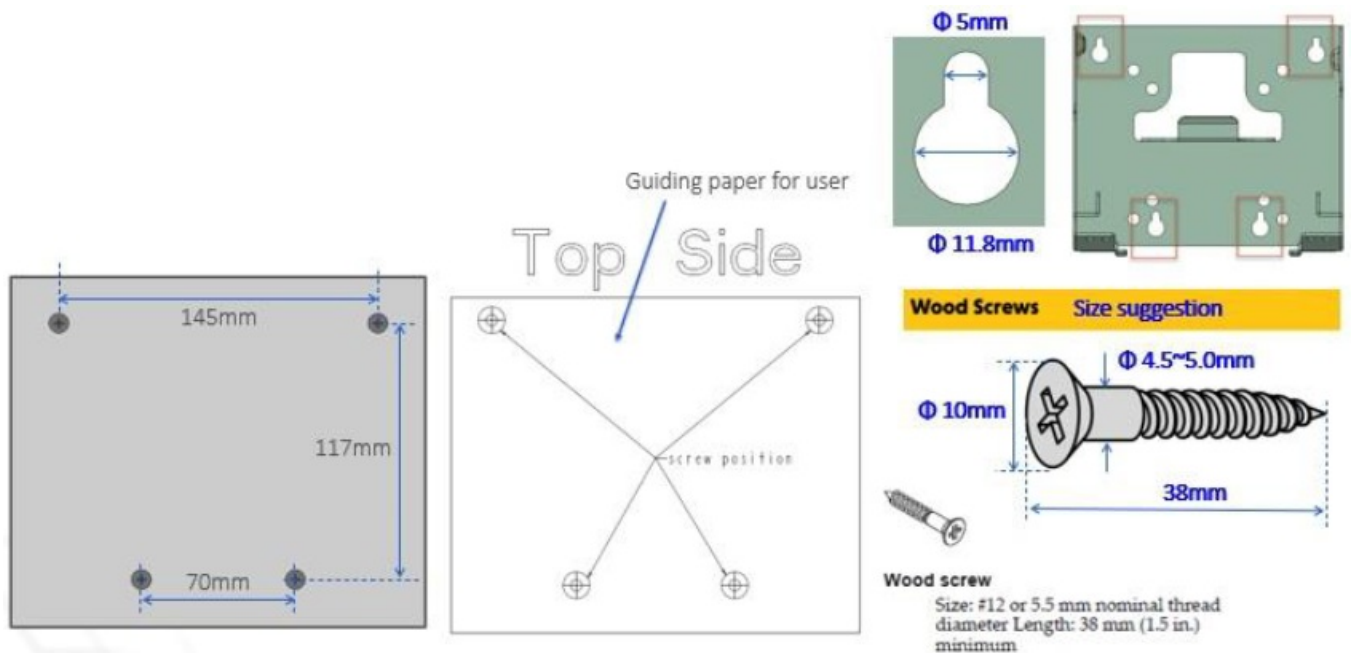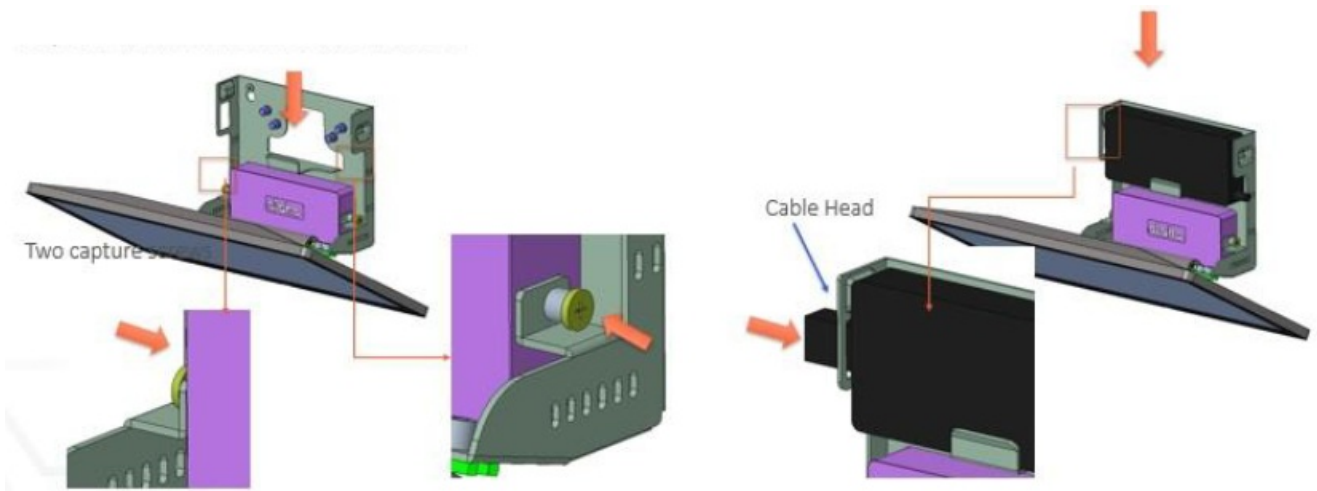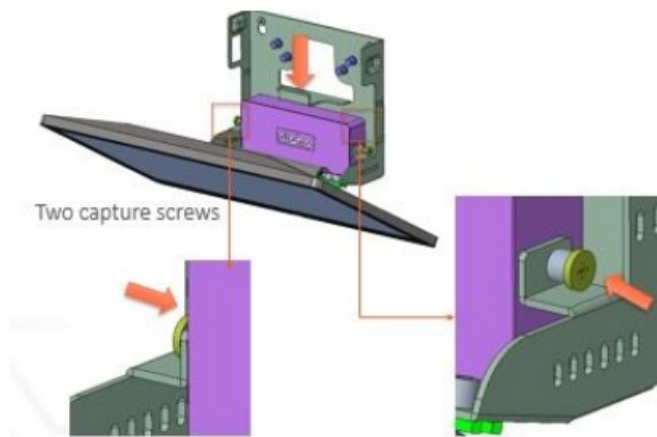

VESA Mount Assembly

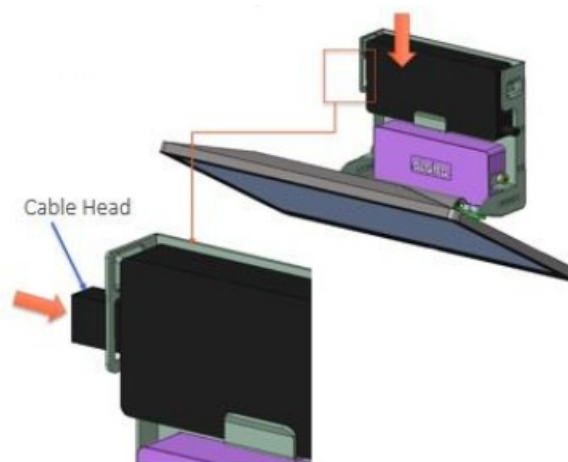- **Step 2:** Install bracket on VESA mount by four screws

- **Step 3:** Put IO Hub to wall mount bracket
- **Step 4:** Tight 10 Hub screws on two sides
- **Step 5:** Put power adapter to wall mount bracket
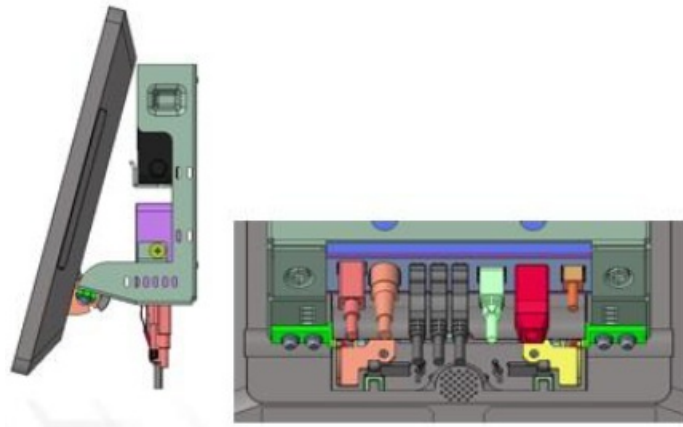- **Step 6:** Plug the adapter cable head

Two capture screws

Cable Head

- **Step 7:** Put IO Hub to wall mount bracket
- **Step 8:** Tight 10 Hub screws on two sides

Two capture screws

- **Step 9:** Put power adapter to wall mount bracket
- **Step 10:** Plug the adapter cable head

Cable Head

- **Step 11:** Backward to 15°, and plug the cables into 10 Hub
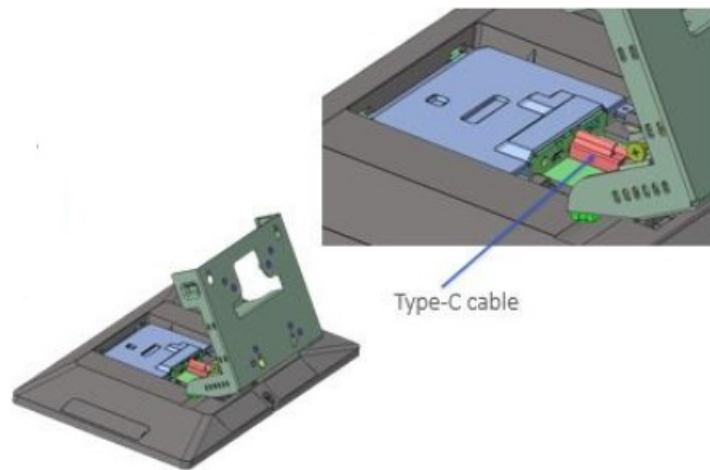
- **Step 12:** Use cable tie for cable routing
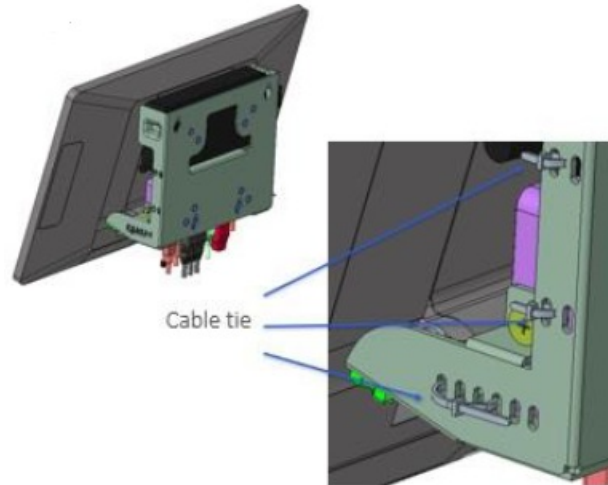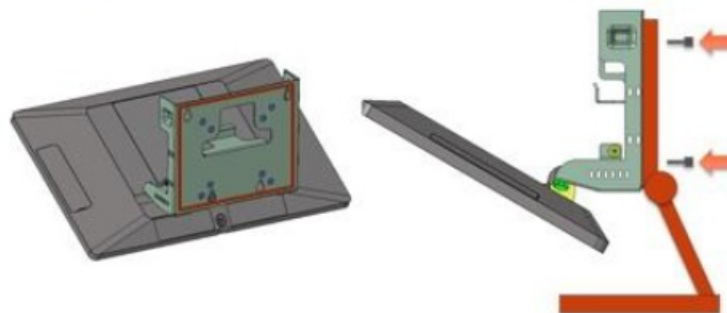

Cable tie

VESA Mount Attachment

VESA Mount Assembly

- **Step 1:** Forward the Head unit to 60°, and then open the Back- Cover to reach motherboard 10 connectors
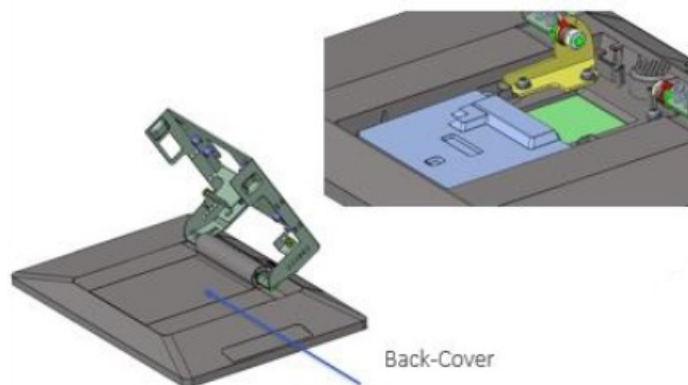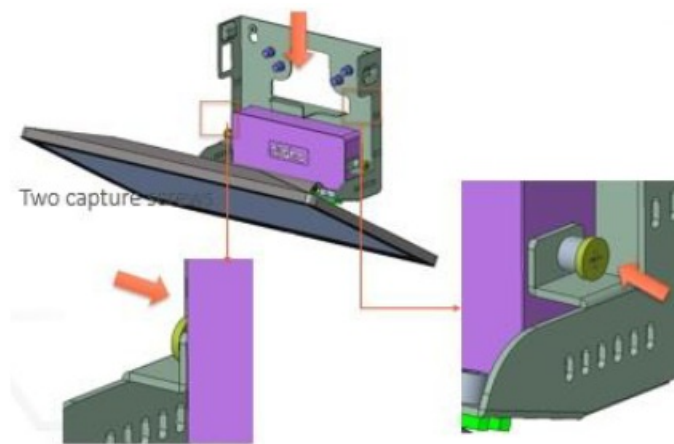

Back-Cover

- **Step 2:** Plug the Type-C cable for 10 Hub into the motherboard, and then assemble the back cover

Type-C cable

- **Step 3:** Install bracket on VESA mount by four screws

VESA hole
100mm
75mm

VESA
Video Electronics Standards Association

FDMI™ Standard

5 **Part D – Mounting Interface Standard for 12" to 22.9" Diagonal Flat Displays (Replaces FPMPMI™ Standard)**

5.2.3 Mounting Screw Specifications
- Four (ea.) 4 mm ∅, .7 pitch x 10 mm long screws
- If specified mounting screws are not utilized, the display manufacturer must specify and supply the correct mounting screws.
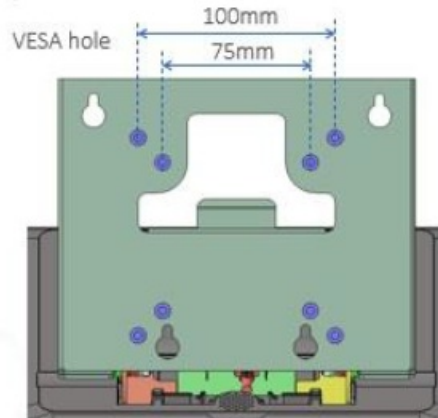
- **Step 4:** Put 10 Hub to wall mount bracket
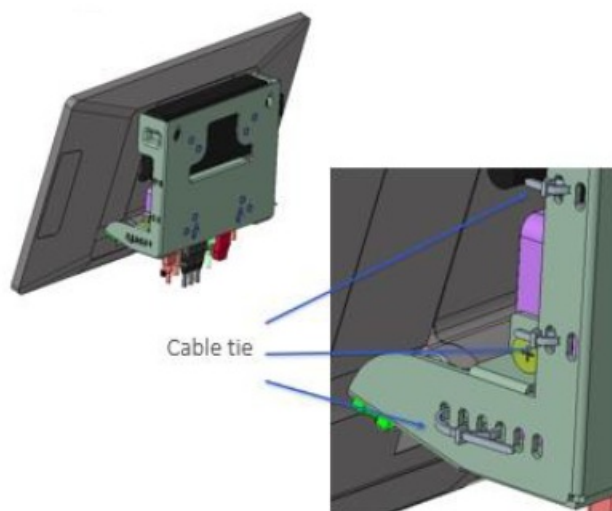- **Step 5:** Tight 10 Hub screws on two sides

- **Step 6:** Put power adapter to wall mount bracket
- **Step 7:** Plug the adapter cable head

Cable Head
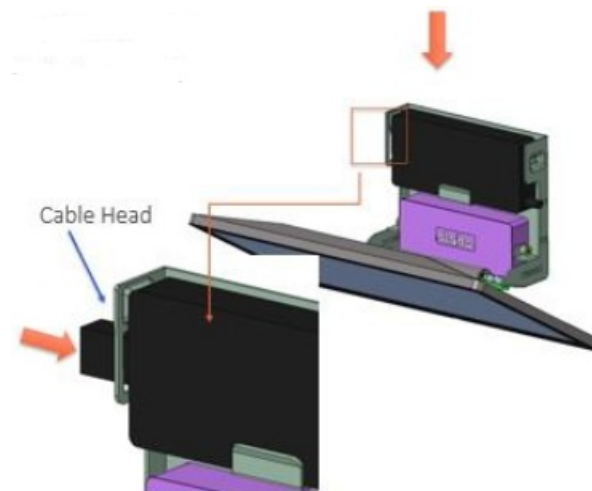
- **Step 8:** Backward to 15°, and plug the cables to 10 Hub
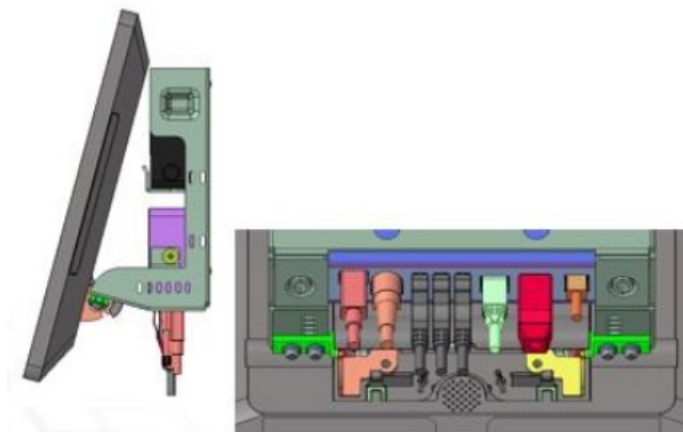
- **Step 9:** Use cable tie for cable routing

Cable tie

Regulatory Information

Model	AX 5 (7748)
FCC-ID	JEH7748AX5
IC-ID	470B-7748AX5

- **Safety information:**

  The unit was designed to be used with the coin battery. Only this type of battery may be used. There is a danger of explosion if the battery is replaced by an incorrect battery type.

- **Safety and handling:**

  See the "Safety information" in the user manual before using the unit.

- **Regulatory information:**

  Regulatory information, certification, and certification marks are available under the "Regulatory information" section.

- **Important:**

  This device complies with EMC directives and was tested with compatible peripheral equipment and shielded cables for the connection to system components. Make sure to only use shielded cable for the connection between system components to avoid any interference with radios, TVs, or other electronic equipment.

Documents / Resources

NCR VOYIX AX5 Display [pdf] User Manual
AX5, AX5 Display, Display

References

- ⟳ **Hardware Publications**
- **User Manual**