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DISPLAYS



ACCESSORIES

YUNO II



USER MANUAL

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Liability Disclaimer

In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages.

Regulatory Information

FCC Notice



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the Federal Communications Commission (FCC) Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If

this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS DEVICE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE DEVICE.

CE Notice



This device complies with **EMC Directive 2014/30/EU** “**Low Voltage Directive**” issued by the Commission of the European Community.

UL Notice



This manual refers to UL certified products and conforms to UL 62368-1, 2nd Edition, 2014-12-1, CAN/CSA-C22.2 No. 62368-1-14 and IEC 62368-1:2014 STANDARD FOR Information Technology Equipment - Safety - Part 1: General Requirements.

WEEE Notice



The **WEEE** mark applies only to countries within the European Union (EU) and Norway.

This appliance is labeled in accordance with **European Directive 2012/19/EU** concerning **waste electrical and electronic equipment (WEEE)**. The Directive determines the framework for the return and recycling of used appliances as applicable throughout the European Union. This label is applied to various products to indicate that the product is not to be thrown away, but rather reclaimed upon end of life per this Directive.

CAUTION :

Risk of Explosion if Battery is replaced by an incorrect Type.

Dispose of Used Batteries According to the instructions.

Safety

IMPORTANT SAFETY INSTRUCTIONS

To disconnect the machine from the electrical Power Supply, turn off the power switch and remove the power cable plug from the wall socket. The wall socket must be easily accessible and in close proximity to the machine.

Read these instructions carefully. Save these instructions for future reference.

Follow all warnings and instructions marked on the product.

Do not use this product near water.

Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

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.

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.

Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord. 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.








Ensure that the device connects to a socket/outlet with ground/earth connection.

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1. Item Checklist

1.1 Standard Items

	
a. System : YUNO-II 151 & YUNO-II 156	
	
b. Power Adapter (65W)	c. Power Cable
	
d. RJ50-COM Cable 100cm (x1)	e. System Cover
	
f. Peripheral Adapter	g. QuickStart guide

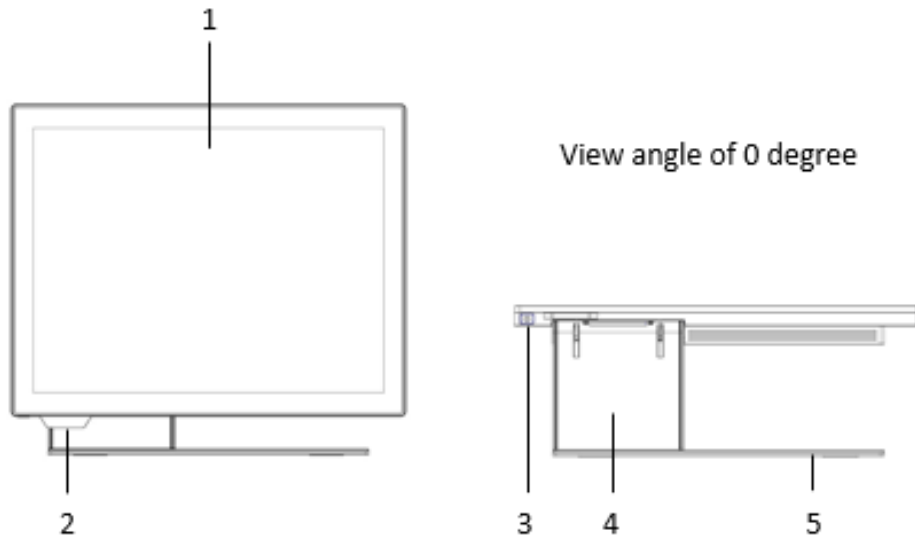
1.2 Optional Items

YUNO-II supports full range of peripherals as listed below.

Model #	Description
YUNO-II-2NDLCD10.1	USB interface Attachment-type (integrated) Second Display (non-Touch and Touch models)
YUNO-II-LCM	2x20 LCM
YUNO-MSRLONG	3-Track USB Keyboard HID Attachment-type (integrated) Magnetic Stripe Reader
YUNO-SCANNER2D	USB interface Attachment-type (integrated) 2D Scanner
YUNO-DALLAS	USB Keyboard and USB/COM interface Attachment-type (integrated) Dallas Key Reader
YUNO-ADDIMAT	USB Keyboard and USB/COM interface Attachment-type (integrated) Addimat Key Reader
YUNO-ALIM-11/36V	DC/DC Switching Power Adapter Input Voltage : 36Vdc Output Voltage : 19Vdc
FINGERPRINT READER	FINGERPRINT READER
YUNO-MSR-RFID	YUNO-MSR-RFID

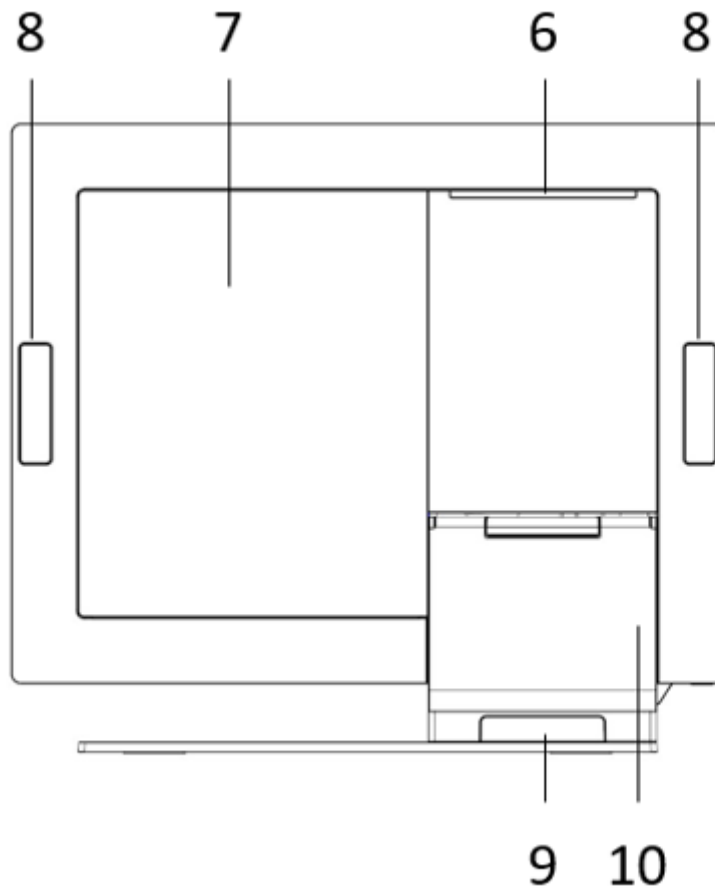
2. System View

2.1 Front View



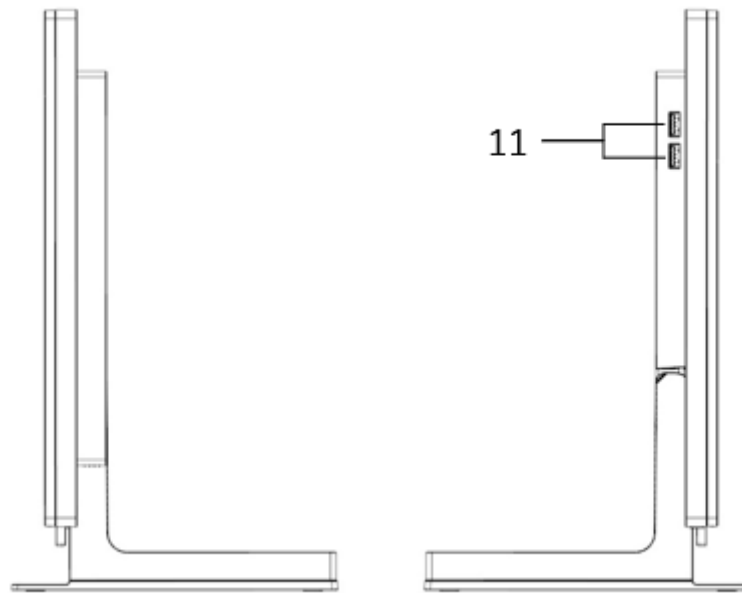
Number	Description
1	Bezel Free Panel PC
2	Logo LED Plate
3	Power Button
4	L-Stand
5	Base Plate

2.2 Rear View



Number	Description
6	Attachment-type Customer Display (YUNO-II LCM & 10") service door
7	System Cover
8	Service door for peripherals
9	Rear Side Cable service door
10	L-Stand Cover

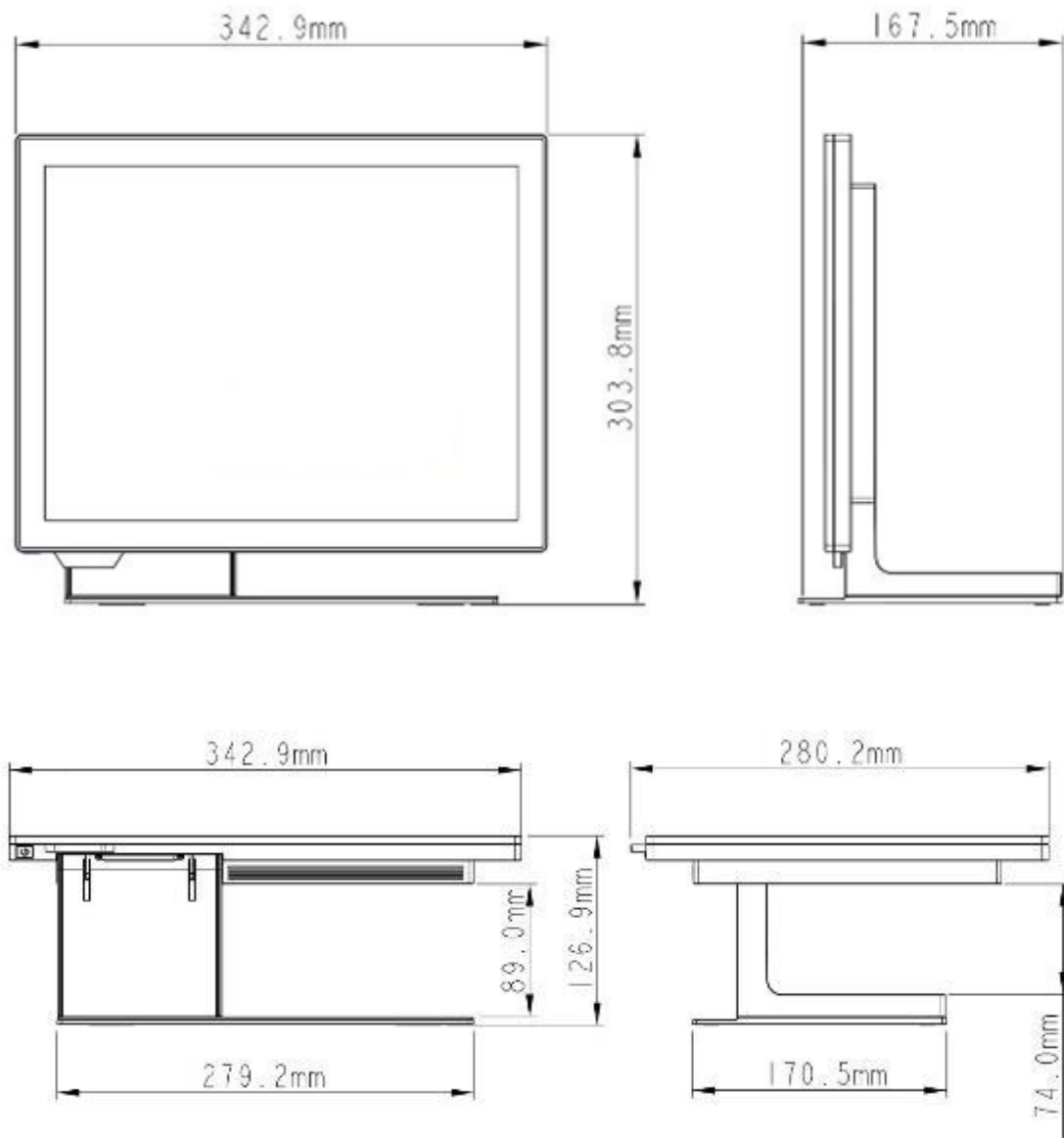
2.3 Side View



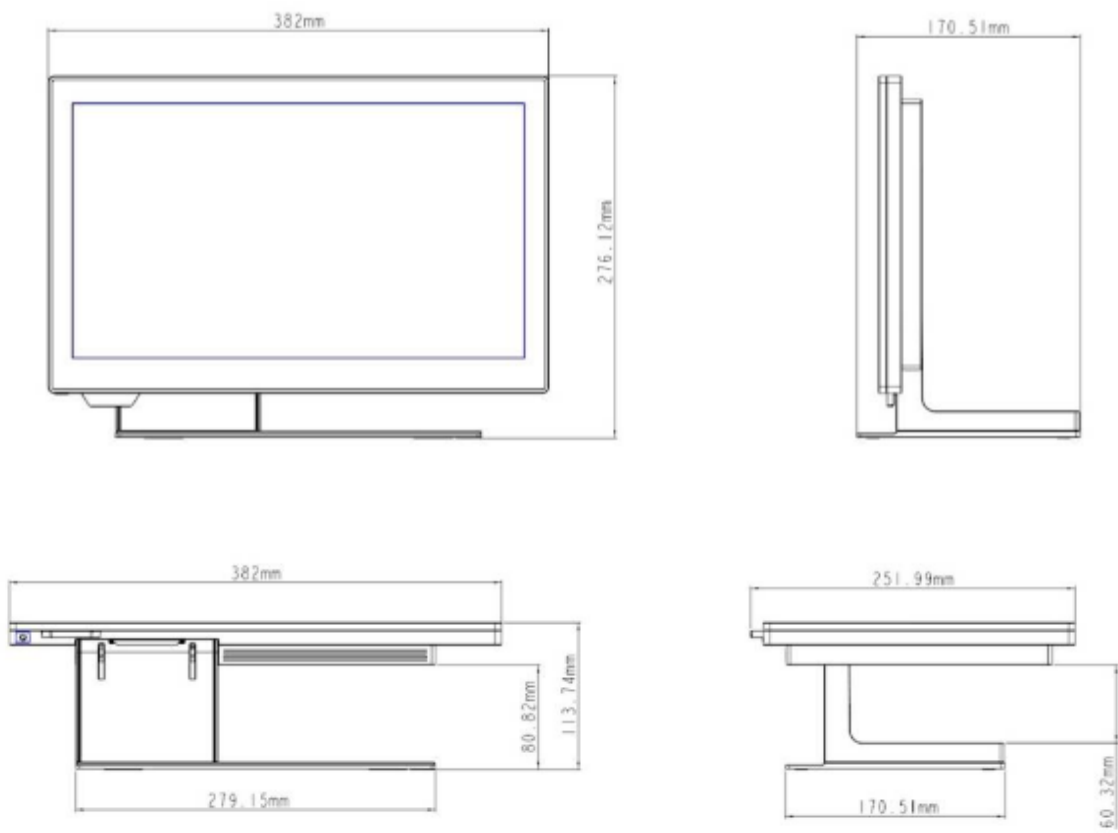
Number	Description
11	USB 3.0 (Type A)

2.4 Dimension

For YUNO-II151,

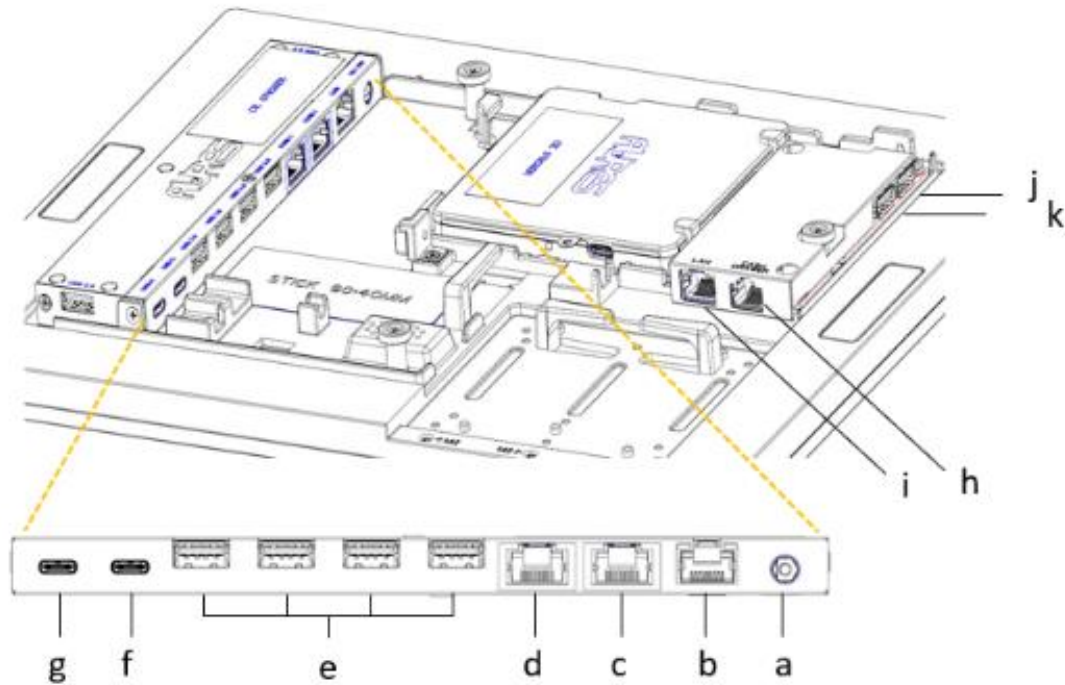


For YUNO-II156



2.5 I/O View

Full Feature Mode



Inside View	
Number	Description
a	DC-IN Jack
b	Ethernet 1Gb
c	COM1
d	COM2
e	USB 3.0 x 4
f	USB-C with Video Support
g	USB-C to Processor
h	Cash Drawer port
i	Ethernet 1Gb

Right-side View	
Number	Description
j	1 x USB 3.0 (Type A)
h	1 x USB 3.0 (Type A)

3. Specification

Model Name	YUNO-II	
Model Number	YUNO-II 151-50KH (ART-05199)	YUNO-II 156-50KH (ART-05200)
CPU support	X85 motherboard (Tiger Lake platform) : Intel® Core™ J6412 Processor (1,5M Cache, up to 2.6 GHz) Intel® Core™ i3-1115G4E Processor (6M Cache, up to 3.9 GHz) Intel® Core™ i5-1145G7E Processor (8M Cache, up to 4.10 GHz)	
System memory	1 x SO-DIMM DDR4-3200 Max 32GB (Default 4GB on J6412, 8GB on i3/i5)	
LAN controller	Intel I219LM PCI-E Gigabit LAN	
Audio controller	3SYSTEM 1700B1HD Audio CODEC with 2-Channel	
Audio	2W Speaker x 1	
BIOS	AMI uEFI BIOS	
LCD Panel		
LCD size	15.0" Life : 50,000 hours	15.6" Life : 50,000 hours
Brightness in cd/m²	400	400
Maximal resolution	1024 x 768	1920 x 1080 Full High Definition (FHD)
Aspect Ratio	4:3	16:9
Backlight Type	LED	
Touch Sensor		
Touch Type	P-CAP	
Touch Screen	Multi-touch	
Interface	USB	
Storage		
1st SSD	1 x M.2 Key-M 2280 NVMe (Default 128GB)	
2nd SSD	1 x M.2 Key-M 2280 NVMe	
Extra I/O		
USB	2 x USB 3.0	
LAN	Gigabit LAN x 1	
Cash Drawer	1	

Inside I/O	
DC-IN jack	1 x jack connector for 19V DC input
LAN	1 x RJ45 port for Gigabit Ethernet, support Wake on LAN
Serial / COM	2x RJ50 connector with RJ50 to DB9 cable for RS-232 port
USB	4 x USB 3.0
USB-C	USB-C with Video Support
USB-C	USB-C to Processor Module
Bottom I/O	
Power Button	1
Power	
Power Adapter	External 19V / 3.42A 65Watt Adapter
Peripherals	
Customer Display	Attachment-type USB interface (YUNO-LCM option)
Second Display	Attachment-type USB interface non-Touch and Touch models (YUNO-II-2NDLCD10.1 option)
Magnetic Stripe Reader	Attachment-type 3-Track USB Keyboard HID (YUNO-MSRLONG option)
2D Scanner	Attachment-type USB interface (YUNO-SCANNER2D option)
Dallas Key Reader	Attachment-type Keyboard and Serial emulation USB interface (YUNO-DALLAS option)
Addimat Key Reader	Attachment-type Keyboard and Serial emulation USB interface (YUNO-ADDIMAT option)
DC/DC Power Adapter	Input 36Vdc to Output 19Vdc Switching Power Adapter (YUNO-ALIM-11/36V option)
Fingerprint Reader	Attachment-type USB interface (FINGERPRINT READER)
Combo MSR-RFID Reader	Attachment-type USB interface (YUNO-MSR-RFID)

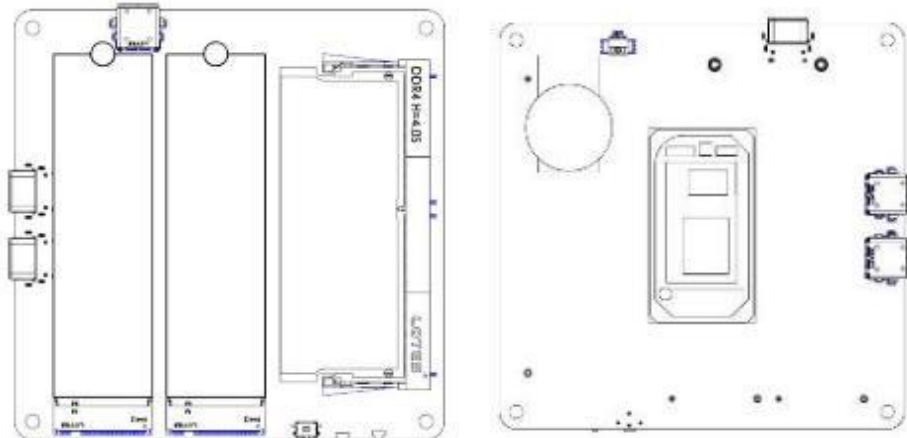
Certifications		
EMI	CE / FCC Class B / RCM / UKCA	
Safety	UL	
Environment		
Operating temperature	0℃ ~ 35℃ (32°F ~ 95°F)	
Storage temperature	-20℃ ~ 60℃ (-4°F ~ 140°F)	
Humidity	5% ~ 80%, non-condensing	
Dimension (W x D x H)	YUNO-II151: LCD 90° 342.9 x 167.5 x 303.8 mm	YUNO-II156: LCD 90° 382 x 170.51 x 276.12 mm
Weight (N.W./G.W.)	YUNO-II151: 5kg / 6kg	YUNO-II156: 5kg / 6kg
OS support	Windows® 10 IoT Enterprise	

* This specification is subject to change without prior notice.

4. Configuration

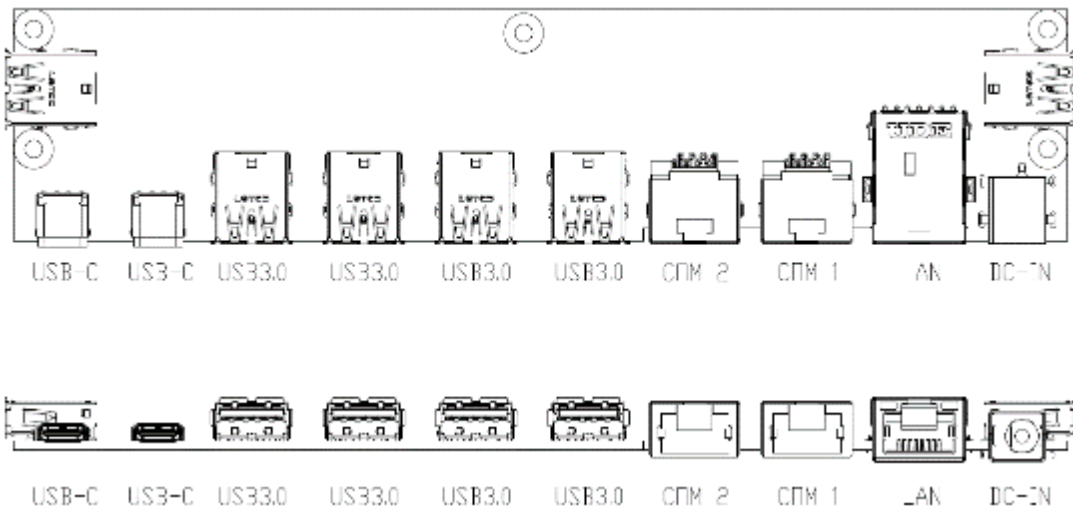
4.1 Processor Module

Tiger Lake Platform

		
SKU	ART-05205 TGL-MB-I3-1115G4E	ART-05206 TGL-MB-I5-1145G7E
CPU	Intel® Core™ i3-1115G4E Processor (6M Cache, up to 3.90 GHz)	Intel® Core™ i5-1145G7E Processor (8M Cache, up to 4.10 GHz)
DIMM1	SO-DIMM DDR4 x 1	
CN1_IN	USB-C Connector (Power Deliver In) to I/O Module ART-05201 I/O-MODULE-III	
CN2_OUT	USB-C Connector (Power Deliver Out) to Display (ART-05199 YUNO-II-BASE151-GREY, or, ART-05200 YUNO-II-BASE156-GREY)	
CN3 & CN4	2 x M.2 Key-M 2280 Slot	

4.2 I/O Module

4.2.1 Layout, Connectors & Functions

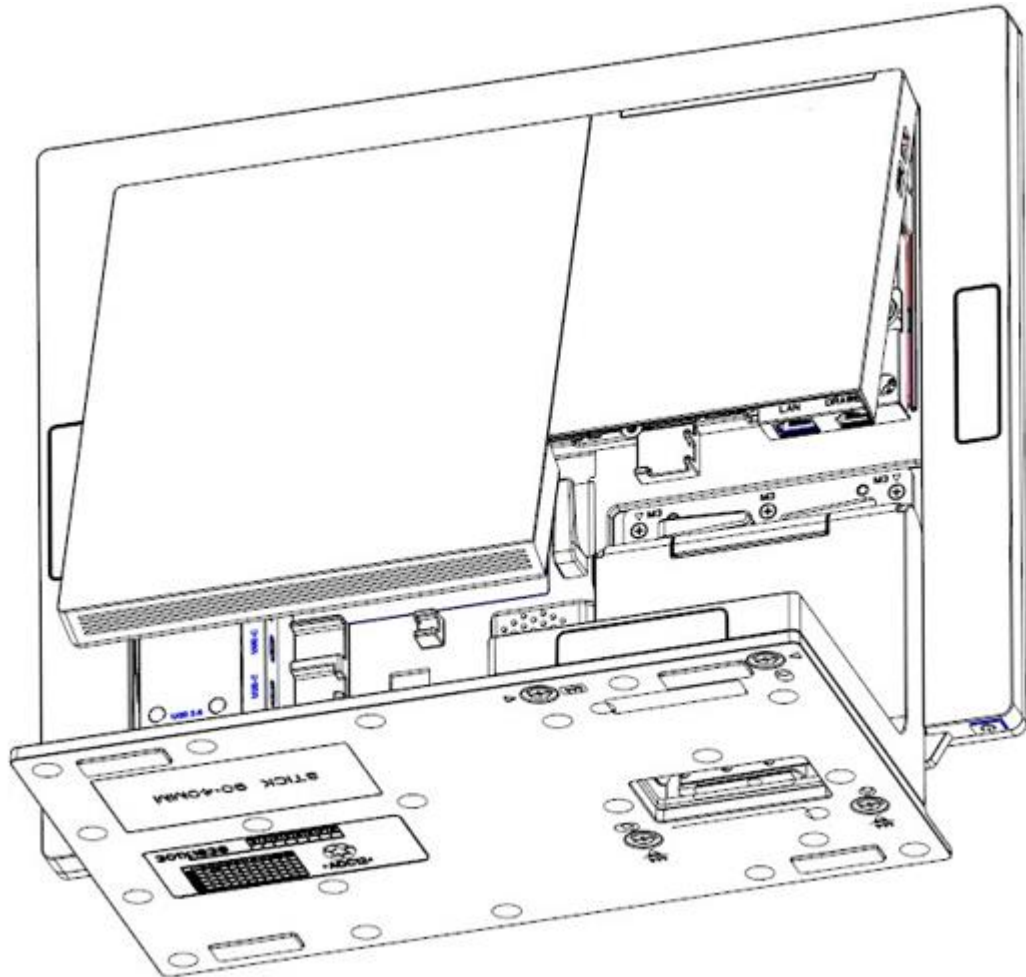
	 <p>USB-C USB-C USB3.0 USB3.0 USB3.0 USB3.0 COM 2 COM 1 LAN DC-IN</p> <p>USB-C USB-C USB3.0 USB3.0 USB3.0 USB3.0 COM 2 COM 1 LAN DC-IN</p>
SKU	ART-05201 I/O-MODULE-III
DC-IN1	DC-IN jack
LAN_CON1	LAN (RJ45 Connector)
COM1 & COM2	COM1~2 (from right to left) (RJ50 Connector)
USB1~6	4 x USB 3.0 (Type A)
CN1	USB-C (Power Deliver Out) to Processor Module
CN2	USB-C (only 2 channel DisplayPort, but supports FHD) with Video and Power in/out

5. POS System Assembly & Disassembly

Diagrams of YUNO-II are used as a representative of all YUNO-II POS System series for elaboration in the rest of this manual.

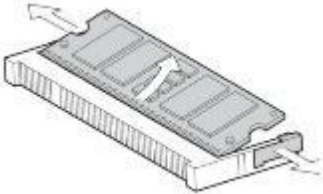
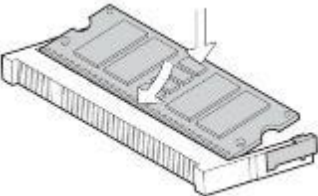


5.1 Open the System Cover

Open the System Cover by holding the bottom side of the System Cover and drag up.



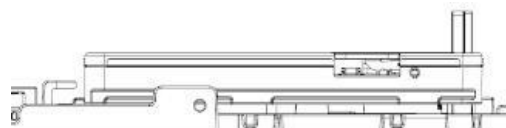
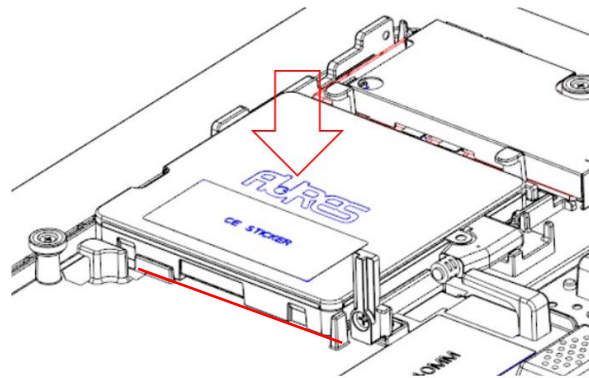
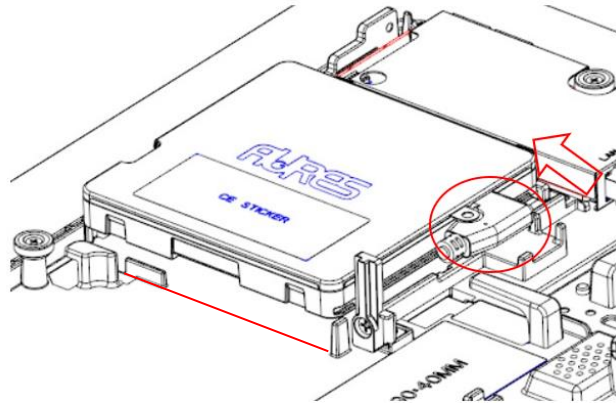
5.2 Install the Processor Module

- Install the memory and SSD

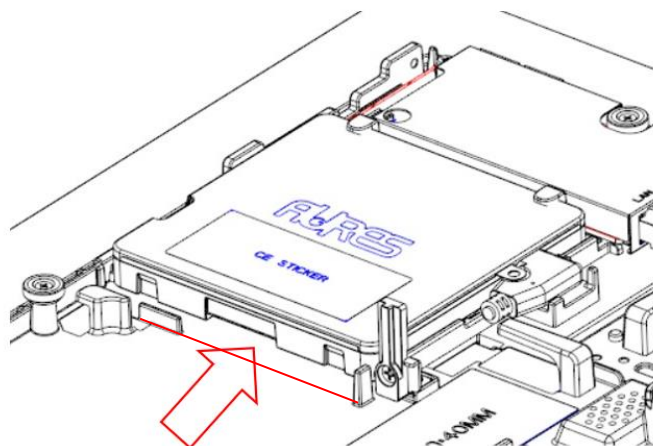
Install the Memory		Install the Storage Disk Drive
<p>(1) Locate the memory slot inside the Processor Module enclosure.</p> <p>(2) Flip the ejector clips outwards to remove the memory module from the memory slot.</p>  <p>(3) Slide the memory module into the memory slot and press down until the ejector clips snaps in place.</p> 	 	<p>1. Notice correct dump-proof key and install the SSD.</p> <p>(2) Press the SSD to horizontal position and fix with the rubber inner groove.</p> <p>(3) reverse operation if want to remove the SSD</p>

- Install the CPU Module to dock with AD board

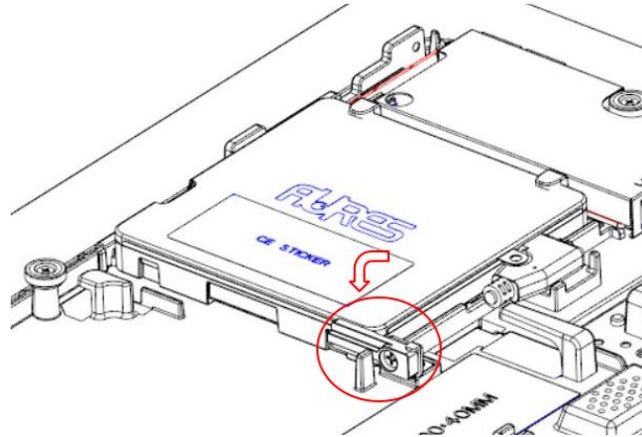
- (1) Connect USB-C cable
- (2) Place the Processor Module from the start position on the surface of rear base.



- (3) Slide the Processor Module to dock with AD board
(Note: Be cautious the bottom of the Processor Module should be 100% in contact with rear base)



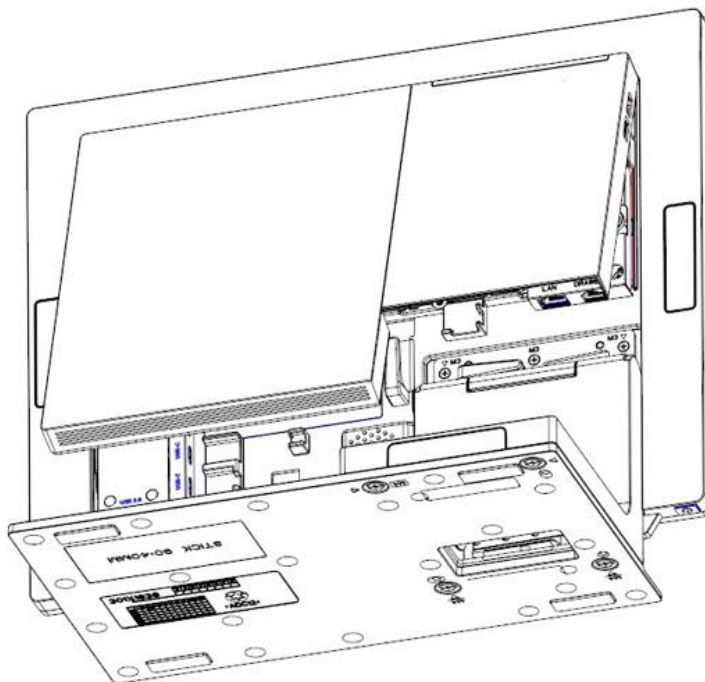
- (4) Rotate the lever to secure the Processor Module



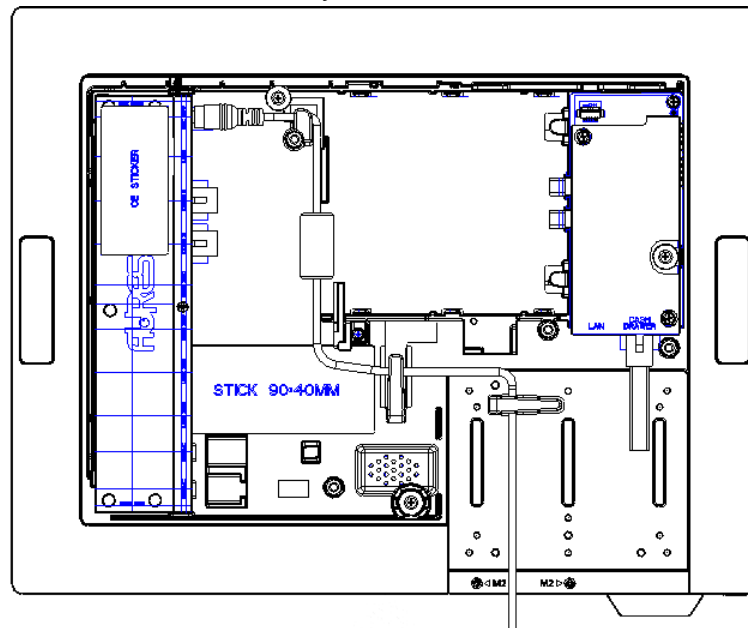
5.3 Install the Power Adapter

The system is equipped with a 65W power adapter. Please follow below procedures to get it plugged into the system.

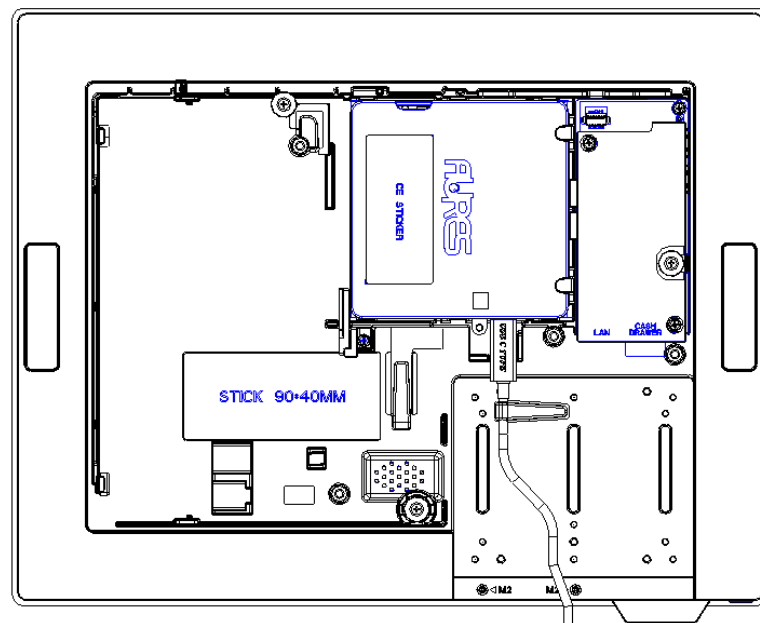
1. To open the System Cover, please refer to the procedures described in Chapter 5-1, and remove it.



2. Locate the power connector on the I/O panel (please refer to Chapter 2-5) and connect the plug of power adapter directly to the DC-IN jack.
Route the DC cord connection securely.



All Feature Mode

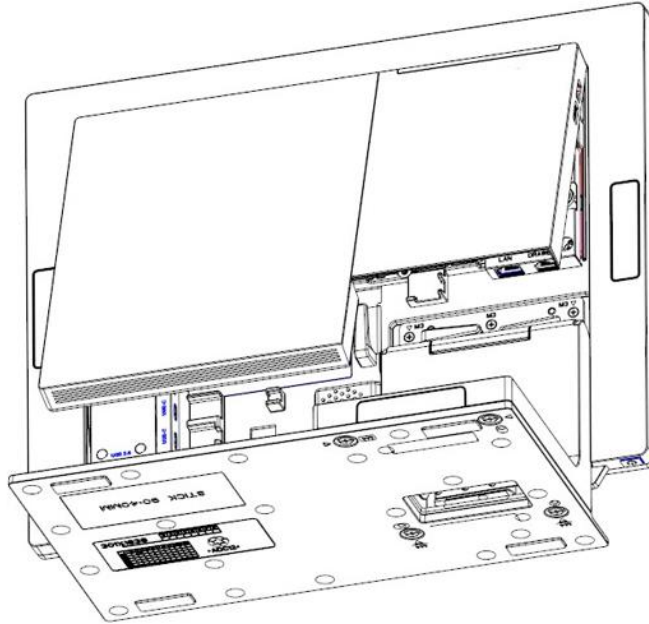


Processor & AD Board Only Mode

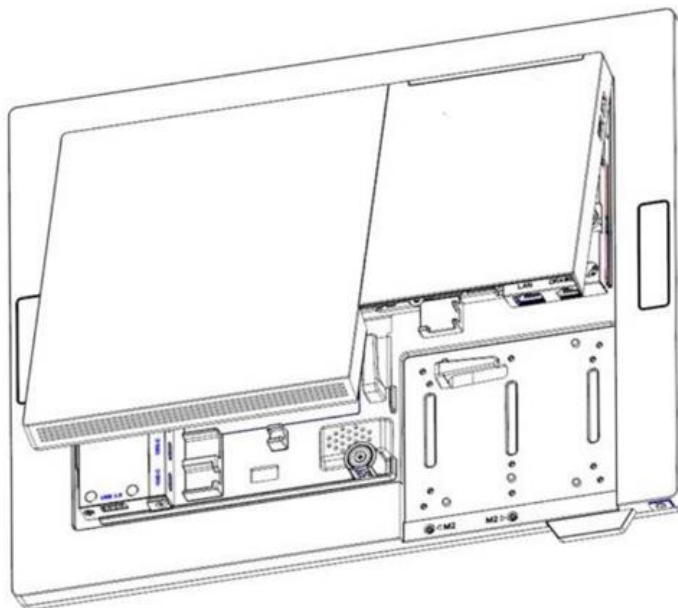
3. Using USB-C PSU, 65W, 19V as a power source for YUNO-II

5.5 Install the VESA mount

1. Open the System Cover, please refer to the procedures described in Chapter 5-1, and remove it.

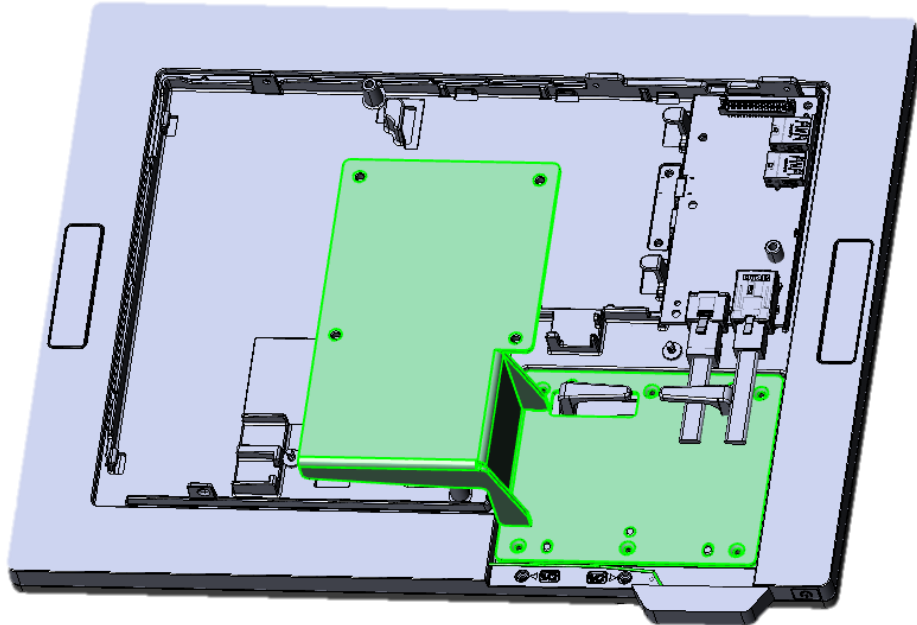


1. Remove the 11 screws of the L-stand and separate them.



2. Install the VESA bracket

Fix VESA bracket by six M3*6 screws [shown as below]



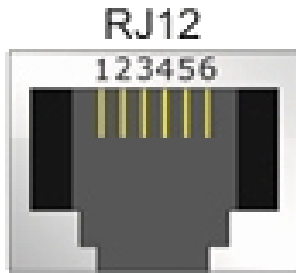
6. Peripherals Installation

6.1 Install the Cash Drawer

You can install a cash drawer through the cash drawer port.

Please verify the pin assignment before installation.

Cash Drawer Pin Assignment

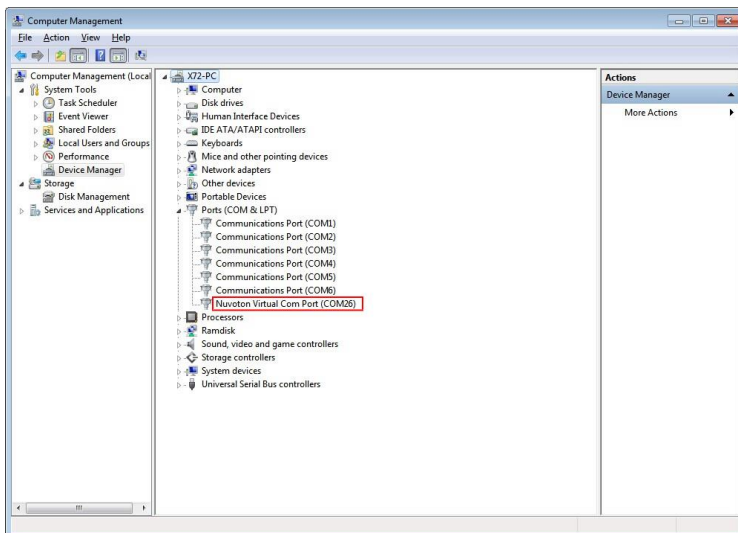


Pin	Signal
1	GND
2	Drawer 1 kick out
3	Drawer open/close status
4	PUH/PUH3 12V/24V CDA 24V
5	Drawer 2 kick out
6	GND

Please check the Device Manager after you installed Nuvoton driver.

You will find a “Nuvoton Virtual Com Port (COM*)” like below picture.

This needs to know this COM port number and use it to commutation with MCU.



Read FW Command

You can send below command sequence to get MCU FW version

Read FW Version	0x1D	0x41	0x30
-----------------	------	------	------

You can read FW version after "Read FW" command. The FW version is a ASCII string.

Open Command

You can send below command sequence to COM port to open drawer.

ESC p m t1 t2

Name Specify pulse

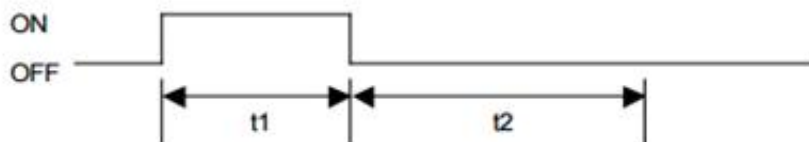
Code	ASCII	ESC	p	m	t1	t2
	Hex.	1B	70	m	t1	t2
	Decimal	27	112	m	t1	t2

Defined Region $0 \leq m \leq 1, 48 \leq m \leq 49$
 $0 \leq t1 \leq 255$
 $0 \leq t2 \leq 255$

Function This outputs a signal specified by t1 and t2 to the connector pin specified by m.

m	Connector Pin
0, 48	Drawer kick connector pin #2
1, 49	Drawer kick connector pin #5

Details Drawer kick on time is set to $t1 \times 2$ ms; off time is set to $t2 \times 2$ ms.



When $t1 > t2$, the value of $t2$ is processed as $t2 = t1$.

Drawer 1 Kick Out	0x1B	0x70	0x00	T1	T2
Drawer 2 Kick Out	0x1B	0x70	0x01	T1	T2

T1 / T2 : Drawer kick on time is set to $T1 \times 2$ ms, off time is set to $T2 \times 2$ ms.

The best value for T1/T2 is 7D($125 \times 2\text{ms} = 250\text{ms}$)

Note : CDA CD port need to charge power after each time open drawer. The charge time about 600ms, please wait 600ms at least between two open drawer command.

Status Command

You can send below command sequence to COM to read drawer status.

GS r n

Name	Transmission of status			
Code	ASCII	GS	r	n
	Hex.	1D	72	n
	Decimal	29	114	n
Defined Region	n = 2, 50			
Function	Sends the specified status. Drawer Kick Connector Status (n = 2, 50)			

Status	"0"	"1"
--------	-----	-----

Read Drawer Status

Read Status	0x1D	0x72	0x02
-------------	------	------	------

You can read drawer status after "Read Drawer Status" command.

Drawer Status	0x01	Drawer Opened
	0x00	Drawer Closed

ASB Command (Automatic Status Back)

If ASB mode is activated, the PUH will report status if drawer status has changed.

You can use command to enable or disable this function.

The ASB is disabled by default when PUH power on. You need to enable ASB after each time power on.

Enable ASB function

Enable ASB	0x1D	0x61	0x01
------------	------	------	------

Disable ASB function

Enable ASB	0x1D	0x61	0x00
------------	------	------	------

ASB Message - Status Report

The ASB message are always 4 bytes with some fixed bits which can be used to identify the message as an ASB message. Bit 2 of the first byte signals the drawer state.

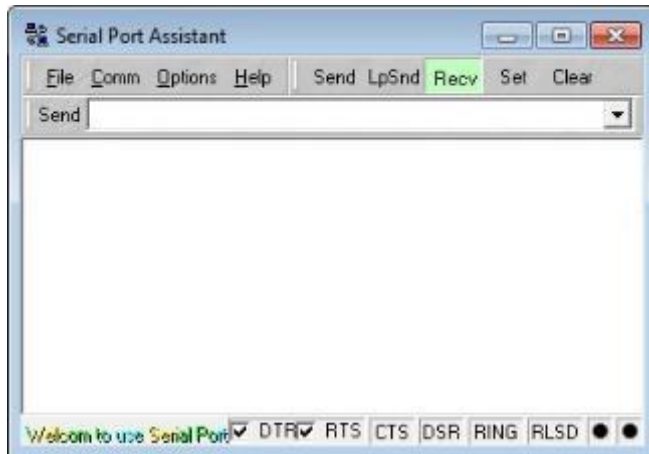
Drawer Opened	0x10	0x00	0x00	0x0F
Drawer Closed	0x14	0x00	0x00	0x0F

How to access Cash Drawer in Windows

You can use COMMTTest to access cash drawer. The application can download at here <http://www.cppfans.com/software/communication/serailassistant.asp>

Start COMMTTest

Right click on COMMTTest.exe and select "Run as Administrator" to start COMMTTest.



Setup COM port

The MCU is commutation through Prolific virtual COM port. Please find out the COM port number first than setup the COM port and baud rate to "115200, N, 8, 1".



Read FW Version

Input "Read FW" command "1D 41 30" than enter, this command will return MCU FW version.



Open Drawer

Input "Open Drawer" command "1B 70 00 7F 7F" than enter, this command will open drawer.



Read Drawer Status

Input "Read Drawer Status" command "1D 72 02" to read status. The status will return and display after read command.



Enable ASB

Input "Enable ASB" command "1D 61 01". The drawer will automatic report drawer status when drawer open/close status changed.



Disable ASB

Input "Disable ASB" command "1D 61 00" . The drawer will not report drawer status. You need to use read status to read drawer status.



How to access Cash Drawer in Ubuntu

You can access Cash Drawer port through USB-to-Serial port. You can use cutecom to access it.

Find PUH CD port

You can list all `"/dev/ttyUSB*"` by `ls` command. There are total 5 COM ports for PUH. The CD port will be the last port, like `"/dev/ttyUSB4"`.

```
user@D18:~$ ls /dev/ttyUSB*
/dev/ttyUSB0 /dev/ttyUSB1 /dev/ttyUSB2 /dev/ttyUSB3 /dev/ttyUSB4
```

Find CDA CD port

You can list all `"/dev/ttyACM*"` by `ls` command. You may find more than one devices, like `"/dev/ttyACM0"`, `"/dev/ttyACM1"`, if you install more than one CDA.

The CDA port will like `"/dev/ttyACM0"` for one CDA installed.

```
user@D18:~$ ls /dev/ttyACM*
/dev/ttyACM0
```

Install cutecom

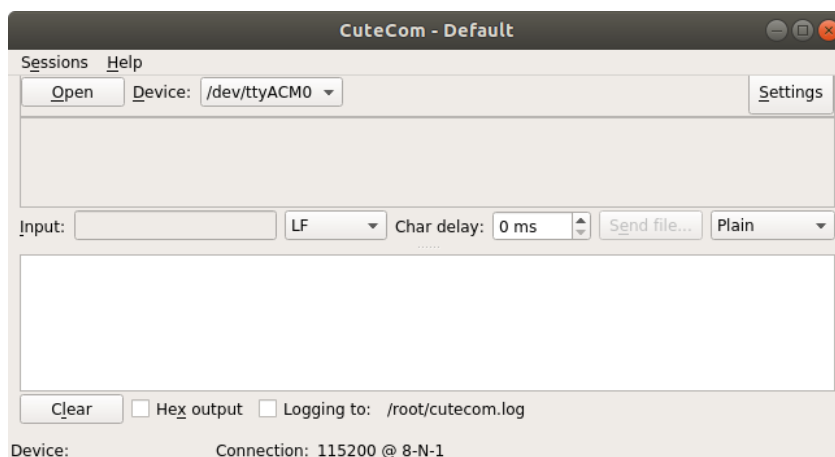
You can install cutecom by `"sudo apt install cutecom"`.

```
user@D18:~$ sudo apt install cutecom
[sudo] password for user:
```

Start cutecom

You can use `"sudo cutecom"` to start cutecom.

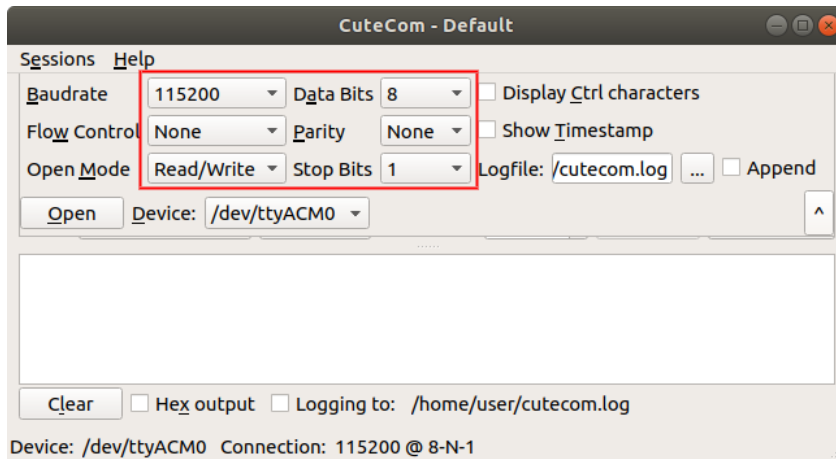
```
user@D18:~$ sudo cutecom
```



Setup COM port

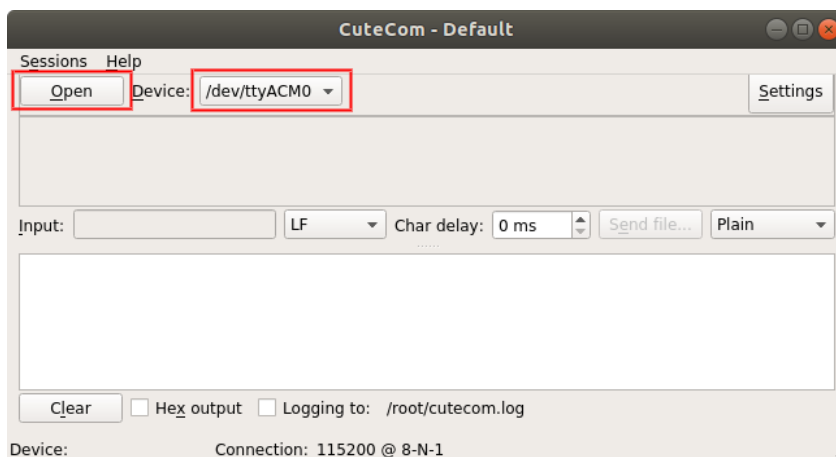
The MCU is commutation through virtual COM port. Please find out the PUH/CDA port name first than setup the COM port baud rate to "115200, N, 8, 1" .

Click "Setting" to display COM port setting.

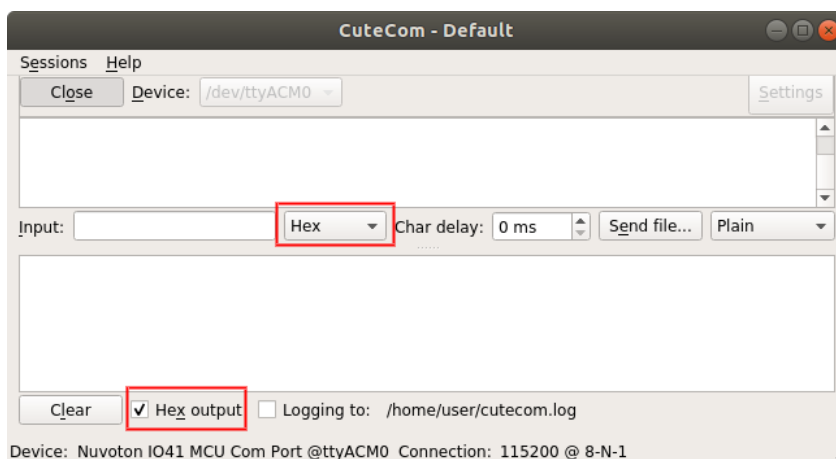


Open COM port

Select which device for access "/dev/ttyACM0" . Then click "Open" to open device for access.

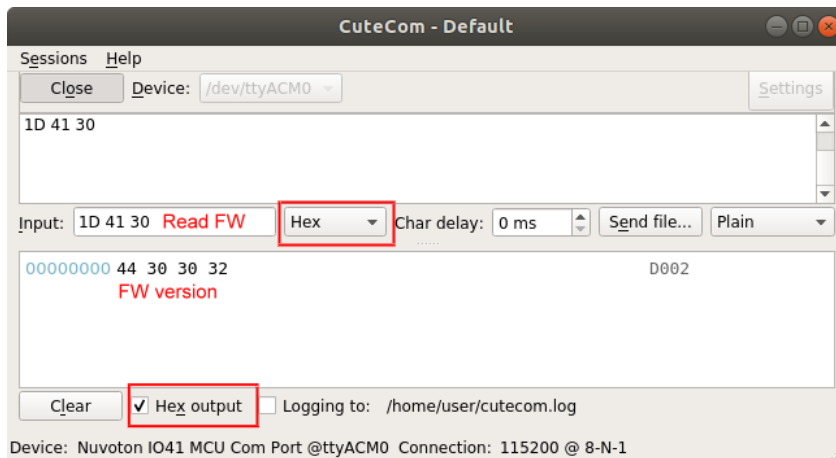


Please select input/output to "Hex" for later access. All command is HEX value.



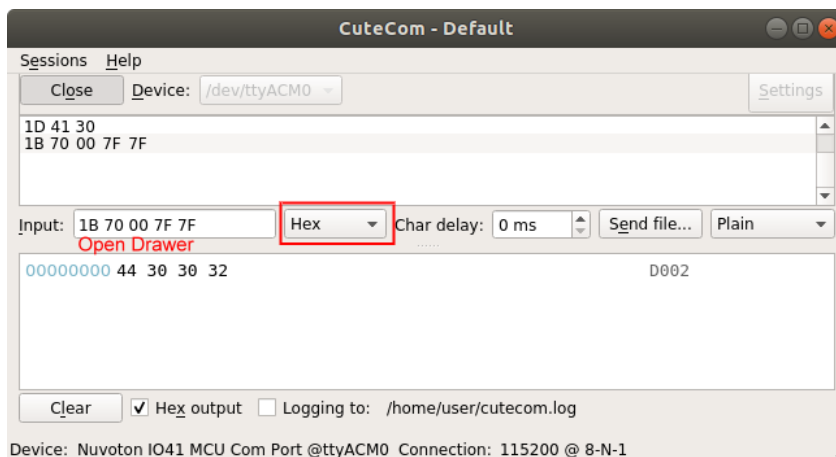
Read FW Version

Input "Read FW" command "1D 41 30" than enter, this command will return MCU FW version.



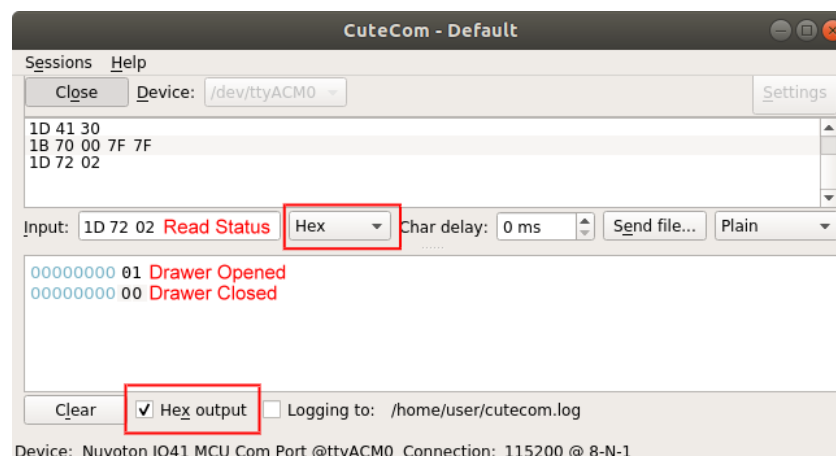
Open Drawer

Input "Open Drawer" command "1B 70 00 7F 7F" than enter, this command will open drawer.



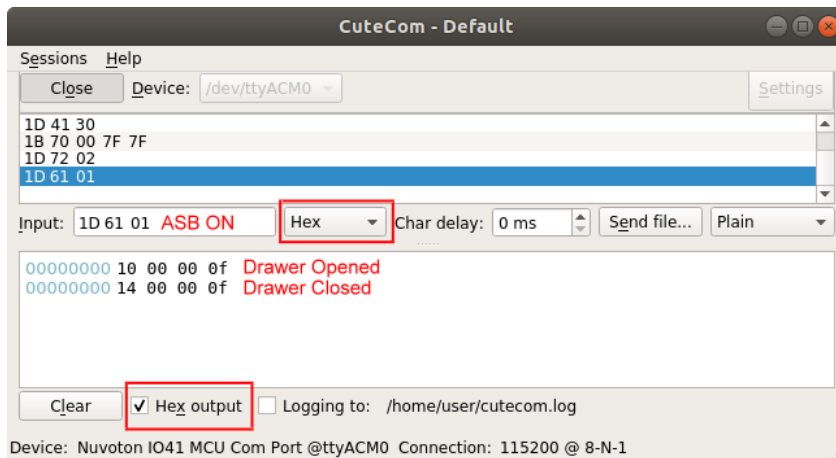
Read Drawer Status

Input "Read Drawer Status" command "1D 72 02" to read status. The status will return and display after read command.



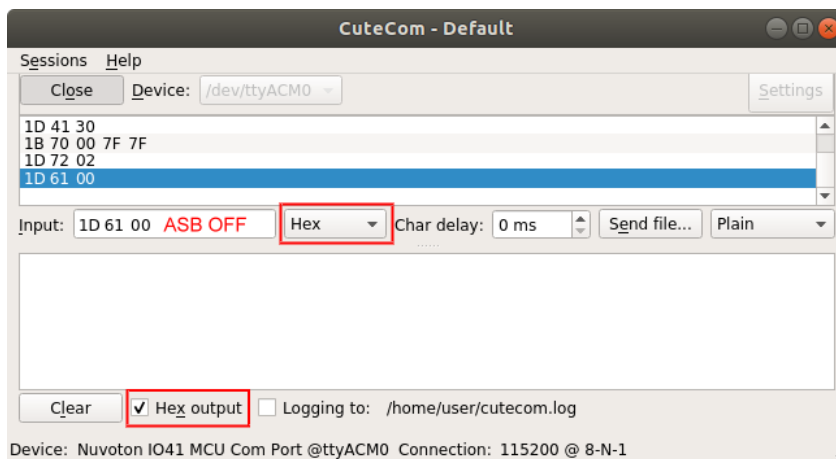
Enable ASB

Input "Enable ASB" command "1D 61 01". The drawer will automatic report drawer status when drawer open/close status changed.



Disable ASB

Input "Disable ASB" command "1D 61 00". The drawer will not report drawer status. You need to use read status to read drawer status.

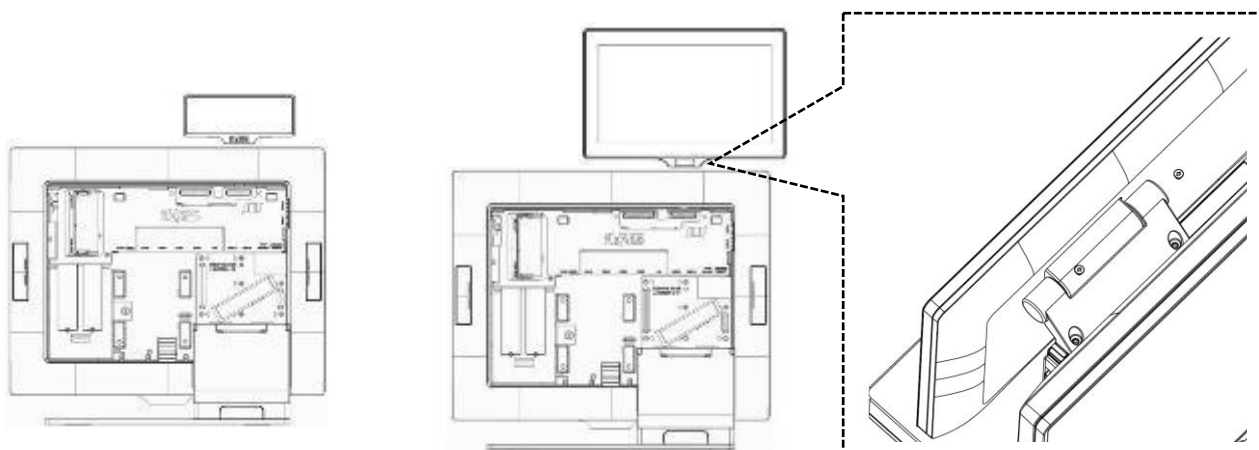


6.2 Install the Attachment-type Customer Display (YUNO-II-LCM) and Second Display (YUNO-II-2NDLCD10.1)

The Attachment-type Customer Display (YUNO-II-LCM) and Second Display (YUNO-II-2NDLCD10.1) can be installed from the rear top side of the system. Make sure the unit is powered off before starting.

Please follow the below steps to finish the installation:

1. Open the rear cover
2. Remove the rear top door of the rear cover.
3. Connect the Customer Display cable with the connector of the system. Locate this connection properly.
4. Insert the Customer Display in place and fasten two screws to make it secure.




Installed with YUNO-II-LCM

Installed with YUNO-II-
2NDLCD10.1

6.3 Install other Attachment-type Peripherals

Attachment-type peripherals, including YUNO-MSRLONG, YUNO-SCANNER2D, YUNO-DALLAS and YUNO-ADDIMAT Reader, may be easily installed at either side of the system. YUNO-MSRLONG is used as an installation representative for elaboration.

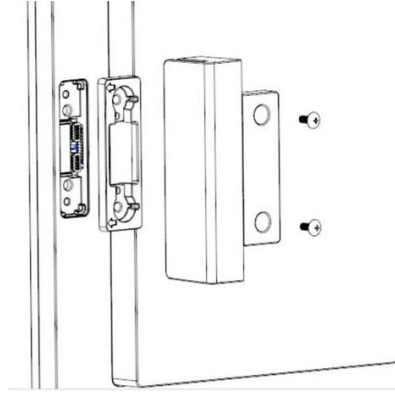
See the peripheral adapter control table for side peripherals:

Name	Peripheral adapter needed 	Screw length	Screw in accessory's box
YUNO-MSRLONG	Yes	8mm	8mm
YUNO-SCANNER2D	No	5mm	8mm for YUNO and 5mm for YUNO-II
YUNO-DALLAS	No	5mm	8mm for YUNO and 5mm for YUNO-II
YUNO-ADDIMAT	No	5mm	8mm for YUNO and 5mm for YUNO-II
FINGERPRINT READER	Yes	8mm	8mm
YUNO-MSR-RFID-SP	Yes	8mm	8mm

Make sure the unit is powered off before starting.

Please follow the below steps to finish the installation:

1. [Open the cover door of peripheral](#)
2. Place the Peripheral Adapter and connect the peripheral with the connector of the system. Locate this connection properly.



3. Insert the peripheral in place and fasten the two pcs of screws to make it secure.

Appendix A: Driver Installation

To download the most recent drivers and utilities, and obtain advice regarding the installation of your equipment, please visit the AURES Technical Support Website:

www.ares-support.com