

OFT-10W02

10.1" Open Frame Tablet

Quick Reference Guide

4th Ed – 21 February, 2023

Copyright Notice

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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 UNDESIRE OPERATION.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of 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 instruction, 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:

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

Notice:

- (1) A Unshielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used.
- (2) Use only shielded cables to connect I/O devices to this equipment.
- (3) Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65 and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices. The radiated output power of this Wireless LAN device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized. When nearby persons has to be kept to ensure RF exposure compliance, in order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20 cm.

WARNING

“CAUTION – Use suitable mounting apparatus to avoid risk of injury.”

“CAUTION – This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures”

“CAUTION –Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.”

“CAUTION - 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.”

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

WiFi information :

Product Description	IEEE 802.11 b/g/n Wireless LAN and Bluetooth Combo LGA Module
WLAN Standard	IEEE 802.11b/g/n, Wi-Fi compliant
Bluetooth Standard	Bluetooth 2.1+Enhanced Data Rate (EDR) / BT4.0
Major Chipset	Realtek RTL8723BS
WiFi PID/VID	B723 / 024C
Antenna Type	PIFA
Operating Conditions	
Temperature	Operating: 0~70 °C ; Storage: -20~85 °C
Electrical Specifications	
Frequency Range	WLAN: 2.4 GHz Band 2.412-2.472 GHz Bluetooth: 2400~2483.5MHz
Number of Channels	802.11b: USA, Canada and Taiwan : 1 ~ 11 Most European Countries : 1 ~ 13 Japan : 1 ~ 13 802.11g: USA and Canada : 1 ~ 11 Most European Countries : 1 ~ 13 802.11n: USA and Canada : 1 ~ 11 Most European Countries : 1 ~ 13
Modulation	WLAN: DSSS, OFDM, BPSK(9/6Mbps), QPSK(18/12Mbps), DBPSK(1Mbps), DQPSK(2Mbps), CCK(11/5.5Mbps), 16-QAM(36/24Mbps), 64-QAM (72.2/54/48Mbps) Bluetooth: GFSK (1Mbps), Π/4DQPSK (2Mbps) and 8DPSK (3Mbps)

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1. Getting Started

1.1 Safety Precautions

Warning!



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

1.2 Packing List

- 1 x OFT-10W02 Open Frame Tablet



If any of the above items is damaged or missing, contact your retailer.

1.3 System Specifications

Component	
CPU	<ul style="list-style-type: none"> Intel Atom Z8300/Z8350
CPU Cooler (Type)	<ul style="list-style-type: none"> Heatsink
Memory	<ul style="list-style-type: none"> 2GB DDR3L
Power Supply	<ul style="list-style-type: none"> DC Input 12 ~ 24V
Microphone	<ul style="list-style-type: none"> 1 x A-MIC interface
Speaker	<ul style="list-style-type: none"> 2 x speaker(L & R) interface
Camera	<ul style="list-style-type: none"> 1 x USB pin header
Wireless LAN	<ul style="list-style-type: none"> WIFI 802.11 b/g/n
Bluetooth	<ul style="list-style-type: none"> BT4.0
Operating System	<ul style="list-style-type: none"> Windows10 IoT 2016 64bit
Other Component	<ul style="list-style-type: none"> 1 x RS232 or RS485 1 x 16 bit DIO 1 x Touch Button interface 1 x eDP & Dual channel 24bit LVDS 1 x backlight control & power 1 x I2C interface for PCAP 1 x USB interface for PCAP 1 x DC input 4pin header 1 x Optional I2C interface
Storage	
Other Storage Device	<ul style="list-style-type: none"> 32GB eMMC
Internal I/O	
LCD Panel	<ul style="list-style-type: none"> 10.1": 1280x800 pixel
Touch Screen	<ul style="list-style-type: none"> PCAP
External I/O	
USB Port	<ul style="list-style-type: none"> 1 x USB 2.0 Type A 1 x Micro USB2.0 client (reserved)
Video Port	<ul style="list-style-type: none"> 1 x HDMI
Audio Port	<ul style="list-style-type: none"> 1 x Headphone Jack
LAN Port	<ul style="list-style-type: none"> 1 x 10/100/1000 Ethernet
Wireless LAN Antenna	<ul style="list-style-type: none"> 1 x 400mm PIFA Antenna
Expansion Slots	<ul style="list-style-type: none"> 1 x Micro SD slot
Mechanical	

Power Type	<ul style="list-style-type: none"> DC Input 12 ~ 24V
Power Connector Type	<ul style="list-style-type: none"> DC jack DC input 4pin header optional Powered LAN 802.3AT (10.1" only)
Dimension	<ul style="list-style-type: none"> 252 x 166 x 38mm
Weight	<ul style="list-style-type: none"> 1.18kg
OS Support	<ul style="list-style-type: none"> Windows10 IoT 2016 64bit
Reliability	
EMI Test	<ul style="list-style-type: none"> CE FCC Class A VCCI
Vibration Test	<ul style="list-style-type: none"> <u>Sine Vibration test (Non-operation)</u> Reference IEC60068-2-6 Testing procedures Test Fc : Vibration sinusoidal <ol style="list-style-type: none"> 1 Test Acceleration : 2G 2 Test frequency : 5~500 Hz 3 Sweep : 1 Oct/ per one minute. (logarithmic) 4 Test Axis : X,Y and Z axis 5 Test time :30 min. each axis 6 System condition : Non-Operating mode <u>Package Vibration Test</u> Reference IEC60068-2-64 Testing procedures Test Fh : Vibration boardband random Test <ol style="list-style-type: none"> 1. PSD: 0.026G²/Hz , 2.16 Grms 2. Non-operation mode 3. Test Frequency : 5-500Hz 4. Test Axis : X,Y and Z axis 5. 30 min. per each axis <u>Random Vibration Operation</u> Reference IEC60068-2-64 Testing procedures Test Fh : Vibration boardband random Test <ol style="list-style-type: none"> 1. PSD: 0.00454G²/Hz , 1.5 Grms 2. Operation mode 3. Test Frequency : 5-500Hz 4. Test Axis : X,Y and Z axis 5. 30 minutes per each axis 6. IEC 60068-2-64 Test:Fh
Mechanical Shock	<ul style="list-style-type: none"> <u>Bump Test</u>

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Test	<ul style="list-style-type: none">• Reference IEC 60068-2-29 Testing procedures• Test Eb : Bump Test<ol style="list-style-type: none">1. Wave form : Half Sine wave2. Acceleration Rate : 10g for operation mode3. Duration Time : 11ms4. No. of Shock : Z axis 300 times5. Test Axis: Z axis6. Operation mode
Operating Temperature	<ul style="list-style-type: none">• 0°C ~ 40°C
Operating Humidity	<ul style="list-style-type: none">• 0% ~ 90% relative humidity, non-condensing
Storage Temperature	<ul style="list-style-type: none">• -20°C ~ 60°C

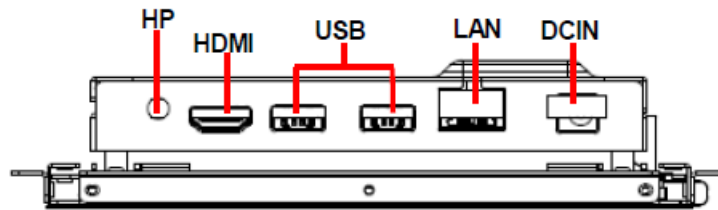


Note:

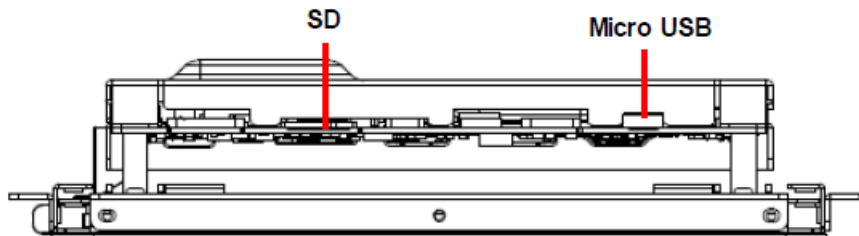
1. Specifications are subject to change without notice.
2. Limitation: CPU Intel Z3735F only has S0iX or S5 without S3 & S4.
S0iX needs hardware support that means all of device must have S0iX support or will not wake up.
Please strongly advice customers to not get into sleep mode, just backlight off.

1.4 System Overview

1.4.1 Right View



1.4.2 Left View

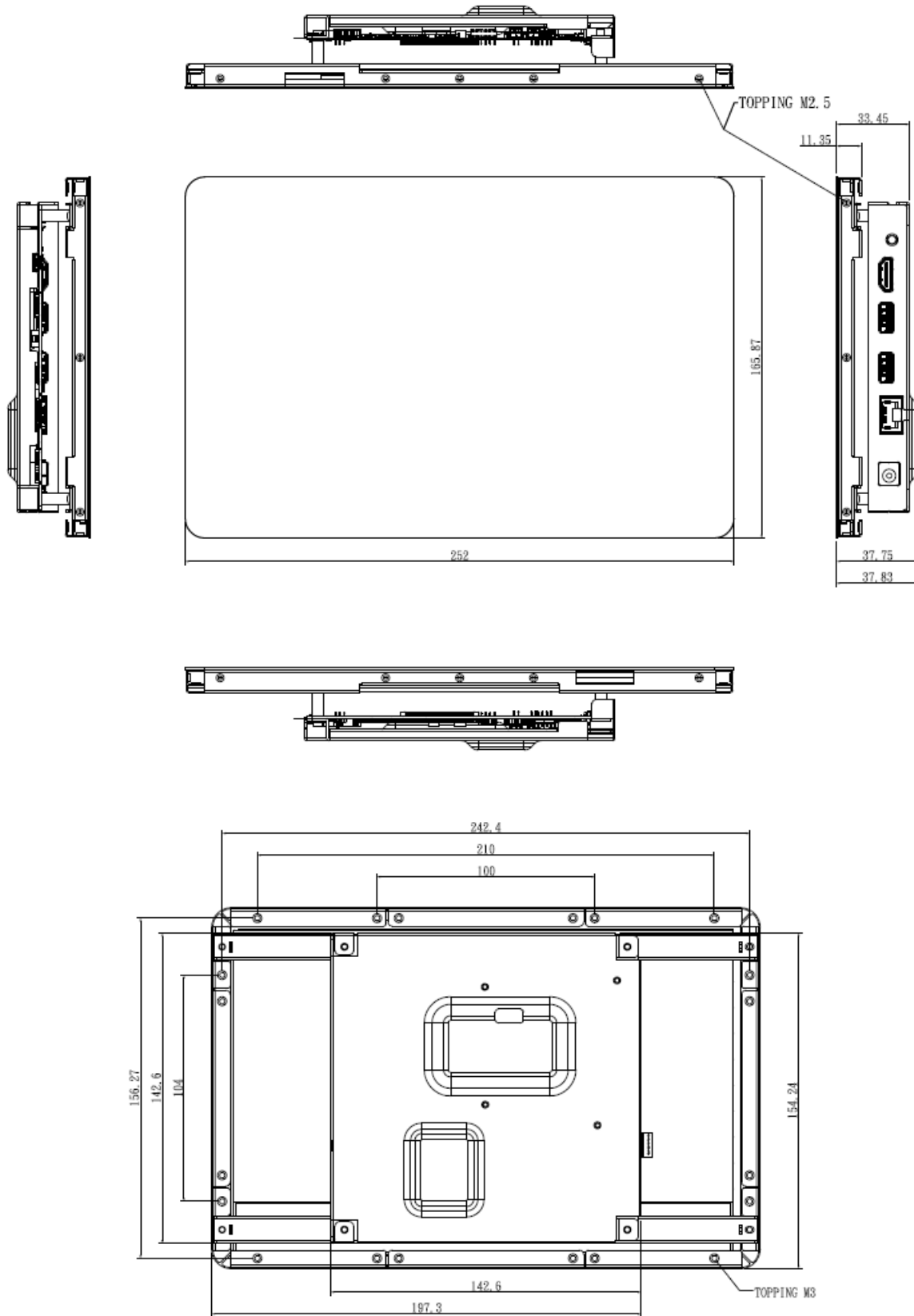


Connectors

Label	Function	Note
HP	Audio line-out connector	
HDMI	HDMI connector	
USB	2 x USB 2.0 connector	
DCIN	DC power-in connector	
SD	Micro SD card slot	
Micro USB	Micro USB connector	
LAN	RJ-45 Ethernet	

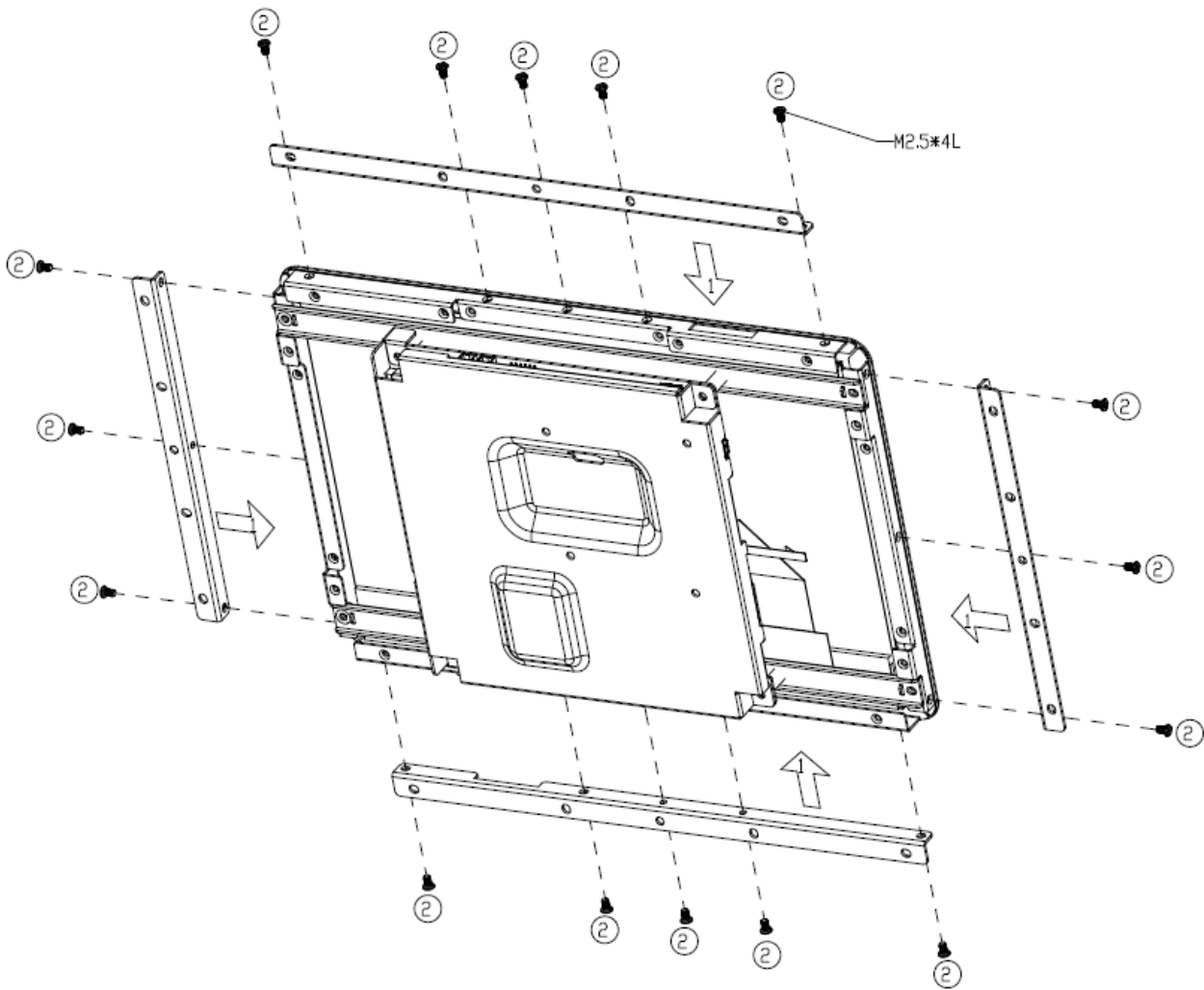
1.5 System Dimensions

1.5.1 Front and Rear side



(Unit: mm)

1.5.2 Installing Extend Brackets

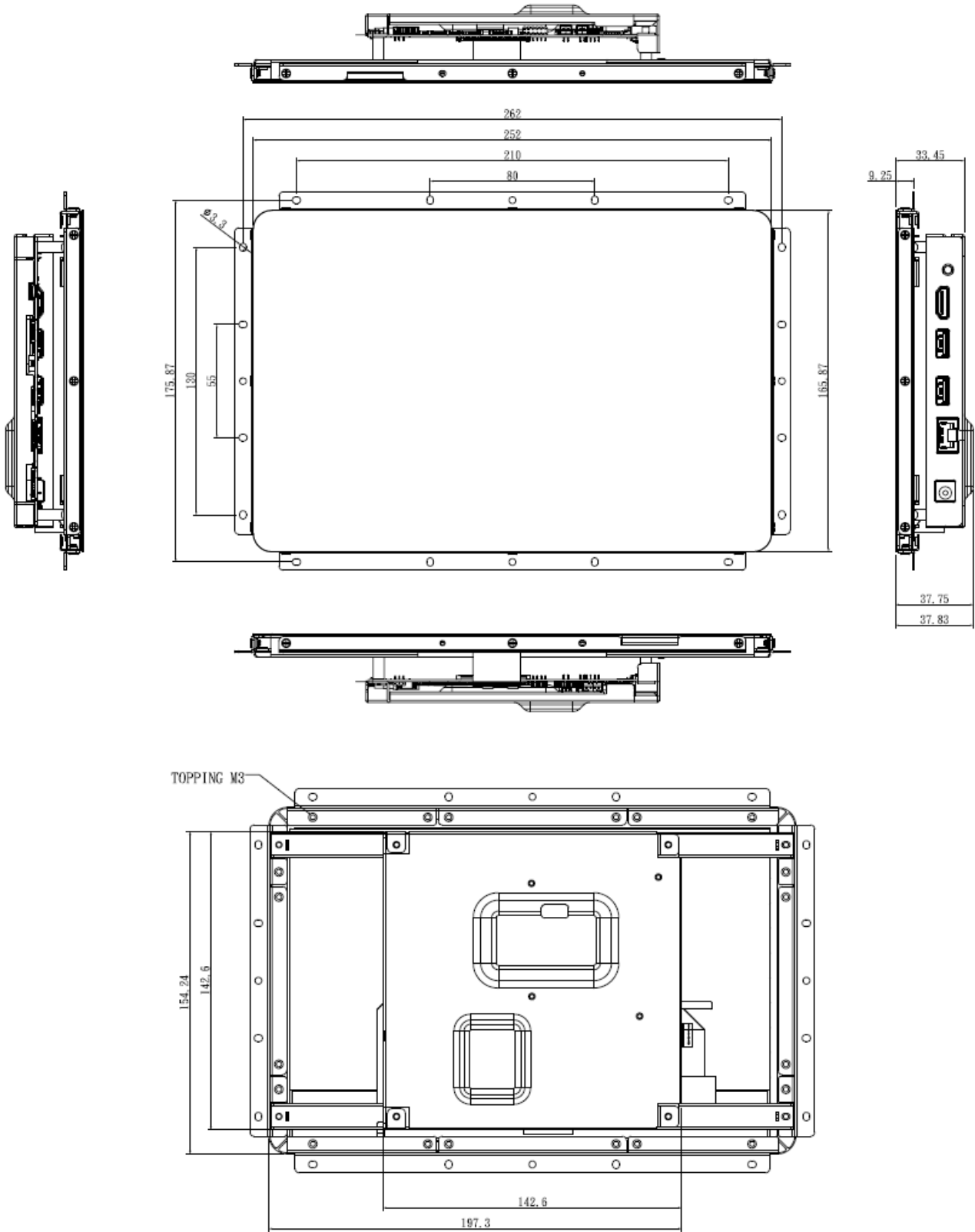


Step1. Locate brackets on both sides, matching the holes on the monitor.

Step2. Insert and fasten 16 screws on each side of the monitor to secure Mounting brackets.

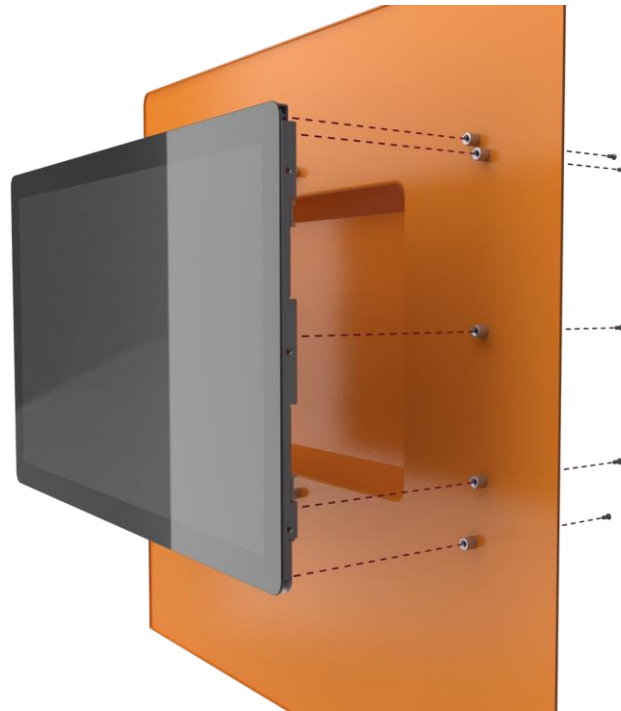
Note: Brackets sold separately.

1.5.3 Front and Rear side (With Extend Bracket)

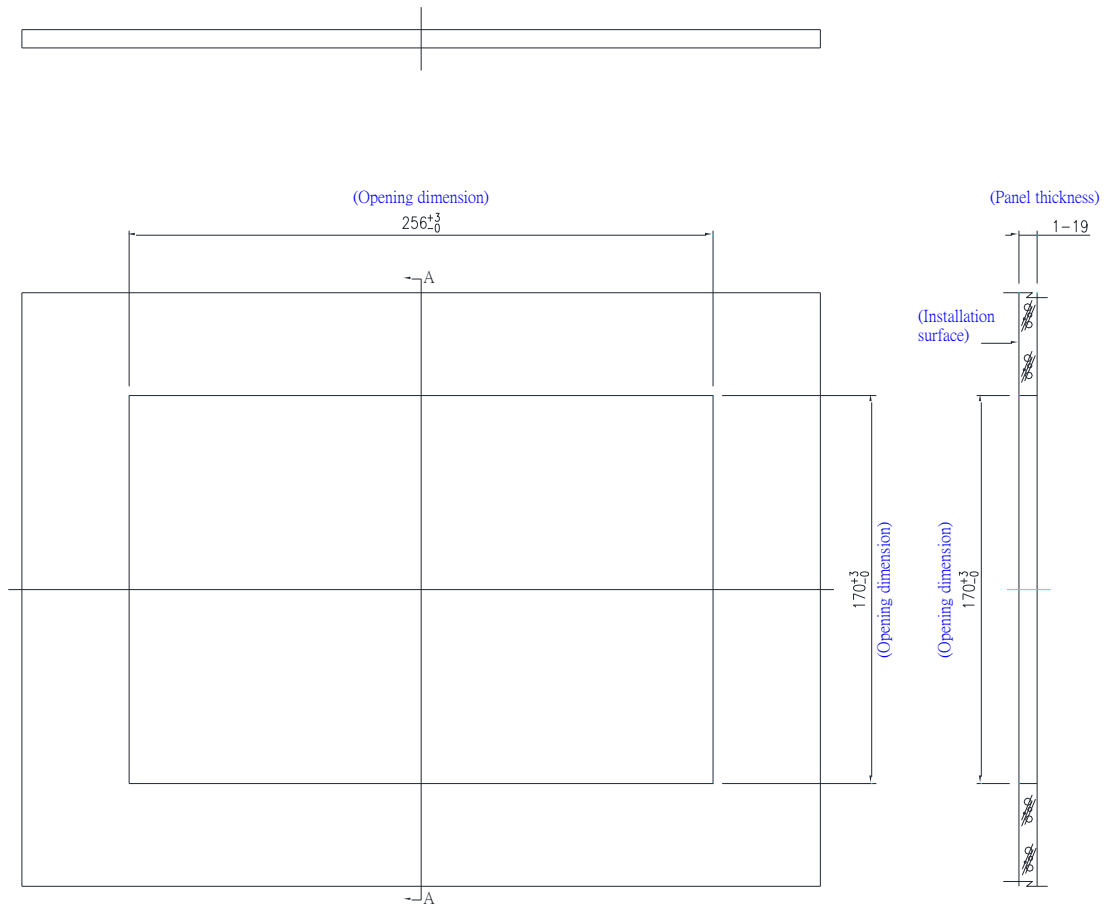


(Unit: mm)

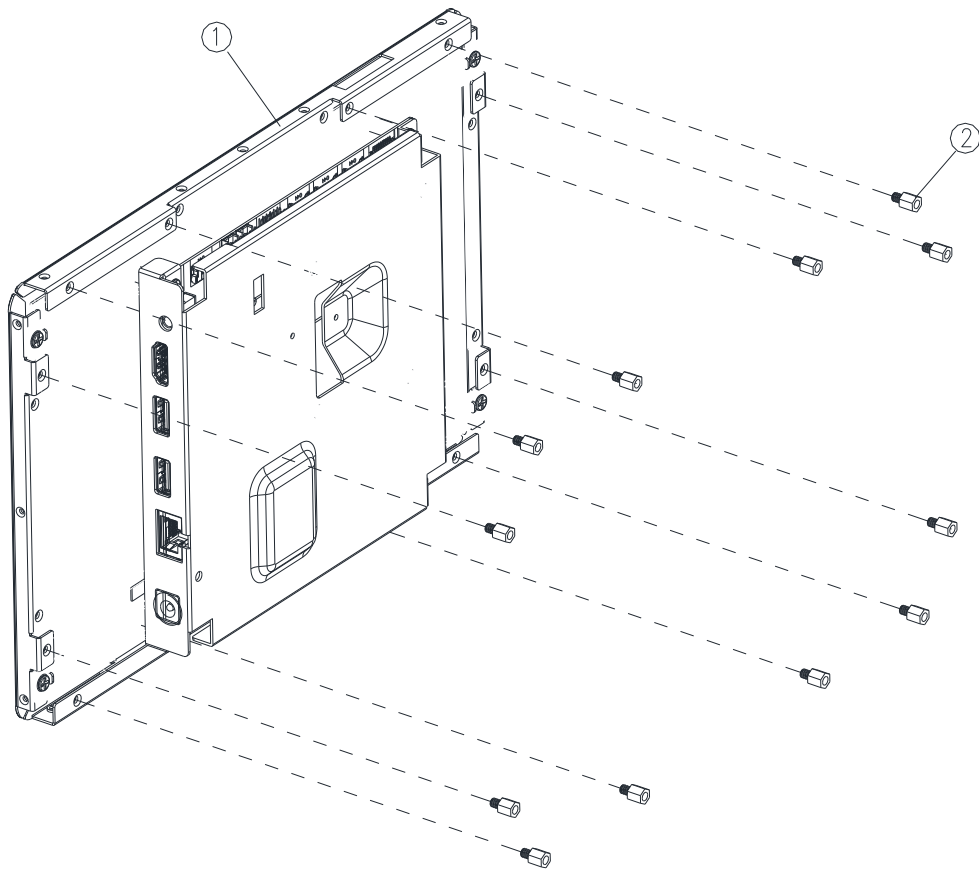
1.6 Flush Mounting Concept



1.7 Panel Mounting



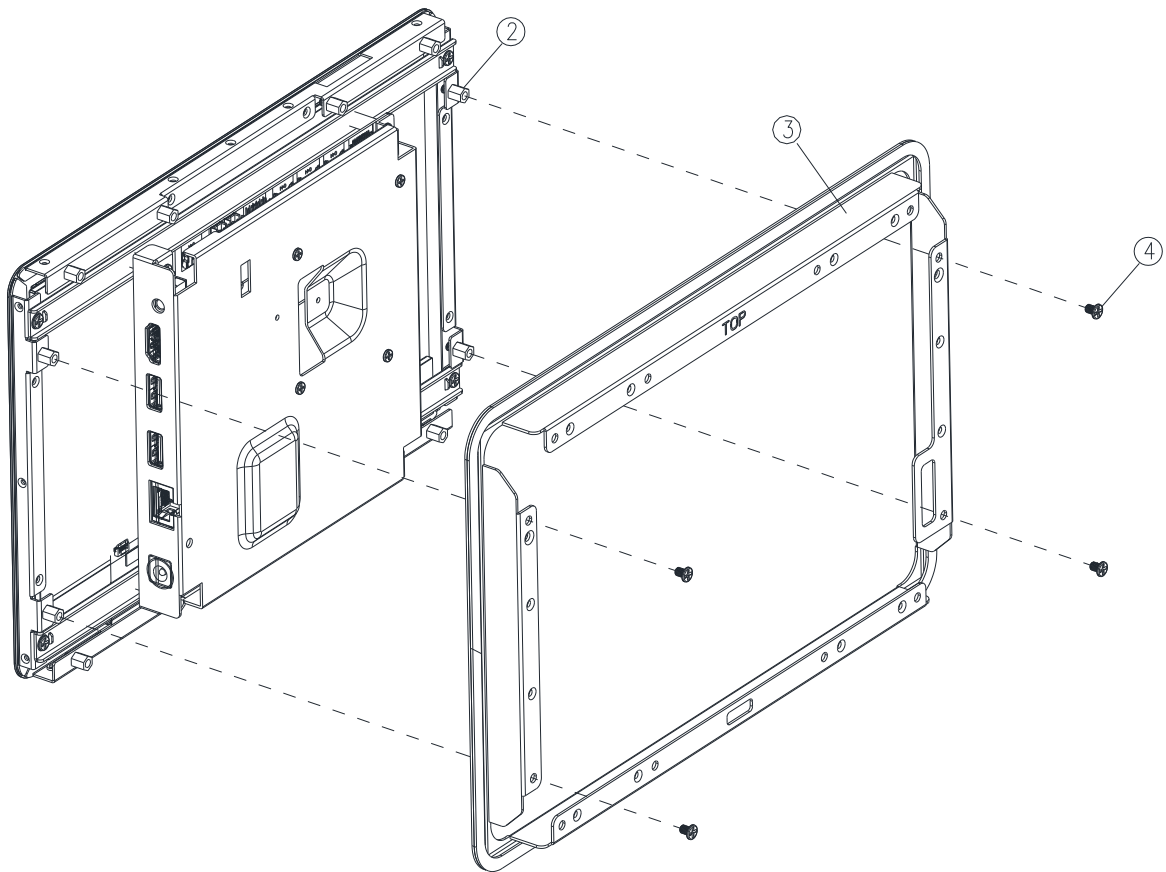
(Unit: mm)



Step1-1. Locate brackets on both sides, matching the holes on the monitor.

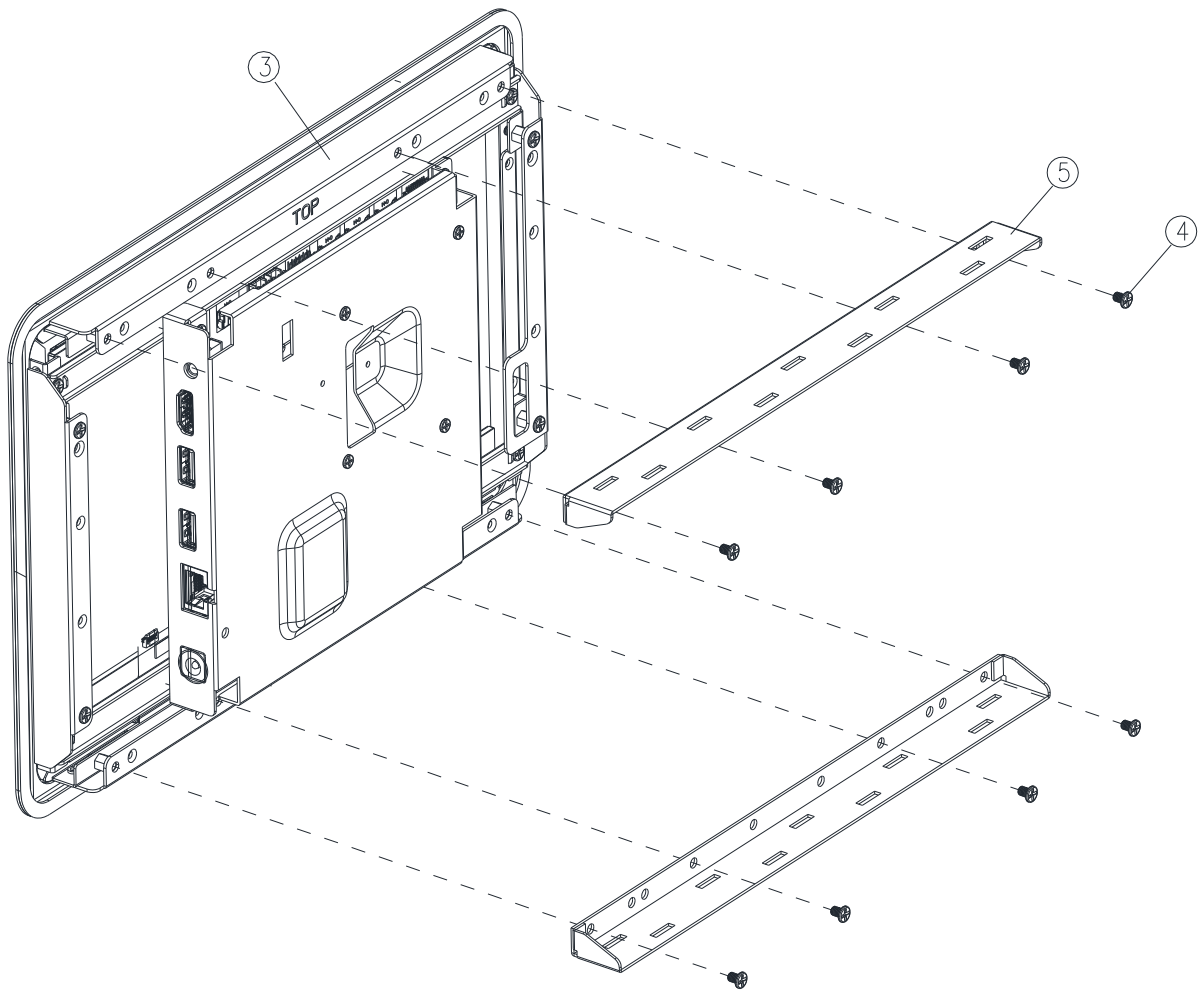
Step1-2. Insert and fasten 12 screws on each side of the monitor to secure Mounting brackets.

2	Hexagon Stud	12
1	Motherboard_10W1_ASSY	1
Item	Part Name	Quantity



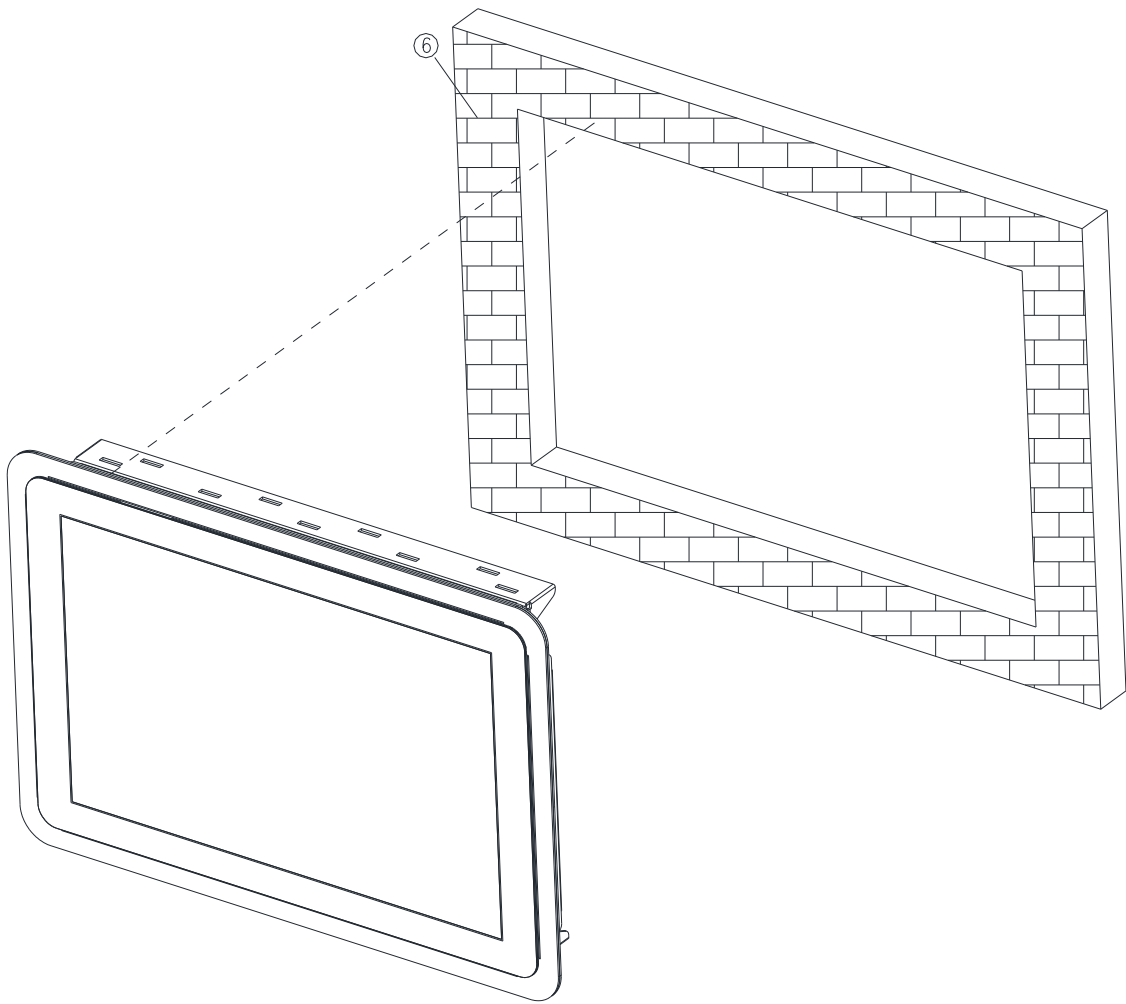
Step2. Insert and fasten 4 screws on each side of the monitor to secure Front bracket.

2	Hexagon Stud	12
1	Motherboard_10W1_ASSY	1
Item	Part Name	Quantity



Step3. Insert and fasten 8 screws to secure Bracket T/B.

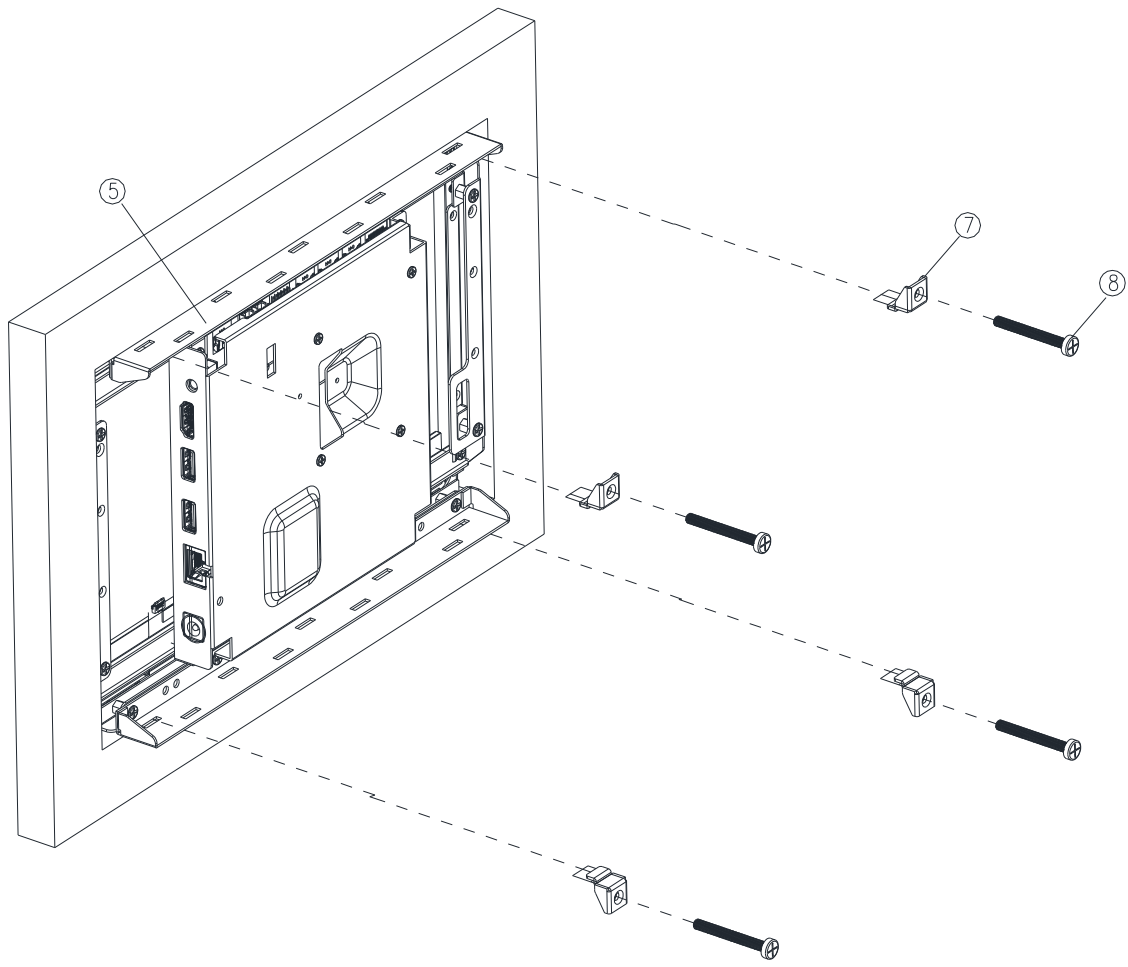
5	Bracket T/B	2
4	Screw	8
3	Front Bracket	1
Item	Part Name	Quantity



(Outside of the wall)

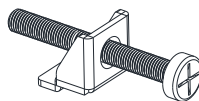
Step4. Insert Motherboard 10" Open frame into the wall.

6	Wall	1
Item	Part Name	Quantity



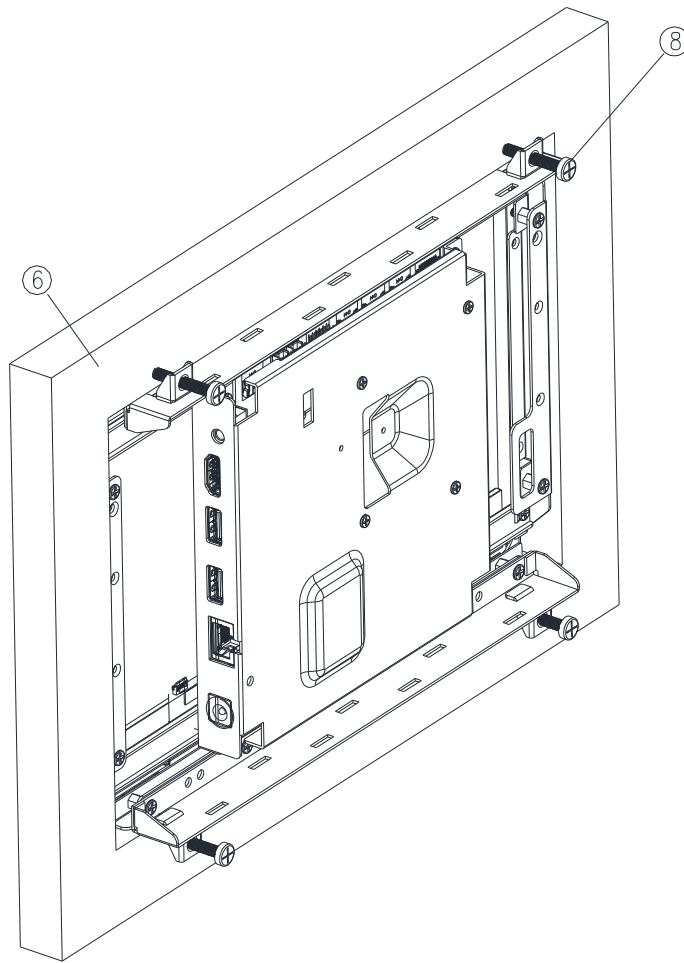
(Inside of the wall)

Step5. Fasten 4 screws to secure Panel mount brackets and insert it into Bracket/TB.



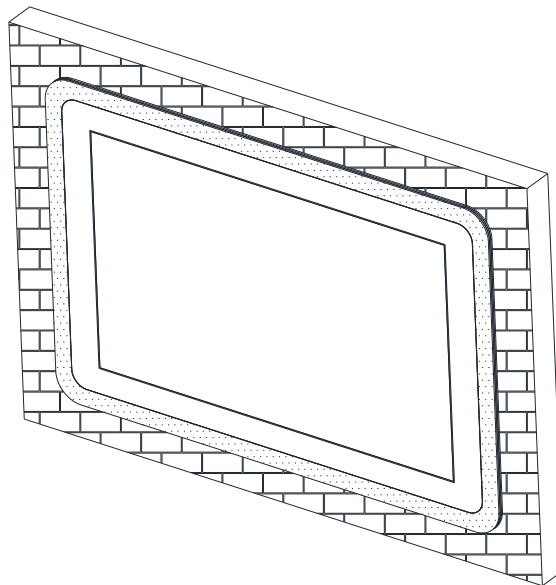
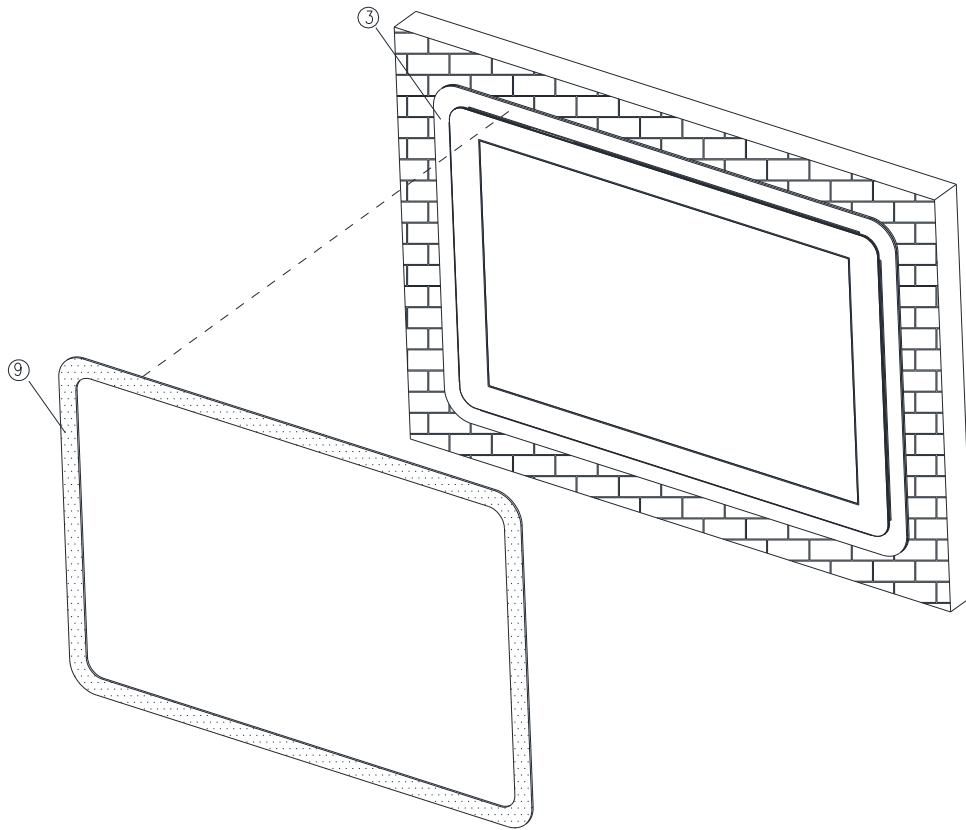
5-1

8	Panel mount Screw	4
7	Panel mount Bracket	4
5	Bracket T/B	2
Item	Part Name	Quantity



Step6. Insert and fasten 4 Panel mount screws to secure the module.

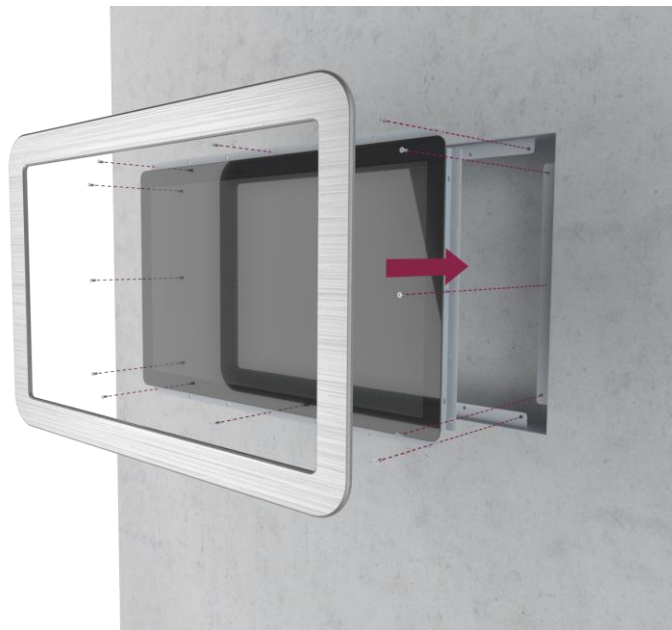
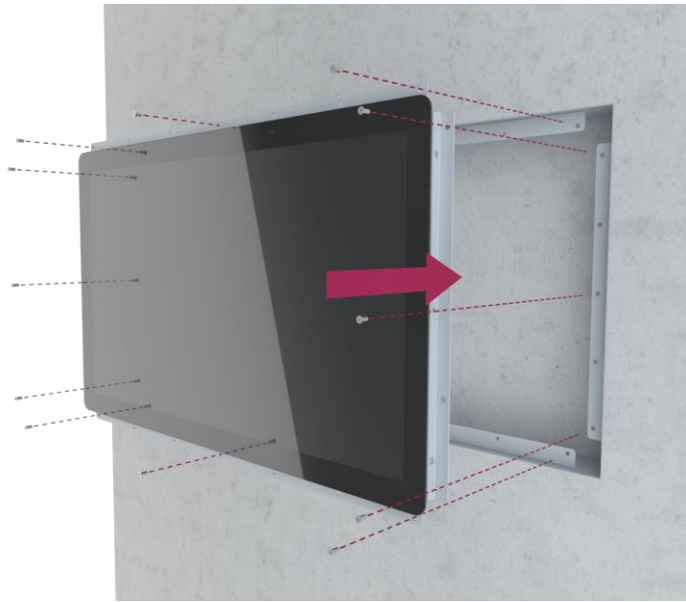
8	Panel mount Screw	4
6	Wall	1
Item	Part Name	Quantity



Step7. Paste the Decoration Plate on the Front bracket to complete installation.

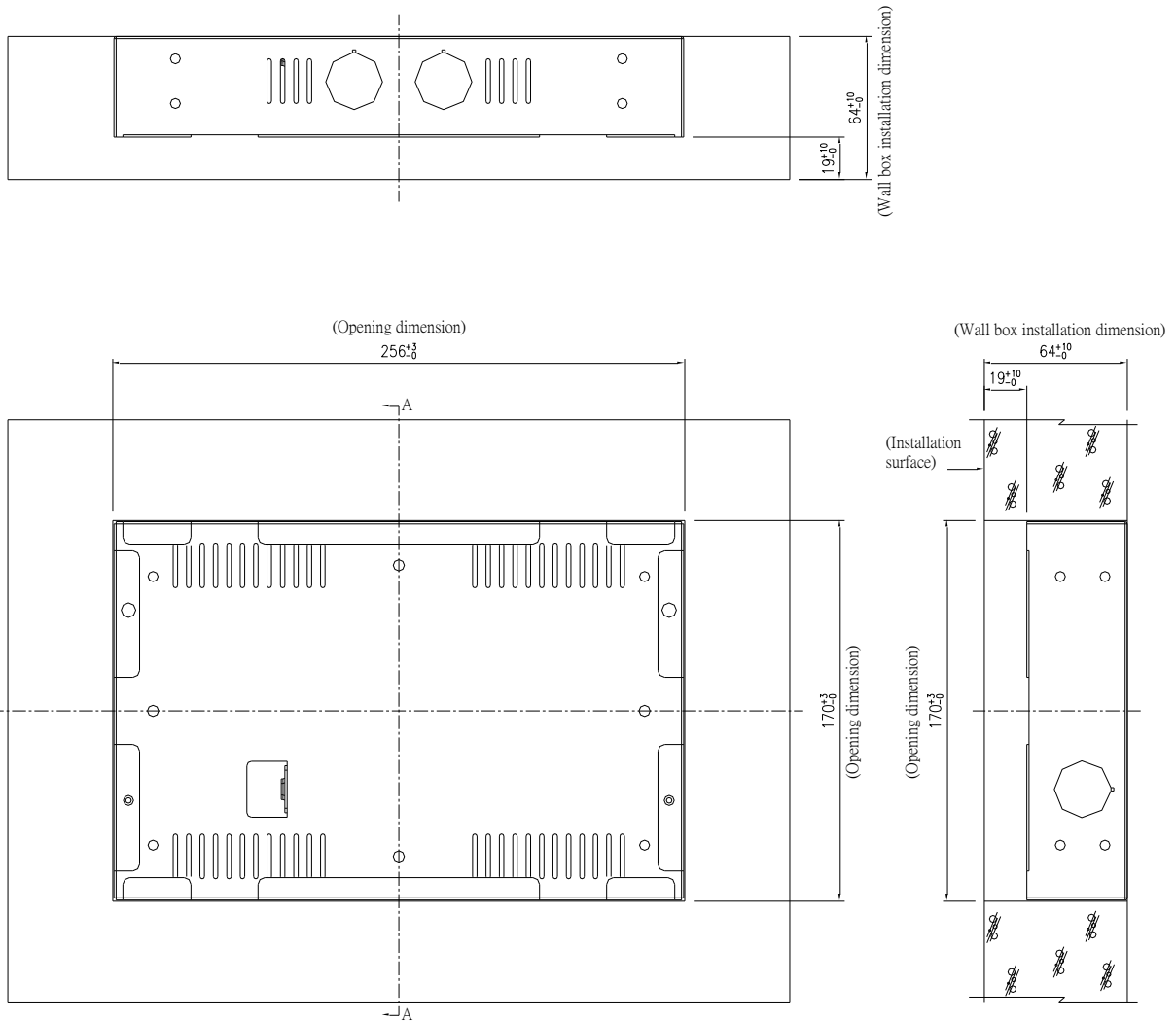
9	Decoration Plate	1
3	Front Bracket	1
Item	Part Name	Quantity

1.8 Wall Mounting Concept



1.9 Wall Mounting

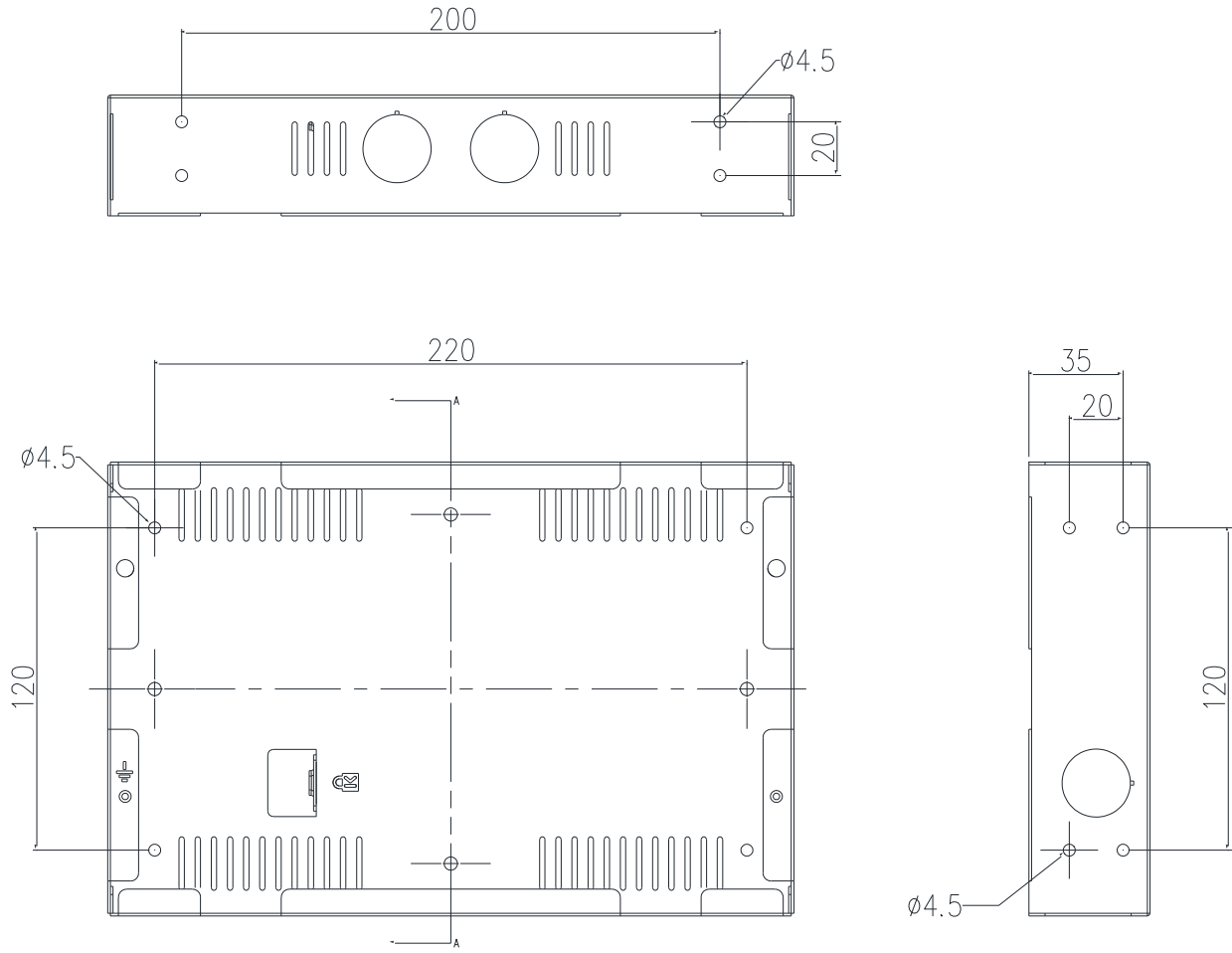
Size of the opening



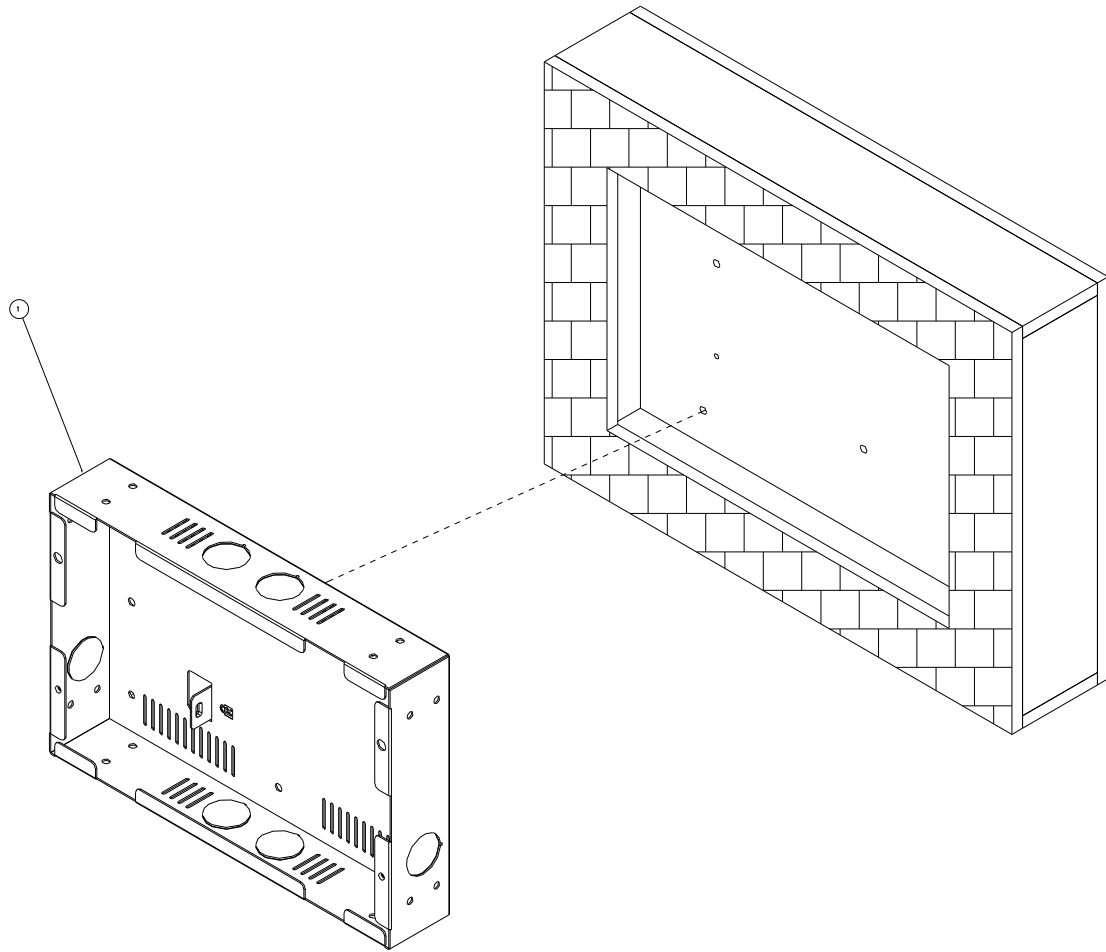
(Unit: mm)

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Screw hole location

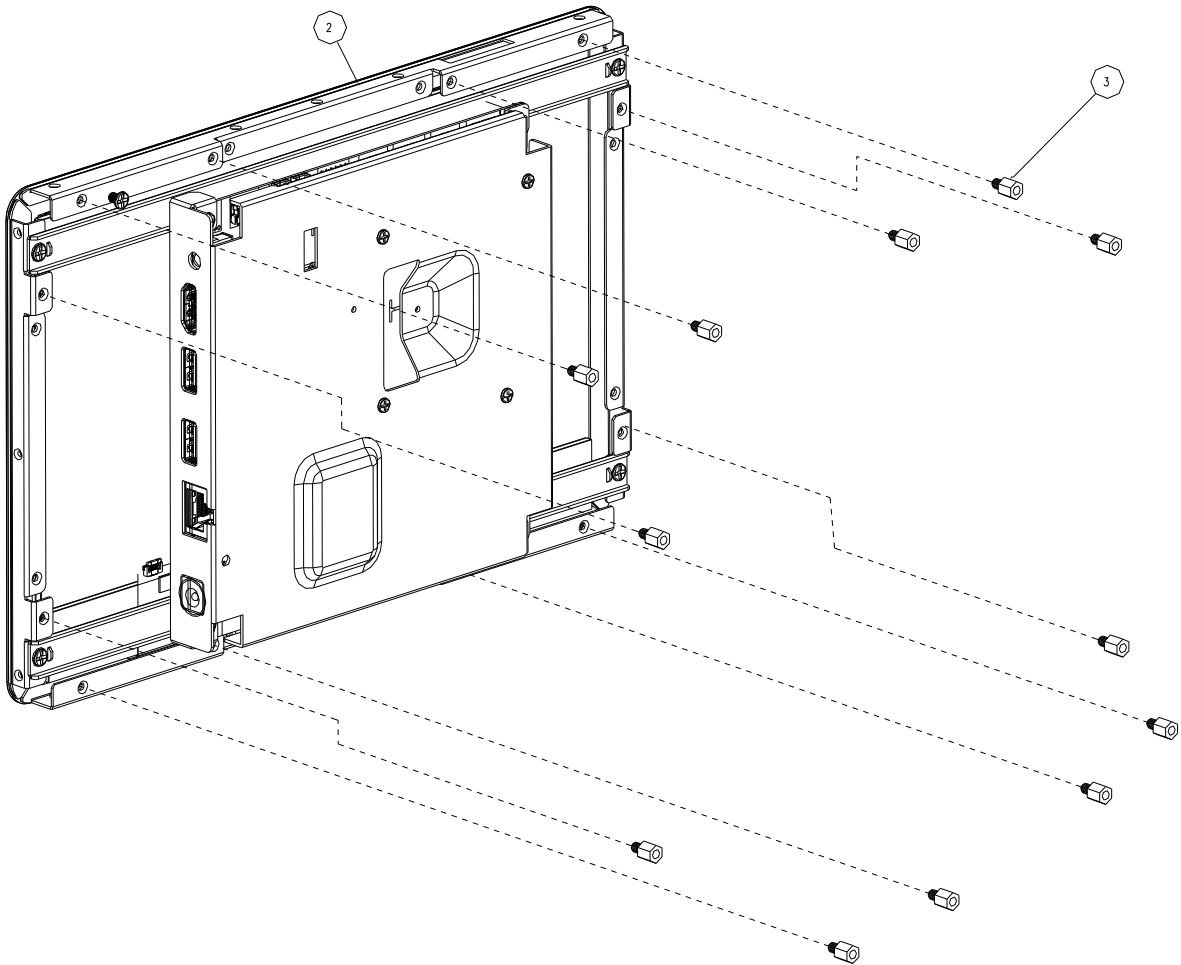


(Unit: mm)



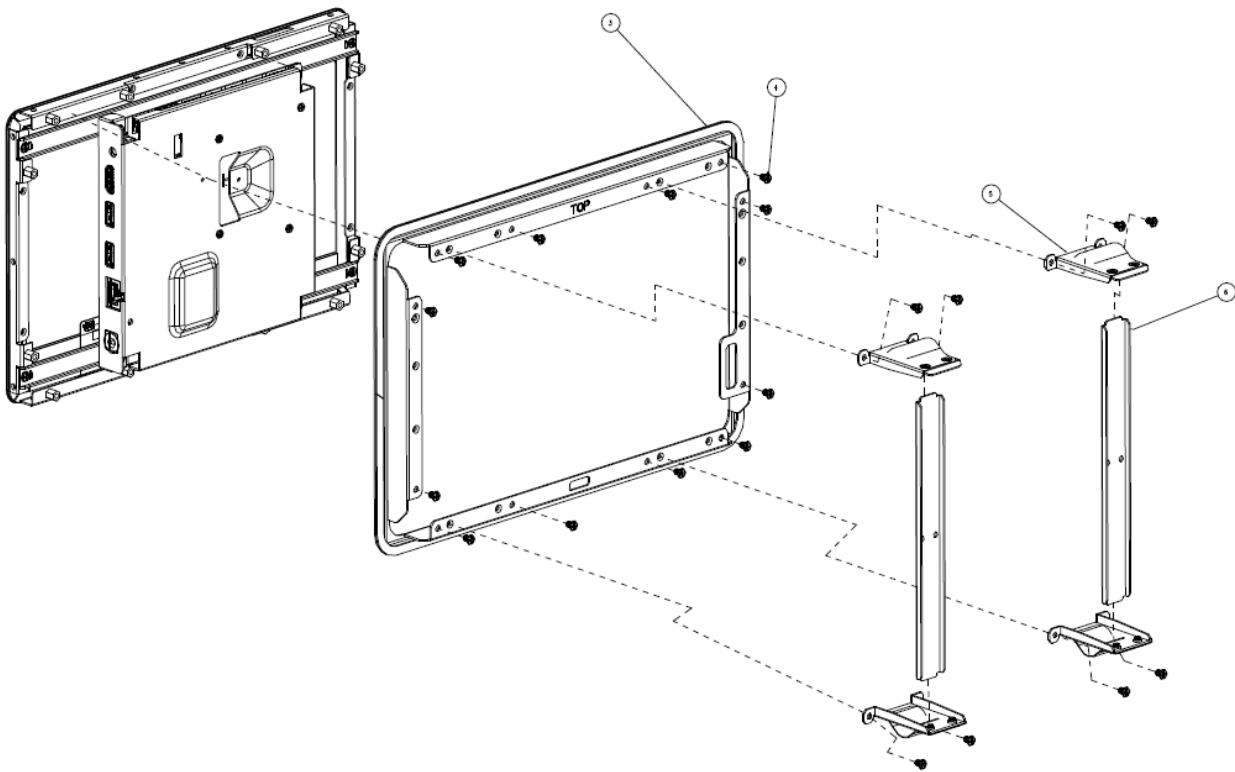
Step1. Fasten the screw on the wall.

1	Wall box	1
Item	Part Name	Quantity



Step2. Insert and fasten 12 screws on each side of the monitor to secure brackets.

3	Hexagon Stud	12
2	Motherboard_10W1_ASSY	1
Item	Part Name	Quantity

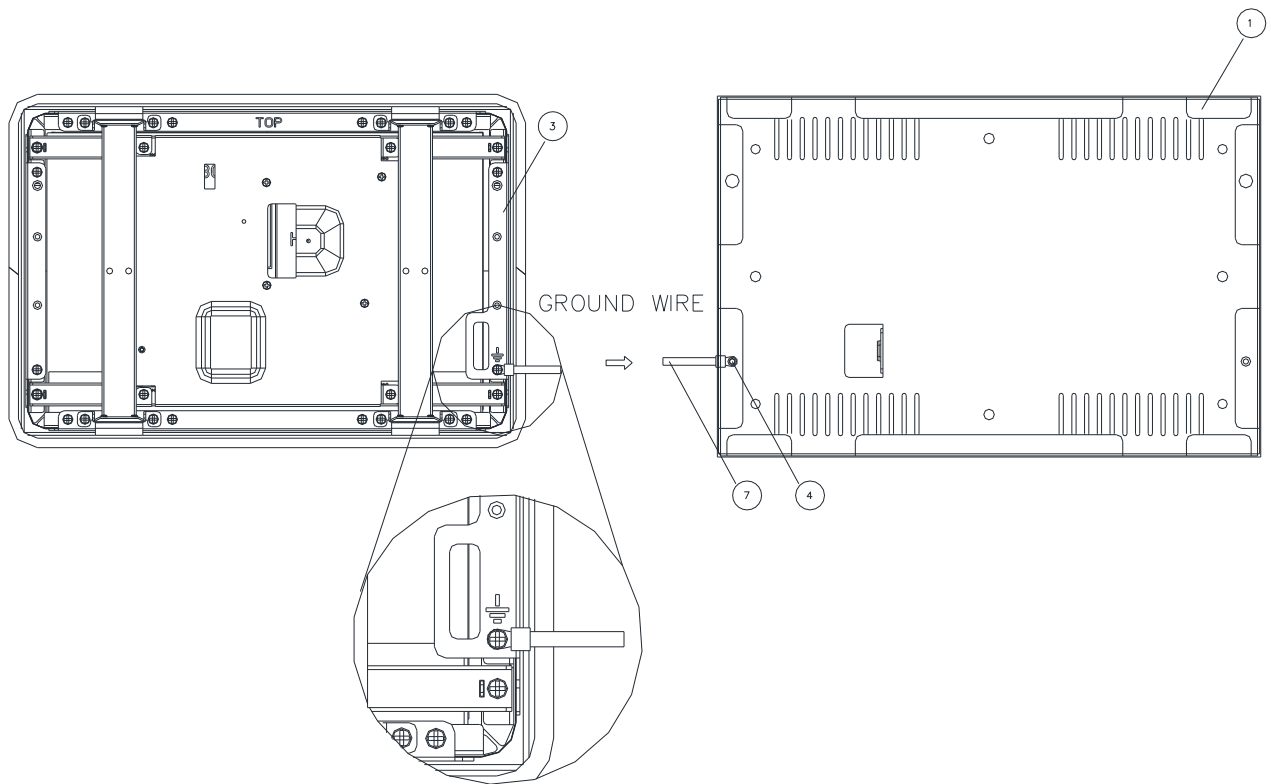


Step3-1. Insert and fasten 12 screws on each side of the monitor to secure Front bracket.

Step3-2. Fasten 4 screws on Front bracket of the monitor to secure Wall mount kit.

Step3-3. Insert and fasten 4 screws to secure Bracket L/R.

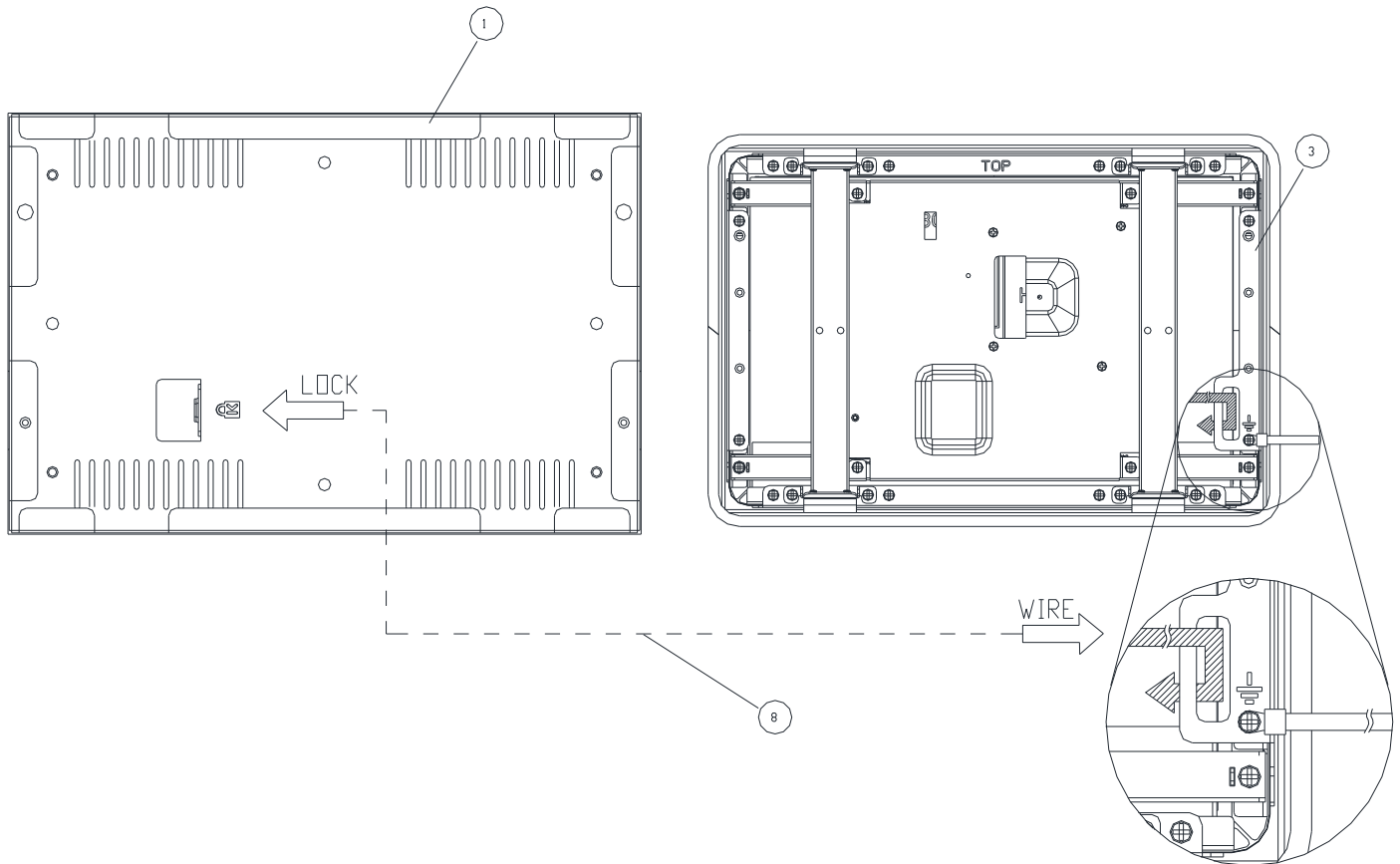
6	Bracket L/R	2
5	Wall mount kit	4
4	Screw	8
3	Front bracket	1
Item	Part Name	Quantity



Step4. Insert and fasten 2 screws on Front bracket and Wall box of the monitor to secure Ground wire.

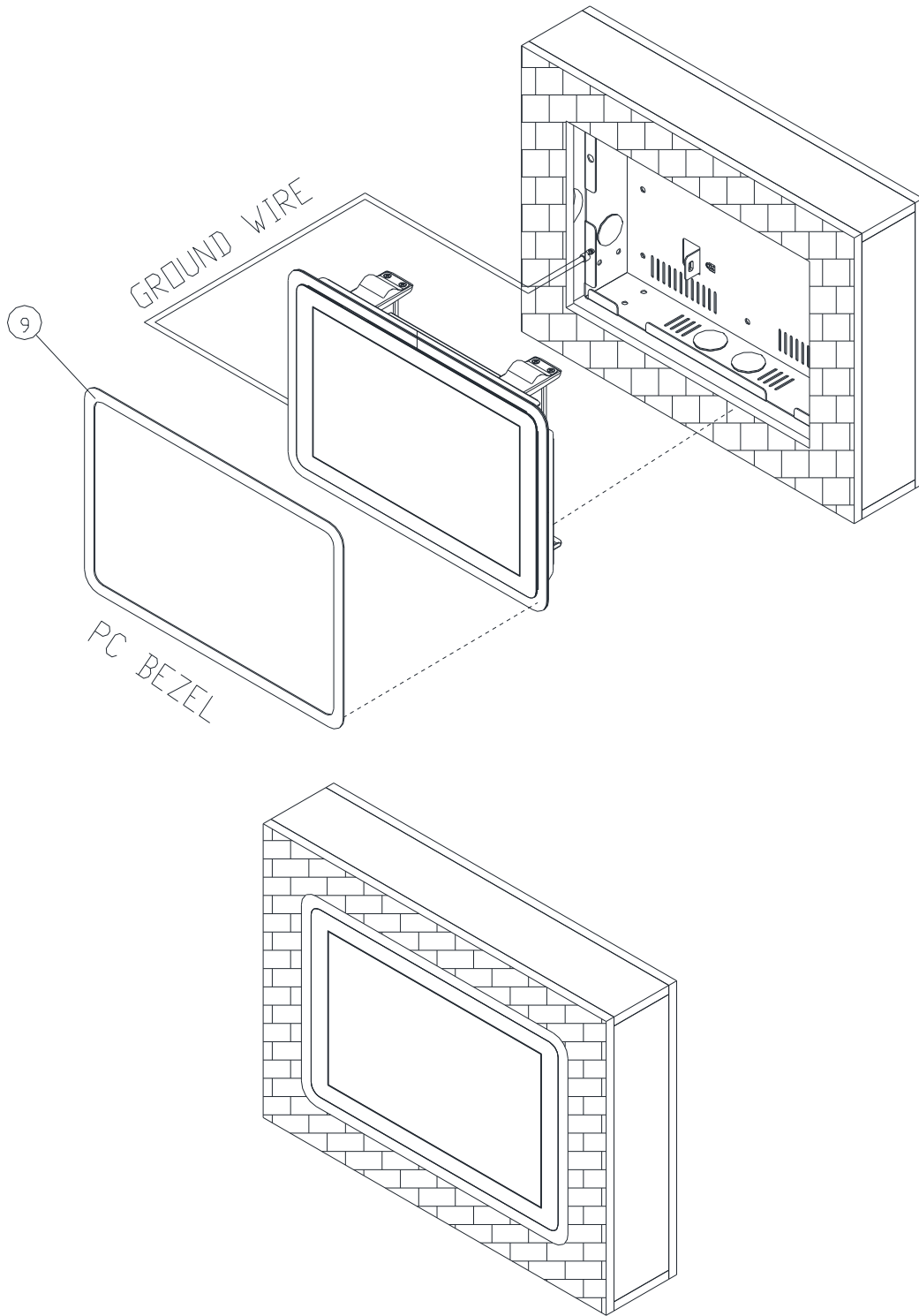
7	Ground wire	1
4	Screw	2
3	Front bracket	1
1	Wall box	1
Item	Part Name	Quantity

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Step5. Wrap the Kensington lock (option) around the hole in the front bracket and attach the lock to the keyhole in the Wall box.

8	Kensington lock	1
3	Front bracket	1
1	Wall box	1
Item	Part Name	Quantity



Step6-1. Insert the Ground wire and Kensington lock in the Wall box and Insert Motherboard 10" Open frame into the wall.

Step6-2. Paste the Decoration Plate on the Front bracket to complete installation.

9	PC bezel	1
Item	Part Name	Quantity

2. Hardware Configuration

For advanced information, please refer to:

- 1- Motherboard included in this manual.

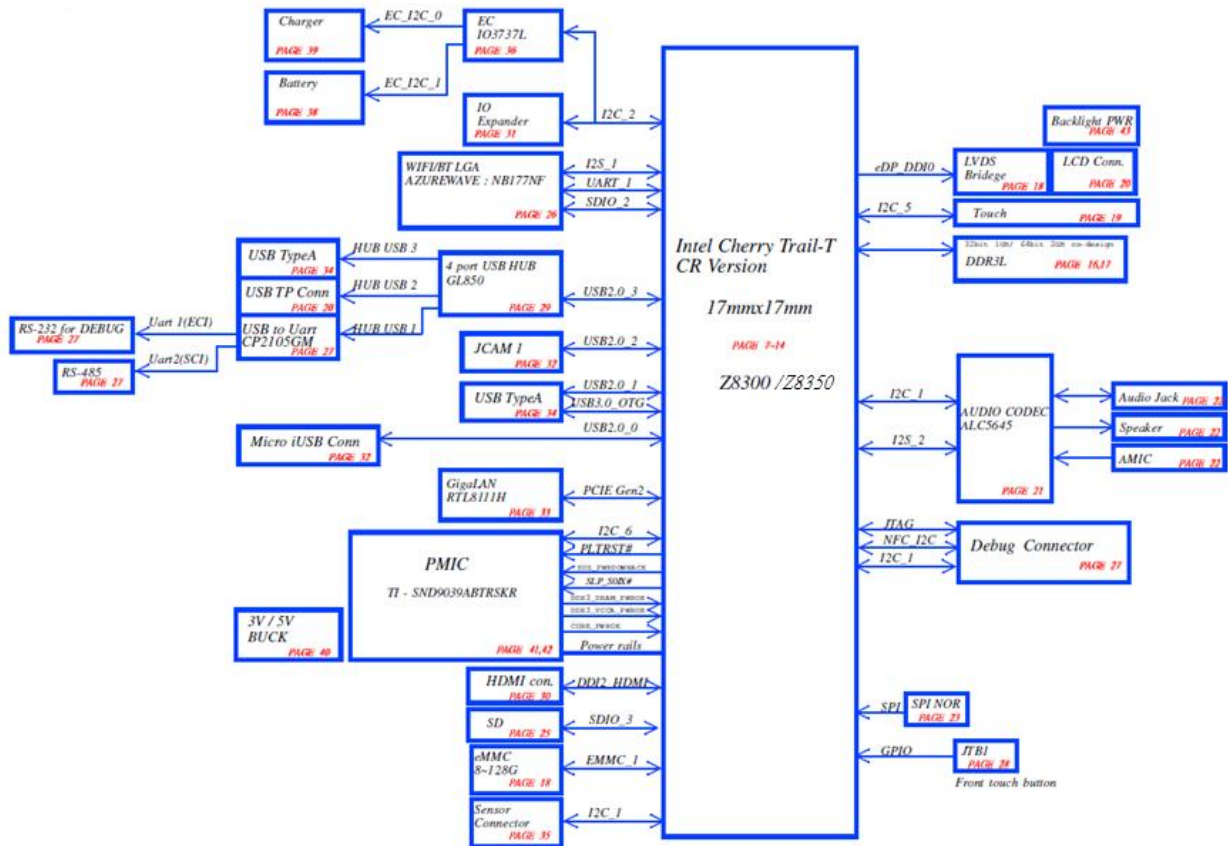


Note: If you need more information, please visit our website:

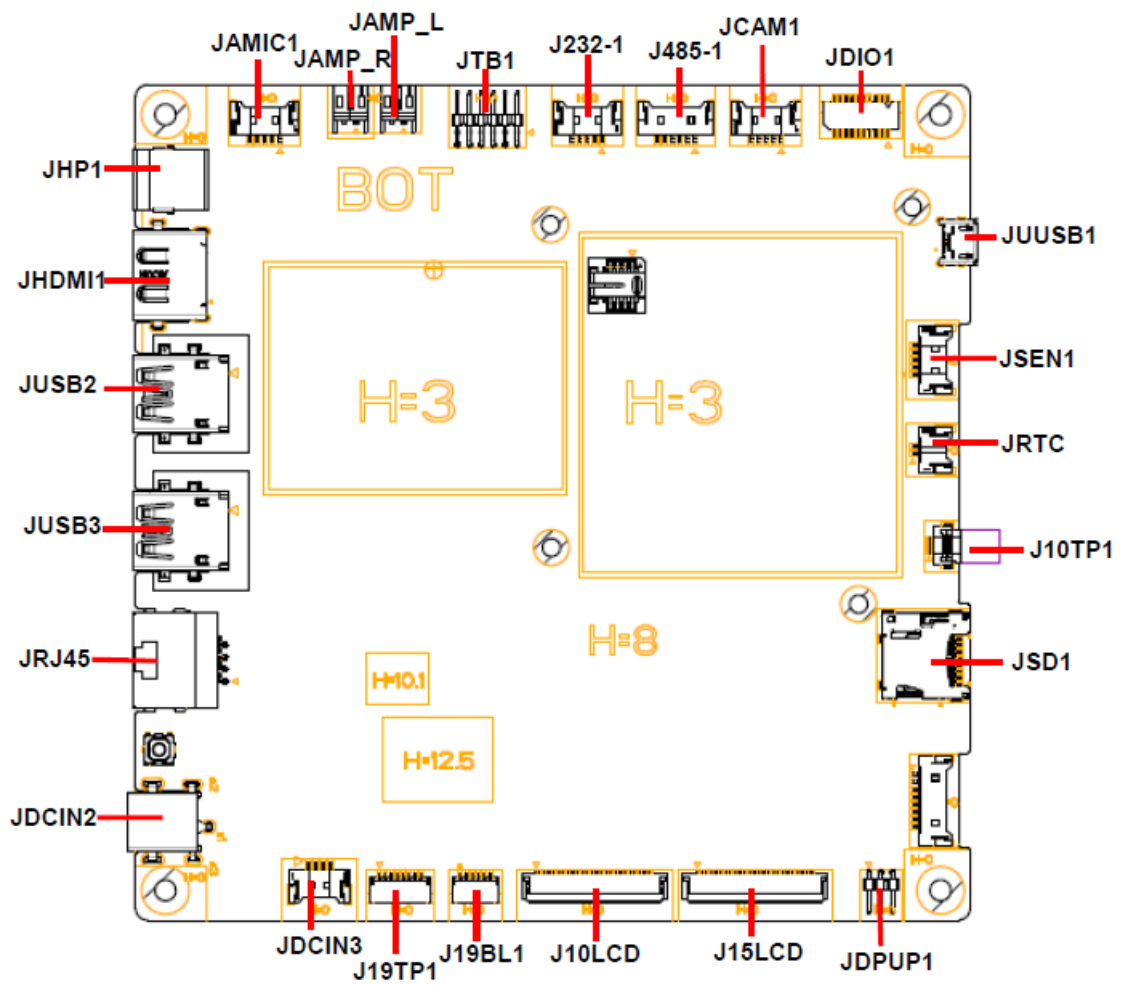
<http://www.avalue.com.tw>

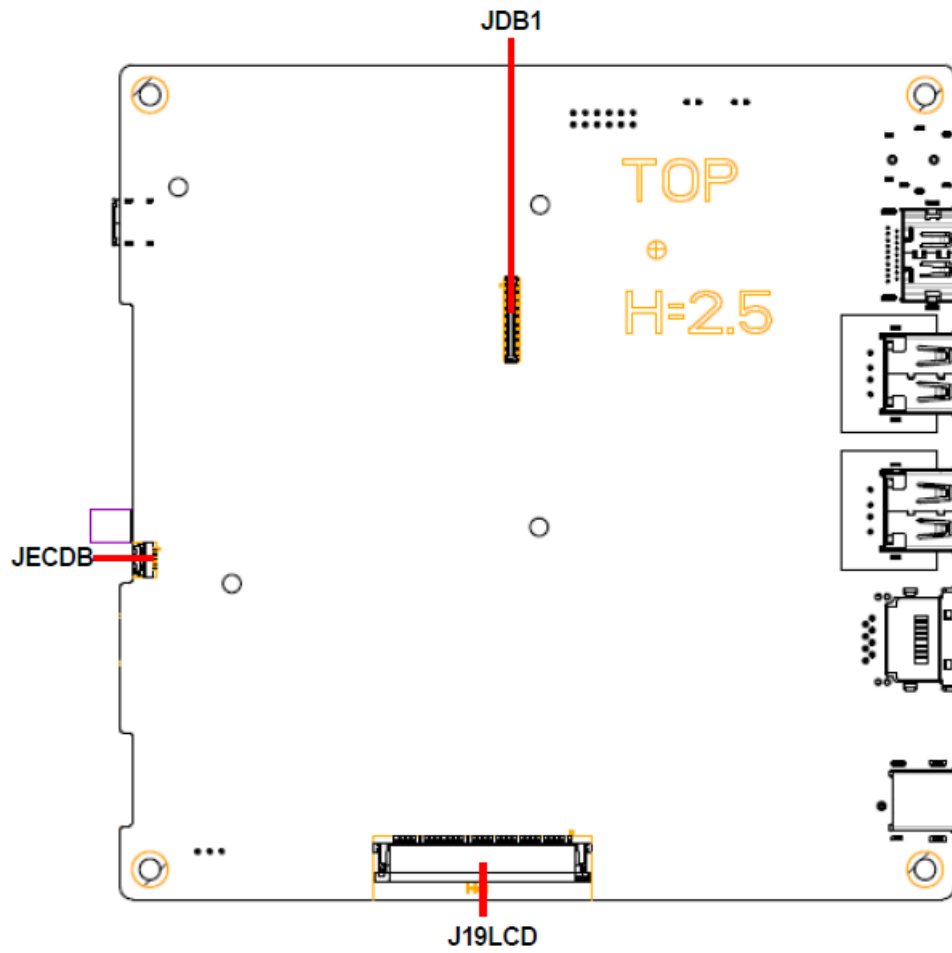
2.1 Architecture Overview—Block Diagram

The following block diagram shows the architecture and main components of Motherboard.



2.2 Motherboard Overviews





2.3 Motherboard Connector list

Connectors

Label	Function	Note
JHP1	Audio line-out connector	
JHDMI1	HDMI connector	
JUSB2/3	2 x USB 2.0 connector	
JRJ45	RJ-45 Ethernet connector	
JDCIN2	DC Power-in connector	
JDCIN3	DC Power-in connector	
J10TP1	10" Touch connector	
J19TP1	21" Touch connector	
J19BL1	21" back light connector	
J10LCD	10" LCD connector	
J15LCD	15" LCD connector	
J19LCD	21" LCD connector	
JDPUP1	Debug Port	
JSD1	Micro SD card slot	
JRTC	RTC battery connector	
JSEN1	I2C connector	
JUUSB1	Micro USB connector	
JDIO1	General purpose I/O connector	
JCAM1	USB connector	
J485-1	RS-485 connector	
J232-1	RS-232 connector	
JTB1	Touch button board connector	
JAMP_L	AMPLIFIER_L	
JAMP_R	AMPLIFIER_R	
JAMIC1	A-MIC connector	
JECDB	EC Debug connector	
JDB1	Debug connector	

***Ethernet LED behavior:**

Label	LED color	Indication	Meaning
Data Rate	Yellow	LED off	10 Mbits/sec data rate is selected
		LED on	100 Mbits/sec data rate is selected
Link/ACT	Green	off	LAN link is not established
		LED on	LAN link is established
		LED Blinking	LAN active is occurring

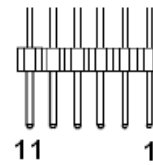
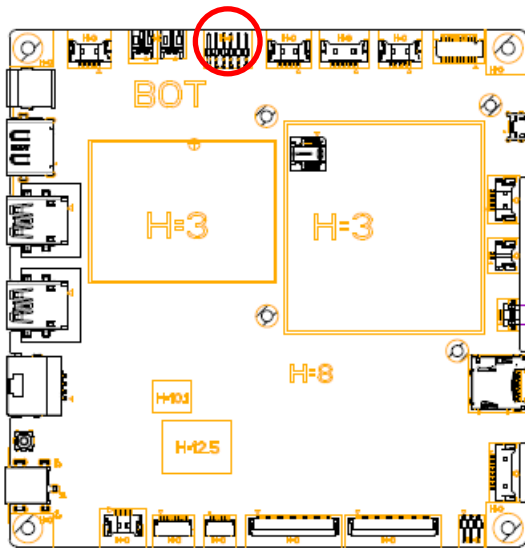
***RTC Battery**

Warning: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions."

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

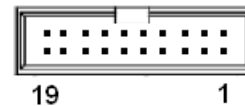
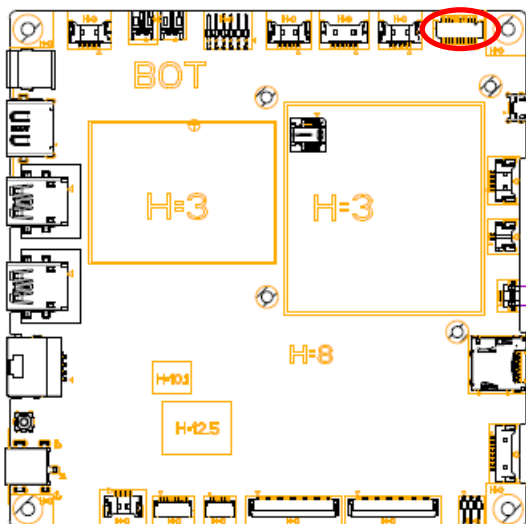
2.4 Motherboard Connectors settings

2.4.1 Touch button board connector (JTB1)



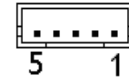
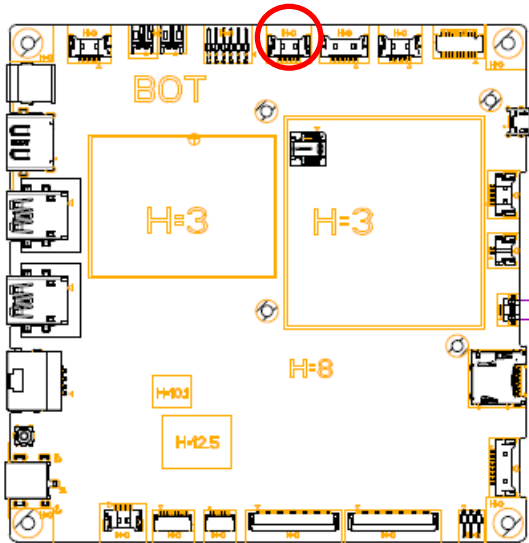
Signal	PIN	PIN	Signal
PWR_JTB1	1	2	GND
NC	3	4	BU1_TV_3V
VOL_UP_3V	5	6	VOL_DOWN_3V
PWRBTN_3V	7	8	BU_BR+_3V
BU_BR-_3V	9	10	BU7_3V
LED_GREEN_con	11	12	LED_ORANGE_con

2.4.2 General purpose I/O connector (JDIO1)



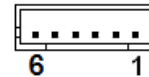
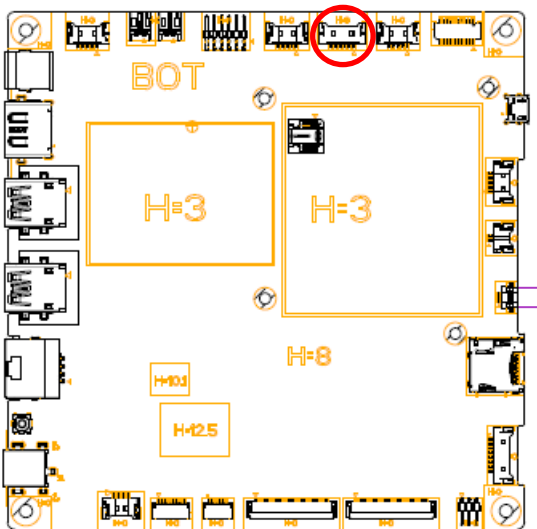
Signal	PIN	PIN	Signal
DIO_GP20	1	2	DIO_GP10
DIO_GP21	3	4	DIO_GP11
DIO_GP22	5	6	DIO_GP12
DIO_GP23	7	8	DIO_GP13
DIO_GP24	9	10	DIO_GP14
DIO_GP25	11	12	DIO_GP15
DIO_GP26	13	14	DIO_GP16
DIO_GP27	15	16	DIO_GP17
I2C_2_SDA_5V	17	18	I2C_2_SCL_5V
+V5S_DIO	19	20	GND

2.4.3 RS-232 connector (J232-1)



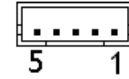
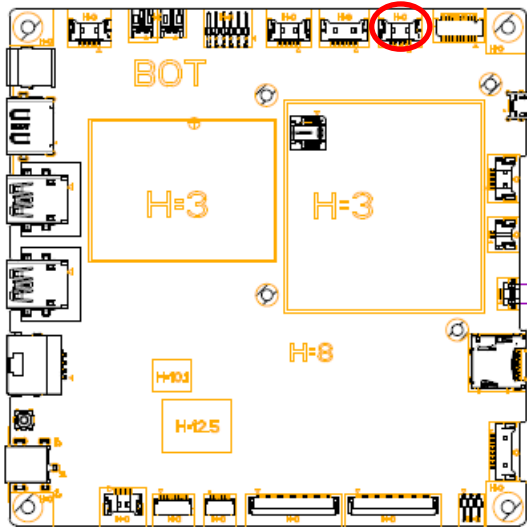
Signal	PIN
DEBUG_TXD	1
DEBUG_RXD	2
DEBUG_RTS#	3
DEBUG_CTS#	4
GND	5

2.4.4 RS-485 connector (J485-1)



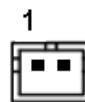
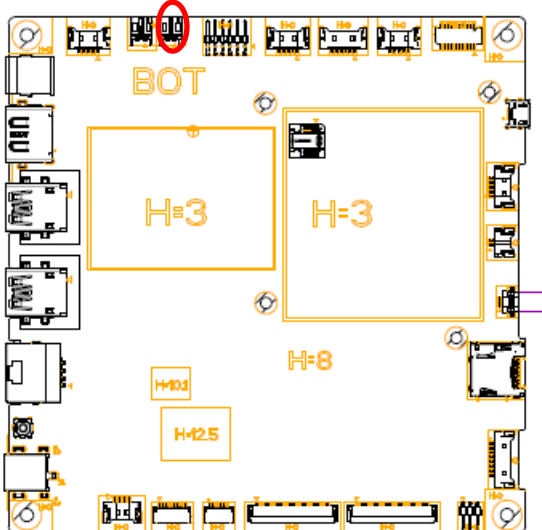
Signal	PIN
485_422TX1-	1
485_422TX1+	2
+5V_DEV	3
NC	4
NC	5
GND	6

2.4.5 USB connector (JCAM1)



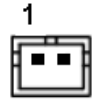
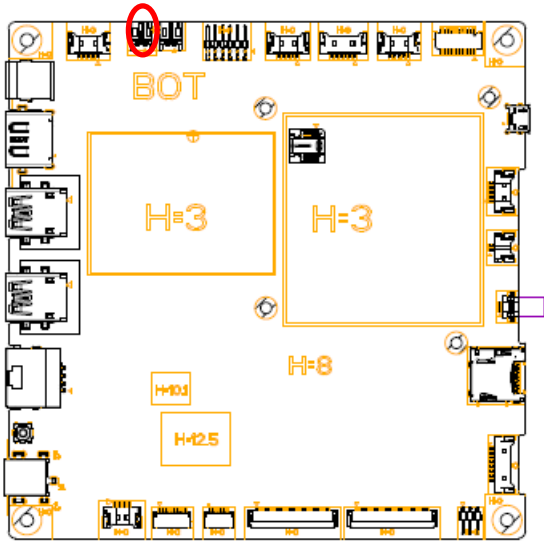
Signal	PIN
+5V_CAM	1
USB20_N2_R	2
USB20_P2_R	3
GND	4
GND	5

2.4.6 AMPLIFIER_L (JAMP_L)



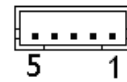
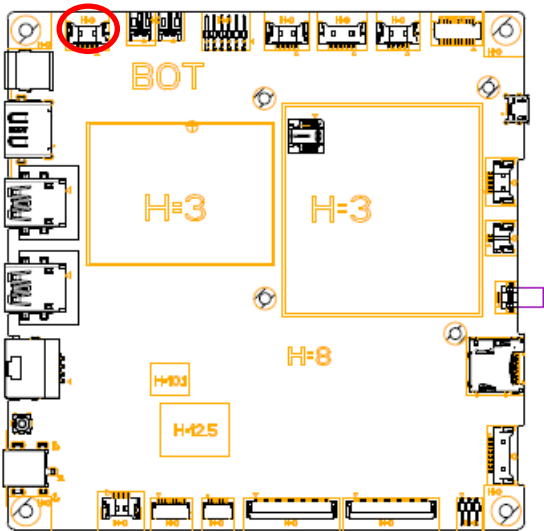
Signal	PIN
SPKL_P	1
SPKL_M	2

2.4.7 AMPLIFIER_R (JAMP_R)



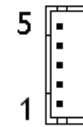
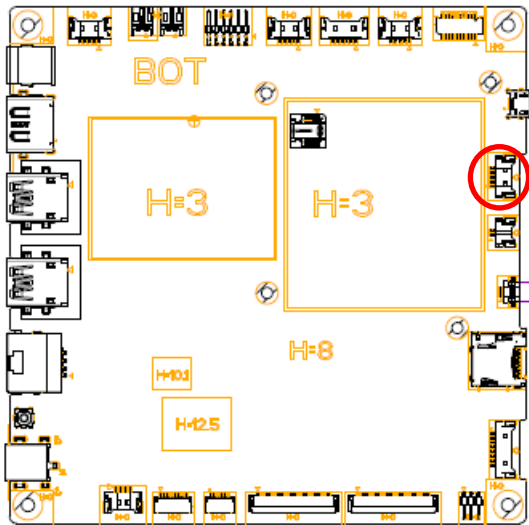
Signal	PIN
SPKR_P	1
SPKR_M	2

2.4.8 A-MIC connector (JAMIC1)



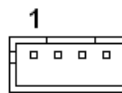
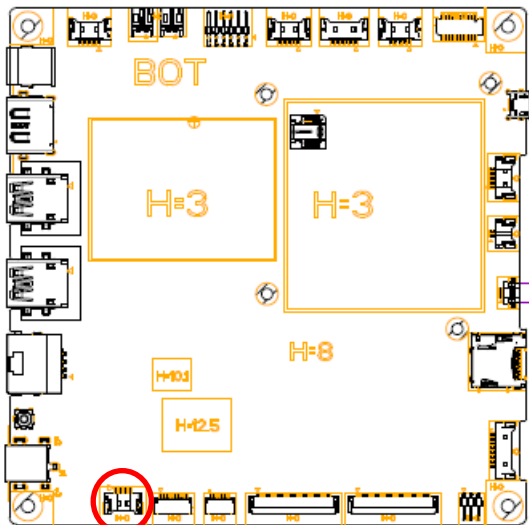
Signal	PIN
NC	1
NC	2
IN2P	3
IN2N	4
GND	5

2.4.9 I2C connector (JSEN1)



Signal	PIN
GND	5
SENSOR_INT_R	4
I2C1_SCL_SENSOR	3
I2C1_SDA_SENSOR	2
+3.3VA_SENSOR	1

2.4.10 DC Power-in connector (JDCIN3)



Signal	PIN
+19V_+24V_ADPIN	1
+19V_+24V_ADPIN	2
GND	3
GND	4

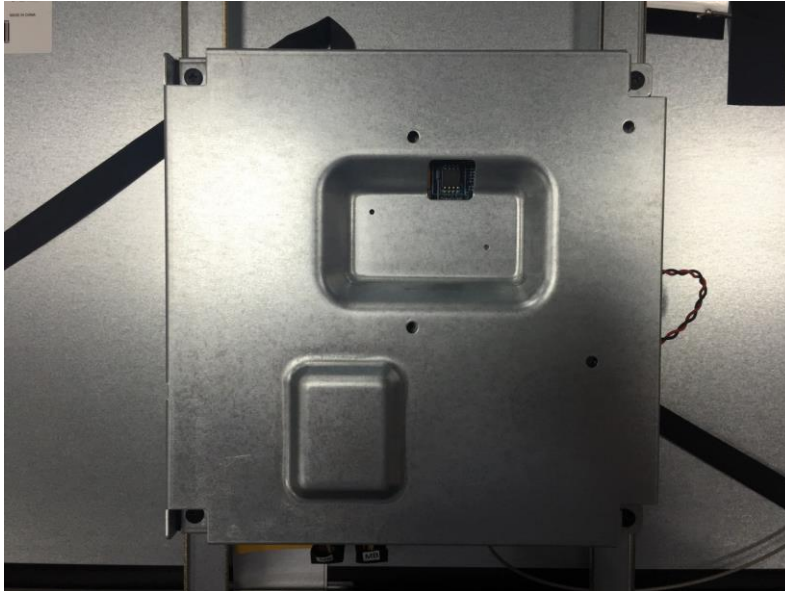
2.5 FCC

Contains

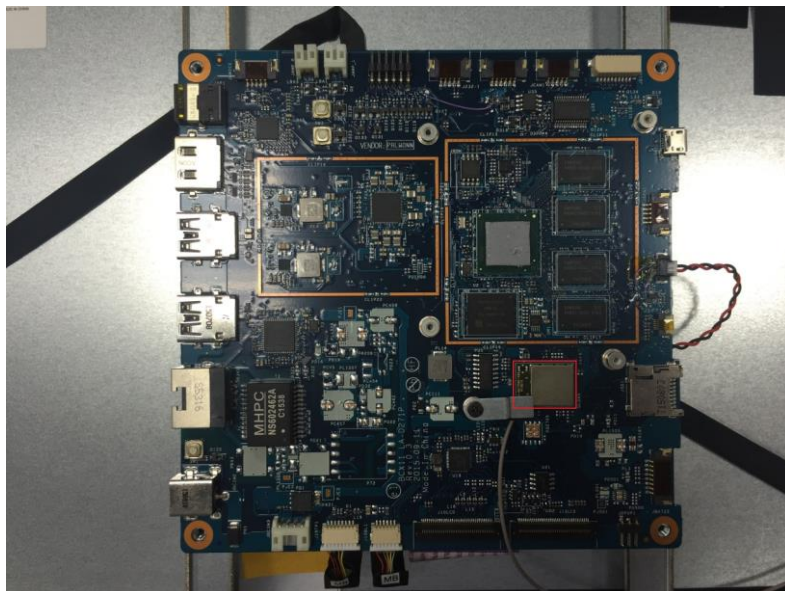
FCC ID: TX2-RTL8723BS

IC: 6317A-RTL8723BS

FCC ID is located on the MB WiFi Module:



Remove all screws on shielding cover.



WiFi Module is located on MB underneath of the Shielding cover.

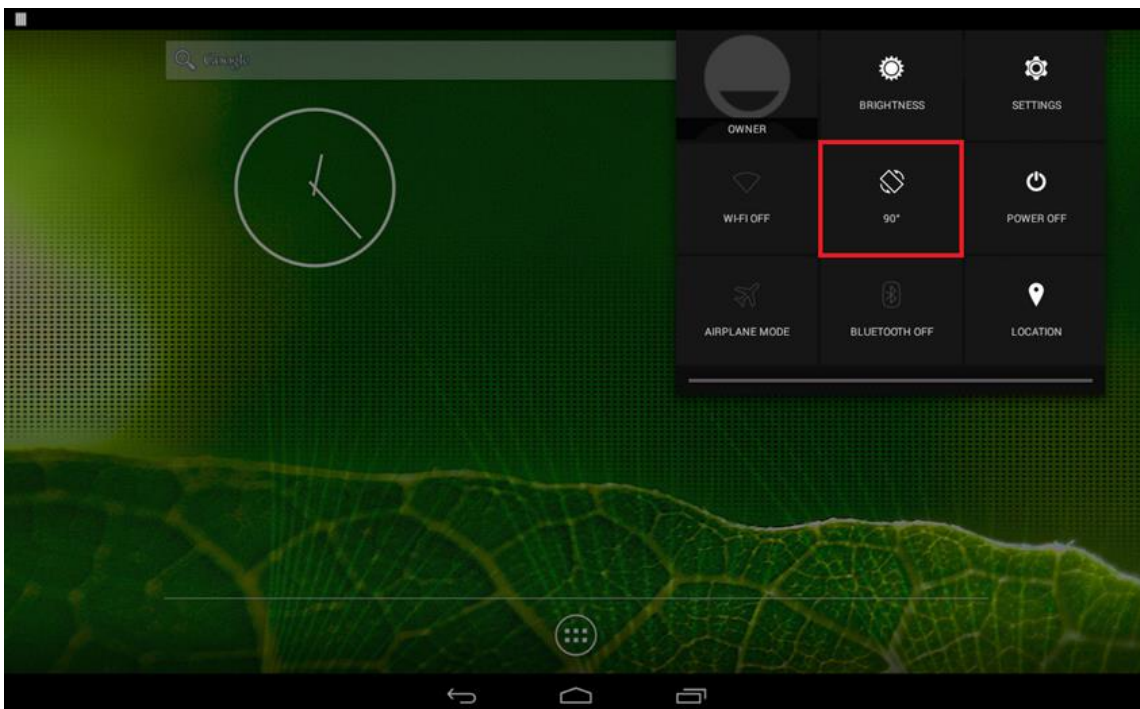
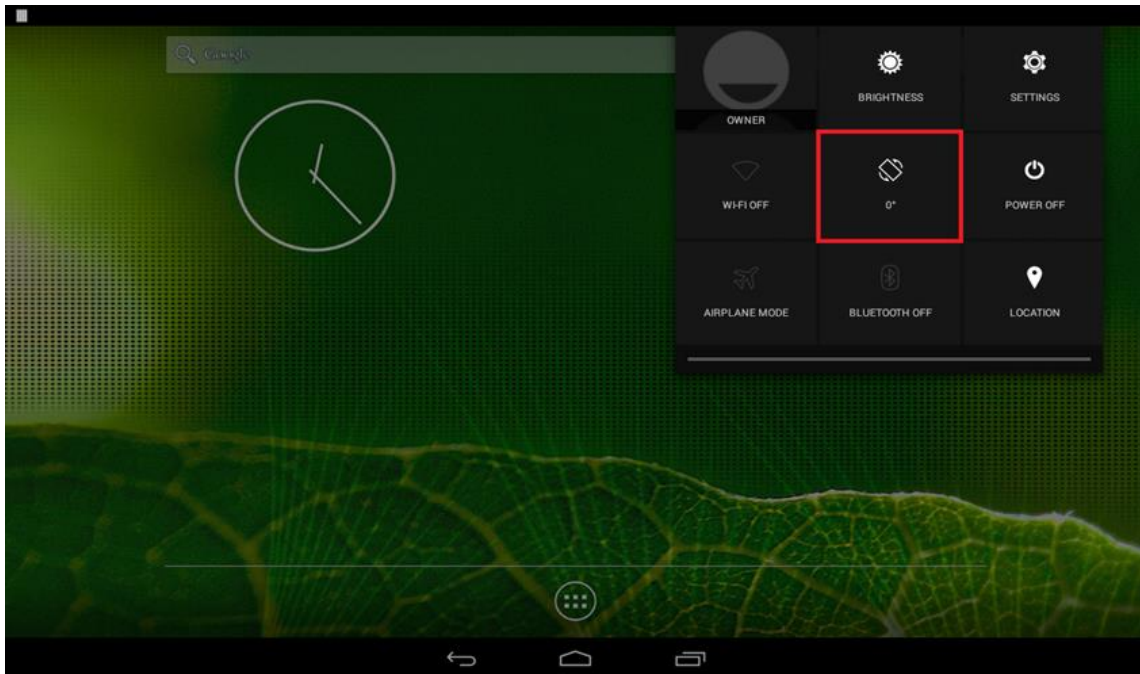


FCC ID is shown on WiFi Module.

2.6 Android Rotate Setting

Landscape/portrait mode rotate setting:

Default rotation is 0° → rotate 90°/180°/270° → Power off → Restart



Quick Reference Guide

