

OPS Presentation



Vestel Application Engineering Department

2017

Vestel's pluggable processors (OPS) are designed to give extra computational power to our displays.

Model Name	OPSJ1900	OPSSL630	OPSSL650	OPSRK150	OPSQM330	OPSQM350	OPSATOM
CPU	Intel® Celeron® J1900	Intel® Core™ i3-6100U, Skylake-U SoC	Intel® Core™ i5-6200U, Skylake-U SoC	RockChip RK3188	Intel® Core™ i3-3120ME	Intel® Core™ i5-3610ME	Intel® Atom™ D2550
Chipset	N/A	N/A	N/A	N/A	Intel® QM77 with vPro	Intel® QM77 with vPro	Intel® NM10
Resolution Support	Full HD Max.2560x1440 @60Hz	Ultra HD, Max. 4096 x 2304 @24Hz	Ultra HD, Max. 4096 x 2304 @24Hz	Full HD Max.2560x1440 @60Hz	Full HD Max.2560x1440 @60Hz	Full HD Max.2560x1440 @60Hz	Full HD Max.2560x1440 @60Hz
GPU	Intel® HD Graphics	Intel® HD Graphics 520	Intel® HD Graphics 520	MALI- 400 MP GPU up to 600 Mhz	Intel® HD Graphics 4000	Intel® HD Graphics 4000	Integrated
Memory	2 x SO-DIMM DDR3L, Up to 8GB	2 x SO-DIMM DDR3L, Up to 16GB	2 x SO-DIMM DDR3L, Up to 16GB	2 GB DDR3	4 GB DDR3, Up to 8 GB	4 GB DDR3, Up to 8 GB	4 GB DDR3
Network	LAN: 10/100 Mbps, WLAN: 802.11 a/g/n, Bluetooth 4.0	LAN: 10/100 Mbps, WLAN: 802.11 a/g/n, Bluetooth 4.0, 4G (optional)	LAN: 10/100 Mbps, WLAN: 802.11 a/g/n, Bluetooth 4.0, 4G (optional)	LAN: 10/100 Mbps, WLAN: 802.11 a/g/n, Bluetooth 4.0	vPro, PXE, AMT (i5-3610ME required), LAN: 10/100 Mbps, WLAN: 802.11 a/g/n	vPro, PXE, AMT (i5-3610ME required), LAN: 10/100 Mbps, WLAN: 802.11 a/g/n	LAN: 10/100 Mbps
Storage	SSD 256 GB, HDD 500 GB	SSD 256 GB, HDD 500 GB	SSD 256 GB, HDD 500 GB	Internal Storage: 8 GB Nand Flash, SD Card : Up to 32 GB	SSD 256 GB, HDD 500 GB	SSD 256 GB, HDD 500 GB	Internal Storage: 4 GB, HDD 500 GB
I/O Ports	1 x RJ45 2 x USB2.0 1 x Display Port 1 x Headphone 3.5 mm jack 1 x Microphone 3.5 mm jack 2 x WiFi antenna connector 1 x Power button 1 x Reset button	1 x RS232 3 x USB3.0 1 x USB2.0 1 x HDMI 1 x Headphone 3.5 mm jack 1 x Microphone 3.5 mm jack 2 x WiFi antenna connector	1 x RS232 3 x USB3.0 1 x USB2.0 1 x HDMI 1 x Headphone 3.5 mm jack 1 x Microphone 3.5 mm jack 2 x WiFi antenna connector	1 x RJ45 2 x USB2.0 1 x USB OTG 1 x Headphone 3.5 mm jack 1 x Microphone 3.5 mm jack 1 x WiFi antenna connector 1 x SD Card Slot	1 x RJ45 2 x USB 3.0 ports 2 x USB 2.0 ports 1 x Headphone 3.5 mm jack 1 x Microphone 3.5 mm jack 2 x WiFi antenna connector	1 x RJ45 2 x USB 3.0 ports 2 x USB 2.0 ports 1 x Headphone 3.5 mm jack 1 x Microphone 3.5 mm jack 2 x WiFi antenna connector	1 x RJ45 2 x USB2.0 1 x VGA (out) 1 x Display Port 1 x Power button 1 x Reset button 1 x Audio (line- out, mic-in) 1 x UART
Operating System	Windows 10	Windows 10	Windows 10	Android 4.4 Kitkat	Windows 10	Windows 10	Windows 10
Available Models/Series	STM, PDM, PDH, UHM, IFM	STM, PDM, PDH, UHM, IFM	STM, PDM, PDH, UHM, IFM	STM, PDM, PDH, UHM, IFM	IF, CD, STM, PDM, PDH, UHM, IFM	IF, CD, STM, PDM, PDH, UHM, IFM	32" CD

•GENERAL VIEW; OPSSL630,OPSSL650

TOP VIEW

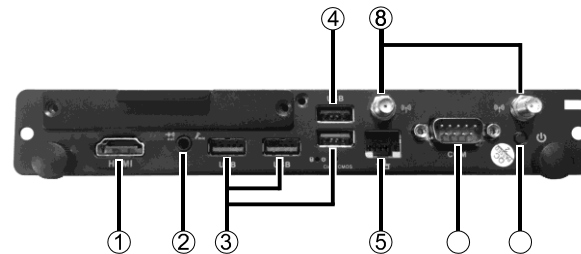


BOTTOM VIEW



Input/Output Connections

The connections are illustrated as shown below.



- | | |
|--|-----------------------------------|
| 1. HDMI | 5. RJ45 10/100/1000 Mbps Ethernet |
| 2. Microphone / Headphone (3.5mm jack) | 6. RS232 |
| 3. 3 x USB 3.0 ports | 7. On/Off Button |
| 4. USB 2.0 port | 8. 2 x WiFi Antenna Connectors |

•GENERAL VIEW; OPSJ1900

TOP VIEW

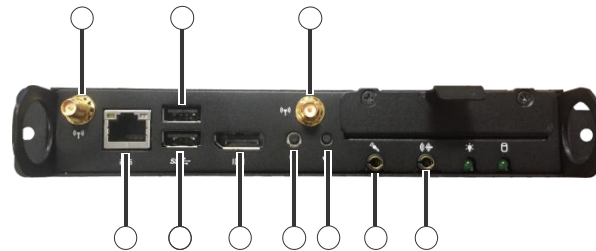


BOTTOM VIEW



Input/Output Connections

The connections are illustrated as shown below.



1. RJ45 10/100/1000 Mbps Ethernet
2. 2 x USB 2.0 ports
3. Display Port
4. On/Off Button
5. Reset Button
6. Microphone (3.5mm jack)
7. Headphone (3.5mm jack)
8. 2 x WiFi Antenna Connectors

•GENERAL VIEW; OPSRK150

TOP VIEW



BOTTOM VIEW



Input/Output Connections

The connections are illustrated as shown below.

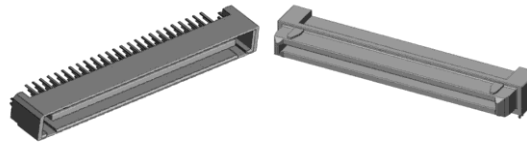


- | | |
|-------------------------------|------------------------------|
| 1. WIFI Antenna Connector | 5. RJ45 10/100 Mbps Ethernet |
| 2. SD Card Slot | 6. 2 x USB 2.0 Ports |
| 3. Microphone Port 3.5mm jack | 7. USB OTG |
| 4. Headphone Port 3.5mm jack | |

•CONNECTION SCHEME

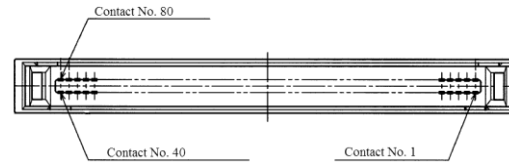
⚠ Warning

Insert the OPS into the slot with the “This Side Out” warning label facing outside.
Your product has an 80 pin OPS standard connection interface. Interconnection of the product and another board (i.e. docking board, monitor board or main board...) is provided by JAE TX/24TX25 plug and receptacle connectors.

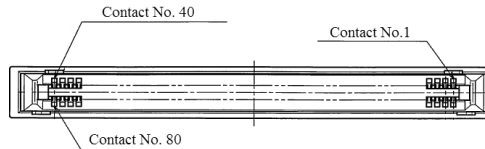


Left: Plug connector (p/n: TX25-80P)

Right: Receptacle connector (p/n: TX24-80P)



Plug Connector / TX25 Pinout



Receptacle Connector / TX24 Pinout

*Connector series image, reference only.

•PIN CONNECTIONS (JAE TX25-80)

PIN NO	Signal	Description	I/O
1	NC	DisplayPort	OUT
2	NC	DisplayPort	OUT
3	GND	Ground	-
4	NC	DisplayPort	OUT
5	NC	DisplayPort	OUT
6	GND	Ground	-
7	NC	DisplayPort	OUT
8	NC	DisplayPort	OUT
9	GND	Ground	-
10	NC	DisplayPort	OUT
11	NC	DisplayPort	OUT
12	GND	Ground	-
13	NC	DisplayPort	OUT
14	NC	DisplayPort	OUT
15	NC	DisplayPort	IN
16	GND	Ground	-
17	TMDS_CLK-	DVI-D	OUT
18	TMDS_CLK+	DVI-D	OUT
19	GND	Ground	-
20	TMDS0-	DVI-D	OUT
21	TMDS0+	DVI-D	OUT
22	GND	Ground	-
23	TMDS1-	DVI-D	OUT
24	TMDS1+	DVI-D	OUT
25	GND	Ground	-
26	TMDS2-	DVI-D	OUT
27	TMDS2+	DVI-D	OUT
28	GND	Ground	-
29	DVI_DDC_DATA	DVI_D	I/O
30	DVI_DDC_CLK	DVI_D	I/O
31	DVI_HPD	DVI_D	IN
32	GND	Ground	-
33	+12V~+19V	Power	-
34	+12V~+19V	Power	-
35	+12V~+19V	Power	-
36	+12V~+19V	Power	-
37	+12V~+19V	Power	-
38	+12V~+19V	Power	-
39	+12V~+19V	Power	-
40	+12V~+19V	Power	-
41	PWROK	System power OK	OUT
42	WAKE	System wake	OUT
43	RSVD	Reserved pins	-

44	RSVD	Reserved pins	-
45	RSVD	Reserved pins	-
46	RSVD	Reserved pins	-
47	RSVD	Reserved pins	-
48	RSVD	Reserved pins	-
49	RSVD	Reserved pins	-
50	SYS_FAN	System Fan Control	OUT
51	UART_RXD	UART 3.3V	IN
52	UART_TXD	UART 3.3V	OUT
53	GND	Ground	-
54	StdA_SSRX-	USB3.0	IN
55	StdA_SSRX+	USB3.0	IN
56	GND	Ground	-
57	StdA_SSTX-	USB3.0	OUT
58	StdA_SSTX+	USB3.0	OUT
59	GND	Ground	-
60	USB_PN2	USB	I/O
61	USB_PP2	USB	I/O
62	GND	Ground	-
63	USB_PN1	USB	I/O
64	USB_PP1	USB	I/O
65	GND	Ground	-
66	USB_PN0	USB	I/O
67	USB_PP0	USB	I/O
68	GND	Ground	-
69	AZ_LINEOUT_L	Audio-Lch	OUT
70	AZ_LINEOUT_R	Audio-Rch	OUT
71	CEC	Consumer Electronic Control	I/O
72	PB_DET	Pluggable Board Detect	OUT
73	PS_ON	Pluggable Signal ON	IN
74	PWR_STATUS	PowerGood	OUT (OC)
75	GND	Ground	-
76	GND	Ground	-
77	GND	Ground	-
78	GND	Ground	-
79	GND	Ground	-
80	GND	Ground	-

•USING YOUR PRODUCT MORE EFFECTIVELY

Paying attention to the following points with respect to your product will provide a stable performance and also prolong its life.

- Ensuring security of your product
- Daily care of your product

Daily Care & Environmental Factors

Ambient temperature must be between 0°C - 40°C while the product is running. Do not directly expose the product to humidity, high temperature, fire, direct sun light and dust while using it. The vent holes of the product will allow it perform safer without system overheating. Do not cover these holes or do not prevent air flow with an object. Position the product at least 15 cm away from strong magnetic field generating electrical devices such as TV, refrigerator or large speakers. Do not suddenly take your product from a cold environment and suddenly put it in a warm environment. A sudden temperature change of 10°C may cause some of the internal parts to malfunction. Do not put your product on an uneven surface.

Points to be taken into consideration while clean- ing the product

Your system must be turned off while cleaning the product. Please use a soft and damp piece of cloth for cleaning its surface. Do not use chemical cleansers to clean the product. Do not directly apply the cleaning material on your product.

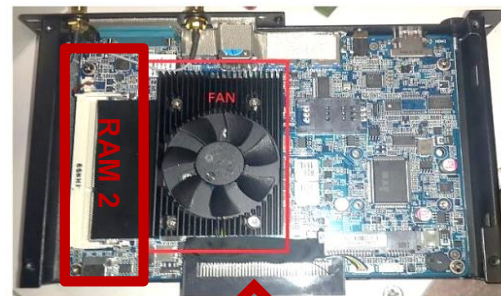
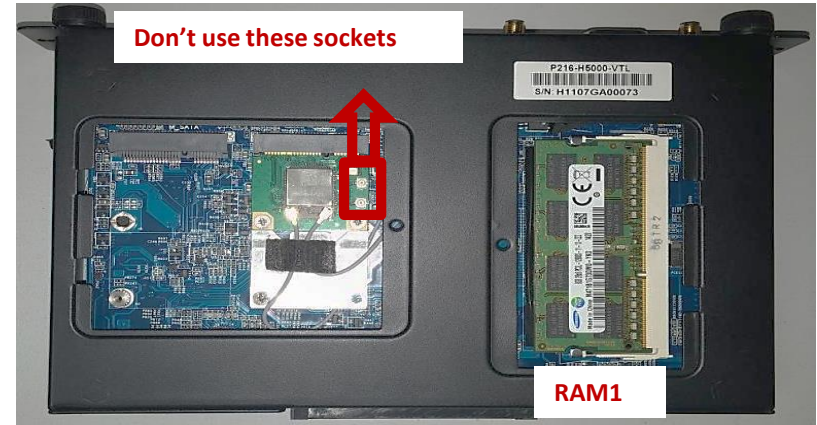
Wireless LAN Transmitter Specifications

Frequency Ranges	Max Output Power
2400 - 2483,5 MHz (CH1-CH13)	< 100 mW
5150 - 5250 MHz (CH36 - CH48)	< 200 mW
5250 - 5350 MHz (CH52 - CH64)	< 200 mW
5470 - 5725 MHz (CH100 - CH140)	< 200 mW

This device is intended for home and office use in all EU countries (and other countries following the relevant EU directive) without any limitation except for the countries mentioned by side.

The requirements for any country may change at any time. It's recommended that user checks with local authorities for the current status of their national regulations for both 2.4 GHz and 5 GHz wireless LAN's.

• Replacing HDD & RAM & WIFI ; OPSSL630,OPSSL650 Models



• Replacing HDD or SSD; OPSSL630,OPSSL650 , OPSJ1900 Models



• Replacing WIFI, RAM ; OPSJ1900 Models



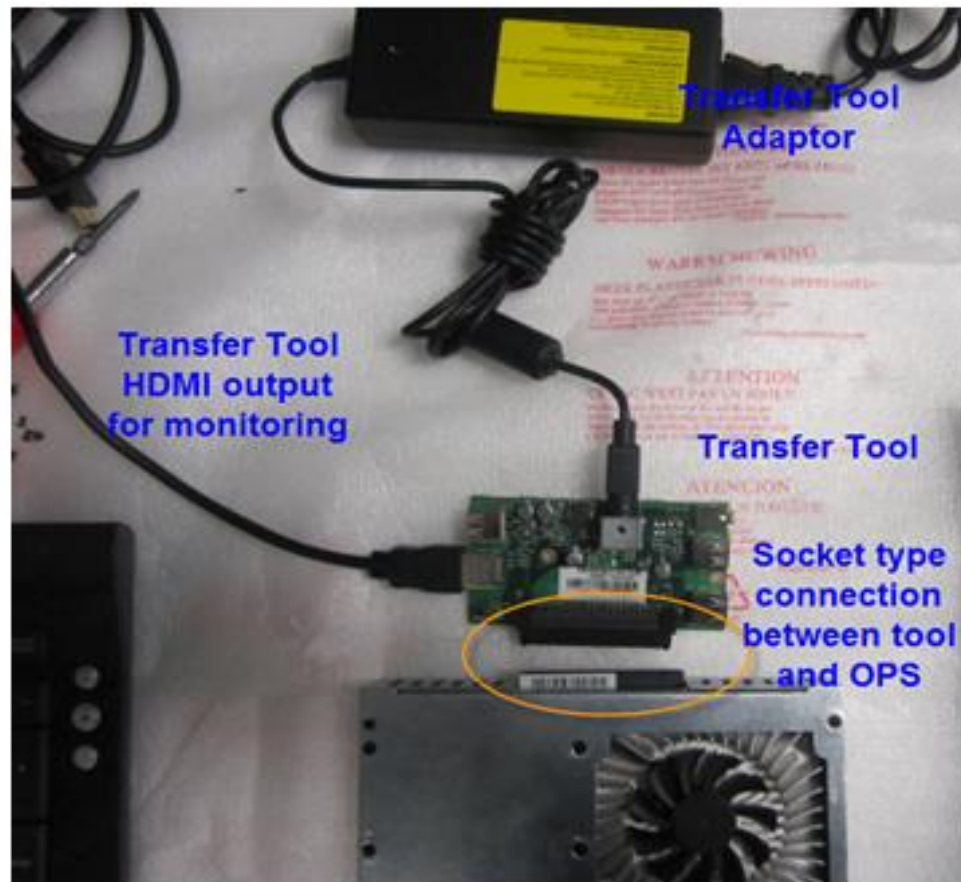
• Docking Board



NO	COMPONENT
1	Power Input (12V)
2	USB Sockets
3	HDMI Socket
4	OPS Socket

Verification Test after Swapping any component

After changing/swapping any component, verification test should be done in order to check the OPS whether it is working properly or not. By using this tool, it's possible to test the OPS with any monitor having HDMI input.



Power state	ACPI state	Description
Working	S0	The system is fully usable. Hardware components that are not in use can save power by entering a lower power state.
Sleep (Modern Standby)	S0 low-power idle	Some SoC systems support a low-power idle state known as Modern Standby . In this state, the system can very quickly switch from a low-power state to high-power state, so that it can respond quickly to hardware and network events. Systems that support Modern Standby do not use S1-S3.
Sleep	S1 S2 S3	<p>The system appears to be off. Power consumed in these states (S1-S3) is less than S0 and more than S4; S3 consumes less power than S2, and S2 consumes less power than S1. Systems typically support one of these three states, not all three.</p> <p>In these states (S1-S3), volatile memory is kept refreshed to maintain the system state. Some components remain powered so the computer can wake from input from the keyboard, LAN, or a USB device.</p> <p><i>Hybrid sleep</i>, used on desktops, is where a system uses a hibernation file with S1-S3. The hibernation file saves the system state in case the system loses power while in sleep.</p> <p>Note SoC systems that support modern standby (the low-power idle state) do not use S1-S3.</p>
Hibernate	S4	<p>The system appears to be off. Power consumption is reduced to the lowest level. The system saves the contents of volatile memory to a hibernation file to preserve system state. Some components remain powered so the computer can wake from input from the keyboard, LAN, or a USB device. The working context can be restored if it is stored on nonvolatile media.</p> <p><i>Fast startup</i> is where the user is logged off before the hibernation file is created. This allows for a smaller hibernation file, more appropriate for systems with less storage capabilities.</p>
Soft Off	S5	The system appears to be off. This state is comprised of a full shutdown and boot cycle.
Mechanical Off	G3	The system is completely off and consumes no power. The system returns to the working state only after a full reboot.

• How to Reset Your Windows 10 PC

If your computer isn't running the way it should, you're getting strange errors or you just want to return it to its default state, Windows 10 has your answer. The operating system provides a number of options that let you restore your computer to an earlier state. Here's how to reset your PC in Windows 10.

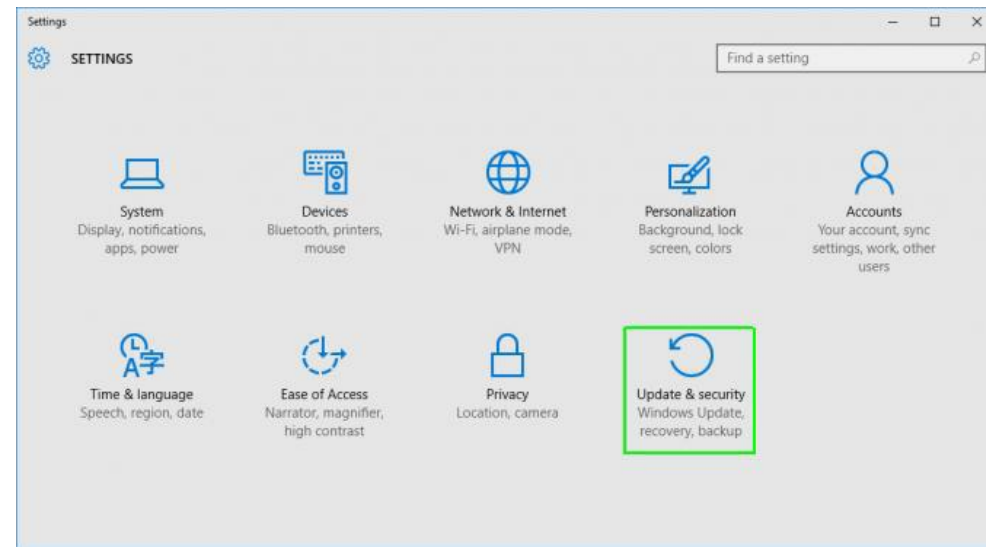
Navigate to Settings. You can get there by clicking the gear icon on the Start menu.

1. Navigate to Settings. You can get there by clicking the gear icon on the Start menu.

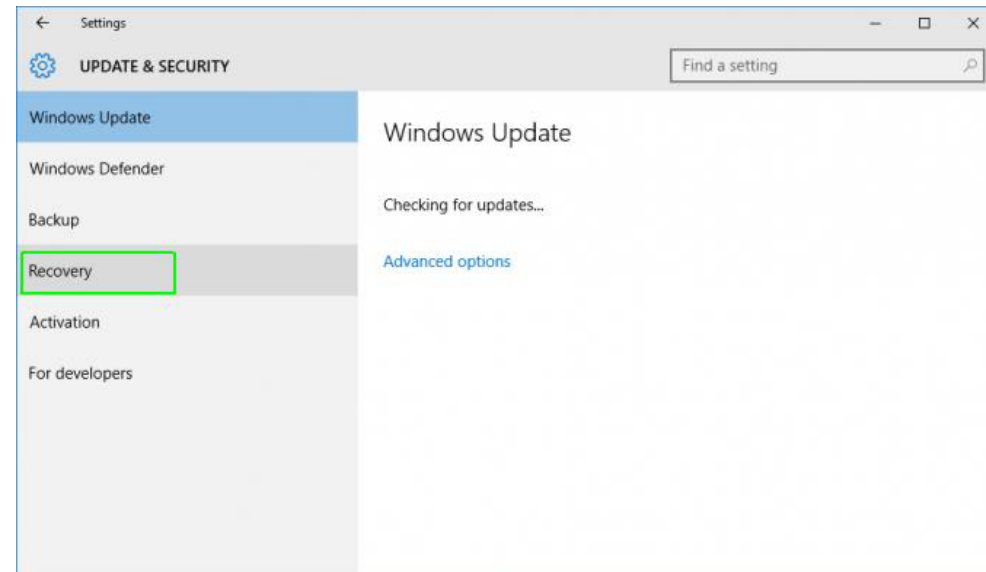


• How to Reset Your Windows 10 PC

2. Select "Update & security"



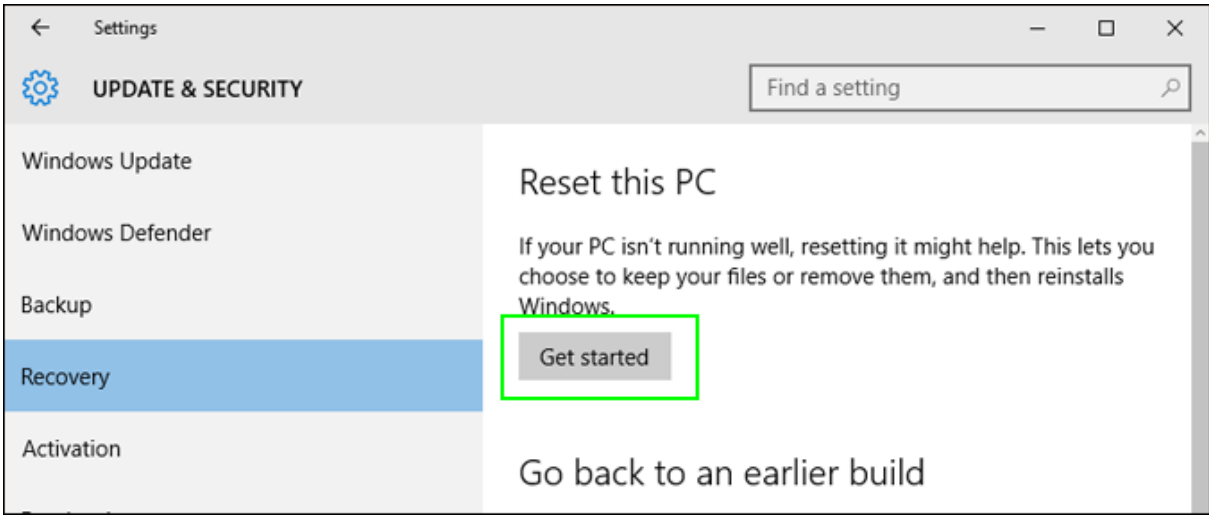
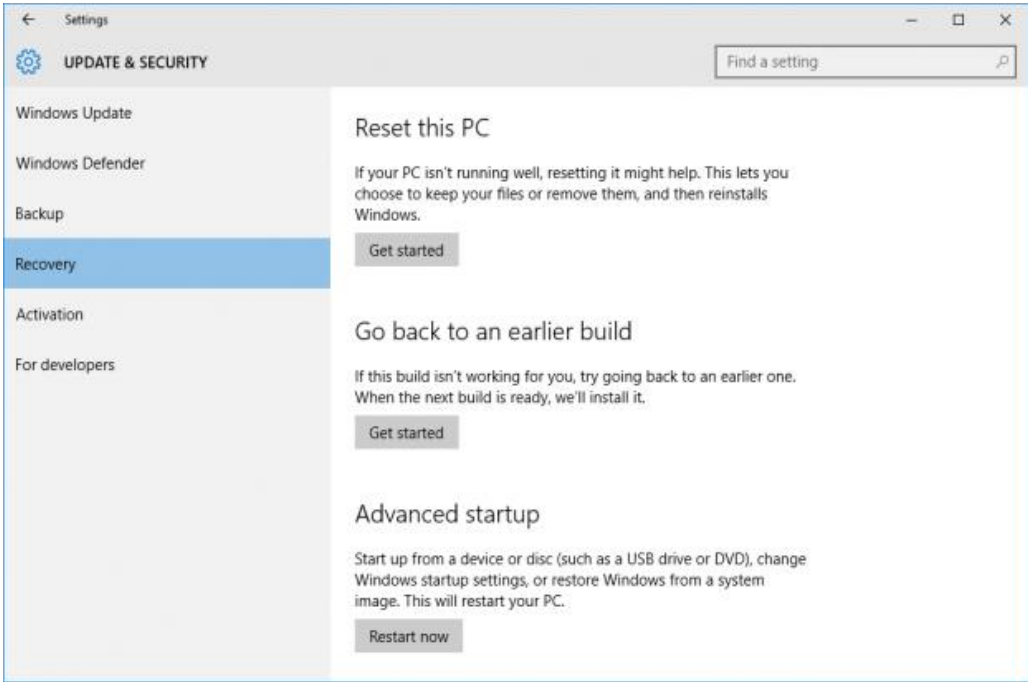
3. Click Recovery in the left pane.



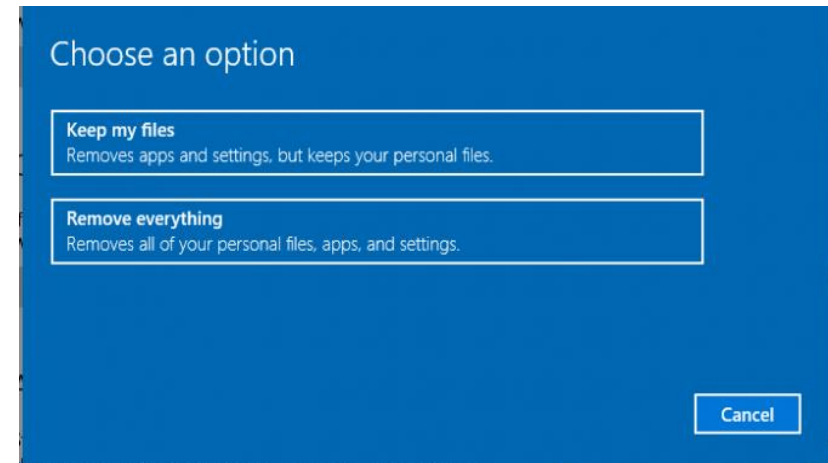
• How to Reset Your Windows 10 PC

Windows presents you with three major options: Reset this PC, Go back to an earlier build and Advanced startup. Reset this PC is the best option for starting fresh. Advanced startup lets you boot off a recovery USB drive or disc and "Go to an earlier build" is made for Windows Insiders who want to roll back to a previous version of the OS.

4. Click Get started under Reset this PC.



5. Click either "Keep my files" or "Remove everything," depending on whether you want to keep your data files intact. Either way, all of your settings will return to their defaults and apps will be uninstalled.

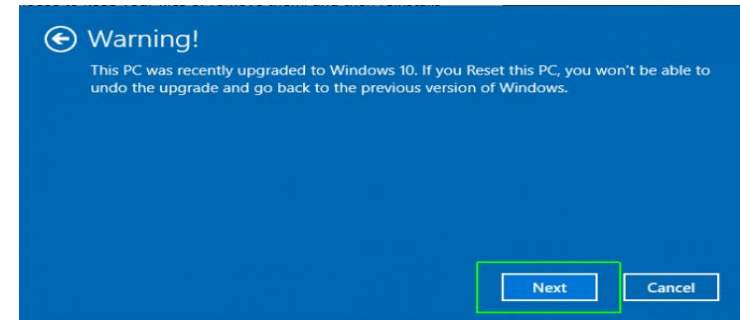


6. Select "Just remove my files" or "Remove files and clean the drive" if you chose to "remove everything" in the prior step. Cleaning the drive takes a lot longer but will make sure that, if you are giving the computer away, the next person will have a hard time recovering your erased files. If you are keeping the computer, choose "Just remove my files."

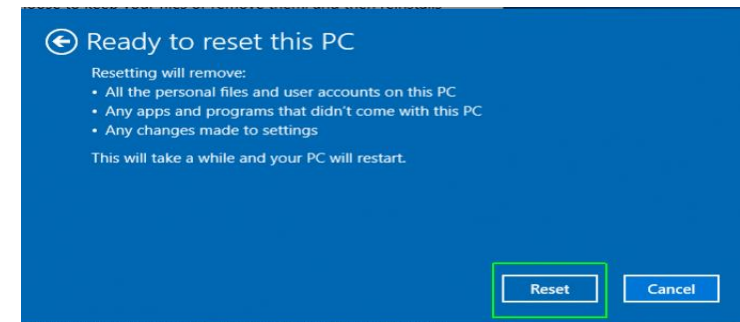


• How to Reset Your Windows 10 PC

7. Click Next if Windows warns you that you won't be able to roll back to a prior version of the OS.

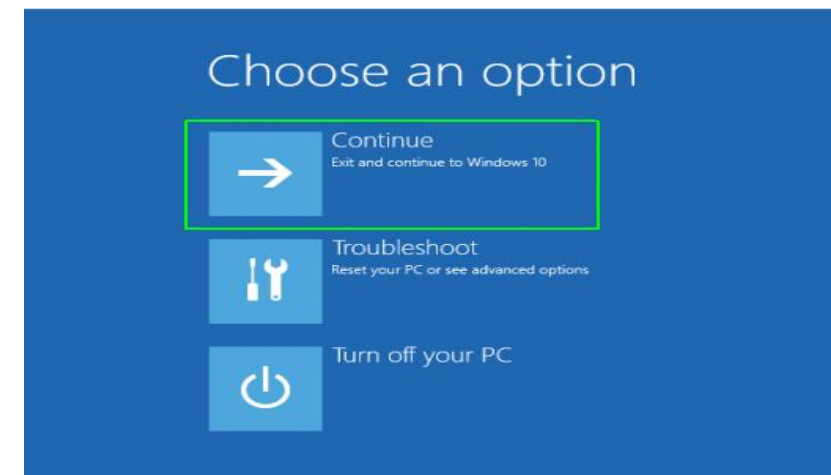


8. Click Reset when prompted.



Windows will then restart and take several minutes to reset itself.

9. Click Continue when prompted.



Requirements;

- USB Flash Drive which has minimum 16GB capacity,
- AIO/OPS device,

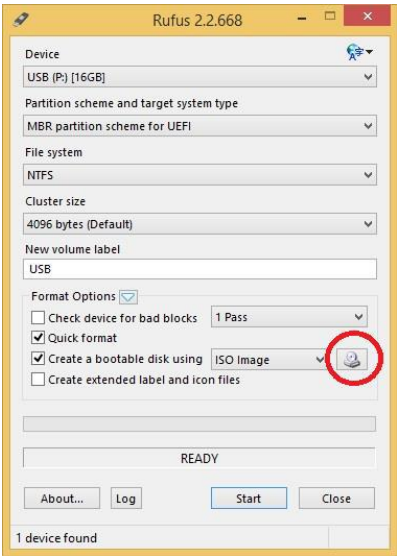
Steps;

Start Rufus software and install "windows image.iso" file to USB flash drive as shown.

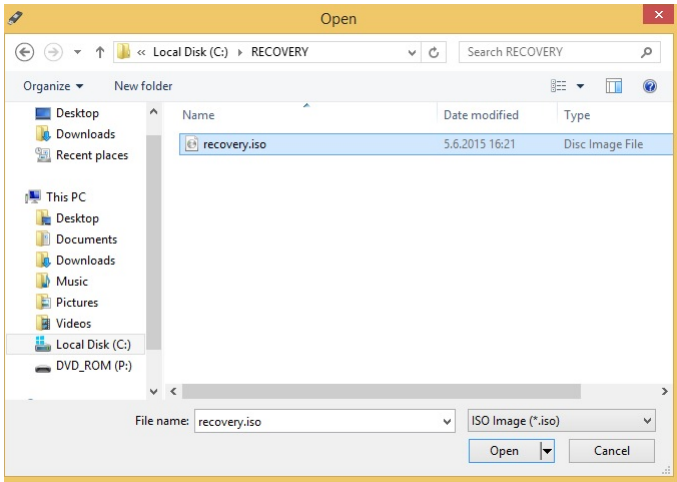
(Picture 1) **(windows image.iso file can be changed according to type of OPS model.)Rufus application and windows image files shared via Customer Support**

- Usb flash drive should be chosen under Device option.
 - File system should be chosen as "NTFS"
 - "windows image.iso" should be chosen as ISO Image. (Picture 2)
1. Click on start button to start the process. (Picture 3)
 2. You will see Done after the process is finished. (Picture 4)
 3. Power off the device with operating system problem,
 4. Plug USB Drive and power on,
 5. After power on press F7 and select USB drive with UEFI option as shown . (Picture 5)
 6. Installation progress will start. Just wait until the process is finished.
 7. Device will power off after installation finished, remove USB drive and power on again.
 8. Device will start with the new operating system.

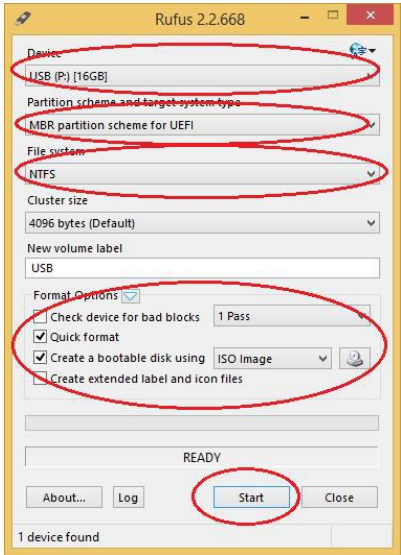
• WINDOWS 10 REINSTALLATION VIA USB FLASH DRIVE



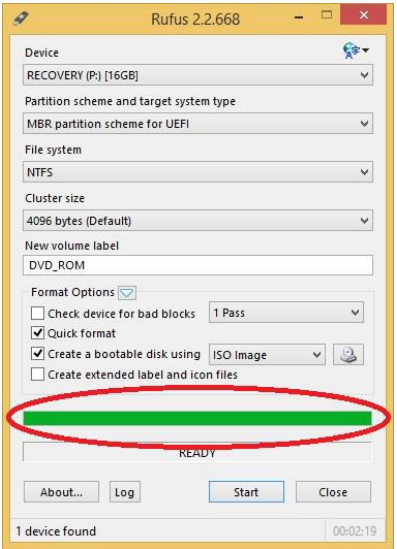
Picture 1



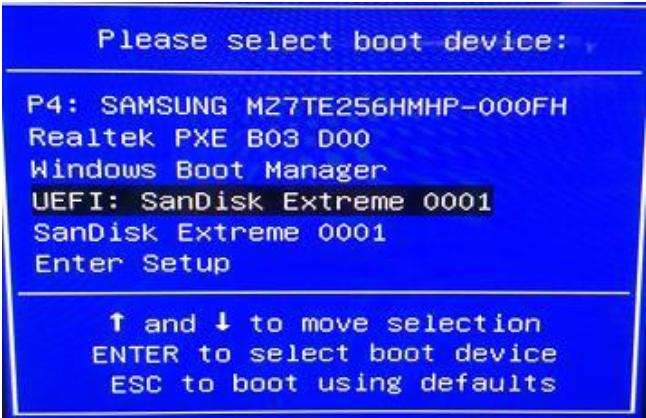
Picture 2



Picture 3



Picture 4

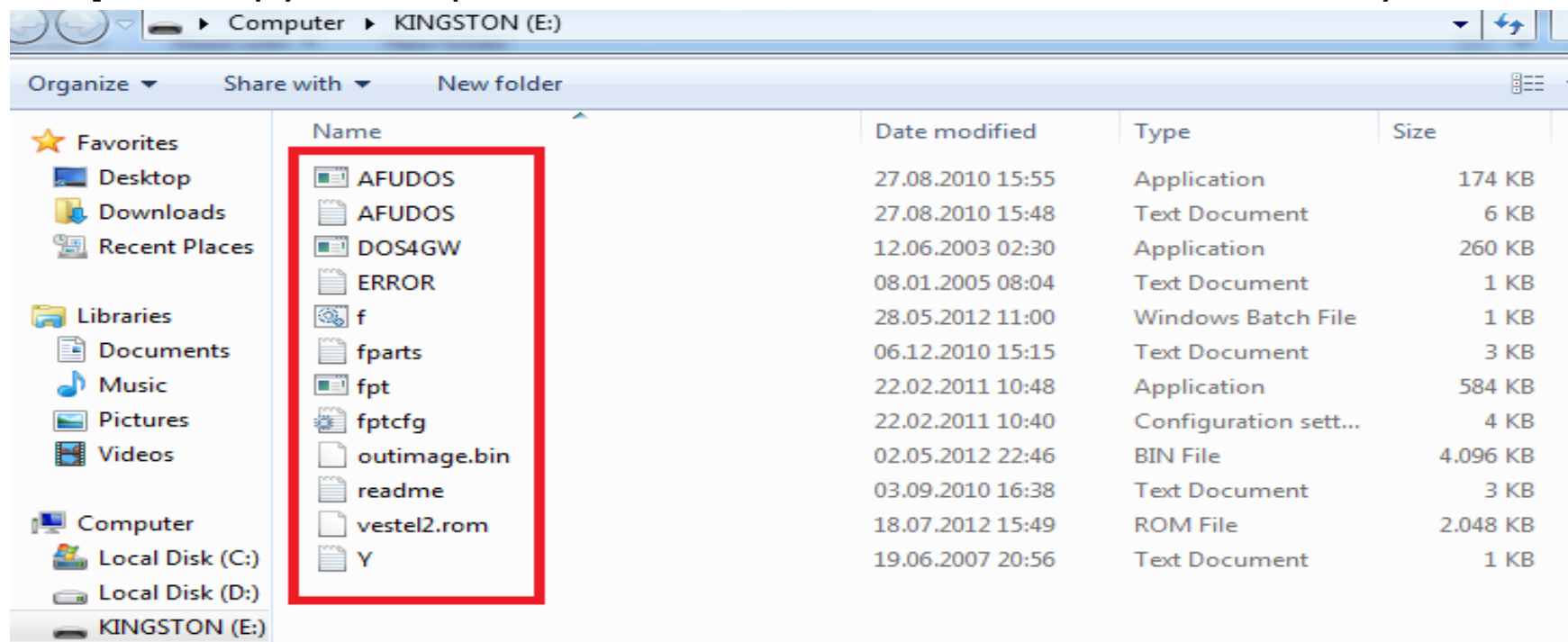


Picture 5

Requirements;

- **USB Flash Drive which has minimum 32MB**
- **Bios Update files are specific for product that will share via Customer Support.**

Step 1. Copy bios update files in to the Bootable Flash memory.



Step 2. Plug the Bootable Flash Memory to OPS USB Input Port.

Step 3. Plug keyboard to OPS USB Input Port.

Step 4. Press power on button and run IWB.

Step 5. While Bios Logo shown on the screen, press F7 for Boot Menu.

Step 6. Select Bootable USB memory.



Step 7. Run the update batch file " f.bat" in DOS commad prompt



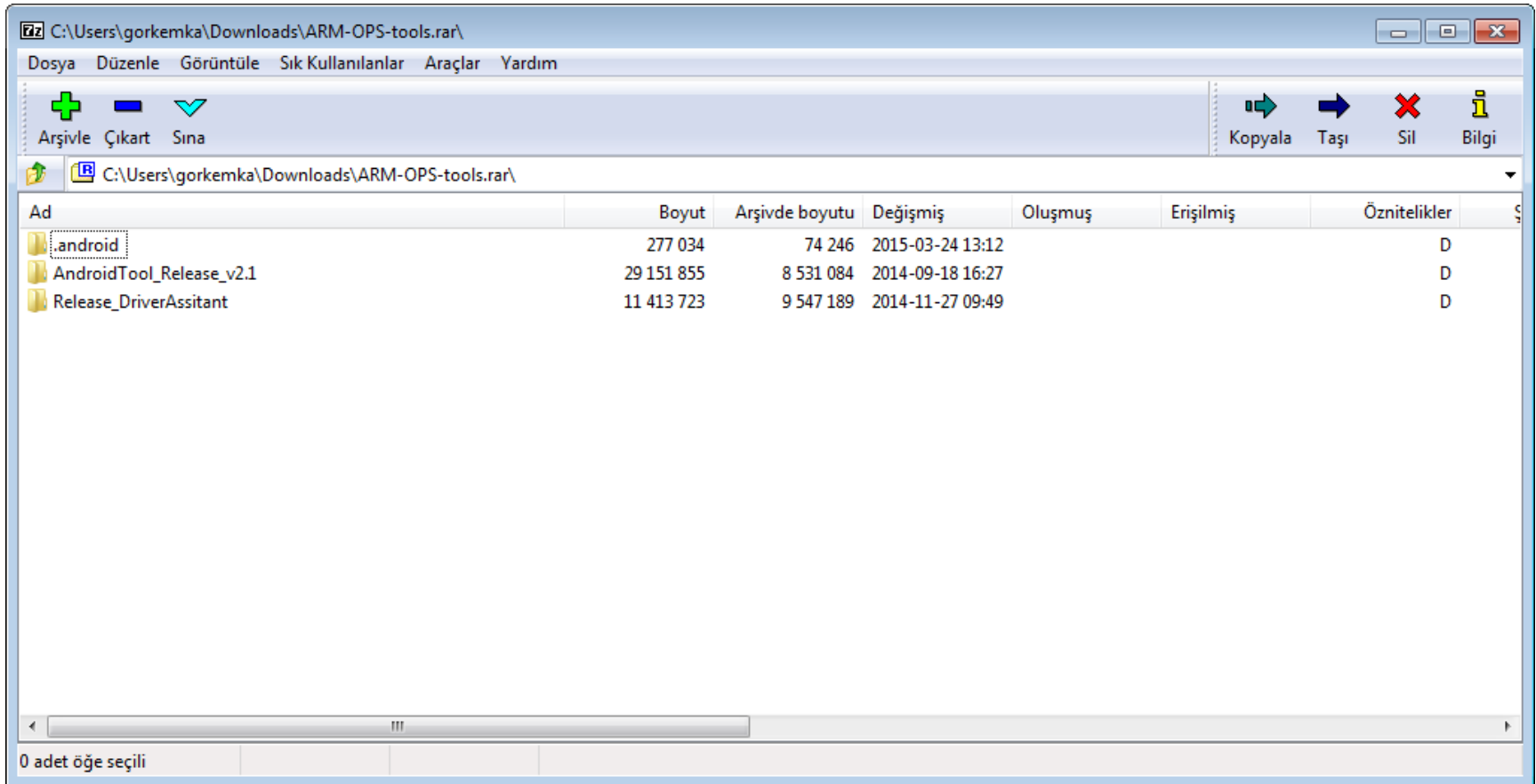
Step 8. "Bios Update Completed Succesfully" screen shown below.



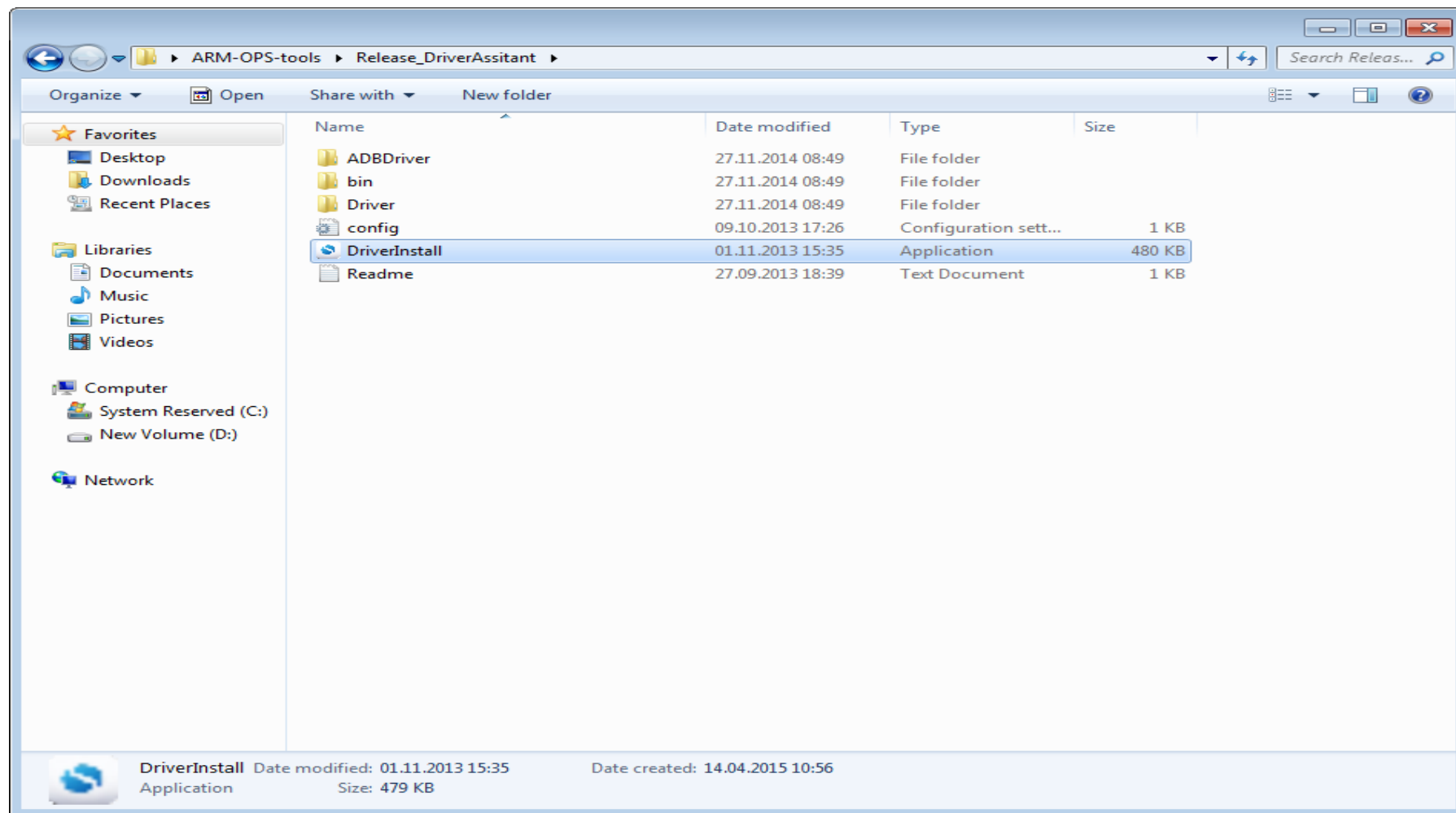
Step 9. Please Unplug-Plug AC 220V power cable after update proses.

Rockchip Driver Installation

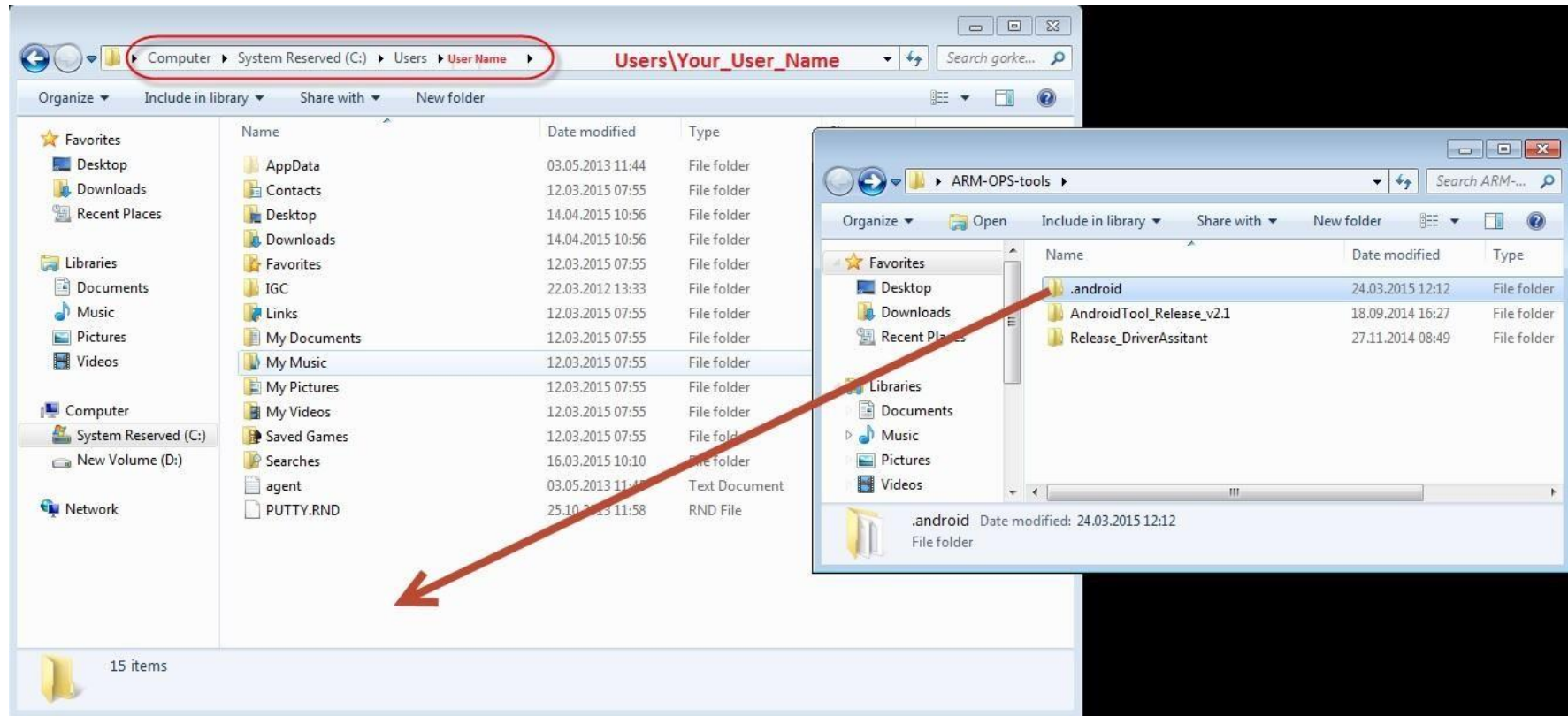
1. Download the ARM-OPS-tool.rar file from the link shared with you.
2. Extract it to your local drive.



3. Open Release_DriverAssistant folder. Then double click DriverInstall.exe.
Wait till the installation ends.



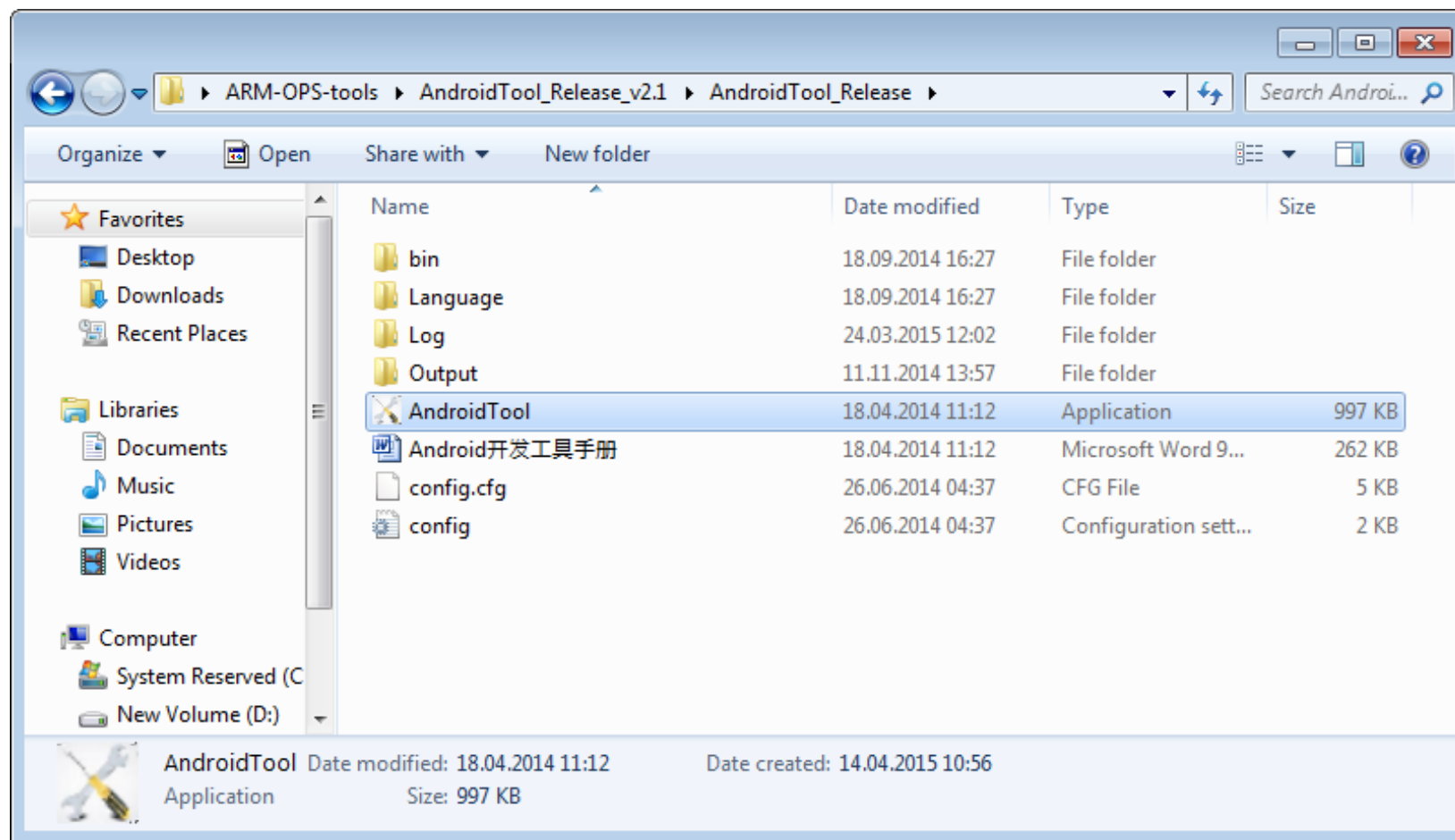
4. Copy “.android” folder to this address “C:\Users\Your_User_Name\”.



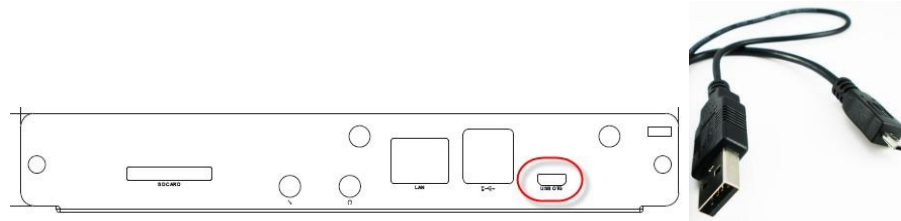
No need to do these steps again once it has done for the first time usage.

Adnroid Image Installation

1. Run AndroidTool.exe from “AndroidTool_Release_v2.1\AndroidTool_Release\” folder



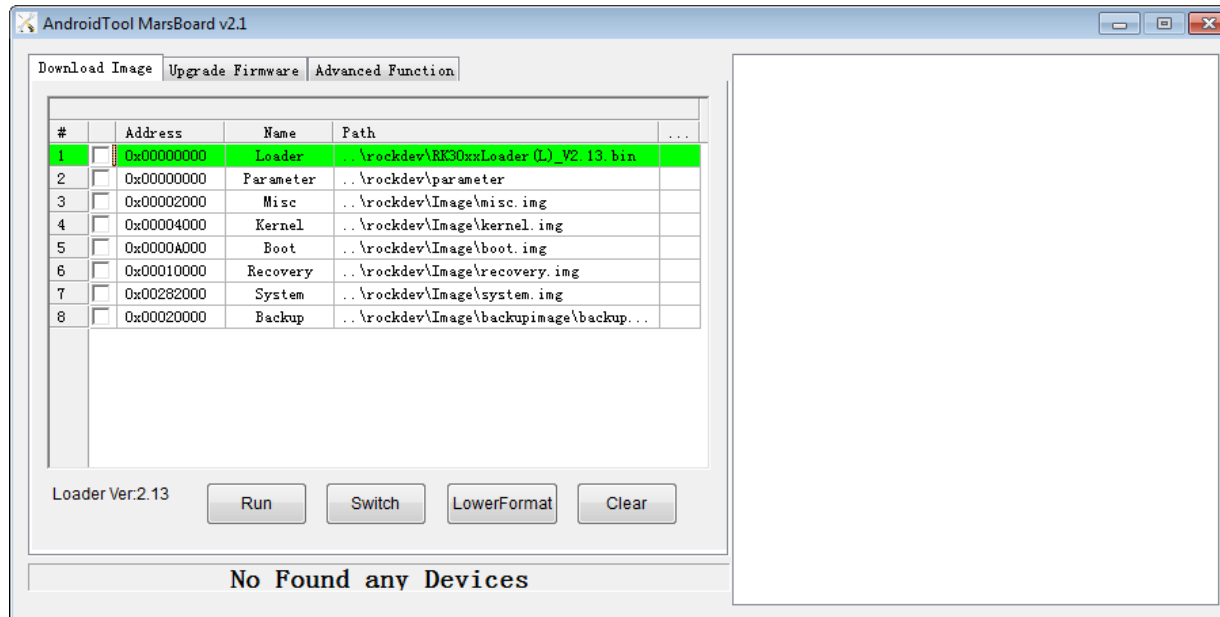
2. Connect ARM OPS to your computer via USB OTG cable.



3. Turn on the OPS by pressing the Power On/Off button at least 1-4 sec. from docking board.



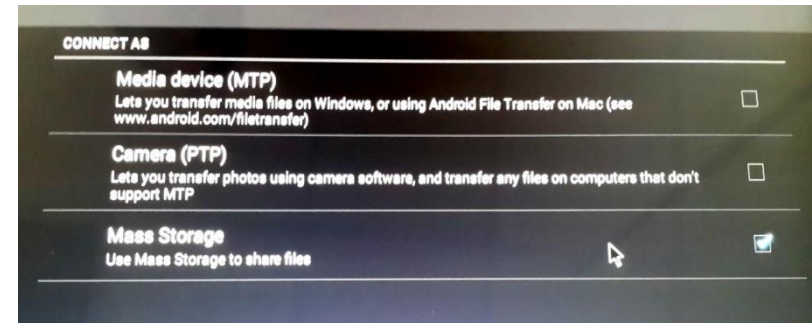
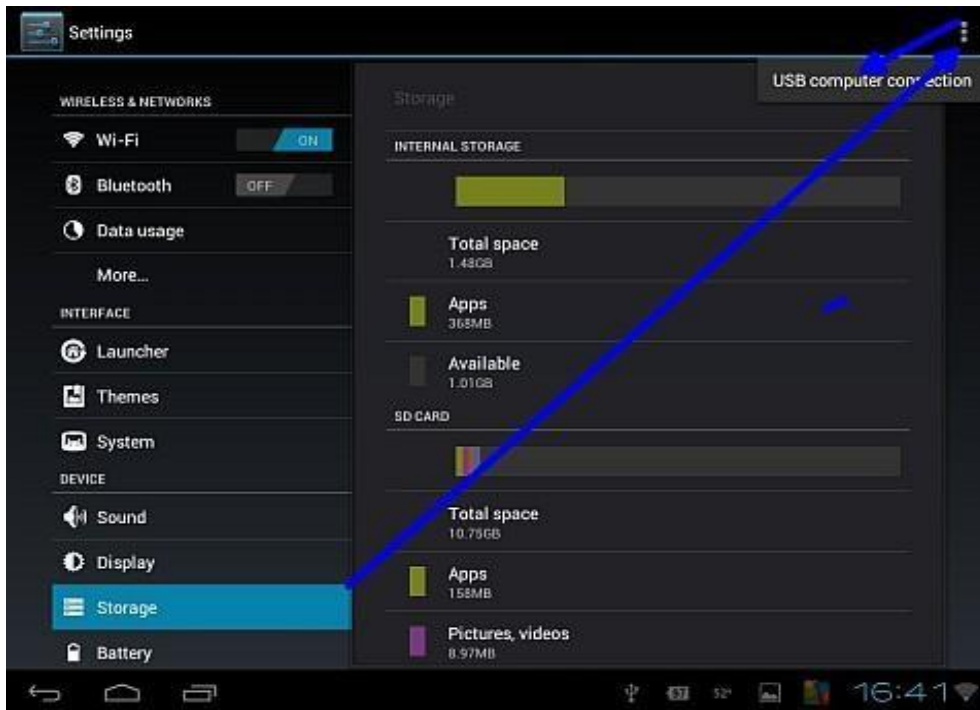
4. When the Tool is opened, there writes “No Found any Devices” at bottom bar. After the Android boot logo is appeared on the screen, then there will write “Found one MSC Device”



NOTE: If label at bottom bar could not turn to “Found one MSC Device”, follow these steps:

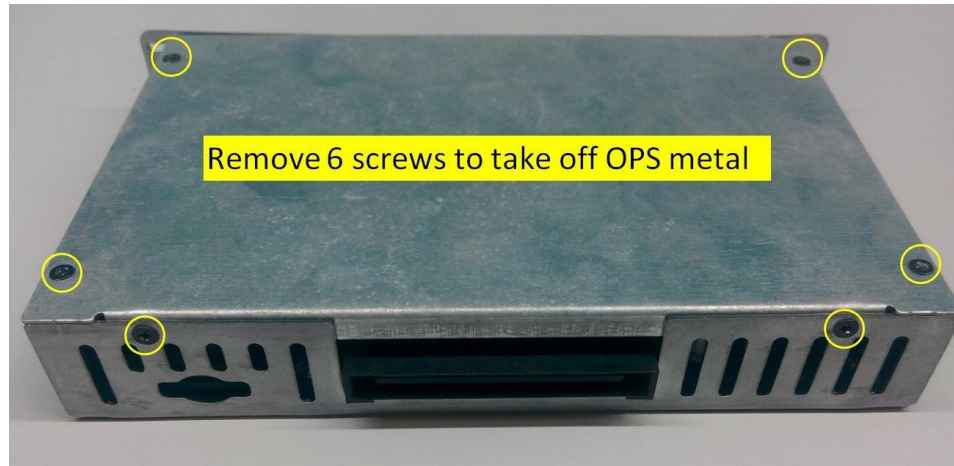
- Connect a mouse to the ARM OPS.
- Go to Settings menu.
- Then select STORAGE. From here at the right corner of the screen click USB computer connection icon.

- *Select Mass Storage*

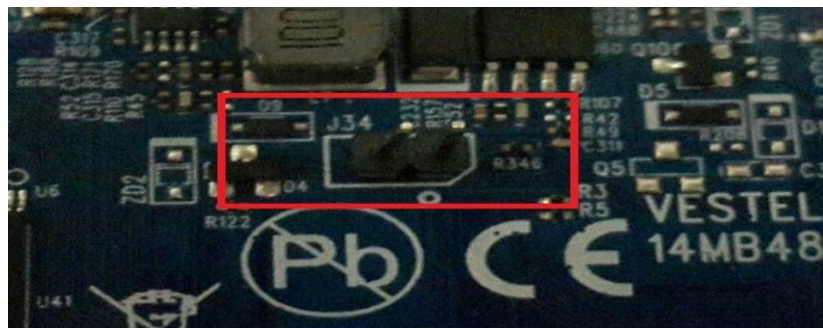


- *After these steps there must be written “Found one MSC Device” on the tool.*

If OPS is not connecting as Mass Storage Device, please follow these steps:
Unscrew OPS top bracket in order to reach OPS Main Board.



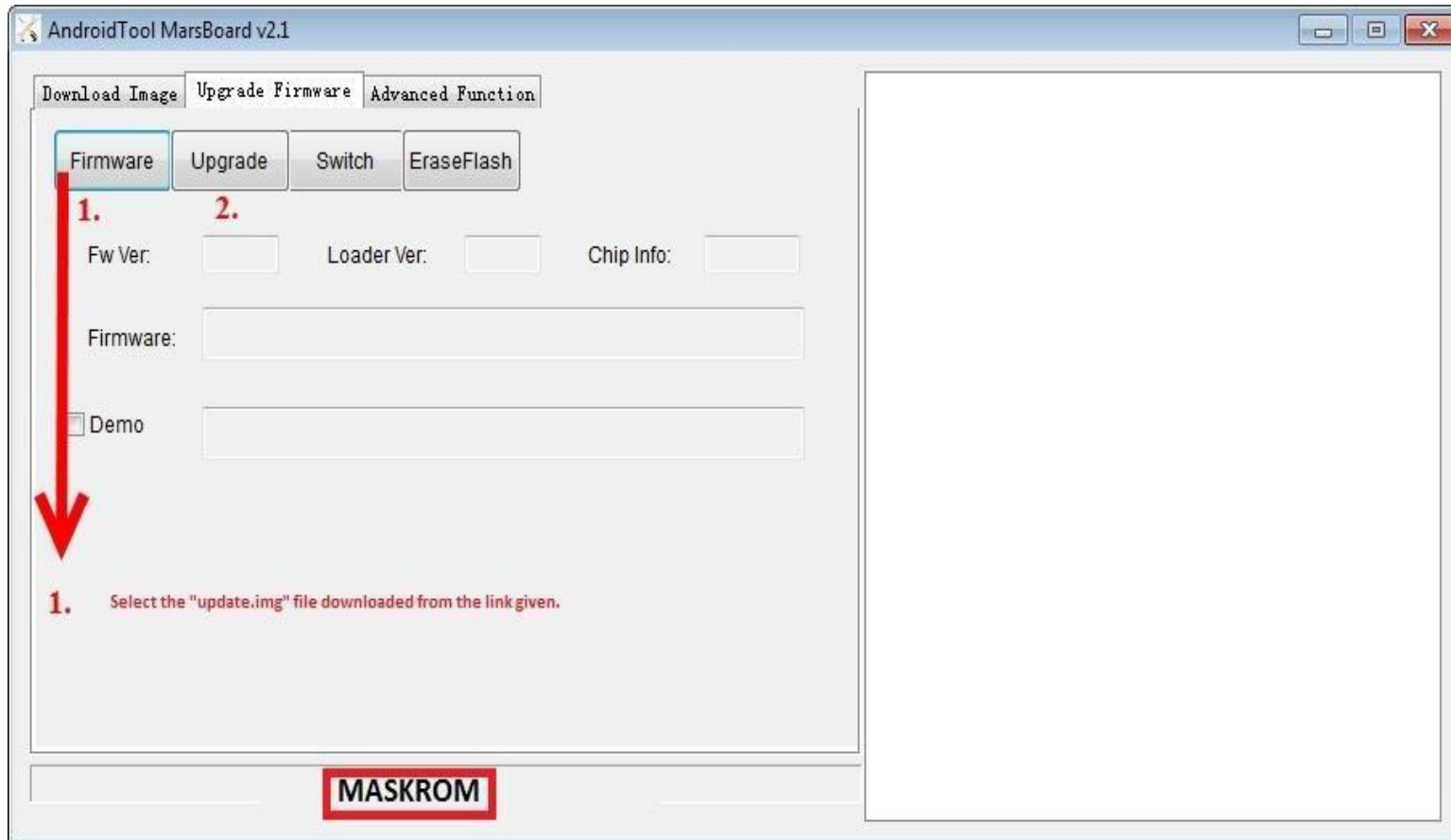
Short the J34 with any material(Cable etc).



If everything is OK. There will write “MASKROM” in red rectangle area.

Then Load Image File by clicking the button marked with “1”.

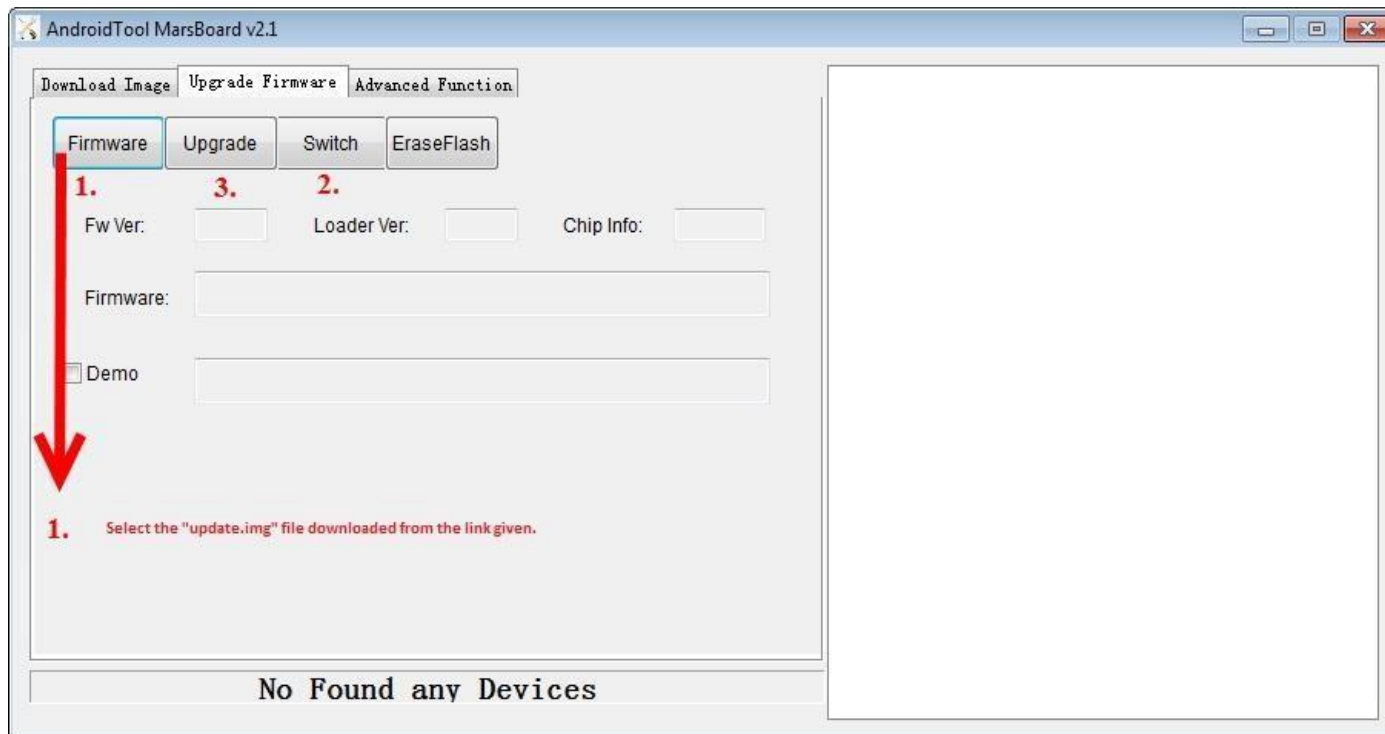
A pop-up menu will appear and select Android update image file from here.



5. Click “Upgrade Firmware” tab then click “Firmware” button from the tool after then select update.img which is given.

6. Click “Switch” button. This will put ARM OPS into image update mode.

7. Click Upgrade button to start the image update. Then wait till the system opens automatically.



Some troubleshooting issues are mentioned in this chapter under the following titles:

- ✓ Points to be checked first
- ✓ Frequently asked questions

☐ Points to be checked first

When a problem occurs, it is very important to diagnose this problem correctly. Try to find out what it is. Determine what causes the problem and under which category it falls. Write down the error codes and messages displayed on the screen, if possible. Contact technical support to get support.

☐ Frequently Asked Questions

✓ Sound Issues

Problem: Sound system is not working.

Check the following:

Be sure that sound volume is not low and sound is not muted. Ensure that the sound driver and its application are installed properly. Check cable connections.

Some troubleshooting issues are mentioned in this chapter under the following titles:

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☐ **Points to be checked first**

When a problem occurs, it is very important to diagnose this problem correctly. Try to find out what it is. Determine what causes the problem and under which category it falls. Write down the error codes and messages displayed on the screen, if possible. Contact technical support to get support.

☐ **Frequently Asked Questions**

✓ **Sound Issues**

Problem: Sound system is not working.

Check the following:

Be sure that sound volume is not low and sound is not muted. Ensure that the sound driver and its application are installed properly. Check cable connections.

Problem: External microphone and auditory devices are not working

Check the following:

Make sure that the cables are properly and firmly connected. Check that the driver is installed. Check sound settings and whether the system is muted or not.

✓ **Issues about turning on the system**

Problem: System does not start.

Check The Following:

- **Steady, long beeps -- This is another POST code that noted a bad power supply. The difference is, while the “steady, short beeps” code notes that the power supply may be bad, this POST code notes that it has gone bad. Be sure that power voltage is in a range of DC 12V – DC 19V.**
- **Steady, short beeps -- The power supply may be bad, this is a good one. We tested the power supply to see if it turned things on, but what if it's not turning everything on? Or if the voltages are wrong? This POST test helps us narrow the cause down to the power supply. A replacement would usually be necessary.**
- **Long continuous beep tone -- Memory failure. This is usually what you hear when one or both of your Random Access Memory (RAM) sticks goes bad. If there is more than one stick installed, try taking one out first to see if the computer boots, if it does not, try with the other one. Usually, this will tell you which stick has gone bad, and you can replace or upgrade accordingly. If there is only one stick installed, you will need to replace or upgrade to fix the problem.**

THANK YOU

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