Please gather all of these materials before installing the upgrade.

Your printer should have come with:
- 1 x spider assembly with belt.
- 4 x FHSCS M3 x 16 mm
- Z-max endstop assembly
- 1 x SHCS M3 x 20 mm

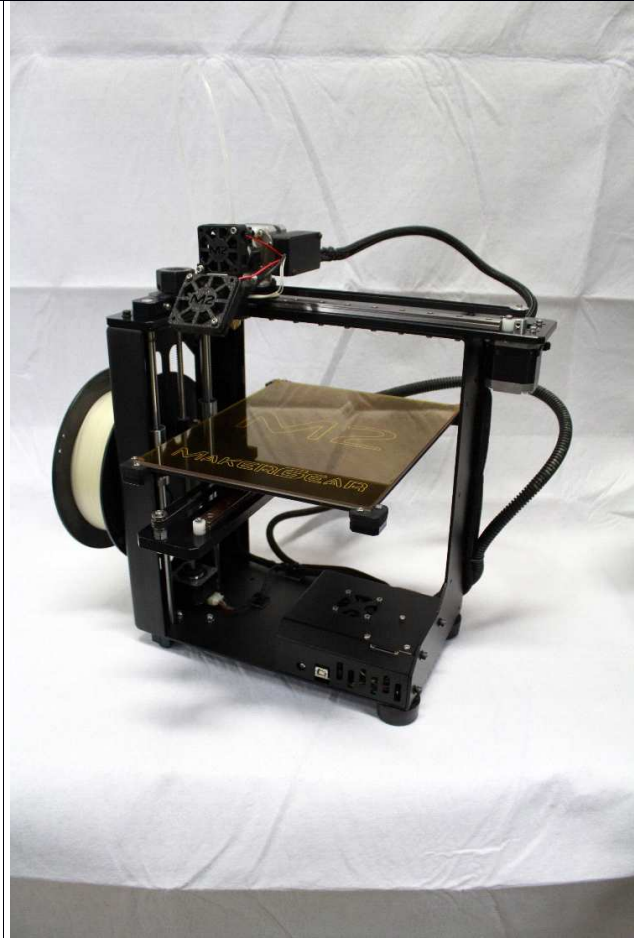You will need the following tools to complete the upgrade:
- A tool to cut zip ties
- 2.5 mm hex key
- 2 mm hex key
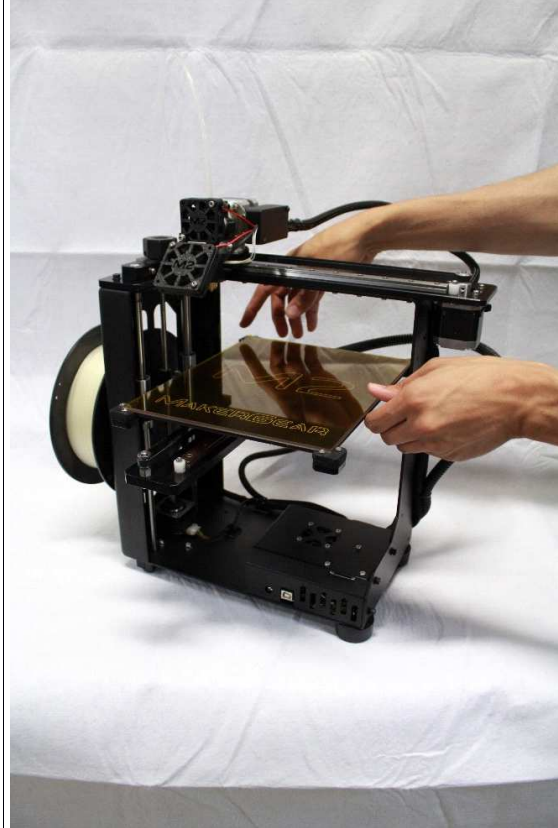- 7 mm wrench

Note: Label tools and parts in pictures

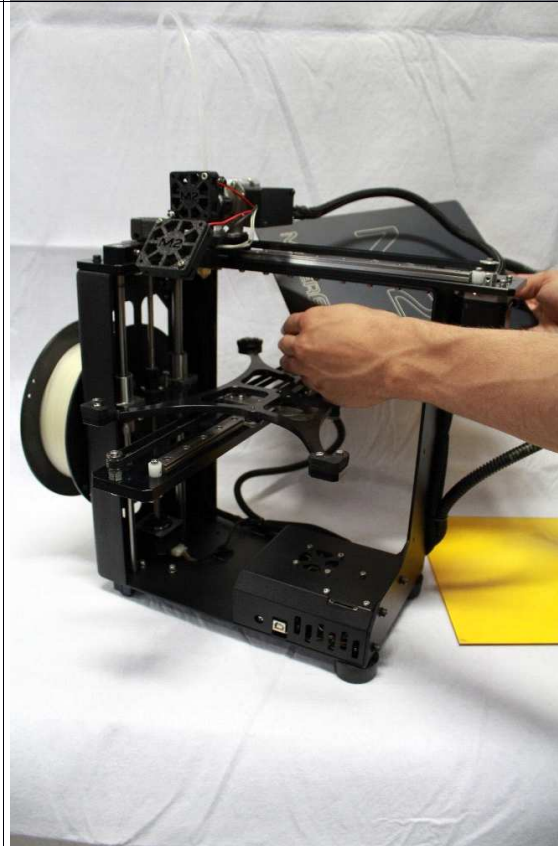Please disconnect power from your printer before beginning.

Move your M2 to a clear area that will be easy to work in and keep track of parts.

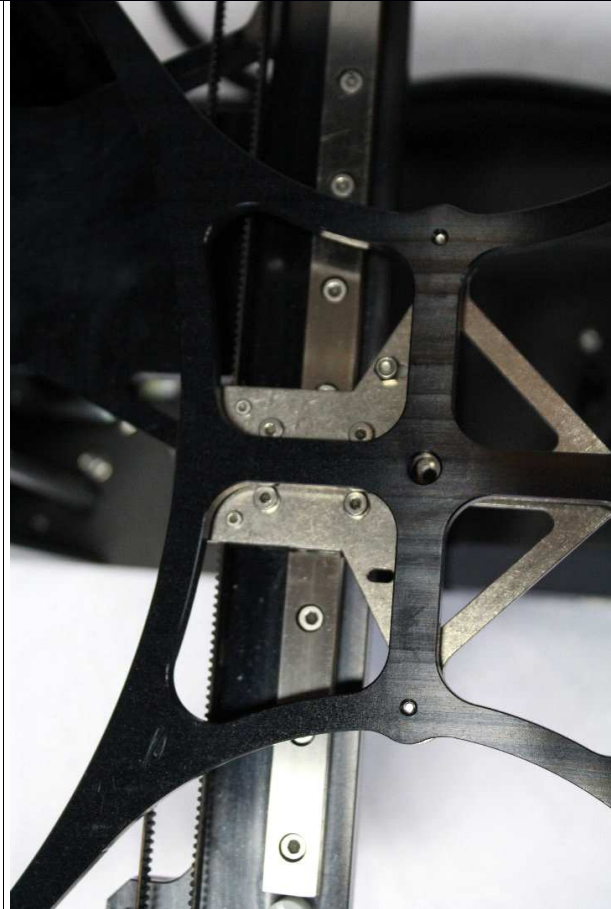|	
Remove the glass from the printer's bed.	
Remove the heated build platform from the printer's spider from the back of the printer and place it on a steady surface.	

Looking down on the spider, there are 4 screws holding the silver leveling plate to the carriage beneath. Use your 2 mm hex key to remove these screws.
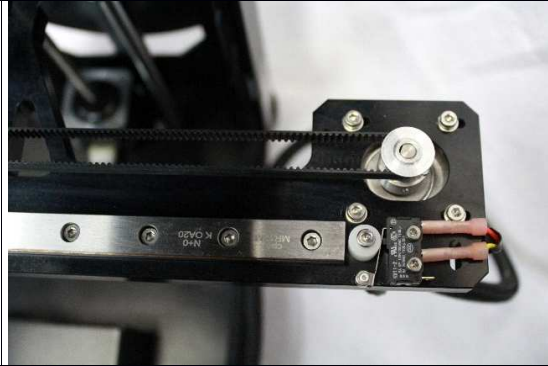
Note: Highlight screws

Make sure your hex key is aligned with the screw and fully inserted to prevent the head of the screw. Loosen each one a couple of turns at a time.
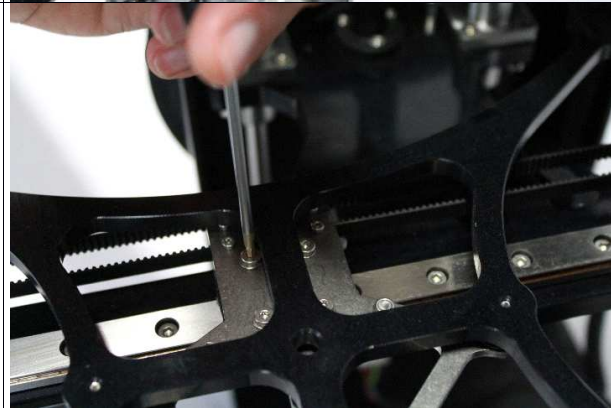
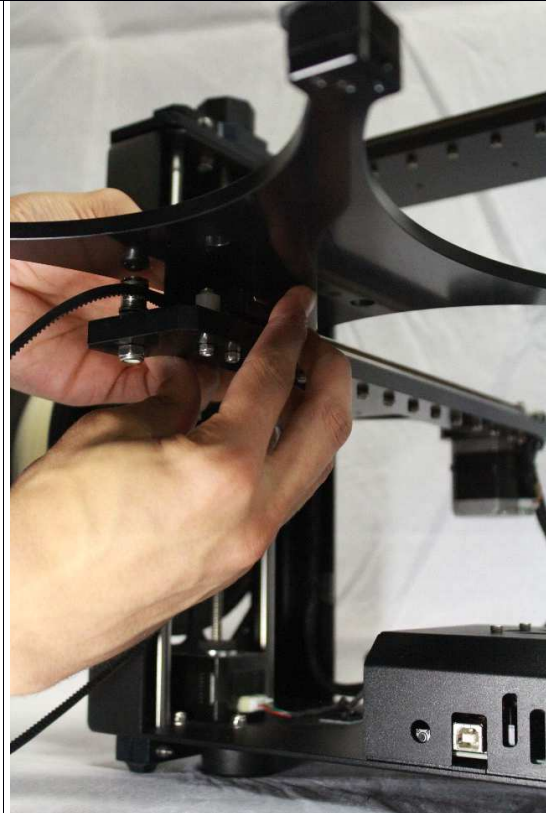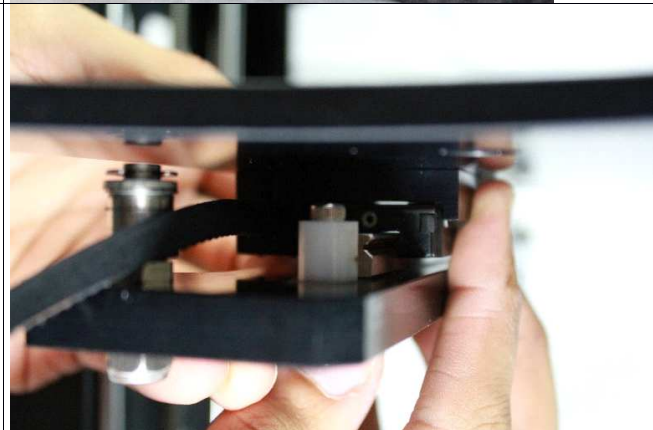|	
Using a 2.5 mm hex key, loosen the four screws holding the Y-motor to the Z-stage. Please do not remove the screws. Slide the Y-motor towards the front of the printer to slacken the Y-belt. Note: Highlight screws	
Remove the old spider assembly, and its attached belt from the printer.	
You should have these parts removed from your printer: • Old spider with Y-belt • 4 screws • 4 split washers	

|	
Place the new spider on the Y-carriage. The clamped belt should be on the left side along the Y-axis (same orientation as old belt).	
Make sure the flange coming down from the spacer block is pressed against the carriage and that the bottom of the spacer block is flat on the carriage. This will ensure that the spider is oriented properly. Note: Annotate	
While holding the spacer block in place, line up the holes in the top of the spider with the holes in the carriage and lightly screw in the FHSCS M3 x 16 mm screws just to hold them in place.	
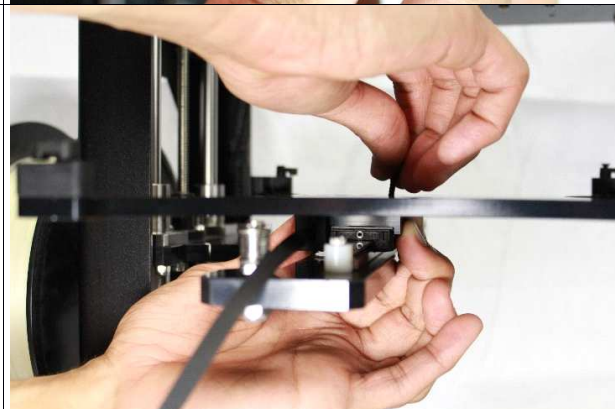
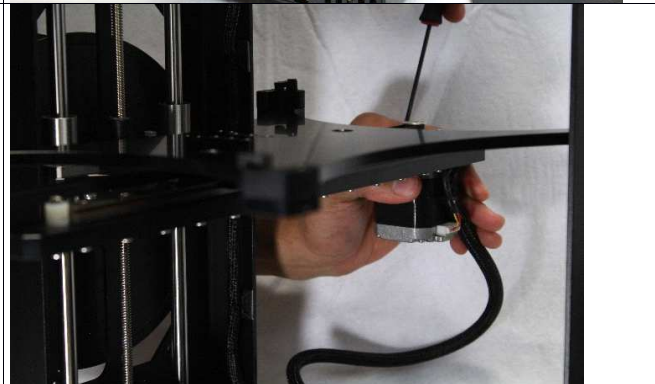|	
While holding the spacer block in place, loosely screw in the four screws then incrementally tighten them so that the spider maintains the correct orientation. Be careful to not apply so much torque that the screws are damaged.	
Put the Y-belt around the motor pulley, then around the idler in the front of the printer. Note: annotate	
While pulling the Y-motor back to make the Y-belt taut, tighten the four screws over the motor with a 2.5 mm hex key.	
The SHCS in the rubber corners may need to be tightened. Use a 2.5 mm hex key to tighten them until the rubber is slightly squished. Note: Highlight screws	

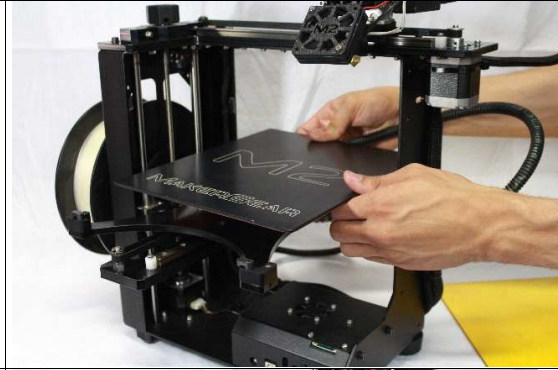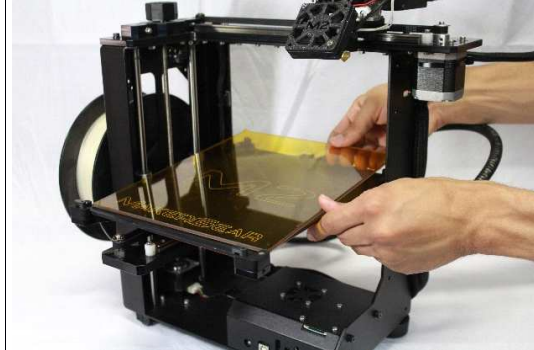|	
Please take a look at the underside of you heated build platform (HBP). If it has full corners as shown in the picture instead of cut corners then please follow these next steps. For the two front corners of the HBP, measure 6 mm from the corner on each side and connect the point to create a cutting guide on the heating pad.	
Use your sharp object of choice to cut along your cutting guide and remove that corner of the heating pad.	
Scrape off as much remaining residue as you can.	
After finishing the two front corner, the HBP should look like this. The missing corners allow the aluminum plate to contact the leveling set screws in the new spider.	
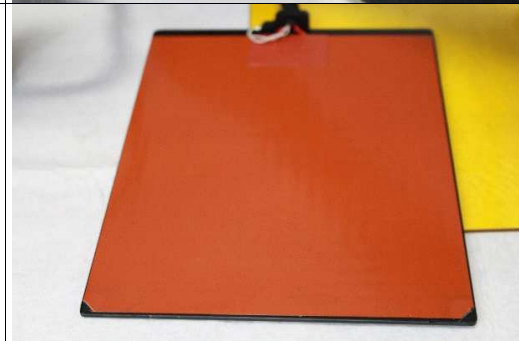
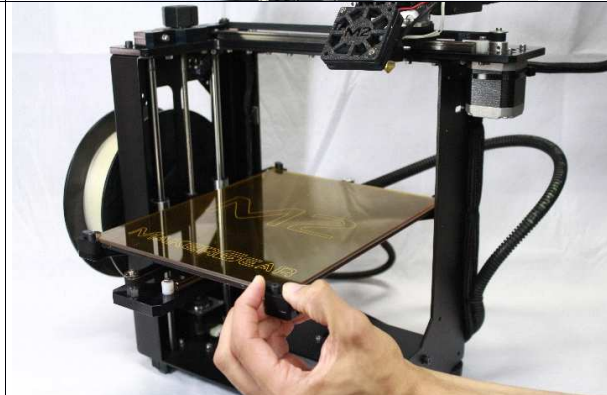|	
Rotate the bed hold down clips out of the way and place the HBP onto the spider.	
Make sure there is no debris on the HBP or under the glass, then place the glass bed with the polyimide tape side up on the HBP.	
Rotate the bed hold down clips onto the bed so that their long sides are parallel with the Y-axis. If needed, loosen the clips with a 2 mm hex key before rotating them onto the bed.	
Tighten the bed hold down so that they apply gentle pressure to the bed. You want the clips to push the bed down so that he HBP contacts the leveling set screws, but you do not want them to be tight enough to cause white stress lines to appear.	
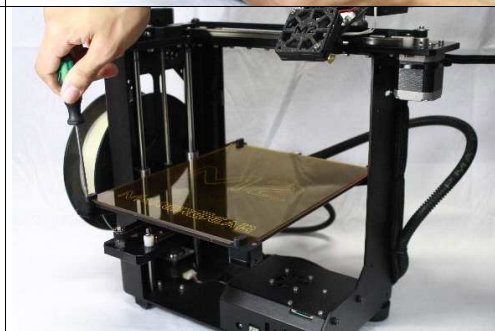
| Use a 7 mm wrench to loosen the jam nut under the Z-stage.
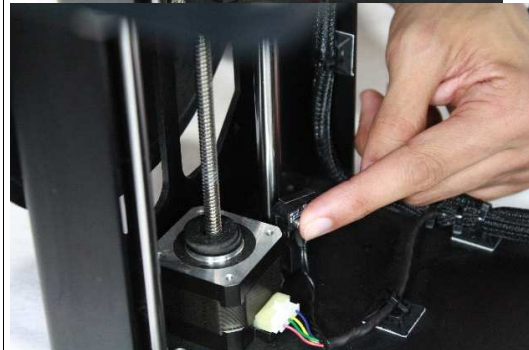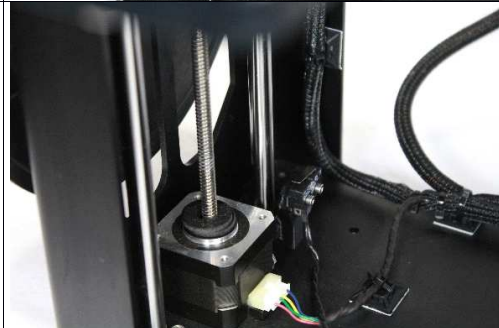
Note: annotate	
Remove the Z-adjustment screw by hand.	
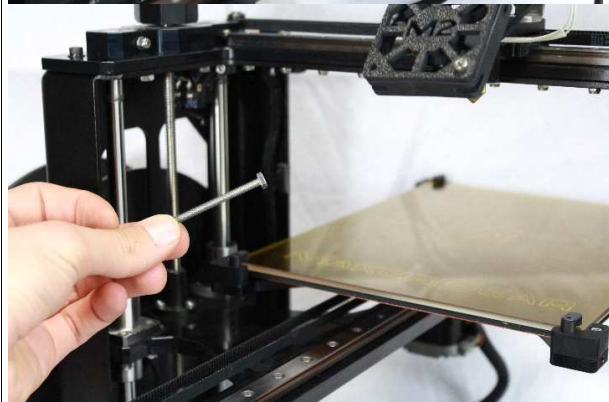
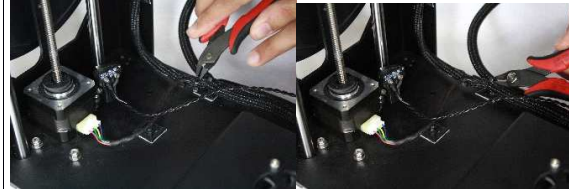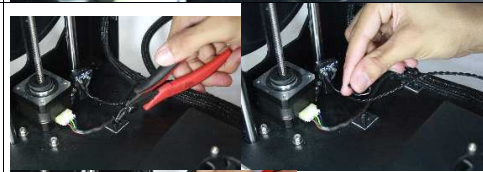Snap the printed Z-endstop bracket onto the far smooth Z-rod.

Slide the printed Z-endstop bracket to the bottom of the printer, then rotate it so its lever arm is pointed at the front smooth Z-rod.

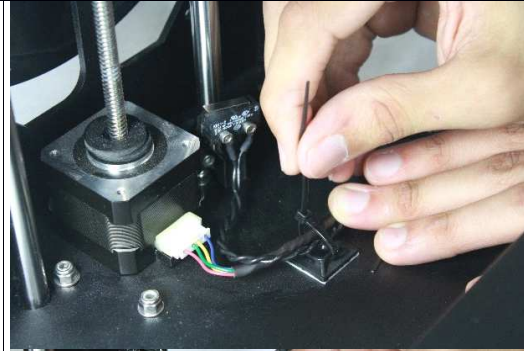| Insert the SHCS M3 x 20 mm into the endstop bracket and screw it into the lock nut on the other side with a 2.5 mm hex key. | |
| Cut and remove zip-ties as shown in the pictures. | |

Replace the zip-ties with the Z-endstop wires included in the bundles. Cut off the ends of the zip-ties to make it neat.	
If you have a metal electronics enclosure then remove it by removing the three M4 screws on the side of the printer with a 3 mm hex key. If you have a plastic electronics enclosure, then remove it by sliding the top to the left, then lifting it off.	

Open the enclosure slightly then unplug the SD card reader cable. If your cable has colors, then the red wire should be nearest the front when you plug it back in.
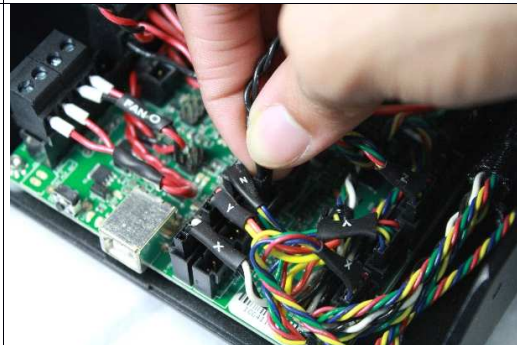
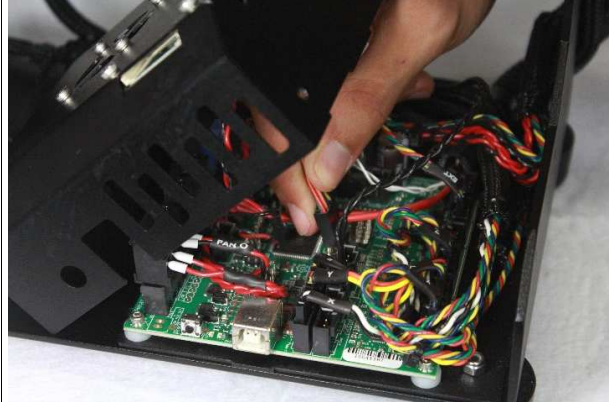Pivot the enclosure to rest it on its left side.

The bed will need to be lifted up to do this. You can lift the bed by hand by pushing up under the Z-stage near the Z-screw, or you can turn the Z-knob to raise it.

Plug the new Z-endstop (max) into the Z-max endstop connector on the RAMBo board. The wires should be in the two front-most pins (S and -).

Plug the SD card reader cable back in.	
Secure the electronics enclosure.	
Finish by updating your M2c or d printer to M2e firmware downloadable from this site: **http://makergear.wikidot.com/m2-firmware**	