



IPad Air REPAIR GUIDE

Version 1
2016 Edition





IPad Air REPAIR GUIDE LCD AND DIGITIZER REPLACEMENT

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FOR EVERY REPAIR
MAKE SURE TO COMPLETE, INITIAL,
AND HAVE CUSTOMER SIGN THE CELLAIRIS
REPAIR LIABILITY WAIVER FORM



PRE-REPAIR DEVICE CHECK-IN

	Pre-Repair Device Inspection			Post-Repair Device Inspection		
Liquid Damage:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Jailbroken or Rooted:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A			
Unlocked or Flashed:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A			
Previously Repaired:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A			
Frame Damage:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Digitizer Damage:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
LCD Damage:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Device is unable to be turned on prior to repair for Device Inspection			<input type="checkbox"/> Yes	<input type="checkbox"/> NO		
	Yes (Working)	No (Not Working)		Yes (Working)	No (Not Working)	
Volume Button:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Mute Switch:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Vibration :	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Power Button:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Home Button:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
WiFi:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Cell Service/Call:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Proximity Sensor:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Ear Speaker:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Phone Microphone:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
External Speaker:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
External Microphone:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Headphone Jack:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Rear Facing Camera & Flash:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Front Facing Camera:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Charge Port:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
Fingerprint Scanner:	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> NO	<input type="checkbox"/> N/A



TOOLS NEEDED

Philips screwdriver #00

Spudger

Tweezers

Isesamo

Large Flathead screwdriver/Hammer

Magnetic Mat

Heat Gun

Canned Air

PDI Adhesive Remover Pad

Alcohol Prep Pad

3M #94 Adhesive Primer

Silicone

Ipad Air digitizer Assembly

Safety Glasses

Nitrile Latex Gloves



HEAT-GUN PRECAUTIONS

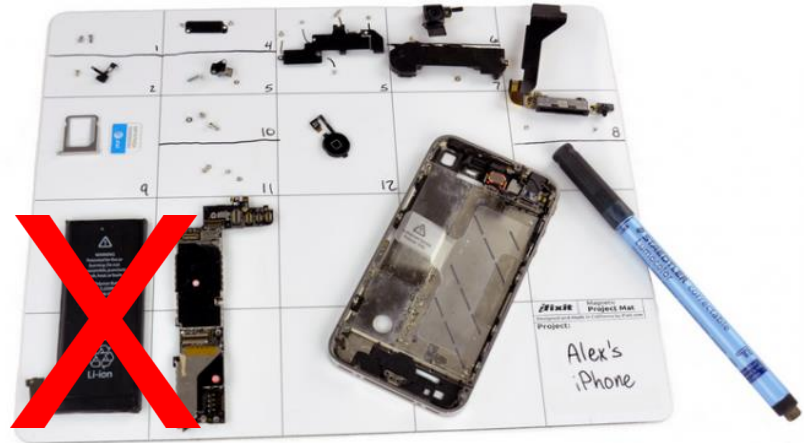
- Always operate the heat gun on the lowest setting.
- Keep face, hands, hair, and clothing away from the air stream.
- The air nozzle also becomes extremely hot. Never grab the heat gun by the nozzle.
- Never operate the heat gun by laying it on its side on a table. It should be firmly grasped in one hand at all times during usage.
- Never operate near flammable or explosive liquids and vapors. Cleaning supplies and the 3M #94 Primer are of concern. Make sure fumes are absent from the work area before operating the heat gun.
- The heat gun nozzle should never get closer than 2" to the object being heated.
- Keep heat gun moving. Never stay in one spot.



ADDITIONAL PRECAUTIONS

- **Magnetic Pad:** During the repair, you will be utilizing a magnetic pad to organize the plethora of differing screws that you will be pulling out of the iPad mini. Below is a list of several internal components of the iPad mini that should never be placed on the pad, or you risk damaging the hardware or erasing client data:

- LCD/Digitizer Assembly
- Cameras
- Motherboard
- Battery
- Speaker



ADDITIONAL PRECAUTIONS

- **Power on/off:** To avoid any damage to the hardware during the repair, it is best to have the device powered off until you can get to and disconnect the battery.
- **Battery:** Never unplug any flex cables unless the battery has been completely disconnected to avoid frying your hardware. Do not plug the battery back until all cables have been reconnected.
- **Release Screws:** Apply pressure on the screw and twist counterclockwise to initially loosen it, then lighten the pressure and continue twisting until the screw is gently released. Make sure you have properly sized screwdrivers available for the repair.
- **Pin Connectors:** extremely fragile and must be plugged or unplugged with extreme caution.
- **Battery connector:** held down by light adhesive and solder. If not cautious it will come off the motherboard. Very time consuming to be repaired. Do not break it in the first place.
- **Motherboard:** small surface mount components can be easily damaged if they are nicked by the spudger. Always take your time and never touch the surface of the motherboard.



ADDITIONAL PRECAUTIONS

THE HEAT GUN CAN REACH TEMPERATURES OF 1000° F

- Always operate the heat gun on the lowest setting
- Keep face, hands, hair, clothing etc. away from the air stream
- The air nozzle also becomes extremely hot, never grab the heat gun by the nozzle
- Never operate the heat gun by laying it on it's side on a table. It should be firmly grasped in one hand at all times during usage.
- Never use heat gun if overly tired or after taking any kind of drug that has drowsiness as a side effect
- Never operate near flammable or explosive liquids and vapors. Cleaning supplies and the 3M #94 Primer are of concern – make sure fumes are absent from the work area before operating the heat gun
- The heat gun nozzle should never get closer than 2” to the object being heated.
- Keep the heat gun moving – never stay in one spot and apply constant heat.



ADDITIONAL PRECAUTIONS

WEAR SAFETY GLASSES DURING SCREEN REMOVAL

When removing the old digitizer, the glass often splinters and shatters. This discharges small glass shards at high velocities that can become lodged in the soft tissue of the eye, causing serious injury. Safety glasses should be worn until all glass has been removed from the iPad frame.

WEAR LATEX GLOVES AT ALL TIMES

Small glass splinters are created when the old digitizer is removed, and they can be spread all over the work area. If you run your hand over them, they can become embedded in your skin. This is painful and they can be very difficult to see and remove. Wearing gloves should keep the splinters from endangering your skin.

Wearing gloves also keeps fingerprints off of the LCD and digitizer, and from getting finger oils on the frame which may weaken the new adhesive.



Pre-Repair

Check-in

Hardware/Functionality to be Checked:

- Wifi
- Home button
- Volume Keys-Up&Down
- Mute-UP&Down
- Charging
- Cellular Signal(3G Version Only)
- Built in Microphone
- External Speaker
- Headphone Jack
- Rear Facing Camera
- Front Facing Camera
- Power Button/Power off

Has:

- The Device Been Repaired Before?
- The Device Been Exposed to water?
- The Charge port Been smashed/Damaged?



Pre-Repair

Check-in

Turn on Assistive Touch

Since the home button will not be useable during the digitizer replacement, it is usually advisable to turn on assistive touch for any testing/diagnostic that needs to be done before the new digitizer is installed.

You can turn on assistive touch by opening setting, general, accessibility, assistive touch, turn on.



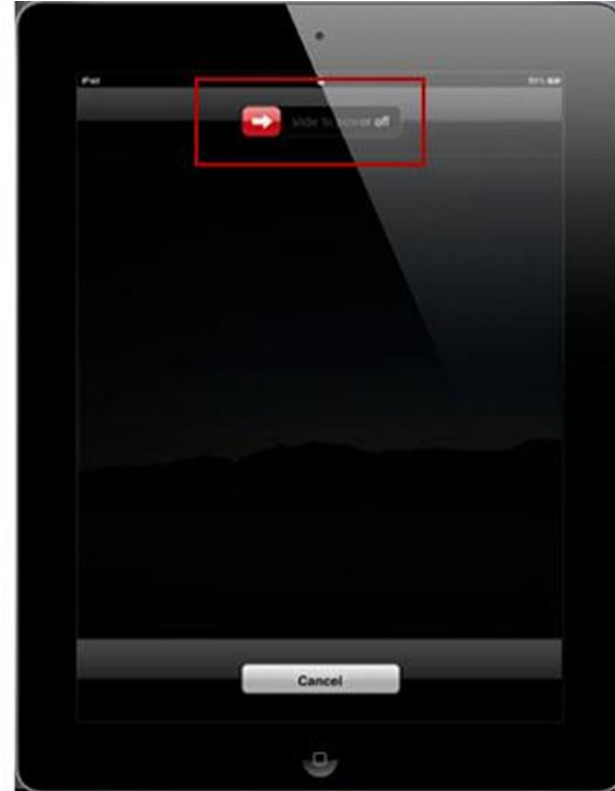
Pre-Repair

Check-in

To avoid any damage to hardware during the repair, it is best to have the device powered off until you can get to and disconnect the battery.

Normal power off: Hold down power button and home button until the screen goes black, the Apple logo appears, and then the screen goes black again and release.

Nonfunctioning Power Button: Use assistive touch, press and hold "lock Button" until "slide to turn off" appears, slide to turn off



STEP 1

Disassemble the device

Tools: heat gun, Painters knife, Tweezer, Philips screwdriver, spudger

Tips: Put iPad on a flat surface!! Never start from the bottom the digitizer cable is located in that area as well as the home button significant pieces that should not be touched by metal.

- The iPad air requires finesse, a steady hand and knowledge of the device. You will need to be able to determine if it has Wi-Fi only or cellular service. You do Not want to tear the cellular cables along the top because of not knowing. There will be white or black tape running along the top of the iPad if it has cellular service. If it does, this just means be extra careful sliding your isesamo, painters knife etc. underneath the glass.
- Once that is determined power off device and lay iPad on a flat service.
- Face the iPad horizontal towards you like below it opens from left to right.

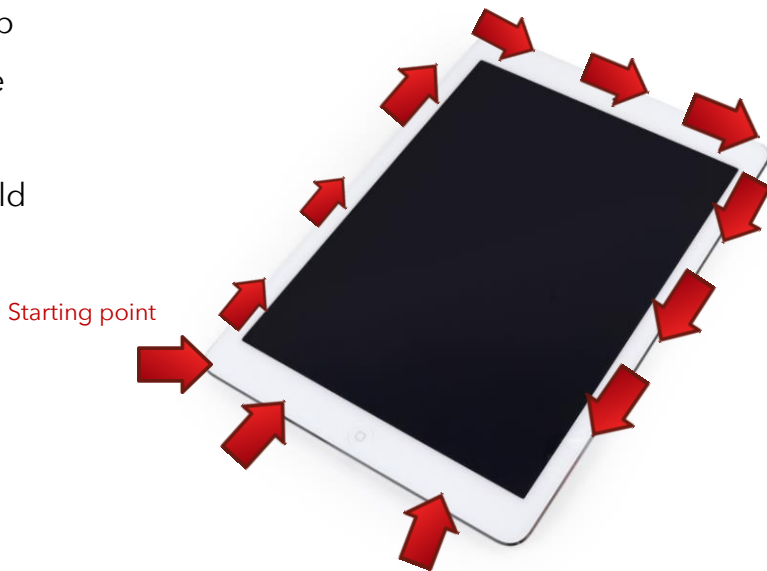


Tools: heat gun, Tweezers, plastic cards, Painters knife or isesamo

STEP 2

Disassemble the device

- The first step will require you to heat the top glass. Take the heat gun and go around the frame In a constant motion never allowing the heat gun to rest in one spot too long. Hold the heat gun at a 45 degree angle while doing this process.
- Take painters knife and slide it in between the glass and frame of iPad to start. As you heat you will need to slide your isesamo or painters knife along heated area simultaneously. If you notice it's getting harder to separate the screen from adhesive more heat is need as it is cooling down. Do not start at the bottom!



STEP 3

Disassemble the device

- As you heat the frame of the glass use the painters knife or isesamo and flex the tool left to right slightly to help lift the glass. You can use plastic cards or picks to keep the glass from sticking back down.
- The bottom is where the home button flex cable is attached to the glass by adhesive. It's hard to see while separating the glass until the other sides are up. Once its heated and opened lay screen against something so the cables aren't pulling.

Tips: Taking your time throughout this process is essential and do not slide tool to far into the screen or you might scratch the lcd. If you can see the tool near lcd then you have gone to far into the glass with isesamo.



Tools: Tweezers, Fingers

STEP 4

Disassemble the device

- Once opened you will be able to see the home button flex cable. Peel this cable off of the original screen be careful not to pull to hard and tear. Use flat end of spudger. When removing the home button there is a extra gasket around it peel that off as well. The replacement screens usually don't have this piece attached. Picture below of gasket!



gasket



Tools: Spudger, Philips screwdriver, tweezers

STEP 5

Disassemble the device

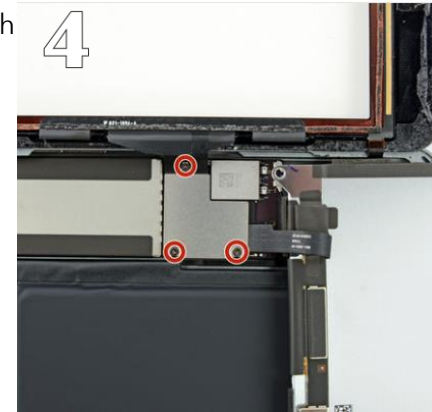
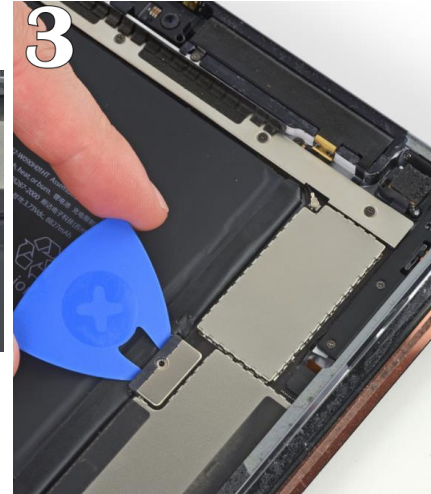
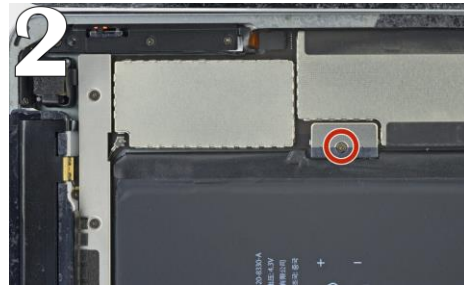
- Next step will be removing the four (4) lcd screws. Two (2) of them are covered by black tape that can be pulled back to expose the screw.



STEP 6

Tools: Spudger,
tweezers, Philips
screwdriver

- Lift the lcd using spudger from top to bottom because digitizer and lcd cables still need to be disconnected before removing lcd.
- Disconnect the battery by unscrewing the single Philips screw. Once removed slide a plastic card underneath where the battery meets the motherboard.
- Then remove EMI shield covering the lcd and digitizer cables. Use Philips screw driver and spudger to lift sh

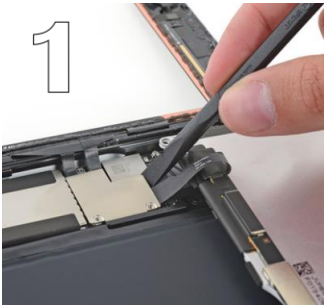


Tools: Spudger

STEP 7

Disassemble the device

- Disconnect the lcd and Digitizer cables by flexing up slightly with the plastic spudger. Put old digitizer to the side some replacement digitizers come with a new home button and flex cable but, if not keep home button flex attached to motherboard you can reuse.



Tools: Spudger, Hands

STEP 8

- Once the screen is disassembled next step will require you to clean the frame of the iPad. Use PDI pads (adhesive remover) to scrape off any old adhesive or glass shards. If the frame is not properly cleaned then trying to close the screen can result in it breaking do to glass stuck or, it won't adhere properly. Wipe frame first with pad then use flat head driver or scraping tool around the frame

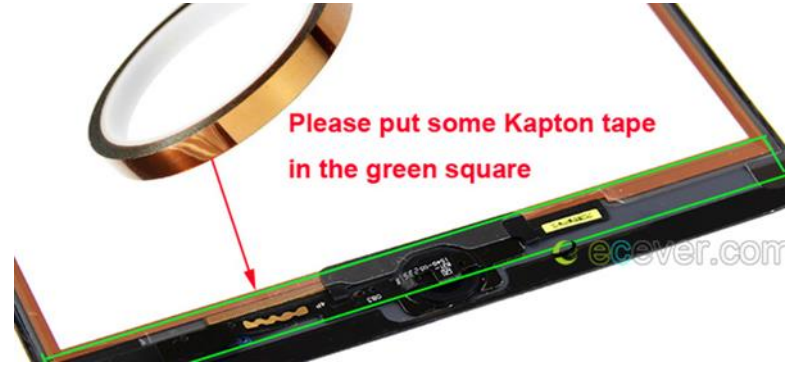


Tools: Philips screwdriver,
spudger

STEP 9

Disassemble the device

- The frame is now clean we will move on to the new replacement screen the first thing we will do with the new digitizer is add two strips of clear packing tape or kapton tape to the bottom of screen.
- Place a thin layer of tape on the copper/ metal part of the screen in the areas outlined by the two black boxes. It helps prevent ghosting. You do not have to add any on home button or over top of home button only on each side of button on the designated areas.

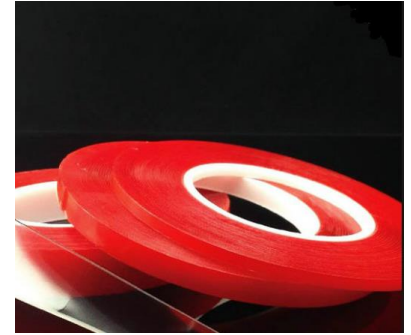


Tips: Try not to double up tape over same area will cause the screen to be lifted higher than normal.

STEP 10

Disassemble the device

- The replacement screen may or may not come with adhesive already attached if it does not add double sided adhesive around the glass so it will adhere. Line thin pieces of tape around highlighted blue area.



Tips: Don't forget to take off plastic covering on the inside of the screen otherwise you will have to open the screen up again to remove.

STEP 11

Disassemble the device

- At this point you can reassemble with new screen. Take new screen and connect the Digitizer cables to motherboard.
- Next, take the LCD and reconnect to motherboard.
- Place the EMI shield back over the cables and screw down the three (3) Philips screws.
- Take out the plastic card under battery connector and screw in the single screw. At this point you can power on device to do a quick post-test to make sure touch is responsive.
- If all is well proceed to close the screen.
- Take the home button flex cable and attach it to the new screen make sure the lcd is clean by wiping it down or using canned air if necessary.
- Then remove plastic over the adhesive tape and protector off inside of new glass replacement.



Tips: Heat for 5 to 6 seconds around frame.

STEP 12

Disassemble the device

- Now, laying the screen will require you to pay attention to the lcd and digitizer cables as you lay it down because they are thick. Lay the side opposite of the cables to the frame first then use your spudger to make sure digitizer/lcd are fitting in the indentation on the frame then push straight down on the screen so the cables fit into the frame properly.
- Once the screen is laid down smooth out all sides with your hands. Use the heat gun to heat around the frame again but one time around to help seal the adhesive. Same method as before at 45 degree angle constant motion so it doesn't burn the lcd or screen.
- Do post test again after sealing.



Tools: Weights, binder clips

STEP 13

Disassemble the device

- Now that the new digitizer is laying down on the on iPad you want to test it one more time make sure the functionality is proper and to ensure that it is sealed lay it down on a flat surface and put some weight on it so it has time to seal for about 2 hrs.
- A good method for this is heat the frame of screen exactly how you removed it but not as long. Heat around the frame about 2 times consecutively then flip screen facing down put a towel over the back and place a weight on top. If you don't have physical weights use some type of book or you can use medium sized binder clips and place one on each corner of the iPad to clamp and leave it for about 2 hours.



Tips: Clamp the four corners with these medium sized. Make sure to clean the glass with cleaning cloth leave no fingerprints!



Troubleshooting

- If you notice the screen is ghosting most likely that is because no tape was added to the new replacement screen.
- If there is dead spots on screen and weren't there during the pre-test most likely it's a defective screen try a new one.
- Now, if those efforts don't work possibly could mean that the iPad has severe frame damage. These devices are sensitive items therefore the issues are internal and couldn't be diagnosed before repair. Let the customer know the situation and, let the manager go over some options with customer and go from there.



CONTACT

**BECOME A
MASTER
FRANCHISE**

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**THANK
YOU!**