

Iphone6 1610a2 replacement

- 1 remove the motherboard completely from the phone remove the metal shield protecting the usb charge ic identify the location of the shield from the picture below
- 2 secure the MB using a vice or other tool and identify the ic to be replaced and protect the surrounding parts from excess heat by covering with kapton tape or metal shielding
- 3 use hot air set to 120deg low air flow and using a sharp needle or tweezers heat the black glue around the edges of the ic and remove the glue completely take as much time as necessary as this is a very important process failure to remove the glue at this stage may result in damaged unrepairable pads / tracks later .
- 4 put flux on top and around the edges of the ic to aid heat dispersion then using a 6mm nozzle and hot air at 380deg (air flow set to minimum) apply heat to the ic in a circular fashion for around 30 /45 seconds testing with a metal pick constantly until the chip is freely moving then remove the chip from the pcb.
- 5 remove any traces of solder and clean the pads on the MB using flux and any one of the many methods currently demonstrated on the web I personally use braid impregnated with extra flux **be extremely careful not to detach any of the pads on the pcb**
- 6 apply flux to the pads on the replacement ic then position the ic beneath a direct heat stencil and apply leaded solder paste to the pads which should be visible. Using 200deg heat and minimum air flow, heat the solder until it flows around 30 /45 secs **(leaded paste or balls must be used to ensure minimum temp fixing)**

Refitting

- 1 apply flux to the pads on the motherboard and a very small amount on top of the ic
- 2 place the ic into position on the pads of the motherboard the ic must be correctly oriented at this point
- 3 using a 6mm nozzle set to 240deg and minimum air flow place the hot air gun directly above the ic at a distance of around 10mm, the external components must be protected from any heat at all times reflow time 45 seconds
- 5 remove the heat and allow the MB to cool for approx. 5mins without moving

Important notes

there are many variables involved in hot air soldering

MB =motherboard IC = integrated circuit

All temps and durations are based on a fully functioning hot air bga reflowing system

most of the bga systems on the market retailing for less than £399 have wide tolerances ie the indicator may say 200deg but tolerance could be ><10% therefore the heat produced may actually be anything from 180deg to 220deg .in this case it is vital to calibrate your device first.

Ambient temperature is also vitally important make sure the ambient temp of the room you are using is within the range of 19deg to 21deg

The above instructions are for guidance only and computabench accepts no liability for breakdown or damage to components caused by untrained personnel the utube guide below demonstrates removal of an 1608a1 (similar ic)

<https://www.youtube.com/watch?v=B7zN2S-23bA>

Lead solder balls' melting point is 180°C, 210°C-215°C is the best melting temperature.
Lead Free solder balls' melting point is 217°C, 235°C-245°C is the best melting temperature.

The temperatures listed above are the chip's solder balls actual temperatures (they are measured by the measuring wire on the BGA machine),but not the temperatures from the BGA rework station's top bottom heat guns.

If soldering a new Lead solder balls chip with Lead Free temperature curve (profile), it will overheat the new chip.

If soldering a new Lead Free solder balls chip with Lead temperature curve (profile), it will not completely melt the lead free solder balls on the new chip.

