
Introduction

- **Online Free Course in Mobile Repairing (Card & Chip Level Training).**
- **Taught and Trained by Experienced Teachers.**
- **Learn Mobile Repairing with Modern Tools and Equipment and Latest Technology.**
- **Students can Start Their Own Business after Completing the Course.**

Scope for Students

- **Students can Start Their Own Business in Mobile Phone Repairing and Cell Phone Industry.**
- **Students can Work as a Technician in a Cell Phone Service Centre.**
- **Students can Find Job in Cell Phone Industry.**

Course Overview

- **Introduction & Identification of PCB (Printed Circuit Board).**
- **Fault Finding of Mobile Phone Sections with Block Diagram.**
- **Hardware of Mobile Phone.**
- **Use of Tools and Equipment.**
- **Mobile Phone Software.**
- **Multimedia and Downloading.**

Index

1. Mobile Phone Dictionary: Full Forms of Terms Used in Mobile Phone.
2. Mobile Phone Repairing Tools and Equipment.
3. Identification of Card Level Parts.
4. Identification of PCB.
5. Identification of Big Parts in a Mobile Phone.
6. Identification of Small Parts in a Mobile Phone.
7. About IC (Integrated Circuit) and Counting Techniques of Leg-Type and Ball-Type IC.
8. About Current.
9. Circuit (CKT) Symbol.
10. **Sections of a Mobile Phone.**
11. **Software Tools.**
12. **Software Problems and Solutions.**
13. **Multimedia and Downloading.**

Mobile Phone Dictionary

1. **1G:** 1St Generation in Mobile Telephony.
 2. **2G:** 2Nd Generation in Mobile Telephony.
 3. **3G:** 3Rd Generation in Mobile Telephony.
 4. **4G:** 4Th Generation in Mobile Telephony.
 5. **AC:** Alternate Current.
 6. **BGA:** Ball Grid Array.
 7. **BSI:** Battery Status Indicator.
 8. **CDMA:** Code Division Multiple Access.
 9. **CPU:** Central Processing Unit.
 10. **DCT:** Digital Core Technology.
-

Mobile Phone Dictionary

11. **DC:** Direct Current.
 12. **GSM:** Global System for Mobile Communications.
 13. **IMEI:** International Mobile Equipment Identity.
 14. **IC:** Integrated Circuit.
 15. **LED:** Light Emitting Diode.
 16. **PDA:** Personal Digital Assistant.
 17. **PFO:** Power Frequency Oscillator.
 18. **PCB:** Printed Circuit Board.
 19. **RAM:** Random Access Memory.
 20. **RF:** Radio Frequency.
-

Mobile Phone Dictionary

- 21. **ROM:** Read Only Memory.
- 22. **RTC:** Real Time Clock.
- 23. **RX:** Receive / Receiver (Receiving Section).
- 24. **SMD:** Surface Mount Device.
- 25. **TX:** Transmit (Transmitting Section).
- 26. **UEM:** Universal Energy Manager.
- 27. **VCO:** Voltage-Controlled Oscillator.

Mobile Phone Repairing Tools and Equipment

1. **Soldering Iron or Soldering Station:** Used to Solder.



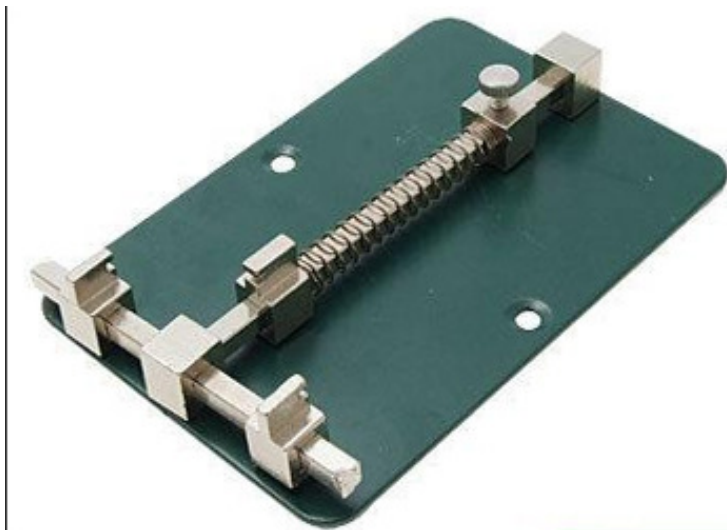
Soldering Iron



Soldering Station

Mobile Phone Repairing Tools and Equipment

- **P.C.B Stand:** Used to Hold PCB.
- **Solder Wire (Ranga):** Used to Solder.



Mobile Phone Repairing Tools and Equipment

- **Thinner:** Used to Clean PCB.
- **Jumper Wire:** Used to Connect One Point to Another Point on a PCB.



Mobile Phone Repairing Tools and Equipment

- **Blade Cutter:** Used to Cut and Remove Lamination.
- **Point Cutter:** Used to Cut Wire.



Mobile Phone Repairing Tools and Equipment

- **Nose Cutter:** Used to Cut Wire.
- **Screwdriver (T6,T5,T4,+,-):** Used to Remove and Tighten Screws from Mobile Phone.



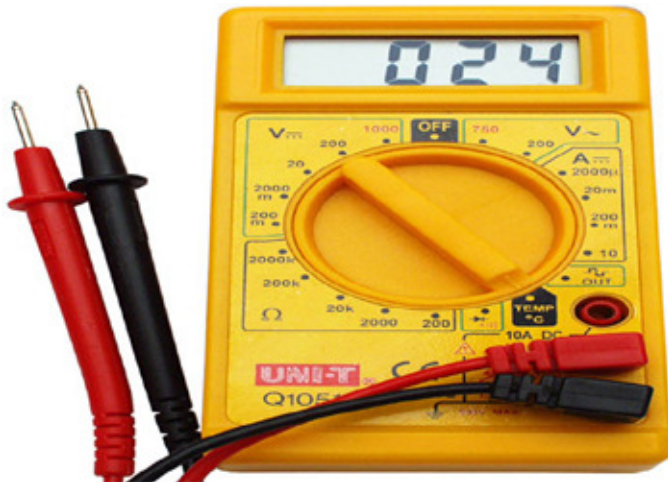
Mobile Phone Repairing Tools and Equipment

- **Tweezers:** To Hold Wire and Components.
- **Brush:** For Cleaning.



Mobile Phone Repairing Tools and Equipment

- **Multimeter:** To Check PCB Track and Electronic Components.
- **Blower (S.M.D Rework Station):** To Remove and Solder SMD / Chip Components.



Mobile Phone Repairing Tools and Equipment

- **Battery Booster:** To Boost Voltage of Battery.
- **Ultrasonic Cleaner:** To Clean PCB and Electronic Components.



Mobile Phone Repairing Tools and Equipment

- **BGA Kit:** To Reball and Repair Ball-Type IC.
- **Magnifying Lamp:** To Get Magnified View of PCB and Components.



Mobile Phone Repairing Tools and Equipment

- **Case and Screen Opener:** To Open the Screen and Case of a Mobile Phone.
- **Regulated DC Power Supply:** To Supply DC Electricity.



Mobile Phone Repairing Tools and Equipment

- **Liquid Flux:** To Clean PCB Track and Legs of Electronic Components While Soldering.
- **Paste Flux:** Used While Soldering.



Mobile Phone Repairing Tools and Equipment

- **Solder Paste:** Solder in Semi-Solid Form. Used to Solder.
- **File / Reti / Cleaning Sponge:** To Clean Tip of Soldering Iron



Mobile Phone Repairing Tools and Equipment

- **Desoldering Wire:** To Desolder Electronic Components and To Remove Excess Solder from PCB Track.
- **Screwdriver Kit:** To Disassemble and Assemble Mobile Phone.



Identification of Card Level Parts.

1. Fascia



Facia

2. Back Facia



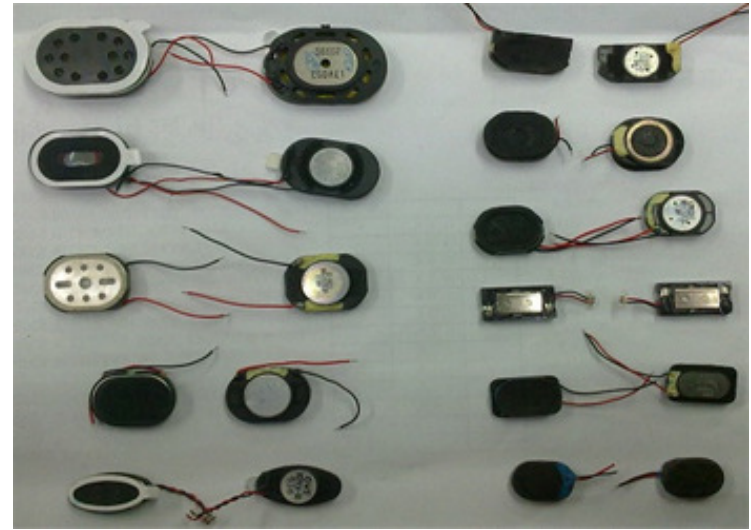
Back Facia

Identification of Card Level Parts.

3. Haddi / Internal Fascia



4. Ringer / Loudspeaker



Identification of Card Level Parts.

5. Speaker / Earpiece



6. Mic / Microphone

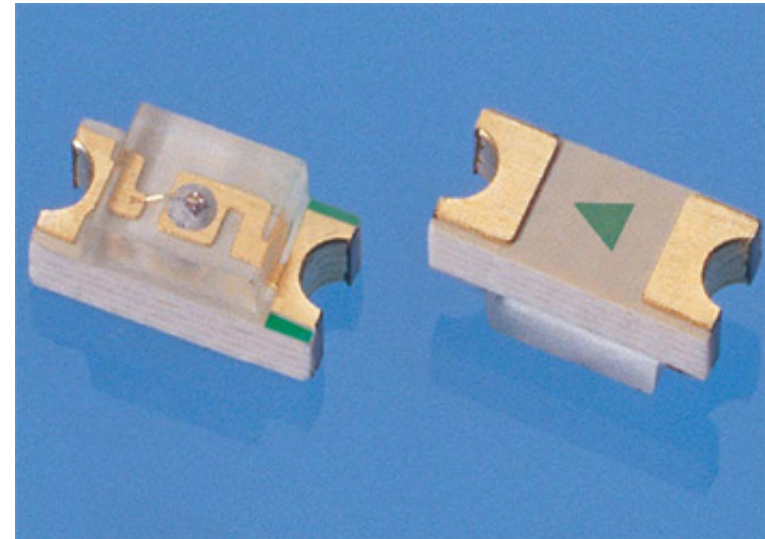


Identification of Card Level Parts.

7. **Vibrator / Motor**

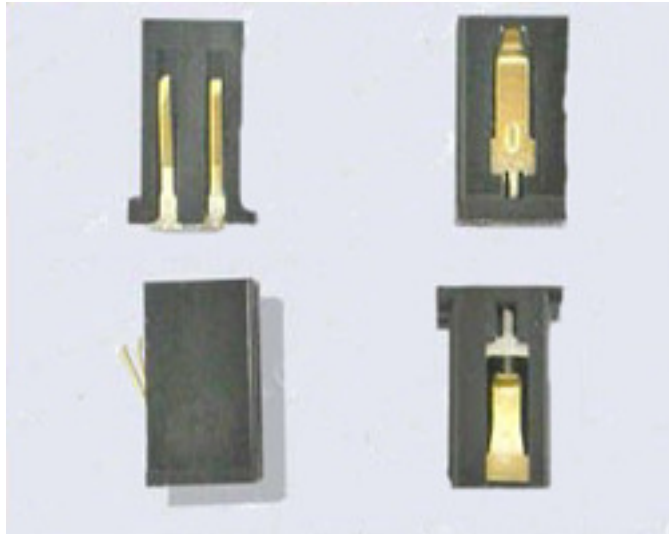


8. **LED**



Identification of Card Level Parts.

9. Charging Connector

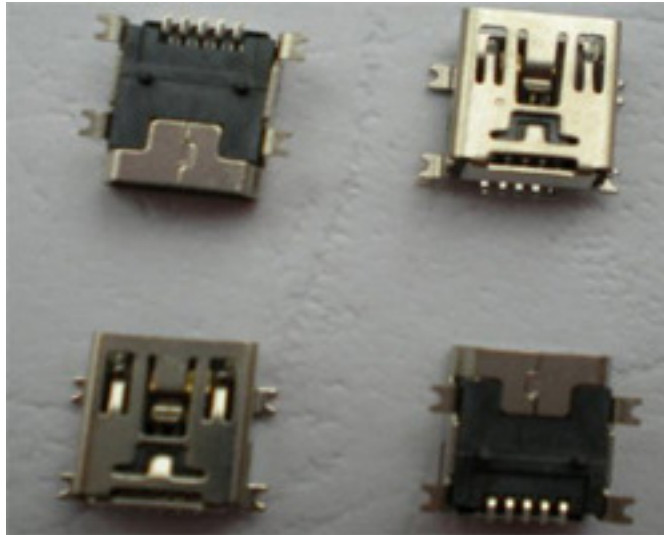


10. Headphone / Earphone Connector



Identification of Card Level Parts.

11. Data Cable Connector



Identification of Card Level Parts.

12. Battery



13. Battery Connector

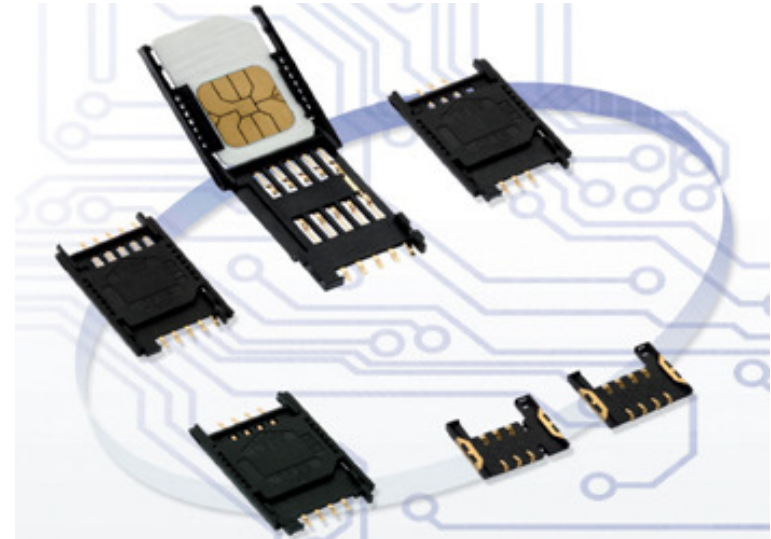


Identification of Card Level Parts.

14. SIM Card



15. SIM Card Connector

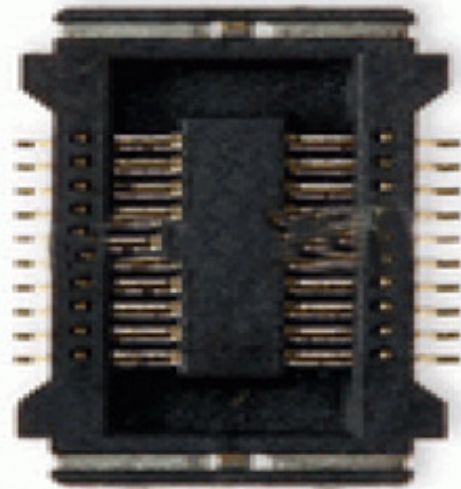


Identification of Card Level Parts.

18. Camera



19. Camera Connector

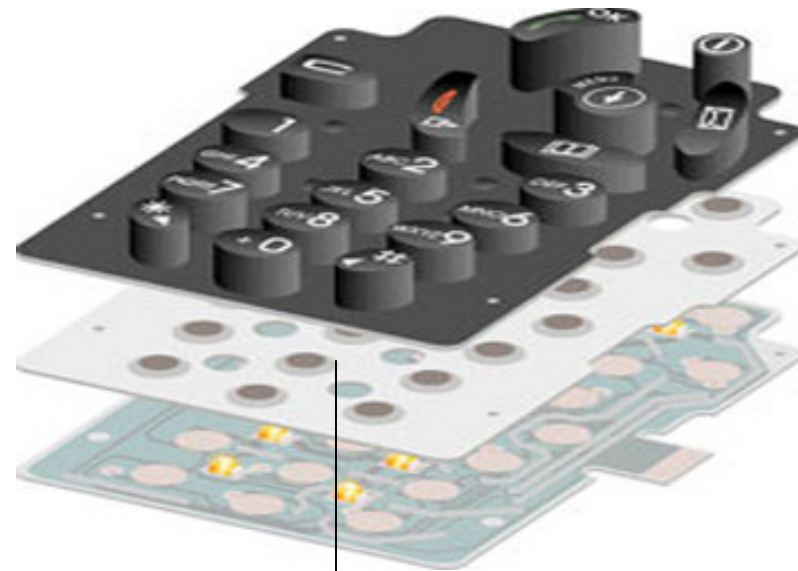


Identification of Card Level Parts.

20. Keypad Button



21. Keypad Carbon / Tickly



Keypad Carbon

Identification of Card Level Parts.

22. Keypad Connector

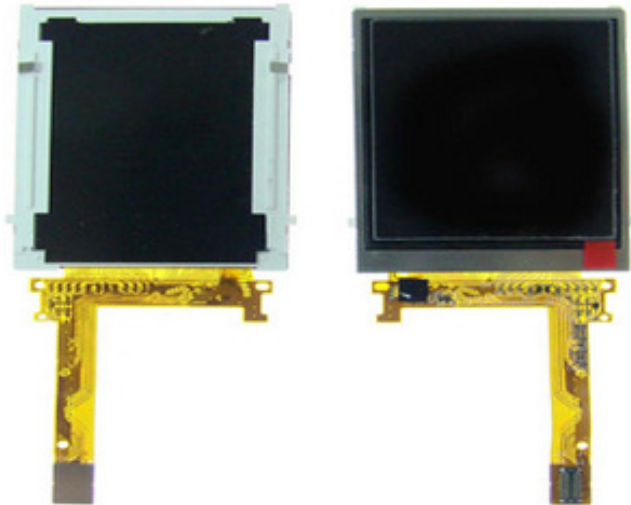


23. ON / OFF Switch

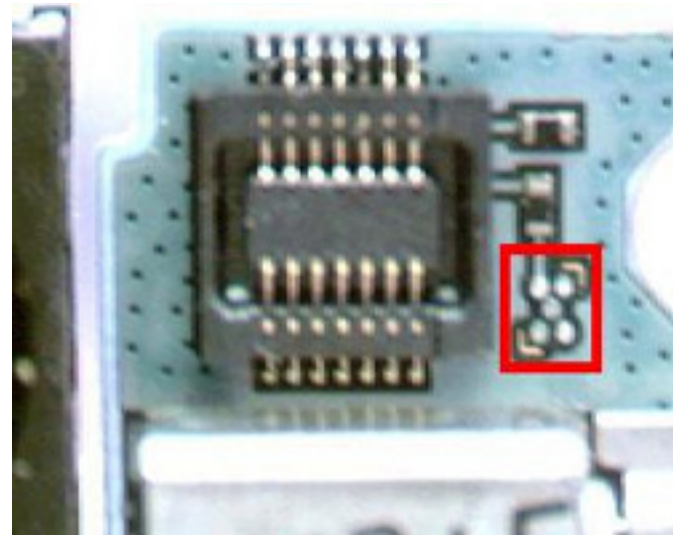


Identification of Card Level Parts.

24. Display

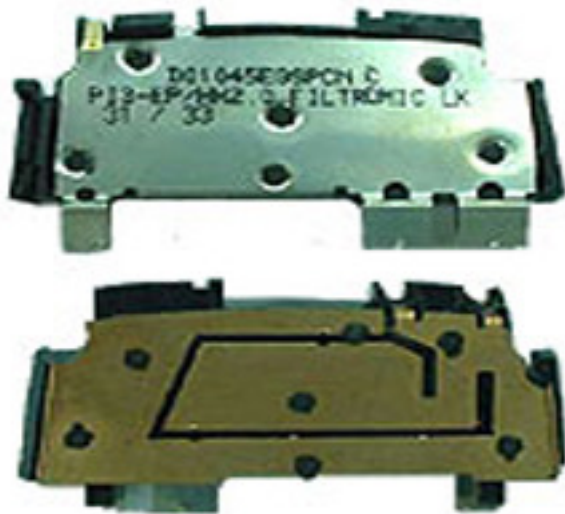


25. Display Connector



Identification of Card Level Parts.

26. Antenna



27. PCB

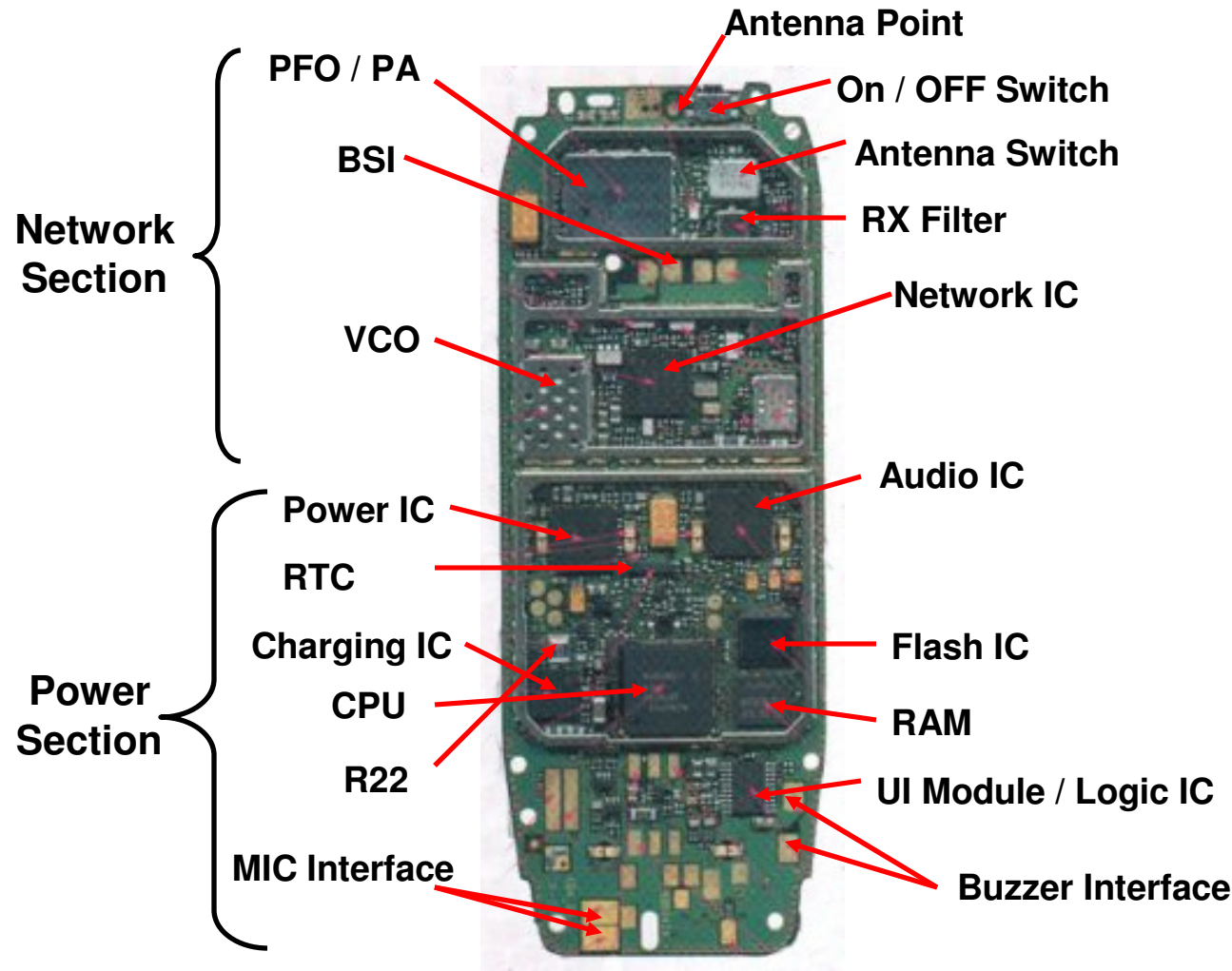


Identification of Card Level Parts.

28. PDA



Nokia 3310 Mobile Phone PCB Diagram



NOTES:

- 1. UEM =**
Logic IC
+ Charging IC
+ Audio IC
+ Power IC
- 2. PFO =**
Antenna
Switch
+ PFO
- 3. Flash IC =**
RAM + Flash
IC

Identification of PCB

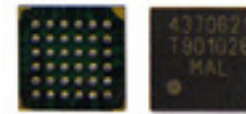
1. **Antenna Point:** The point where antenna is connected is called antenna point.
2. **Network Section:** The section below antenna point and above power section is called network section.
3. **Antenna Switch:** It is found in the network section. It is made from metal and non-metal. It has 16 points or legs.



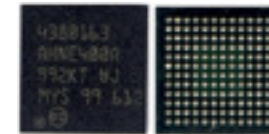
Identification of PCB

4. **In some mobile phones, the antenna switch is merged with PFO.**

5. **PFO: It is present beside the antenna switch.**



6. **Network IC: It is below or beside the antenna switch and PFO.**

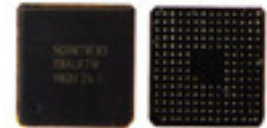


7. **In some mobile phones, the Network IC is merged with the CPU. E.g.: Nokia 1200, 1650, 1208, 1209 etc.**

Identification of PCB

8. **Power Section:** This section is below the Network Section.

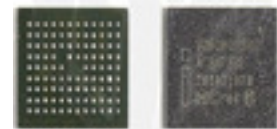
9. **Power IC:** In the Power Section, the IC around which there are several brown-coloured capacitors, is called Power IC. In some mobile phones there are 2 Power IC.



10. **CPU:** In the power section, the largest IC is the CPU. In some sets there are 2 CPU.



11. **Flash IC:** This IC is found beside the CPU.

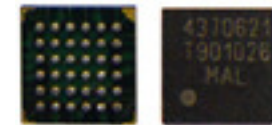


Identification of PCB

12. **Logic IC:** The IC with 20 legs is the Logic IC.



13. **Charging IC:** In the Power Section, the IC beside R22 is the Charging IC.



14. **Audio IC:** The IC parallel to Power IC is the Audio IC.

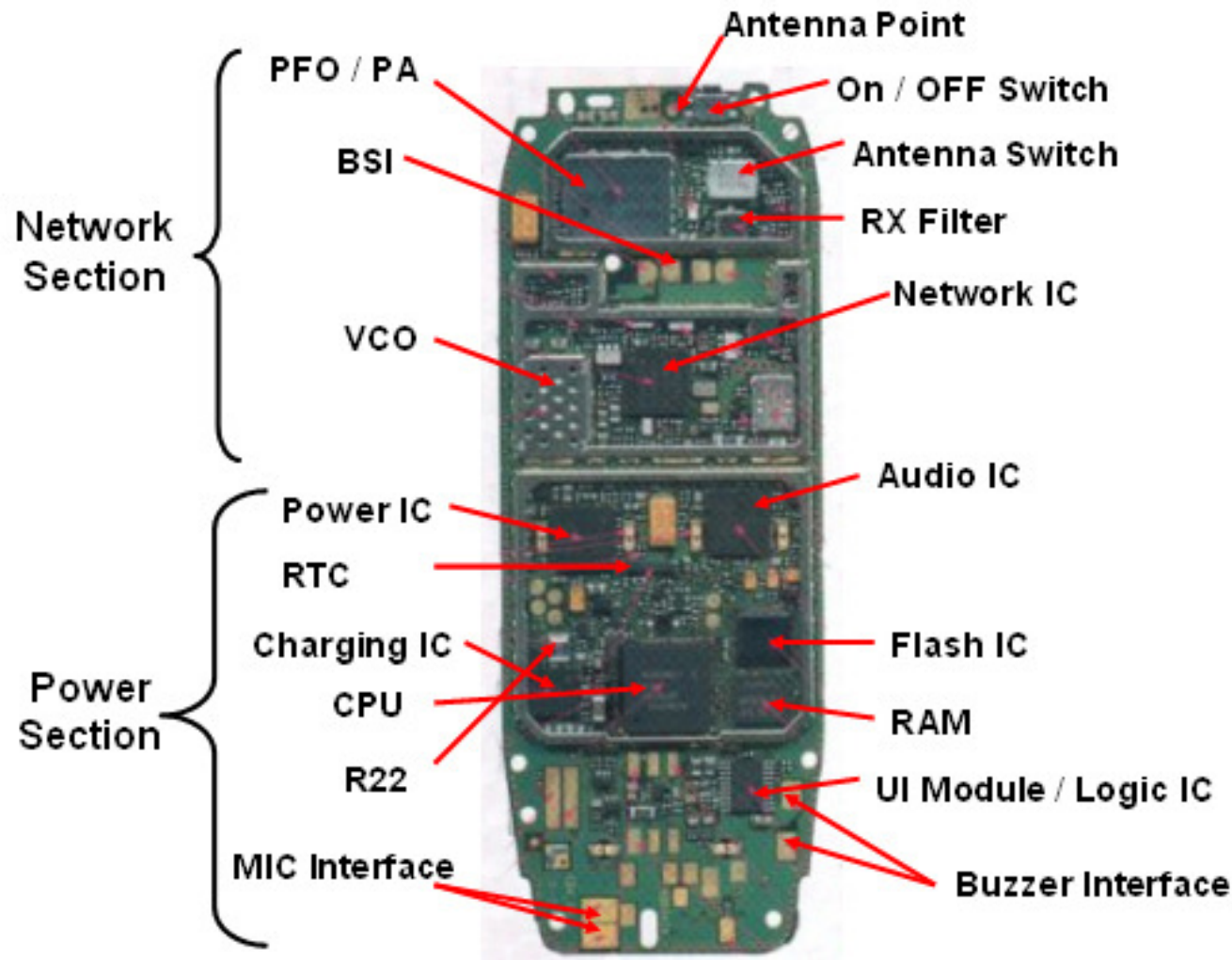


15. **UEM = Logic IC + Charging IC + Audio IC + Power IC**

16. **PFO = Antenna Switch + PFO**

17. **Flash IC = RAM + Flash IC**

Nokia 3310 Mobile Phone PCB Diagram



NOTES:

- UEM =**
Logic IC
+ Charging IC
+ Audio IC
+ Power IC
- PFO =**
Antenna
Switch
+ PFO
- Flash IC =**
RAM + Flash
IC

Definition of Big Parts

1. **Antenna Switch**: It is found in the Network Section of a Mobile Phone and is made up of metal and non-metal. In GSM sets it is found in white colour and in CDMA sets it is found in golden metal.



Work: It searches network and passes forward after tuning.

Faults: If the Antenna Switch is faulty then there will be no network in the mobile phone.

Definition of Big Parts

2. **P.F.O**: It is found near the Antenna Switch in the Network Section of a Mobile Phone. It is also called P.A (Power Amplifier) and Band Pass Filter.



Work: It filters and amplifies network frequency and selects the home network.

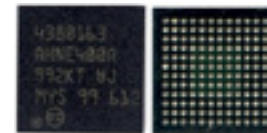
Faults: If the PFO is faulty then there will be no network in the mobile phone. If it gets short then the mobile phone will get dead.

Definition of Big Parts

3. **RF IC / Hager / Network IC**: It is found near the PFO in the Network Section of a Mobile Phone. It is also called RF signal processor.

Work: It works as transmitter and receiver of audio and radio waves according to the instruction from the CPU.

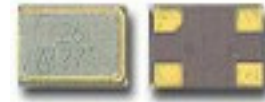
Faults: If the RF IC is faulty then there will be problem with network in the mobile phone. Sometimes mobile phone can even get dead.



Definition of Big Parts

4. **26 MHz Crystal Oscillator**: It is found near the PFO in the Network Section of a Mobile Phone. It is also called Network Crystal. It is made up of metal.

Work: It creates frequency during outgoing calls.



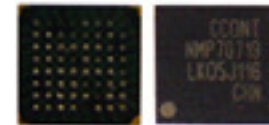
Faults: If this crystal is faulty then there will be no outgoing call and no network in the mobile phone.

Definition of Big Parts

5. **VCO**: It is found near the Network IC in the Network Section of a Mobile Phone.

Work: It sends time, date and voltage to the RF IC / Hager and the CPU. It also creates frequency after taking command from the CPU.

Faults: If it is faulty then there will be no network in the mobile phone and it will display “Call End” or “Call Failed”.



Definition of Big Parts

6. **RX Filter**: It is found in the Network Section of a Mobile Phone.

Work: It filters frequency during incoming calls.

Faults: If it is faulty then there will network problem during incoming calls.



7. **TX Filter**: It is found in the Network Section of a Mobile Phone.

Work: It filters frequency during outgoing calls.

Faults: If it is faulty then there will network problem during outgoing calls.

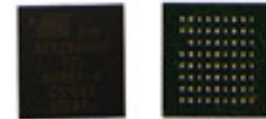


Definition of Big Parts

8. **ROM:** It is found in the Power Section of a Mobile Phone.

Work: It loads current operating program in a Mobile Phone.

Faults: If ROM is faulty then there will software problem in the mobile phone and the set will get dead.



Definition of Big Parts

9. **RAM:** It is found in the Power Section of a Mobile Phone.

Work: It sends and receives commands of the operating program in a mobile phone.

Faults: If RAM is faulty then there will be software problem in the mobile phone and it will get frequently get hanged and the set can even get dead.

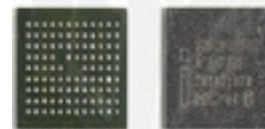


Definition of Big Parts

10. **Flash IC:** It is found in the Power Section of a Mobile Phone.
It is also called EEPROM IC, Memory IC, RAM IC and ROM IC.

Work: Software of the mobile phone is installed in the Flash IC.

Faults: If Flash IC is faulty then the mobile phone will not work properly and it can even get dead.

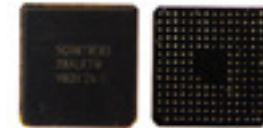


Definition of Big Parts

11. **Power IC:** It is found in the Power Section of a Mobile Phone. There are many small components mainly capacitor around this IC. RTC is near the Power IC

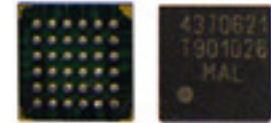
Work: It takes power from the battery and supplies to all other parts of a mobile phone.

Faults: If Power IC is faulty then the set will get dead.



Definition of Big Parts

12. **Charging IC**: It is found in the Power Section near R22.



Work: It takes current from the charger and charge the battery.

Faults: If Charging IC is faulty then the set will not get charged. If the Charging IC is short then the set will get dead.

Definition of Big Parts

13. **RTC (Simple Silicon Crystal)**: It is found in the Power Section near Power IC. It is made up of either metal or non-metal. It is of long shape.

Work: It helps to run the date and time in a mobile phone.



Faults: If RTC is faulty then there will be no date or time in the mobile phone and the set can even get dead.

Definition of Big Parts

14. **CPU**: It is found in the Power Section. It is also called MAD IC, RAP IC and UPP. It is the largest IC on the PCB of a Mobile Phone and it looks different from all other ICs.



Work: It controls all sections of a mobile phone.

Faults: If CPU is faulty then the mobile phone will get dead.

Definition of Big Parts

15. **Logic IC / UI IC**: It is found in any section of a mobile phone. It has 20 pins or legs. It is also called UI IC and Interface IC.

Work: It controls Ringer, Vibrator and LED of a mobile phone.

Faults: If Logic IC / UI IC is faulty then Ringer, Vibrator and LED of mobile phone will not work properly.



Definition of Big Parts

16. **Audio IC:** It is found in Power Section of a mobile phone. It is also called Cobba IC and Melody IC.

Work: It controls Speaker and Microphone of a mobile phone.

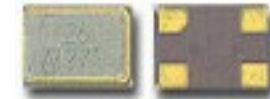
Faults: If Audio IC is faulty then Speaker and Microphone of a mobile phone will not work and the set can even get dead.



Identification of Small Parts

1. **Crystal:** There are 2 types of crystal in a mobile phone:

i) **Network Crystal:** This crystal is found in the Network Section of a Mobile Phone. It is made up of metal.



Network Crystal
/ 26 MHz Crystal Oscillator

Work: It filters network.

Faults: If the Network Crystal is faulty then there will be no network in the mobile phone.

ii) **Simple Silicon Crystal (RTC):** This crystal is found in the Power Section of a mobile phone. It is made up of either metal or non-metal and is of long shape.



Simple Silicon Crystal / RTC

Work: It runs the clock of a mobile phone.

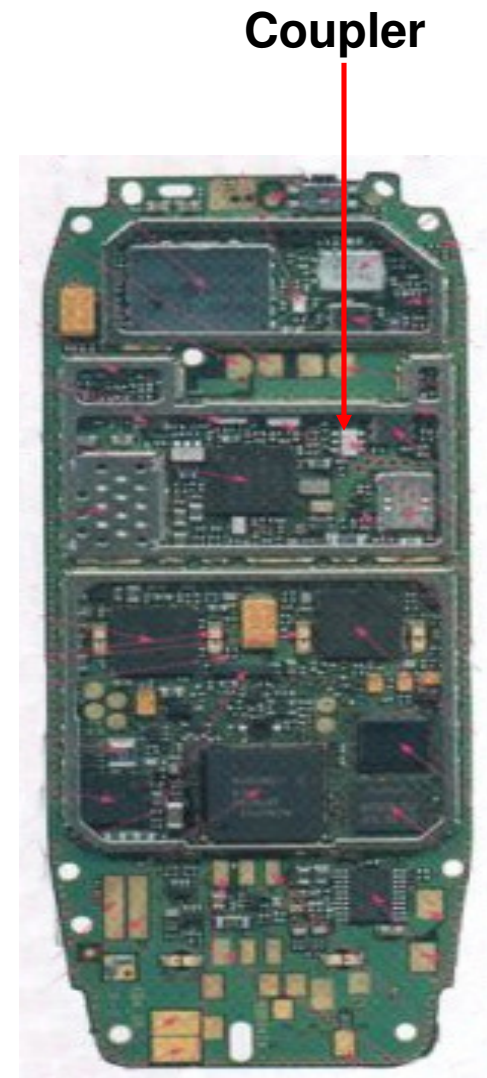
Faults: If this crystal is faulty then the clock of the mobile phone will not work and the set can get dead.

Identification of Small Parts

2. **Coupler:** This electronic component is found in the Network Section of a mobile phone. It is of either black or white colour and has 6 pins bent inside.

Work: It filters network.

Faults: If the coupler is faulty then there will be no network in the mobile phone.



Identification of Small Parts

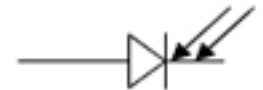
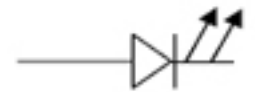
3. **Diode:** Diodes are of 4 types:-

i) **Rectifier Diode:** It is found in black colour and converts AC Current to DC Current. It passes current in one direction. It does not pass current in reverse direction.

ii) **LED:** It is found in white or light yellow colour and emits light.

iii) **Zener Diode:** It is found in charging section. It filters and minimize current and passes forward. It acts as voltage regulator. Zener diode has fixed capacity like 4V, 6V, 8V etc.

iv) **Photo Diode:** It is used for Infrared. It captures Infrared Rays.

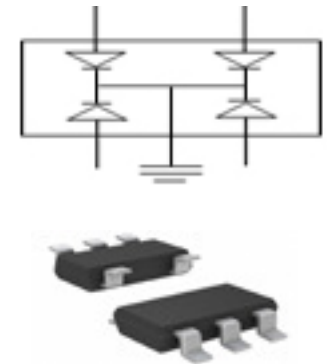


Identification of Small Parts

4. **Transistor:** This electronic component is found in any section of a mobile phone. It is of black colour and it has 3 legs. It does the work of switching.



5. **Regulator:** This electronic component is found in any section of a mobile phone. It is of black colour and has 5 or 6 legs. It filters current and regulates voltage.



Identification of Small Parts

6. **Resistance:** There are 2 types of resistance on a the PCB of a mobile phone:

a) **Chip Resistance:** It can be found in any section of a mobile phone. It is of black colour. In some sets it is also found in blue and green colour. It is the smallest electronic components on the PCB of a mobile phone. It decreases current and passes forward.

b) **Network Resistance:** It can be found in any section of a mobile phone. It is made from 2 or more Chip Resistance.



Identification of Small Parts

7. **Capacitor:** 3 types of capacitor are found in a mobile phone:
- a) **Non-Electrolytic Capacitor:** It is found in any section of a mobile phone. It's height is little more than chip resistance. It can be of light black, yellow or brown in colour. It has no Positive (+) or Negative (-) side. It filters DC current.
 - b) **Electrolytic Capacitor:** It is found in any section of a mobile phone. It's size is larger than non-electrolytic capacitor. It is found in 2 colours – (i) Orange with brown strip: and (ii) Black with white strip. The side with the strip is Positive(+) and the other side is Negative (-). It filters and stores current.
 - c) **Network Capacitor:** It is found in any section of a mobile phone. It is made from 2 or more Non-Electrolytic Capacitors.



Non-Electrolytic Capacitor



Electrolytic Capacitor

Identification of Small Parts

8. **Coil:** It is found in any section of a mobile phone. It is found in many shapes and sizes. Coils are found in 2 colours: (i) Black and white; and (ii) Blue and white. It has binding of copper coil inside. It filters and decreases Current and Voltage.

Boost Coil: It's size is little bigger than coil. It is found in black colour and look like button. It increases current. If this coil gets damaged then it has to be changed.



Identification of Small Parts

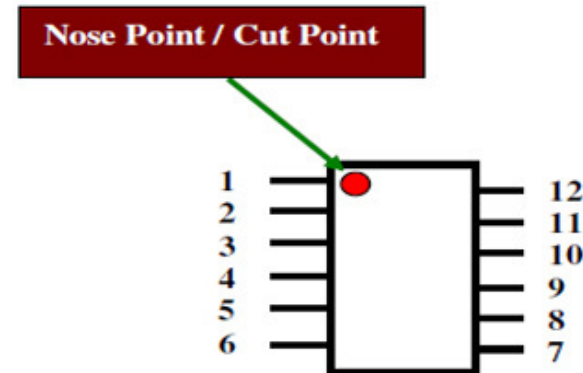
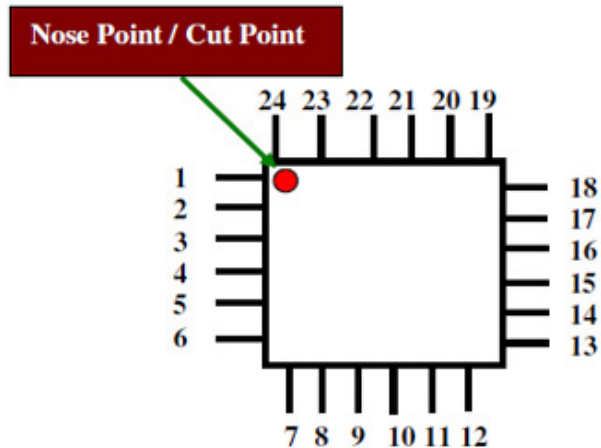
Electronic Components that Will Give Beep When Tested with Multimeter on Buzzer Mode.

If Component is Good	If Component is Faulty
1. Speaker	1. Microphone
2. Coil	2. Capacitor
3. Resistance	3. Diode

IC & Counting

IC (Integrated Circuit): IC is an electronic component that is made up of many other small electronic components like resistance, capacitor, coil, diode, transistor etc. There are 2 types of ICs – (i) **Leg-Type IC**; and (ii) **Ball-Type IC**.

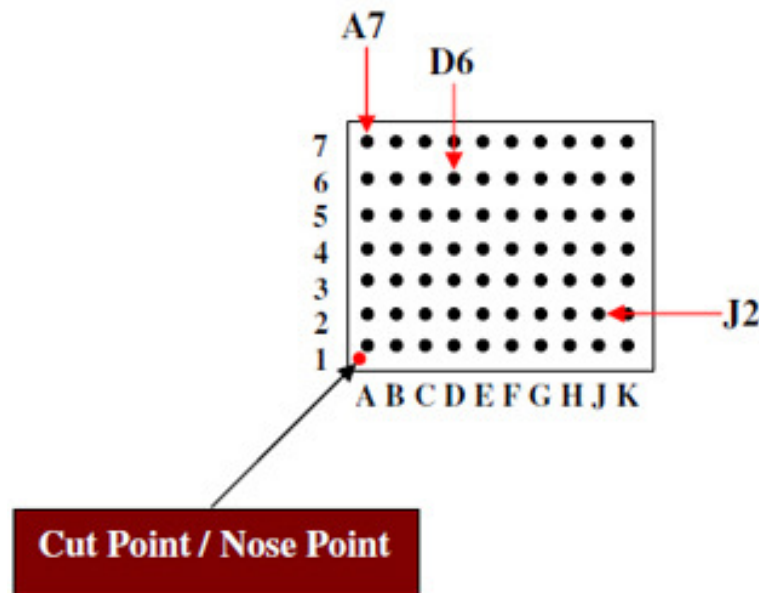
Counting: Leg-Type IC: Counting of leg-type IC starts in Numerical Digit in **Anticlockwise Direction** starting from the **Nose Point or Cut Point**.





IC & Counting

Counting: **Ball-Type IC:** Counting of Ball-type IC is done in Both Clockwise and Anti-Clockwise Direction. Rows are counted in Digit Numbers (1,2,3,4...) in Clockwise Direction. Columns are Counted in Alphabet (A,B,C,D...) in Anti-Clockwise Direction.





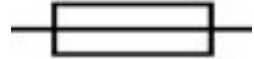

NOTE: When counting Columns, “I” and “O” are omitted because they look like “1” and “0”.





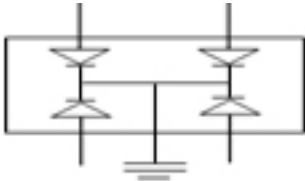


Current

- **Unit of Current:** Ampere or Amp (A).
- **Unit of Voltage:** Volt (V).
- **Current:** Flow of Electric Charge through a Conductive Medium.
- **Types of Current:** (1) Alternate Current (AC) and (2) Direct Current (DC).
- **Alternate Current (AC):** The Movement of Electric Charge Periodically Reverses Direction. E.g: Power Substation. 
- **Direct Current (DC):** The Movement of Electric Charge is in One Direction. E.g: Power from Battery. 

Circuit (CKT) Symbol

1. **AC Current:** 
2. **DC Current:** 
3. **Capacitor:** 
4. **Coil:** 
5. **Fuse:** 
6. **Resistance:** 

8. **Diode:** 
9. **LED:** 
10. **Transistor:** 
11. **Crystal:** 
12. **Regulator:** 

Ringer: Faults & Solution

- **Ringer:** Type of component that rings or plays loud sound is called Ringer. It is also called by several other names like – I.H.F Speaker, Buzzer, Melody etc.

- **Faults:**

1. Ringer not working.
2. Less sound from the Ringer.
3. Sound coming from Ringer but with interruption.
4. Sound not clear.

- **Solution:**

1. Check Ringer Settings in Mobile Phone. Check Ringer Volume and Silent Mode. ([See Video](#))
2. Open Mobile Phone and Clean Ringer Point and Ringer Connector. ([See Video](#))
3. Check Ringer by Keeping the Multimeter in Buzzer Mode. Value must be 8 ~ 10 Ohm. If the Value is not between 8~10 Ohm then change the Ringer. ([See Video](#))
4. Check Track of Ringer Section. Do Jumper Wherever required. ([See Video](#))
5. Check Ringer IC. Heat or Change if Required. ([See Video](#))
6. UEM / Logic IC: Heat, Reball or Change. ([See Video](#))
7. CPU: Heat, Reball or Change. ([See Video](#))

NOTES:

1. If there is less sound from the Ringer then change the Ringer.
2. If the problem is not solved then heat or change the Ringer IC.

Vibrator: Faults & Solution

- **Vibrator:** Type of component that vibrates. It is also called Motor. Vibrator is controlled by Logic IC or Power IC.

- **Faults:**
 1. Vibrator not working.
 2. Vibration with interruption.
 3. Vibration Hangs.

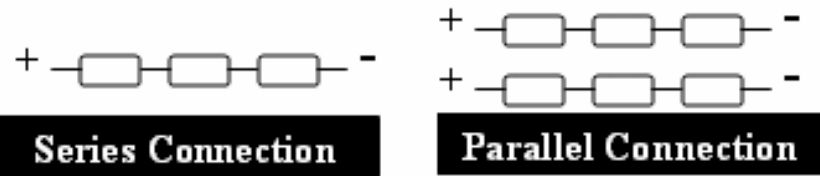
- **Solution:**
 1. Check Vibrator Settings in Mobile Phone. Check if Vibrator is ON or OFF.
 2. Open Mobile Phone and Clean Vibrator Tips Connector.
 3. Check Vibrator by Keeping the Multimeter in Buzzer Mode. Value must be 8~16 Ohm. If the Value is not between 8~16 Ohm then change the Vibrator / Motor.
 4. Check Track of Vibrator Section. Do Jumper Wherever required.
 5. UEM / Logic IC / Power IC: Heat, Reball or Change.
 6. CPU: Heat, Reball or Change.

Light: Faults & Solution

- **LED:** Type of component that generates light in the Mobile Phone. These are generally LED or Light Emitting Diode.

- **Faults:**

1. No Light.
2. Light in only Keypad or Display.
3. Some lights not working.



- **Solution:**

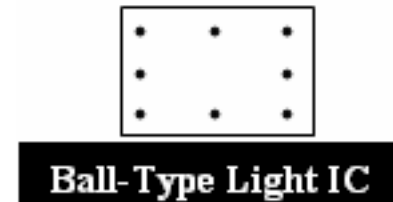
1. Check Light Settings.
2. Resold all LED. There are 2 types of connection in the Light Section of a Mobile Phone: (i) Series Connection; and (ii) Parallel Connection.
3. Change Display and Check.
4. Keep Multimeter in Buzzer Mode and Check LED. If LED is Good then it will Glow. If LED is Faulty then it will Not Glow.
5. Change LED or Jumper.
6. Check Track and Jumper if Required.
7. Check Boosting Coil and Change if Required.
8. Light IC: Heat or Change.
9. Power IC: Hear, Reball of Change.

Light: Faults & Solution

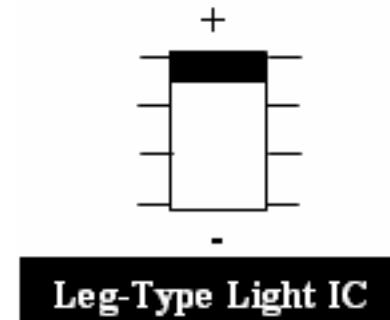
■ **Note:**

1. In all Nokia Mobile Phones, there are 2 Types of Light IC:

(i) **Ball-Type Light IC:** Beside the Boosting Coil, There is a Small-Sized Ball-Type IC. When this IC is Desoldered, There are 8 Ball Underneath. This is the Light IC.



(ii) **Leg-Type Light IC:** Beside the Boosting Coil, There is a Small-Sized, 4+4 = 8-Leg-Type IC. This is Light IC.



2. Light IC = Back Light + Display Light

Earpiece: Faults & Solution

- **Earpiece:** Type of component that helps to listen to sound during phone call. It is also called Speaker or Ear Speaker. Earpiece is controlled by Audio IC or Power IC (UEM).

- **Faults:**

1. No sound during phone call.
2. Less sound during phone call.
3. Sound with interruption.

- **Solution:**

1. Check Speaker Volume during Phone Call.
2. Check Earpiece / Speaker by Keeping the Multimeter in Buzzer Mode. Value must be 25~35 Ohm. If the Value is not between 25~35 Ohm then change the Earpiece / Speaker.
3. Check Track of Earpiece Section. Do Jumper Wherever required.
4. UEM / Audio IC: Heat, Reball or Change.
5. CPU: Heat, Reball or Change.

Note:

1. If there is less sound or sound is not clear during phone call then change the speaker.

Microphone: Faults & Solution

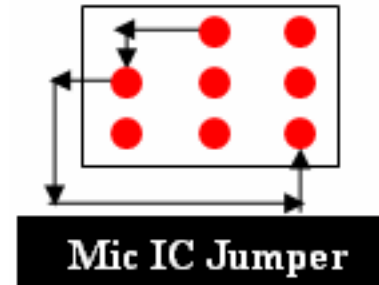
- **Microphone:** Type of component that helps to transmit sound from one mobile phone to another during phone call.

- **Faults:**

1. No sound or Less Sound during phone call.
2. Sound with interruption or Changed sound.

- **Solution:**

1. Check Microphone settings.
2. Check and clean Microphone Tips and Connector.
3. Check Microphone by Keeping the Multimeter in Buzzer Mode. Value must be 600~1800 Ohm. If the Value is not between 600~1800 Ohm then change the Microphone. **NOTE: Only one side will give value. The other side will not give any value.**
4. Check Track of Microphone Section. Do Jumper Wherever required.
5. Microphone IC: Heat or Change.
6. UEM / Audio IC / Power IC: Heat, Reball or Change.
7. CPU: Heat, Reball or Change.



Note:

1. If there is less sound or sound is not clear during phone call then change the Microphone.

Headphone: Faults & Solution

- **Headphone:** Type of component that does the job of Mic and Speaker separately. When we insert Headphone, then Speaker and Microphone of the Mobile Phone Gets Disconnected. Headphone is controlled by C.P.U.

- **Faults:**

1. No sound from Headphone or sound from only one side of the Headphone.
2. Sound does not go from the Mic of the Headphone.

- **Solution:**

1. Change the Headphone and Check.
2. Clean Headphone Jack and Connector.
3. Resolder or Change the Headphone Connector.
4. Check Track of Headphone Section. Do Jumper Wherever required.
5. Headphone IC: Heat or Change.
6. UEM / Audio IC / Power IC: Heat, Reball or Change.
7. CPU: Heat, Reball or Change.



Note:

1. If there is symbol of Headphone without inserting the Headphone then there is problem with the CPU. To solve the problem, clean or change the Headphone Connector OR Short the Headphone Connector.

Keypad: Faults & Solution

- **Keypad:** Type of component that helps to operate a mobile phone. Some mobile phones are screen touch and are operated by PDA.

- **Faults:**

1. No Key Working or only Some Key Working.
2. Keys need more pressure to work. Or when pressed a key works continuously.
3. One key is pressed and some other key works OR when one key is pressed, some other key works simultaneously.

- **Solution:**

1. Check Facial of the Keypad.
2. Clean Keypad Tikli and Keypad Points.
3. Keep Multimeter in Buzzer Mode and Check Row and Column of the Keypad. If there is Beep Sound then Pad is OK.
4. Keypad IC / Interface IC: Heat or Change.
5. CPU: Heat, Reball or Change.



Note:

1. In a Mobile Phone, when we press a Key and it works very slow then Reload Software to Solve the Problem.
2. In all Nokia Mobile Phones, if only some key works or non of the keys are working then change the Keypad IC to solve the Problem.
3. If Keypad problem is not solved by Hardware, then Reload Software in the Mobile Phone to Solve the Problem.

Screen Touch: Faults & Solution

- **Screen Touch:** Type of component that helps to operate a mobile phone by touching the screen. Touch Screen is available in different sizes. It normally has 4 Points Namely: - (+), (-), (RX), (TX). Screen Touch is also called PDA. It is controlled by the CPU. In some Mobile Phones there is an Interface IC called PDA IC or Screen Touch IC.

- **Faults:**

1. Screen Touch not Working.
2. Only Half Screen Touch Works.
3. One key is pressed and some other key works.

- **Solution:**

1. Check Settings if the Mobile Phone has Both Keypad and Touch Screen.
2. Clean and Resold PDA Tips and PDA Connector.
3. Change PDA.
4. Check Track of the PDA Section and Jumper if Required.
5. PDA IC: Heat or Change.
6. CPU: Heat, Reball or Change.

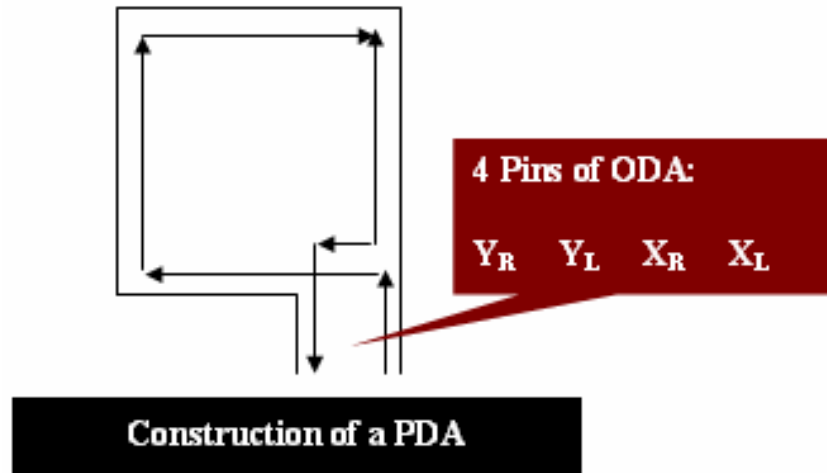
Note:

1. If the PDA Problem is not solved by Hardware Then Reload Software to Solve the Problem.

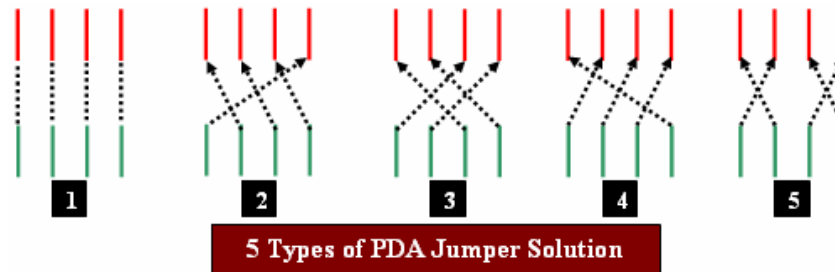
Screen Touch: Faults & Solution

Note:

2. Construction of PDA:



3. Any PDA of SAME Size will Fit any Mobile Phone. Any One of the Following 5 Jumper Settings will Work:



Display: Faults & Solution

- **Display:** The Display Section of a Mobile Phone is controlled by the CPU. In some Mobile Phones, there is an Interface IC called Display IC between the Display and the CPU.

- **Faults:**
 1. Nothing shows on the Display or Display is Blank.
 2. Only Half Display Working.
 3. Display Broken or Crack.
 4. Sometimes Display Works and Sometimes it doesn't work.
 5. There is only light in the Display and nothing else.

- **Solution:**
 1. Clean Display Tips and Display Connector and Reset the Display.
 2. Resold the Display Connector.
 3. Change the Display.
 4. Check Display Track.
 5. Resold or Change Display IC.
 6. C.P.U: Heat, Reball or Change.

Display: Faults & Solution

Note:

- If the Display is Up-Side Down or only Half Display is Working or if the Display is Broken then Change the Display.
- If the Display is White and the Display is changed but the problem is not solved then Reload Software in the Mobile Phone.
- In some Mobile Phone Sets, like Nokia 6600, N72, when the set is Switched ON, the Nokia Logo Appears and then it Disappears. This is problem of the BOOT IC. Change the Boot IC.
- In slider mobile phone handsets, if there is display problem then it is mainly because of Display Track (Patta) that connects the Display with the Mobile Phone PCB. This will create White Display or Display will not work properly. Change the Display Track to solve the problem.