



# NOAHTECH COMPUTER REPAIRING AND SERVICES

NO: 3A-1, JALAN CEMPAKA SD 12/2, BANDAR SRI DAMANSARA,  
52200 KUALA LUMPUR.  
TEL: 03-62778522 / 62778523 FAX: 03-62778521

## Basic Practical CRT Monitor Repair

### Topics Covered

Course Code BPM01  
Course Length: 3 days

#### Day 1

9.00am – 9.30am	<p>How to execute a Monitor Testing Program</p> <ul style="list-style-type: none"> <li>*Explains the functions keys F1 to F10</li> <li>*Explains the alphabet keys A,B,C,D &amp; E</li> </ul> <p>(Participants will be able to run an appropriate program to solve monitor problem)</p>
9.30am- 10.45am	<p><b>Removing Monitor Cover</b></p> <ul style="list-style-type: none"> <li>-How to use a gently manner to remove a monitor cover</li> <li>* (Participants will be able to remove monitor cover without fear of breaking it)</li> <li>*(Use Sponge to avoid scratches on the CRT screen)</li> </ul> <p><b>Safety Precautions</b></p> <ul style="list-style-type: none"> <li>*Explain about the safety precaution when comes to monitor repair</li> <li>*SMPS Filter Capacitor</li> <li>*Discharging CRT anode</li> </ul>
10.45am – 11.00am	Tea Break
11.00am – 1.00pm	<ul style="list-style-type: none"> <li>*High Voltage (24KV)</li> <li>*Electrical shocks</li> <li>*Fire</li> <li>*Isolation Transformer</li> <li>*Wearing goggles (especially tube)</li> <li>*HOT Ground</li> <li>*Lifting</li> <li>*(Participants will be able to know:-</li> <li>- The danger of electrical shock and high voltage.</li> <li>- How to avoid electrical shocks</li> <li>- How to discharge the filter cap and anode voltage</li> </ul>

1.00pm- 2.00pm	Lunch Break
2.00pm- 3.30pm	<b>Explanation on each section of a monitor</b> *Switch mode power supply (SMPS) *Cathode Ray Tube (CRT) *Video Board *High Voltage Section *Horizontal Section *Vertical Section *Flyback Transformer *Micro-P IC *Horizontal Output Transistor (HOT) *Degaussing Coil *Deflection Yoke Coil *Switch Mode Power Transformer *Posistor *B+ FET *Monitor Controls *EEPROM IC *(Participants will be able to differentiate each section of a monitor circuit)
3.30pm-3.45pm	-Tea Break
3.45pm-5.00pm	<b>-How A Monitor Work</b> -Explain the functions of a monitor based on a basic monitor block diagram *SMPS *CRT *Video Signal *Video Driver Circuit *Video Output Circuit *Micro-P *EEPROM *Flyback Transformer *B+ Circuit *Horizontal Signal *Horizontal Oscillator *Horizontal Drive *Horizontal Output *Horizontal Deflection Coil *Vertical Signal *Vertical Oscillator *Vertical Output *Vertical Deflection Coil *(Participants will be able to know where to begin troubleshooting when problems occur)

## Day 2

9.00am- 10.45am	<p><b>How To Read Monitor Schematic Diagram</b></p> <p>Describe to students every section of a monitor circuit base on a monitor schematic diagram</p> <p>*(Participants will be able to read a monitor schematic diagram and start troubleshooting, recognize monitor components symbols, for example: Flyback Transformer, SMPS Transformer, CRT and etc.</p>
10.45am-11.00am	-Tea Break
11.00am- 1.00pm	<p><b>-Removing Main Board From A Monitor</b></p> <ul style="list-style-type: none"><li>- To Discharge All Capacitors With Resistor And Screw Driver</li><li>- To remove all cables connected to CRT</li><li>- To Install back the main Board</li></ul> <p>Parts involved:</p> <ul style="list-style-type: none"><li>*Yoke Coil</li><li>*Degaussing Coil</li><li>*CRT Grounds</li><li>*Anode Cap</li><li>*Video Board</li><li>*Monitor Controls</li></ul> <p>*(Participants will be able to:-</p> <ul style="list-style-type: none"><li>- Remove and install main board without fear of getting electrical shock</li><li>- Double confirm before switching on the MONITOR otherwise it may not work.)</li></ul>
1.00pm-2.00pm	Lunch Break
2.00pm- 3.30pm	<p><b>Flyback Transformer / SMPS / B+ Coil / Horizontal Yoke Coil</b></p> <p>*Remove &amp; Install a flyback transformer / SMPS / B+ Coil / Horizontal Yoke Coil</p> <p>*To check flyback primary transformer winding if good or bad with a flyback Tester. Answer will be filled by participant.</p> <p>*To check flyback internal capacitor if is good or shorted with an analog multimeter. Answer to be filled by participant</p> <p>*To check flyback internal capacitor if is good or shorted with digital capacitor meter. Answer to be filedl by participant.</p>

3.30pm-3.45pm	<p>*To check SMPS primary winding if is good or bad with Flyback Tester. Answer to be filled by participant.</p> <p>Tea Break</p>
3.45pm- 5.00pm	<p>*To check B+ coil if it good or bad with Flyback Tester. Answer to be filled by participant.</p> <p>*To check Horizontal Yoke Coil if it is good or bad with Flyback Tester. Answer to be filled by participant.</p> <p>*(Participant will be able to know if flyback, SMPS, B+ coil and Horizontal Yoke Coil is good or bad</p> <p>-Diagnose a problem caused by a defective Flyback, SMPS, B+ Coil and Horizontal Yoke Coil)</p>

### **Day 3**

9.00am- 9.45am	<p><b>Checking VGA Signal Cable</b></p> <p>*To check if there is any broken wires in VGA signal cable.</p> <p>*To explain each functions of a signal pin 1,2,3,13 and 14</p> <p>*(Participant will be able to know:-</p> <ul style="list-style-type: none"> <li>-if a monitor colors and sync problem are caused by a defective signal cable</li> <li>-how to fabricate a new VGA connector in case there is a broken wire inside the VGA signal cable.)</li> </ul>
9.45am-10.45am	<p><b>Monitor Blur Buster</b></p> <p>*Install a Monitor Blur Buster</p> <p>*Remove a Monitor Blur Buster</p> <p>*Explain the purpose of Monitor Blur Buster</p> <p>*(Participant will be able to:-</p> <ul style="list-style-type: none"> <li>-Install a Monitor Blur Buster if a monitor blur</li> <li>-Use Monitor Blur Buster to diagnose to see if blur are caused by flyback or picture tube.</li> </ul>
10.45am-11.00am	<p>Tea break</p>
11.00am-1.00pm	<p><b>Making Internal Adjustment</b></p> <p>*To make voltage measurement in some critical test points within the monitor circuit such as</p> <ul style="list-style-type: none"> <li>- Measure AC Voltage in</li> <li>- SMPS filter cap</li> </ul>

	<ul style="list-style-type: none"> <li>- All Secondary Voltage</li> <li>- Voltage regulator input / output</li> <li>- Micro-P</li> <li>- Focus</li> <li>- Anode</li> <li>- B+ pin</li> <li>- Display IC VCC</li> <li>- Horizontal IC VCC</li> <li>- Vertical IC VCC</li> <li>- Heater</li> <li>- G1</li> <li>- G2</li> <li>- R, G, B Cathode</li> <li>- EEPROM</li> </ul> <p>*(Participant will be able to:-  -Troubleshooting minor monitor problems base on voltage measurement  -Know where to begin troubleshooting when the voltage reading in incorrect.)</p>
1.00pm-2.00pm	Lunch Break
2.00pm- 4.45pm	<p><b>Illustration Of Monitor Problems &amp; Solutions</b></p> <p>*To explore participant to real life monitor problem and suggested solution</p> <ul style="list-style-type: none"> <li>- No Power</li> <li>- No display</li> <li>- No Raster but have picture</li> <li>- Raster too bright (with retrace line)</li> <li>- Blur display (poor focus)</li> <li>- Dim Display</li> <li>- Horizontal size big</li> <li>- Horizontal size small</li> <li>- Cannot save current setting</li> <li>- Monitor has tic-tic sound</li> <li>- One Horizontal Line</li> <li>- Vertical size big</li> <li>- Vertical size small</li> <li>- No green color (only purple color)</li> <li>- No red color (only cyan color)</li> <li>- No blue color (only yellow color)</li> <li>- Adjust brightness no effect</li> <li>- Pincushion out</li> <li>- No vertical sync</li> <li>- No horizontal sync</li> <li>- Vertical overlapping</li> <li>- Power Blink</li> </ul>

4.45pm- 5.00pm	<ul style="list-style-type: none"> <li>- One vertical line</li> <li>*(Participant will be able to:-</li> <li>-Diagnose monitor problem base on symptom appeared on the monitor screen</li> <li>-Questions/Answers and Presentation Certificate of Attendance</li> </ul>
----------------	---

For more information please contact us at

<http://www.noahtechelronicstraining.com/contact-us>