

• MODULE E1: SMD ELECTRONICS:

In This Foundation Module, You Will Learn:

- Basic of electronics, assembling and soldering, identify electronics components,
- Types of circuits and testing electronics components.

E1 : BASIC ELECTRONICS ANALOG, DIGITAL, PRACTICE (SHORT)

1. **AC, DC, Electronics**, (Electrical, Current, Voltage, Watt, Ampere, Types Of Circuit, Measure.)
2. **Types of Material**, Working Detail of Circuit, Different Components.
3. **Resistor**: Types, Uses, SMD, Measure, Value.
4. **Capacitor**: Work, Types, Ceramic, Electrolyte, Tantalum
5. **Induction / Coil**: Work, Types, Check.
6. **Transformer**: Work, Types, Step Up, Step Down, SMD, Checks.
7. **Diode**: Semiconductor, N Type, P Type, Work, Types, Testing.
8. **Transistor**: Work, Types, NPN, PNP, Testing Method, Uses.
9. **FET, MOSFET**: Work, Types, NPN, PNP, Testing, Single Channel, Dual Channel, Testing, Uses.
10. **Other Components**: Fuse, Crystal, RTC.
11. **Digital Electronics**, Types of Number Systems, Conversion.
12. **Types Of Logic Gate**: AND, OR NOT NOR, NAND, Flip Flop, Exclusive.
13. **Study of Different** Chip Datasheet with Different Gates and Working Idea of Different Chips.
14. **Soldering**, Removing, Cold Testing, Warm Testing, Procedure of Components.
15. **Project on Electronics**, practical Idea of Using Different Components. Resistor, Capacitor Diode Transistor, MOSFET, Fuse, Coil, Led, Switch etc.
16. **Soldering and Desoldering Practice**
Revision and Exams.

• MODULE C2 : SMPS, LCD, LED REPAIRING CONCEPT:

In This Foundation Module, You Will Learn:

- Working concept of power supply smps, understanding internal circuit of lcd & led

C2 : SMPS LCD LED REPAIRING CONCEPT

1. SMPS repairing
2. Lcd , inverter repairing concept
3. Hard disk basic troubleshooting
4. Ram basic service
5. Dvd rom Basic service

• MODULE C3 : COMPUTER DEKSTOP BOARD REPAIRING TRAINING CONCEPT:

In This Foundation Module, You Will Learn:

- Understand how desktop motherboard work
- Troubleshoot problems in desktop board
- Bios update process,
- Fault finding thru multimeter, CRO

C3 : COMPUTER MOTHERBOARD REPAIRING TRAINING

⇒ Module 3.1 WORKING FUNCTION OF DIFFERENT CHIP AND MAIN SIGNAL TRACING

1. Basic computer & Block diagrams of computer motherboards, frame structure
2. Basic working detail of computer motherboards, power on signals
3. SMPS basic working and different voltages, pson, pgood, sus, 12v, 5v, 3.3v vrm
4. MOSFETS & coil used, switching and linear output
5. Testing & understand vrm section offline and online with multimeter & cro
6. Understand Power on sequence of computer motherboard (K8V-MX)
7. Clock generator chip, Clock crystal, different frequency, voltage x1, x2,
8. Types of CPU socket and CPU, main signals of CPU(vid, vcccore, shdn, vron)
 - a. VRM section detail with different phase for CPU
9. Northbridge working concept, main signals, different power
 - 9.a. RAM, Types, main signals, linear output, voltage,
 - 9.b. VGA display connector
 - 9.c. AGP slot
 - 9.d. Graphic chip
10. South bridge working concept, main signals, different power
 - 10.a. Hard disk, CD ROM connection, important signals
 - 10.b. fdd connector
 - 10.c. USB connector
 - 10.d. sata connector
 - 10.e. pci slot
 - 10.f. bios chip, main pins detail, identify, cmos battery
 - 10.g. RTC, clock crystal,
 - 10.h. PCI / ISA details pin out, important signals detail
11. LAN and audio chip, main signals, connection with socket
12. I/O controller working concept, main signals, different power
 - 12.a. Com port
 - 12.b. Ps2 connection
 - 12.c. Printer port connection
 - 12.d. Cpu temperature
 - 12.e. Power controller, on/off, vrmon, etc
 - 12.f. fan controller
13. PCI express /mini pci AGP slot, Testing signals on pci agp slots

⇒ Module 3.2 MOTHERBOARD FAULT FINDING

14. Common fault chart and solution steps of computer motherboard
15. Repairing steps of motherboard identify problems
16. Debug card details, use of Debug card, common error code
17. Testing with multimeter, CRO different signals of motherboard
* pson, power good, 12v, 5v, 3.3v, 2.5v 1.5v 1.8v, 5vsus, reset signals, vid signals, rtc crystal, cmos battery, clock crystal, address, data buses, bios chip,
18. Slot tester and use details, cpu, ram, pci, agp
19. Reset signals detail, testing reset signals
20. Bios update

⇒ Module 3.3 BGA REPAIRING AND REBALLING

21. Washing, Cleaning, drying, Dry solder problem solution of motherboard

22. Introduction to BGA machines, used, temperature setting,
23. ICs rebelling, BGA ball arrangement, practice., Using BGA machine
24. Removing and inserting different chips practice (video & step)
25. Removing & replacing sockets , CPU , RAM, PS2, COM ETC
26. DEMO FOR OTHER PRODUCTS AVAILABLE
27. Chip and ics to be stock