

DR LAPCARE TECHNICAL INSTITUTE (PUNE)

Course Title

Advance Laptop Chip Level Repairing Course- L4

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BASIC REPAIR COURSE FOR FRESHER'S:

MODULE-1

In this module, 1st 20 days we will provide very basic about desktop and laptop training, theory with 100% practical. This module makes understanding laptop and desktop repairing easier and interesting, this module is for those who do not have an electronics background. The only reason behind this is that you become familiar with electronic components and circuits so that it is easy to do advance chip level training.

Basic Electronics Introduction:

Introduction to linear electronics, Basic understanding of current, AC/DC circuit, Voltage AC/DC and their measuring units, Types of signals (Analog & Digital), Types of Circuits, Current directions and Identification of Shorting Problems...

Analog Electronic Components:

- Study of circuit elements and passive components (with special reference to symbols, denoting letter, function, types, specifications and applications) – According to real shape on motherboard both SMD & DIP type & fault finding...
- REGISTER
- CAPACITOR
- INDUCTOR/ COIL
- DIODE
- BIPOLAR JUNCTION TRANSISTOR (BJT)
- CRYSTAL, RTC (BLUE CLK 14.318MHZ, GREEN CLK 24 MHZ, 25MHZ & RTC 32.768 KHZ)

- MOSFET {VGS(+), VGS(-)}
- SENSING RESISTOR
- IDENTIFICATION & TESTING OF IC's CHIPS, SOCKETS, PORTS & SLOTS
- SOLDERING & DESOLDERING PRACTICE

DIGITAL ELECTRONICS:

- Types of Number system, binary, octal, Hex, Conversion of Number Systems
- Types of Gate: - AND, NAND, OR, NOT & NOR etc.

MODULE-2

- SUPPLY SEQUENCE
- CPU SUPPLY CHIP FUNCTION AND SOLUTION
- RAM SUPPLY PROBLEM AND SOLUTION
- GMCH, PCH, ICH SUPPLY CHIP FUNCTION
- STEPDOWN SUPPLY FUNCTION
- CLOCK AND RTC FUNCTION
- USB, SATA PROBLEM AND SOLUTION
- AUDIO, LAN, VGA PROBLEM AND SOLUTION
- ROM (BIOS) PIN DETAILS
- BIOS FLASHING AND PROGRAMMING
- PS-ON AND TRIGGER SWITCH
- SMPS DETAILS

BASIC LAPTOP REPAIRING COURSE FOR FRESHER'S:

MODULE-3

- BASIC ELECTRONIC COMPONENTS
- SUPPLY SEQUENCE
- CPU SUPPLY CIRCUIT
- CPU THERMAL SECTION
- RAM SUPPLY CIRCUIT
- HUB, PCH & SOC ARCHITECTURE
- 3V 5V STANDBY SECTION
- CLOCK & RTC SECTION
- USB, LAN, SATA, SOUND
- FAN CONTROLLER

- IMPORTANT TIPS FOR REPAIRING

ADVANCE LAPTOP REPAIRING COURSE (L-4):

Completion of basic repairing course we will start advance laptop repairing training, Advance course will last from 2 and half months where you will learn step-by-step schematic tracing, IC pin function, circuit calculation and internal logic of all regulator circuit, which makes you perfect chip-level expert. After an advanced laptop repairing course, no need for anyone's support. You will be able to repair any type of problem yourself on your table

MODULE-4

- DCIN SECTION OF DIFFERENT ARCHITECTURE BOARDS
- UNIVERSAL CONCEPT OF DCIN
- WORKING CONCEPT OF CHARGING IC
- UNIVERSAL CONCEPT OF CHARGING SECTION
- ALL PIN FUNCTION OF CHARGING IC
- CHARGING CONTROL SECTION
- CHARGING PROTECTION CIRCUIT
- SIO & PROGRAMMING CONTROLL SECTION
- CHARGING ISSUE & SOLUTION
- 3V 5V REGULATOR & PIN FUNCTION
- 3V 5V IC REQUIREMENT
- GENERATING OF 15V, 28V, 12V

MODULE – 5

- SIO REQUIREMENT
- PCH & SIO COMMUNICATION
- RTC SECTION
- GREEN CLOCK WITH POWER SEQUENCE & BLUE CLOCK
- BIOS & CLOCK
- CLOCK RELATED ISSUE
- STATES G1-S5-S4-S3-S0...
- POWER RAILS OF DIFFERENT ARCHETECTURE
- RAM SECTION

- RAM PIN FUNCTION
- RAM PROTECTION CIRCUIT
- NO DISPLAY ISSUE

MODULE-6

- PCH REQUIREMENTS
- PCH DATASHEET
- DIFFERENT PCH WELLS
- PCH SWITCHING
- SOC ARCHETECTURE
- CPU REQUIREMENT
- VRM IC REQUIREMENT
- VID VS SVID
- CPU WITH RAM COMMUNICATION
- THERMAL SECTION & CPU FAN
- LVDS VS EDP
- USB, SATA, SOUND, LAN CONNECTOR
- KEYBOARD, TOUCHPAD

MODULE-7

- RAM WITH CPU COMMUNICATION
- PCH WITH SOC COMMUNICATION
- 510N LOGIC
- SIO COMMUNICATION
- SIO PSL LOGIC
- VOLTAGE TESTING POINT
- NEW POWER UP SEQUENCE
- PCH POWER MANAGEMENT
- GRAPHICS CONVERSION
- BIOS EDITING AND ME REGION CLEANING
- HOW TO USE BOARDVIEWS
- TROUBLASHOOTING LAPTOP BOARDS

MODULE-8

- PCH POWER MANAGEMENT
- SIO & POWER SEQUENCE
- CRO BASIC FUNCTION SETTING
- CRO DRAMRST CHECKING
- CRO DUAL CHANNEL DIFFERENTIAL TESTING
- CRO DUTY CYCLE CONCEPT
- CRO PWM CHECKING
- CRO RTC TESTING
- CRO SUSCLK & SMBUS TESTING
- THERMAL CRO DOUBTS
- ALL DOUBTS
- MIX SECTION DOUBTS

MODULE-9

- CASE STUDIES MIX
- NEW POWER SUPPLY
- NEW POWERUP SEQUENCE
- LIFETIME WORKING BIOS UP TO LATEST GEN.
- SCHEMETIC LAPTOP, DESKTOP, APPLE-MAC
- BIOS PASSWORD TOOLS
- HDD PASSWORD TOOLS
- ME-CSME- CLEANING SOFTWARE
- BIOS EDITING TOOLS
- DIS TO UMA CONVERSION
- FUTURE UPDATES FREE
- MOTHERBOARD FAULT TRACING

MODULE-10

- HOW TO USE BOARDVIEWS
- HOW TO USE OF DSO
- HOW TO USE OF POWER SUPPLY
- HOW TO TRACE SHORTING WITH THE HELP OF POWER SUPPLY

- BIOS PROGRAMMING
- IO PROGRAMMING
- BOARD WASHING WITH WATER
- LAPTOP FABRICATION
- COMMON FAULTS
- HOW TO SOLVE MULTIPLE PROBLEMS
- MAGICAL CASE STUDY

“MOVE AHEAD IN YOUR CARRIER WITH YOUR PASSION”