

Innovative Engineering Technologies

Diploma Of Advance Laptop Chip Level Repair Engineering Training Course

TIME TABLE

New Intel Core i 1st GEN to Intel 14th Gen Upgraded Syllabus (2026 - 2027)

THEORY		PACTRICAL	
1 st Day	i) SMD BASIC ELECTRONICS Fundamentals – what is AC/DC, Current, Ampere, Watts Types Of Circuits. What is OVP, OCP, OTP, TVC, THERMTRIP & PWM Circuits.. ii) What is Comparators & Basic Application Circuits iii) What is Converter Basic Application Circuits (Buck & Boost Converters)	1 st Day	i) SMD Type Of Components (Identify All SMD Type Active & Passive Components) ii) Capacitors What is Filter Capacitors What is Coupling Capacitors What is Resonance Capacitors iii) Resistors What is Pull-up resistance & Pull-down resistance What is Resistor Dividers & Protection resistors, iv) What is EIA 96 Resistors, Inductors, Zero Ohm Fuses, Diodes Enhanced Transistors, Dual & Enhanced Mode MOSFETS, On board & Offline Testing Using Smart Electronic Tester Tools.
2 nd Day	i) ADVANCE SMD DIGITAL ELECTRONICS. Type of Digital Numbering Systems Bit, Byte, Binary, Octal, Hexa Conversion of Number systems. Type of SMD Gate ICs . AND, OR, NOT, NAND, NOR. Etc.. ii) What is Schmitt Trigger, iii) What is Tri state gate, iii) What is Transitions Pulse.	2 nd Day	i) Find out 5 pin & 6 pin Gate ICs In Laptop Motherboards ii) HOW TO SOLDERING ,DISOLDERING OF ALL COMPONENTS USING COMPRESSOR TYPE HOT AIR STATIONS WITH REAL TEMPERATURE PROFILES WITH DEFERENT SKILLS . iii) What is IR PRE HEATER. How Motherboard All Connectors & Slots Removing & Replacing . iv) How Use Micro Tips & Soldering Irons ,Special Bits & High Precision Professional Soldering Station v) What is Soldering Various & Paste Types . (pb /pb -free / HF / Radium) vi) How to Solder and How Protect our Health with Chemicals . vii) How to Use Smart Microscopes ,Handling Practice Carefully & Tiny Chips Soldering Disordering . Mono ,Stereo ,TFT Screen Types & High Definition PC Control Types

3 rd Day	BASIC KNOWLEDGE OF LAPTOP PARTS AND ASSEMBLE DISASSEMBLE HARDWEAR & ELECTRONICS IN DEPTH.	3 rd Day	i) HOW TO FULL SERVICE ANY LAPTOP STEP BY STEP REMOVING & REPLACING HARDWEAR LEVEL ii) How to Replace HD /FHD/IPS frame less Any Laptop LCD Screen with Touch Correctly & Carefully iii) Any Laptop Housing Mounts & Hinge Repair & Replacing Methods .
4 th Day	LAPTOP MOTHERBOARD ADVANCE REPAIRING:- i) BLOCK DIAGRAM OF LAPTOP MOTHERBOARDS ii) BASIC POWER SIGNALS DETALS	4 th Day	i) IDENTIFY LAPTOP MOTHERBOARD SCHEMATICS BLOCK DIAGRAMS MANUFACTURAL ARCHITECTURE WISE GENERATIONS INTEL / AMD / NVIDIA / APPLE ii) IDENTIFY LAPTOP MOTHERBOARD REAL FOUNDRY MANUFACTURES WITH HOW RIGHT WAY FOR SCHEMATIC READINGS... • Quanta • Compal • Weft Chuang • Inventec • Pegatron United • Samsung • Apple • Other Manufactures iii) Identify Any Laptop Motherboards Adaptor Power Driving Circuits With Working Concept . iv) What is LDO Voltages & How there Logics. v) How to Find LDO Power Short Circuits Fault Repair.
5 th Day	i) LAPTOP MOTHERBOARD POWER ON SEQUENCE ii) SOME IMPORTANT POWER SIGNALS NAME & IDENTIFY	5 th Day	i) UNDERSTANDING WORLDWIDE IEEE STANDED LAPTOP POWER STAGES ii) What is ICH,GMCH ,PCH, IVY BRIGE CHIPSET TYPES iii) What is HASWELL ,BROADWELL ,BRASWELL ,KABY LAKE COFFEE LAKE ,COMET LAKE,RAPTOR LAKE Architecture wise Chipset Types. iv) What is PWM Buck Controller Power Supplies Advantages . • 1st Power stage 5v, 3v (Always On) or 1.8v/1.0v • 2nd power stage 1.8v 1.5v ,1.35v /1.2v • 3rd power stage VRM CPU CORE 1.1v • 4th power stage GFX/VGFX CORE 1.1v/0.45V • 5th power stage SUS 3.3v/5v POWER DISTRIBUTE BUCK DIFFERENT CHIPS 5V,3V REG & LDO ,VDDQ,VTT,VCCSA,VCC CORE,VCCST,VCCGT 5V/3V, SUS, 1.05V, 1.8VSUS, 5V, 2.5V v) Understanding different power stages and different Signals According to GENs

6 th Day	ADV. LAPTOP CHIP LEVEL LATEST BIOS EDITING & PROGRAMMUING REPAIRING TRAINING	6 th Day	i) What is RTC Circuit with or without CMOS Power. ii) What is Serial & Parallel Data Communications . iii) How Identify Chip Select Command & SM Bus Communication Topology. iv) What is EC Bios POST Booting ,Secure Boot Settings AHCI & UEFI BIOS Boot Settings. v) How to Extract Rom.Bin,Hex File From Manufacture Original exe Bios File. vi) Advance BIOS Programming , Editing With UEFI Tools vii) What is Intel i Gen Bios Bins Region Settings & Intel Clean ME (Intel 1st Gen to 14 Gen Bios Editing , ME Region Editing's with Intel Official Tools.) Bios Editing Practice Continues.....
7 th Day	ADV. LAPTOP CHIP LEVEL LATEST BIOS EDITING & PROGRAMMUING REPAIRING TRAINING Part II	7 th Day	i) How to Flash Bios of Laptop Chip Online or Offline Using Advance BIOS Programmers..... ii) Programming Advance Deferent BIOS using Programmer Firmware with Adaptors Bios Chips 3.3v / 1.8v & 1.2v.with ICSP..... <u>WHAT IS MICROCONTROLLER TYPE SUPER IO CHIPS</u> i) Understanding Temperature Controller & Fan PWM Controller KBC Circuits. ii) KBC Tracing Programming ,Bios Password Removing & Bios Chip Fault Finding... iii) KBC Programming On Board Or Separate ,Serial & Parallel Methods Using Advance KBC Programmers.... (RT809F / ENIT TOURBO / SUCSOSSOR)

8 th Day	ENGINEERING LAPTOP MOTHERBOARD BGA LEVEL REPAIRING TRAINING	8 th Day	<u>BGA LEVEL REPAIRING TRAINING USING DARK INFRARED SIX ZONE BGA STATION MACHINE</u> What is BGA Chip, BGA Station & BGA CHIP Anatomy Removing BGA Chips and Reballing It Using Reball Stencil Chipset ICS Reballing ,BGA Ball Arrangements Using BGA Reballing Station Stencils & Practice How to Find Lead /Lead free / Halogen Free Soldering Methods & BGA Temperature Profiles Creations Two methods i) Applying balls with help of BGA Reballing Station ii)) Applying liquid paste and Direct Heat with BGA SIX ZONE Advance BGA Station . BGA IC Removing Replacement Practice with SOFIX BGA Heat Plate , Component placing Practice with Dark Infrared BGA Machine, Removing Replacing PCH ,CPUs & Reballing to Chip Using Different Method, BGA BALL Arrangement, BGA Soldering Station, Using Liquid Lead free Paste, Solder Bath Tub, Removing Sockets, Connectors.
9 th Day	ENGINEERING LAPTOP MOTHERBOARD REPAIR TRAINING	9 th Day	<u>PRACTICE WITH BGA LEVEL REPAIRING TRAINING USING DARK INFRARED SIX ZONE BGA STATION MACHINE</u> i) BGA IC Removing Practice with SOFIX BGA Heat Plate Component Practice with Dark Infrared BGA Machine Continue Practical Days.....
10 th Day	UNDERSTANDING DIFFERENT SIGNALS OF MIXED SIGNAL OSILASCOPE (OCR & MSO TRAINING) Part I PRACTICE WITH ADVANCE TOOLS	10 th Day	i) WHAT IS INTEL POWER MANAGEMENT TIMING SEQUENCE IEEE MODE FAULT FINDING WITH MIXED SIGNAL OSILASCOPE • Main signals of Clock Generator (In PCH & CPU) • Main signals of CPU Processor • Main signals of PCH Chipset • Main signals of Graphics Chipset • Main signals of IO/Power Management Chip • Main signals of CPU IVY Bridge , • Main signals of Intel CPU Haswell ,Broadwell , Braswell ,Kaby Lake ,Coffee Lake ,Comet Lake, • Rocket Lake ,Alder Lake, Raptor Lake & Refresh Processors & Chipsets • (6th GEN up to 14th GEN)

14 th Day	TRACING DIFFERENT SIGNALS	14 th Day	i) TRACING A DIFFERENT DEAD LAPTOP MOTHERBOARD. Cold Checking & Hot Checking PRACTICE WITH SHORTCUT REPAIR TIPS & OUTSIDE MOTHERBOARD REPAIRING CUSTOMER MOTHERBOARD REPAIRING PRACTICE KNOWLEDGE PRACTICE TRAINING WITH DIFFERENT MOTHERBOARD HAVING MORE CONFIDENCE IN LAPTOP MOTHERBOARD REPAIRING...
15 th Day	ANY LAPTOP MOTHERBOARD REPAIR & TRABLESHOOTING FAULT FINDING	15 th Day	PRACTICE TRAINING WITH DIFFERENT MOTHERBOARD Con... YOU MUST FIND & BRING 3 NOS DEMO OWN ANY DEFECTIVE LAPTOP MOTHERBOARDS TO CLASS FOR DAY TO DAY PRACTICAL & ALSO STUDENTS CAN BRING LAPTOP MOTHERBOARDS TO PRACTICE TO DEDICATED PRACTICALS DAYS AND REPAIR IN THE CLASS ROOM .

Course Conduct by :- **Mr. Indika Bandara**

(Desktop & Laptop Computer Motherboards SMT Level Manufacturing Plant QA Engineer)

Course Duration : - **06 Month (30th Sundays Full days)** (9.00 AM -5.00PM)

Course Fee :- Rs.120,000 /-

IET Institute Student Registration Fee :- Rs. 5,000 /-

Please Complete the Advance Payments Rs,60,000/- Before Starting the Class Day.....

Before You Come to Course

Notice :- * All Participations Must Completed

- 1) Computer Hardware Engineering Course
- 2) Practical Basic Electronic Course First . *

• Original **Intel 6th Gen to 14th Gen Laptop Schematics, Broadview's** Working Bios Repository Pack Database & Very Valuable Software's, Diagrams Free With life time www.iet.lk web Site Membership.

• A '**Certificate of Diploma will be issued all Students**' each participant Finished Final Exam as well..

• Tea time and refreshment included During the Class.

• A/C Class room Facilities