

LAB EQUIPMENT for ICs and passive devices

<i>I. Lab equipment for electrical examinations</i>	
1	resistor measure facility, Burster incl. temperature compensation
2	RLC-measure facility, GenRad
3	CANoe, Vektor Informatik simulation and test system for CANBus
4	electrical load, et System up to 300 A
5	curve tracer, Tektronix 370A
6	needle prober PM5, Karl Süs , 3 probeheads PH150, 1x PH120
9	Schaffner pulse Generator
10	Digital Scope LeCroy LC 574A
<i>II. Physical examinations</i>	
1	camera for thermography
2	lock-in thermography detects features or defects (e.g. short-circuit) due to heat wave interference
3	stereo microscopes, Zeiss / Olympus / Leica
4	microscopes, Zeiss incl. fluorescence equipment
5	research microscopes, Zeiss for incident light and transmitted light, bright field and dark field, differential interference contrast, magnification up to x1500
6	scanning electron microscope, Zeiss LEO 1550 incl. EDX (energy dispersive x-ray analysis)
7	scanning electron microscope, Leica Stereoscan 360 FE incl. Oxford EDX (energy dispersive x-ray analysis); resolution 2nm with 25kV; magnification 10x to 500,000x
8	laser scanning microscope, Zeiss -for IC failure localisation- incl. CCD camera for emission microscopy (light emission) liquid cristal thermography (warmth)
9	photo emission microscope, Hamamatsu Phemos 200, emission spot resolution appr. 2 µm / access to Phemos 1000 with Si-/InGaAs camera, EMI and OBIRCH
10	scanning acoustic microscopes, SamTec Evolution II / Sonix HS-500 non-destructive analysis of internal interfaces, up to 10 – 150 MHz transducer for a broad application spectrum
11	X-ray microscope nanomex, Phoenix X-ray max. magnif. 25.000x / res. ca. 0,3 µm / max. transmission thickness of material: 60 mm Alu, 16 mm Steel; real time
12	access to X-ray tomography (3D)
13	interference contrast microscopes, Leica / Polyvar MET / Metaplan
14	ERSASCOPE inspection system, Ersca especially for assessment of BGA solder joints
15	bond pull / bond shear / die shear tester, XYZTEC Condor 100-4 / Condor 70
16	gross leak / fine leak-Tester, Ulvac
17	ionograph, AlphaMetals eliminates ionic impurities on PCBs (max. size 30x30 cm)
18	solderability system, WAZAU for SnPb and lead free
19	Liquid Crystal Thermography System MOM 250
20	focused ion beam (FIB), FEI 200xP single beam system for chip modification and repair
<i>IV. Specimen preparation</i>	
1	plasma etching system TePla 100-E , Technics; removal of Si ₃ N ₄
2	decapsulation system DCap, B&G ; works with nitric acid, sulfuric acid and mixture
3	IC-backside polishing machine, Hamamatsu; ASAP-1
4	polishing & grinding machines, ATM / DAP-V / Struers Rotopol-2
5	precision cut-off grinding machines, ATM
6	high precision low tour saw, Isomet 1000 / Bühler; desk circular saw, Mutronic
7	analysis balance, Sartorius
8	decapsulation with laser Rofin Powerline E
9	chemical hoods chemical decapsulation,
10	Vacuum embedding system, Struers Epovac