

ITU VLSI LABS

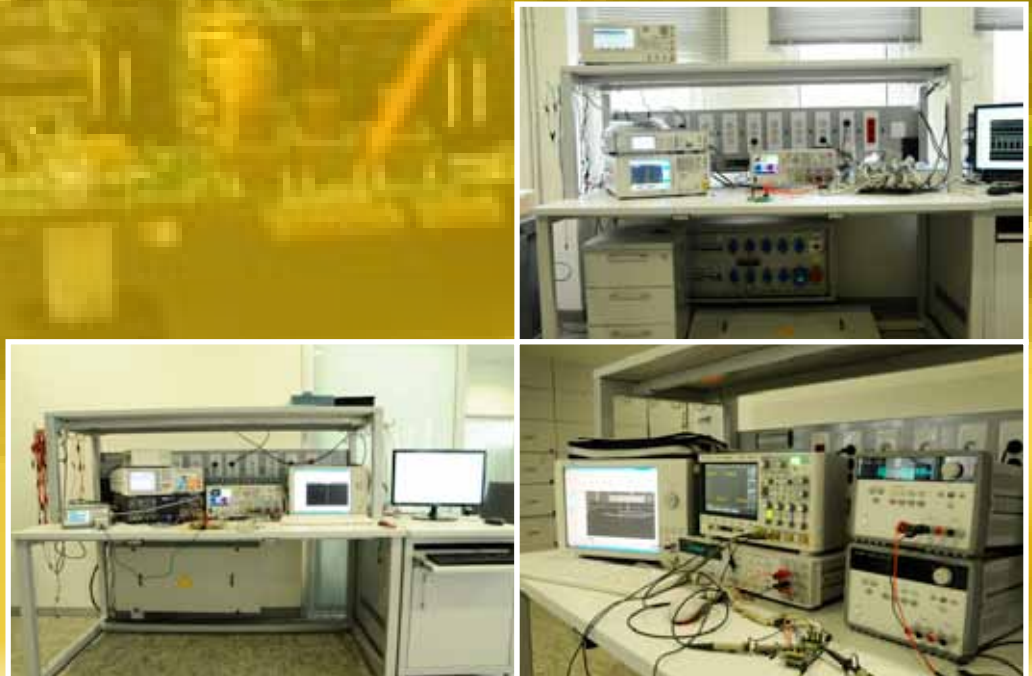
CAD - ÜRETİM - ÖLÇÜM

ITU VLSI LABs

ITU VLSI LABs is an academic work group that consists of researchers working on VLSI technologies using the ITU VLSI CAD (Computer Aided Design) Laboratory and the ITU VLSI Duran Leblebici Measurement Laboratory at Istanbul Technical University Electrical and Electronics Engineering Faculty. Simply put, VLSI technologies are related to the design, fabrication and testing of the integrated circuits (IC/SOC).

Founded 1992, ITU VLSI CAD Laboratory is the first and one of the most competent world-class IC design laboratories in Turkey with respect to its software and hardware infrastructure. ITU VLSI CAD Laboratory has access to 18 different IC fabrication process through existing international memberships. The researchers at ITU work on data converters, RF/analog/mixed-signal/digital electronics and power management ICs using the infrastructure provided by ITU VLSI CAD Laboratory.

ITU VLSI Measurement Laboratory, funded mostly by Turkish Ministry of Development and partially by ASELSAN A.Ş., is capable of measuring RF/Analog/Mixed-Signal/Digital electronic hardware within any environmental condition with utmost precision and accuracy from DC to 50GHz frequency band. Specialized especially on IC measurement, ITU VLSI Measurement Laboratory is one of the Turkey's most up-to-date and mature laboratories in terms of technical capability in this field.



The Goals of ITU VLSI LABs Group

The goals of the ITU VLSI LABs group and its affiliated laboratories are:

- To increase the know-how on high-added-value IC design, test and strategic IC fabrication processes to support Turkey's goals on increasing its market share in the global VLSI market.
- To help the development of the VLSI technology ecosystem in Turkey, to reduce the entrance barriers and to improve the effective working conditions for the companies
- To generate the necessary know-how to transform Turkish electronics industry from an assembly based production business model to the high-added-value product fabrication based business model.
- To educate highly qualified work force for high-added-value IC design and testing business.
- To allow the access to software/hardware/testing equipment infrastructure with an acceptable cost.

What Is the Competence of ITU VLSI LABs Academic Staff?

The academicians working within ITU VLSI LABs group have spent over cumulative 50 years at United States working for world leader firms in VLSI design and manufacturing such as Texas Instruments, Linear Technologies and ST Microelectronics. While working, they successfully lead IC design teams, and founded and managed a high performance testing laboratory. ITU VLSI LABs staff is Turkey's the most experienced group on especially high-performance electronic testing.

Per the strategic partnership agreement signed among ITU VLSI LABs, Agilent Technologies and Spark Measurement Technologies firms, an Agilent trained application engineer will be hired by Spark Measurement Technologies and be stationed full-time at ITU VLSI Measurement Laboratory for efficient and effective utilization of the laboratory infrastructure.

The laboratory users will be able to work closely with a staff who not only has in depth theoretical knowledge on high performance testing, but also knows intimately how to utilize the available complex testing equipment while; solving the problems encountered during testing.

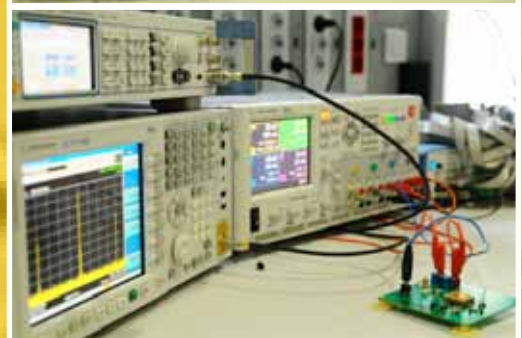
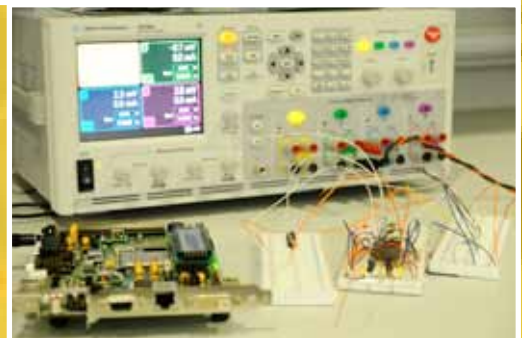
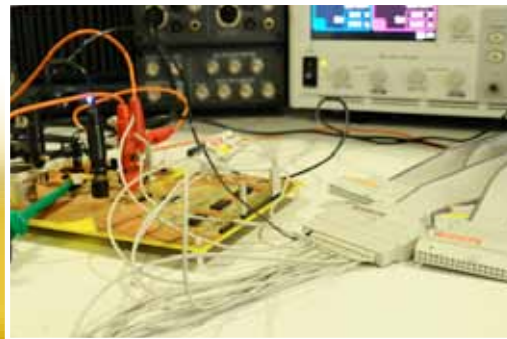
Who Can Use The Laboratories? How It Can Be Used?

Specialized on IC design, ITU VLSI CAD Laboratory and its infrastructure are open to all interested public or private entities. The utilization is regulated with bilateral agreements and restrictions apply with respect to the academic license agreements that ITU is obliged to follow.

The basic aim of ITU VLSI Measurement Laboratory is to facilitate the utilization of the available test equipment inventory with utmost efficiency by all individual and institutions needing high resolution and high resolution electronics measurements, as a result of their state-of-the-art research, development and prototyping activities. It is necessary to reserve a test bench and required test equipment through direct contact or web interface. The infrastructure also allows the test automation and remote measurement. The provided service is not free of charge but being an educational institution, ITU's approach is not to obtain maximum income but to raise the necessary funds to guarantee the sustainability of the founded infrastructure and to improve its technical capabilities. Compared to alternative service providers' cost structures, utilizing ITU VLSI Measurement laboratory infrastructure is cheaper and faster.

It is possible to summarize the reasons why an individual or an institution working on an high-tech electronic product should utilize ITU VLSI Measurement Laboratory infrastructure as follows:

1. It is possible to build any measurement setup with worlds most precise and accurate test equipment.
2. ITU VLSI LABs academic staff, competent on high performance test and measurement, helps the users on their electronic measurement problems.
3. Compared to the alternative service purchase scenarios, using ITU VLSI Measurement Laboratory is faster and definitely cheaper.
4. It is very easy to reach to the laboratories due to its very central location.

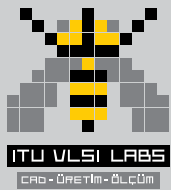


What Can Be Done Using The Laboratory Infrastructure?

ITU VLSI CAD Laboratory consists of software tools necessary for state-of-the-art IC design (Cadence, Cadence Allegro, Synopsys, Mentor, HPADS, Matlab, HFSS, BDA, Labview) and remote accessed 192 LSF server farm. Its software and hardware infrastructure can easily support 50 users in parallel. ITU VLSI CAD Laboratory is able to utilize 18 different IC fabrication process (SiGe, 0.35um-40nm CMOS, HVCMS) granted by the signed agreement between Europractice, CMP and MOSIS. It is possible to design PCB and RF, Analog, Digital, Mixed Signal, Power Management ICs using the available infrastructure.

It is possible to build test setups for a wide range of applications at IC, PCB and system level using the measurement equipment inventory available in ITU VLSI Measurement Laboratory. The list below itemizes the measurement capability and the notable test equipment of the laboratory with respect to the application areas.

1. Wired/wireless Communication and RF Electronic Systems: 50 GHz Agilent PNAX, 50GHz Agilent PXA, 26.5GHz RohdeSchwarz FSU26, 26.5GHz Agilent E5052B, 20GHz Tektronix 72004, 67GHz Agilent E8257D, 44GHz Agilent 8267D.
2. Data Converters and Mixed-Signal Electronic Systems: RohdeSchwarz SMA100A, Agilent 3458, Audio Precision AP2700, Agilent B1500, Agilent B2962A, Agilent 16822A, Agilent N6715B, Agilent 81150, Hioki IM3533
3. Digital Communication and Digital Electronic Systems: 3.5GHz Agilent 81134A, 13.5GHz Agilent 81250A Parbert, 4GS/s Agilent U4154A, Automatic Test Equipment
4. Power Management Electronic Systems: Tektronix MSO4104, Agilent MSOX 3104, Agilent 33250A, Keithley 2308, Keithley 2000, Keithley 2634B, Hameg HMP 4040, Hameg HM 8143, Hioki IM3570
5. Auxiliary Test Systems: Rubidium Time Reference, Faraday Cage, Thermonics T2800, ESPEC SH261, SUSS PA300 Probe Station, ZapMaster MK1 ESD Tester, FLIR Thermal Camera, LPKF Protomat S100 PCB Plotter



Contact

ITU VLSI LABS group and its affiliated laboratories are located physically in Istanbul Technical University Electrical and Electronics Engineering Faculty.

ITU VLSI LABS

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How to reach

The easiest way to reach to ITU VLSI LABS and its affiliated laboratories is to take the Metro from Taksim Metro Station.



Representatives

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