

SmartSoC Solutions, a leading engineering company in **Custom Silicon, Embedded Product Engineering, and Artificial Intelligence** with a team size of **1,450+ engineers** worldwide, is bringing world-leading tier-1 foundries to India and extending the **start-of-the-art lab** to the start-up eco-system at a pro-bono rate.

State-of-the-art lab includes the world-leading Test & Measuring equipment, like:

- **Mixed signal Oscilloscope from Tektronix:** up to 20 GHz real-time bandwidth, 50 GS/s, jitter/eye analysis tools
- **Signal & Spectrum analyzer from Rohde & Schwarz:** Up to 85 GHz frequency, 2 GHz analysis bandwidth, real-time spectrum mode
- **J-BERT High-Performance Serial BERT from Agilent:** Up to 12.5 Gbps, differential and single-ended outputs, jitter injection
- **Arbitrary Waveform Generator from Tektronix:** Up to 50 GS/s, 10-bit vertical resolution, >2 GHz bandwidth
- **Digital Serial Analyzer from Agilent:** 13 GHz bandwidth, 40 GS/s, 4 channels
- **Vector network Analyzer from Copper Mountain Technologies:** 100 kHz–9 GHz frequency range, >145 dB dynamic range, 10 µs/point sweep speed
- **mmWave Frequency Extenders from Cobalt:** 60 to 90GHz
- **RF power meter from Keysight**
- **Programmable DC & bench power supply**

This equipment can be used to test chip designs for IoT, high-speed SoCs, display & multimedia IPs, high-speed digital IPs, RF & mixed-signal chips.

Chip / IP	Examples	Tools Used	Executable tests
IoT & RF SoCs	BLE, Wi-Fi, Zigbee, NB-IoT, LoRa	Spectrum Analyser, Power Meter, Cobalt VNA, mmWave Extenders	RF output power & EVM measurement, Spectrum mask & spurious analysis, Antenna S-parameter testing, Range simulation
Mixed-Signal ICs	LED drivers, ADC/DAC, sensor interfaces	MSO54B, Keithley 2200, Korad KA3005P	Power-up sequencing, ADC/DAC linearity, noise, settling time testing, Digital interface validation (I2C/SPI/CAN), Timing, protocol decoding, transient glitch capture
High-Speed Digital IPs	PCIe Gen3-6, USB 3.x/4, MIPI, DDR, UCIE	J-BERT, DSA91304A, MSO72004C, AWG70000	Eye diagram and jitter analysis, BER testing and stress margin validation, Protocol compliance (e.g., Gen3/4/5 for PCIe) Lane-to-lane skew, link training analysis, TX/RX equalization tuning and debug
SoCs & GHz Processors	Application SoCs, custom silicon	Full bench setup: PSU, MSO, AWG, Spectrum Analyzer	Clock distribution/jitter measurements, Interface-level validation (DP, USB, Ethernet, PCIe, etc.), Functional verification of subsystems (GPU/Display, Audio, SerDes) Debugging post-silicon bugs via logic, power, and waveform analysis
Display / Multimedia IPs	DP TX/RX, HDMI, video subsystems	UCD-400, DPA-400, MSO72004C	DisplayPort compliance and link training, AUX/I2C/EDID/HDCP/DSC validation, Signal integrity on main links, Video frame capture, resolution/format check

The above-mentioned equipment can be used to carry out the following tests/validation activities:

Validation Area	Test Type	Supported Use Cases
Power Integrity (PI)	<ul style="list-style-type: none"> ▪ Load, ripple, voltage margining 	<ul style="list-style-type: none"> ▪ Validate power domains under real-world conditions
Signal Integrity (SI)	<ul style="list-style-type: none"> ▪ Eye diagrams, jitter, skew 	<ul style="list-style-type: none"> ▪ PCIe, DDR, USB, high-speed lane analysis
Protocol Compliance	<ul style="list-style-type: none"> ▪ DP, PCIe, USB, I2C/SPI/CAN decoding 	<ul style="list-style-type: none"> ▪ Link training, decoding, and timing validation
RF/mmWave Testing	<ul style="list-style-type: none"> ▪ Spectrum, gain, antenna S-params 	<ul style="list-style-type: none"> ▪ RF performance, spurious, mmWave characterization
Functional Debug	<ul style="list-style-type: none"> ▪ Logic capture, trigger-based waveform review 	<ul style="list-style-type: none"> ▪ Embedded bring-up, SoC peripheral debugging
Stress Testing	<ul style="list-style-type: none"> ▪ Jitter, ISI, analog signal injection 	<ul style="list-style-type: none"> ▪ Marginal validation of I/O and analog front-end

As a part of C2S, DLI eco-system, SmartSoC welcomes all start-ups and eco-system partners to utilize the lab facility based on availability.

For booking, please contact:

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