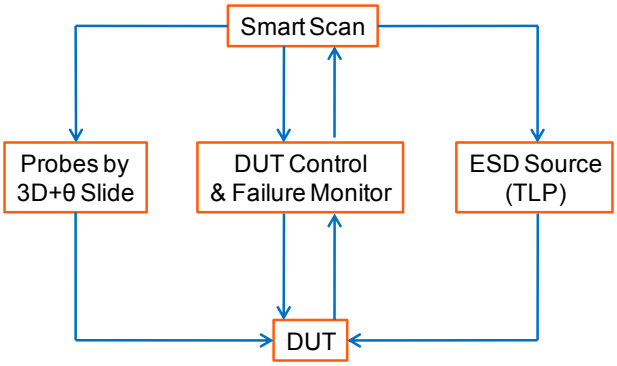
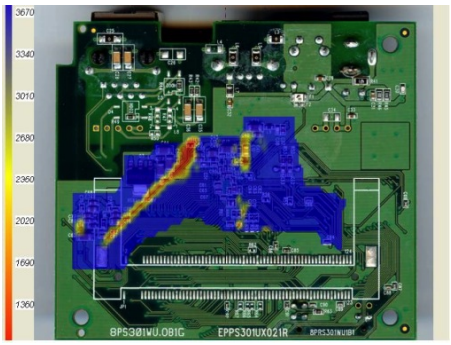
SmartScan *-350 / -550 ESD*

SmartScan-350/550 **ESD** is *specifically* designed for susceptibility scanning system.

A broad band pulse from a pulse source (TLP) is delivered to an electric field or a magnetic field probe. The generated field couples with components or traces of DUT or PCB, and causes failure. Or the pulse can be directly injected through direct injection probes. It mainly reproduces IEC 61000-4-2 test failure types, both soft and hard failures.

The probe is positioned at desired test points by a robot with software control, triggers the coupling and the response of the DUT is recorded for relative immunity level comparison. A simplified immunity set-up diagram and a sample immunity level plot (susceptibility map) are shown below.

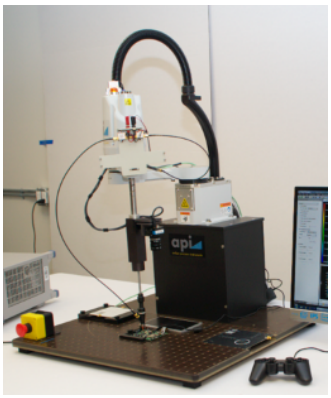
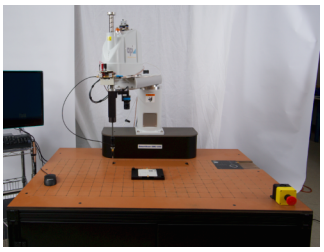




Applications of the immunity scanning are

- Identification of sensitive spots, areas or traces to IEC 61000-4-2 type tests
- Estimation of system level ESD test performance at early stage of development
- Relative immunity level comparison before and after design change
- Selection of more ESD resistant parts (supplier-A over –B)

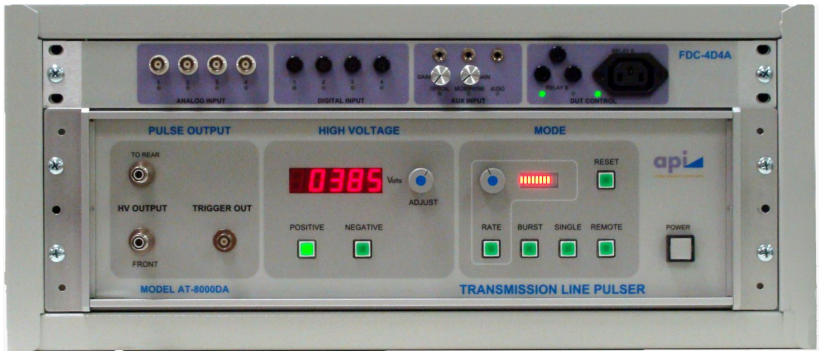
Hardware Configurations:

Models	ESD-350	ESD-550
Scanner Images		
Styles	Table top unit	Stand-alone unit
Probe positioning (1)	350mm four axis robot	550mm four axis robot
Z-stroke	150mm	150mm
Max. scan area	1500cm2	4150cm2
Accuracy	100um	100um
Repeatability	< 50um	< 50um
Foot print	27" x 25" x 37" (WxDxH)	59" x 33" x 72" (WxDxH)
ESD Probes (2)	Hx/y – 1mm and 5mm Hz – d=8mm Ez – d=8mm	Hx/y – 1mm and 5mm Hz – d=8mm Ez – d=8mm

Notes: (1) Contact API for other sizes of robots
(2) Contact API for other probes

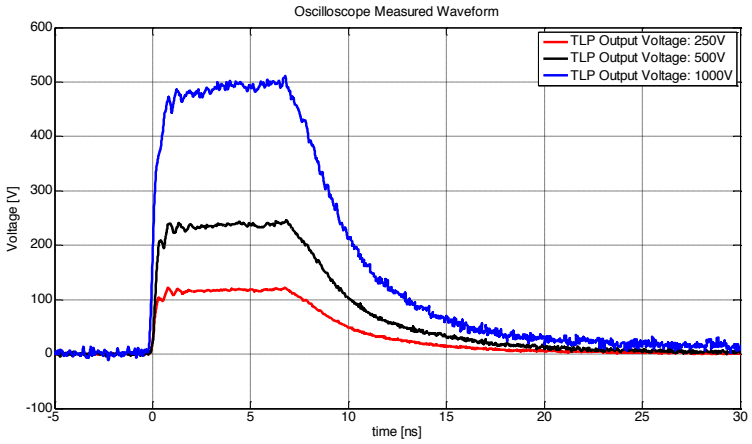
ESD Box

- ESD Box consists of TLP and failure detection unit



- Failure detection unit
  - Four analog signal inputs
  - Four digital signal inputs
  - Three auxiliary inputs
  - 120V and DC power supplies for remote controlled DUT power cycle
  - Optical sensors for image change detection
  - Micro phone for sound On/Off detection
  - Integration of DUT controllers
  - Simultaneous monitoring of multiple signals
  - Boolean operation of monitoring signals to control DUT reset and sort out failure types

- TLP (Transmission Line Pulsar)
  - 200V to 8,000V transmission line charging voltage
  - <300 pSec rise time and >6 nSec falling time to prevent causing failures at both edges

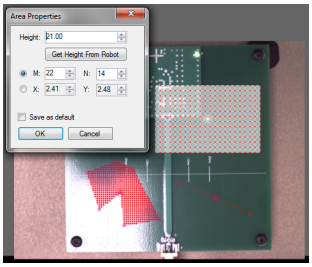


Software

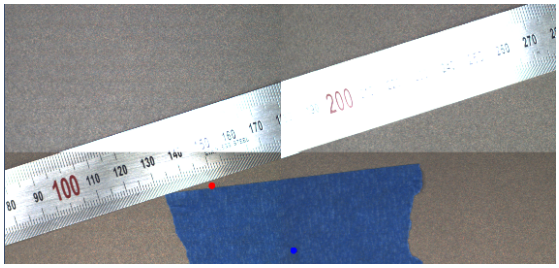
- ESD test condition control and data visualization
- User friendly, intuitive and very flexible to integrate other scan technologies

Scan area editor (SAE)

- By a DUT location camera- The scan area is edited directly on the DUT picture taken by the camera. The software controls the movement of the probe to the defined scan points
- Flexible scan area selection - any shape and multiple scan area can be defined for optimum scan time. Height of each defined scan area can be given separate
- For large DUT's, multiple pictures are taken and they are stitched together to capture whole DUT image in one picture



Multiple scan areas in different shapes



Stitching of four camera shots