

O. ASA GLOSSARY

(* denotes term referenced to computer-controlled Tracker use)

2+ Sample: The number of samples taken when attempting to stabilize a signature. An "N" indicates only one sample was taken. A "Y" indicates that more than one sample was taken (see Unstable).*

Alphanumeric: Refers to letters, numbers, or both.*

Area: The sum of all the deviations (see Deviation).*

AREA: When signature order is set to DIFFERENCE, this is one of the two sort methods (see PEAK). This method is based on the sum of all the deviation numbers (see Deviation).*

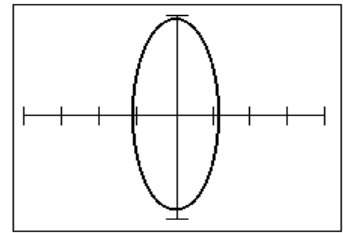
Analog Signature Analysis: ASA is a unique, "power off" troubleshooting technique. It uses a sine wave (AC) stimulus to display the current vs. voltage characteristic of a device on CRT. ASA is also referred to as VI testing.

Back: The portion of the chair pattern rising vertically from the seat. This represents forward current. See Chair Pattern.

Banana Jack: The type of probe jacks used on Huntron Trackers.

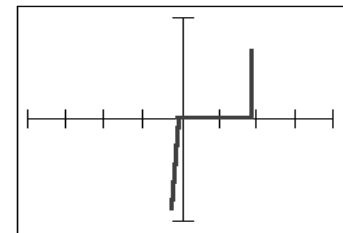
Board: Any electronic circuit board.

Capacitive: A signature or portion of a signature that is round or elliptical caused by the voltage and current being out of phase.



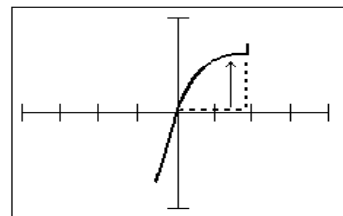
Capacitor: An electrical component designed to store electricity. Capacitors are widely used in circuits for producing time delays and filtering electrical oscillations.

Chair Pattern: The signature pattern common to ICs and zener diodes that resembles a chair. The lower vertical part is the leg, the horizontal part is the seat, and the upper vertical part is the back.



Character: A letter, digit, or other graphic symbol.*

Charging Effect: A condition where the seat moves up and stabilizes over a short period of time.



Circuit: An arrangement of components connected together in such a way that a useful function is performed.

CMOS: Complementary Metal-Oxide Semiconductor. A wide range of ICs are CMOS. They known for low power consumption making them useful in battery-operated devices. They are susceptible to damage from static electricity.

Common Fuse: The 1 amp 250V fuse accessible from the front panel of the 5100DS. It protects the 5100DS from external voltages that exist with respect to earth ground.*

Common Jack: The black banana jack on the front of a Huntron Tracker.

Common Lead: The black lead with a banana plug and a clip used to connect common to a board.

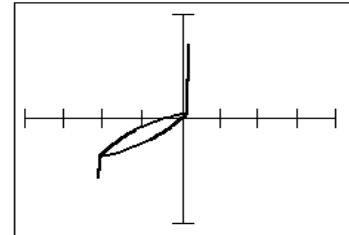
Common Pin: The reference pin for the component. Typically, The common pin is the negative power supply pin or the ground pin.

Component: Any piece of electronic hardware having a particular purpose such as an integrated circuit (IC), transistor or resistor.

Component Name: Unique identifier for the component under test (such as U1) to indicate its location on the board.*

Component Type: The part number (not the date code) on the component (e.g. 7404, 2N3904, etc.).*

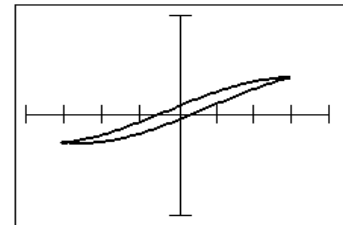
Composite Signature: A signature composed of combinations of resistive, capacitive, inductive, and/or semiconductive characteristics.



Coprocessor: An IC (math coprocessor) optionally installed in a computer to enhance the speed of math and graphic functions. It is recommended when using the 5100DS.*

Current: The vertical component of a signature (See Chair). Shorting the probes together causes maximum current to flow and display a vertical line on the CRT.

Degeneration: The effect of time or electrical stress on a component, causing a change in its ideal signature. This is a fault common to capacitors and solid-state junctions. The diagram shows a capacitor exhibiting noise, loss of capacitance, and resistance.

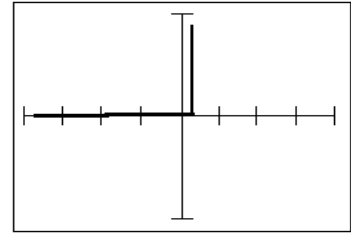


Deviation: The amount that the value of one signature data point exceeds the value of the learn signature data point plus the tolerance.*

DIFFERENCE: One of the two signature orders. When in this mode, signatures are displayed from the most to least different in the most to least different range (also see NUMERIC).*

Diode: A component which allows current to flow through it in one direction only. Diodes are used in power supplies to convert alternating current to direct current.

Diode Pattern: A signature pattern common to diodes or single junction devices. See Polarity.



DIP: Dual-in-line Package. A popular IC package having terminal pins in two parallel rows, one along each side of the package.

Discrete Component: A component that is a single device with a single purpose such as a resistor, capacitor, or diode.

DOT: One of the two signature styles. This mode displays only the actual data points of the signature (also see Line).*

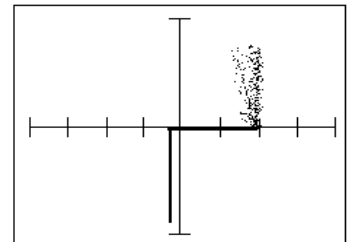
DUT: Device Under Test

EGA: Enhanced Graphics Adapter. A type of video card and monitor capable of displaying graphics in 16 colors at a resolution of 640 by 350 pixels.*

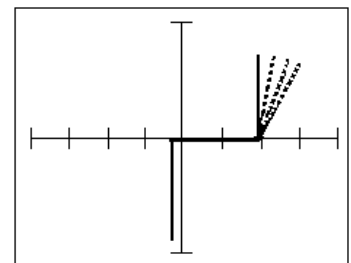
FEA Board: Front End Adapter Board. This board allows the user to build a custom test fixture.*

Filter: This algorithm removes oscillations (spider webbing) from certain types of signatures. An "N" disables the filter and a "Y" enables the filter.*

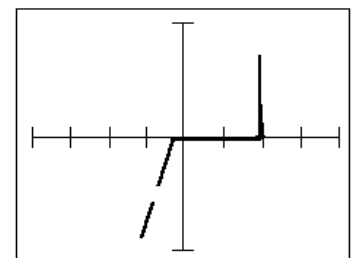
Flagging: Oscillations in a signature, usually located on the back of the chair pattern.



Flutter: A signature or part of a signature oscillating. Flutter is common in capacitors and solid-state junctions. The diagram shows a chair pattern with the back fluttering.



Gap: A missing section of a signature. Indicates a full voltage scale change during current conducting portion of the signature.



Glitch: This indicates that the filter algorithm found signature glitches and removed them.*

GPIB: General Purpose Interface Bus that conforms to the IEEE-488 standard. This is a standardized method of connecting instrument controllers or computers to peripherals such as test equipment.*

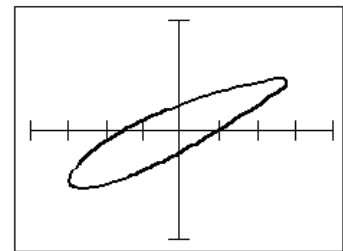
Graticule: The set of horizontal and vertical axes behind the signatures used to approximate turn-on voltages and aid in comparison of signatures with the signatures of similar points.

High Range: This 60Vpk range is used most often for high impedance components and high voltage diodes. It has a resistance range of 3Kohm to 1Mohm and a capacitance range of 500pF to .2uF.

IC: Integrated Circuit. An electrical circuit consisting of transistors, resistors, diodes, and sometimes capacitors formed and connected together on a single chip of silicon.

IC Clips: The clips with 8 to 64 pins used to attach to ICs and IC clip cables.

Inductive: The inductive signature resembles the capacitive signature being round or elliptical. Unlike the capacitive signature, the inductive signature may have distortions.



Leg: The vertical portion of a chair pattern extending downward from the seat. See chair pattern.

LINE: This is one of the two signature styles. When in this mode, all of the signature data points are displayed and connected with lines (also see DOT).*

Low Range: This 10Vpk range is used most often for discrete components and determining shorts. It has a resistance range of 1 ohm to 400 ohms and a capacitance range of 1uF to 1000uF.

Max. # of Samples: At the section entry screen, this allows entry of the maximum number of samples allowed before marking the signature unstable.*

Medium 1 Range: This 15Vpk range is most often used for analog ICs. It has a resistance range of 50ohms to 10Kohms and a capacitance range of .05uF to 15uF.

Medium 2 Range: This 20Vpk range is most often used for digital ICs. It has a resistance range of 1Kohms to 200Kohms and a capacitance range of .0025uF to .5uF.

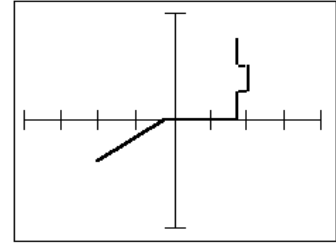
Merge Tolerance: This is the tolerance setting that alerts the user when learning a component after the first time. This setting is set in the SETUP screen on computer-controlled Trackers. *

Merged Learns: After signatures for a component have been stored, the component may be learned again and again on different known-good boards and merged to create MIN/MAX signatures.*

NUMERIC: This is one of the two signature orders. When in this mode, the signatures are displayed sequentially by their pin number and from the highest to the lowest range (also see DIFFERENCE).*

Offset: A sharp change in the voltage characteristic of a current leg or back. Indicates a slight voltage change during current conducting portion of the signature.

Package: This can be DIP (D), SIP (S), Both (B), Front (F), Multi (M) or Probe (P).*



PEAK: When the signature order is set to DIFFERENCE, this is one of the two sort methods (also see AREA). This method orders the signatures based on their single largest deviation outside of the tolerance.*

Pop-up Window: A bordered block of information that overlays a rectangular portion of the screen.*

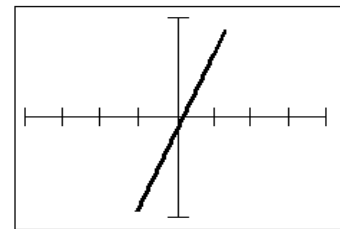
Polarity: By reversing the probes on a component, the signature displayed will be reversed.

Probes: The red and black test leads with adjustable tips and banana plugs that connect to a Tracker. They are used to probe individual test points.

RAM: Random Access Memory

Range: The voltage/impedance range applied to the component under test such as Low, Medium1, Medium2, or High.

Resistive: A linear response characterized by the angular trace.



Resistor: A component in a circuit which offers resistance to the flow of current to create a difference in potential. Resistors can be recognized by their banded color coding system which gives their values in ohms.

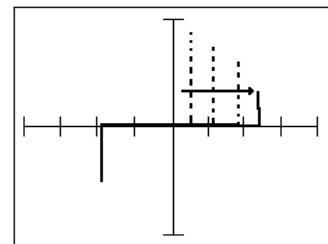
Resistor Jumpers: The 1Kohm and 10Kohm resistors with clips on both ends used to stabilize CMOS components.

Sample: A sample consists of a double reading of each signature. After processing for glitches and oscillations (if filter = Y), the two readings are compared and must be similar or that sample is unstable.*

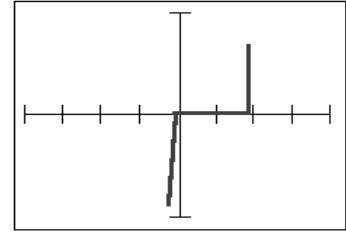
Seat: The horizontal portion of a chair pattern. See chair pattern.

Section: A group of components on a board.*

Settling effect: A condition where the back of a chair pattern will stabilize over a short period of time.



Sharp corner: The sharp angle when a device conducts current.



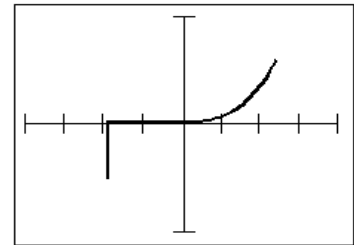
Signal Fuse: The .25A 250V fuse accessible from the front panel of the 5100DS. It protects the 5100DS from voltages on a component that are between the test pin and the common pin.*

Signature Order: The sequence in which the signatures are arranged on the display.*

Signature Style: The way the signatures are presented on the screen or on the printer (see DOT and LINE).*

SIP: Single In-line Package. A component package having a single line of pins, such as a connector or resistor pack.

Soft corner: A curve rather than a sharp angle where a junction changes from a voltage state to a current state. On some devices this is an indication of leakage.



Sort Method: The algorithm used to put the signatures in DIFFERENCE order (see PEAK and AREA).*

Test Pin: The current pin under test on a component.

Tolerance: The margin within which a component is still considered equivalent when being tested.*

Tree: A structured group of Systems, Units, Boards, Sections, and Components used to store all of the information about a board that is to be learned and tested.*

Troubleshoot: A report showing all of the DIFFERENT pins and components of the current test.*

Unstable: A signature that required the maximum number of samples and still did not compare correctly.*

VGA: Video Graphics Array. A type of video card and monitor capable of displaying graphics in 16 colors at a resolution 640 by 480 pixels.*

Voltage: The horizontal portion of a signature. An open circuit (a horizontal line) represents maximum voltage.

V/I: V = Voltage and I = current, another name for ASA testing.

Zener pattern: A pattern similar to a chair pattern although opposite in polarity. Corners indicate actual operating voltages.

