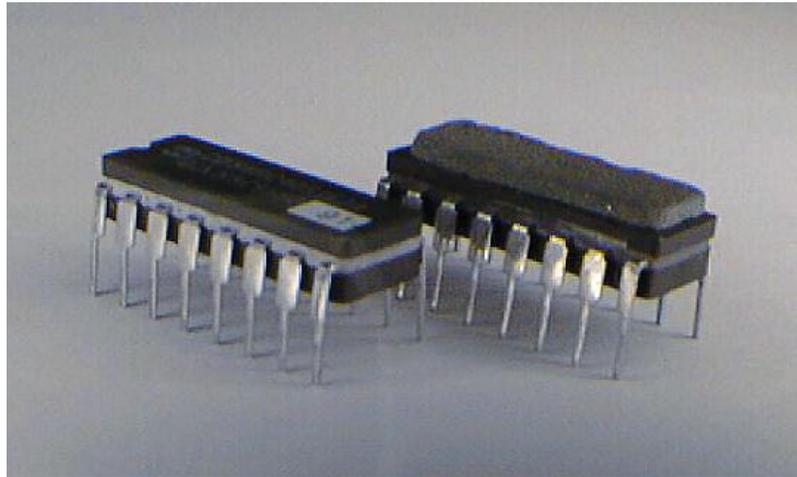




Transient Test Techniques Representative of Typical Equipment Susceptibilities

E2



Objective

To address the problem of on-orbit anomalies that are not detected by the standard transient conducted susceptibility test method, a new technique has been developed that is more representative of equipment turn-on, turn-off, and mode switching transients on space system power buses. In the past, space hardware such as the Spacelab Remote Acquisition Unit (RAU) has been found susceptible to turn-on transients, despite having been qualified to MIL-STD-461.

Why Needed

A test method using a line impedance simulation network (LISN) and switched high current load has been fully developed as an alternative transient generator. A bounceless, non-arcing solid-state switch with controlled transition time will also be designed and built to study AC switch transients. In the past, space hardware such as the Spacelab Remote Acquisition Unit (RAU) has been found susceptible to turn-on transients, despite having been qualified to MIL-STD-461. Because widely accepted detailed transient emission test procedures do not currently exist, this effort fills the void and provide a big improvement in the quality of data gathered by NASA.

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Sponsor

NASA Space Environments and Effects (SEE) Program