Active Differential Voltage Probes

Agilent 1153A Low-Bandwidth Active Differential Voltage

- **View of low-bandwidth differential signals in the presence of much larger common-mode signals**
- **dc to 200 MHz bandwidth**
- **Input from ±300 mV (dc + peak ac) to ±30 V with attenuation**
- **3000:1 CMRR at 1 MHz**
- **Input coupling: dc offset, low-frequency reject, ac coupling**
- **Low dc thermal drift**

Reliable Probing of Low-Bandwidth Signals

The Agilent 1153A is a 1:1 FET differential probe with 200 MHz bandwidth and 3000:1 CMRR (Common Mode Rejection Ratio) at 1 MHz. Two attenuators, 10:1 and 100:1, expand the dynamic range of the inputs up to + 30 V. The probe has a high input resistance of 1 MΩ and low input capacitance of 7 pF to minimize circuit loading.

Input coupling modes include dc, dc with variable offset, and low-frequency (LF) reject. The probe also comes with an ac coupling adapter for those cases where the input dc voltage level prevents the use of LF reject. LF reject, like ac coupling, blocks the dc component in a signal without degrading low frequency CMRR, which occurs when you use blocking capacitors to accomplish ac coupling. The probe's dual-path amplifier design provides superior dc stability by reducing the drift to less than 50 µV dc per degree Celsius.

The 1153A is designed for reliability through use of over-voltage protection circuitry, which decreases the probe's susceptibility to damage from electrostatic discharge and other accidental exposure to excessive voltage. Special attention is paid to isolating critical parts from shock.

The probe is compatible with the AutoProbe interface, which completely configures the Infiniium scope for the probe. The probe interface recognizes the probe and automatically sets up the proper power, coupling modes, 50 Ω impedance, and offset range. A snap-on BNC connector simplifies connecting the probe to the scope.

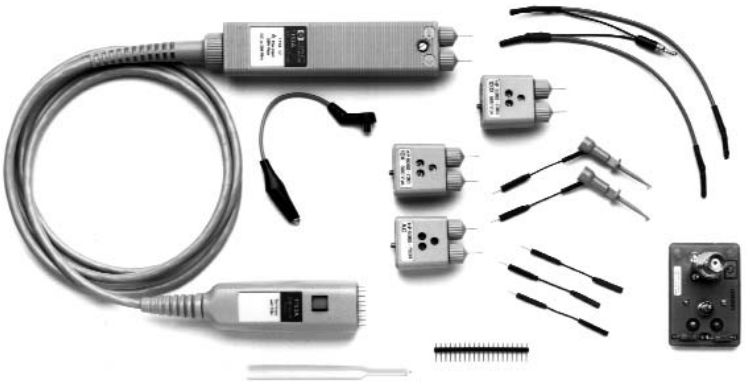

Figure 4.3. Agilent 1153A 1:1 FET differential probe with 200 MHz bandwidth.