Wayne Kerr Electronics

/Y option – Polar/Complex Plots

6500B Series Precision Impedance Analyzer

The Polar/Complex Plots function is a firmware option (order code /Y) available on the 6500B Precision Impedance Analyzer series. It is only available in Analysis Mode, and therefore cannot be installed on a 6500P HF LCR Meter. It can be factory fitted at the time of manufacture, or added later by the user.
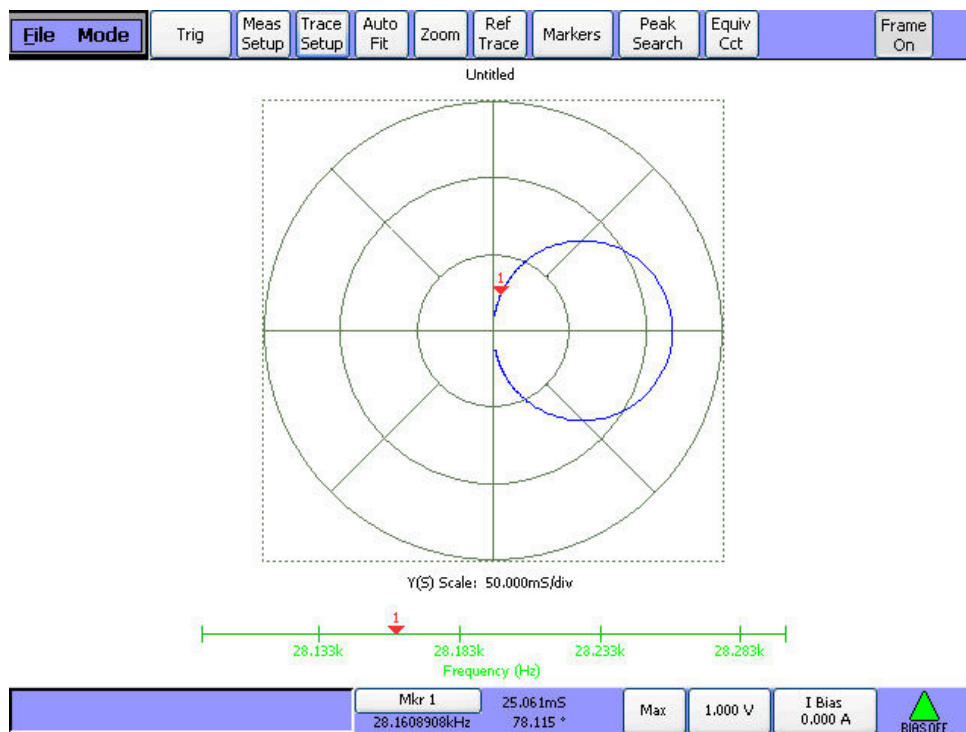
The Polar/Complex Plots function provides 2 more display formats in Analysis Mode in addition to the Combined and Split formats.

Polar Plots

This setting offers the following choices for the Polar Plot:

> 1. Z (Impedance & Angle plot)
>
> 2. Y (Admittance & Angle plot)

This gives a plot where the Z or Y parameter is displayed on an absolute value scale as the distance from the origin, and the phase angle is displayed as a counter-clockwise (positive) phase angle from the x-axis.
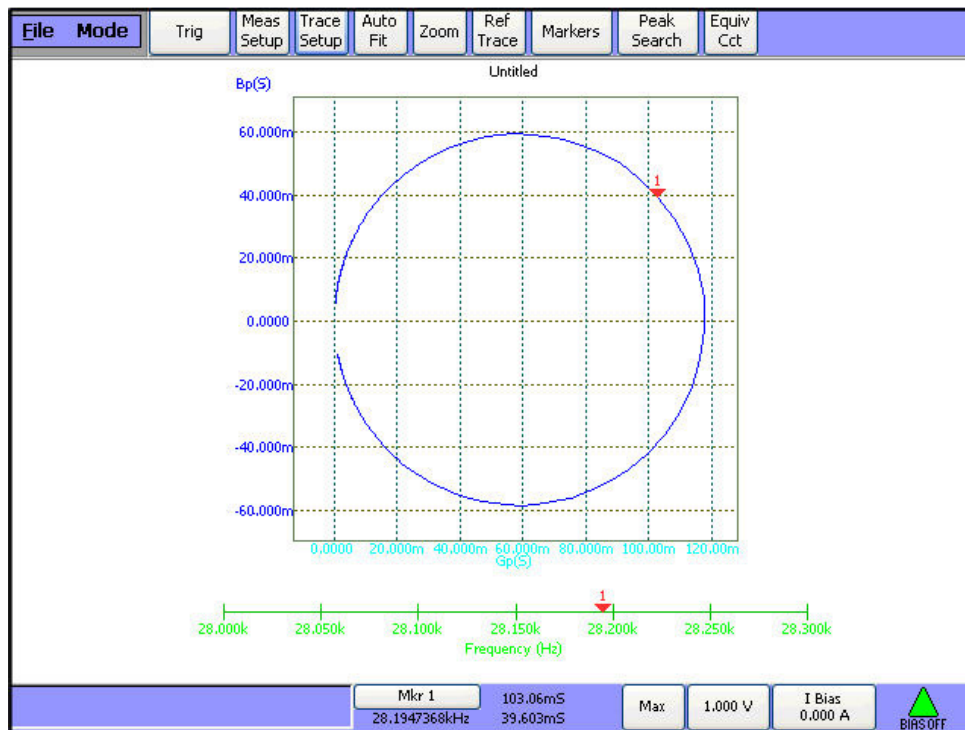

Example of Y Polar Plot showing Admittance and Phase Angle

Complex Plots

This setting offers the following choices for the Complex Plot:

> 1. Rs/Xs (Series Resistance against Series Reactance plot)
>
> 2. Gp/Bp (Parallel Conductance against Parallel Susceptance plot)
>
> 3. Z'/Z" (Real Impedance against Imaginary Impedance plot)

This displays the plot as a grid scale whose horizontal axis is the real parameter (Rs, Gp or Z') and whose vertical axis is the imaginary parameter (Xs, Bp or Z").

Example of Complex Plots showing Gp against Bp

For both types of plot, the measurements traces can be swept against Frequency, AC Drive Level and DC Bias Level (when a /D dc bias option is fitted).

It is possible to toggle between the Combined/Split, Polar and Complex plots formats in order to view the same measurement traces in the different plot formats.

The standard sweep analysis features in standard Analysis Mode, including the 3-element and 4-element Equivalent Circuit Analysis /E option, are also available with the Polar Complex Plots option.

Installation

This option can be installed on a unit at the time of manufacture, or by the customer later after a licence has been emailed to them.