Vector Network Measurement System

Anritsu Company, a provider in high-performance test and measurement solutions, introduces the MS4600/4B option for its Scorpion&reg MS46XX RF Vector Network Measurement System (VNMS). The MS4600/4B extends the noise figure frequency of the VNMS to 6 GHz so it can analyze low noise amplifiers (LNAs) and other devices covering the 5.2 GHz-5.8 GHz band that are used in applications such as ETC, HIPERLAN, WLAN, and ISM.

The MS4600/4B brings Scorpion's inherent advantage as a single-instrument solution that combines the ability to conduct all typical RF measurements, such as gain, Intermodulation Distortion (IMD) and Noise Figure (NF), with power and frequency sweep capabilities to the 5.2 GHz-5.8 GHz band. With the flexibility of Scorpion, handset and base station component manufacturers can have a VNMS configuration that suits their immediate needs as well as provides them with an easy and affordable upgrade path.

Because the Scorpion VNMS has the capability of vector error correction, it provides greater noise figure measurement accuracy than specialized NF analyzers, which use a traditional scalar measurement approach. The improved accuracy is seen in two main areas &#151 gain and noise source match &#151 both of which play a key role in the calculation and measurement of noise figure.

Scorpion uses available gain rather than insertion gain in the second stage noise figure equations, as well as S-parameter gain measurements instead of noise-based gain measurements. Because S-parameter information is available with vector error correction, noise source match variations associated with state changes and changes in noise coupling to the device under test (DUT) can be handled properly, resulting in a more accurate noise figure measurement.

As well as greater accuracy, Scorpion offers flexibility and convenience. Scorpion's single connection measurement approach combines all typical RF measurements in a single instrument, making complete characterization of LNAs easy and convenient. The single-connection approach also aids in achieving a balance between best gain, match, and NF because there is no need to change measurement equipment or connections. Scorpion can also quickly, easily, and accurately characterize the noise figure of a mixer with frequency sweep of the LO or the IF. In addition to improving measurement capability, the single connection is more cost effective at both the manufacturing and R&D levels.

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