APPLICATION NOTE

MAGNETIC FIELD TESTING ON HIGH-FREQUENCY CONNECTORS FOR PIM QUALITY CONTROL

Magnetic contamination can cause PIM and signal degradation. Magnetic field testing reliably identifies critical connectors before installation.

THE CHALLENGE

In modern 4G and 5G networks, passive intermodulation (PIM) can degrade signal quality. Magnetic contamination or ferromagnetic materials in high-frequency connectors contribute to non-linear mixing effects. Since PIM cannot be filtered out, components must be verified before installation. Reliable residual magnetic field testing is therefore essential for quality control.

THE SOLUTION

Magnetic signature testing is performed using MAGNETOSCOP or MAGNETOMAT systems with a differential probe such as the PFD-100. The opposing sensor arrangement compensates for environmental disturbances while detecting local magnetic anomalies. Components are positioned on one sensor, enabling rapid classification of magnetic field strength without magnetic shielding.

THE RESULT

The method enables clear differentiation between compliant and non-compliant connectors, for example ~100 nT for acceptable parts and ≥1000 nT for defective ones. High sensitivity and differential measurement improve reproducibility and detection reliability. The system supports effective PIM quality control in high-frequency electronic components.

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MAGNETOSCOP

Portable Solution For Magnetic Field and Permeability Measurement

PROBES AND SENSORS FOR MAGNETOSCOP & MAGNETOMAT

Flexible Solutions for Magnetic Field and Permeability Measurements

MAGNETOMAT

PC-supported magnetometer for measuring magnetic flux density and relative permeability

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