SRF5030T Near Field Probe

User Manual

Introduction

The SRF5030T near field probe set are magnetic field (H) and electric field (E) probes for radiated emissions EMC pre-compliance measurements. The probes are used in the near field of sources of electromagnetic radiation.They serve to locate and identify potential sources of interference within the building blocks of electronic assemblies.

The probes act similar as wide bandwidth antennas, picking up radiated emissions from components, PCB traces, housing openings or gaps and from any other parts that could be emitting RF. They are usually connected to a spectrum analyser. Scanning the probe over the surface of a PCB assembly or housing quickly identifies locations which emit electromagnetic radiation. By changing to a probe with smaller size, the origination of the emissions can be further narrowed down.

Additional applications are RF immunity tests by feeding a RF signal into the probe and radiating it into potentially susceptible circuit sections: Furthermore the probes can be used in the field of repair or debugging to track down issues in RF signal chains by contactless measurement of RF signal levels. One more application is non-invasive measurement of RF building blocks such as modulators or oscillators. Frequency, phase noise and spectral components can be measured in conjunction with a low noise preamplifier.

Features

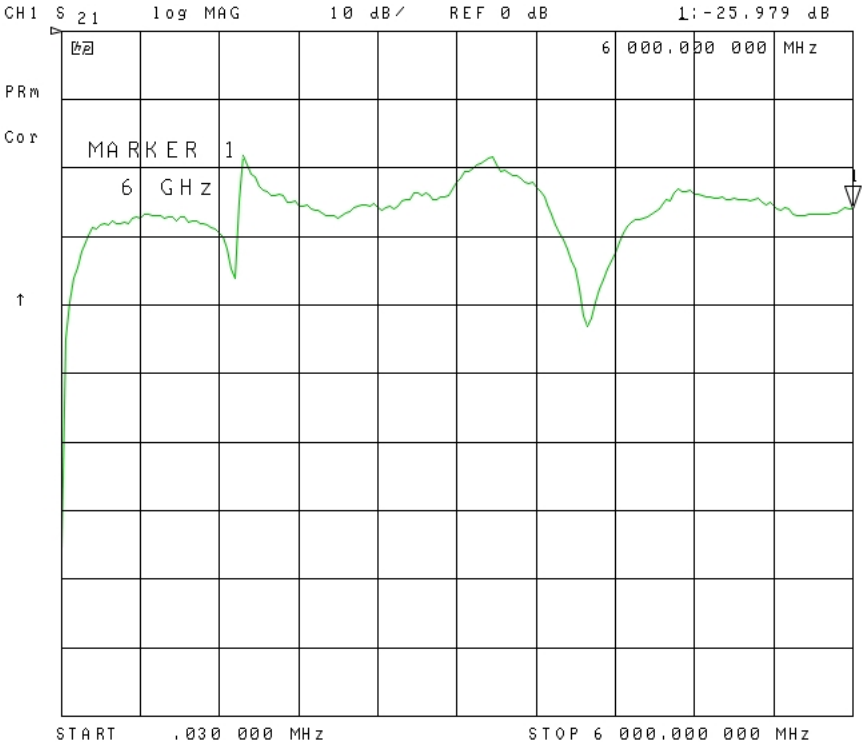
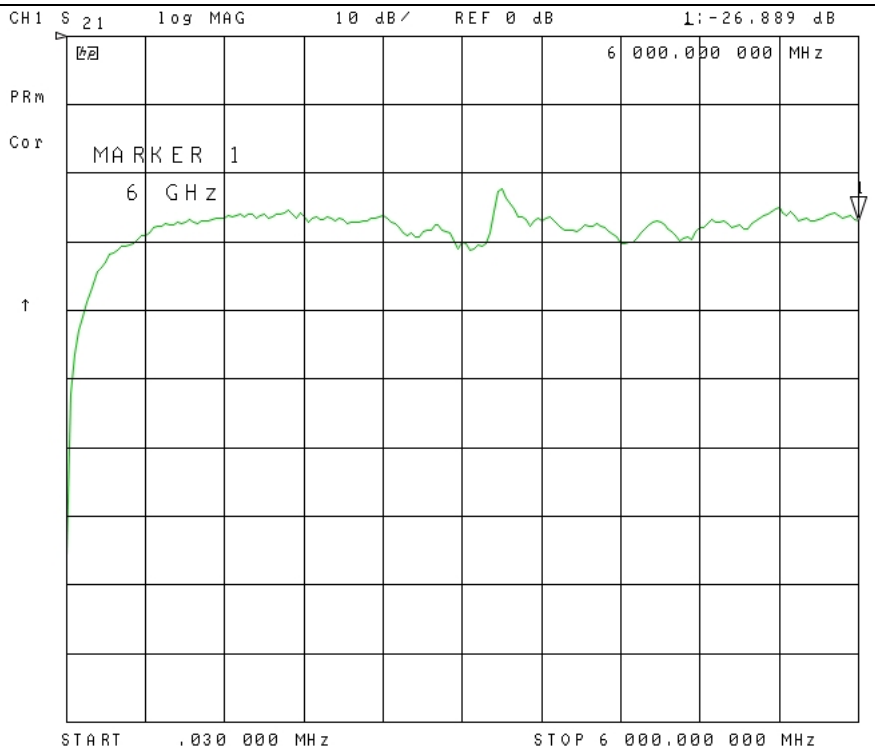
Slim design for good access in between tightly spaced components

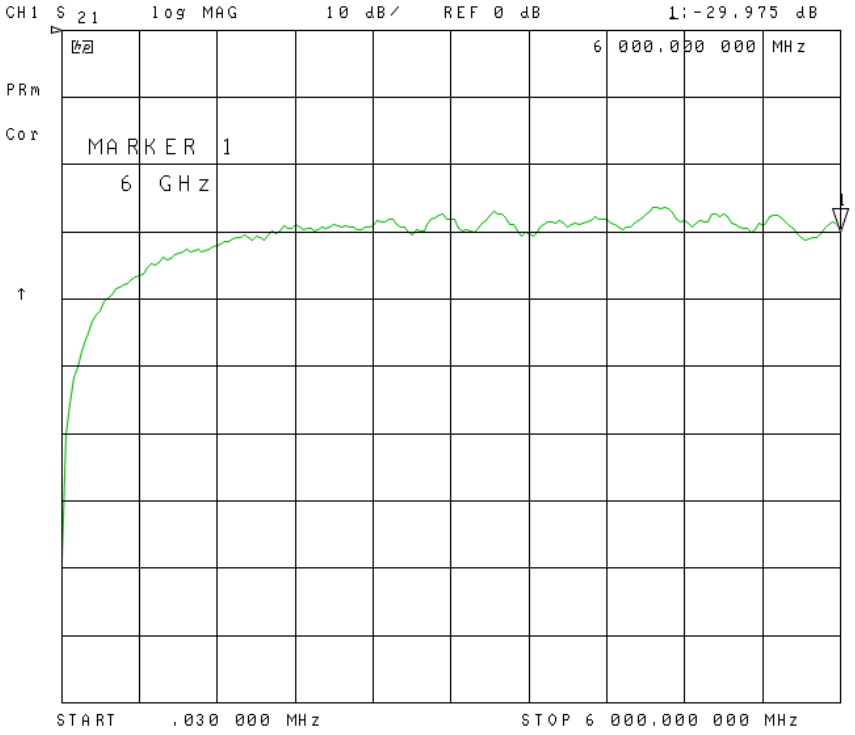
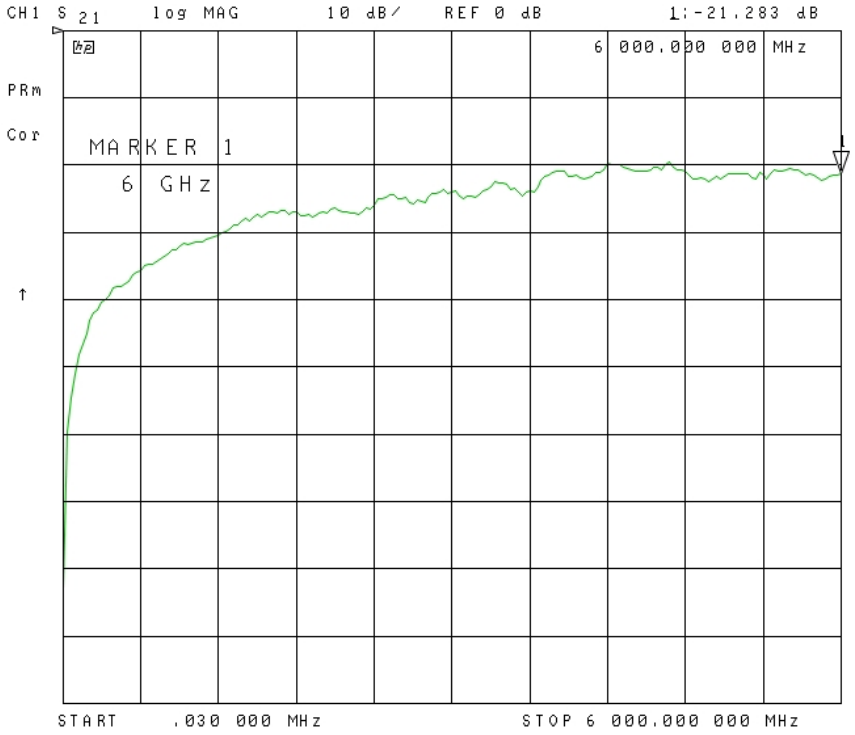
Shielded loops to avoid picking up common mode noise, insensitive to the human hand

Frequency range: 300 kHz-3 GHz, though they can be used well beyond 6 GHz

SMB connectors to avoid twisting the RF cable when scanning DUTs

Insulated with rubber coating

Model	Characteristic
H20 	
H10 	

Model	Characteristic
H5 	
E5 	

Specifications

Probe	Field	Resolution	Frequency
H20	H-Field	20 mm	300 kHz – 3 GHz
H10	H-Field	10 mm	300 kHz – 3 GHz
H5	H-Field	5 mm	300 kHz – 3 GHz
E5	E-Field	5 mm	300 kHz – 3 GHz

Connection	
Terminal Type	SMB (M)
Cable	SMB (F) to SMA (M), 100cm
Adapter	SMA (F) to N (M)

Spectrum analyzer settings

If the probes are used without wideband preamplifier, set the input attenuation to 0dB and turn on the internal pre-amplifier if available on your spectrum analyzer. Furthermore you can increase the dynamic range and sensitivity by reducing frequency span, resolution bandwidth and video bandwidth.

Warning

Do not use the EMC probes to measure devices containing DC voltages higher than 75V or AC voltages higher than 50V_{eff}. Though the probes are insulated with solder mask, conformal coating and rubber coating, sharp metal edges may damage the insulation and cause lethal electrical shocks!