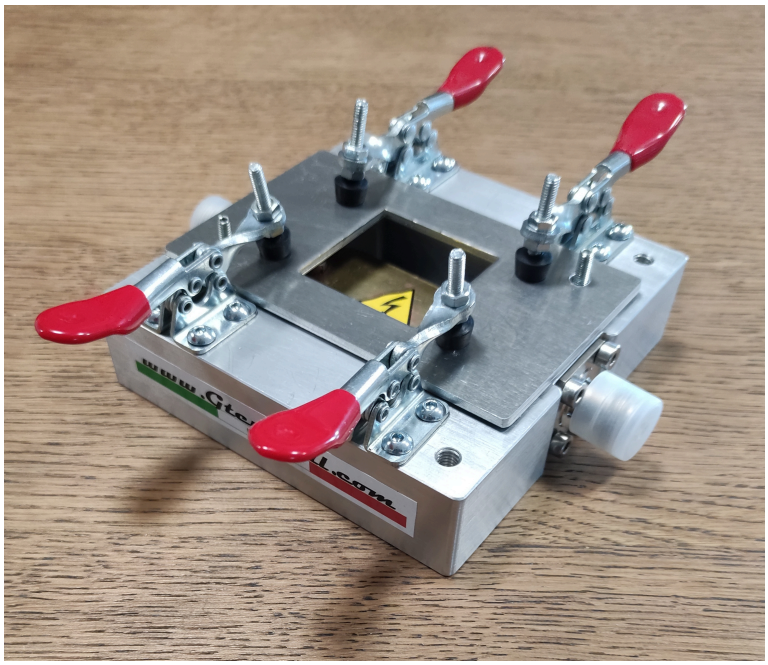
GTEMCELL TEM6000 - Stripline TEM Cell

(DC-6 GHz, up to 5 kV Pulse)

Description

TEM6000 is a 6 GHz IC Stripline TEM Cell generates the Electro-Magnetic field for testing small devices such as IC's, wireless communication modules, etc. An external test signal applied through the input port of the TEM6000 generates a consistent and predictable TEM test field inside the cell. The radiation field from a device transmitting in the Cell can also be detected through the port using a test receiver. The unique compact and economical design is optimized for medium accuracy measurements beyond the standard TEM Cell frequency range. The operation principle of TEM6000 is essentially the same as TEM Cell. The E-H field inside the test volume is proportional to the input voltage and inversely proportional to the cell height. If a radiating object is inserted inside the cell, the radiated wave toward input port is guided by the transmission line and picked up at the input with a receiver such as a spectrum analyzer. With this method, the RFI from a radiating device can be measured quantitatively. Since this apparatus is very broadband, it has many applications in the area of EMI, EMS, receiver sensitivity test, etc. The TEM6000 Cell requires only 0.3125 mW input power to achieve 10 V/m E-field, or 3.125 W to achieve 1000 V/m E-field.



Features

- Up to 6 GHz bandwidth (beyond normal TEM Cell bandwidth of 1 GHz)
- Can test up to 5 kV high voltage pulse for transient field injection

1. Applications

- Electromagnetic immunity test of IC

GTEM of E. S. Benites – 106, Ponte Str., 37015 – Sant'Ambrogio di Valpolicella (VR) – ITALY,
Tel.+39 3200470064 – Fax.+39 0541 1641013, EMail: gtem.cell@gmail.com; Web: www.gtemcell.com

• Electromagnetic radiation test of IC

• ESD/Surge field susceptibility test of IC

• IEC 61967-8:2011 Integrated circuits – Measurement of electromagnetic emissions, 150 kHz up to 3 GHz – Part 8: Measurement of radiated emissions – IC stripline method

• IEC 61967-2 Integrated circuits - Measurement of electromagnetic emissions, 150 kHz to 1 GHz –Part 2: Measurement of radiated emissions - TEM cell and wideband TEM cell method

• IEC 62132-8 Integrated circuits - Measurement of electromagnetic immunity - Part 8: Measurement of radiated immunity - IC stripline method

• SAE 1752-3 Measurement of Radiated Emissions from Integrated Circuits -- TEM/Wideband TEM (GTEM) Cell Method; TEM Cell (150 kHz to 1 GHz), Wideband TEM Cell (150 kHz to 8 GHz)

Specifications

Specification	Parameters
Frequency range	DC to 6 GHz (First spike by undesired higher order mode > 6 GHz)
TEM Cell Impedance	50Ω ± 5% nominal
VSWR	DC- 3 GHz 20 dB, 3 – 5 GHz >14 dB, 5 – 6 GHz >10 dB
Insertion Loss (S21)	DC- 3 GHz <1dB, 3-5GHz<1,5dB
Return Loss (S11 & S22)	DC- 3 GHz >20 dB, 3 – 5 GHz >14 dB, 5 – 6 GHz >10 dB
Effective Septum to Wall Height	12.5 mm
E-Field Strength at Center of Cell	80 V/m @ 1V (Maximum 240 kv/m static or 400 kv/m transient) Requires only 0.3125 mW input power to achieve 10 V/m E-field, or 3.125 W to achieve 1000 V/m. This is calculated based on 12.5 mm Septum to Wall Height.
H-Field Strength at Center of Cell	= E-Field Strength /377 (A/m)
RF Connectors	N-Type
Maximum Input Power	500 Watts Maximum
Maximum Input Voltage	3 kV @DC, 5kV @Pulse
DUT Port Dimension	50 (W) x 50 (D) mm
Recommended MAX DUT Dimensions	30 (W) x 30(W) x 3(H) mm
TEM Cell Dimensions	170 (W) x 120 (D) x 70 (H) mm
Weight	Approx. 1 kg