



TC-5063A Pneumatic UHF TEM Cell

Product Description

TC-5063A, Pneumatic UHF TEM Cell generates the Electro-Magnetic field for testing small RF devices such as wireless pager, GPS Receiver, Mobile phone, etc. An external test signal applied through the input port of the TC-5063A 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.

Theory of operation

TC-5063A UHF TEM cell is made to work beyond the typical TEM Cell operating frequency range limited by cell resonance. A typical TEM Cell is a 2-port symmetrical device; RF voltage is applied to one port while the other port is terminated in 50 ohm while maintaining 50Ω characteristic impedance along the cell. Due to expansion and contraction parts of the cell, the wave propagation beyond certain frequency is no more propagated by TEM mode alone and creates resonance. To eliminate the resonance problem, the half of the cell is replaced by the wave absorbing material. One commercial implementation is G-TEM cell. The size of the G-TEM design is too large for typical small device applications due to the type of absorber used. We borrowed the concept of the G-TEM, but changed the termination implementation scheme, and designed a very compact broad band TEM Cell that can be used on a desktop.

The operation principle of TC-5063A 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.



Key Features

- Radiation and susceptibility test
- A broadband TEM Cell up to 3GHz
- Small Size, Small footprint for Desktop application
- High Effective Shielding
- Specifically designed for various types of mobile phones
- Pneumatic Open / Close Construction
- RS-232C Open / Close control



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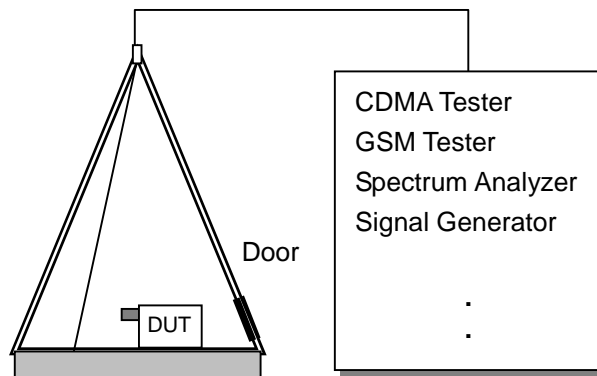
Testing Solutions for the Wireless Industry

TC-5063A Pneumatic UHF TEM Cell Preliminary

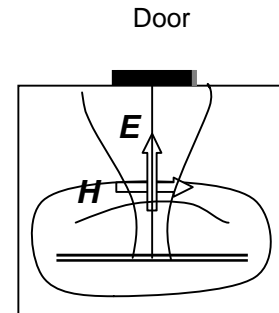
Applications

- Receiver sensitivity testing, Transmitter radiated power testing
- EMI and EMS tests for small UHF devices
- Mobile Phones, W-LAN, PDA, Bluetooth, DAB/DMB

Type-N RF Connector



Test Configuration



Field Pattern (Top View)

Specification

- Shielding effectiveness: > 80dB up to 2GHz, > 70dB 2GHz ~ 3GHz
- VSWR: < 1.7, 100MHz ~ 3GHz
- Path Loss: 22dB Typical
- Field Strength at Center of Cell: 13 dB μ V/meter at 1 μ V input
- Effective Cell Height: 220 mm
- RF Connector: N(f) outside, SMA(f) outside and SMA (f) inside
- Data Connector: DB9 (f) outside and DB9 (f) inside
- Remote control: RS-232C, 3 wire, DB9(p)
- Line Voltage: 100 to 240 volt AC, 50/60 Hz, 15 watt max
- Input air pressure: 5 bar to 10bar
- Main air connector: 6mm OD hose, one-touch push-on fitting
- Weight Total: 27 kg
- Dimension: 344(W) x 420(D) x 725(H) mm door closed. 614(D) mm, door open
- Door size: 176(W) x 130(H) mm

SPECIFICATIONS SUBJECT IS TO CHANGE WITHOUT PRIOR NOTICE.