

TC-5062C 6 GHz TEM Cell



Product Description

TC-5062C, 6 GHz TEM Cell generates the Electro-Magnetic field for testing small RF devices such as wireless communication receiver, Mobile phone, etc. An external test signal applied through the input port of the TC-5062C 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-5062C 6 GHz 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 50 ohm 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. TESCOM borrowed the concept of G-TEM, but changed the termination implementation scheme, and designed a very compact broad band TEM Cell that can be used on a desktop.

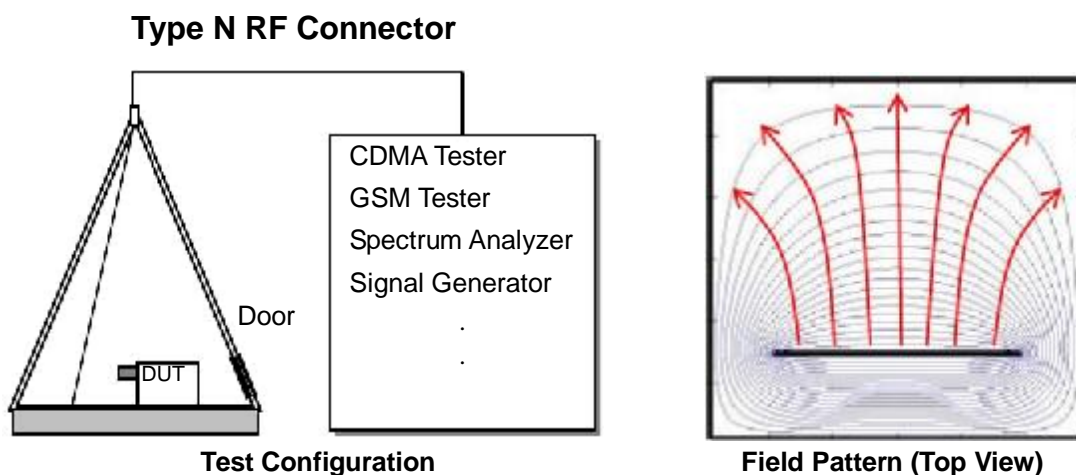
The operation principle of TC-5062C is essentially the same as TEM Cell. The E-H field inside the test volume is proportional to the input voltage and inversely proportional to the cell height. If a radiating object is inserted inside the cell, the radiated wave toward input port is guided by the transmission 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

Features

- Radiation and susceptibility test
- Broadband TEM Cell up to 6 GHz
- Small size, Small footprint for desktop application
- High effective shielding
- Specifically designed for all types of mobile phones
- Able to install DUT Rotator

Applications

- Receiver sensitivity testing, Transmitter radiated power testing
- EMI and EMS tests for small Wireless devices



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Specifications

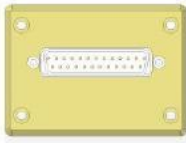

General Specification

VSWR	< 1.7, 700MHz ~ 6 GHz
Path Loss	25 dB Typical @1.8 GHz dipole
Effective Cell Height	220 mm
Field Strength at Center of Cell	13 dB μ V/meter at 1 μ V input
RF Connectors without module	1 N(f) topside, 1 SMA(f) outside and SMA(f) inside
Dimension	
Inside	268(W) x 205(D)
Outside	344(W) x 380(D) x 675(H) mm
Door Size	176(W) x 130(H) mm
Weight	19 kg

Typical RF Shielding

700 to 2000 MHz	> 80 dB
2000 to 3000 MHz	> 70 dB
3000 to 6000 MHz	> 60 dB

Optional I/O Modules for TC-5062C

Appliance	Module Number & Description
	<p>M506202A ; DB25 Data Interface Module</p> <p>Shielding Spec. : >70 dB from 0.1 to 2 GHz, >60 dB from 2 to 3 GHz, >55 dB from 3 to 6 GHz</p> <p>Working Voltage: 100 VDC</p> <p>Dielectric Withstanding Voltage: 300 VDC</p> <p>EMI Filter: 1000 pF Pi filter</p>
	<p>M506204A ; USB2.0 Data Interface Module</p> <p>Shielding Spec. : >60 dB from 0.1 to 6 GHz</p> <p>USB A 2.0 outside and inside</p>

*Values are typical values when the module is mounted on the shield box

Ordering Information

Product	Module Number
6 GHz TEM Cell (including accessories below)	

Operating Manual	
Test Report	
SS-402, N(m) to N(m) 2 m (< 6 GHz)	TC-5062C

Optional Module

DB25 Data Interface Module	M506202A
USB2.0 Data Interface Module	M506204A

Optional Accessories

SS-402, N(m) to N(m) 1 m (< 6 GHz)	4011-0001
SS-402, N(m) to N(m) 2 m (< 6 GHz)	4011-0019
SS-402, N(m) to SMA(m) 2 m (< 6 GHz)	4011-0020
DB9(p) to DB9(s) cable, 1 m	4003-0004
DB25(p) to DB25(s) cable, 1 m	4003-0005
USB A(p) to USB A(p) cable 1 m	4008-0017
USB A(p) to USB A(s) cable, 50 cm	4008-0018

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