

TC-5060A/B UHF TEM Cell

Product Description

TC-5060A/B, economy UHF TEM Cell generates a consistent Electro-magnetic field for testing small RF devices such as mobiles, Bluetooth, DAB/DMB, RFID, Zigbee, etc. An external test signal applied through the input port of the TC-5060A/B 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-5060A/B 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. 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.

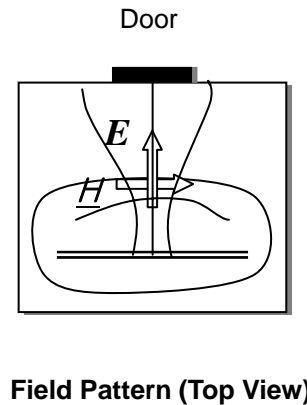
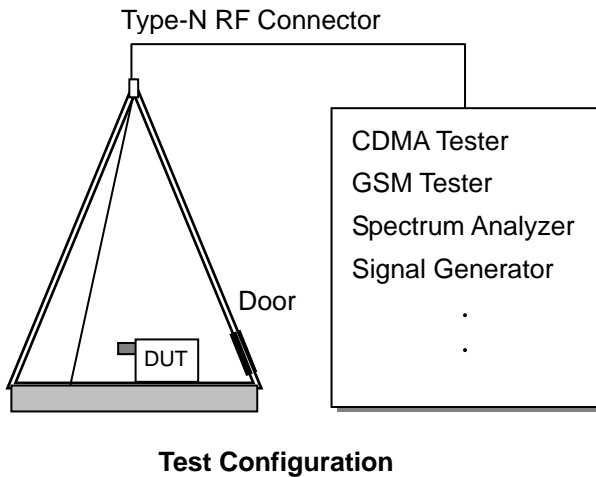
The operation principle of TC-5060A/B is essentially the same as TEM Cell. The E-H field inside the test volume is proportional to the input voltage and inversely proportional to the cell height. If a radiating object is inserted inside the cell, the radiated wave toward input port is guided by the transmission 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
- Broadband TEM Cell up to 3 GHz
- Small size, Small footprint for desktop application
- High effective shielding
- Specifically designed for all types of mobile phones

Applications

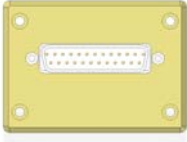


- Receiver sensitivity testing, Transmitter radiated power testing
- EMI and EMS tests for small UHF devices
- Mobile Phone, W-LAN, PDA, Bluetooth, DAB/DMB



Specification

- VSWR : < 1.7, 400MHz ~ 3GHz (TC-5060A); < 1.7, 100MHz ~ 3GHz (TC-5060B)
- Path Loss : 22dB Typical
- Effective Shielding : > 80dB up to 2GHz, > 70dB 2GHz ~ 3GHz
- Effective Cell Height : 220 mm
- Field Strength at Test Point : 13 dBuV/m at 1 uV input
- Data Connector : DB25(p) outside, DB25(s) inside
- RF Connector : N(f) outside, SMA(f) outside and SMA(f) inside
- Dimension : 344(W) x 380(D) x 675(H) [mm]
- Door Size : 176(W) x 130(H) [mm]
- Weight : 19 Kg
- Accessories Supplied : 4006-0002, N(m) to N(m) cable, 2m, 1pc.
1901-0002, SMA 50Ω Termination, 1pc. (TC-5060B only)

Optional I/O module

Module	Specification
M506202A	DB25 Data interface module
	<ul style="list-style-type: none"> - Shielding Spec. : >80dB up to 2GHz, >70dB 2GHz to 3GHz - Working Voltage: 100VDC - Dielectric Withstanding Voltage: 300VDC - EMI Filter: 1000 pF Pi filter
M506204A	USB2.0 interface module
	<ul style="list-style-type: none"> - Shielding Spec. : >70dB up to 2GHz, >60dB 2GHz to 3GHz - USB A 2.0 outside and inside
M506208A	Ethernet interface module
	<ul style="list-style-type: none"> - Shielding Spec. : >70dB up to 2GHz, >60dB 2GHz to 3GHz - Ethernet outside and inside, for LAN

Ordering Information

TC-5060A, UHF TEM Cell

TC-5060B, UHF TEM Cell

F5060-10, DUT Mounting Fixture, Maximum 50mm x 125mm

F5060-20, DUT Mounting Fixture, Maximum 90mm x 125mm

M506202A, DB25 module

M506204A, USB2.0 module

M506208A, Ethernet module

4003-0005, DB25(p) to DB25(s) cable, 1m

4008-0006, RJ45 to RJ45 cable, Direct (uncrossed), 30cm

4008-0007, RJ45 to RJ45 cable, Direct (uncrossed), 2cm

4008-0017, USB A(p) to USB A(p) cable, 4C, 1m

4008-0018, USB A(p) to USB A(p) cable, 4C, 50cm



F5060-10



F5060-20

※ Only one module can be installed in the TEM Cell.

Design Patent 237512

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.