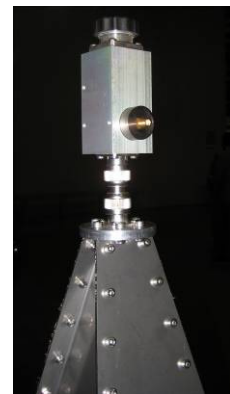


EMC GTEM-250

Gtem Cell

Introduction

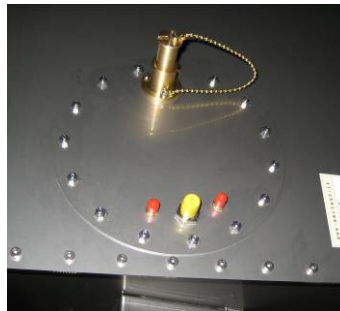
The GTEM cell is a TEM waveguide with the upper frequency limit extended to the GHz range. It is under consideration as an alternative measurement facility for both radiated emission and immunity measurements. It is included in the recently published standard IEC 61000-4-20 "Emission and Immunity Testing in Transverse Electromagnetic (TEM) Waveguides".



Apex



Locking System



Technical Panel



Multipolar Filter

Key Features

- Engineered and completely manufactured in Italy.
- Ruggedized fully INOX steel construction
- Unique compact design.
- Optimized for EMI and EMC.
- Strong fields achieved with low input power
- Broadband up to 6GHz (up-gradable up to 20Ghz.)
- High effective shielding
- 15 poles filter standard
- Excellent quality at Low cost

Theory of operation

GTEM-cells (Giga-hertz Transversal Electro-Magnetic cells) are waveguide structures intended for electromagnetic compatibility measurements, as well as biomedical applications. The electromagnetic field distribution inside the cell is in TEM mode. With TEM mode propagation, there is no component of electric and magnetic field in the direction of propagation of electromagnetic wave. Therefore the field components are strictly perpendicular. Assuming the field distribution ideal TEM below the cut-off frequency of the cell (before the introduction of higher order modes), the electromagnetic field distribution can be considered static.

Applications

- EMI and EMS devices
- Radiation and susceptibility test
- Specifically designed for telecom application
- Biomedical and dosimetrical applications
- Isotropic sensors calibration
- Receiver sensitivity test

Specifications *

Operating range:	0,1MHz-6GHz (0,1MHz-20GHz)
RF Input	max continuous. input power: 25W RF
Input connector type	"N" UG-21 connector
Shielding:	better than 60 to 100dB depending from frequencies
Absorbers:	350 mm TDK
Outer cell dimension:	(L)1150x(W)640x(H)440mm
Door Size:	450 x 250mm
Construction	Fully inox steel 10/10 and 20/10

Technical panel *

Power supply / Filter box - In and out. *

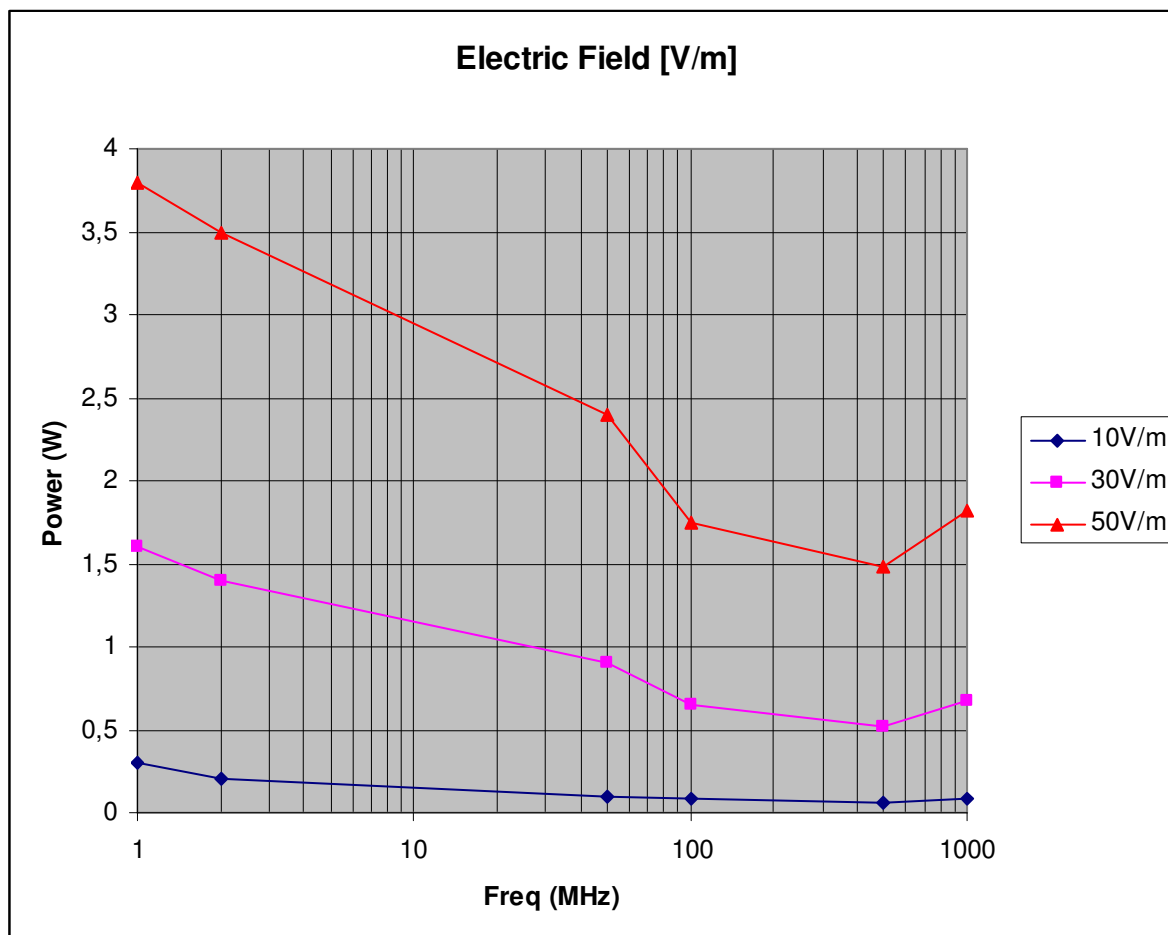
N.1 Feed-thru "N"	N.1 6 amp. 250VAC, two phase + line filter
N.2 "SMA" connectors	N.1 filtered 10 poles connector 10A 600Vdc
N.1 feed-thru fibre optic penetration for 1 couples.	N.3 filtered banana sockets 1A 1000Vac

Options

Inspection window with shielded polycarbonate glass
Feedtrough panels, pipes connector
multi holes feed-thru fibre optic penetration for 3 or 6 couples.
Honeycomb air vents exhaust fan
TDK 6mm. ferrite tiles on the bottom

* data subject to variations without notice

Power required / Electric field Vs. frequency



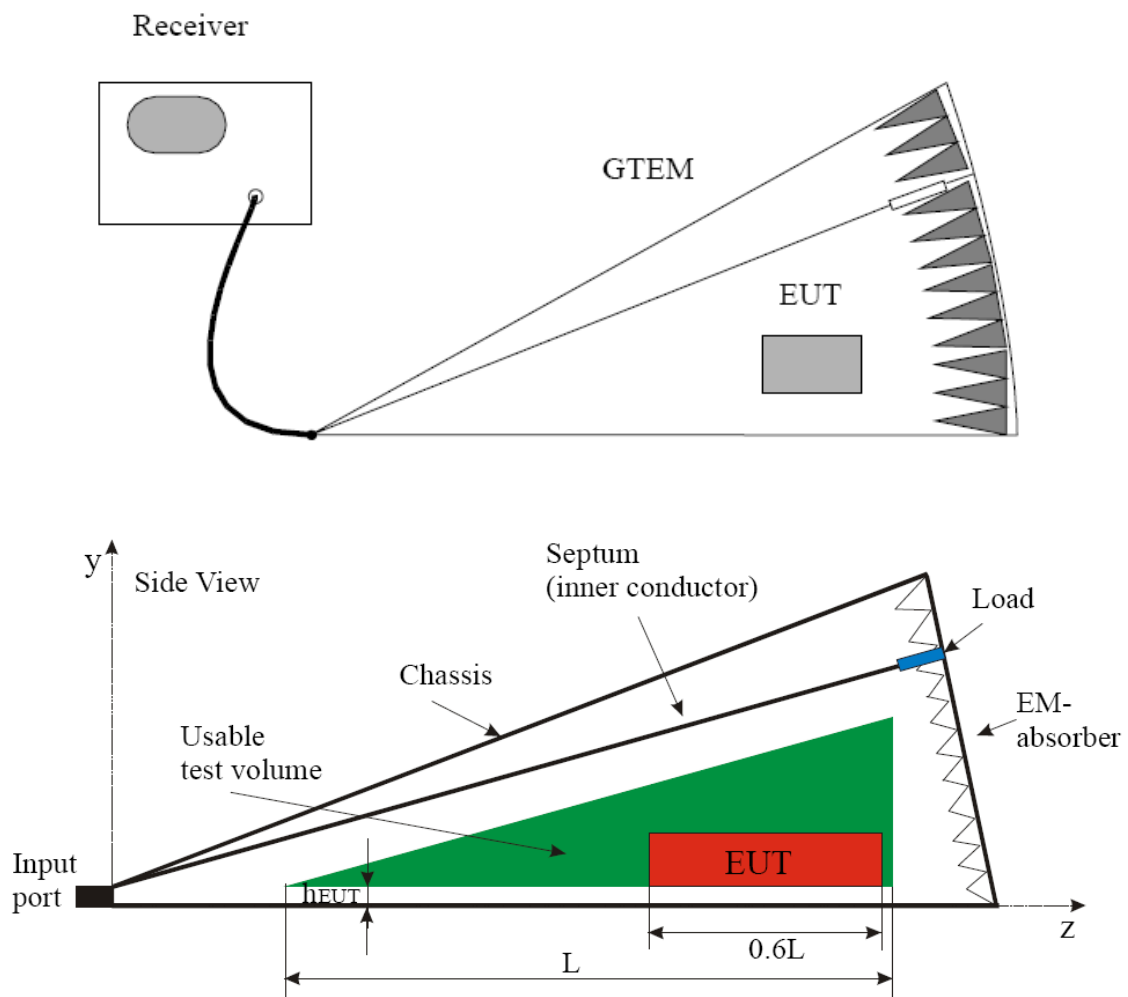
Installation manual and general safety instructions

The GTEM (GigaHertz Transverse Electromagnetic) cell is a precision electromagnetic compatibility (EMC) test instrument primarily intended for use as radiated immunity and radiated emission test facility without environmental electromagnetic interference.

The cell is electrically similar to a coaxial cable with one side open (the apex) and other side closed on the impedance of the generator or receiver connected. In this case with a multi-meter appears as 50 Ohm resistance.

Measurement setup

The setup for emission measurements in a GTEM cell is shown in Fig.1. the EUT is placed inside the GTEM and its radiation is measured with a receiver. The receiver can be software controlled, and some software that includes the GTEM to OATS correlation is commercially available.



Before using GTEM-250 cell, please read the following instructions



The cell is made to work in Horizontal position.

The Input port N connector at the top of the pyramid is very delicate: please take care avoiding to break the internal pin. For frequent use leave a coax cable in a stable connection.

The internal coaxial semi-rigid cable require care during handle, don't make torsion or fold too much .

The filter and the technical panel units contents feed-trough connections Pin-to-pin to supply EUT (Equipments under test) with AC or DC source or I/O connection. Please refer to the max limit stated in the specification section.

Don't apply over currents and over-voltage.



The unit must be separately earthed, or connected to an AC main source with a hearth connection.

Possibly supply energy from a tapes source equipped with earth connection and differential magneto- thermic protection switch



During immunity test, Don't leave open door, Radio frequency could interfere with civil communications. Long term Expositions at High RF levels could be dangerous for the health.



Maintenance require periodically check of the gaskets and the lock system. Don't apply strong pressure on to the gaskets. Leave the door open when the cell is stored for a long time, it preserve the gaskets. Keep clean the internal ambient of the cell from the carbon residual, it could cause short circuit in the E.U.T. and between the connections! If necessary help you with an air vacuum cleaner.

For any trouble feel free to contact us at: emctest@gmail.com