



# GTEM 250A-SAE TEST CELL FOR SAE 1752/3, IEC 62132-2 AND IEC 61967-2



A GTEM (Gigahertz Transverse Electro Magnetic) cell is a test site for efficiently performing both radiated immunity and emissions testing in a single, controllable and shielded environment. Compared to other test sites, GTEM testing is faster with high accuracy and excellent reproducibility.

In principle, the GTEM cell is a coaxial line expanding pyramidally and having an impedance of 50 Ω. At its end, the line is terminated by a combination of termination resistors and RF absorbers designed and constructed to match the above mentioned impedance.

Teseq offers with GTEM 250A-SAE a GTEM cell with excellent VSWR for improved testing in range above 1 GHz.

- Test cell with special opening to test integrated circuits on approx. 45 mm septum height
- Meets IEC/EN 61000-4-20, SAE J1752/3, IEC 62132-2 and IEC 61967-2
- For 100 Watts input power
- Excellent VSWR up to 18 GHz

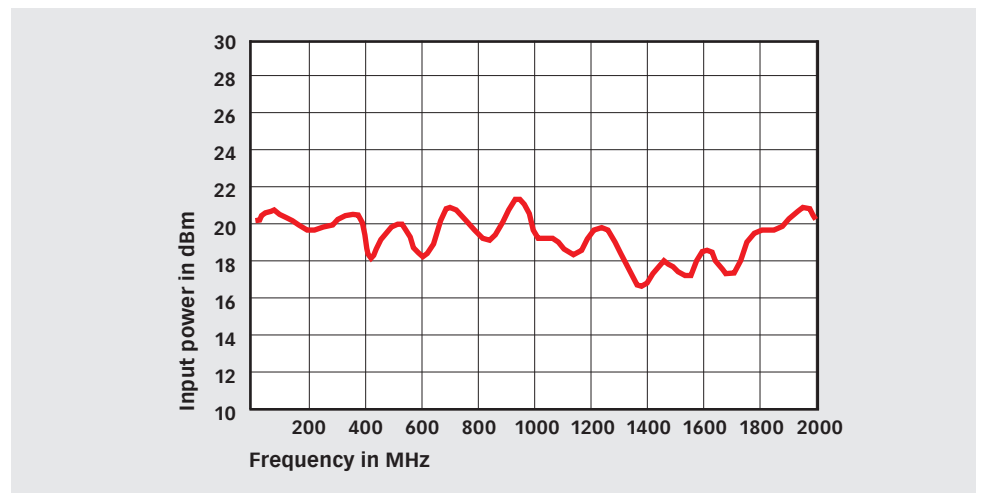
### Emissions measurements

The standards SAE J1752/3 and IEC 61967-2 define a method for measuring the electromagnetic radiation from an IC (integrated circuit) in the frequency range 150 kHz to 1 GHz. The IC itself is mounted on a shielded test board that is clamped to a special hole in the top of the TEM cell. Except for the IC, all the interface wiring and other required components are placed on the outside of the test board which becomes part of the cell wall. A spectrum analyzer or measurement receiver is connected to the GTEM and measures the RF emissions from the integrated circuit.

### Immunity testing

The test board described above can also be used for IC immunity testing with a GTEM cell. The standard IEC 62132-2 specifies the immunity test method for integrated circuits in the frequency range 150 kHz to 1 GHz.

### Required input power for field strength of 10 V/m (Y axis, typical values)



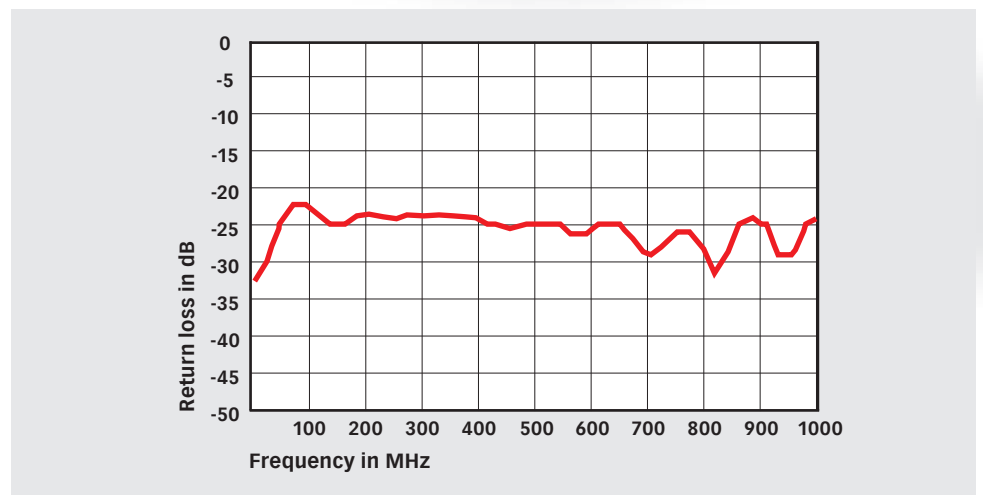
Advanced Test Solutions for EMC

# **GTEM 250A-SAE** **TEST CELL FOR SAE 1752/3, IEC 62132-2** **AND IEC 61967-2**



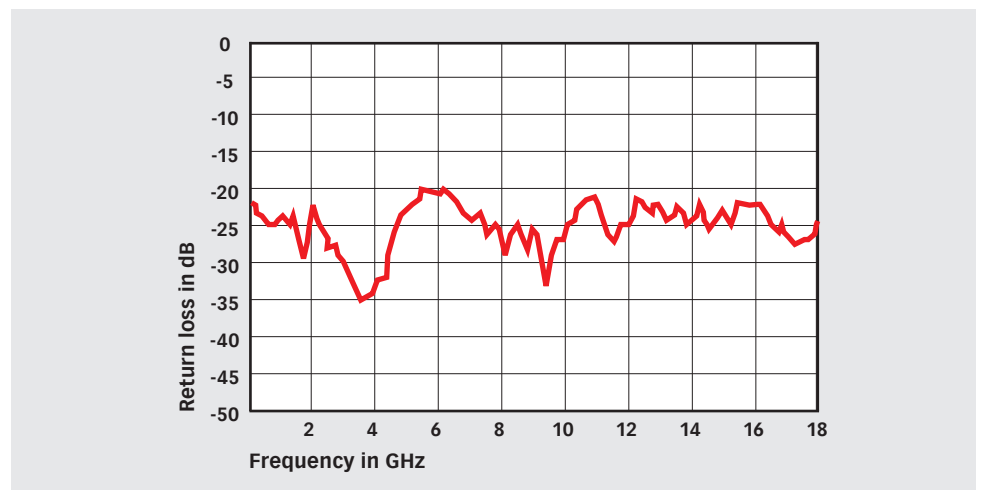
GTEM 250A-SAE with view to the back side

Return loss (typical values) in the frequency range 1 MHz to 1 GHz



GTEM 250A-SAE with view to opening for IC testing

Return loss (typical values) in the frequency range 1 to 18 GHz

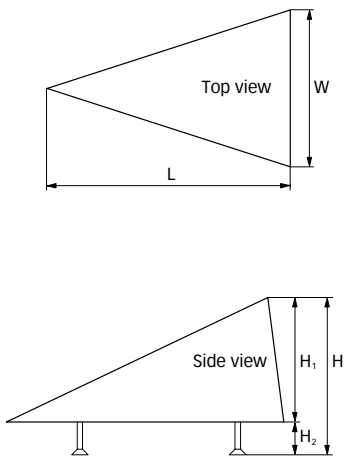




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## Technical specifications



Max. septum height:	250 mm
Septum height at marker position:	217 mm
Dimension (LxWxH in m):	1.25 x 0.65 x 0.45
Weight:	45 kg
Height H <sub>1</sub> of cell corpus:	0.345 m
Height H <sub>2</sub> of supports:	0.105 m
Door (LxH in m):	0.20 x 0.13
EUT size (max. dimension, LxWxH in m):	0.20 x 0.20 x 0.15
EUT dimension for uniform-area 0 to 6 dB (LxWxH) in m:	0.083 x 0.083 x 0.083
RF-input connector:	N-type
Nominal impedance:	50 Ω
Frequency range:	DC up to 20 GHz
Frequency range according IEC/EN 61000-4-20:	30 to 1000 MHz
Return loss / VSWR:	≥ 20 dB / <1.25:1
Max input power (without additional external air cooling, without any EUT waste heat)	
below 1 GHz:	100 W for 15 min
above 1 GHz:	100 W continuous
Operating temperature:	+5°C to +30°C
Temperature range for this specification:	+20°C to 28°C
Shield characteristic (without any filter)	
10 MHz to 1 GHz:	100 dB
1 to 18 GHz:	90 dB
Dimensions of the opening for IC testing:	80 mm x 80 mm
Septum height for IC testing:	approx. 45 mm

# **GTEM 250A-SAE**

## **TEST CELL FOR SAE 1752/3, IEC 62132-2 AND IEC 61967-2**

### **Model No. and options**

Part number	Description
252925	GTEM 250A-SAE GTEM with septum height 250 mm, 100 W, low VSWR, with special opening to test IC with approx. 45 mm septum height, meets SAE 1752/3, IEC 62132-2 and IEC 61967-2
251720	ETV 250 Option for GTEM 250: Extended test volume for GTEM 250 in direction to the input section, lowest septum height of 100 mm, max. EUT size of 30 x 30 x 30 mm @ 100 mm septum height, special shipment required, order only with GTEM
251970	SHW 250 Shielded window for GTEM 250 door (SHD 1), order only with GTEM
225583	SIA 250 Option for GTEM 250: Upgrade of empty EUT BOX (included in standard delivery) to 10 x 15 A filter with banana jacks, 4x 5 A filter with Sub-D 9 pins, order only with GTEM 250
225584	SIB 250 Option for GTEM 250: Upgrade of empty EUT BOX (included in standard delivery) to 2 x 15 A filter with banana jacks, 37x 5 A filter with Sub-D 37 pins, order only with GTEM 250
255200	SIC 250 Option for GTEM 250: Upgrade of empty EUT BOX (included in standard delivery) to mains port 6 A, 6x filter with banana jacks and 9x filter with Sub-D 9 pins, order only with GTEM 250
255215	SID 250 Option for GTEM 250: Upgrade of empty EUT BOX (included in standard delivery) to mains port 6 A, 2x filter with banana jacks, 1x PE and 15x filter with Sub-D 15 pins, order only with GTEM 250
251150	EUT BOX-250 Option for GTEM 250: Upgrade of empty EUT BOX (included in standard delivery) to 4x 16 A power filter, 250 V AC, banana, order only with GTEM 250
251151	EUT BOX-251 Option for GTEM 250: Filter box with 4x 16 A power filter, 250 V AC, banana, easy exchangeable of standard GTEM 250 filter box
225569	OPL 250 Option for GTEM 250: Feed through for fiber optics, order only with GTEM