



RF Emissions/Immunity Test Cell **GTEM!**™ Models 5405/5407

Features:

- New Sizes, Lower Price
- 25x25x25 cm³ or 40x40x40 cm³ EUT Test Volumes
- For All Phases of EMC Testing:
 - Design Qualification
 - Pre-Compliance
 - Full Compliance
 - Post Production
- For Full Compliance Demonstration of:
 - IEC 61000-4-3, EN 61000-4-3, MIL-STD 462, ANSI C63.4, EN 55022 and VDE 0871
- Reduces Test Time
 - ≈ 8:1 for RE (vs. OATS)
 - ≈ 2:1 for RI (vs. chamber)



New Model 5405

EMCO's Model 5405 and 5407 GTEM!™ Cells enable users to perform radiated emissions and radiated immunity tests in less time than at either an OATS or in a chamber. Tests can be performed quickly and accurately throughout the product life cycle. Beginning with design qualification testing and moving through to pre-compliance testing, full compliance testing and production sampling, EMCO's GTEM! cells are time-saving devices for your test lab. A typical radiated emissions test (10,000 point scan) can be completed in 15 minutes or less, while a typical radiated immunity test can usually be completed in half the normal time.

The GTEM! is based on experience, not experimentation. Originally developed in the EMC Baden (Switzerland) labs of ABB, the cell has been accepted in the EMC community for more than 10 years,

and is field proven daily at more than 400 installations worldwide. Measurements made with a GTEM! are accepted for final compliance demonstration by the FCC for Part 15 & 18 radiated emissions testing, and comply with IEC 61000-4-3 Annex D for immunity testing.

The GTEM!'s unique tapered shape, offset septum, resistive termination network and absorber-lined backwall remove performance limitations of TEM cells and boxy enclosures. Electromagnetic wave and RF current termination are smooth and controlled. Field uniformity is ± 3 dB up to 1 GHz, and ± 4 dB above 1 GHz.

These new models are the result of an on-going program of research and development. The new sizes are a result of customer requirements, while the lower price is a result of process and material improvements.

Standard Configuration

- GTEM! cell with door placement on right side (viewed from feed)
- Mobile base with locking caster wheels
- Hydraulically damped door with recessed contact mechanism, contact RF sealing and shielded window
- Rantec high performance RF anechoic absorber
- Single phase, 20A, 50/60 Hz filter with choice of two floor mounted receptacles
- One wall mounted fiber optic feedthrough (4 lines)
- Three N connector feedthroughs

For a performance comparison of the GTEM!™ and several contemporary TEM devices, request a reprint of a paper by Dr. H. Garbe, University of Hannover, Field Homogeneity in Different TEM Waveguides.

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Electrical Specifications

MODEL	FREQUENCY RANGE	VSWR TYPICAL	MAXIMUM CW INPUT POWER	INPUT IMPEDANCE	FEED CONNECTOR TYPE	SHIELDING EFFECTIVENESS
5405	RE TESTS ¹ 9 kHz – 5 GHz	CHARACTERISTIC FREQ ³ ≤ 1.75:1	250 W	50 Ω	CW 7/16 DIN PLUG TO N JACK ADAPTER	FROM INTERNAL E-FIELDS 80 dB MINIMUM 10 kHz – 1 GHz
	RI TESTS ² DC – 20 GHz	ALL OTHER FREQ ≤ 1.3:1	400 W W/ OPT. BLOWER			
5407	RE TESTS ¹ 9 kHz – 5 GHz	CHARACTERISTIC FREQ ³ ≤ 1.75:1	200 W	50 Ω	CW 7/16 DIN PLUG TO N JACK ADAPTER	FROM INTERNAL E-FIELDS 80 dB MINIMUM 10 kHz – 1 GHz
	RI TESTS ² DC – 20 GHz	ALL OTHER FREQ ≤ 1.3:1	500 W W/ OPT. BLOWER			

Physical Specifications

MODEL	OUTER CELL DIMENSION	DOOR DIMENSION	HIGHEST ACCURACY TRANSVERSE TEST SURFACE IN CENTER OF CELL ⁴	APPROX CELL WEIGHT	MAXIMUM SEPTUM HEIGHT ⁵	DISTRIB LOAD RATING ⁶
5405	(L) 3.0 m (9.8 ft)	(W) 460 mm (18.1 in) (H) 385 mm (15.2 in)	(W) 300 mm (11.8 in) (H) 300 mm (11.8 in)	250 kg (551 lb)	550.0 mm (21.7 in)	250 kg (551 lb)
	(W) 1.6 m (5.2 ft)					
	(H) 1.7 m (5.6 ft) W BASE					
	(H) 1.1 m (3.7 ft) W/O BASE					
5407	(L) 4.0 m (13.10 ft)	(W) 686 mm (27.0 in) (H) 747 mm (29.4 in)	(W) 400 mm (15.8 in) (H) 400 mm (15.8 in)	500 kg (1100 lb)	900.0 mm (35.4 in)	430 kg (950 lb)
	(W) 2.2 m (7.1 ft)					
	(H) 2.1 m (6.8 ft) W BASE					
	(H) 1.4 m (4.6 ft) W/O BASE					

¹ Frequency range where OATS correlation demonstrated: 3-position algorithm 30 MHz – 5 GHz, 9-position algorithm 9kHz – 5 GHz

² Low VSWR to $f \geq 20$ GHz; subject to field uniformity tolerance

³ Characteristic frequency: resistor board/RF absorber crossover frequency

⁴ ≤ 8 dB Uniformity

⁵ At resistor board junction

⁶ Total EUT and personnel load distributed at maximum loading of 450 kg/m². Point loads less than 7 cm² should not exceed 20 kg/cm².

Note: The 5405 is shipped fully assembled. Please note dimensions in the Physical Specifications table to ensure the unit will fit through your doorways. As standard, the 5407 is shipped partially assembled with instructions for installation. Doorways that are 218.5 cm (86 in) wide and 203.2 cm (80 in) high are needed for subassembly passage. If space limitations exist, the unit can be shipped unassembled. Contact EMC sales department regarding requests to ship the unit unassembled and for supervision of installation.



Model 5407

Options

- Custom Electrical Filters
- Custom Feedthrough Panels
- EUT XYZ Axis Positioning Device
- EUT Illumination
- Forced Ventilation
- High Power Configuration

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