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# EMC GTEM 500

## GTEM CELL EMC GTEM 500 IEC 61000-4-20




*Ideally suited for pre-compliance testing and medium EUTs*

**STANDARD CONFIGURATION:**

INOX; 1x PLF-16S; 1x FT-N; 1x FT-SMA; 1x FOPT-3; 1x 7/16(F); 1x IEC-16A; 1x N(F); FERRITE; WHEEL

### TECHNICAL SPECIFICATIONS

| | |
|---|---|
| **Frequency Range** | 0.1 MHz to 18 GHz |
| **Septum Height** | 500 mm |
| **Max Input Power** | 500 W (Continuous) |
| **Input Connector** | N type or 7/16" DIN |
| **Nominal Impedance** | 50 Ohm |
| **Typical VSWR** | 1:1.2 |
| **Shielding Effectiveness** | > 60dB (typ. > 80dB) |
| **Dimensions (LxWxH)** | 257 x 168 x 115 cm |
| **Weight** | 150 Kg (approx) |
| **Door Size (WxH)** | 40 x 40 cm |
| **EUT Max Size** | 40 x 40 x 30 cm |

**Description:** GTEM 500 cell for EMC testing. Perfect for pre-compliance and full compliance for smaller objects. Designed for emission and immunity testing according to IEC/EN 61000-4-20 and IEC/EN 61000-4-3 standards.

### KEY STANDARDS & PERFORMANCE REQUIREMENTS

**TEM Mode Verification:** Testing must ensure the GTEM operates in the Transverse Electromagnetic (TEM) mode, which is verified using an isotropic 3-axis field probe.

**Frequency Range:** While standard TEM cells are limited to ~1 GHz, our advanced GTEM cells are designed for higher frequencies, successfully validated up to 6 GHz and beyond (up to 20 GHz for some models).

**Uniformity & Termination:** The cell requires a hybrid combination of precise resistors and RF absorbers to achieve a 50-ohm broadband match.

**IEC/EN 61000-4-20 (Main Standard):** Provides the authoritative requirements for electromagnetic compatibility (EMC) testing in waveguide structures, including GTEM cells. It defines validation methods for field uniformity and test procedures for immunity and emissions.

**Radiated Immunity (IEC/EN 61000-4-3):** GTEM cells are used to test device immunity to radiated electromagnetic fields.

**Automotive Standards (SAE J1113-25):** Specifically for testing vehicle components, covering electromagnetic compatibility, immunity to radiated fields (10 kHz to 1000 MHz).

**Integrated Circuit (IC) Standards:** IEC 61967-2/8 for measurement of electromagnetic radiation from ICs (emission). IEC 62132-8/9 for measurement of IC immunity to electromagnetic radiation.

**Commercial & Product Standards:** CISPR/EN Standards used for EMC testing to achieve CE marking (e.g., Residential/Industrial).

**Medical Equipment (IEC 60118-13):** Often used for testing electroacoustics and hearing aids.

**Military/Aerospace:** Applied for testing, often in accordance with MIL-STD-461/462 or RTCA DO-160C/D/E.

| | |
|---|---|
| **7/16(F)** | 7/16" - Female Input Connector (max. 8GHz) |
| **AIRVENT120** | Air venting shielded window 120x120 mm |
| **AIRVENT55** | Air venting shielded window 50x50 mm |
| **AIRVENT88** | Air venting shielded window 80x80 mm |
| **DCF-120** | Single pole Filtered AC/DC Feedthru 120A 1700VDC/250VAC |
| **DUT-BOX-500** | 3 Axis Positioning System: Transparent polycarbonate glass box suitable to define effective test volume and positioning the DUT on the 3-testing axis. (Available up to the EMC GTEM 1500) |
| **ESI-500** | Electrical safety interlock |
| **FERRITE** | Ferrite tiles installed on the bottom of the GTEM cell, combined with hybrid pyramidal absorbers to achieve excellent highfrequency performance |
| **FOPT-3** | Channel for fibre optic leads (3 fiber pairs) |
| **FPT-DB25** | Filtered 25-poles pass-thru RS-232 (DB25) |
| **FPT-DB9** | Filtered 9-poles pass-thru RS-232 (DB9) |
| **FPT-DC10** | N.2 filtered 10A 600V DC banana socket pass-thru |
| **FPT-DC120** | N.2 filtered pass-thru 120A 500V DC - M8 stud connection |
| **FPT-DC200** | N.2 filtered pass-thru 200A 500V DC - M10 stud connection |
| **FPT-DC300** | N.2 filtered pass-thru 300A 500V DC - M10 stud connection |
| **FT-AIR** | Gas/air waveguide Feedthru |
| **FT-ANYCABLE** | Anycable Flexible inox steel pipe feedthru 20cm long 1inch diameter - modular system. |
| **FT-BNC** | RF feed-thru BNC-BNC Female panel mount type connector |
| **FT-BNC/SMA** | RF feed-thru BNC-SMA Female panel mount type connector |
| **FT-N** | RF feed-thru N type connector |
| **FT-RJ45** | Shielded RJ45 (RJ11) feed-thru female-female connector |
| **FT-RJ45F** | RJ45 (RJ11) 1Gbps filtered Feedthru connector female-female |
| **FT-SMA** | RF feed-thru SMA type connector |
| **FT-USB2** | USB 2.0 shielded Feedthru |
| **FT-USB3** | USB 3.0 shielded Feedthru |
| **FT-USB3F** | USB 3.0 Type A Female Filtered Feedthru |
| **FT-USBC** | USB Type C shielded Feedthru |
| **HCOMB-10** | Honeycomb 10x10cm venting / audio feedthru air intake/outtake |
| **HCOMB-20** | Honeycomb 20x20cm venting / audio feedthru air intake/outtake |
| **HN** | High Voltage N Connector (Usable for burst pulses only) - Max freq: 3GHz |
| **HPTER-250** | Hi Power terminations 500W continuous power up to 3GHz |
| **IEC-16A** | IEC 16A 250V AC (Single Phase) |
| **ILED** | Indoor LED lighting shielded lamp |
| **INOX** | Fully INOX steel rugged military grade construction |
| **N(F)** | N Female Input Connector (max. 20GHz) |
| **PDTP** | Technical panel pre-drilled for options with EMC gaskets and inox bolts |
| **PLF-16S** | Single Phase AC Power Line Filter 2x 16A Phase+N+Ground |
| **PLF-16T** | Tri Phase AC Power Line Filter 4x 16A 3P+N+PE |
| **PLF-20S** | Single Phase AC Power Line Filter 2x 20A P+N+PE |
| **PLF-20T** | Tri Phase AC Power Line Filter 4x 20A 3P+N+PE |
| **PLF-32S** | Single Phase AC Power Line Filter 2x 32A P+N+PE |
| **PLF-32T** | Tri Phase AC Power Line Filter 4x 32A 3P+N+PE |
| **PLF-40S** | Single Phase AC Power Line Filter 2x 40A P+N+PE |
| **PLF-60S** | Single Phase AC Power Line Filter 2x 60A P+N+PE |
| **PLF-64T** | Tri Phase AC Power Line Filter 4x 64A 3P+N+PE |
| **PWS-16S** | Additional Power Socket for EUT - 2x16A P+N+PE |
| **PWS-16T** | Additional Power Socket for EUT - 4x16A 3P+N+PE |
| **PWS-32S** | Additional Power Socket for EUT - 2x32A P+N+PE |
| **PWS-32T** | Additional Power Socket for EUT - 4x32A 3P+N+PE |
| **PWS-64T** | Additional Power Socket for EUT - 4x64A 3P+N+PE |
| **SAE** | Door for tests acc. to SAE J1752/3 - Integrated Circuit |
| **SHW-500** | Shielded Window in door |
| **SHWB-500** | Removable metal shielded window blinder |
| **US-WIRING** | Wired for U.S. 110VAC |
| **USB-CAM** | Lithium Battery Powered Shielded USB to Fiber Optic Camera System (Full HD, Autofocus) |
| **VPOS** | GTEM Vertical positioning - Plastic table over absorbers - 90° turned door turn of door position, plastic table over pyramids, included the vertical wheeled undercarriage |
| **WE1EMCGTEM-500** | Warranty extension to 3 years in total |
| **WHEEL** | Wheeled undercarriage with brakes |

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## PHOTO GALLERY / DETAILS



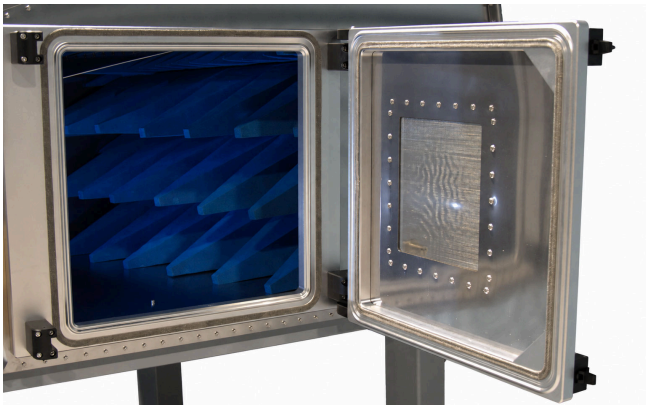

EMC GTEM 500 Emissions Immunity Test 1



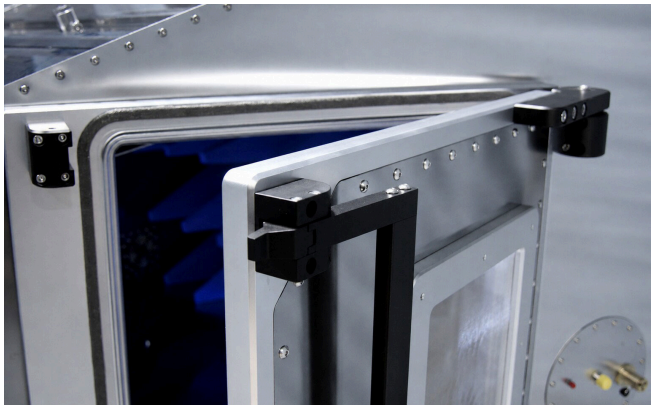

EMC GTEM 500 Emissions Immunity Test 2



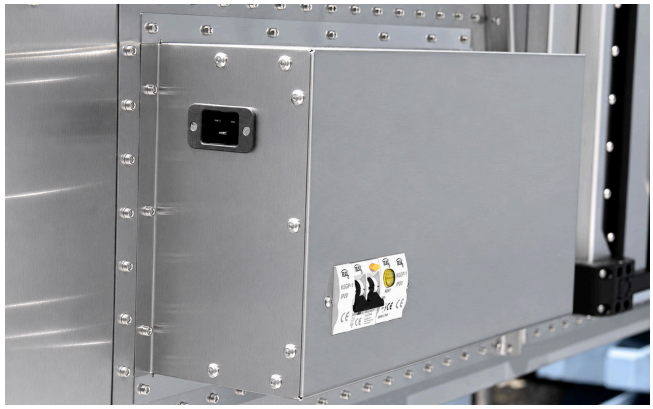

EMC GTEM 500 Emissions Immunity Test 3



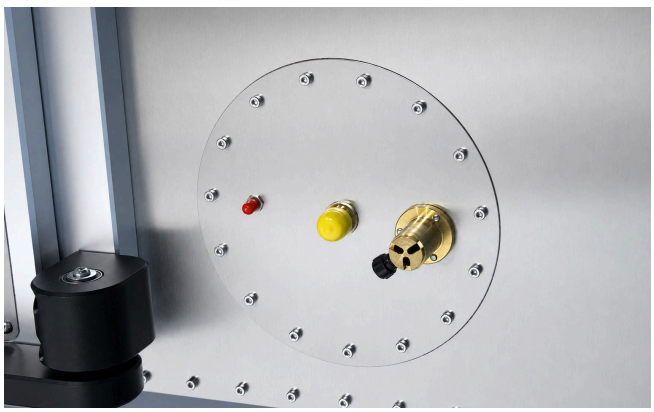
EMC GTEM 500 Emissions Immunity Test 4



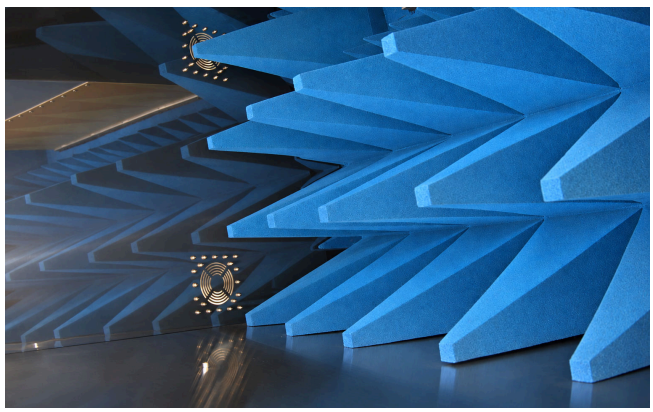
EMC GTEM 500 Emissions Immunity Test 5



EMC GTEM 500 Emissions Immunity Test 6



EMC GTEM 500 Emissions Immunity Test 7



EMC GTEM 500 Emissions Immunity Test 8

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