

LaplaCell vs. GTEM

Please see the Technical and Cost advantages of the Laplace LaplaCell 300 vs. a GTEM below.

Laplace Instruments LaplaCell Technical advantages over GTEM technology

Laplace Instruments LaplaCell	GTEM
Dual Septum – more compact design and better field uniformity	Single Septum
Shielded and Filtered I/O compartment	No Shielded I/O compartment
Built in isotropic probe	isotropic probe required for immunity testing
Compact Size for equal EUT size	Requires 3 time the space
Free space impedance 200 Ohm	Free space impedance 50 Ohm
pre-compliance emissions testing	pre-compliance emissions testing

1) The Laplace Instruments LaplaCell products (300 & 600) utilize a dual septum technology.

This is like taking two GTEM Cells and putting them against each other and taking away the ground plain. Due to this technology, you get data from both septums at the same time. This requires the use of a Balun for Balancing and Impedance matching, which at this time is limited to 3GHz at this time.

2) Please also note that with the LaplaCell products, I/O cables are brought in through an I/O filter compartment with shielded and filtered I/O ports designed block any external RF (when emissions testing) from entering the cell, and to block any RF inside (when immunity testing) from being transmitted outside.

3) There is no need for an isotonic probe for immunity testing with the Laplace Laplacell products. This is a \$10,000USD savings.

An isotonic probe is needed for someone that purchases a GTEM and wants to perform Immunity testing. By using the isotonic probe the customer would know the field in V/m inside the cell. He would have to do this before every test.

With the LaplaCell products, this is unnecessary because the probe is already inside the cell and is used in real time to insure the needed V/m inside the cell during the Immunity test.

6) The LaplaCell600-3 can sit on a 2x4 foot table and you would have room to put the instrumentation on the table also. Please also note that with GTEM you would need 3 times (10 feet long) more the space due to the overall size of the cell in order to achieve the same DUT test side room inside the cell.

7) LaplaCells uniformity field up to 3GHz would give you information that would be closer to OATS. This is because the free space impedance of the LaplaCell is 200 Ohm. In a GTEM this value is 50 Ohm. OATS has it 377Ohm. The LaplaCell is much closer matched with OATS than GTEM. As a result, many LaplaceCell users self-certification their EUT's for CE Certification and as a pre-compliance cell for FCC Certification. GTEM has resonances above 1GHz which would mean that your harmonics may show higher than the fundamental for your product. This is one of the biggest reason why they only promote the GTEM cell as pre-compliance only device.

Laplace Instruments LaplaceCell

The Cells are a modified form of GTEM cell, using a balanced dual septum design which maximizes EUT volume for a given external size of cell, and dramatically improves field linearity. The EUT volume is fully lined in structural polycarbonate capable of supporting heavy products and access is via a large, full height door at the end of the cell. Adjacent to the door is the I/O filter compartment which can be customized to suit the user's requirements. USB, RS232, Parallel, Ethernet, co-ax and other product specific filters can be added at time of ordering.

Key Points

- 30MHz to 3GHz frequency coverage
- Fully calibrated for Emissions (correlated to a 3M distanced test on OATS) and immunity (fully calibrated up to 27 points in accordance with IEC61000-4-20)
- Lc300/2: for EUT up to 30cm cube
- Field sensor for immunity testing is included
- Complies with IEC61000-4-20
- Excellent field uniformity
- Compact size
- Ready for immediate use upon delivery. No assembly required.
- Standard filtered I/O includes mains feed, fiber optic access and 12 individual connections.

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