Electromagnetic reverberation chamber is a multifunctional EMC (Electromagnetic Compatibility) test facility for commercial, military, automotive testing and other electromagnetic investigations. Also known as reverb chamber (RVC) or mode-stirred chamber (MSC) or, Vibrating intrinsic reverberation chamber (VRC).

A reverberation chamber is a screened room with a minimum of absorption of electromagnetic energy. Due to the low absorption of the walls, very high field strength can be achieved with moderate input power. A reverberation chamber is a cavity resonator with a high Q factor. Thus, the spatial distribution of the electrical and magnetic field strengths is strongly inhomogeneous (standing waves). To reduce this inhomogeneity, different techniques are applied:

- generating reverberation through one or more tuners (stirrers) in movement.
- Vibrating the walls of a shielded tent. (VRC)

A tuner is a construction with large metallic reflectors that can be moved to different orientations in order to achieve different boundary conditions.

The VRC is basically a tent made with a special metalized shielded flexible fabric assembled as a cavity that provides a periodic electro-magnetic randomly polarized, spatially uniform and isotropic facilit. The walls of the tent are inducted in mechanical vibration between 5 and 20Hz able to reflect the electromagnetic waves inside the tent volume with a reverberation effect. The VRC find application to create an electromagnetic environment for immunity and emission testing, it offers the advantage faster test throughput times than other test methods, increasing the uniformity levels.

The VRC is easy to mount and can be quickly assembled and disassembled directly at the customer's place in a few hours. It allows testing large systems/installations with a VRC and overcome space limitations incorporating also big devices under test.

The Lowest Usable Frequency (LUF) of a reverberation chamber depends on the size of the chamber and the design of the tuner. Small chambers have a higher LUF than large chambers.

The chambers RVC are made by modular 2 mm thickness galvanized steel or 3mm. aluminum panels system. In addition to our standardized models, all chambers are available in customized dimensions according to individual requirements.

All the Gtemcell stirrer systems are compatible with software by Nexio, Teseq and Rohde & Schwarz. The stirrer systems can be controlled using a standard office PC or lab top. Gtemcell can offer the reverberation chamber as a turnkey solution including software, operational verification and after sales service support.
### Applicable standards / test methods for the reverberation chambers.

- IEC 61000-4-21:2003
- MIL-STD-481-E&F
- RTCA/DO-160-G
- EUROCAE/ED-14F

### Reverberation chambers

<table>
<thead>
<tr>
<th>Model</th>
<th>Lowest useful frequency</th>
<th>External Dimensions</th>
<th>Usable test volume</th>
<th>Stirrer system</th>
<th>Note:</th>
</tr>
</thead>
<tbody>
<tr>
<td>80RVC</td>
<td>80MHz-18GHz</td>
<td>L12.5xW10.5xH6m</td>
<td>L7.0xW7.0xH4.5m</td>
<td>Z fold 2 rotary stirrers</td>
<td>Hot galvanized steel panels</td>
</tr>
<tr>
<td>100RVC</td>
<td>100MHz-18GHz</td>
<td>L9.00xW7.95xH6m</td>
<td>L4xW4xH4.5m</td>
<td>Z-fold duo-pole rotating vertical stirrer system</td>
<td>Hot galvanized steel panels</td>
</tr>
<tr>
<td>200RVC</td>
<td>200MHz-18GHz</td>
<td>L5.10xW4xH3m</td>
<td>L2.4xW2.2xH1.25m</td>
<td>Z-fold duo-pole rotating vertical stirrer system</td>
<td>Hot galvanized steel panels</td>
</tr>
<tr>
<td>400RVC</td>
<td>400MHz-18GHz</td>
<td>L2.50xW2xH2m</td>
<td>L0.8xW0.8xH0.8m</td>
<td>Z-fold duo-pole rotating vertical stirrer system</td>
<td>Aluminium panels</td>
</tr>
<tr>
<td>1G-RVC</td>
<td>1GHz-18GHz</td>
<td>L0.80xW0.90xH1.5</td>
<td>L0.5xW0.5xH0.5m</td>
<td>A-symmetric stirrer system</td>
<td>Aluminium panels. (Rack on trolley)</td>
</tr>
</tbody>
</table>

### Reverberation Tents

<table>
<thead>
<tr>
<th>Lowest frequency usable</th>
<th>External Dimensions</th>
<th>Usable test volume</th>
<th>Vibration system</th>
<th>Note:</th>
</tr>
</thead>
<tbody>
<tr>
<td>700RVC 700MHz-18GHz</td>
<td>L1.2xW1.2xH1.2m</td>
<td>L0.5xW0.5xH0.5m</td>
<td>VRC, Vibrations of the 5 walls</td>
<td>Metalized fabric</td>
</tr>
<tr>
<td>400RVC 400MHz-18GHz</td>
<td>L3xW2xH2m</td>
<td>L0.8xW0.8xH0.8m</td>
<td>VRC, Vibrations of 5 walls</td>
<td>Metalized fabric</td>
</tr>
<tr>
<td>400RVC -HY 400MHz-18GHz</td>
<td>L2.50xW2xH2m</td>
<td>L0.8xW0.8xH0.8m</td>
<td>VRC, Vibrations of 3 walls</td>
<td>Hybrid: Metalized fabric + metal base and front door metal panel</td>
</tr>
</tbody>
</table>

**OPTIONS:**
- Additional shielded room (control room) to house the RF control test instruments
- Additional shielded door with screened window glass.
- Non Conductive test table and standing EUT supports
- Pairs of antennas (BICONIC, LOG, RIDGE HORN, HORN)
- Non conductive Tripods and brackets for antennas
- Connectors and different filters feed-through
- Isotropic field strength sensors 0,1V/m-500V/m up to 9,25GHz

***Prices and specifications could change without notice.
REVERBERATING HYBRID TENT CHAMBER Mod. 400-VRC-HY

Description

1  200mm. shielded glass window
2  Monitor antenna (Biconical, logarithmic, Double ridge Horn)
3  Transmitting antenna (Biconical, logarithmic, Double ridge Horn)
4  Isotropic sensor
5  Metalized vibrating tent
6  ON AIR alarm lamp
7  Filter box power supply unit
8  Honeycomb air vent panel
9  Technical panel: N, SMA, fiber optic feed-through connectors, wave guides
10 Vibrating device system
11 Vibrating device system