

EM603-8 IC-Stripline TEM Cell



1. Description

ESDEMC's EM603-8 is a DC to 8 GHz IC-Stripline TEM Cell that generates an electromagnetic field for testing small devices such as IC's, wireless communication modules, etc. An external test signal applied through the input port of the EM603-8 generates a consistent and predictable TEM test field inside the cell. The radiation field from a device transmitting inside the TEM Cell can be measured through the port using a test receiver.

The unique compact and economical design is optimized for medium accuracy measurements beyond the standard TEM Cell frequency range. The operating principle of EM603-8 is essentially the same as TEM Cell. The E-H field inside the test volume is proportional to the input voltage and inversely proportional to the cell height. If a radiating object is inserted inside the cell, the radiated wave toward input port is guided by the transmission line and measured at the input with a receiver such as a spectrum analyzer. With this method, the RF emissions from a device can be measured quantitatively. Since this apparatus is very broadband, it has many applications in the area of EMI, EMS, receiver sensitivity test, etc.

2. Features

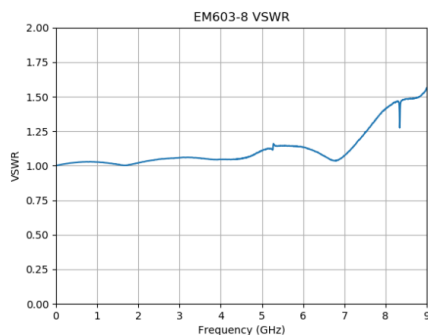
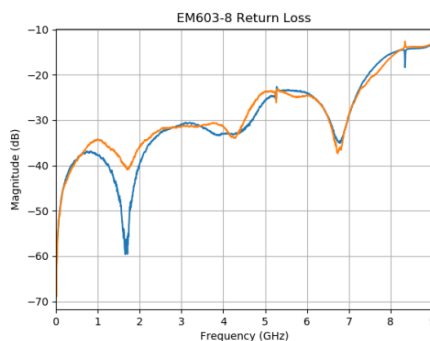
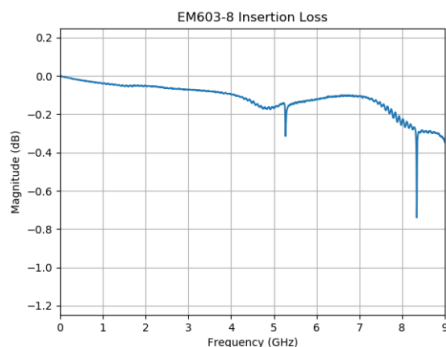
- Up to 8 GHz bandwidth (beyond normal TEM Cell bandwidth of 1 GHz)
- Can test up to 12.5 kV/m at 53 dBm injected power (maximum rating)

3. Applications

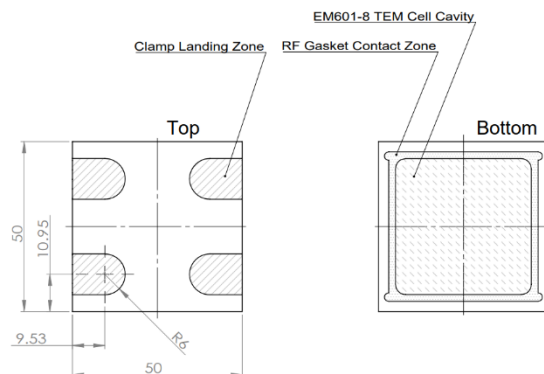
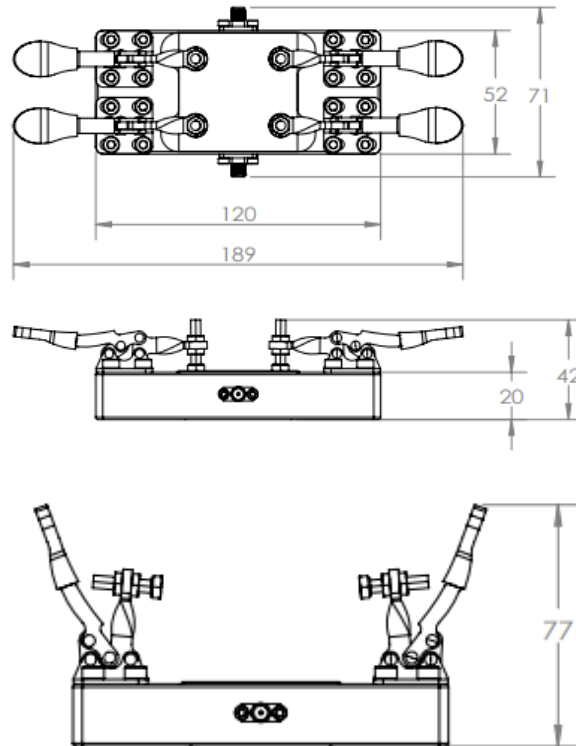
- Electromagnetic immunity testing for integrated circuits
- Electromagnetic radiation testing for integrated circuits
- ESD/Surge field susceptibility testing for integrated circuits
- Designed to meet the requirements of the following standards:
 - SAE 1752-3
 - IEC 61967-2
 - IEC 61967-8
 - IEC 62132-2
 - IEC 62132-8

4. Specifications

Specification	Parameters
Frequency range	DC to 8 GHz (First spike by undesired higher order mode > 8 GHz)
TEM Cell Impedance	50 Ω $\pm$ 5% nominal
VSWR	DC – 3 GHz < 1.2 3 – 8 GHz < 1.5
Insertion Loss (S21)	DC – 8 GHz < 1 dB
Return Loss (S11 & S22)	DC – 3 GHz > 20 dB 3 – 8 GHz > 14 dB
Effective Septum to Wall Height	8.0 mm
E-Field Strength at Center of Cell	125 V/m @ 1V (max 12.5 kV/m @ 200 W-rms, 125 kV/m @ 1kV pulse)
H-Field Strength at Center of Cell	= E-Field Strength / 377 (A/m)
RF Connectors	SMA
Maximum Input Power	200 W-rms, 53 dBm
Maximum Input Voltage	100 V-rms, 1 kV TLP pulse
DUT Port Dimension	40 (W) x 40 (D) mm
Recommended MAX DUT Dimensions	20 (L) x 20 (W) x 2 (H) mm
TEM Cell Dimensions	120 (W) x 52 (D) x 20 (H) mm
Weight	Approx. 0.5 kg



5. Dimensions



Recommended Board Thickness: 1.6mm

6. Ordering Information

Line	Part # or Option #	Description	Status
1	EM601-8	EMC601-8 IC Stripline TEM Cell, DC-8 GHz	Active