

# EM603-8 IC Stripline TEM Cell

(DC-8 GHz, up to 1 kV)



## 1. Description

ESDEMC's EM603-8 is an 8 GHz IC Stripline TEM Cell generates the Electro-Magnetic 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 in the Cell can also be detected 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 operation 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 picked up at the input with a receiver such as a spectrum analyzer. With this method, the RFI from a radiating 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 1 kV high voltage for field injection

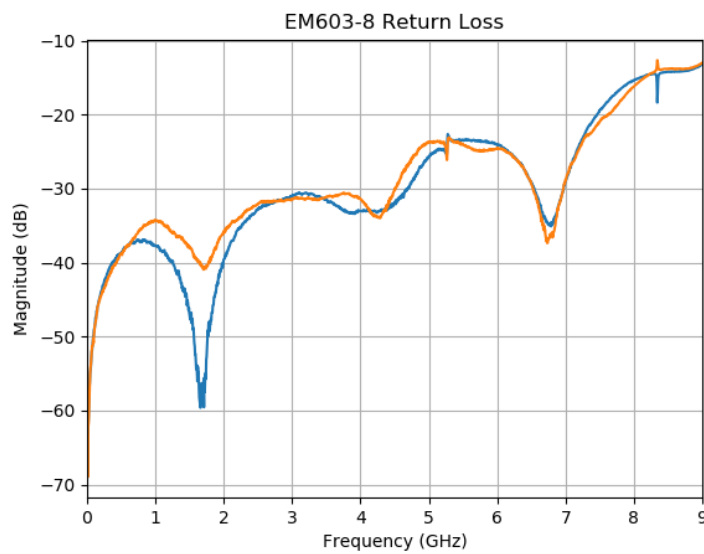
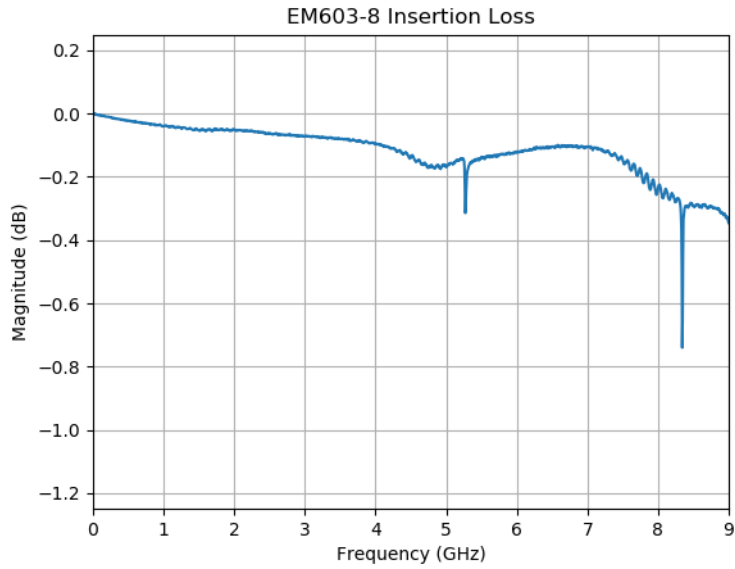
### 3. Applications

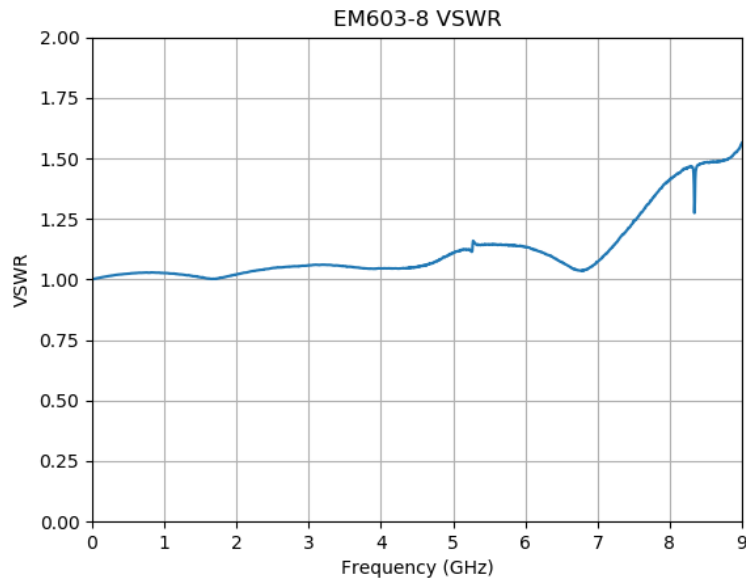
- Electromagnetic immunity test of IC
- Electromagnetic radiation test of IC
- ESD/Surge field susceptibility test of IC
- IEC 61967-8:2011 Integrated circuits – Measurement of electromagnetic emissions, 150 kHz up to 3 GHz – Part 8: Measurement of radiated emissions – IC stripline method
- IEC 61967-2 Integrated circuits - Measurement of electromagnetic emissions, 150 kHz to 1 GHz - Part 2: Measurement of radiated emissions - TEM cell and wideband TEM cell method
- IEC 62132-8 Integrated circuits - Measurement of electromagnetic immunity - Part 8: Measurement of radiated immunity - IC stripline method
- SAE 1752-3 Measurement of Radiated Emissions from Integrated Circuits -- TEM/Wideband TEM (GTEM) Cell Method; TEM Cell (150 kHz to 1 GHz), Wideband TEM Cell (150 kHz to 8 GHz)

### 4. Specifications

Specification	Parameters
Frequency range	DC to 8 GHz (First spike by undesired higher order mode > 6 GHz)
TEM Cell Impedance	50 Ω ± 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 125 kV/m @ 1kV)
H-Field Strength at Center of Cell	= E-Field Strength /377 (A/m)
RF Connectors	SMA
Maximum Input Power	70 Watts
Maximum Input Voltage	1 kV @ DC
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

#### EM603-8 TEM Cell S-Parameter Measurements





## 5. Ordering Information

Line	Part # or Option #	Description	Status
1	EM603-8	EM603 IC Stripline TEM Cell, DC-8 GHz	Active