



CC Series TEM Cells

DC – 2000 MHz • 1000 V/m Power Capability

When it comes to testing electronic products or components to EMC susceptibility standards, you don't have to have a full scale test chamber at your disposal. The IFI CC Series of TEM Cells can offer the necessary environment for performing pre-compliance and compliance testing in a package that is convenient, cost-effective and (in certain respects) technically superior to the larger anechoic chamber.

Originally conceived by Mike Crawford at the National Bureau of Standards and further developed by IFI, the CC TEM Cells consist of a rectangular transmission line operating in the transverse electromagnetic mode (TEM). The cell is tapered at each end to a transition section that includes type N coaxial jacks for signal connection.

Size and precision design of the CC series allow for accurate maintenance and measurement of E-Field levels (within ± 1.0 dB nominal on most models) without antennas. The geometry of the cell combined with its well maintained impedance minimizes undesirable resonance effects. In addition, the typical VSWR is less than 1.25 to 1. To summarize, the ability to produce, maintain and measure E-fields is considerably easier within a CC Series TEM cell than within the larger anechoic chambers.

The compact size of the CC Series allows them to be easily moved around, essentially acting as a "bench-top shielded room". And with IFI's line of amplifiers and accessory products, your whole test area can take up a fraction of the space of a standard EMC test facility.

With the average CC TEM cell costing two to four percent of an average anechoic chamber, manufacturers could afford a complete test setup, and test labs can afford multiple test setups. We provide thirty-five models ranging in size and frequency, the CC series offers you a choice to fit your specific application needs.

<p>Features Include:</p> <ul style="list-style-type: none"> • 1000 V/m capability • Ultra-broadband • Compact & Portable • Cost effective • Test samples up to 26x26x13 inches • Traceable accuracy • Virtually eliminates resonance • Low VSWR & Efficient field generation 	<p>Applications Include:</p> <ul style="list-style-type: none"> • Susceptibility testing • Emissions testing • Test portable communication products • Meter/sensor calibration • Product calibration • High Power leveling • Medical and Biological
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Models & General Specifications:

Model Number	DC to Maximum Frequency (MHz)	Maximum Test Object Size (inches)			Outside Dimension (Inches)			Septum Height	
		Length	Depth	Height	Length	Depth	Height	Inches	Meters
CC-100S	91	26.2	26.2	13.1	162	80	83	39.4	1.00
CC-101	100	22.6	22.6	7.6	140	72	51	26.6	0.68
CC-101S	100	22.6	22.6	11.3	140	72	72	34.0	0.86
CC-101.5	150	15.7	15.7	5.2	104	50	34	15.7	0.40
CC-101.5S	150	15.7	15.7	7.8	104	50	50	23.6	0.60
CC-102	200	11.8	11.8	3.9	77	38	26	11.8	0.30
CC-102EX	375	11.8	11.8	3.9	77	38	26	11.8	0.30
CC-102S	200	11.8	11.8	5.9	77	38	38	17.7	0.45
CC-102SEX	325	11.8	11.8	5.9	77	38	38	17.7	0.45
CC-103	300	7.9	7.9	2.6	54	26	18	7.9	0.20
CC-103EX	500	7.9	7.9	2.6	54	26	18	7.9	0.20
CC-103S	300	7.9	7.9	4.0	54	26	26	11.8	0.30
CC-103SEX	500	7.9	7.9	4.0	54	26	26	11.8	0.30
CC-104	400	5.9	5.9	1.9	42	20	14	5.9	0.15
CC-104EX	750	5.9	5.9	1.9	42	20	14	5.9	0.15
CC-104EXX	1000	5.9	5.9	1.9	42	20	14	5.9	0.15
CC-104S	400	5.9	5.9	2.9	42	20	20	8.9	0.23
CC-104SEX	750	5.9	5.9	2.9	42	20	20	8.9	0.23
CC-104SEXX	1000	5.9	5.9	2.9	42	20	20	8.9	0.23
CC-105	500	4.7	4.7	1.5	34.3	16	11	4.7	0.12
CC-105EX	750	4.7	4.7	1.5	34.3	16	11	4.7	0.12
CC-105EXX	1000	4.7	4.7	1.5	34.3	16	11	4.7	0.12
CC-105S	500	4.7	4.7	2.3	34.3	16	16	7.1	0.18
CC-105SEX	750	4.7	4.7	2.3	34.3	16	16	7.1	0.18
CC-105SEXX	1000	4.7	4.7	2.3	34.3	16	16	7.1	0.18
CC-108	800	2.9	2.9	0.9	24	11	8	3.0	0.08
CC-108EX	1200	2.9	2.9	0.9	24	11	8	3.0	0.08
CC-108EXX	1600	2.9	2.9	0.9	24	11	8	3.0	0.08
CC-110	1000	2.3	2.3	0.7	18.8	9	6	2.4	0.06
CC-110EX	1500	2.3	2.3	0.7	18.8	9	6	2.4	0.06
CC-110EXX	2000	2.3	2.3	0.7	18.8	9	6	2.4	0.06
CC-110S	1000	2.3	2.3	1.1	18.8	9	9	3.6	0.09
CC-110SEX	1400	2.3	2.3	1.1	18.8	9	9	3.6	0.09
CC-110SEXX	1800	2.3	2.3	1.1	18.8	9	9	3.6	0.09

Field level calculation

- The Field generated inside the chamber may be calculated from the expression $E=V/D$, where V is the input voltage to the cell and D is the septum to top plate separation ("septum height" in above chart).
- To ensure that the test object "sees" a uniform field, its dimensions should not exceed one third of the volume between the septum and the walls of the TEM cell (i.e., the "maximum test object size" in the above chart).