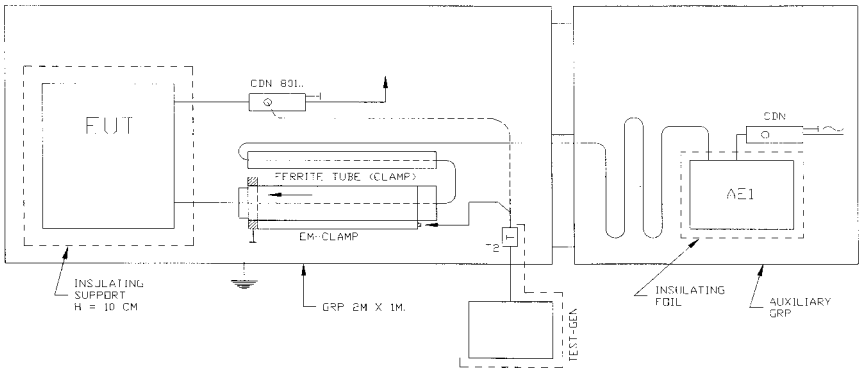
Fischer Custom Communications, Inc.

RF electromagnetic fields frequently degrade the performance of electronic equipment by generating common mode currents on cables. The effect of these E and H fields on the equipment can be reproduced by injecting common mode currents onto the cables of the equipment being tested for RF immunity. IEC 1000-4-6 defines the methods for testing the immunity of electronic equipment to conducted common mode currents between 150 kHz and 230 MHz.



The electromagnetic (EM) clamp is a high efficiency broadband clamp-on injection device developed to test the immunity of electronic equipment when the standard IEC 1000-4-6 CDN using the direct capacitive coupling technique is not possible nor appropriate. The EM clamp is often used to test unshielded multiple conductor cables. The figure above shows a typical test setup using the EM Clamp and a ferrite tube decoupling network.

Fischer Custom Communications, Inc. offers two EM Injection Clamps, model F-203I-23mm and F-203I-32mm. FCC EM Injection Clamps offer unique benefits compared to conventional EM Injection Clamps.

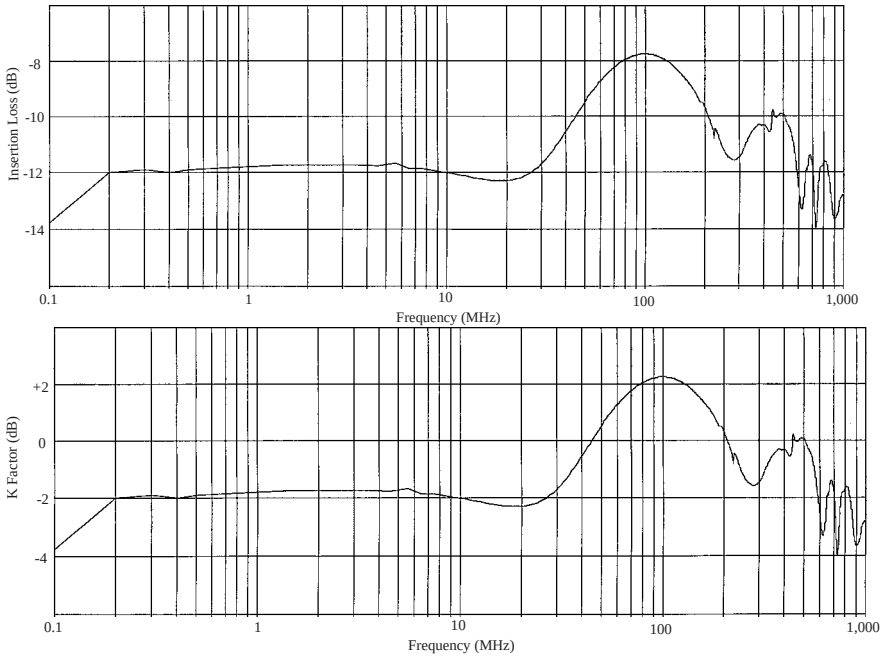
- Broad bandwidth — usable from 10 kHz to 1 GHz
- High efficiency coupling factor, <3 dB from 150 kHz - 500 MHZ
- F-203I-32mm is ideal for testing multi-conductor cables
- FCC offers all of the test accessories required for testing with the EM Injection Clamps including clamp-on current monitor probes, calibration fixtures and ferrite tube decoupling networks with 23 mm and 32 mm apertures.

For conducted immunity testing from 150 kHz to 230 MHz the increased efficiency can save the user as much as 100% on required CW amplifier power. The F-203I family requires less than 10 watts to develop the 10 volt open circuit level in accord with IEC 1000-4-6. When an additional ferrite decoupling or ferrite tube is used in the test the F-203I family requires less than 36 watts to develop the 10 volt open circuit level.

EM Injection Clamps for IEC 10004-6

Specification	F-203I-23mm	F-203I-32mm
Input Power Rating		
10 kHz to 100 MHz:	100 watts CW for 15 minutes	125 watts CW for 30 minutes
100 MHz to 230 MHz:	100 watts CW for 10 minutes	100 watts CW for 30 minutes
230 MHz to 1GHz:	50 watts CW for 10 minutes	100 watts for 15 minutes
Pulse Mode:	Transients of 3 nanosecond rise times and pulse widths of 100 nanoseconds can be coupled into cables up to 5 KV	
Directivity:	>10 dB above 20 MHz	>10 dB above 20 MHz
Coupling Aperture:	23 mm	32 mm
Length	610 mm	610 mm
Width	75 mm	105 mm
Height including handle	135 mm	190 mm
RF Disturbance Connector	N	N

Typical Inserion loss and K factor are shown to the right for the F-203I-23mm. 10 kHz to 1000 MHz performance data is supplied with each instrument.



Contact the applications engineers at Fischer Custom Communications, Inc. to discuss your requirements for IEC 1000-4-6 or pre-compliance testing.

Fischer Custom Communications, Inc.

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