SIMCO ION™
An ITW Company

APPLICATION NOTE

Magnetic Field Emissions

From Model 5515 Emitters

The question was raised as to magnitude of the magnetic field generated by the operation of the Simco-Ion Model 5515 Emitter, as commonly used to control ESD events in semiconductor manufacturing clean rooms and other ISO Class 4 and better environments. The conclusion is that in such a typical setting that the 5515 Emitter does not add any significant field strength above the ambient fields, either at 15 cm or 1m distances from the emitter points.

Test Setup and Equipment

Testing was performed at Simco-Ion's facility in Alameda, CA, in the Engineering Lab. No steps were taken to shield the area from background magnetic fields from the earth or from nearby manufacturing equipment.

Test Equipment Used:

- Aaronia NF5010 1 Hz-1 MHz Spectrum Analyzer
- Antenna setting: Mag-XY, 3D
- Antenna location: 15 cm and 100 cm centered below the two emitter points.
- Ionization system: Model 5582 Controller and Model 5515 Emitter.
- Ionization settings: 100% power for both polarities; 1 sec on and 1 sec off for both polarities.

Test Results

Distance: 15cm (from emitter points)
Band: 1-15Hz, RBW=0.3Hz
Power off: 265.4uT
Power on: 265.4uT

Band: 15-30Hz, RBW 0.3Hz
Power off: 1.274uT
Power on: 1.225uT

Band: 30-60Hz, RBW 1Hz
Power off: 1.094uT
Power on: 980.6nT

Band: 60-100Hz, RBW 1Hz
Power off: 286.7nT
Power on: 328.4nT

Band: 100-200Hz, RBW 1Hz
Power off: 605.5nT
Power on: 608.3nT

Distance: 1 meter
Band: 1-15Hz, RBW 1Hz
Power off: 34.45uT
Power on: 34.60uT
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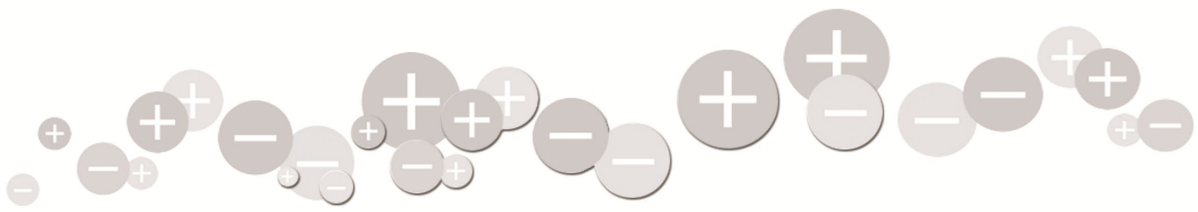
Band: 15-30Hz, RBW 1Hz
Power off: 309.4nT
Power on: 309.4nT

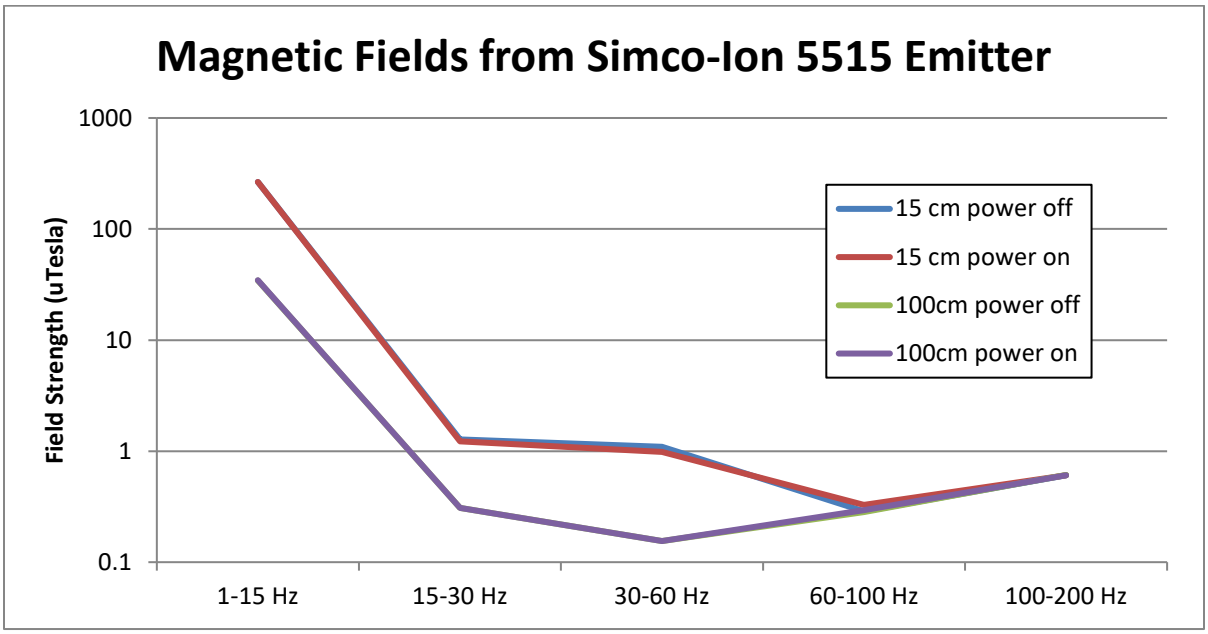
Band: 30-60Hz, RBW 1Hz
Power off: 154.7nT



Power on: 154.7nT

Band: 60-100Hz, RBW 1Hz
Power off: 282.9nT
Power on: 295.0nT

Band: 100-200Hz, RBW 1Hz
Power off: 609.2nT
Power on: 608.6nT



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