



Tempe, AZ

EMI Log

Customer: Finnmark Designs			Project Number: PR108242		
Test Item: Infrared Heaters			Log Start Date: 12/5/2019		
Model P/N: Spectrum +			Standard: Customer Email		
S/N:			Test: RF/Magnetic Field Survey (ICNIRP Occupational 2010 Test Limit)		
Temp: 22.1°C			Humidity: 44%		
Date	Start Time	Finish Time	NOTES	Result	Init
			Spectrum +		
12/5/19	1230		Ambient Position 1 (cables) Bandwidth @ 100Hz	Pass	JG
			Measured EMF: 0.5304mG @ 59.81Hz		
			Heater On Position 1 (cables) Bandwidth @ 100Hz	Pass	JG
			Measured EMF: 0.7328mG @ 60.06Hz		
			Heater On Position 1 (cables) Bandwidth @ 200Hz	Pass	JG
			Measured EMF: 0.7875mG @ 60.06Hz		
			Heater On Position 1 (cables) Bandwidth @ 3800Hz	Pass	JG
			Measured EMF: below 0.1mG		
			Heater On Position 2 Bandwidth @ 100Hz	Pass	JG
			Measured EMF: 0.6998mG @ 59.81Hz		
			Heater On Position 2 Bandwidth @ 200Hz	Pass	JG
			Measured EMF: 0.6881mG @ 60.06Hz		
			Heater On Position 2 Bandwidth @ 3800Hz	Pass	JG
			Measured EMF: below 0.1mG		
			Heater On Position 3 Bandwidth @ 100Hz	Pass	JG
			Measured EMF: ≈1mG @ ≈60Hz		
			Heater On Position 3 Bandwidth @ 200Hz	Pass	JG
			Measured EMF: 1.1708mG @ 60.06Hz		
12/5/19		1530	Heater On Position 3 Bandwidth @ 3800Hz	Pass	JG
			Measured EMF: below 0.1mG		

Test Personnel:

Customer Witness:

Customer: Finnmark Designs			Project Number: PR108242		
Test Item: Infrared Heaters			Log Start Date: 12/6/2019		
Model P/N: Spectrum Carbon			Standard: Customer Email		
S/N:			Test: RF/Magnetic Field Survey (ICNIRP Occupational 2010 Test Limit)		
Temp: 20.4°C			Humidity: 45%		
Date	Start Time	Finish Time	NOTES	Result	Init
			Spectrum Carbon		
12/6/19	0630		Ambient Position 1 (cables) Bandwidth @ 100Hz	Pass	JG
			Measured EMF: 0.4002mG @ 60.06Hz		
			Heater On Position 1 (cables) Bandwidth @ 100Hz	Pass	JG
			Measured EMF: 0.4379mG @ 60.06Hz		
			Heater On Position 1 (cables) Bandwidth @ 200Hz	Pass	JG
			Measured EMF: 0.4371mG @ 60.06Hz		
			Heater On Position 1 (cables) Bandwidth @ 3800Hz	Pass	JG
			Measured EMF: below 0.1mG		
			Heater On Position 2 Bandwidth @ 100Hz	Pass	JG
			Measured EMF: 0.5893mG @ 60.06Hz		
			Heater On Position 2 Bandwidth @ 200Hz	Pass	JG
			Measured EMF: 0.4120mG @ 60.06Hz		
			Heater On Position 2 Bandwidth @ 3800Hz	Pass	JG
			Measured EMF: below 0.1mG		
			Heater On Position 3 Bandwidth @ 100Hz	Pass	JG
			Measured EMF: 0.4075mG @ 60.06Hz		
			Heater On Position 3 Bandwidth @ 200Hz	Pass	JG
			Measured EMF: 0.4083mG @ 60.06Hz		
12/6/19		0900	Heater On Position 3 Bandwidth @ 3800Hz	Pass	JG
			Measured EMF: below 0.1mG		

Test Personnel:

Customer Witness:

The heaters were tested in a controlled environment using a Narda EHP-50F Electric & Magnetic RF Analyzer to conduct the required measurements.

The heaters were tested in 3 different resolution bandwidths (100Hz, 200Hz, 3800Hz). The multiple bandwidths allowed for a more accurate reading below 200Hz of the 60Hz (and harmonics) signal(s). The scans were 1-100Hz, 1-200Hz, and 200-4000Hz. Please note, that the minimum operating frequency of the EHP-50F is 1Hz, therefore any “measurements” that appear below 1Hz are invalid.

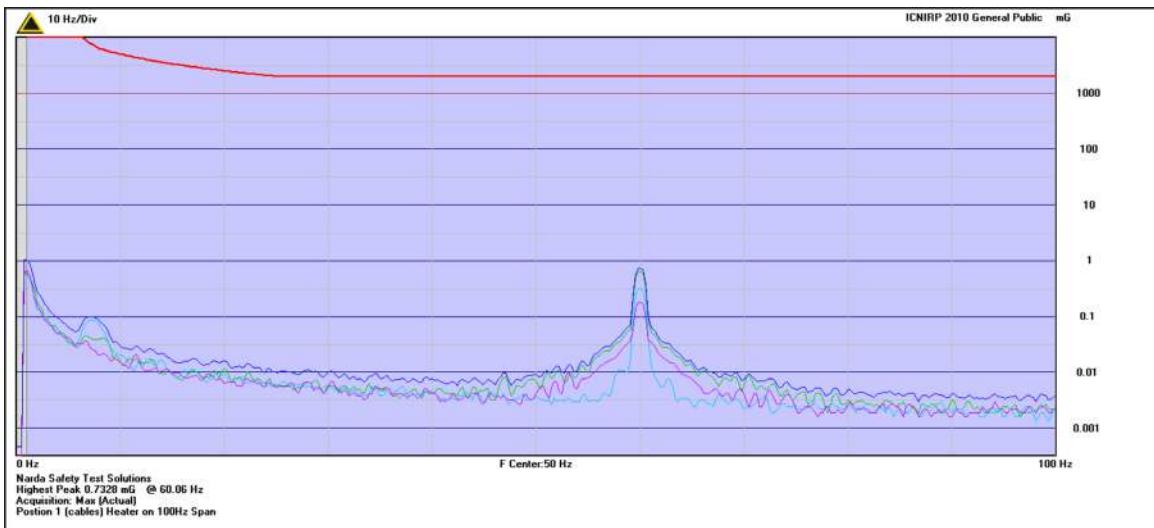
Each heater was measured at three different positions (see photos) for the frequency spans/scans listed above.

All measurements were plotted against the ICNIRP_Occupational_2010 Test Limit (see plots). The “highest” recorded measurement was Position 3 (200Hz Bandwidth) of the Spectrum + with a measured value of 1.1708mG.

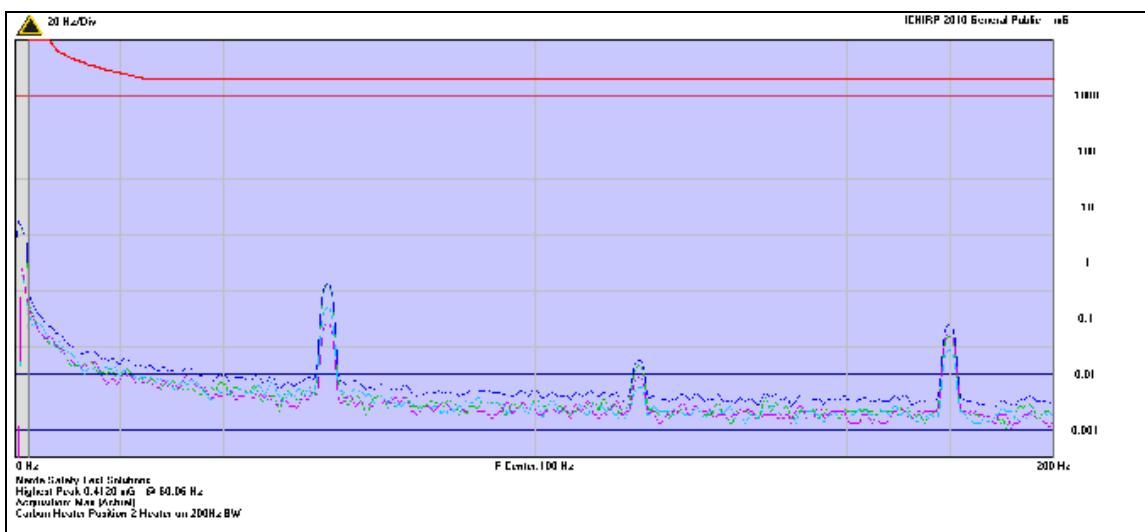
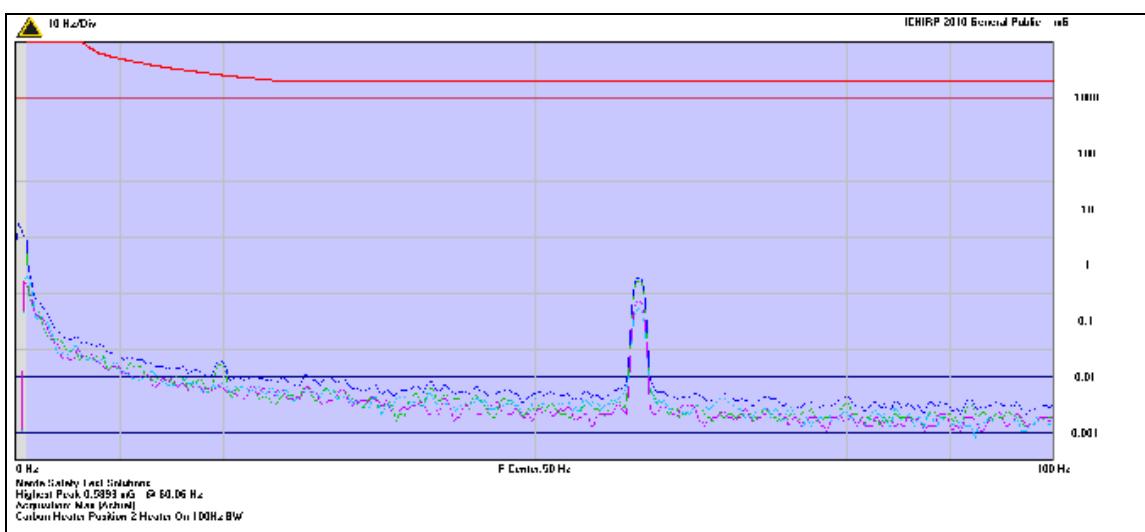
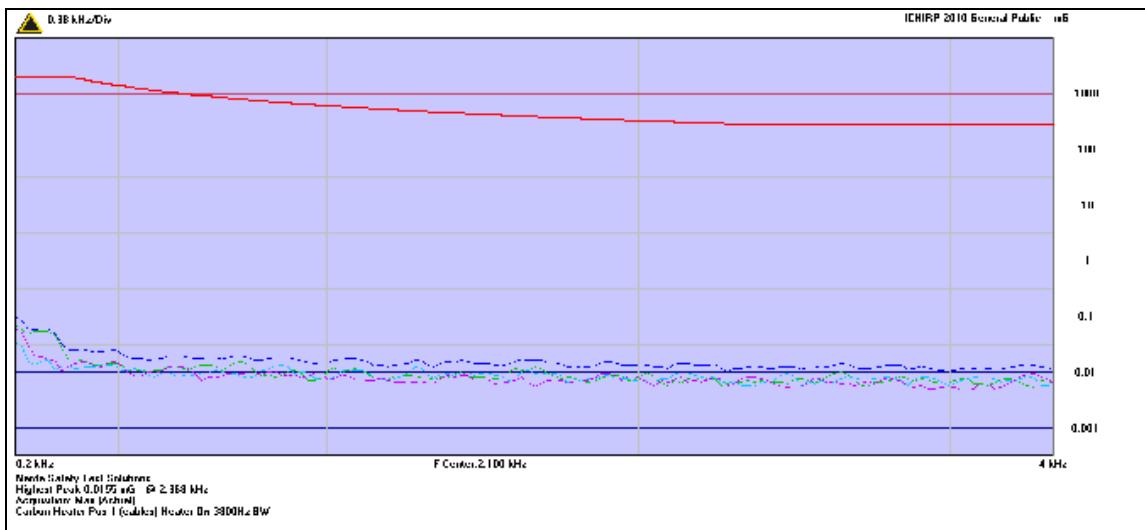
All of the measurements that were conducted/recorded were MAGNITUDES lower than the ICNIRP_Occupational_2010 Test Limit.

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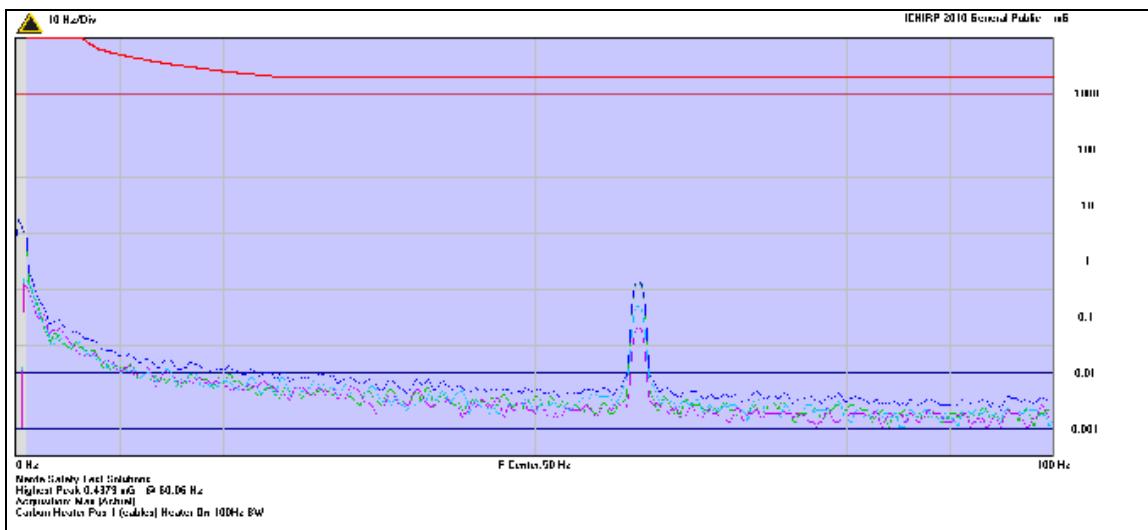
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