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5 Radiated Emissions – Intentional Radiators: Output Power - Fundamental & Harmonics of the Fundamental – FCC 15.247(b)(2)

5.1 Method

The test methods used comply with ANSI C63.10. Unless otherwise stated no deviations were made from FCC CFR47 15.247.

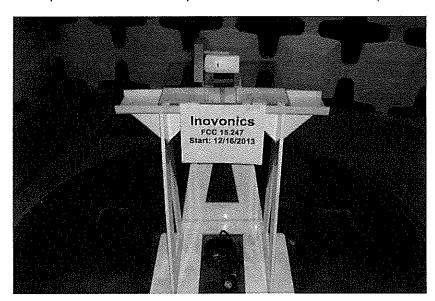
This testing was performed at Intertek Denver, located at 1795 Dogwood St. Suite 200, Louisville, CO 80027.

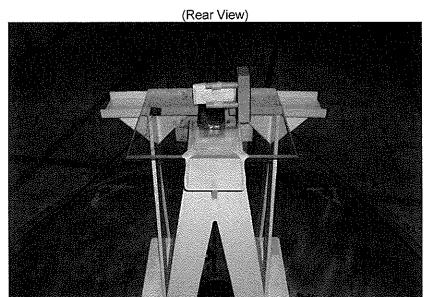
5.2 Test Equipment Used:

Asset ID	<u>Description</u>	<u>Manufacture</u>	<u>Model</u>	<u>Serial</u>	<u>Cal Date</u>	Cal Due
DEN-073	EMI Receiver	ROHDE & SCHWARZ	ESU 26	100265	01/23/2013	01/23/2014
18912	9 kHz- 1.3GHz Pre Amp	Hewlett-Packard	8447F	3113A05545	06/07/2013	06/07/2014
19937	Bilog Antenna 30MHz - 6GHz	Sunol Sciences	JB6	A050707-2	03/20/2013	03/20/2014
18906	RF Pre-Amp (1-4GHz)	Mini-Circuits Lab	ZHL-42	N052792-2	06/10/2013	06/10/2014
DEN-032	4-18 GHz LNA	NARDA	DBL- 0618N615	031	03/07/2013	03/07/2014
18887	Horn Antenna 1-18GHz	EMCO	3115	9205-3886	03/19/2013	03/19/2014
DEN-060	1GHz low Pass Filter	Mini-Circuits	VHF-1300+	3 1022	12/19/2013	12/19/2014
SW-6	Software for Radiated and Conducted emissions.	Intertek	OATS vba	V. 1.0	VBU	VBU

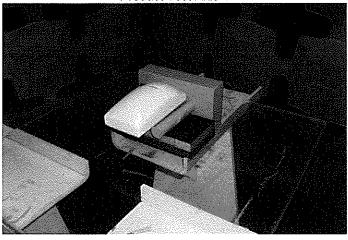
5.3 Results:

Test Setup – Tx Fundamental Output & Harmonics of Fundamental (Front View)

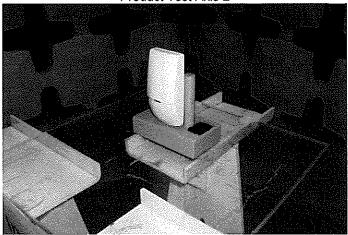




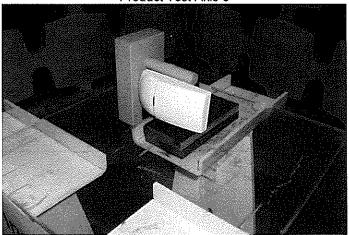
Product Test Axis 1



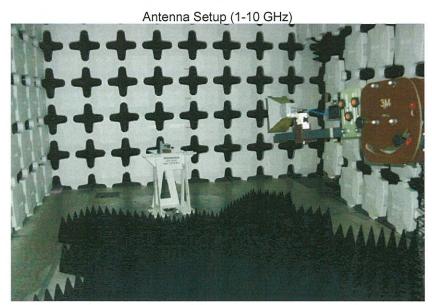
Product Test Axis 2



Product Test Axis 3







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7 Radiated Emissions Tx Spurious (Non Harmonics)

7.1 Method

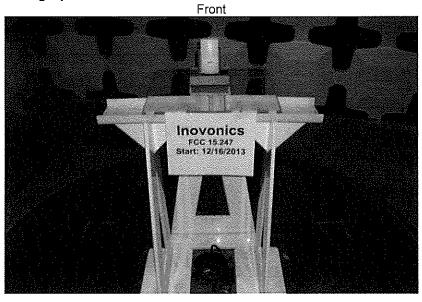
Unless otherwise stated no deviations were made from ANSI C63.10 and FCC public notice DA 00-705.

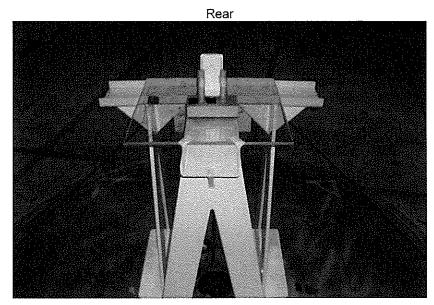
This testing was performed at Intertek Denver, located at 1795 Dogwood St., Suite 200, Louisville, CO 80027.

7.2 Test Equipment Used:

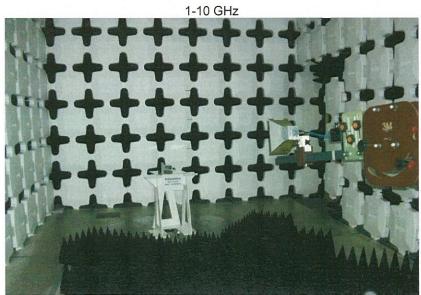
Asset ID	<u>Description</u>	<u>Manufacture</u>	<u>Model</u>	<u>Serial</u>	Cal Date	<u>Cal Due</u>
DEN-073	EMI Receiver	ROHDE & SCHWARZ	ESU 26	100265	01/23/2013	01/23/2014
18912	9 kHz- 1.3GHz Pre Amp	Hewlett-Packard	8447F	3113A05545	06/07/2013	06/07/2014
19937	Bilog Antenna 30MHz - 6GHz	Sunol Sciences	JB6	A050707-2	03/20/2013	03/20/2014
18906	RF Pre-Amp (1-4GHz)	Mini-Circuits Lab	ZHL-42	N052792-2	06/10/2013	06/10/2014
DEN-032	4-18 GHz LNA	NARDA	DBL- 0618N615	031	03/07/2013	03/07/2014
18887	Horn Antenna 1-18GHz	EMCO	3115	9205-3886	03/19/2013	03/19/2014
SW-6	Software for Radiated and Conducted emissions.	Intertek	OATS vba	V. 1.0	VBU	VBU

7.3 Results:









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8 Radiated Unintentional Emissions - Idle/Standby Mode of Operation

8.1 Method

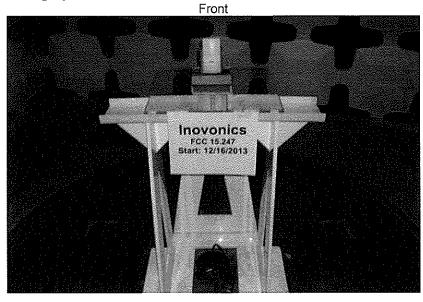
Unless otherwise stated no deviations were made from ANSI C63.10 and FCC public notice DA 00-705.

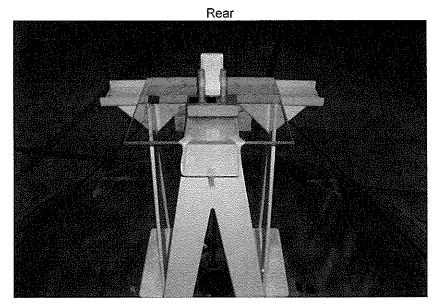
This testing was performed at Intertek Denver, located at 1795 Dogwood St., Suite 200, Louisville, CO 80027.

8.2 Test Equipment Used:

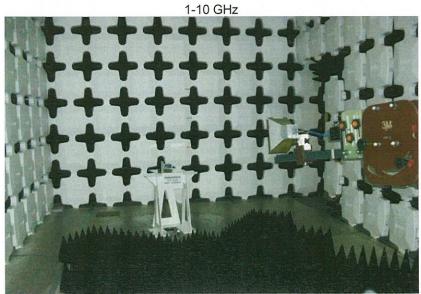
<u>Description</u>	<u>Manufacture</u>	<u>Model</u>	<u>Serial</u>	Cal Date	<u>Cal Due</u>
EMI Receiver	ROHDE & SCHWARZ	ESU 26	100265	01/23/2013	01/23/2014
9 kHz- 1.3GHz Pre Amp	Hewlett-Packard	8447F	3113A05545	06/07/2013	06/07/2014
Bilog Antenna 30MHz - 6GHz	Sunol Sciences	JB6	A050707-2	03/20/2013	03/20/2014
RF Pre-Amp (1-4GHz)	Mini-Circuits Lab	ZHL-42	N052792-2	06/10/2013	06/10/2014
4-18 GHz LNA	NARDA	DBL- 0618N615	031	03/07/2013	03/07/2014
Horn Antenna 1-18GHz	EMCO	3115	9205-3886	03/19/2013	03/19/2014
Software for Radiated and Conducted emissions.	Intertek	OATS vba	V. 1.0	VBU	VBU
	EMI Receiver 9 kHz- 1.3GHz Pre Amp Bilog Antenna 30MHz - 6GHz RF Pre-Amp (1-4GHz) 4-18 GHz LNA Horn Antenna 1-18GHz Software for Radiated and	EMI Receiver ROHDE & SCHWARZ 9 kHz- 1.3GHz Pre Amp Hewlett-Packard Bilog Antenna 30MHz - 6GHz Sunol Sciences RF Pre-Amp (1-4GHz) Mini-Circuits Lab 4-18 GHz LNA NARDA Horn Antenna 1-18GHz Software for Radiated and Intertek	EMI Receiver ROHDE & SCHWARZ ESU 26 9 kHz- 1.3GHz Pre Amp Hewlett-Packard 8447F Bilog Antenna 30MHz - 6GHz Sunol Sciences JB6 RF Pre-Amp (1-4GHz) Mini-Circuits Lab ZHL-42 4-18 GHz LNA NARDA DBL-0618N615 Horn Antenna 1-18GHz EMCO 3115 Software for Radiated and Intertek OATS vba	EMI Receiver ROHDE & SCHWARZ ESU 26 100265 9 kHz- 1.3GHz Pre Amp Hewlett-Packard 8447F 3113A05545 Bilog Antenna 30MHz - 6GHz Sunol Sciences JB6 A050707-2 RF Pre-Amp (1-4GHz) Mini-Circuits Lab ZHL-42 N052792-2 4-18 GHz LNA NARDA DBL-0618N615 031 Horn Antenna 1-18GHz EMCO 3115 9205-3886 Software for Radiated and Intertek OATS vba V. 1.0	EMI Receiver ROHDE & SCHWARZ ESU 26 100265 01/23/2013 9 kHz- 1.3GHz Pre Amp Hewlett-Packard 8447F 3113A05545 06/07/2013 Bilog Antenna 30MHz - 6GHz Sunol Sciences JB6 A050707-2 03/20/2013 RF Pre-Amp (1-4GHz) Mini-Circuits Lab ZHL-42 N052792-2 06/10/2013 4-18 GHz LNA NARDA DBL- 0618N615 031 03/07/2013 Horn Antenna 1-18GHz EMCO 3115 9205-3886 03/19/2013 Software for Radiated and Intertek OATS vba V. 1.0 VBU

8.3 Results:









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9 20 dB Bandwidth – FCC 15.247 (a)(1)(i)

9.1 Method

Unless otherwise stated no deviations were made from ANSI C63.10 and FCC public notice DA 00-705.

This testing was performed at Intertek Denver, located at 1795 Dogwood St., Suite 200, Louisville, CO 80027.

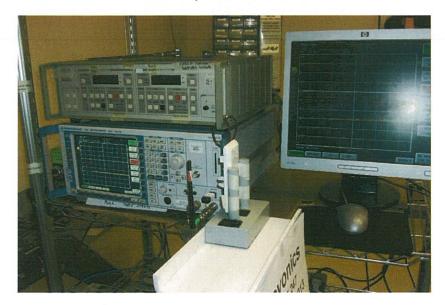
9.2 Test Equipment Used:

Asset ID:	<u>Description:</u>	<u>Manufacturer:</u>	<u>Model:</u>	<u>Serial:</u>	<u>Cal Date</u>	<u>Cal Due</u>
DEN- 073	EMI Receiver	ROHDE & SCHWARZ	ESU 26	100265	01/23/2013	01/23/2014
EMC- xx	Whip antenna	xxx	xxx	xxx	VBU	VBU

9.3 Results:

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Test Setup – 20dB Bandwidth



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10 Carrier Frequency Separation – FCC 15.247 (a)(1)

10.1 Method

Unless otherwise stated no deviations were made from ANSI C63.10 and FCC public notice DA 00-705.

This testing was performed at Intertek Denver, located at 1795 Dogwood St., Suite 200, Louisville, CO 80027.

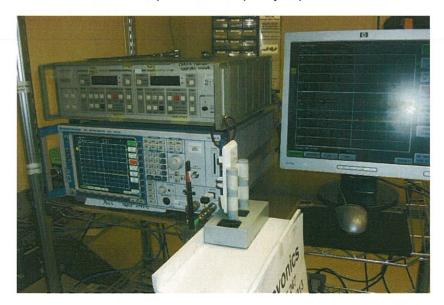
10.2 Test Equipment Used:

Asset ID:	<u>Description:</u>	Manufacturer:	<u>Model:</u>	Serial:	<u>Cal Date</u>	<u>Cal Due</u>
DEN- 073	EMI Receiver	ROHDE & SCHWARZ	ESU 26	100265	01/23/2013	01/23/2014
EMC- xx	Whip antenna	xxx	xxx	xxx	VBU	VBU

10.3 Results:

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Test Setup – Carrier Frequency Separation



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11 Number of Hopping Frequencies – FCC 15.247 (a)(1)(i)

11.1 Method

Unless otherwise stated no deviations were made from ANSI C63.10 and FCC public notice DA 00-705.

This testing was performed at Intertek Denver, located at 1795 Dogwood St., Suite 200, Louisville, CO 80027.

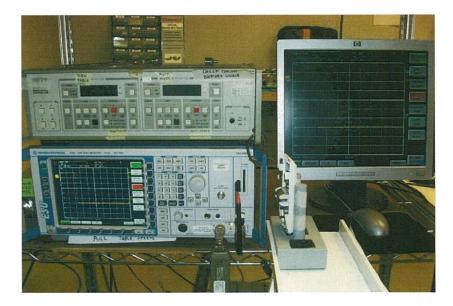
11.2 Test Equipment Used:

<u>Asset</u> <u>ID:</u>	<u>Description:</u>	Manufacturer:	Model:	Serial:	<u>Cal Date</u>	<u>Cal Due</u>
DEN-	EMI Receiver	ROHDE &	ESU 26	100265	01/23/2013	01/23/2014
073		SCHWARZ				
EMC-	Mhin antonna	****			VDII	VOL
XX	Whip antenna	XXX	XXX	XXX	VBU	VBU

11.3 Results:

Test Setup – Tx Number of Hopping Frequencies





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12 Time of Occupancy (Dwell Time) – FCC 15.247 (a)(1)(i)

12.1 Method

Unless otherwise stated no deviations were made from ANSI C63.10 and FCC public notice DA 00-705.

This testing was performed at Intertek Denver, located at 1795 Dogwood St., Suite 200, Louisville, CO 80027.

12.2 Test Equipment Used:

Asset ID:	<u>Description:</u>	Manufacturer:	<u>Model:</u>	<u>Serial:</u>	<u>Cal Date</u>	<u>Cal Due</u>
DEN-	EMI Receiver	ROHDE &	ESU 26	100265	01/23/2013	01/23/2014
073		SCHWARZ				
EMC-	Whip antenna	xxx	xxx	xxx	VBU	VBU
XX		7.101	7000	7000		

12.3 Results:

Test Setup - Time of Occupancy (Dwell Time)



