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EMC COMPLIANCE REPORT

In accordance with:

CFR47 FCC Part 15, Subpart B, Section 15.109
CFR47 FCC Part 15, Subpart C, Section 15.209

Blast Movement Technologies

Ball shaped Transmitter (BMM), BMM Detector & BMM Activator*

**See Product sample, configurations and modifications section for further details*

Blast movement probe detection system

REPORT: E1306-0348-1 Rev1
DATE: September, 2013

Certificate of Compliance

EMC Bayswater Test Report: E1306-0348-1 Rev1
Issue Date: September, 2013

Test Sample(s):	Blast movement probe detection system
Model No:	Ball shaped Transmitter (BMM), BMM Detector & BMM Activator*
Serial No:	None stated
	**See Product sample, configurations and modifications section for further details*

Client Details:

Mr. Brane Pesic
Blast Movement Technologies
PO Box 73
Bellbowrie
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Australia

Phone No: +61 07 3202 9499
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Test Specification:

CFR47 FCC Part 15, Subpart B, Section 15.109
CFR47 FCC Part 15, Subpart C, Section 15.209

Results Summary:

Radiated Emissions	***Complied***
Conducted Emissions	***Complied****

**Not applicable the EUT was battery powered only*

Test Date(s): 6th and 7th of June 2013

Test House (Issued By)

EMC Bayswater Pty Ltd
52 Holloway Drive
Bayswater
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FCC Registration number: 419968

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This is to certify that the necessary measurements were made by EMC Bayswater Pty Ltd, and that the modified Blast Movement Technologies, Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* Blast movement probe detection system (Serial No: None stated), have been tested in accordance with requirements contained in the appropriate commission regulations.

Prepared by:	Approved by:	
		18/09/2013 09:18
Clint Finch (Principal Engineer)	Andrew Whiteford (General Manager)	Date

EMC Compliance Report
for
Blast Movement Technologies

Contents

1. Introduction

Electromagnetic Compatibility (EMC) tests were performed on a Blast Movement Technologies, Blast movement probe detection system in accordance with the requirements of Title 47 of the standard CFR47 FCC Part 15, Subpart B, Section 15.109 and CFR47 FCC Part 15, Subpart C, Section 15.209.

2. Summary of Results

The EUT complied with FCC Part 15, subpart C, section 15.209 and FCC Part 15, subpart B, Section 15.109 Radiated Emissions requirements. Worst-case emissions are tabled as follows:

EUT	FCC Part 15	Test	Result
Ball shaped Transmitter (BMM)	Subpart C	Maximum Fundamental Field Strength	Complied by 11.2dB
	Subpart C	Radiated Spurious and Harmonic Emissions	Complied by 36.2dB
	Subpart B	Radiated Emissions	Complied by more than 10dB
BMM Detector	Subpart B	Radiated Emissions	Complied by more than 10dB
BMM Activator	Subpart C	Maximum Fundamental Field Strength	Complied by more than 36.9dB
	Subpart C	Radiated Spurious and Harmonic Emissions	Complied by more than 11.7dB
	Subpart B	Radiated Emissions	Complied by more than 10dB

Table 1: Summary of test results

3. Product Sample, Configuration & Modifications

3.1. Product Sample Details

The EUT (Equipment Under Test), as supplied by the client, is described as follows:

Product:	Blast movement probe detection system
Model No:	Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* *Three separate products used together as a system
	<u>Ball shaped Transmitter (BMM) (Transmitter & Receiver)</u>
Model No:	V5
Frequencies:	54.0kHz (Red coloured plastic on EUT) 59.6kHz (Green coloured plastic on EUT) 66.0kHz (Orange coloured plastic on EUT) 78.0kHz (Yellow coloured plastic on EUT)
RF output power:	3mW EiRP (approximately)
Modulation:	None (CW)
Serial No:	None stated
Specification:	9V 3 x Panasonic CR123A, 3V, 1.4Ah, Lithium batteries
Firmware:	Version 5 Revision 3
Highest non RF frequency:	<108MHz
Description:	The BMM is a directional transmitter that is programmed and installed in dedicated blast holes and has the ability to transmit through 25 m of rock. The BMMs are simply targets that move with the rock during the blast and have been designed to withstand the extreme conditions within a blast, with far fewer losses than any other method. The 2011 upgrade of the BMM System has four versions of the BMM that can be identified by the BMM Detector, allowing up to four BMMs to be installed in a single hole or BMMs close to each other in different holes. They are colour coded for easy identification and more are planned in the future.
	<u>BMM Activator (Transmitter)</u>
Model No:	V5
Frequencies:	120kHz
RF output power:	2.5µW EiRP (approximately)
Modulation:	None (CW)
Serial No:	310500024
Firmware:	Version 5 Revision 1
Specification:	9V 1 x Panasonic 6LR61T1, Alkaline battery
Highest non RF frequency:	4MHz
Description:	The BMMs leave the factory in a low-power state, giving them a long shelf-life. The BMM Activator is a remote control device that provides the signal to turn a BMM on and program certain functions prior to installation into the blast.

	BMM Detector (Receiver)	
Model No:	GP5200	
RF output power:	N/A (Receiver only)	
Modulation:	N/A (Receiver only)	
Serial No:	520033	
Firmware:	Version 3 Revision 3	
Specification:	7.4V 7.4V, 13.91Wh, 2/UF103450/RL296, Lithium ion battery	
Highest non RF frequency:	20MHz	
Description:	The BMM Detector is specifically designed to receive and interpret the signal produced by the BMMs. This allows the user to quickly locate the peak signal that occurs directly above each BMM. This point is surveyed and the signal is recorded by the BMM Detector for later processing by the software. The BMM Detector has been designed for ease of use in a production environment and has been used in temperatures from -50°C to +50°C. It usually takes less than one hour to locate all the BMMs after a typical blast. The EUT also has a built in pre-approved CE, IC and FCC Bluetooth module, details as shown below:	
	Manufacturer:	BlueGiga
	Model:	WT12
	FCC No:	QOQWT12
	IC No:	5123A-BGTWT12A

The general concept is that remotely locatable targets (BMMs) are installed near the valuable mineral. They are located after the blast, allowing the production team to know exactly where the ore and waste is so they can be separated and sent to appropriate locations – improving mine reconciliation.

(Refer to photographs in Appendix B for views of the EUT)

3.2. EUT Configuration

The EUTs were tested on a standalone basis as follows:

Ball shaped Transmitter (BMM):
Powered on (using the BMM Activator) operating at 66.0kHz fundamental transmitter frequency. The worst case EUT with the highest power level as determined from initial maximum EiRP measurements performed on each unit in the X and Y together (the EUT was cylindrical) & Z EUT orientations was used for all testing. The units were tested with new batteries and orientated to give the highest power level (X orientation).

(Refer to graphs Appendix C, for worst case determinations)

BMM Detector:
The EUT was configured with the accessories on the table top and the EUT was configured as per typical use by the customer. The EUT was powered by its internal batteries.

BMM Activator:
Powered on, operating continuously (the EUT was modified to allow this. The worst case orientation was determined from initial maximum EiRP measurements performed on each unit in the X, Y & Z EUT orientations. The units were tested with new batteries and orientated to give the highest power level (Z orientation).

(Refer to graphs Appendix C, for worst case determinations)

3.3. Modifications

EMC Bayswater did not modify the EUT.

4. Test Facility & Equipment

4.1. Test Facility

Radiated Emissions and Conducted measurements were taken in the indoor Open Area Test Site (iOATS) facility at EMC Bayswater Pty Ltd, located at 52 Holloway Drive, Bayswater, Victoria, Australia.

EMC Bayswater Pty Ltd’s FCC registration number is 419968.

4.2. Test Equipment

Refer to Appendix A for the measurement instrument list.

5. Referenced Standards

CFR47 FCC Part 15, Subpart C

CFR47 FCC Part 15, Subpart B

ANSI C63.4 - 2009
American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

6. Maximum Fundamental Field Strength

6.1. Test Procedure

Maximum field strength was measured 3 metres away from the EUT in the iOATS (indoor Open Area Test Site) facility, which is an ANSI C63.4 compliant semi-anechoic chamber with ground plane.

The EUT was placed on polystyrene platform at a height of 0.8m above the ground reference plane. The measuring antenna was located at a distance of 3m from the EUT. The peak BMM Detector was set to MAX-HOLD and the range selected continuously scanned. The antenna height was fixed at 1 metre and the turntable slowly rotated. The EUT was also orientated in each of the X, Y and Z-axis (when applicable), in-turn in order to find the worst-case emission arrangement.

Plots of the accumulated measurement data including all transducer correction factors, were produced.

(Refer to photographs 1 to 3 for the Ball shaped Transmitter test configurations and photographs 4 to 7 for the BMM Activator test configurations in Annex C)

6.2. Limits

The EUT shall meet the limits in the following table:

Frequency Range (MHz)	Limits (dBµV/m)
	Quasi-Peak
0.009 to 0.490	128.5 to 93.8
0.490 to 1.705	73.8 to 63.0
1.705 to 30	69.5
NOTE The lower limit shall apply at the transition frequency.	

Table 2: Limits for Radiated Emissions at distance of 3m – FCC Part 15.209 General limits

6.3. Test Results

Radiated Emissions measurements are tabulated below.

(Refer to graphs 1 to 11 in Appendix C)

Frequency (kHz)	Result Quasi-peak (dBμV/m)	Limit Quasi-peak (dBμV/m)	Delta limit (dB)
53.299	96.851	113.059	-16.208

Table 3: Radiated Emissions – Red colour unit BMM - X EUT Orientation

Frequency (kHz)	Result Quasi-peak (dBμV/m)	Limit Quasi-peak (dBμV/m)	Delta limit (dB)
53.299	82.973	113.059	-30.086

Table 4: Radiated Emissions – Red colour unit BMM – Y and Z EUT Orientation

Frequency (kHz)	Result Quasi-peak (dBμV/m)	Limit Quasi-peak (dBμV/m)	Delta limit (dB)
59.659	82.576	112.080	-29.504

Table 5: Radiated Emissions – Green colour unit BMM - X EUT Orientation

Frequency (kHz)	Result Quasi-peak (dBμV/m)	Limit Quasi-peak (dBμV/m)	Delta limit (dB)
56.619	97.107	112.086	-14.979

Table 6: Radiated Emissions – Green colour unit BMM - Y and Z EUT Orientation

Frequency (kHz))	Result Quasi-peak (dBμV/m)	Limit Quasi-peak (dBμV/m)	Delta limit (dB)
67.463	99.813	111.013	-11.200

Table 7: Radiated Emissions – Orange colour BMM unit - X EUT Orientation

Frequency (kHz)	Result Quasi-peak (dBμV/m)	Limit Quasi-peak (dBμV/m)	Delta limit (dB)
67.423	85.882	111.018	-25.136

Table 8: Radiated Emissions – Orange colour unit BMM - Y and Z EUT Orientation

Frequency (kHz)	Result Quasi-peak (dBμV/m)	Limit Quasi-peak (dBμV/m)	Delta limit (dB)
78.020	98.530	109.751	-11.221

Table 9: Radiated Emissions – Yellow colour unit BMM - X EUT Orientation

Frequency (kHz)	Result Quasi-peak (dBμV/m)	Limit Quasi-peak (dBμV/m)	Delta limit (dB)
78.060	83.902	109.747	25.845

Table 10: Radiated Emissions – Yellow colour unit BMM - Y and Z EUT Orientation

Frequency (kHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
111.421	69.149	106.658	-37.509

Table 11: Radiated Emissions – BMM Activator - X EUT Orientation

Frequency (kHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
111.381	64.399	106.661	-42.262

Table 12: Radiated Emissions – BMM Activator - Y EUT Orientation

Frequency (kHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
111.381	69.717	106.661	-36.944

Table 13: Radiated Emissions – BMM Activator - Z EUT Orientation

The measurement uncertainty was calculated at ±4.3dB for measurements between 9kHz and 30MHz. The reported uncertainty is an expanded uncertainty calculated using a coverage factor of $k=2$ which gives a level of confidence of approximately 95%.

Climatic Conditions	
Temperature:	26 to 28°C
Humidity:	33 to 41%

Table 14: Climatic conditions

Comments: BMM - Ball shaped Transmitter (BMM) (Transmitter & Receiver)

The maximum Fundamental Field Strength measurements were below the permissible Spurious and general intentional radiator limits, Peak BMM Detector emissions were below the applicable limits.

The worst case EUT was the Orange (64.4kHz) transmitter in the X orientation.

BMM Activator (Transmitter)

The maximum Fundamental Field Strength measurements were below the permissible Spurious and general intentional radiator limits, Peak BMM Detector emissions were below the applicable limits.

The worst case EUT orientation was the Z orientation.

Assessment: The BMM - Ball shaped Transmitter (BMM) (Transmitter & Receiver) and BMM Activator (Transmitter) complied with the Radiated Emissions requirements of CFR47 FCC Part 15, Subpart C, Section 15.209.

7. Radiated Spurious and Harmonic Emissions

7.1. Test Procedure

Radiated Spurious and Harmonic Emissions were measured 3 metres (from 9kHz to 30MHz) away from the EUT in the iOATS (indoor Open Area Test Site) facility, which is an ANSI C63.4 compliant semi-anechoic chamber with ground plane.

The EUT was placed on a non-conductive support at a height of 0.8m above the ground plane. For both horizontal and vertical antenna polarizations (were applicable) the peak and average BMM Detectors were set to MAX-HOLD and the range selected continuously scanned. The antenna height was set at 1 metre and the turntable slowly rotated, in order to find the worst-case emission arrangement. When an emission was within 6dB of the limit further measurements were performed on each orientation of the EUT and with a varying antenna height when applicable.

Plots of the accumulated measurement data for both horizontal and vertical antenna polarizations, including all transducer correction factors, were produced.

(Refer to photographs 1 to 3 for the Ball shaped Transmitter test configurations and photographs 4 to 7 for the BMM Activator test configurations in Annex C)

7.2. Limits

The EUT shall meet the limits in the following table:

Frequency Range (MHz)	Limits (dBμV/m)
	Quasi-Peak
0.009 to 0.490	128.5 to 93.8
0.490 to 1.705	73.8 to 63.0
1.705 to 30	69.5
NOTE The lower limit shall apply at the transition frequency.	

Table 15: Limits for Radiated Emissions at distance of 3m

7.3. Test Results

Radiated Emissions measurements are tabulated below.

(Refer to graphs 12 and 13 in Appendix C)

Frequency (kHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
206.092	65.1	101.3	-36.2
340.090	55.4	97.0	-41.6
470.952	49.5	94.1	-44.6

Table 16: Radiated Emissions – Orange coloured BMM EUT

Frequency (kHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
224.790	62.6	100.6	-38.0
336.974	69.0	97.1	-28.1
446.042	63.6	94.6	-31.0
558.227	59.7	72.7	-13.0
670.411	59.4	71.1	-11.7
894.780	55.8	68.6	-12.8
1116.032	52.5	66.7	-14.2
1340.401	49.0	65.1	-16.1

Table 17: Radiated Emissions – BMM Activator EUT

The measurement uncertainty was calculated at ±4.3dB for measurements between 9kHz and 30MHz. The reported uncertainty is an expanded uncertainty calculated using a coverage factor of *k=2* which gives a level of confidence of approximately 95%.

Climatic Conditions	
Temperature:	23 to 28°C
Humidity:	33 to 74%

Table 18: Climatic conditions

Comments: BMM - Ball shaped Transmitter (BMM) (Transmitter & Receiver)
All Spurious Emissions measurements were below the permissible Spurious and general intentional radiator limits, Peak BMM Detector emissions were below the applicable limits.

The EUT was tested in the worst case EUT orientation which was the X orientation.

BMM Activator (Transmitter)
All Spurious Emissions measurements were below the permissible Spurious and general intentional radiator limits, Peak BMM Detector emissions were below the applicable limits.

The EUT was tested in the worst case EUT orientation which was the Z orientation.

Assessment: The BMM - Ball shaped Transmitter (BMM) (Transmitter & Receiver) and BMM Activator (Transmitter) complied with the Radiated Spurious and Harmonic Emissions requirements of CFR47 FCC Part 15, Subpart C, Section 15.209.

8. Radiated Emissions

8.1. Test Procedure

Radiated Emissions were measured 3 metres away from the EUT in the iOATS (indoor Open Area Test Site) facility, which is an ANSI C63.4 compliant semi-anechoic chamber with ground plane.

The EUT was placed on a non-conductive table, at a height of 0.8m above the ground plane. For both horizontal and vertical antenna polarizations, the peak BMM Detector was set to MAX-HOLD and the range selected continuously scanned. The antenna height was varied from 1 to 4 and the turntable slowly rotated in order to find the worst-case emission arrangement.

Plots of the accumulated measurement data for both horizontal and vertical antenna polarizations, including all transducer correction factors, were produced.

(Refer to photographs 8 to 10 in Annex C for views of the test configurations)

8.2. Limits

The EUT shall meet the limits in the following table:

Frequency Range (MHz)	**Limits (dBµV/m)**
	Quasi-Peak
30 to 88	40.0
88 to 216	43.5
216 to 960	46.0
960 to 1000	53.9
Frequency Range (MHz)	**Limits (dBµV/m)**
	Average
Above 1000	53.9
NOTE The lower limit shall apply at the transition frequency.	

Table 19: Limits for Radiated Emissions at distance of 3m – Class B

8.3. Test Results

Radiated Emissions measurements are tabulated below. Quasi-peak measurements were performed at spot frequencies where the peak emission was close to, or exceeded the applicable limit line.

(Refer to graphs 14 to 19 in Appendix C)

Frequency (MHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
All Peak emissions above the noise floor were >20dB below the specified limit			

Table 20: Radiated Disturbance – Vertical Antenna Polarisation - Orange coloured BMM EUT

Frequency (MHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
All Peak emissions above the noise floor were >20dB below the specified limit			

Table 21: Radiated Disturbance – Horizontal Antenna Polarisation - Orange coloured BMM EUT

Frequency (MHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
All Peak emissions above the noise floor were >20dB below the specified limit			

Table 22: Radiated Disturbance – Vertical Antenna Polarisation - BMM Activator

Frequency (MHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
All Peak emissions above the noise floor were >20dB below the specified limit			

Table 23: Radiated Disturbance – Horizontal Antenna Polarisation – BMM Activator

Frequency (MHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
All Peak emissions above the noise floor were >20dB below the specified limit			

Table 24: Radiated Disturbance – Vertical Antenna Polarisation - BMM Detector

Frequency (MHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
All Peak emissions above the noise floor were >20dB below the specified limit			

Table 25: Radiated Disturbance – Horizontal Antenna Polarisation - BMM Detector

The measurement uncertainty was calculated at ±4.7dB for measurements below 1GHz. The reported uncertainty is an expanded uncertainty calculated using a coverage factor of $k=2$ which gives a level of confidence of approximately 95%.

Climatic Conditions	
Temperature:	12 - 18°C
Humidity:	56 - 69%

Table 26: Climatic conditions

Comments: BMM - Ball shaped Transmitter (BMM) (Transmitter & Receiver)
All Radiated Emissions measurements were below the Class B limit.

The declared highest frequency generated or used within the device is <108MHz therefore testing was completed up to 1GHz only.

BMM Activator (Transmitter)
All Radiated Emissions measurements were below the Class B limit.

The declared highest frequency generated or used within the device is 4MHz therefore testing was completed up to 1GHz only.

BMM Detector (Receiver)
All Radiated Emissions measurements were below the Class B limit.

The declared highest frequency generated or used within the device is 20MHz therefore testing was completed up to 1GHz only.

Assessment: The BMM - Ball shaped Transmitter (BMM) (Transmitter & Receiver), BMM Activator (Transmitter) and BMM Detector (Receiver) complied with the Radiated Emissions requirements of CFR47 FCC Part 15, Subpart B, Section 15.109.

9. Conclusion

The Blast Movement Technologies, BMM - Ball shaped Transmitter (BMM) (Transmitter & Receiver), BMM Activator (Transmitter) and BMM Detector (Receiver), Blast movement probe detection system complied with the requirements of CFR47 FCC Part 15, Subpart B, Section 15.109 and CFR47 FCC Part 15, Subpart C, Section 15.209**.**

Appendix A – Test Equipment

Inv	Equipment	Make	Model No	Serial No	Calibration	
					Due	Type
Radiated Emissions						
818	EMI Receiver	Rohde & Schwarz	ESIB40	100295	Aug 13	E
935	ANTENNA, Biconilog	Sunol Sciences	JB5	A07116	Dec 14	E
024	Active loop Antenna	EMCO	6502	2620	Dec 13	I
793	Cable, Coax, Multiflex MF141	Huber+Suhner	84025724/1806	C351	Apr 14	I
812	Cable, Coax, Multiflex MF141	Huber+Suhner	84025730/1806	C354	Feb 14	I
932	Controller, Position	Sunol Sciences	SC104V-3	081006-1	N/A	V
933	Turntable	Sunol Sciences	SM46C	081006-2	N/A	V
934	Mast, Antenna	Sunol Sciences	TLT2	TBA	N/A	V
666	Enclosure, Semi-Anechoic, No 5	RFI Ind	S800 iOATS	1229	Mar 14	I
General Equipment						
997	Hygrometer, Temp, Humidity	RS	408	6109	Mar 14	E

V: Verification of operation against an internal reference
I: Internal calibration against a NATA traceable standard
E: External calibration by a NATA endorsed facility
N/A: Not Applicable

Appendix B – Photographs

Annex	Number	Photograph Description
A	1	EUT – External view – BMM – Red coloured unit
A	2	
A	3	
A	4	EUT – External view – BMM – Green coloured unit
A	5	
A	6	
A	7	EUT – External view – BMM – Orange coloured unit
A	8	
A	9	
A	10	EUT – External view – BMM – Yellow coloured unit
A	11	
A	12	
A	13	EUT – External view – BMM – Reverse side of PCB (All colours are identical)
A	14	
A	15	EUT – External view – BMM – Batteries
A	16	
A	17	EUT – External view – BMM Activator
A	18	
B	1	EUT – Internal view – BMM Activator
B	2	
B	3	
B	4	
B	5	
A	19	EUT – External view – BMM Activator battery
A	20	EUT – External view – BMM Detector system - Overview
A	21	
A	22	
A	23	
A	24	EUT – External view – BMM Detector system
B	6	EUT – Internal view – BMM Detector system
B	7	
B	8	
B	9	
B	10	
B	11	
B	12	
B	13	
A	25	EUT – External view – BMM Detector system – Serial number
A	26	

Annex	Number	Photograph Description
C	1	BBM - Radiated measurements – Setup below 30MHz
C	2	BBM - Radiated measurements – EUT X Orientation
C	3	BBM - Radiated measurements – EUT Y & Z Orientation
C	4	BBM Activator - Radiated measurements – Setup below 30MHz
C	5	BBM Activator - Radiated measurements – EUT X Orientation
C	6	BBM Activator - Radiated measurements – EUT Y Orientation
C	7	BBM Activator - Radiated measurements – EUT Z Orientation
C	8	BBM - Radiated measurements – 30MHz to 1GHz
C	9	BBM Activator - Radiated measurements – 30MHz to 1GHz
C	10	BBM Detector - Radiated measurements – 30MHz to 1GHz

Please note all photographs are in separate documents - Annexes (A to C):

EUT Internal Photographs	-	EMC Bayswater Test Report E1306-00348-1 Annex A
EUT External Photographs	-	EMC Bayswater Test Report E1306-00348-1 Annex B
Test set-up & EUT Orientations Photographs	-	EMC Bayswater Test Report E1306-00348-1 Annex C

Appendix C – Measurement Graphs

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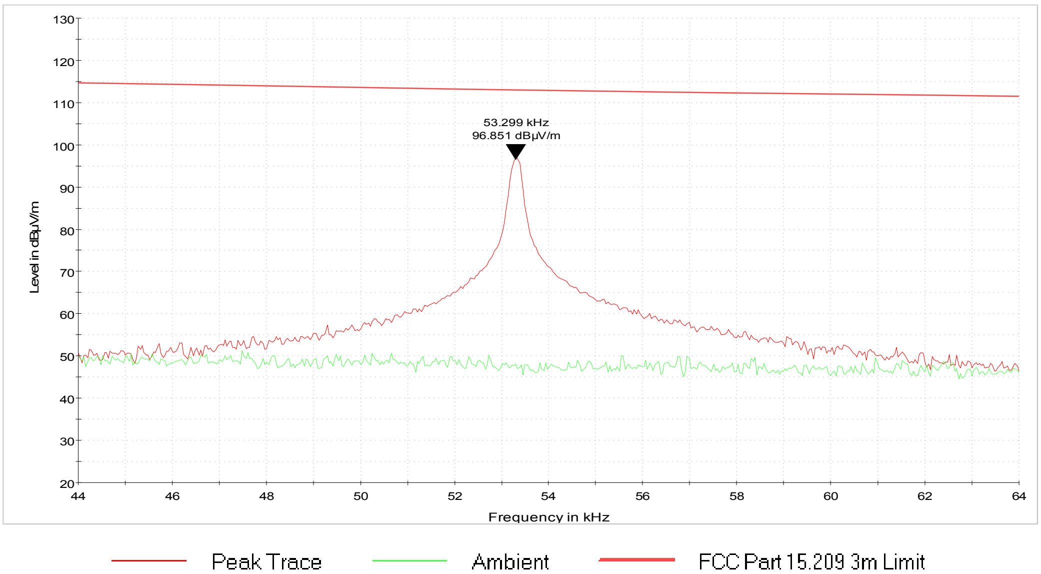
<tr><td>19</td><td>Horizontal Antenna Polarisation</td></tr>
</table>

	EMC Bayswater Pty. Ltd. **CFR47 FCC Part 15, Subpart C, Section 15.209 – Radiated Emissions - Maximum EiRP** **Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system** **Red Ball shaped Transmitter (BMM) – X orientation**	Job Number: Test Engineer:	E1306-0348-1 Rev1 CF



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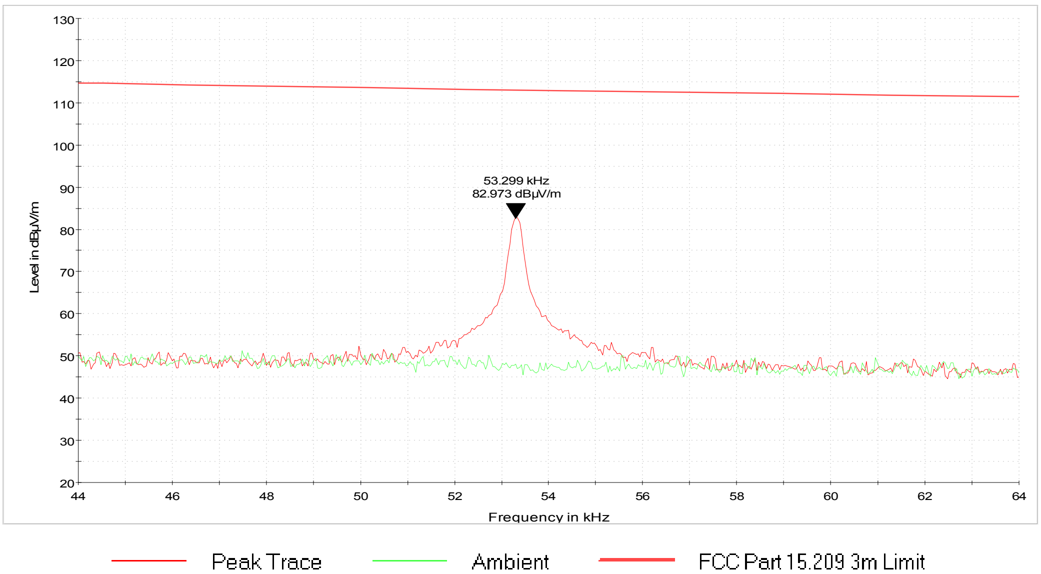
Graph 1

	EMC Bayswater Pty. Ltd. **CFR47 FCC Part 15, Subpart C, Section 15.209 – Radiated Emissions - Maximum EiRP** **Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system** **Red Ball shaped Transmitter (BMM) – Y and Z orientation**	Job Number: Test Engineer:	E1306-0348-1 Rev1 CF



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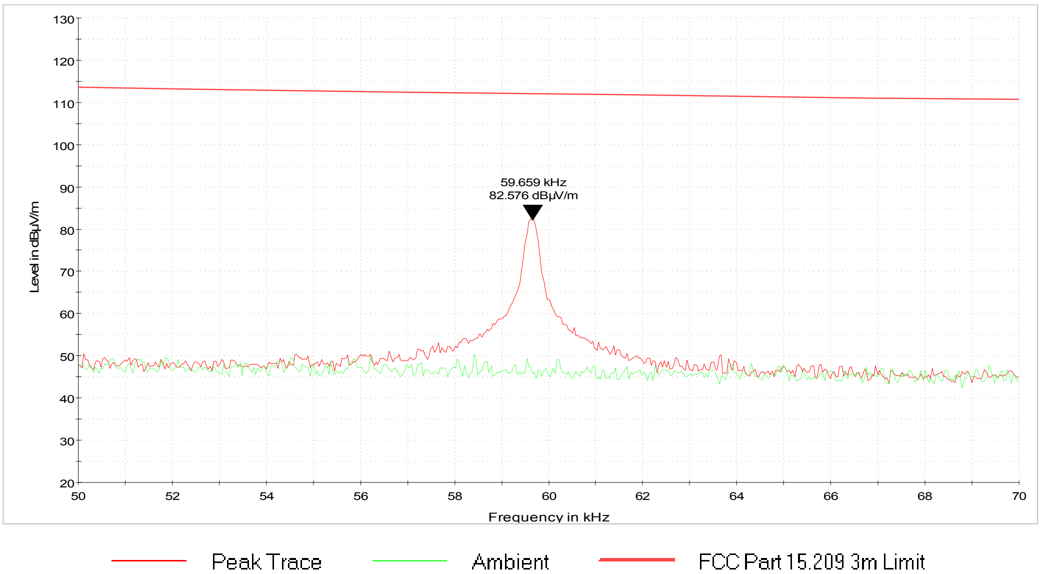
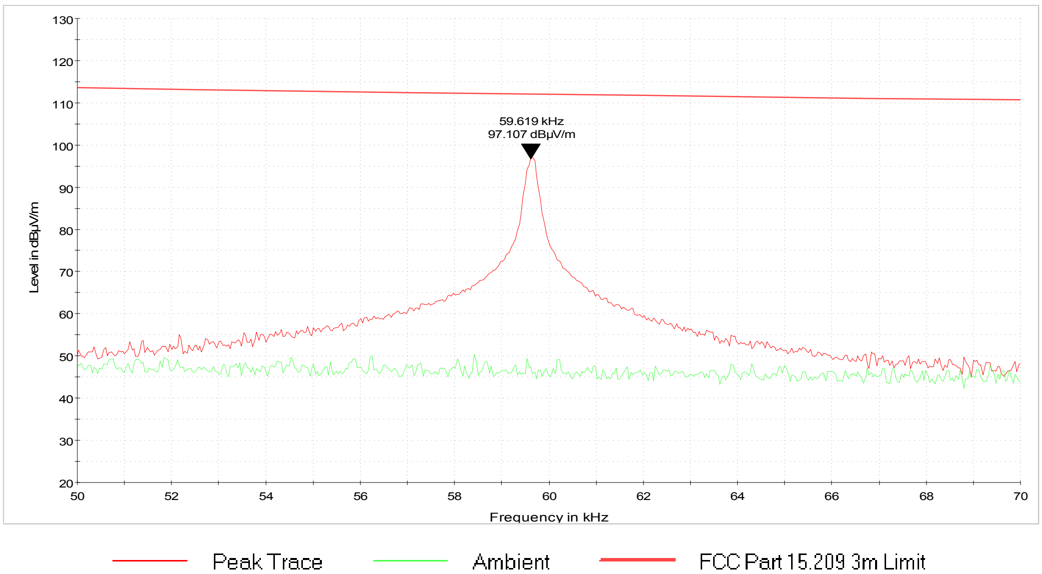
Graph 2

EMC Bayswater Pty. Ltd.		
CFR47 FCC Part 15, Subpart C, Section 15.209 – Radiated Emissions - Maximum EiRP	Job Number:	E1306-0348-1 Rev1
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system	Test Engineer:	CF
Green Ball shaped Transmitter (BMM) – X orientation		



Graph 3

EMC Bayswater Pty. Ltd.		
CFR47 FCC Part 15, Subpart C, Section 15.209 – Radiated Emissions - Maximum EiRP	Job Number:	E1306-0348-1 Rev1
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system	Test Engineer:	CF
Green Ball shaped Transmitter (BMM) – Y and Z orientation		

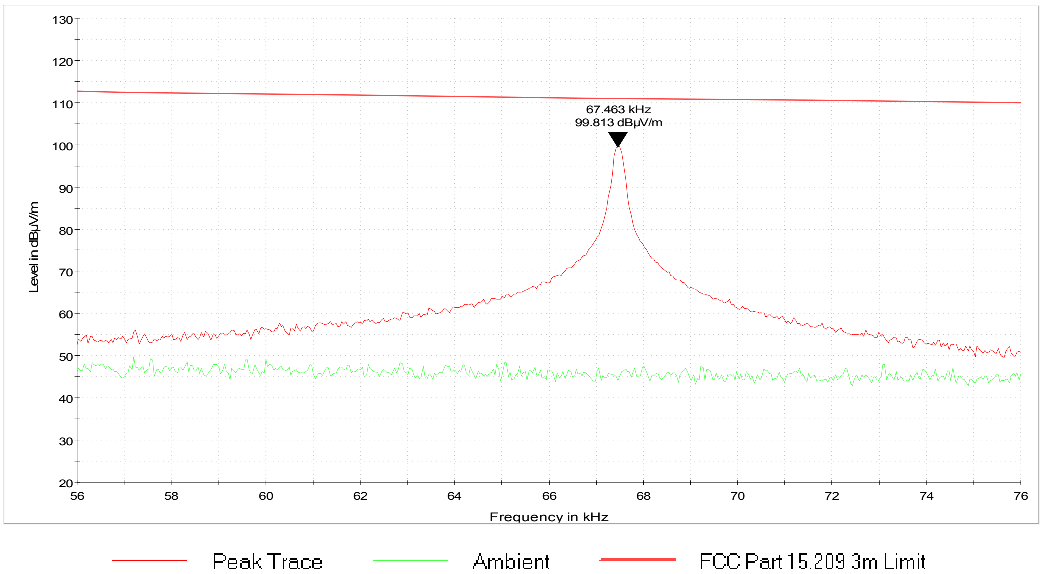


Graph 4

EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart C, Section 15.209 – Radiated Emissions - Maximum EiRP
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system
Orange Ball shaped Transmitter (BMM) – X orientation

Job Number:	E1306-0348-1 Rev1
Test Engineer:	CF

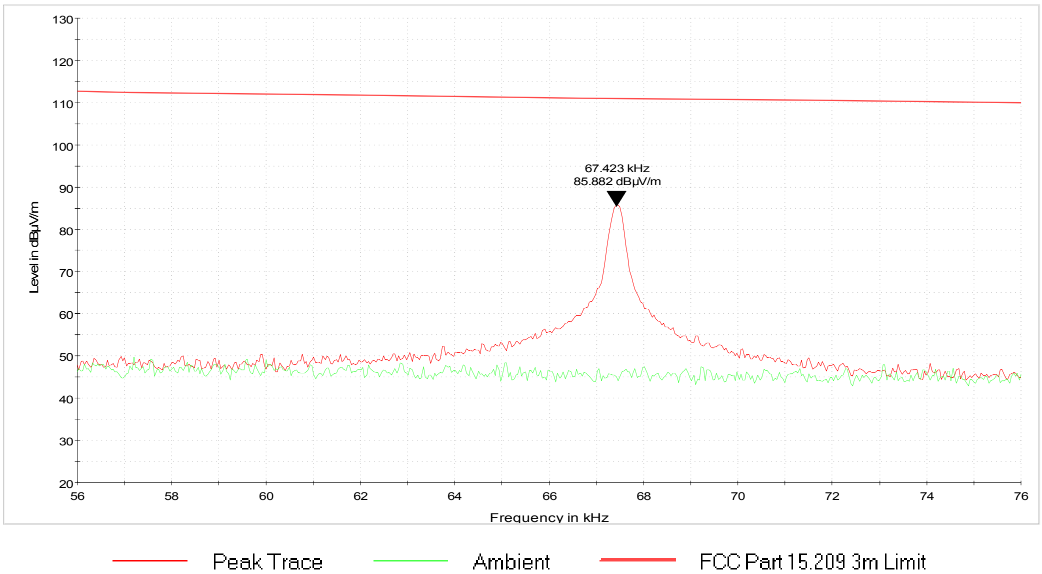


Graph 5

EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart C, Section 15.209 – Radiated Emissions - Maximum EiRP
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system
Orange Ball shaped Transmitter (BMM) – Y and Z orientation

Job Number:	E1306-0348-1 Rev1
Test Engineer:	CF

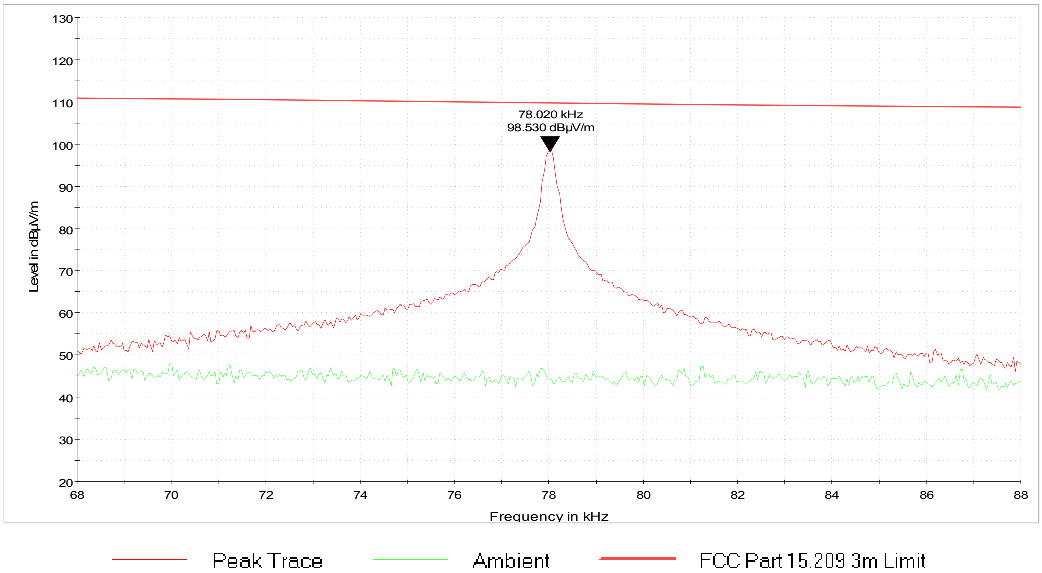


Graph 6

EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart C, Section 15.209 – Radiated Emissions - Maximum EiRP
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system
Yellow Ball shaped Transmitter (BMM) – X orientation

Job Number: E1306-0348-1 Rev1
Test Engineer: CF

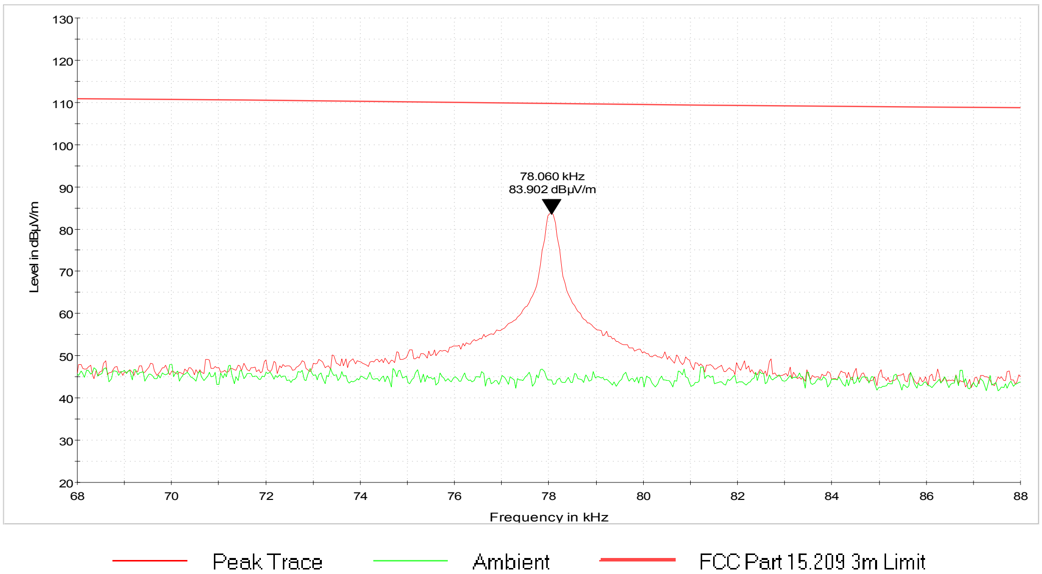


Graph 7

EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart C, Section 15.209 – Radiated Emissions - Maximum EiRP
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system
Yellow Ball shaped Transmitter (BMM) – Y and Z orientation

Job Number: E1306-0348-1 Rev1
Test Engineer: CF

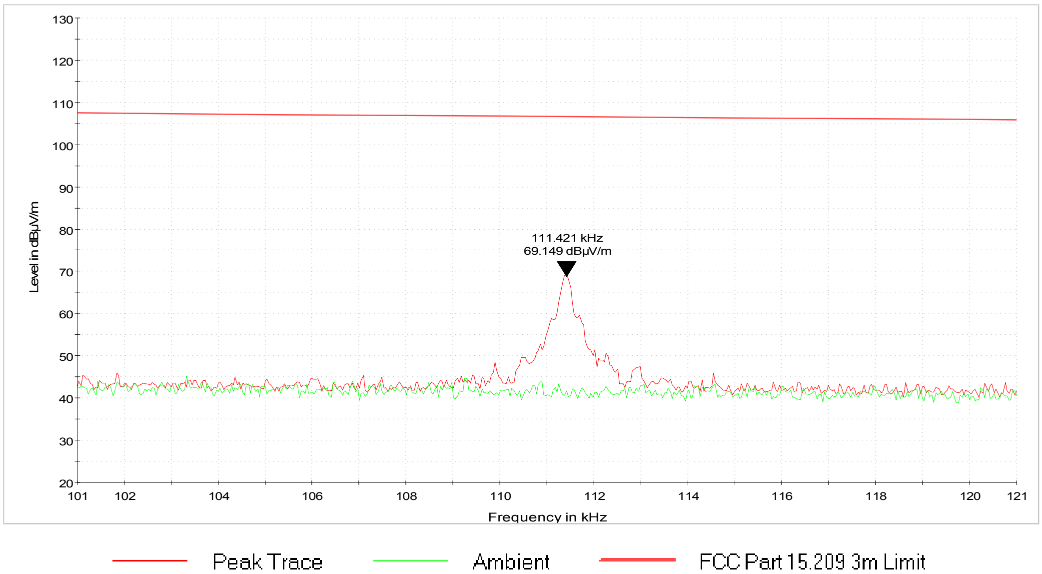


Graph 8

EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart C, Section 15.209 – Radiated Emissions - Maximum EiRP
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system
BMM Activator – X orientation

Job Number:	E1306-0348-1 Rev1
Test Engineer:	CF

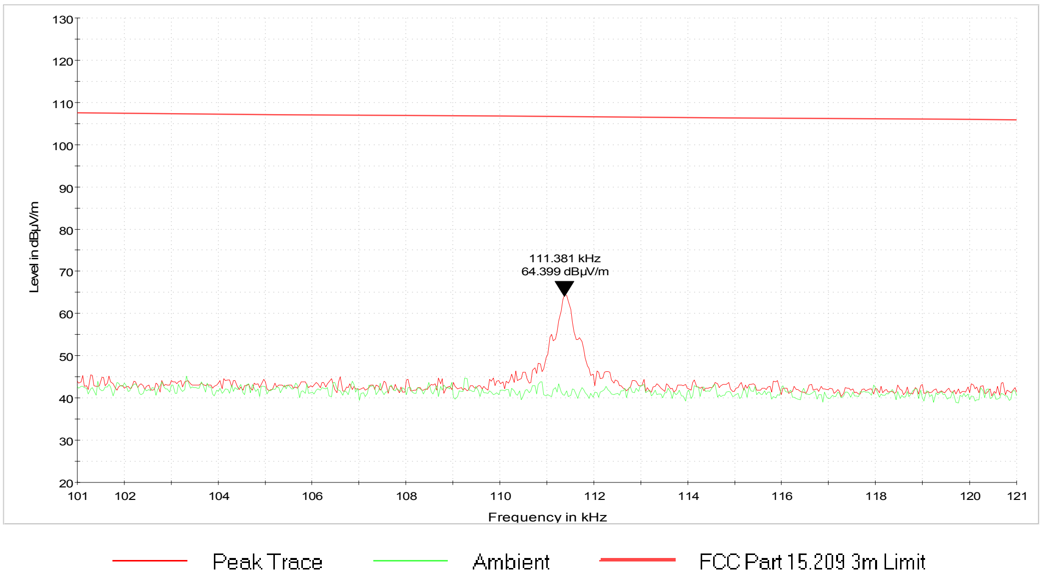


Graph 9

EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart C, Section 15.209 – Radiated Emissions - Maximum EiRP
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system
BMM Activator – Y orientation

Job Number:	E1306-0348-1 Rev1
Test Engineer:	CF

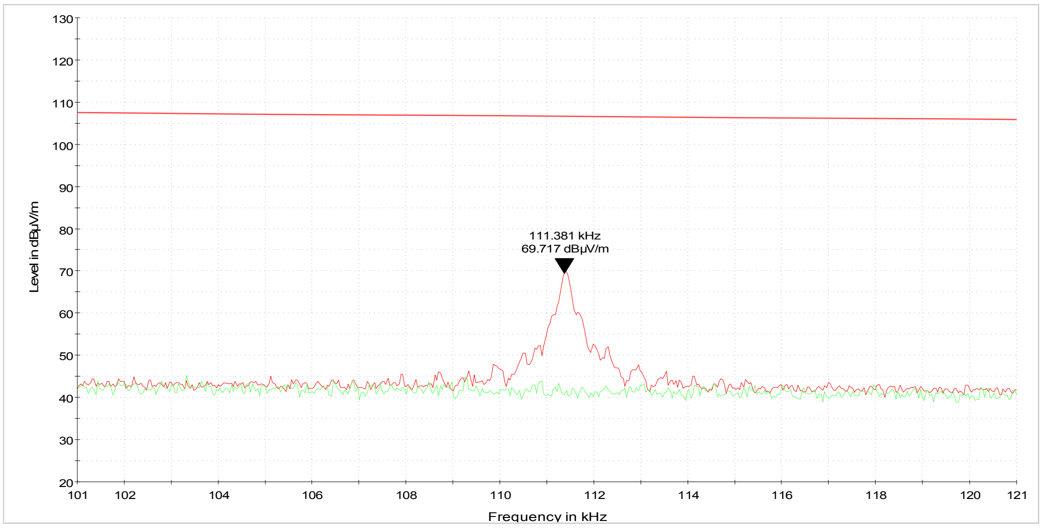


Graph 10

EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart C, Section 15.209 – Radiated Emissions - Maximum EiRP
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system
BMM Activator – Z orientation

Job Number: E1306-0348-1 Rev1
Test Engineer: CF

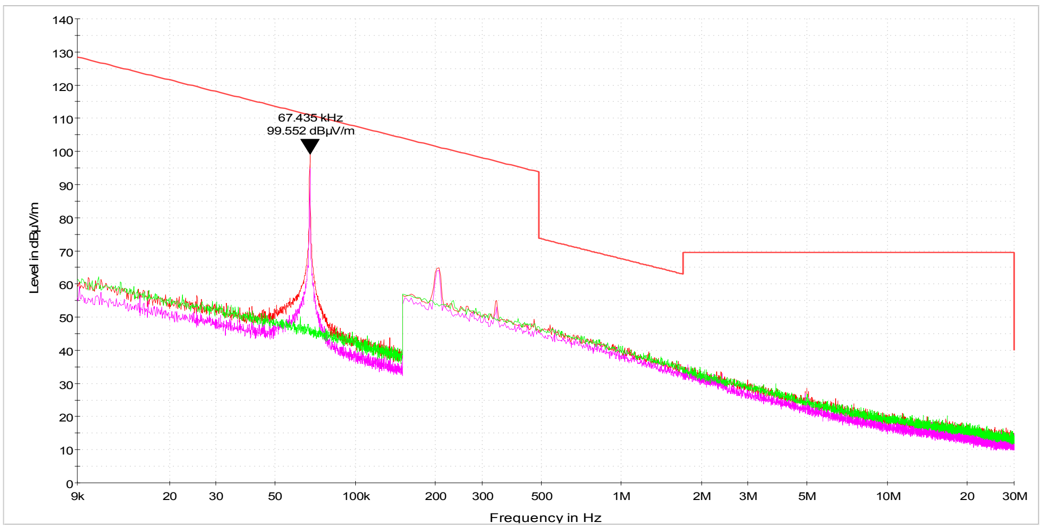


Graph 11

EMC Bayswater Pty. Ltd.

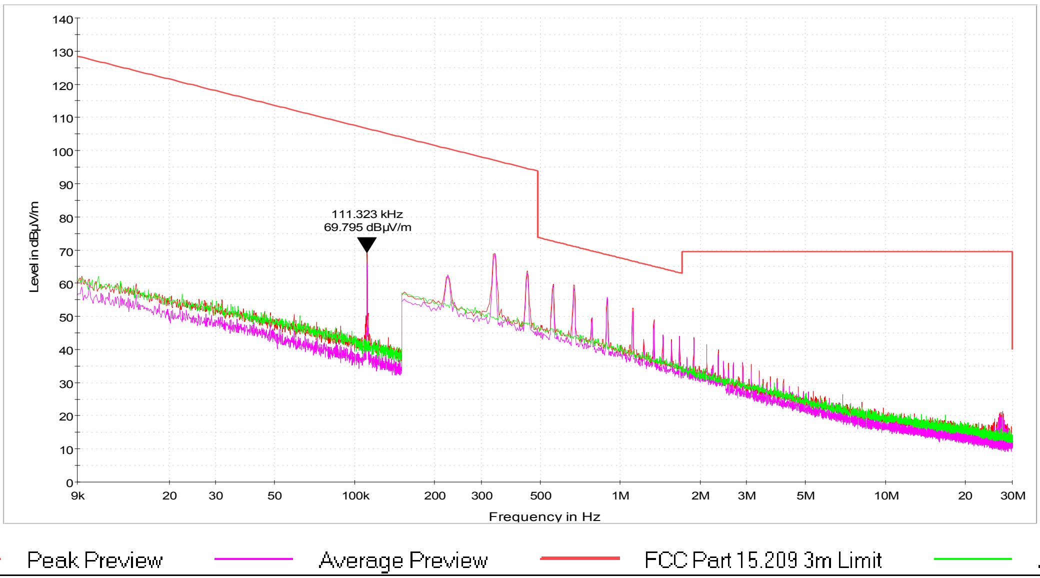
CFR47 FCC Part 15, Subpart C, Section 15.209 - Radiated Spurious and Harmonic Emissions
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system
Orange Ball shaped Transmitter (BMM) – X orientation

Job Number: E1306-0348-1 Rev1
Test Engineer: CF



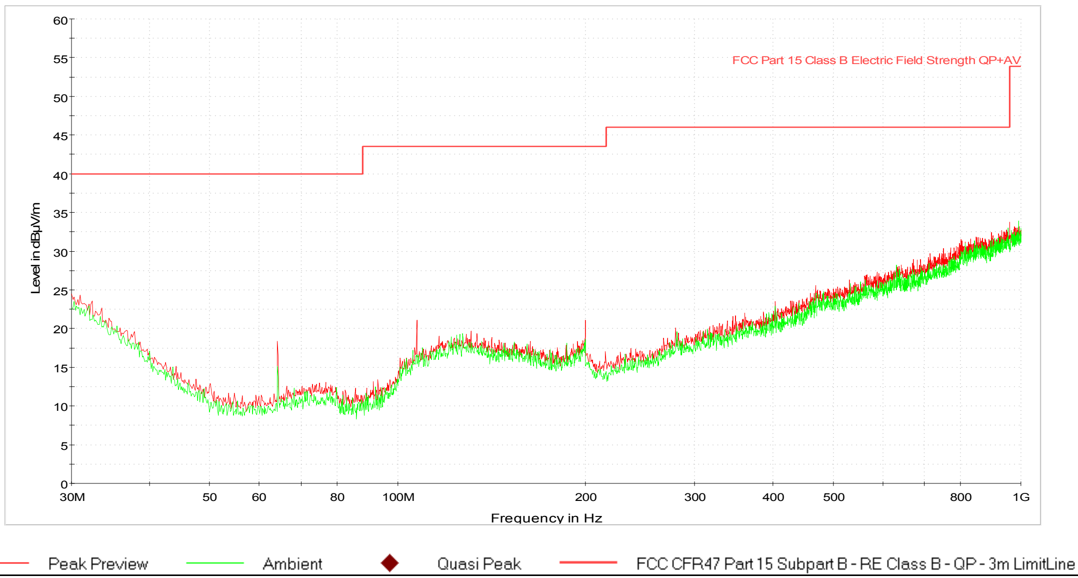
Graph 12

	EMC Bayswater Pty. Ltd. **CFR47 FCC Part 15, Subpart C, Section 15.209 - Radiated Spurious and Harmonic Emissions** **Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system** **BMM Activator – Z orientation**	Job Number: Test Engineer:	E1306-0348-1 Rev1 CF



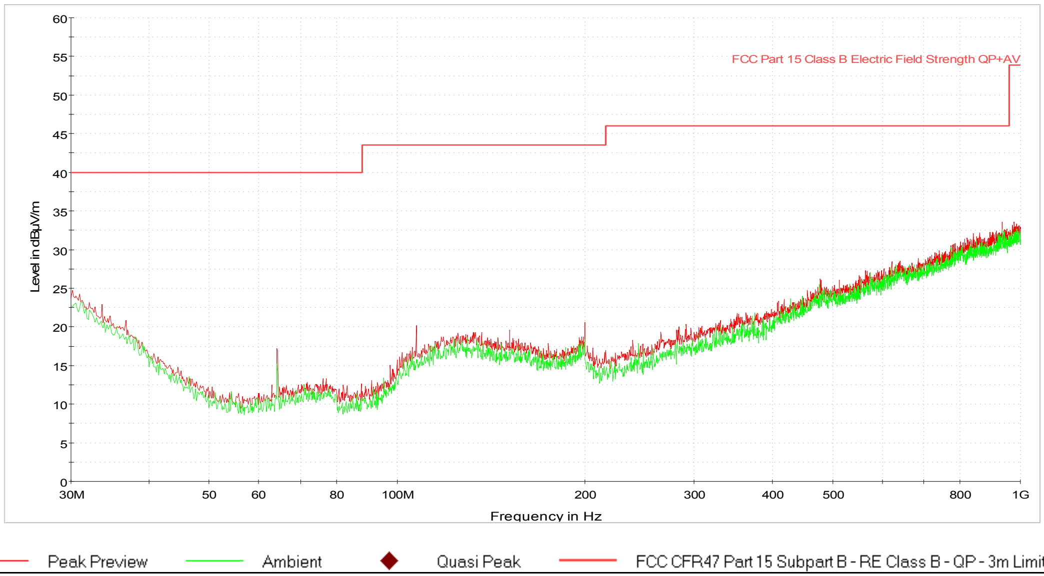
Graph 13

	EMC Bayswater Pty. Ltd. **CFR47 FCC Part 15, Subpart B, Section 15.109 - Radiated Emissions** **Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system** **Orange Ball shaped Transmitter (BMM) – X orientation – Vertical Antenna**	Job Number: Test Engineer:	E1306-0348-1 Rev1 SR



Graph 14

EMC Bayswater Pty. Ltd.		
CFR47 FCC Part 15, Subpart B, Section 15.109 - Radiated Emissions	Job Number:	E1306-0348-1 Rev1
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system	Test Engineer:	SR
Orange Ball shaped Transmitter (BMM) – X orientation – Horizontal Antenna		



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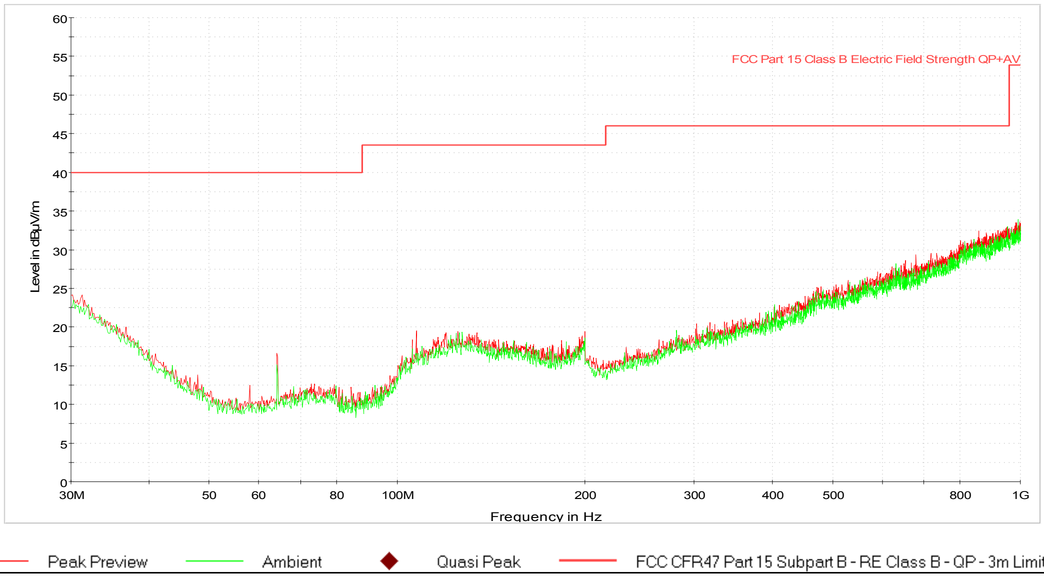
Graph 15

EMC Bayswater Pty. Ltd.		
CFR47 FCC Part 15, Subpart B, Section 15.109 - Radiated Emissions	Job Number:	E1306-0348-1 Rev1
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system	Test Engineer:	SR
BMM Activator – Z orientation – Vertical Antenna		



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Graph 16

EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart B, Section 15.109 - Radiated Emissions
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system
BMM Activator – Z orientation – Horizontal Antenna

Job Number:	E1306-0348-1 Rev1
Test Engineer:	SR

Graph 17

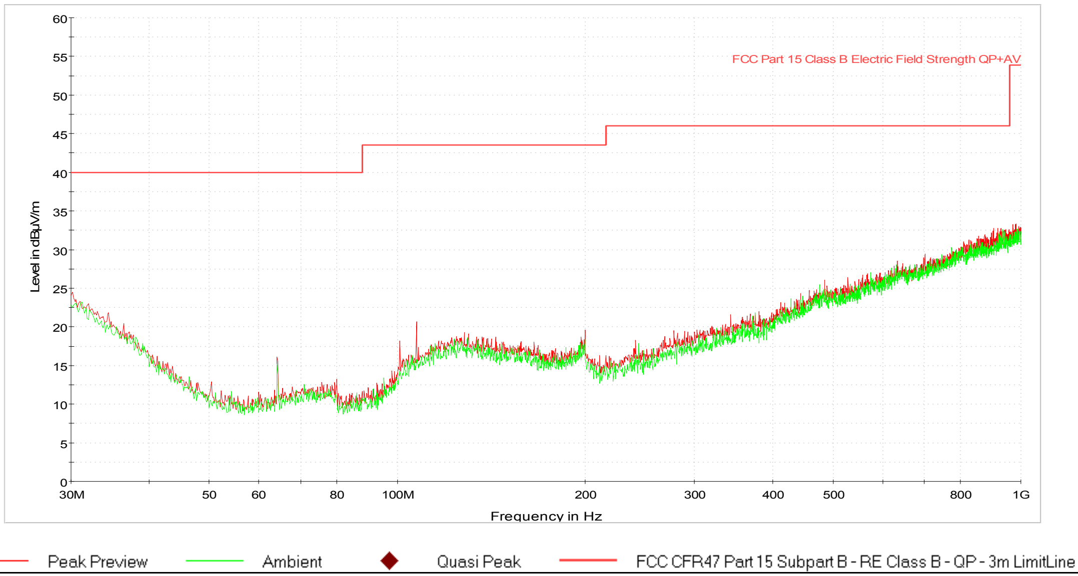
EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart B, Section 15.109 - Radiated Emissions
Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system
BMM Detector – Vertical Antenna

Job Number:	E1306-0348-1 Rev1
Test Engineer:	SR

Graph 18

	EMC Bayswater Pty. Ltd.		
	CFR47 FCC Part 15, Subpart B, Section 15.109 - Radiated Emissions	Job Number:	E1306-0348-1 Rev1
	Blast Movement Technologies - Ball shaped Transmitter (BMM), BMM Detector & BMM Activator* - Blast movement probe detection system	Test Engineer:	SR
	BMM Detector – Horizontal Antenna		



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Graph 19