

NORTHWEST EMC

Garrett Metal Detectors

SM 100

FCC 15.247:2015

2.4 GHz DTS Radio

Report # GARR0010.1



NVLAP Lab Code: 201049-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America. This Report may only be duplicated in its entirety

CERTIFICATE OF TEST

Last Date of Test: September 18, 2015
Garrett Metal Detectors
Model: SM 100

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2015	ANSI C63.10:2013, KDB 558074 V3

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	No	N/A	Not required for permissive change.
6.5, 6.6, 11.12.1, 11.13.2	Spurious Radiated Emissions	Yes	Pass	
6.10.4	Band Edge Compliance	No	N/A	Not required for permissive change.
11.6	Duty Cycle	No	N/A	Not required for permissive change.
11.8.2	Occupied Bandwidth	No	N/A	Not required for permissive change.
11.9	Output Power	No	N/A	Not required for permissive change.
11.10	Power Spectral Density	No	N/A	Not required for permissive change.
11.11	Spurious Conducted Emissions	No	N/A	Not required for permissive change.

Deviations From Test Standards

None

Approved By:



Jeremiah Darden, Operations Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.

REVISION HISTORY

Revision Number		Description	Date	Page Number
00		None		

ACCREDITATIONS AND AUTHORIZATIONS

United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

IC - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

European Union

European Commission – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

MSIP / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Israel

MOC – Recognized by MOC as a CAB for the acceptance of test data.

Hong Kong

OFCA – Recognized by OFCA as a CAB for the acceptance of test data.

Vietnam

MIC – Recognized by MIC as a CAB for the acceptance of test data.

SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>
<http://gsi.nist.gov/global/docs/cabs/designations.html>

MEASUREMENT UNCERTAINTY

Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is on each data sheet. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

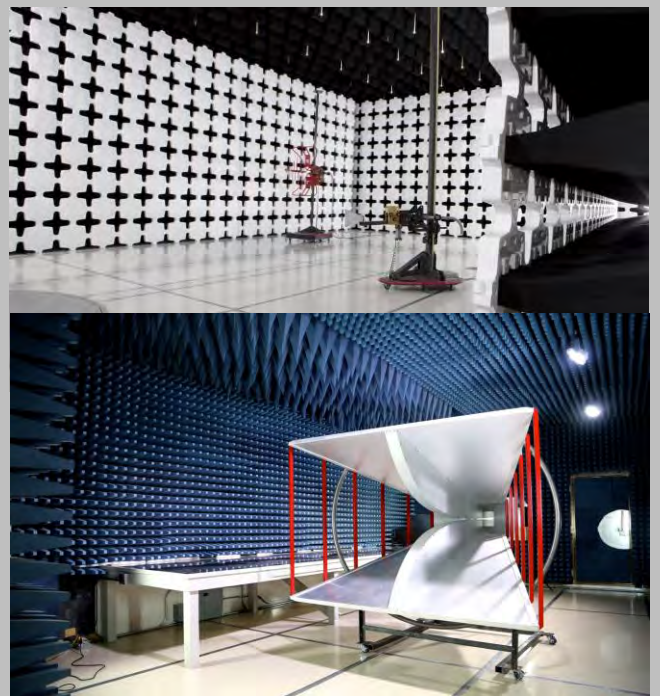
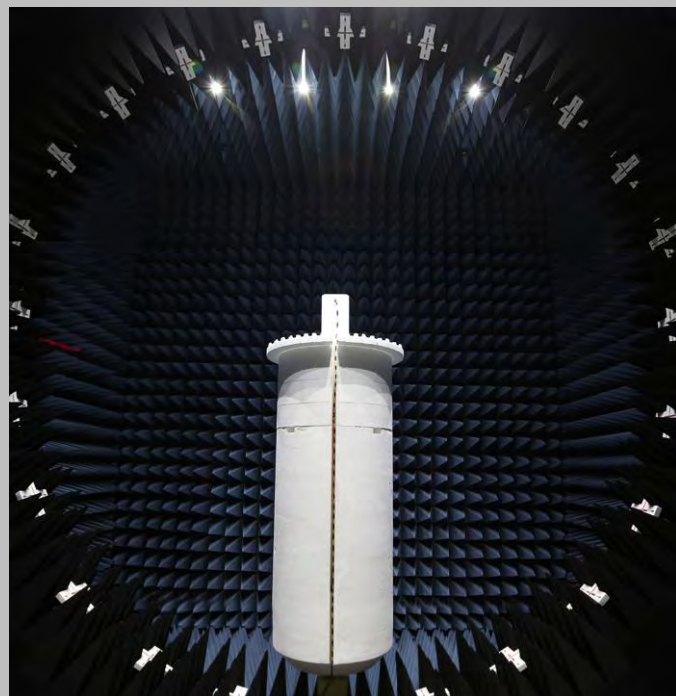
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	4.9 dB	-4.9 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

FACILITIES



California Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	New York Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Oregon Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120 th Ave NE Bothell, WA 9801 (425)984-6600
NVLAP					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
Industry Canada					
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Garrett Metal Detectors
Address:	1881 W. State Street
City, State, Zip:	Garland, TX 75042
Test Requested By:	Weldon Sanders
Model:	SM 100
First Date of Test:	September 18, 2015
Last Date of Test:	September 18, 2015
Receipt Date of Samples:	September 18, 2015
Equipment Design Stage:	Prototype
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
Wireless DTS radio operating in the 2400-2483.5MHz band that is used for timing in a multi-unit installation of Garrett detectors.
Testing Objective:
Provide the required testing to support the Permissive change to allow a new and different type of antenna. Only that testing that is affected by the antenna change was performed. No other changes were made to the radio.

CONFIGURATIONS

Configuration GARR0011- 1

EUT					
Description	Manufacturer		Model/Part Number		Serial Number
Radio	Garrett Metal Detectors		SM 100		55375349

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Metal Detector	Garrett Metal Detectors	PD 6500i	55202749

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Cable	No	5.0m	No	Metal Detector	AC Mains

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	9/18/2015	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

Transmitting OQPSK Low, Mid, High Channel @ 2405, 2440, 2480 MHz

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

GARR0011 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26000 MHz
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SAMPLE CALCULATIONS

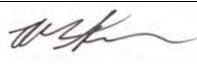
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	1/28/2015	12 mo
Antenna - Biconilog	ETS Lindgren	3143B	AYF	4/7/2014	24 mo
Cable	Northwest EMC	RE 9kHz - 1GHz	TXB	9/18/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1551	PAH	9/18/2015	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AJL	9/15/2014	24 mo
Cable	Northwest EMC	1-8.2 GHz	TXC	9/18/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAJ	9/18/2015	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AJF	NCR	0 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AJG	NCR	0 mo
Antenna - Double Ridge	A.H. Systems, Inc.	SAS-574	AXW	4/23/2014	24 mo
Cable	Northwest EMC	18-40GHz	TXE	11/21/2014	12 mo
Amplifier - Pre-Amplifier	Miteq	JSDQK42-18004000-60-5P	PAM	11/21/2014	12 mo
Cable	Northwest EMC	8-18GHz	TXD	10/27/2014	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	PAL	10/27/2014	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	PAK	10/27/2014	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	HHV	8/11/2015	12 mo
Filter - High Pass	Micro-Tronics	HPM50111	HHX	8/11/2015	12 mo

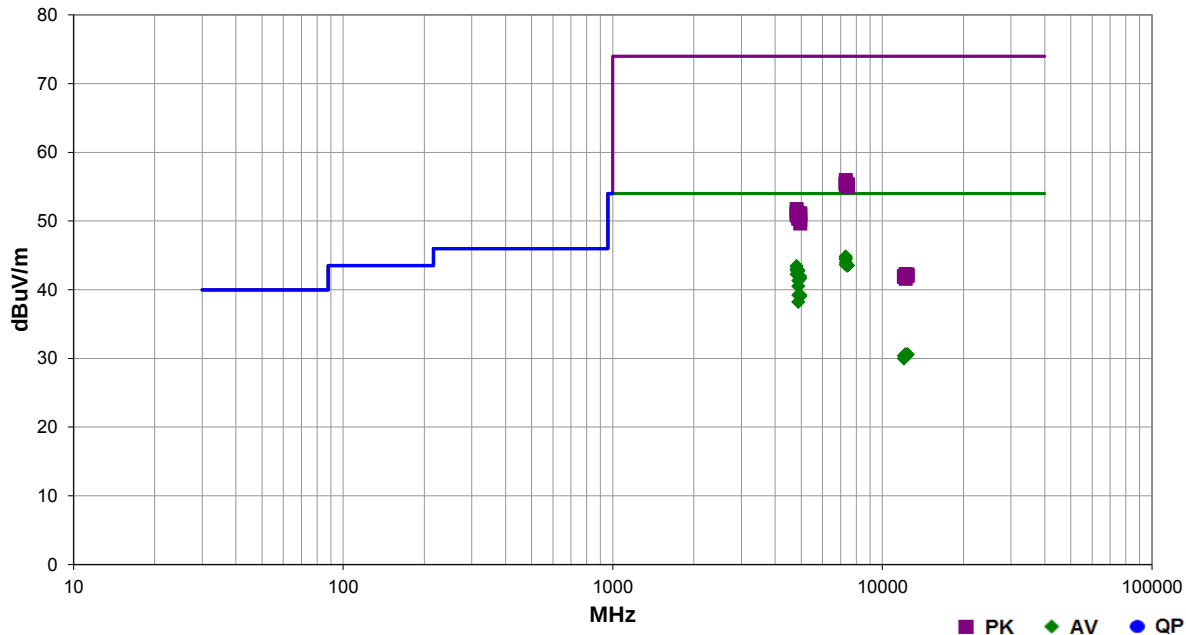
TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Work Order:	GARR0011	Date:	09/18/15	
Project:	None	Temperature:	24.5 °C	
Job Site:	TX02	Humidity:	44.7% RH	
Serial Number:	55375349	Barometric Pres.:	1015 mbar	
EUT:	SM 100			
Configuration:	1			
Customer:	Garrett Metal Detectors			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmitting OQPSK Low, Mid, High Channel @ 2405, 2440, 2480 MHz			
Deviations:	None			
Comments:	None			

Test Specifications	Test Method
FCC 15.247:2015	ANSI C63.10:2013

Run #	1	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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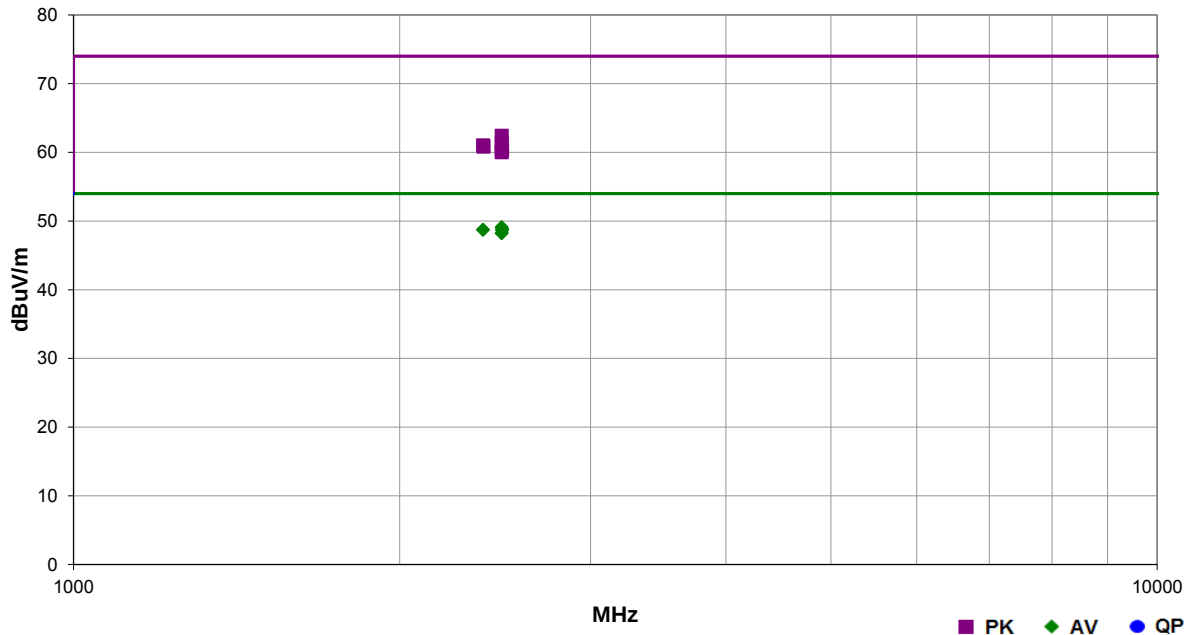
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7320.000	31.5	13.4	1.0	256.9	3.0	0.0	Horz	AV	0.0	44.9	54.0	-9.1	Mid Ch, EUT Vert
7320.065	31.3	13.4	3.3	187.0	3.0	0.0	Vert	AV	0.0	44.7	54.0	-9.3	Mid Ch, EUT Horz
7320.125	31.1	13.4	1.0	199.0	3.0	0.0	Horz	AV	0.0	44.5	54.0	-9.5	Mid Ch, EUT Horz
7320.155	31.1	13.4	1.0	194.0	3.0	0.0	Vert	AV	0.0	44.5	54.0	-9.5	Mid Ch, EUT Vert
7320.110	30.6	13.4	1.0	332.0	3.0	0.0	Horz	AV	0.0	44.0	54.0	-10.0	Mid Ch, EUT Side
7320.045	30.3	13.4	1.0	33.9	3.0	0.0	Vert	AV	0.0	43.7	54.0	-10.3	Mid Ch, EUT Side
7441.175	30.1	13.4	1.0	189.0	3.0	0.0	Horz	AV	0.0	43.5	54.0	-10.5	High Ch, EUT Horz
7440.790	30.1	13.4	1.0	110.0	3.0	0.0	Vert	AV	0.0	43.5	54.0	-10.5	High Ch, EUT Horz
7440.570	30.1	13.4	1.0	272.0	3.0	0.0	Vert	AV	0.0	43.5	54.0	-10.5	High Ch, EUT Vert
7440.405	30.1	13.4	1.0	174.0	3.0	0.0	Horz	AV	0.0	43.5	54.0	-10.5	High Ch, EUT Vert
4810.010	35.6	7.8	1.0	159.0	3.0	0.0	Vert	AV	0.0	43.4	54.0	-10.6	Low Ch, EUT Vert
4810.090	35.2	7.8	2.8	231.9	3.0	0.0	Horz	AV	0.0	43.0	54.0	-11.0	Low Ch, EUT Vert
4810.090	35.0	7.8	1.0	171.0	3.0	0.0	Horz	AV	0.0	42.8	54.0	-11.2	Low Ch, EUT Horz
4880.095	34.8	8.0	1.0	193.0	3.0	0.0	Vert	AV	0.0	42.8	54.0	-11.2	Mid Ch, EUT Vert
4880.000	34.7	8.0	1.0	260.0	3.0	0.0	Horz	AV	0.0	42.7	54.0	-11.3	Mid Ch, EUT Side
4810.025	34.4	7.8	2.1	243.9	3.0	0.0	Vert	AV	0.0	42.2	54.0	-11.8	Low Ch, EUT Horz
4960.100	33.7	8.2	2.5	255.0	3.0	0.0	Vert	AV	0.0	41.9	54.0	-12.1	High Ch, EUT Horz
4960.080	33.4	8.2	2.8	243.9	3.0	0.0	Vert	AV	0.0	41.6	54.0	-12.4	High Ch, EUT Vert
4880.120	33.3	8.0	1.0	159.9	3.0	0.0	Horz	AV	0.0	41.3	54.0	-12.7	Mid Ch, EUT Horz
4880.075	32.5	8.0	1.9	325.0	3.0	0.0	Vert	AV	0.0	40.5	54.0	-13.5	Mid Ch, EUT Side
4960.055	31.0	8.2	1.0	238.9	3.0	0.0	Horz	AV	0.0	39.2	54.0	-14.8	High Ch, EUT Horz
4880.110	31.2	8.0	1.0	153.0	3.0	0.0	Horz	AV	0.0	39.2	54.0	-14.8	Mid Ch, EUT Vert

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4960.225	30.8	8.2	1.0	144.0	3.0	0.0	Horz	AV	0.0	39.0	54.0	-15.0	High Ch, EUT Vert
4880.195	30.2	8.0	1.0	132.0	3.0	0.0	Vert	AV	0.0	38.2	54.0	-15.8	Mid Ch, EUT Horz
7320.505	42.6	13.4	1.0	256.9	3.0	0.0	Horz	PK	0.0	56.0	74.0	-18.0	Mid Ch, EUT Vert
7319.240	42.2	13.4	1.0	194.0	3.0	0.0	Vert	PK	0.0	55.6	74.0	-18.4	Mid Ch, EUT Vert
7320.185	42.1	13.4	1.0	33.9	3.0	0.0	Vert	PK	0.0	55.5	74.0	-18.5	Mid Ch, EUT Side
7321.420	42.0	13.4	1.0	199.0	3.0	0.0	Horz	PK	0.0	55.4	74.0	-18.6	Mid Ch, EUT Horz
7320.370	42.0	13.4	1.0	332.0	3.0	0.0	Horz	PK	0.0	55.4	74.0	-18.6	Mid Ch, EUT Side
7440.735	41.9	13.4	1.0	110.0	3.0	0.0	Vert	PK	0.0	55.3	74.0	-18.7	High Ch, EUT Horz
7439.315	41.9	13.4	1.0	174.0	3.0	0.0	Horz	PK	0.0	55.3	74.0	-18.7	High Ch, EUT Vert
7320.320	41.9	13.4	3.3	187.0	3.0	0.0	Vert	PK	0.0	55.3	74.0	-18.7	Mid Ch, EUT Horz
7438.655	41.6	13.4	1.0	272.0	3.0	0.0	Vert	PK	0.0	55.0	74.0	-19.0	High Ch, EUT Vert
7440.930	41.5	13.4	1.0	189.0	3.0	0.0	Horz	PK	0.0	54.9	74.0	-19.1	High Ch, EUT Horz
4810.370	43.9	7.8	1.0	159.0	3.0	0.0	Vert	PK	0.0	51.7	74.0	-22.3	Low Ch, EUT Vert
4810.270	43.5	7.8	2.8	231.9	3.0	0.0	Horz	PK	0.0	51.3	74.0	-22.7	Low Ch, EUT Vert
4960.140	42.9	8.2	2.5	255.0	3.0	0.0	Vert	PK	0.0	51.1	74.0	-22.9	High Ch, EUT Horz
4810.455	43.3	7.8	2.1	243.9	3.0	0.0	Vert	PK	0.0	51.1	74.0	-22.9	Low Ch, EUT Horz
4880.270	43.1	8.0	1.0	193.0	3.0	0.0	Vert	PK	0.0	51.1	74.0	-22.9	Mid Ch, EUT Vert
4880.145	43.1	8.0	1.0	159.9	3.0	0.0	Horz	PK	0.0	51.1	74.0	-22.9	Mid Ch, EUT Horz
4960.120	42.7	8.2	2.8	243.9	3.0	0.0	Vert	PK	0.0	50.9	74.0	-23.1	High Ch, EUT Vert
4809.885	43.0	7.8	1.0	171.0	3.0	0.0	Horz	PK	0.0	50.8	74.0	-23.2	Low Ch, EUT Horz
4879.880	42.7	8.0	1.0	260.0	3.0	0.0	Horz	PK	0.0	50.7	74.0	-23.3	Mid Ch, EUT Side
12397.520	31.0	-0.4	1.0	199.0	3.0	0.0	Vert	AV	0.0	30.6	54.0	-23.4	High Ch, EUT Horz
12201.820	31.4	-0.8	1.0	111.9	3.0	0.0	Vert	AV	0.0	30.6	54.0	-23.4	Mid Ch, EUT Horz
4880.625	42.5	8.0	1.0	153.0	3.0	0.0	Horz	PK	0.0	50.5	74.0	-23.5	Mid Ch, EUT Vert
12397.850	30.9	-0.4	1.0	297.0	3.0	0.0	Horz	AV	0.0	30.5	54.0	-23.5	High Ch, EUT Horz
12200.480	31.3	-0.8	1.0	201.9	3.0	0.0	Horz	AV	0.0	30.5	54.0	-23.5	Mid Ch, EUT Horz
4879.760	42.4	8.0	1.9	325.0	3.0	0.0	Vert	PK	0.0	50.4	74.0	-23.6	Mid Ch, EUT Side
12025.290	31.7	-1.3	1.1	144.0	3.0	0.0	Vert	AV	0.0	30.4	54.0	-23.6	Low Ch, EUT Horz
4880.925	42.3	8.0	1.0	132.0	3.0	0.0	Vert	PK	0.0	50.3	74.0	-23.7	Mid Ch, EUT Horz
4960.365	42.0	8.2	1.0	238.9	3.0	0.0	Horz	PK	0.0	50.2	74.0	-23.8	High Ch, EUT Horz
12027.080	31.3	-1.3	1.0	350.0	3.0	0.0	Horz	AV	0.0	30.0	54.0	-24.0	Low Ch, EUT Horz
4960.035	41.4	8.2	1.0	144.0	3.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4	High Ch, EUT Vert
12201.970	43.1	-0.8	1.0	111.9	3.0	0.0	Vert	PK	0.0	42.3	74.0	-31.7	Mid Ch, EUT Horz
12399.900	42.6	-0.4	1.0	199.0	3.0	0.0	Vert	PK	0.0	42.2	74.0	-31.8	High Ch, EUT Horz
12399.850	42.4	-0.4	1.0	297.0	3.0	0.0	Horz	PK	0.0	42.0	74.0	-32.0	High Ch, EUT Horz
12024.430	43.3	-1.3	1.1	144.0	3.0	0.0	Vert	PK	0.0	42.0	74.0	-32.0	Low Ch, EUT Horz
12025.030	43.2	-1.3	1.0	350.0	3.0	0.0	Horz	PK	0.0	41.9	74.0	-32.1	Low Ch, EUT Horz
12200.740	42.4	-0.8	1.0	201.9	3.0	0.0	Horz	PK	0.0	41.6	74.0	-32.4	Mid Ch, EUT Horz

Work Order:	GARR0011	Date:	09/18/15	
Project:	None	Temperature:	24.5 °C	
Job Site:	TX02	Humidity:	44.7% RH	
Serial Number:	55375349	Barometric Pres.:	1015 mbar	
EUT:	SM 100			
Configuration:	1			
Customer:	Garrett Metal Detectors			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmitting OQPSK Low, High Channel @ 2405, 2480 MHz			
Deviations:	None			
Comments:	Band Edge			

Test Specifications	Test Method
FCC 15.247:2015	ANSI C63.10:2013

Run #	4	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2484.127	33.5	-4.4	1.0	283.0	3.0	20.0	Horz	AV	0.0	49.1	54.0	-4.9	High Ch, EUT Vert
2487.053	33.3	-4.4	2.0	108.0	3.0	20.0	Vert	AV	0.0	48.9	54.0	-5.1	High Ch, EUT Vert
2486.393	33.1	-4.4	1.0	270.0	3.0	20.0	Horz	AV	0.0	48.7	54.0	-5.3	High Ch, EUT On Side
2387.493	33.1	-4.4	2.2	346.9	3.0	20.0	Vert	AV	0.0	48.7	54.0	-5.3	Low Ch, EUT Vert
2387.500	33.1	-4.4	1.0	187.0	3.0	20.0	Horz	AV	0.0	48.7	54.0	-5.3	Low Ch, EUT Vert
2485.853	33.0	-4.4	1.0	202.9	3.0	20.0	Vert	AV	0.0	48.6	54.0	-5.4	High Ch, EUT On Side
2484.250	32.9	-4.7	1.0	225.9	3.0	20.0	Horz	AV	0.0	48.2	54.0	-5.8	High Ch, EUT Horz
2483.827	32.9	-4.7	1.0	116.0	3.0	20.0	Vert	AV	0.0	48.2	54.0	-5.8	High Ch, EUT Horz
2484.153	47.1	-4.7	1.0	225.9	3.0	20.0	Horz	PK	0.0	62.4	74.0	-11.6	High Ch, EUT Horz
2483.673	45.8	-4.4	1.0	283.0	3.0	20.0	Horz	PK	0.0	61.4	74.0	-12.6	High Ch, EUT Vert
2387.420	45.4	-4.4	2.2	346.9	3.0	20.0	Vert	PK	0.0	61.0	74.0	-13.0	Low Ch, EUT Vert
2389.380	45.2	-4.4	1.0	187.0	3.0	20.0	Horz	PK	0.0	60.8	74.0	-13.2	Low Ch, EUT Vert
2486.307	44.8	-4.4	2.0	108.0	3.0	20.0	Vert	PK	0.0	60.4	74.0	-13.6	High Ch, EUT Vert
2484.927	45.0	-4.7	1.0	116.0	3.0	20.0	Vert	PK	0.0	60.3	74.0	-13.7	High Ch, EUT Horz
2484.087	44.7	-4.4	1.0	270.0	3.0	20.0	Horz	PK	0.0	60.3	74.0	-13.7	High Ch, EUT On Side
2483.933	44.4	-4.4	1.0	202.9	3.0	20.0	Vert	PK	0.0	60.0	74.0	-14.0	High Ch, EUT On Side