

Zonar Systems, LLC

80510 Truck Radio

Report No. ZONA0032

Report Prepared By



www.nwemc.com
1-888-EMI-CERT

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EMC Test Report

Certificate of Test
Last Date of Test: November 2, 2011
Zonar Systems, LLC
Model: 80510 Truck Radio

Emissions			
Test Description	Specification	Test Method	Pass/Fail
Spurious Radiated Emissions	FCC 15.249:2011	ANSI C63.10:2009	Pass
Field Strength of Fundamental	FCC 15.249:2011	ANSI C63.10:2009	Pass
AC Powerline Conducted Emissions	FCC 15.207:2011	ANSI C63.10:2009	Pass

Modifications made to the product
See the Modifications section of this report

Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.
22975 NW Evergreen Parkway, Suite 400
Hillsboro, OR 97124

Phone: (503) 844-4066 Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834D-2).

Approved By:



Rod Munro, Operations Manager



NVLAP Lab Code: 200630-0

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.

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. This Report may only be duplicated in its entirety. 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.

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.



Accreditations and Authorizations

FCC

Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.

NVLAP

Northwest EMC, Inc. is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. NVLAP is administered by the National Institute of Standards and Technology (NIST), an agency of the U.S. Commerce Department. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.

Industry Canada

Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS-Gen, Issue 2 and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2, Brooklyn Park: 2834E-1*)

CAB

Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.

Australia/New Zealand

The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).



Accreditations and Authorizations

VCCI

Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. (*Registration Numbers. - Hillsboro: C-1071, R-1025, G-84, C-2687, T-1658, and R-2318, Irvine: R-1943, G-85, C-2766, and T-1659, Sultan: R-871, G-83, C-3265, and T-1511, Brooklyn Park: R-3125, G-86, G-141, C-3464, and T-1634.*)

BSMI

Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement (US0017).

GOST

Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification

KCC

Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (*Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157, Brooklyn Park: US0175*)

VIETNAM

Vietnam MIC has approved Northwest EMC as an accredited test lab. Per Decision No. 194/QD-QLCL (dated December 15, 2009), Northwest EMC test reports can be used for Vietnam approval submissions.

SCOPE

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

<http://www.nwemc.com/accreditations/>



Northwest EMC Locations



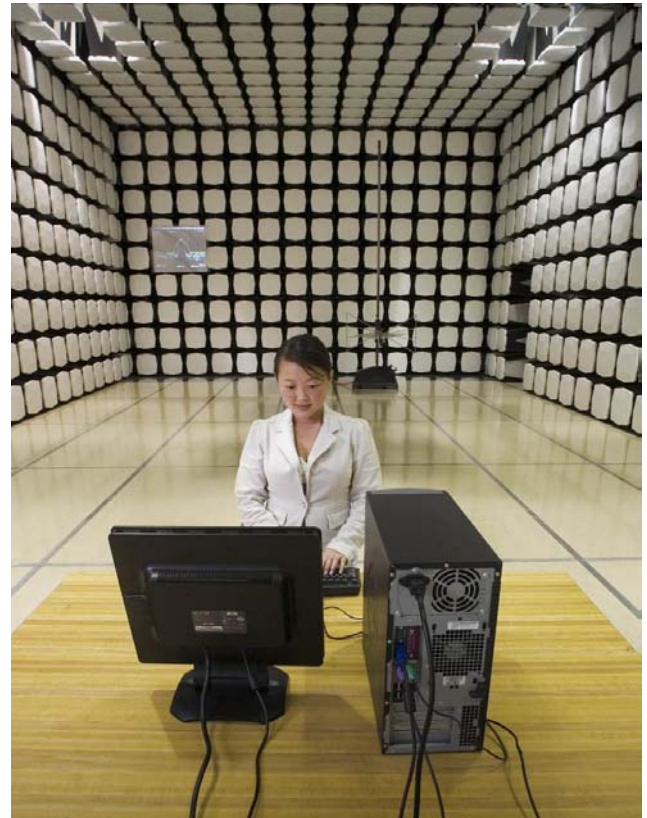
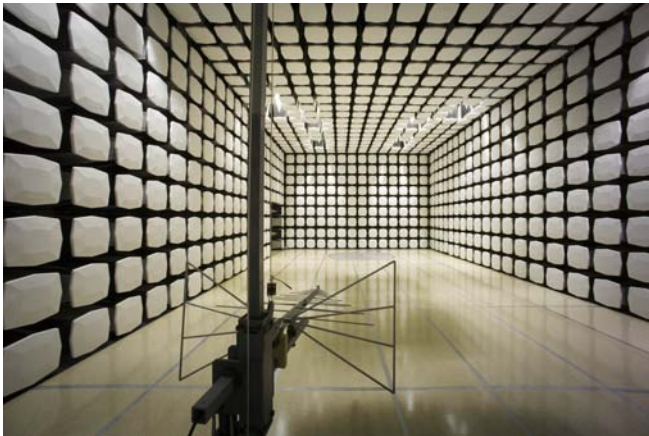
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

Minnesota
Labs MN01-MN08
9349 W Broadway Ave.
Brooklyn Park,
MN 55445
(763) 425-2281

Washington
Labs SU01-SU07
14128 339th Ave. SE
Sultan, WA 98294
(360) 793-8675

New York
Labs WA01-WA04
4939 Jordan Rd.
Elbridge, NY 13060
(315) 685-0796



Party Requesting the Test

Company Name:	Zonar Systems, LLC
Address:	18200 Cascade Ave. S Suite, 200
City, State, Zip:	Seattle, WA 98188
Test Requested By:	Ryan Schoelerman
Model:	80510 Truck Radio
First Date of Test:	October 19, 2011
Last Date of Test:	November 2, 2011
Receipt Date of Samples:	October 10, 2011
Equipment Design Stage:	Preproduction
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test**Functional Description of the EUT (Equipment Under Test):**

Truck Radio

Testing Objective:

To demonstrate compliance to FCC 15.249 specifications as a system.

CONFIGURATION 1 ZONA0032

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Truck Radio	Zonar	80510	825

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Ti Programming Board	Chipcon	SmartRF04EB	0x64CB

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
V2J	Zonar	V2J	2000231
Power Adapter	Zonar	S040EM1200300	None
Host PC	HP	QF938AT#ABA	CNU7390341

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
80504 Cable	No	1.3m	No	Truck Enclosure	V2J
Power	No	3.0m	No	V2J	Power Adapter
Ribbon	No	0.1m	No	Truck Enclosure	Ti Programming Board
USB	Yes	1.0m	No	Ti Programming Board	Host PC
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 2 ZONA0032

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Truck Radio	Zonar	80510	825

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
V2J	Zonar	V2J	2000231
Power Adapter	Zonar	S040EM1200300	None
Ti Programming Board	Chipcon	SmartRF04EB	0x64CB
Host PC	HP	QF938AT#ABA	CNU7390341

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
80504 Cable	No	1.3m	No	Truck Enclosure	V2J
Power	No	3.0m	No	V2J	Power Adapter
Ribbon	No	0.1m	No	Truck Enclosure	Ti Programming Board
USB	Yes	1.0m	No	Ti Programming Board	Host PC
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Equipment modifications					
Item	Date	Test	Modification	Note	Disposition of EUT
1	10/19/2011	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	10/20/2011	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	11/2/2011	Field Strength of Fundamental	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.

MODES OF OPERATION

Tx, MSK modulation, low channel
Tx, MSK modulation, mid channel
Tx, MSK modulation, high channel

POWER SETTINGS INVESTIGATED

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency	30MHz	Stop Frequency	26000MHz
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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
Spectrum Analyzer	Agilent	E4440A	AAW	4/19/2011	12
Antenna, Horn	ETS Lindgren	3160-09	AIV	NCR	0
Cable	ESM Cable Corp.	KMKM-72	EVY	9/12/2011	12
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	9/12/2011	12
Antenna, Horn	ETS	3160-08	AIA	NCR	0
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVI	7/5/2011	12
Antenna, Horn	ETS	3160.07	AHZ	9/8/2010	24
EV12 Cables	N/A	Standard Gain Horn Cables	EVU	6/20/2011	12
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVH	6/20/2011	12
Antenna, Horn	ETS	3115	AIB	9/8/2010	24
EV12 Cables	N/A	Double Ridge Horn Cables	EVT	10/6/2011	12
EV01 Cables	N/A	Standard Gain Horns Cables	EVF	3/2/2011	12
Antenna, Biconilog	EMCO	3141	AXG	3/15/2010	24
EV12 Cables	N/A	Bilog Cables	EVS	6/1/5403	12
Pre-Amplifier	Miteq	AM-1616-1000	AVM	6/20/2011	12
High Pass Filter	Micro-Tronics	50111	HGE	7/14/2010	24

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

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. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting and receiving while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.10:2009). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

EUT: 80510 Truck Radio	Work Order: ZONA0032
Serial Number: 1001596	Date: 10/19/11
Customer: Zonar Systems, LLC	Temperature: 23°C
Attendees: none	Humidity: 48%
Project: None	Barometric Pres.: 1015.5
Tested by: Ethan Schoonover	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS		Test Method	
FCC 15.249:2011		ANSI C63.10:2009	

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

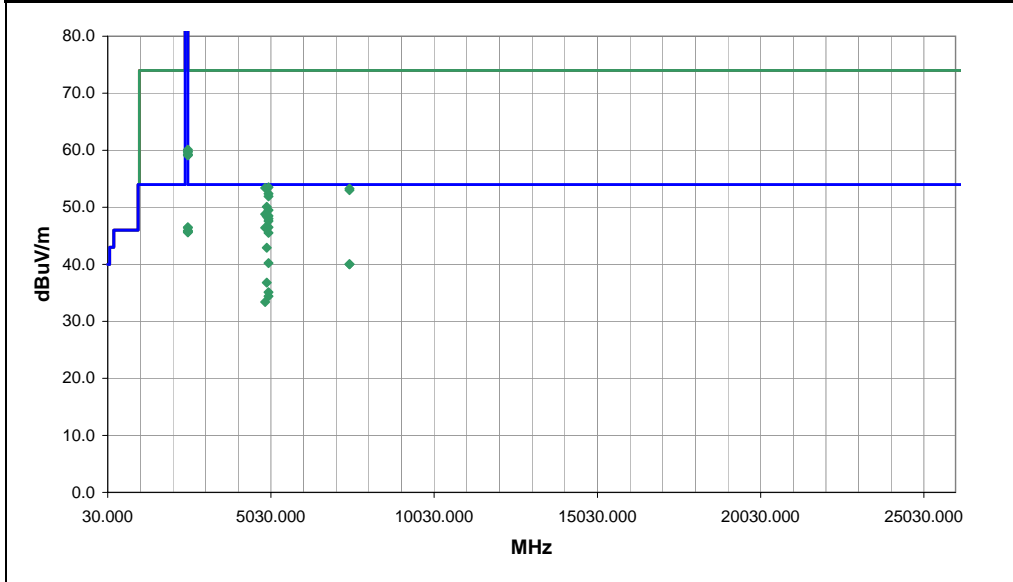
COMMENTS
None

EUT OPERATING MODES
Tx

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	2
Configuration #	1
Results	Pass

Signature 



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
4851.498	39.8	9.0	45.0	1.5	3.0	0.0	H-Horn	AV	0.0	48.8	54.0	-5.2	EUT On Side with low channel
4955.960	39.2	9.3	45.0	1.5	3.0	0.0	H-Horn	AV	0.0	48.5	54.0	-5.5	EUT On Side with high channel
2483.510	27.7	-1.2	229.0	1.0	3.0	20.0	H-Horn	AV	0.0	46.5	54.0	-7.5	EUT Horz with high channel
4955.980	37.2	9.3	72.0	1.5	3.0	0.0	V-Horn	AV	0.0	46.5	54.0	-7.5	EUT On Side with high channel
2483.753	27.6	-1.2	196.0	1.0	3.0	20.0	V-Horn	AV	0.0	46.4	54.0	-7.6	EUT On Side with high channel
2483.818	26.8	-1.2	346.0	1.0	3.0	20.0	V-Horn	AV	0.0	45.6	54.0	-8.4	EUT Horz with high channel
4955.938	36.2	9.3	125.0	1.5	3.0	0.0	H-Horn	AV	0.0	45.5	54.0	-8.5	EUT Vert with high channel
4900.997	33.7	9.2	360.0	1.4	3.0	0.0	H-Horn	AV	0.0	42.9	54.0	-11.1	EUT On Side with mid channel
4955.942	30.9	9.3	156.0	1.0	3.0	0.0	H-Horn	AV	0.0	40.2	54.0	-13.8	EUT Horz with high channel
2483.952	41.3	-1.2	229.0	1.0	3.0	20.0	H-Horn	PK	0.0	60.1	74.0	-13.9	EUT Horz with high channel
7433.353	23.7	16.3	15.0	1.0	3.0	0.0	V-Horn	AV	0.0	40.0	54.0	-14.0	EUT On Side with high channel
7434.058	23.7	16.3	137.0	1.0	3.0	0.0	H-Horn	AV	0.0	40.0	54.0	-14.0	EUT On Side with high channel
2484.307	41.0	-1.2	196.0	1.0	3.0	20.0	V-Horn	PK	0.0	59.8	74.0	-14.2	EUT On Side with high channel
2484.365	40.9	-1.2	94.0	1.0	3.0	20.0	H-Horn	PK	0.0	59.7	74.0	-14.3	EUT On Side with high channel
2484.483	40.5	-1.2	346.0	1.0	3.0	20.0	V-Horn	PK	0.0	59.3	74.0	-14.7	EUT Horz with high channel
2484.443	40.4	-1.2	329.0	1.9	3.0	20.0	V-Horn	PK	0.0	59.2	74.0	-14.8	EUT Vert with high channel
2483.650	40.3	-1.2	206.0	1.2	3.0	20.0	H-Horn	PK	0.0	59.1	74.0	-14.9	EUT Vert with high channel
4900.940	27.6	9.2	195.0	2.1	3.0	0.0	V-Horn	AV	0.0	36.8	54.0	-17.2	EUT On Side with mid channel
4956.018	25.8	9.3	360.0	1.5	3.0	0.0	V-Horn	AV	0.0	35.1	54.0	-18.9	EUT Vert with high channel
4955.850	25.1	9.3	173.0	2.3	3.0	0.0	V-Horn	AV	0.0	34.4	54.0	-19.6	EUT Horz with high channel
4956.003	44.2	9.3	45.0	1.5	3.0	0.0	H-Horn	PK	0.0	53.5	74.0	-20.5	EUT On Side with high channel
4851.582	44.4	9.0	45.0	1.5	3.0	0.0	H-Horn	PK	0.0	53.4	74.0	-20.6	EUT On Side with low channel
4851.383	24.4	9.0	20.0	1.8	3.0	0.0	V-Horn	AV	0.0	33.4	54.0	-20.6	EUT On Side with low channel
7433.713	37.0	16.3	137.0	1.0	3.0	0.0	H-Horn	PK	0.0	53.3	74.0	-20.7	EUT On Side with high channel
7434.122	36.7	16.3	15.0	1.0	3.0	0.0	V-Horn	PK	0.0	53.0	74.0	-21.0	EUT On Side with high channel
4956.087	43.1	9.3	72.0	1.5	3.0	0.0	V-Horn	PK	0.0	52.4	74.0	-21.6	EUT On Side with high channel
4955.942	42.6	9.3	125.0	1.5	3.0	0.0	H-Horn	PK	0.0	51.9	74.0	-22.1	EUT Vert with high channel
4900.963	40.9	9.2	360.0	1.4	3.0	0.0	H-Horn	PK	0.0	50.1	74.0	-23.9	EUT On Side with mid channel
4956.010	40.2	9.3	156.0	1.0	3.0	0.0	H-Horn	PK	0.0	49.5	74.0	-24.5	EUT Horz with high channel
4900.760	39.2	9.2	195.0	2.1	3.0	0.0	V-Horn	PK	0.0	48.4	74.0	-25.6	EUT On Side with mid channel
4955.800	38.7	9.3	173.0	2.3	3.0	0.0	V-Horn	PK	0.0	48.0	74.0	-26.0	EUT Horz with high channel
4955.698	38.3	9.3	360.0	1.5	3.0	0.0	V-Horn	PK	0.0	47.6	74.0	-26.4	EUT Vert with high channel
4851.347	37.4	9.0	20.0	1.8	3.0	0.0	V-Horn	PK	0.0	46.4	74.0	-27.6	EUT On Side with low channel
2483.482	27.1	-1.2	94.0	1.0	3.0	20.0	H-Horn	AV	0.0	45.9	94.0	-48.1	EUT On Side with high channel
2483.452	27.0	-1.2	206.0	1.2	3.0	20.0	H-Horn	AV	0.0	45.8	94.0	-48.2	EUT Vert with high channel
2483.473	26.9	-1.2	329.0	1.9	3.0	20.0	V-Horn	AV	0.0	45.7	94.0	-48.3	EUT Vert with high channel

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.

MODES OF OPERATION

Tx Low channel, MSK modulation

Tx Mid channel, MSK modulation

Tx High channel, MSK modulation

FREQUENCY RANGE INVESTIGATED

Start Frequency	2400 MHz	Stop Frequency	2483.5 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
EV12 Cables	N/A	Double Ridge Horn Cables	EVT	10/6/2011	12
Antenna, Horn	ETS	3115	AIB	9/8/2010	24
Spectrum Analyzer	Agilent	E4440A	AAW	4/19/2011	12

MEASUREMENT BANDWIDTHS

	Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

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. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting and while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT and EUT antenna in 3 orthogonal planes (per ANSI C63.10:2009).

EUT: 80510 Truck Radio	Work Order: ZONA0032
Serial Number: 2000228	Date: 11/02/11
Customer: Zonar Systems, LLC	Temperature: 19
Attendees: None	Humidity: 31%
Project: None	Barometric Pres.: 30.19
Tested by: Jennifer Herrett	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	Test Method
FCC 15.249:2011	ANSI C63.10:2009

TEST PARAMETERS
Antenna Height(s) (m) 1 - 4 Test Distance (m) 3

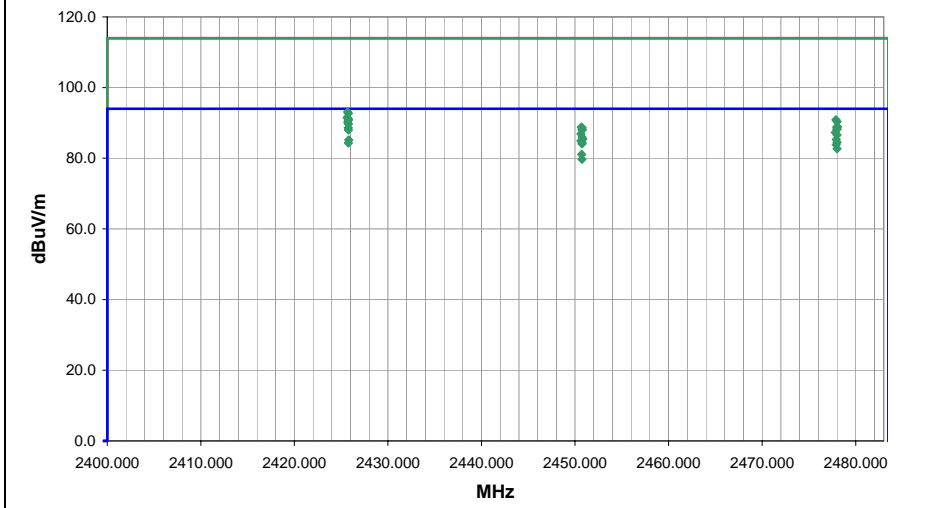
COMMENTS
None

EUT OPERATING MODES
Tx, MSK modulation

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	6
Configuration #	1
Results	Pass

Jennifer Herrett
Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
2425.767	58.0	34.7	79.0	1.2	3.0	0.0	H-Horn	AV	0.0	92.7	94.0	-1.3	Low channel, -10 power level, EUT horizontal.
2425.767	56.3	34.7	16.0	1.1	3.0	0.0	V-Horn	AV	0.0	91.0	94.0	-3.0	Low channel, -10 power level, EUT on side.
2425.767	56.1	34.7	103.0	1.1	3.0	0.0	H-Horn	AV	0.0	90.8	94.0	-3.2	Low channel, -10 power level, EUT on side.
2477.998	55.7	34.7	64.0	1.4	3.0	0.0	H-Horn	AV	0.0	90.4	94.0	-3.6	High channel, -10 power level, EUT horizontal.
2425.767	55.0	34.7	43.0	1.1	3.0	0.0	H-Horn	AV	0.0	89.7	94.0	-4.3	Low channel, -10 power level, EUT vertical.
2477.990	53.5	34.7	103.0	1.0	3.0	0.0	H-Horn	AV	0.0	88.2	94.0	-5.8	High channel, -10 power level, EUT on side.
2477.998	53.5	34.7	67.0	1.1	3.0	0.0	H-Horn	AV	0.0	88.2	94.0	-5.8	High channel, -10 power level, EUT Vert.
2450.757	53.3	34.8	130.0	1.0	3.0	0.0	H-Horn	AV	0.0	88.1	94.0	-5.9	Mid channel, -10 power level, EUT on side.
2425.775	53.3	34.7	284.0	1.4	3.0	0.0	V-Horn	AV	0.0	88.0	94.0	-6.0	Low channel, -10 power level, EUT vertical.
2450.757	53.2	34.8	51.0	1.0	3.0	0.0	H-Horn	AV	0.0	88.0	94.0	-6.0	Mid channel, -10 power level, EUT vertical.
2477.998	51.9	34.7	319.0	2.1	3.0	0.0	V-Horn	AV	0.0	86.6	94.0	-7.4	High channel, -10 power level, EUT Vert.
2450.765	51.1	34.8	122.0	1.0	3.0	0.0	V-Horn	AV	0.0	85.9	94.0	-8.1	Mid channel, -10 power level, EUT on side.
2478.007	49.8	34.7	177.0	2.4	3.0	0.0	V-Horn	AV	0.0	84.5	94.0	-9.5	High channel, -10 power level, EUT on side.
2450.765	49.6	34.8	214.0	1.0	3.0	0.0	V-Horn	AV	0.0	84.4	94.0	-9.6	Mid channel, -10 power level, EUT vertical.
2425.767	49.6	34.7	256.0	1.4	3.0	0.0	V-Horn	AV	0.0	84.3	94.0	-9.7	Low channel, -10 power level, EUT horizontal.
2450.748	49.3	34.8	161.0	1.0	3.0	0.0	H-Horn	AV	0.0	84.1	94.0	-9.9	Mid channel, -10 power level, EUT horizontal.
2477.998	48.0	34.7	342.0	1.0	3.0	0.0	V-Horn	AV	0.0	82.7	94.0	-11.3	High channel, -10 power level, EUT horizontal.
2450.748	44.9	34.8	181.0	1.7	3.0	0.0	V-Horn	AV	0.0	79.7	94.0	-14.3	Mid channel, -10 power level, EUT horizontal.
2425.683	58.4	34.7	79.0	1.2	3.0	0.0	H-Horn	PK	0.0	93.1	114.0	-20.9	Low channel, -10 power level, EUT horizontal.
2425.642	56.8	34.7	16.0	1.1	3.0	0.0	V-Horn	PK	0.0	91.5	114.0	-22.5	Low channel, -10 power level, EUT on side.
2425.717	56.6	34.7	103.0	1.1	3.0	0.0	H-Horn	PK	0.0	91.3	114.0	-22.7	Low channel, -10 power level, EUT on side.
2477.882	56.2	34.7	64.0	1.4	3.0	0.0	H-Horn	PK	0.0	90.9	114.0	-23.1	High channel, -10 power level, EUT horizontal.
2425.700	55.5	34.7	43.0	1.1	3.0	0.0	H-Horn	PK	0.0	90.2	114.0	-23.8	Low channel, -10 power level, EUT vertical.
2478.057	54.2	34.7	67.0	1.1	3.0	0.0	H-Horn	PK	0.0	88.9	114.0	-25.1	High channel, -10 power level, EUT Vert.
2450.682	54.0	34.8	130.0	1.0	3.0	0.0	H-Horn	PK	0.0	88.8	114.0	-25.2	Mid channel, -10 power level, EUT on side.
2477.965	54.1	34.7	103.0	1.0	3.0	0.0	H-Horn	PK	0.0	88.8	114.0	-25.2	High channel, -10 power level, EUT on side.
2425.750	53.9	34.7	284.0	1.4	3.0	0.0	V-Horn	PK	0.0	88.6	114.0	-25.4	Low channel, -10 power level, EUT vertical.
2450.765	53.8	34.8	51.0	1.0	3.0	0.0	H-Horn	PK	0.0	88.6	114.0	-25.4	Mid channel, -10 power level, EUT vertical.
2477.823	52.6	34.7	319.0	2.1	3.0	0.0	V-Horn	PK	0.0	87.3	114.0	-26.7	High channel, -10 power level, EUT Vert.
2450.632	52.1	34.8	122.0	1.0	3.0	0.0	V-Horn	PK	0.0	86.9	114.0	-27.1	Mid channel, -10 power level, EUT on side.
2450.832	50.6	34.8	214.0	1.0	3.0	0.0	V-Horn	PK	0.0	85.4	114.0	-28.6	Mid channel, -10 power level, EUT vertical.
2477.915	50.6	34.7	177.0	2.4	3.0	0.0	V-Horn	PK	0.0	85.3	114.0	-28.7	High channel, -10 power level, EUT on side.
2425.808	50.5	34.7	256.0	1.4	3.0	0.0	V-Horn	PK	0.0	85.2	114.0	-28.8	Low channel, -10 power level, EUT horizontal.
2450.632	50.1	34.8	161.0	1.0	3.0	0.0	H-Horn	PK	0.0	84.9	114.0	-29.1	Mid channel, -10 power level, EUT horizontal.
2477.923	49.1	34.7	342.0	1.0	3.0	0.0	V-Horn	PK	0.0	83.8	114.0	-30.2	High channel, -10 power level, EUT horizontal.
2450.707	46.3	34.8	181.0	1.7	3.0	0.0	V-Horn	PK	0.0	81.1	114.0	-32.9	Mid channel, -10 power level, EUT horizontal.

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.

MODES OF OPERATION

Tx Low Channel
Tx Mid Channel
Tx High Channel

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

ZONA0032 - 2

SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
LISN	Solar	9252-50-R-24-BNC	LIN	5/9/2011	12 mo
LISN	Solar	9252-50-R-24-BNC	LIR	2/17/2011	12 mo
EV07 Cables	N/A	Conducted Cables	EVG	6/17/2011	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HFX	2/9/2011	24 mo
Attenuator, 20 dB, 'BNC'	SM Electronics	SA01B-20	REY	1/10/2011	12 mo
Receiver	Rohde & Schwarz	ESCI	ARH	3/30/2011	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY


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 for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

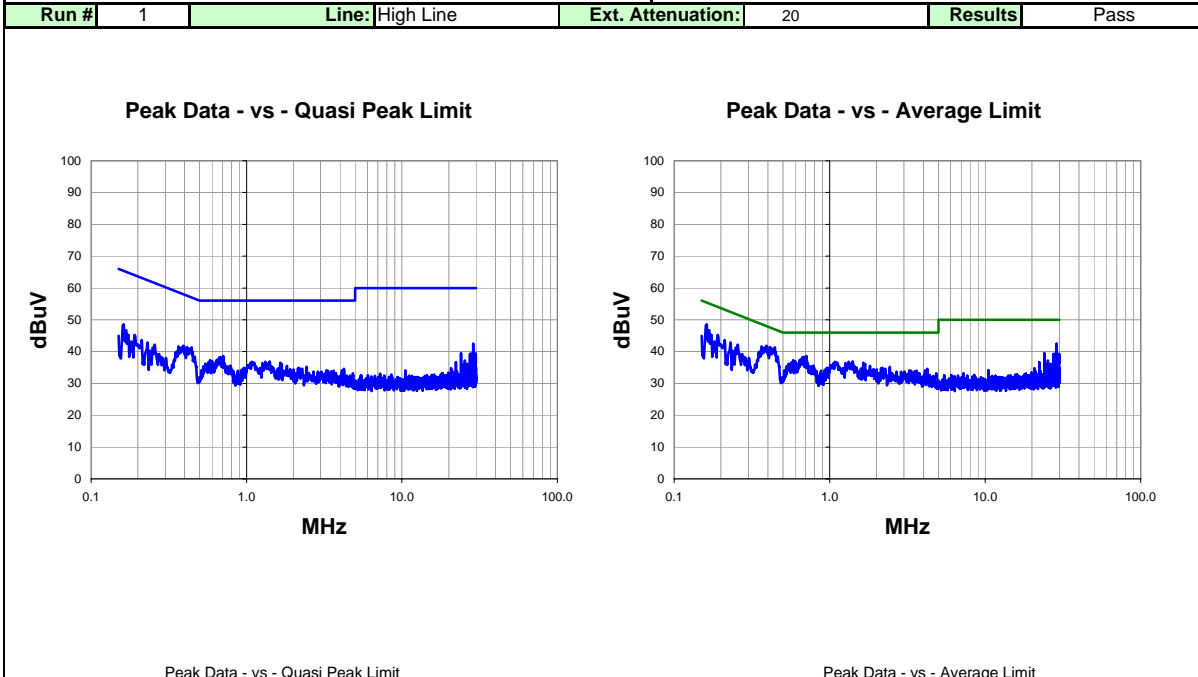
Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm.

EMC

AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ZONA0032	Date:	10/20/11	 Tested by: Ethan Schoonover
Project:	None	Temperature:	21.1 °C	
Job Site:	EV07	Humidity:	45.6% RH	
Serial Number:	825	Barometric Pres.:	1019 mbar	
EUT:	80510 Truck Radio			
Configuration:	2			
Customer:	Zonar Systems, LLC			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Tx Low Channel			
Deviations:	None			
Comments:	None			


Test Specifications FCC 15.207:2011	Test Method ANSI C63.10:2009						
Run #	1	Line:	High Line	Ext. Attenuation:	20	Results	Pass



Peak Data - vs - Quasi Peak Limit						Peak Data - vs - Average Limit					
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)	Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.391	21.8	20.1	41.9	58.0	-16.1	0.391	21.8	20.1	41.9	48.0	-6.1
0.415	21.3	20.1	41.4	57.5	-16.1	0.415	21.3	20.1	41.4	47.5	-6.1
0.162	28.5	20.1	48.6	65.4	-16.8	0.162	28.5	20.1	48.6	55.4	-6.8
0.708	18.5	20.1	38.6	56.0	-17.4	0.708	18.5	20.1	38.6	46.0	-7.4
28.790	21.1	21.3	42.4	60.0	-17.6	28.790	21.1	21.3	42.4	50.0	-7.6
0.682	18.2	20.1	38.3	56.0	-17.7	0.682	18.2	20.1	38.3	46.0	-7.7
0.167	26.6	20.1	46.7	65.1	-18.4	0.167	26.6	20.1	46.7	55.1	-8.4
0.584	17.2	20.1	37.3	56.0	-18.7	0.584	17.2	20.1	37.3	46.0	-8.7
0.191	25.2	20.1	45.3	64.0	-18.7	0.191	25.2	20.1	45.3	54.0	-8.7
0.599	16.9	20.1	37.0	56.0	-19.0	0.599	16.9	20.1	37.0	46.0	-9.0
1.408	16.8	20.1	36.9	56.0	-19.1	1.408	16.8	20.1	36.9	46.0	-9.1
1.080	16.7	20.1	36.8	56.0	-19.2	1.080	16.7	20.1	36.8	46.0	-9.2
0.255	22.1	20.1	42.2	61.6	-19.4	0.255	22.1	20.1	42.2	51.6	-9.4
1.648	16.4	20.1	36.5	56.0	-19.5	1.648	16.4	20.1	36.5	46.0	-9.5
0.230	22.8	20.1	42.9	62.5	-19.6	0.230	22.8	20.1	42.9	52.5	-9.6
1.816	15.4	20.1	35.5	56.0	-20.5	1.816	15.4	20.1	35.5	46.0	-10.5
24.000	18.4	21.0	39.4	60.0	-20.6	24.000	18.4	21.0	39.4	50.0	-10.6
27.760	18.1	21.3	39.4	60.0	-20.6	27.760	18.1	21.3	39.4	50.0	-10.6
29.810	17.9	21.4	39.3	60.0	-20.7	29.810	17.9	21.4	39.3	50.0	-10.7
27.410	18.0	21.2	39.2	60.0	-20.8	27.410	18.0	21.2	39.2	50.0	-10.8

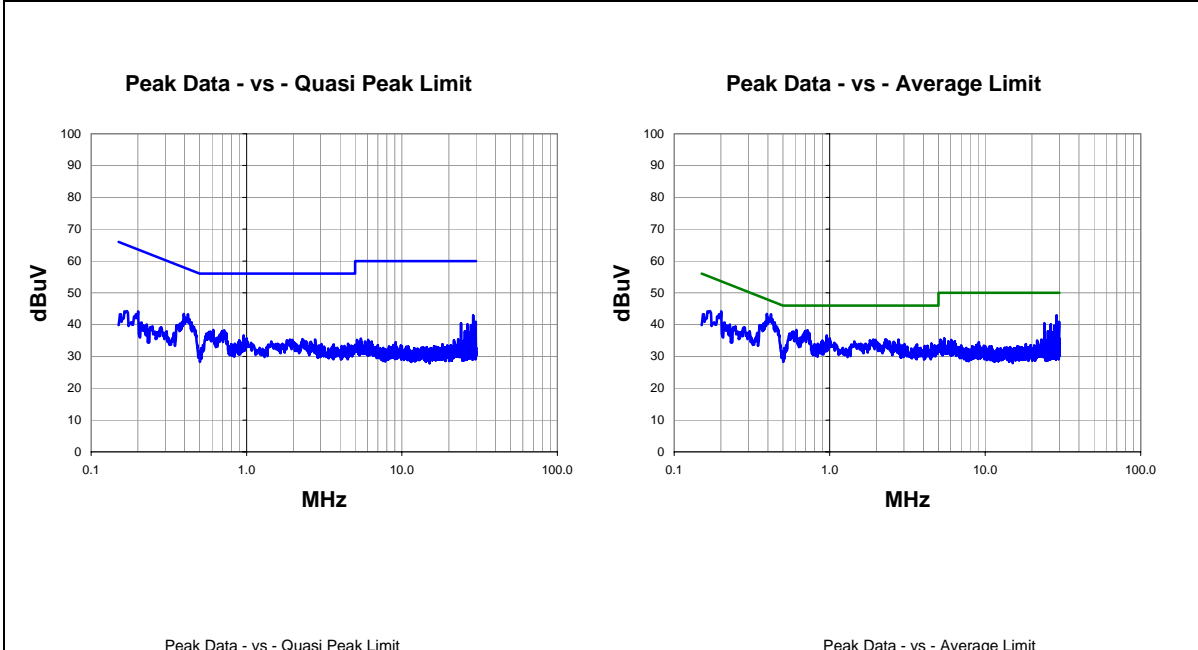
EMC

AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ZONA0032	Date:	10/20/11	
Project:	None	Temperature:	21.1 °C	
Job Site:	EV07	Humidity:	45.6% RH	
Serial Number:	825	Barometric Pres.:	1019 mbar	
				Tested by: Ethan Schoonover
EUT:	80510 Truck Radio			
Configuration:	2			
Customer:	Zonar Systems, LLC			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Tx Low Channel			
Deviations:	None			
Comments:	None			

Test Specifications FCC 15.207:2011	Test Method ANSI C63.10:2009
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Run #	2	Line:	Neutral	Ext. Attenuation:	20	Results	Pass
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Peak Data - vs - Quasi Peak Limit						Peak Data - vs - Average Limit					
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)	Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.420	23.2	20.1	43.3	57.4	-14.1	0.420	23.2	20.1	43.3	47.4	-4.1
0.395	23.3	20.1	43.4	58.0	-14.6	0.395	23.3	20.1	43.4	48.0	-4.6
28.780	21.5	21.3	42.8	60.0	-17.2	28.780	21.5	21.3	42.8	50.0	-7.2
0.611	18.2	20.1	38.3	56.0	-17.7	0.611	18.2	20.1	38.3	46.0	-7.7
0.718	18.1	20.1	38.2	56.0	-17.8	0.718	18.1	20.1	38.2	46.0	-7.8
0.697	17.9	20.1	38.0	56.0	-18.0	0.697	17.9	20.1	38.0	46.0	-8.0
0.585	17.7	20.1	37.8	56.0	-18.2	0.585	17.7	20.1	37.8	46.0	-8.2
29.820	19.5	21.4	40.9	60.0	-19.1	29.820	19.5	21.4	40.9	50.0	-9.1
0.201	24.1	20.1	44.2	63.6	-19.4	0.201	24.1	20.1	44.2	53.6	-9.4
0.957	16.5	20.1	36.6	56.0	-19.4	0.957	16.5	20.1	36.6	46.0	-9.4
24.000	19.3	21.0	40.3	60.0	-19.7	24.000	19.3	21.0	40.3	50.0	-9.7
26.390	18.9	21.2	40.1	60.0	-19.9	26.390	18.9	21.2	40.1	50.0	-9.9
29.500	18.5	21.4	39.9	60.0	-20.1	29.500	18.5	21.4	39.9	50.0	-10.1
27.760	18.5	21.3	39.8	60.0	-20.2	27.760	18.5	21.3	39.8	50.0	-10.2
1.000	15.6	20.1	35.7	56.0	-20.3	1.000	15.6	20.1	35.7	46.0	-10.3
2.280	15.3	20.1	35.4	56.0	-20.6	2.280	15.3	20.1	35.4	46.0	-10.6
0.170	24.2	20.1	44.3	64.9	-20.6	0.170	24.2	20.1	44.3	54.9	-10.6
1.904	15.2	20.1	35.3	56.0	-20.7	1.904	15.2	20.1	35.3	46.0	-10.7
2.768	15.2	20.1	35.3	56.0	-20.7	2.768	15.2	20.1	35.3	46.0	-10.7
0.898	14.9	20.1	35.0	56.0	-21.0	0.898	14.9	20.1	35.0	46.0	-11.0

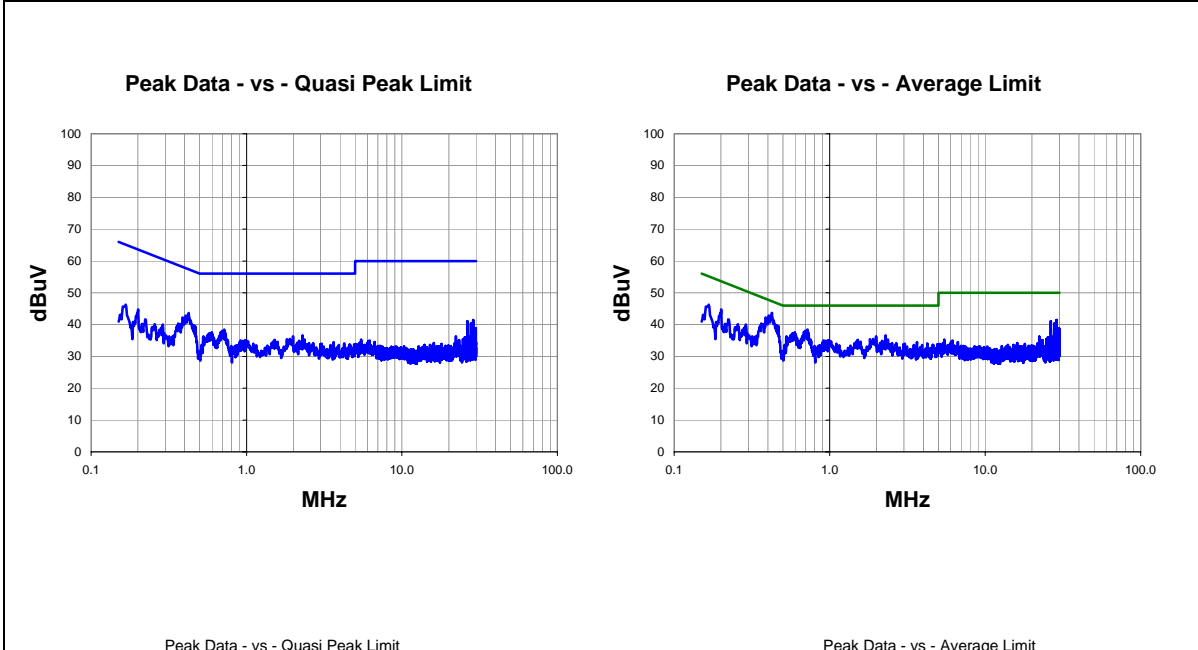
EMC

AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ZONA0032	Date:	10/20/11	 Tested by: Ethan Schoonover
Project:	None	Temperature:	21.1 °C	
Job Site:	EV07	Humidity:	45.6% RH	
Serial Number:	825	Barometric Pres.:	1019 mbar	
EUT:	80510 Truck Radio			
Configuration:	2			
Customer:	Zonar Systems, LLC			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Tx Mid Channel			
Deviations:	None			
Comments:	None			

Test Specifications FCC 15.207:2011	Test Method ANSI C63.10:2009
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Run #	3	Line:	Neutral	Ext. Attenuation:	20	Results	Pass
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Peak Data - vs - Quasi Peak Limit						Peak Data - vs - Average Limit					
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)	Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.424	23.6	20.1	43.7	57.4	-13.7	0.424	23.6	20.1	43.7	47.4	-3.7
0.718	18.3	20.1	38.4	56.0	-17.6	0.718	18.3	20.1	38.4	46.0	-7.6
0.597	17.5	20.1	37.6	56.0	-18.4	0.597	17.5	20.1	37.6	46.0	-8.4
28.790	20.1	21.3	41.4	60.0	-18.6	28.790	20.1	21.3	41.4	50.0	-8.6
0.201	24.7	20.1	44.8	63.6	-18.8	0.201	24.7	20.1	44.8	53.6	-8.8
0.167	26.2	20.1	46.3	65.1	-18.8	0.167	26.2	20.1	46.3	55.1	-8.8
26.390	19.9	21.2	41.1	60.0	-18.9	26.390	19.9	21.2	41.1	50.0	-8.9
2.296	16.5	20.1	36.6	56.0	-19.4	2.296	16.5	20.1	36.6	46.0	-9.4
27.770	19.1	21.3	40.4	60.0	-19.6	27.770	19.1	21.3	40.4	50.0	-9.6
1.992	16.2	20.1	36.3	56.0	-19.7	1.992	16.2	20.1	36.3	46.0	-9.7
0.289	19.9	20.1	40.0	60.5	-20.5	0.289	19.9	20.1	40.0	50.5	-10.5
1.520	15.1	20.1	35.2	56.0	-20.8	1.520	15.1	20.1	35.2	46.0	-10.8
0.978	15.0	20.1	35.1	56.0	-20.9	0.978	15.0	20.1	35.1	46.0	-10.9
0.915	14.9	20.1	35.0	56.0	-21.0	0.915	14.9	20.1	35.0	46.0	-11.0
0.944	14.8	20.1	34.9	56.0	-21.1	0.944	14.8	20.1	34.9	46.0	-11.1
0.223	21.5	20.1	41.6	62.7	-21.1	0.223	21.5	20.1	41.6	52.7	-11.1
29.500	17.5	21.4	38.9	60.0	-21.1	29.500	17.5	21.4	38.9	50.0	-11.1
29.850	17.4	21.4	38.8	60.0	-21.2	29.850	17.4	21.4	38.8	50.0	-11.2
0.257	20.0	20.1	40.1	61.5	-21.4	0.257	20.0	20.1	40.1	51.5	-11.4
3.640	14.3	20.2	34.5	56.0	-21.5	3.640	14.3	20.2	34.5	46.0	-11.5

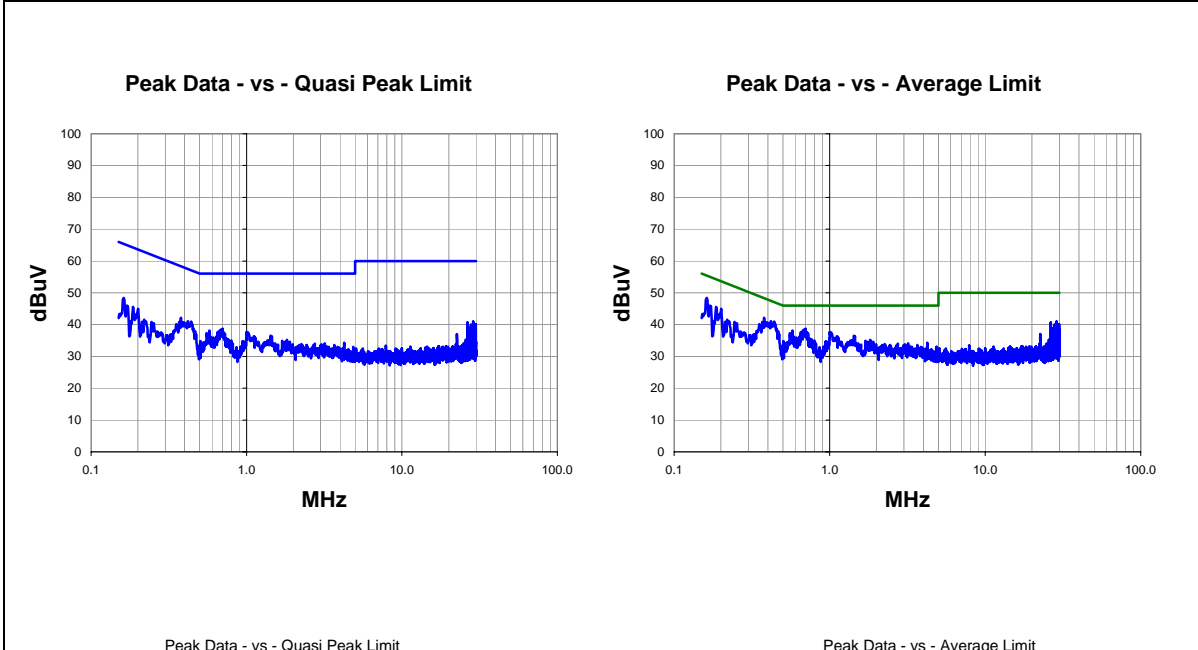
EMC

AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ZONA0032	Date:	10/20/11	 Tested by: Ethan Schoonover
Project:	None	Temperature:	21.1 °C	
Job Site:	EV07	Humidity:	45.6% RH	
Serial Number:	825	Barometric Pres.:	1019 mbar	
EUT:	80510 Truck Radio			
Configuration:	2			
Customer:	Zonar Systems, LLC			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Tx Mid Channel			
Deviations:	None			
Comments:	None			

Test Specifications FCC 15.207:2011	Test Method ANSI C63.10:2009
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Run #	4	Line:	High Line	Ext. Attenuation:	20	Results	Pass
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Peak Data - vs - Quasi Peak Limit						Peak Data - vs - Average Limit					
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)	Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.380	22.1	20.1	42.2	58.3	-16.1	0.380	22.1	20.1	42.2	48.3	-6.1
0.162	28.3	20.1	48.4	65.4	-17.0	0.162	28.3	20.1	48.4	55.4	-7.0
0.701	18.6	20.1	38.7	56.0	-17.3	0.701	18.6	20.1	38.7	46.0	-7.3
0.577	18.0	20.1	38.1	56.0	-17.9	0.577	18.0	20.1	38.1	46.0	-7.9
1.000	17.6	20.1	37.7	56.0	-18.3	1.000	17.6	20.1	37.7	46.0	-8.3
0.201	24.9	20.1	45.0	63.6	-18.6	0.201	24.9	20.1	45.0	53.6	-8.6
0.186	25.5	20.1	45.6	64.2	-18.6	0.186	25.5	20.1	45.6	54.2	-8.6
0.555	17.2	20.1	37.3	56.0	-18.7	0.555	17.2	20.1	37.3	46.0	-8.7
0.170	25.9	20.1	46.0	64.9	-18.9	0.170	25.9	20.1	46.0	54.9	-8.9
28.790	19.6	21.3	40.9	60.0	-19.1	28.790	19.6	21.3	40.9	50.0	-9.1
26.390	19.5	21.2	40.7	60.0	-19.3	26.390	19.5	21.2	40.7	50.0	-9.3
1.432	16.4	20.1	36.5	56.0	-19.5	1.432	16.4	20.1	36.5	46.0	-9.5
29.820	18.8	21.4	40.2	60.0	-19.8	29.820	18.8	21.4	40.2	50.0	-9.8
27.770	18.7	21.3	40.0	60.0	-20.0	27.770	18.7	21.3	40.0	50.0	-10.0
1.136	15.8	20.1	35.9	56.0	-20.1	1.136	15.8	20.1	35.9	46.0	-10.1
1.824	15.1	20.1	35.2	56.0	-20.8	1.824	15.1	20.1	35.2	46.0	-10.8
29.490	17.7	21.4	39.1	60.0	-20.9	29.490	17.7	21.4	39.1	50.0	-10.9
0.796	14.9	20.1	35.0	56.0	-21.0	0.796	14.9	20.1	35.0	46.0	-11.0
28.120	17.7	21.3	39.0	60.0	-21.0	28.120	17.7	21.3	39.0	50.0	-11.0
27.410	17.7	21.2	38.9	60.0	-21.1	27.410	17.7	21.2	38.9	50.0	-11.1

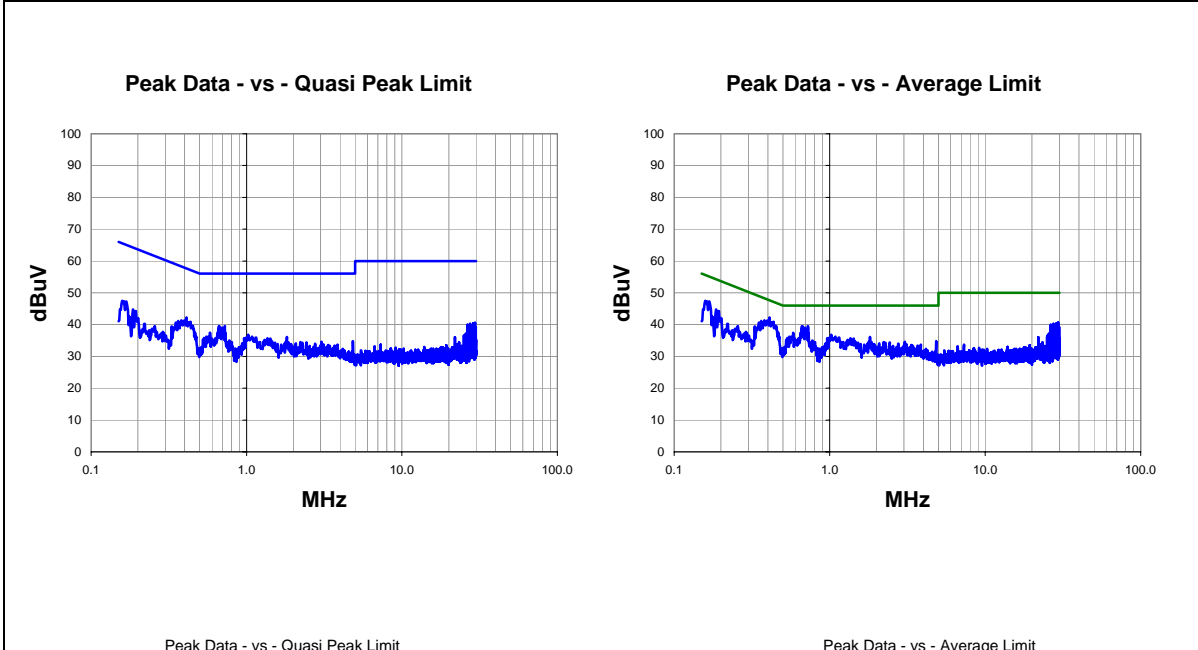
EMC

AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ZONA0032	Date:	10/20/11	 Tested by: Ethan Schoonover
Project:	None	Temperature:	21.1 °C	
Job Site:	EV07	Humidity:	45.6% RH	
Serial Number:	825	Barometric Pres.:	1019 mbar	
EUT:	80510 Truck Radio			
Configuration:	2			
Customer:	Zonar Systems, LLC			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Tx High Channel			
Deviations:	None			
Comments:	None			

Test Specifications FCC 15.207:2011	Test Method ANSI C63.10:2009
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Run #	5	Line:	High Line	Ext. Attenuation:	20	Results	Pass
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Peak Data - vs - Quasi Peak Limit						Peak Data - vs - Average Limit					
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)	Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.410	22.2	20.1	42.3	57.6	-15.3	0.410	22.2	20.1	42.3	47.6	-5.3
0.725	19.4	20.1	39.5	56.0	-16.5	0.725	19.4	20.1	39.5	46.0	-6.5
0.663	19.3	20.1	39.4	56.0	-16.6	0.663	19.3	20.1	39.4	46.0	-6.6
0.694	18.9	20.1	39.0	56.0	-17.0	0.694	18.9	20.1	39.0	46.0	-7.0
0.159	27.4	20.1	47.5	65.5	-18.0	0.159	27.4	20.1	47.5	55.5	-8.0
0.582	17.3	20.1	37.4	56.0	-18.6	0.582	17.3	20.1	37.4	46.0	-8.6
1.024	16.7	20.1	36.8	56.0	-19.2	1.024	16.7	20.1	36.8	46.0	-9.2
29.500	19.3	21.4	40.7	60.0	-19.3	29.500	19.3	21.4	40.7	50.0	-9.3
0.186	24.7	20.1	44.8	64.2	-19.4	0.186	24.7	20.1	44.8	54.2	-9.4
0.194	24.2	20.1	44.3	63.9	-19.6	0.194	24.2	20.1	44.3	53.9	-9.6
28.790	19.1	21.3	40.4	60.0	-19.6	28.790	19.1	21.3	40.4	50.0	-9.6
27.410	19.0	21.2	40.2	60.0	-19.8	27.410	19.0	21.2	40.2	50.0	-9.8
1.816	16.0	20.1	36.1	56.0	-19.9	1.816	16.0	20.1	36.1	46.0	-9.9
26.390	18.8	21.2	40.0	60.0	-20.0	26.390	18.8	21.2	40.0	50.0	-10.0
0.330	19.3	20.1	39.4	59.4	-20.0	0.330	19.3	20.1	39.4	49.4	-10.0
28.120	18.5	21.3	39.8	60.0	-20.2	28.120	18.5	21.3	39.8	50.0	-10.2
0.964	15.6	20.1	35.7	56.0	-20.3	0.964	15.6	20.1	35.7	46.0	-10.3
1.360	15.6	20.1	35.7	56.0	-20.3	1.360	15.6	20.1	35.7	46.0	-10.3
27.760	18.0	21.3	39.3	60.0	-20.7	27.760	18.0	21.3	39.3	50.0	-10.7
29.850	17.8	21.4	39.2	60.0	-20.8	29.850	17.8	21.4	39.2	50.0	-10.8

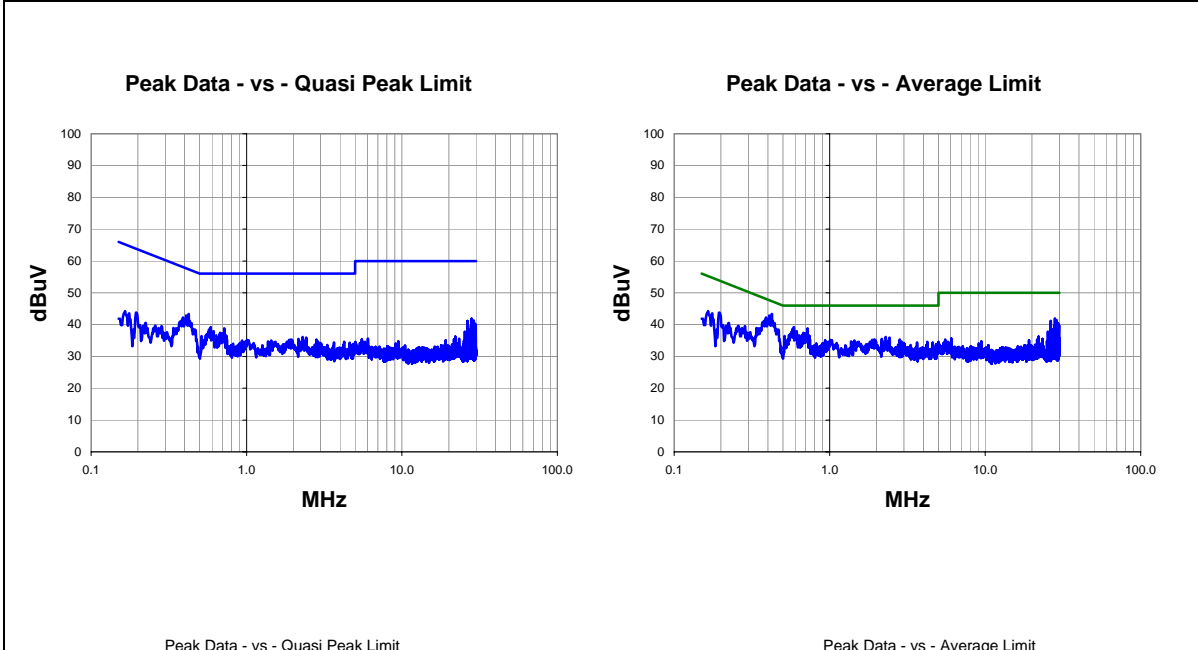
EMC

AC POWERLINE CONDUCTED EMISSIONS

Work Order:	ZONA0032	Date:	10/20/11	
Project:	None	Temperature:	21.1 °C	
Job Site:	EV07	Humidity:	45.6% RH	
Serial Number:	825	Barometric Pres.:	1019 mbar	
				Tested by: Ethan Schoonover
EUT:	80510 Truck Radio			
Configuration:	2			
Customer:	Zonar Systems, LLC			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Tx High Channel			
Deviations:	None			
Comments:	None			

Test Specifications FCC 15.207:2011	Test Method ANSI C63.10:2009
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Run #	6	Line:	Neutral	Ext. Attenuation:	20	Results	Pass
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Peak Data - vs - Quasi Peak Limit						Peak Data - vs - Average Limit					
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)	Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.424	23.3	20.1	43.4	57.4	-14.0	0.424	23.3	20.1	43.4	47.4	-4.0
0.408	22.8	20.1	42.9	57.7	-14.8	0.408	22.8	20.1	42.9	47.7	-4.8
0.589	19.1	20.1	39.2	56.0	-16.8	0.589	19.1	20.1	39.2	46.0	-6.8
0.719	18.7	20.1	38.8	56.0	-17.2	0.719	18.7	20.1	38.8	46.0	-7.2
28.120	20.6	21.3	41.9	60.0	-18.1	28.120	20.6	21.3	41.9	50.0	-8.1
0.677	17.3	20.1	37.4	56.0	-18.6	0.677	17.3	20.1	37.4	46.0	-8.6
28.810	20.0	21.3	41.3	60.0	-18.7	28.810	20.0	21.3	41.3	50.0	-8.7
26.390	20.0	21.2	41.2	60.0	-18.8	26.390	20.0	21.2	41.2	50.0	-8.8
0.638	16.5	20.1	36.6	56.0	-19.4	0.638	16.5	20.1	36.6	46.0	-9.4
0.740	16.5	20.1	36.6	56.0	-19.4	0.740	16.5	20.1	36.6	46.0	-9.4
0.514	16.3	20.1	36.4	56.0	-19.6	0.514	16.3	20.1	36.4	46.0	-9.6
29.500	19.0	21.4	40.4	60.0	-19.6	29.500	19.0	21.4	40.4	50.0	-9.6
2.296	16.0	20.1	36.1	56.0	-19.9	2.296	16.0	20.1	36.1	46.0	-9.9
0.194	23.7	20.1	43.8	63.9	-20.1	0.194	23.7	20.1	43.8	53.9	-10.1
2.424	15.8	20.1	35.9	56.0	-20.1	2.424	15.8	20.1	35.9	46.0	-10.1
29.820	18.3	21.4	39.7	60.0	-20.3	29.820	18.3	21.4	39.7	50.0	-10.3
27.770	18.4	21.3	39.7	60.0	-20.3	27.770	18.4	21.3	39.7	50.0	-10.3
2.160	15.4	20.1	35.5	56.0	-20.5	2.160	15.4	20.1	35.5	46.0	-10.5
1.928	15.2	20.1	35.3	56.0	-20.7	1.928	15.2	20.1	35.3	46.0	-10.7
2.816	15.2	20.1	35.3	56.0	-20.7	2.816	15.2	20.1	35.3	46.0	-10.7