Automatic Labs

TEST REPORT FOR

OBD-II to Bluetooth Bridge Device
Model: Link2

Tested To The Following Standards:

FCC Part 15 Subpart C Section(s)
15.249

Report No.: 96788-5

Date of issue: March 10, 2015

ACCREDITED
Testing Certificates:
803.01, 803.02, 803.05, 803.06

This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

Testing the Future
CKC LABORATORIES, INC.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

Automatic Labs
575 Florida Street
San Francisco, CA 94110

REPRESENTATIVE: Nick Lambourne
Customer Reference Number: CKC10

REPORT PREPARED BY:

Terri Rayle
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 96788

DATE OF EQUIPMENT RECEIPT: February 26, 2015
DATE(S) OF TESTING: February 26- March 2, 2015

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.

Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information

Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
110 Olinda Place
Brea, CA 92823

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Brea A	US0060	SL2-IN-E-1146R	3082D-1	90473	A-0147
Brea D	US0060	SL2-IN-E-1146R	3082D-2	100638	A-0147

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C

Test Procedure	Description	Modifications*	Results
15.31(e)	Voltage Variation	NA	Pass
15.215(c)	Occupied Bandwidth	NA	Pass
15.249(a)	Field Strength of Fundamental	NA	Pass
15.249(a)	Field Strength of Harmonics	NA	Pass
15.249(d)	Spurious Emissions and Band Edge	NA	Pass

Modifications* During Testing

This list is a summary of the modifications made to the equipment during testing.

Summary of Conditions
No modifications were made during testing.

***Modifications listed above must be incorporated into all production units.**

Conditions During Testing

This list is a summary of the conditions noted to the equipment during testing.

Summary of Conditions
None

EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

OBD-II to Bluetooth Bridge Device
Manuf: Automatic Labs
Model: Link2
Serial: NA

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

AC to 12VDC Power Supply
Manuf: ZW
Model: ZW12V3A25RD
Serial: NA

DC Power Supply
Manuf: Topward
Model: 6306D
Serial: 988614

FCC PART 15 SUBPART C

15.31(e) Voltage Variations

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • (714) 993-6112

Customer: **Automatic Labs**
Specification: **15.31(e) Voltage Variation on Power**
Work Order #: **96788** Date: 3/2/2015
Test Type: **Maximized Emissions**
Equipment: **OBD-II to Bluetooth Bridge Device**
Manufacturer: Automatic Labs Tested By: S. Yamamoto
Model: Link2
S/N: NA

***Test Equipment*:**

Asset #	Description	Model	Calibration Date	Cal Due Date
AN02672	Spectrum Analyzer	E4446A	8/14/2013	8/14/2015
ANP05421	Cable	Sucoflex 104A	1/8/2014	1/8/2016
ANP06661	Cable	LDF1-50	4/15/2014	4/15/2016
AN00849	Horn Antenna	3115	3/18/2014	3/18/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
OBD-II to Bluetooth Bridge Device*	Automatic Labs	Link2	(none)

Support Devices:

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	6306D	988614

Test Conditions / Notes:

The equipment under test (EUT) is a standalone on the Styrofoam table top.
The EUT is connected to a DC power supply.
The DC power supply is providing the nominal voltage of 12.0VDC to the EUT.

The EUT low, middle and high channels are 2402MHz, 2442MHz, and 2480MHz.
Modulation types are GFSK 1Mbps, 4 DPSK 2Mbps, and 8 DPSK 3Mbps.
The EUT is transmitting continuously.

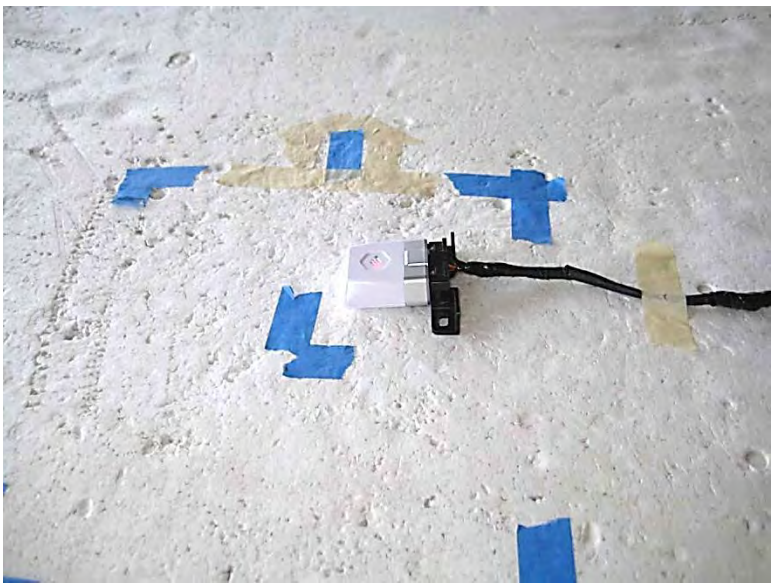
Temperature: 18°C
Relative Humidity: 45%
Pressure: 100kPa

Frequency range of data is 2400MHz to 2483.5MHz. RBW=1MHz, VBW=3MHz
Rated EUT RF output power: +2dBm

Site D
Test method used ANSI C63.4 (2003)

15.31(e) Compliance: The supply voltage was varied between 85% and 115% of the manufacturer declared nominal rated voltage of 12.0VDC. No change in the fundamental signal level was observed.

Test Setup Photo



15.215(c) Occupied Bandwidth

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • (714) 993-6112

Customer: **Automatic Labs**
Specification: **15.215 Occupied Bandwidth (2400-2483.5 MHz Transmitter)**
Work Order #: **96788** Date: 2/26/2015
Test Type: **Maximized Emissions**
Equipment: **OBD-II to Bluetooth Bridge Device**
Manufacturer: Automatic Labs Tested By: S. Yamamoto
Model: Link2
S/N: NA

***Test Equipment*:**

Asset #	Description	Model	Calibration Date	Cal Due Date
AN02672	Spectrum Analyzer	E4446A	8/14/2013	8/14/2015
ANP05421	Cable	Sucoflex 104A	1/8/2014	1/8/2016
ANP06661	Cable	LDF1-50	4/15/2014	4/15/2016
AN00849	Horn Antenna	3115	3/18/2014	3/18/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
OBD-II to Bluetooth Bridge Device*	Automatic Labs	Link2	NA

Support Devices:

Function	Manufacturer	Model #	S/N
AC to 12VDC Power Supply	ZW	ZW12V3A25RD	NA

Test Conditions / Notes:

The equipment under test (EUT) is a standalone on the Styrofoam table top.
The EUT is connected to a remotely located AC to 12VDC power adapter.

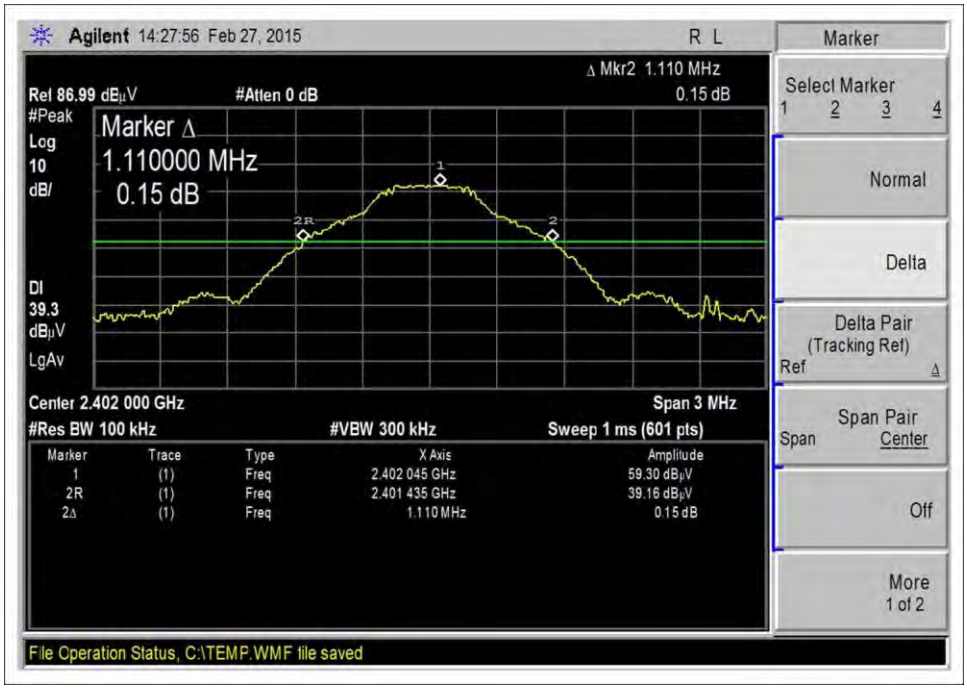
The EUT low, middle and high channels (and data sheet test frequencies) are 2402MHz, 2442MHz, and 2480MHz.
Modulation types are GFSK 1Mbps, 4 DPSK 2Mbps, and 8 DPSK 3Mbps.
Data captures from the spectrum analyzer contain the measurement occupied bandwidth of the EUT.
The EUT is transmitting continuously.

Temperature: 19°C
Relative Humidity: 44%
Pressure: 100kPa

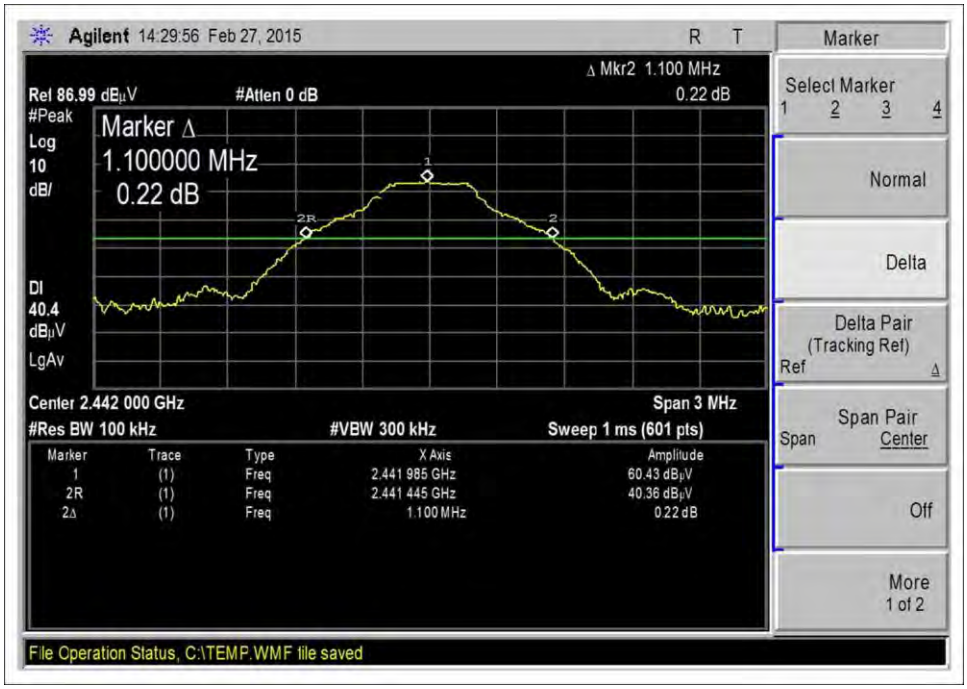
Frequency range of data is 2400MHz to 2483.5MHz. RBW=100kHz, VBW=300kHz.
Rated EUT RF output power: +2dBm

Site A.
Test method used ANSI C63.4 (2003)

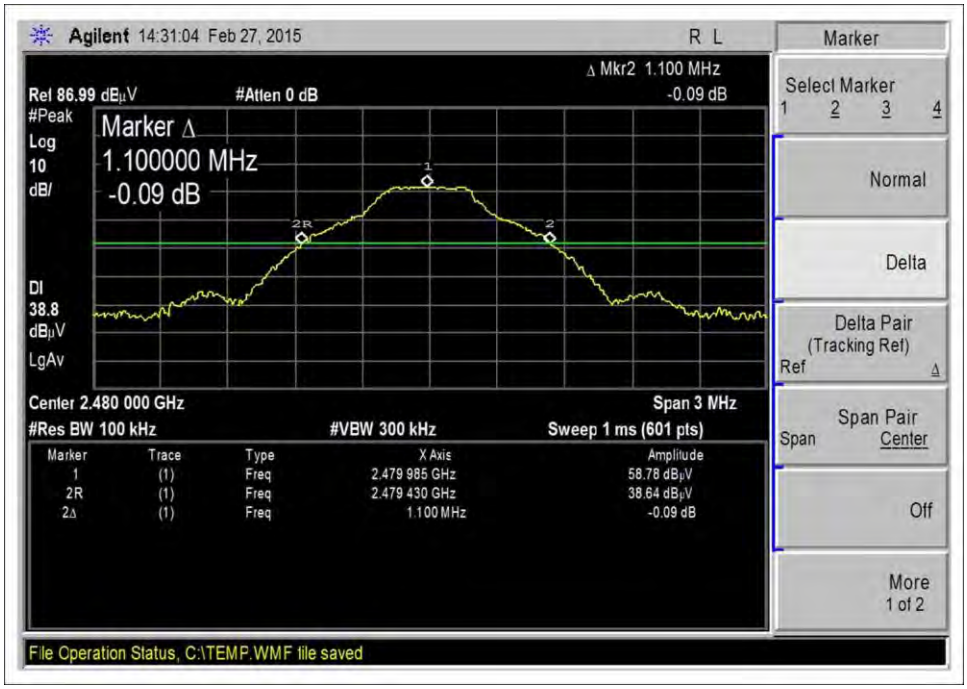
Test Data



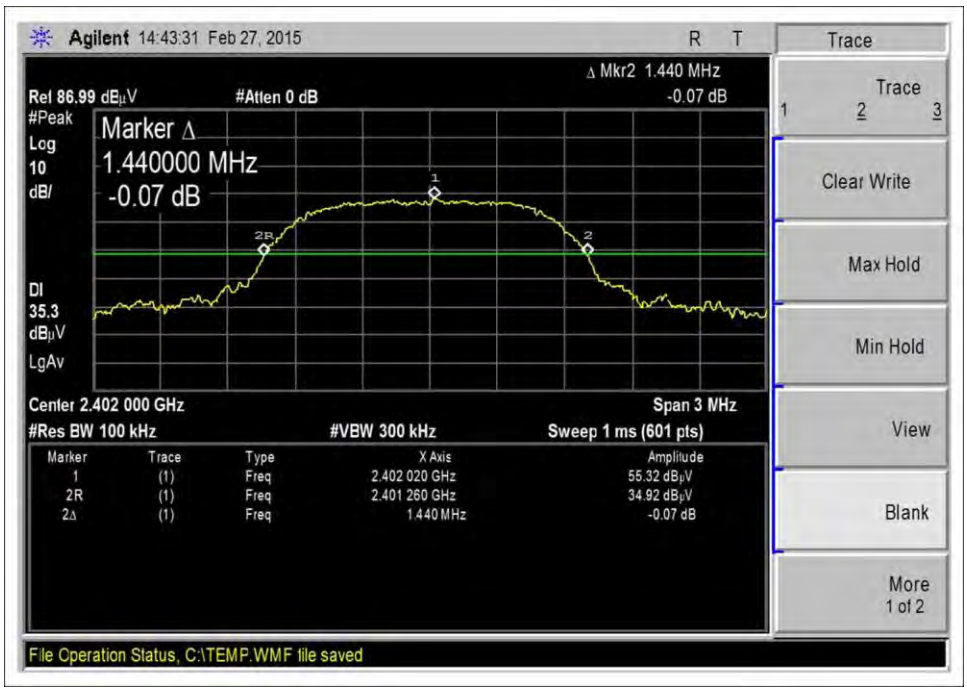
1.1MHz, Low Channel, GFSK



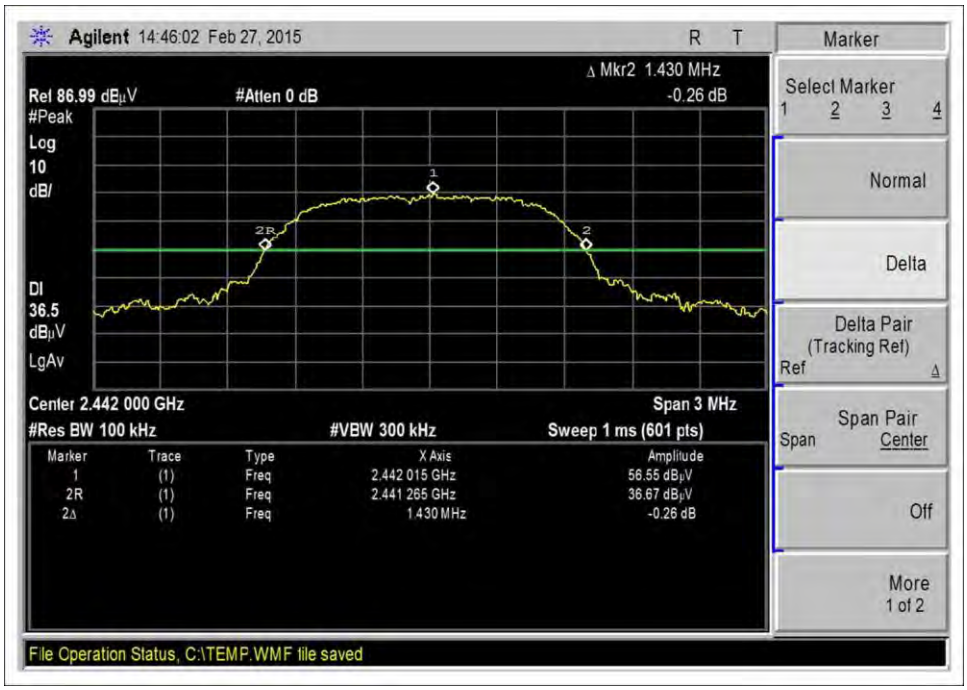
1.1MHz, Mid Channel, GFSK



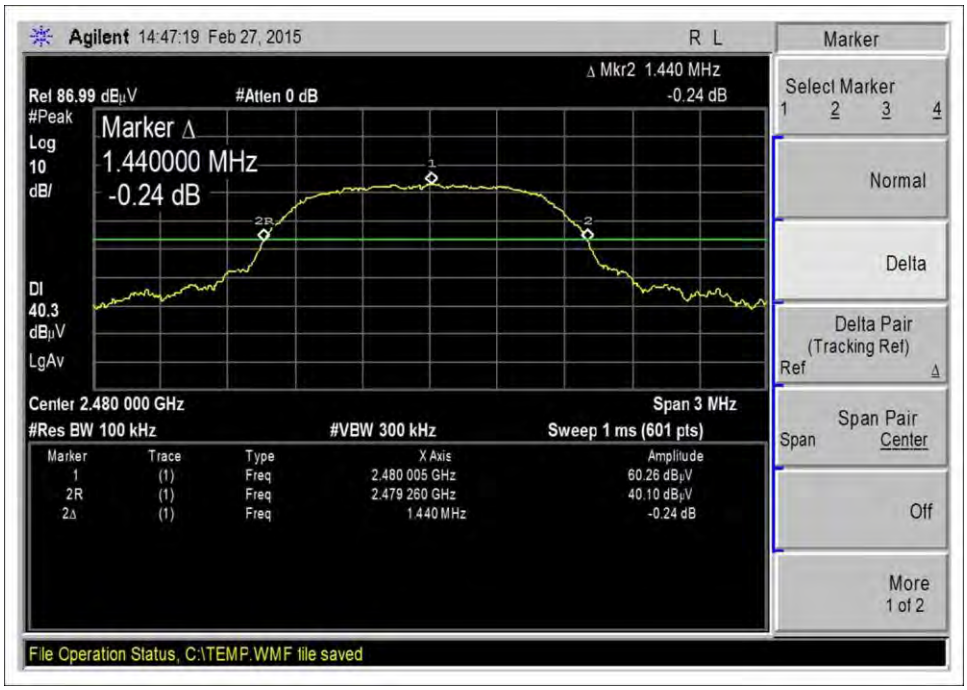
1.1MHz, High Channel, GFSK



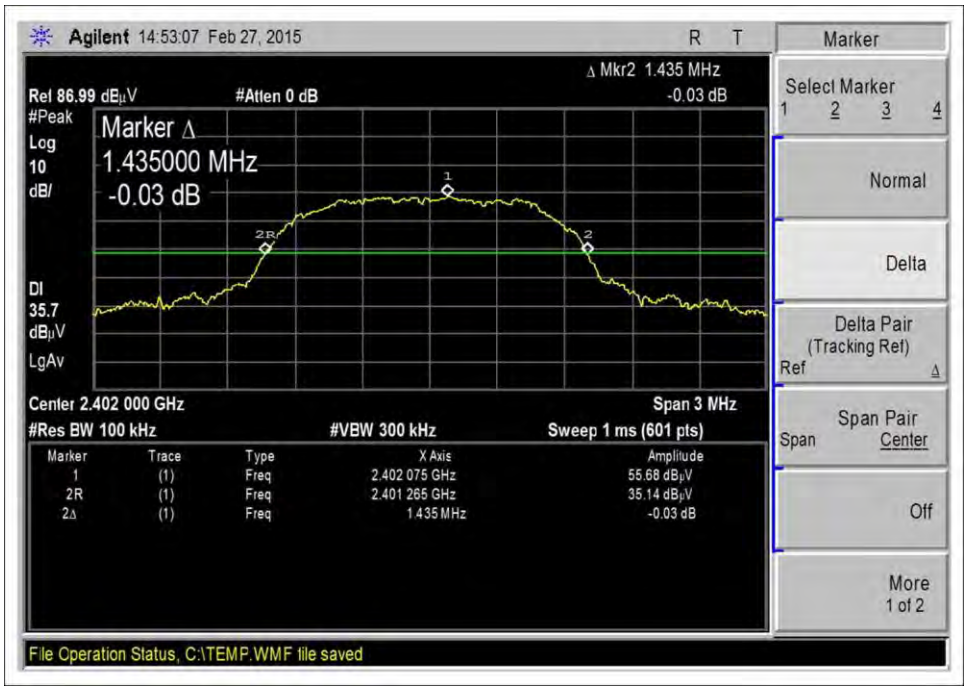
1.4MHz, Low Channel, 4DPSK



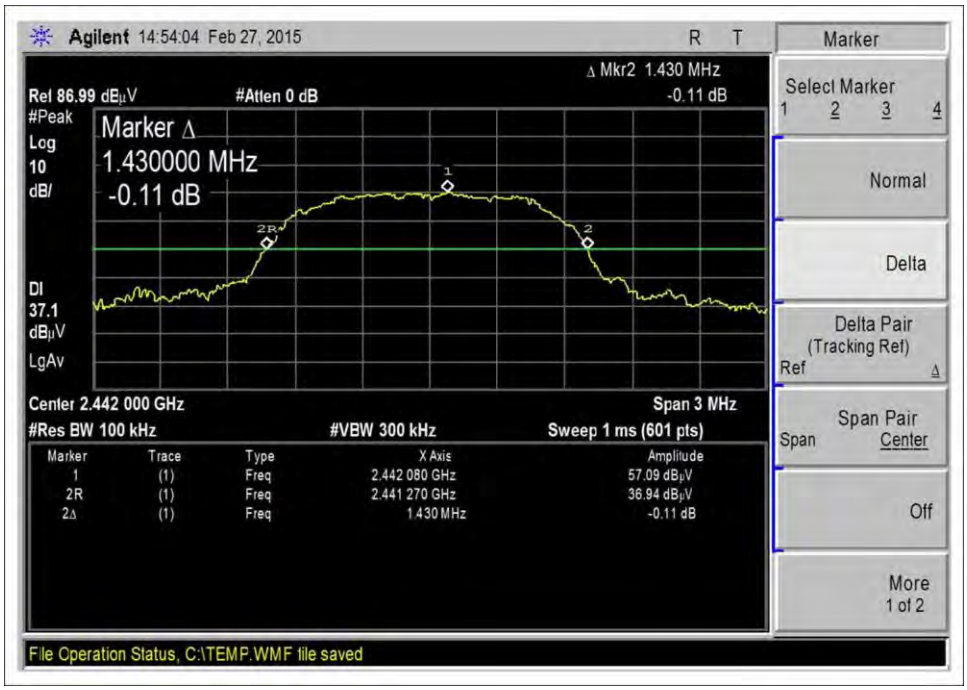
1.4MHz, Mid Channel, 4DPSK



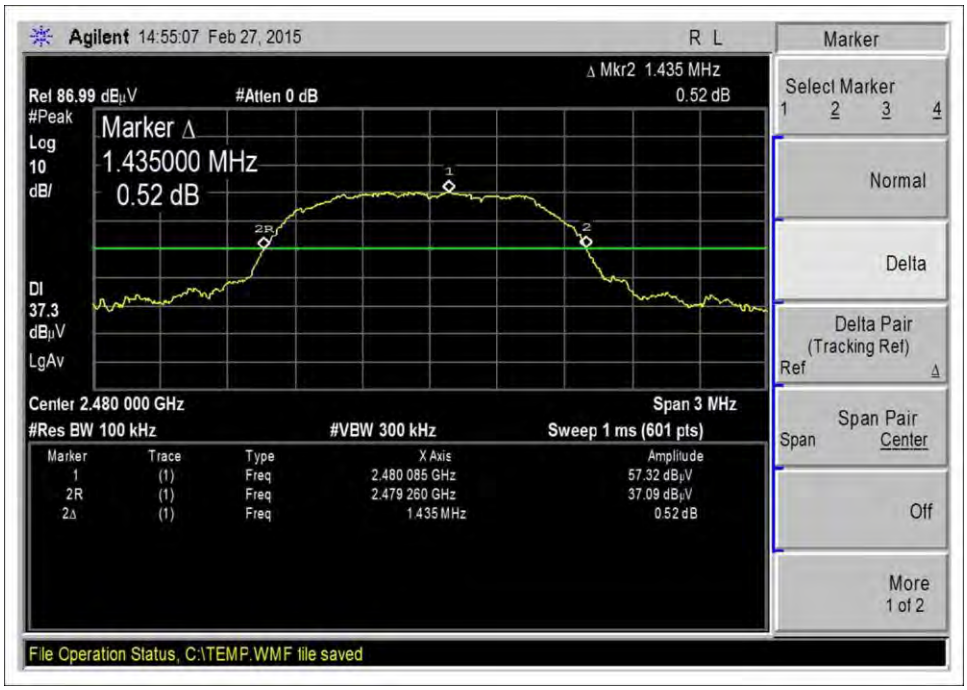
1.4MHz, High Channel, 4DPSK



1.4MHz, Low Channel, 8DPSK

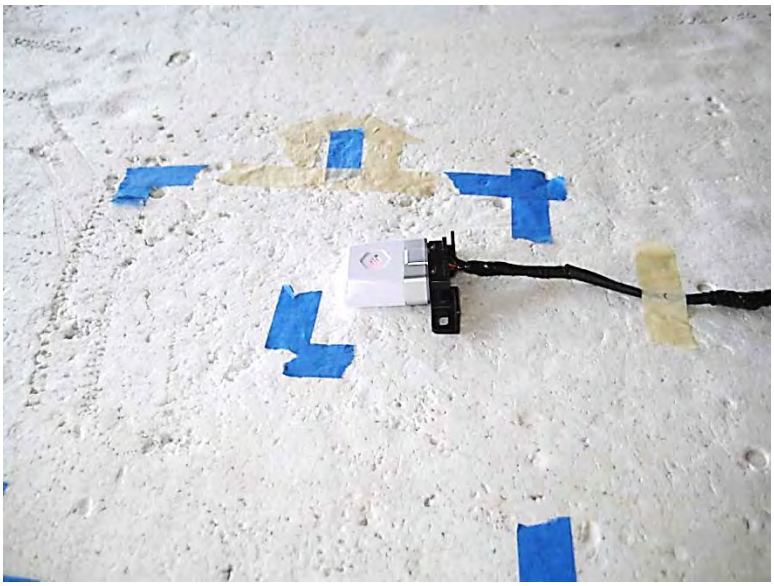


1.4MHz, Mid Channel, 8DPSK



1.4MHz, High Channel, 8DPSK

Test Setup Photo



15.249(a) Field Strength of Fundamental

Test Conditions / Setup / Data

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • (714) 993-6112

Customer: **Automatic Labs**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96788** Date: 2/26/2015
Test Type: **Maximized Emissions** Time: 12:26:58
Equipment: **OBD-II to Bluetooth Bridge Device** Sequence#: 1
Manufacturer: Automatic Labs Tested By: S. Yamamoto
Model: Link2
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN	Test Data Adjustment		9/11/2014	9/11/2016
T2	AN02672	Spectrum Analyzer	E4446A	8/14/2013	8/14/2015
T3	ANP05421	Cable	Sucoflex 104A	1/8/2014	1/8/2016
T4	ANP06661	Cable	LDF1-50	4/15/2014	4/15/2016
T5	AN00849	Horn Antenna	3115	3/18/2014	3/18/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
OBD-II to Bluetooth Bridge Device*	Automatic Labs	Link2	NA

Support Devices:

Function	Manufacturer	Model #	S/N
AC to 12VDC Power Supply	ZW	ZW12V3A25RD	NA

Test Conditions / Notes:

The equipment under test (EUT) is a standalone on the Styrofoam table top.
The EUT is connected to a remotely located AC to 12VDC power adapter.
The power adapter is providing the nominal 12.0VDC to the EUT and is used in place of a battery which would be used in the actual installation.

The EUT low, middle and high channels (and data sheet test frequencies) are 2402MHz, 2442MHz, and 2480MHz.
Modulation types are GFSK 1Mbps, 4 DPSK 2Mbps, and 8 DPSK 3Mbps.
Data sheet contains the measurement of the fundamental amplitude of the EUT.
The EUT is transmitting continuously.
The emission levels reported in this data are representative of worst case emissions.

Temperature: 19°C
Relative Humidity: 44%
Pressure: 100kPa

Frequency range of data sheet 2400MHz to 2483.5MHz. RBW=VBW=1MHz
Rated EUT RF output power: +2dBm
Data was maximized with EUT in each of three axis systems (X, Y, Z) and with each of the three modulation types.

Site A
Test method used ANSI C63.4 (2003)

Manufacturer maximum duty cycle declaration:
When transmitting at full throughput, generate a train of 350us transmission bursts spaced never less than 1.25ms apart, but more typically 12.4ms.
At most, only transmit up to 20 packets per 100ms.
In any given 100ms window captured, maximum duty cycle is 1/14.
Duty Cycle Correction Factor Calculation: DCCF (dB) = 20 Log (dwell time/100 ms) = 20 Log (0.007/0.1) = -23.1 dB.

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	2442.117M	60.4	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	91.1	94.0 Middle, 4 DPSK 2Mbps, Y axis	-2.9	Vert
2	2442.127M	60.1	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	90.8	94.0 Middle, GFSK 1Mbps, Y axis	-3.2	Vert
3	2401.955M	59.8	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	90.3	94.0 Low, GFSK 1Mbps, X axis	-3.7	Horiz
4	2442.158M	59.6	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	90.3	94.0 Middle, GFSK 1Mbps, Z axis	-3.7	Vert
5	2402.170M	59.6	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	90.1	94.0 Low, GFSK 1Mbps, Y axis	-3.9	Vert

6	2402.003M	59.4	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	89.9	94.0 Low, 8 DPSK 3Mbps, Y axis	-4.1	Vert
7	2442.132M	59.0	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	89.7	94.0 Middle, GFSK 1Mbps, X axis	-4.3	Vert
8	2402.165M	59.1	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	89.6	94.0 Low, GFSK 1Mbps, Y axis	-4.4	Horiz
9	2402.153M	59.0	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	89.5	94.0 Low, 4 DPSK 2Mbps, Y axis	-4.5	Vert
10	2402.018M	58.9	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	89.4	94.0 Low, 8 DPSK 3Mbps, Z axis	-4.6	Horiz
11	2402.187M	58.6	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	89.1	94.0 Low, 4 DPSK 2Mbps, Z axis	-4.9	Horiz
12	2401.953M	58.3	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	88.8	94.0 Low, 8 DPSK 3Mbps, X axis	-5.2	Horiz
13	2402.203M	58.2	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	88.7	94.0 Low, GFSK 1Mbps, Z axis	-5.3	Horiz
14	2401.953M	58.0	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	88.5	94.0 Low, 8 DPSK 3Mbps, Z axis	-5.5	Vert
15	2402.173M	57.8	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	88.3	94.0 Low, GFSK 1Mbps, X axis	-5.7	Vert
16	2402.000M	57.8	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	88.3	94.0 Low, 8 DPSK 3Mbps, X axis	-5.7	Vert
17	2402.155M	57.6	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	88.1	94.0 Low, 4 DPSK 2Mbps, X axis	-5.9	Vert
18	2401.902M	57.6	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	88.1	94.0 Low, 4 DPSK 2Mbps, X axis	-5.9	Horiz
19	2402.127M	57.3	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	87.8	94.0 Low, 4 DPSK 2Mbps, Z axis	-6.2	Vert
20	2401.977M	57.3	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	87.8	94.0 Low, 8 DPSK 3Mbps, Y axis	-6.2	Horiz
21	2402.055M	56.6	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	87.1	94.0 Low, GFSK 1Mbps, Z axis	-6.9	Vert
22	2480.138M Ave	63.3	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	71.2	94.0 High, GFSK 1Mbps, Z axis	-22.8	Vert

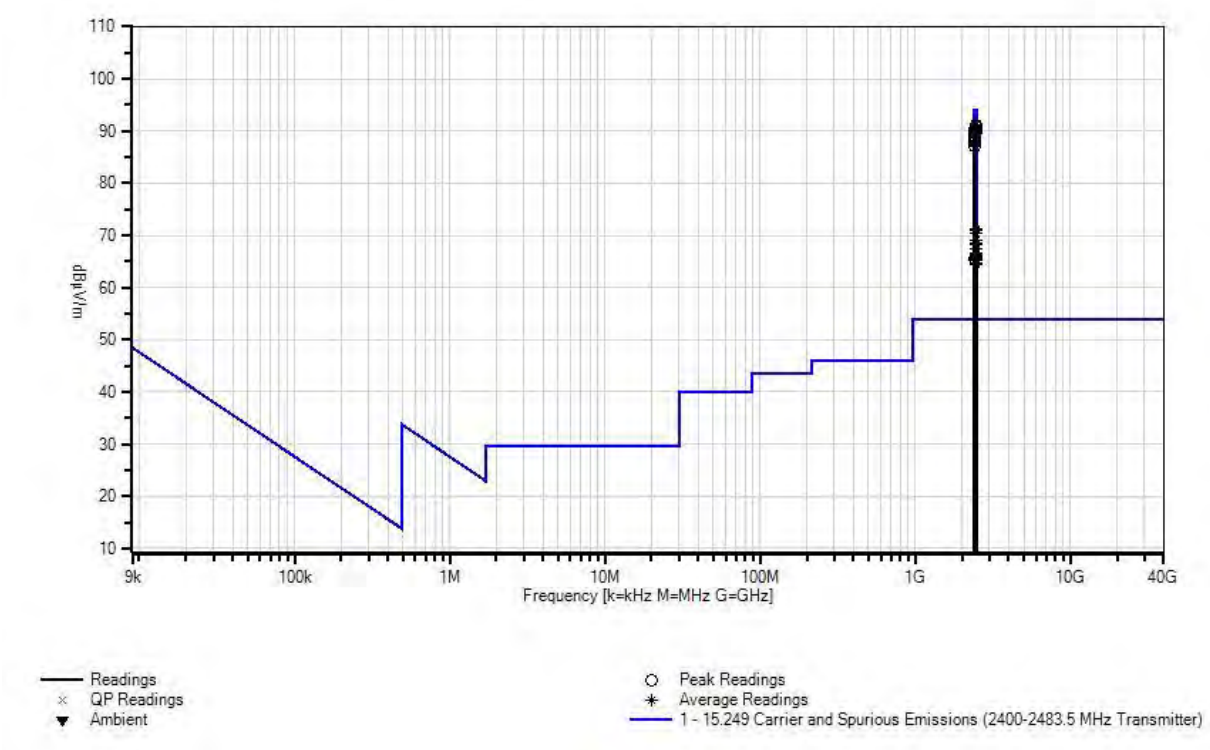
23	2480.032M Ave	63.0	-23.0 +25.4	+0.0	+1.3	+4.2	+0.0	70.9	94.0	-23.1	Horiz	High, GFSK 1Mbps, Y axis
24	2480.000M Ave	62.5	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	70.4	94.0	-23.6	Horiz	High, GFSK 1Mbps, Z axis
25	2480.020M Ave	62.5	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	70.4	94.0	-23.6	Horiz	High, GFSK 1Mbps, X axis
26	2480.115M Ave	61.2	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	69.1	94.0	-24.9	Vert	High, GFSK 1Mbps, Y axis
27	2480.132M Ave	60.7	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	68.6	94.0	-25.4	Vert	High, GFSK 1Mbps, X axis
28	2442.133M Ave	60.5	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	68.2	94.0	-25.8	Horiz	Middle, GFSK 1Mbps, Z axis
29	2480.103M Ave	59.5	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	67.4	94.0	-26.6	Horiz	High, 4 DPSK 2Mbps, Z axis
30	2479.977M Ave	58.7	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	66.6	94.0	-27.4	Horiz	High, 8 DPSK 3Mbps, Z axis
31	2480.110M Ave	58.5	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	66.4	94.0	-27.6	Vert	High, 4 DPSK 2Mbps, Z axis
32	2479.988M Ave	58.3	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	66.2	94.0	-27.8	Horiz	High, 8 DPSK 3Mbps, Y axis
33	2479.920M Ave	58.1	-23.0 +25.4	+0.0	+1.3	+4.2	+0.0	66.0	94.0	-28.0	Vert	High, 8 DPSK 3Mbps, Z axis
34	2441.975M Ave	58.2	-23.0 +25.4	+0.0	+1.2	+4.1	+0.0	65.9	94.0	-28.1	Vert	Middle, 8 DPSK 3Mbps, Z axis
^	2441.975M	62.8	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	93.5	94.0	-0.5	Vert	Middle, 8 DPSK 3Mbps, Z axis
^	2441.923M	61.2	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	91.9	94.0	-2.1	Vert	Middle, 8 DPSK 3Mbps, Y axis
^	2441.877M	61.0	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	91.7	94.0	-2.3	Vert	Middle, 4 DPSK 2Mbps, Z axis
^	2442.023M	60.1	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	90.8	94.0	-3.2	Vert	Middle, 8 DPSK 3Mbps, X axis
^	2442.038M	59.7	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	90.4	94.0	-3.6	Vert	Middle, 4 DPSK 2Mbps, X axis

40	2480.013M Ave	57.9	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	65.8	94.0	-28.2	Horiz High, 8 DPSK 3Mbps, X axis
^	2480.000M	63.0	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	93.9	94.0	-0.1	Horiz High, GFSK 1Mbps, Z axis
^	2479.988M	62.9	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	93.8	94.0	-0.2	Horiz High, 8 DPSK 3Mbps, Y axis
43	2480.105M Ave	57.8	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	65.7	94.0	-28.3	Horiz High, 4 DPSK 2Mbps, X axis
^	2480.103M	63.8	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	94.7	94.0	+0.7	Horiz High, 4 DPSK 2Mbps, Z axis
^	2480.032M	63.4	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	94.3	94.0	+0.3	Horiz High, GFSK 1Mbps, Y axis
^	2480.020M	63.0	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	93.9	94.0	-0.1	Horiz High, GFSK 1Mbps, X axis
^	2480.013M	62.5	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	93.4	94.0	-0.6	Horiz High, 8 DPSK 3Mbps, X axis
^	2480.105M	62.2	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	93.1	94.0	-0.9	Horiz High, 4 DPSK 2Mbps, X axis
49	2480.090M Ave	57.7	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	65.6	94.0	-28.4	Vert High, 4 DPSK 2Mbps, X axis
50	2480.067M Ave	57.7	-23.0 +25.4	+0.0	+1.3	+4.2	+0.0	65.6	94.0	-28.4	Vert High, 8 DPSK 3Mbps, X axis
51	2402.133M	58.0	+0.0 +25.3	+0.0	+1.1	+4.1	+0.0	65.5	94.0	-28.5	Horiz Low, 4 DPSK 2Mbps, Y axis
52	2479.997M Ave	57.5	-23.0 +25.4	+0.0	+1.3	+4.2	+0.0	65.4	94.0	-28.6	Vert High, 8 DPSK 3Mbps, Y axis
^	2479.920M	62.6	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	93.5	94.0	-0.5	Vert High, 8 DPSK 3Mbps, Z axis
^	2479.997M	62.1	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	93.0	94.0	-1.0	Vert High, 8 DPSK 3Mbps, Y axis
55	2479.887M Ave	57.4	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	65.3	94.0	-28.7	Horiz High, 4 DPSK 2Mbps, Y axis
^	2479.977M	63.3	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	94.2	94.0	+0.2	Horiz High, 8 DPSK 3Mbps, Z axis

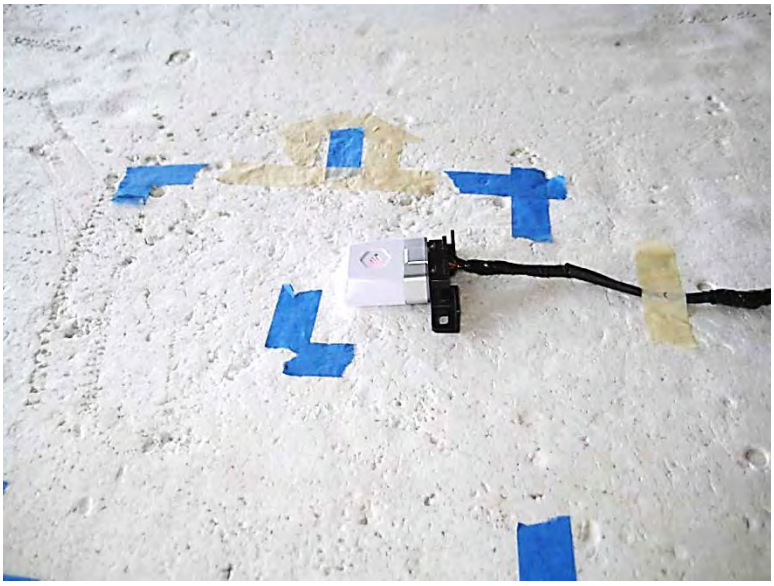
^	2479.887M	61.7	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	92.6	94.0	-1.4	Horiz High, 4 DPSK 2Mbps, Y axis
58	2442.133M Ave	57.6	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	65.3	94.0	-28.7	Horiz Middle, 4 DPSK 2Mbps, Z axis
59	2480.142M Ave	57.4	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	65.3	94.0	-28.7	Vert High, 4 DPSK 2Mbps, Y axis
^	2480.138M	64.3	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	95.2	94.0	+1.2	Vert High, GFSK 1Mbps, Z axis
^	2480.110M	62.7	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	93.6	94.0	-0.4	Vert High, 4 DPSK 2Mbps, Z axis
^	2480.067M	62.6	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	93.5	94.0	-0.5	Vert High, 8 DPSK 3Mbps, X axis
^	2480.115M	62.1	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	93.0	94.0	-1.0	Vert High, GFSK 1Mbps, Y axis
^	2480.090M	62.0	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	92.9	94.0	-1.1	Vert High, 4 DPSK 2Mbps, X axis
^	2480.112M	62.0	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	92.9	94.0	-1.1	Vert High, GFSK 1Mbps, X axis
^	2480.142M	61.9	+0.0 +25.4	+0.0	+1.3	+4.2	+0.0	92.8	94.0	-1.2	Vert High, 4 DPSK 2Mbps, Y axis
67	2442.010M Ave	57.1	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	64.8	94.0	-29.2	Horiz Middle, 8 DPSK 3Mbps, Z axis
^	2442.010M	61.9	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	92.6	94.0	-1.4	Horiz Middle, 8 DPSK 3Mbps, Z axis
^	2442.018M	61.3	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	92.0	94.0	-2.0	Horiz Middle, 8 DPSK 3Mbps, Y axis
^	2442.006M	61.0	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	91.7	94.0	-2.3	Horiz Middle, 8 DPSK 3Mbps, X axis
71	2442.127M Ave	56.8	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	64.5	94.0	-29.5	Horiz Middle, 4 DPSK 2Mbps, Y axis

^ 2442.133M	62.0	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	92.7	94.0	-1.3	Horiz Middle, 4 DPSK 2Mbps, Z axis
^ 2442.127M	61.9	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	92.6	94.0	-1.4	Horiz Middle, 4 DPSK 2Mbps, Y axis
^ 2442.093M	61.5	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	92.2	94.0	-1.8	Horiz Middle, 4 DPSK 2Mbps, X axis
^ 2442.133M	61.5	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	92.2	94.0	-1.8	Horiz Middle, GFSK 1Mbps, Z axis
^ 2442.032M	60.9	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	91.6	94.0	-2.4	Horiz Middle, GFSK 1Mbps, Y axis
^ 2442.152M	60.2	+0.0 +25.4	+0.0	+1.2	+4.1	+0.0	90.9	94.0	-3.1	Horiz Middle, GFSK 1Mbps, X axis

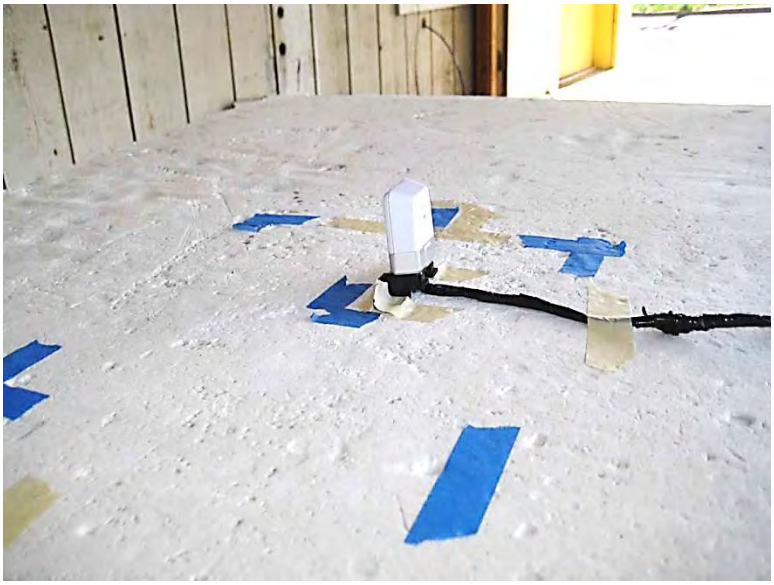
CKC Laboratories, Inc Date: 2/26/2015 Time: 12:26:58 Automatic Labs WO#: 96788
Test Distance: 3 Meters Sequence#: 1



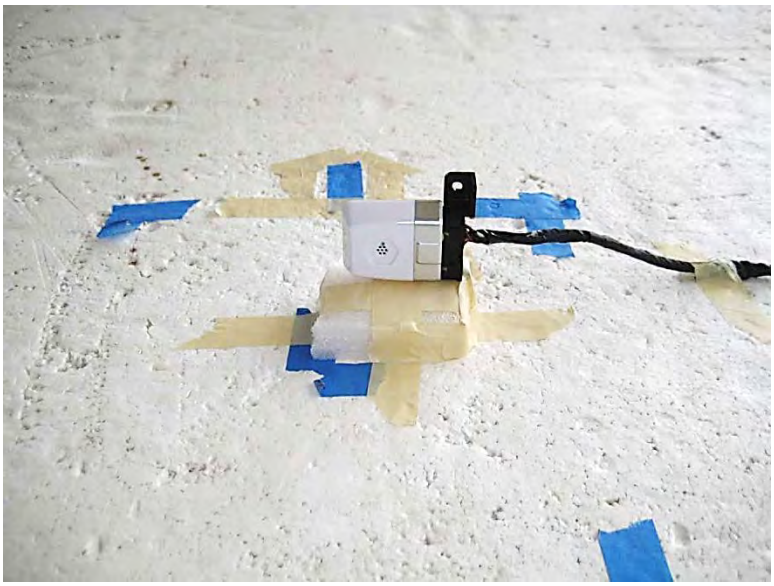
Test Setup Photos



X Axis



Y Axis



Z Axis

15.249(a) Field Strength of Harmonics

Test Conditions / Setup / Data

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • (714) 993-6112

Customer: **Automatic Labs**
Specification: **15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)**
Work Order #: **96788** Date: 2/27/2015
Test Type: **Maximized Emissions** Time: 13:54:46
Equipment: **OBD-II to Bluetooth Bridge Device** Sequence#: 2
Manufacturer: Automatic Labs Tested By: S. Yamamoto
Model: Link2
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02672	Spectrum Analyzer	E4446A	8/14/2013	8/14/2015
	ANP05421	Cable	Sucoflex 104A	1/8/2014	1/8/2016
T2	ANP06661	Cable	LDF1-50	4/15/2014	4/15/2016
T3	AN00786	Preamp	83017A	4/25/2014	4/25/2016
T4	ANP06544	Cable	32026-29094K-29094K-36TC	11/20/2013	11/20/2015
T5	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	6/5/2013	6/5/2015
T6	AN00849	Horn Antenna	3115	3/18/2014	3/18/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
OBD-II to Bluetooth Bridge Device*	Automatic Labs	Link2	NA

Support Devices:

Function	Manufacturer	Model #	S/N
AC to 12VDC Power Supply	ZW	ZW12V3A25RD	NA

Test Conditions / Notes:

The equipment under test (EUT) is a standalone on the Styrofoam table top.
The EUT is connected to a remotely located AC to 12VDC power adapter.
The power adapter is providing the nominal 12.0VDC to the EUT and is used in place of a battery which would be used in the actual installation.

The EUT low, middle and high channels (and data sheet test frequencies) are 2402MHz, 2442MHz, and 2480MHz.
Modulation types are GFSK 1Mbps, 4 DPSK 2Mbps, and 8 DPSK 3Mbps.
Data sheet contains the measurement of the harmonics amplitude of the EUT.

The EUT is transmitting continuously.
The emission levels reported in this data are representative of worst case emissions.

Temperature: 19°C
Relative Humidity: 44%
Pressure: 100kPa

Frequency range of data sheet 4800MHz to 18GHz. RBW=VBW=1MHz.
Rated EUT RF output power: +2dBm
Data was maximized with EUT in each of three axis systems (X, Y, Z) and with each of the three modulation types.

Site A
Test method used ANSI C63.4 (2003)

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	14651.268 M Ave	35.8	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	53.4	54.0 Middle, 4 DPSK 2Mbps, Y axis	-0.6	Horiz
^	14651.268 M	47.8	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	65.4	54.0 Middle, 4 DPSK 2Mbps, Y axis	+11.4	Horiz
3	14411.617 M Ave	35.7	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	53.2	54.0 Low, 8 DPSK 3Mbps, Z axis	-0.8	Vert
^	14411.617 M	46.3	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	63.8	54.0 Low, 8 DPSK 3Mbps, Z axis	+9.8	Vert
5	14651.617 M Ave	35.2	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	52.8	54.0 Middle, 8 DPSK 3Mbps, Y axis	-1.2	Horiz
6	14652.915 M Ave	34.1	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	51.8	54.0 Middle, 4 DPSK 2Mbps, Z axis	-2.2	Vert

7	14411.117 M Ave	34.3	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	51.8	54.0 Low, 4 DPSK 2Mbps, Z axis	-2.2	Vert
8	9768.333M	41.6	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	51.6	54.0 Middle, 8 DPSK 3Mbps, Y axis	-2.4	Horiz
9	12401.100 M	39.8	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	51.5	54.0 High, 4 DPSK 2Mbps, Y axis	-2.5	Horiz
10	14651.633 M Ave	33.7	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	51.3	54.0 Middle, 8 DPSK 3Mbps, Z axis	-2.7	Horiz
^	14651.617 M	46.6	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	64.2	54.0 Middle, 8 DPSK 3Mbps, Y axis	+10.2	Horiz
^	14651.633 M	45.1	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	62.7	54.0 Middle, 8 DPSK 3Mbps, Z axis	+8.7	Horiz
13	14412.883 M Ave	33.8	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	51.3	54.0 Low, 4 DPSK 2Mbps, Y axis	-2.7	Horiz
14	14652.680 M Ave	33.5	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	51.2	54.0 Middle, 4 DPSK 2Mbps, Z axis	-2.8	Horiz
^	14652.680 M	45.4	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	63.1	54.0 Middle, 4 DPSK 2Mbps, Z axis	+9.1	Horiz
16	14411.133 M Ave	33.7	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	51.2	54.0 Low, 4 DPSK 2Mbps, Z axis	-2.8	Horiz
^	14411.133 M	45.1	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	62.6	54.0 Low, 4 DPSK 2Mbps, Z axis	+8.6	Horiz
18	12399.533 M	39.4	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	51.1	54.0 High, 8 DPSK 3Mbps, Y axis	-2.9	Horiz
19	12399.736 M	39.4	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	51.1	54.0 High, GFSK 1Mbps, Z axis	-2.9	Vert

20	9608.283M	41.1	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	51.0	54.0	-3.0	Vert	Low, GFSK 1Mbps, X axis
21	12009.400 M	39.9	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	50.9	54.0	-3.1	Vert	Low, GFSK 1Mbps, X axis
22	12398.467 M	39.1	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	50.8	54.0	-3.2	Vert	High, 8 DPSK 3Mbps, Z axis
23	12210.200 M	39.5	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	50.7	54.0	-3.3	Vert	Middle, GFSK 1Mbps, Z axis
24	12400.306 M	39.0	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	50.7	54.0	-3.3	Vert	High, 4 DPSK 2Mbps, Y axis
25	14410.750 M Ave	33.2	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	50.7	54.0	-3.3	Horiz	Low, 8 DPSK 3Mbps, Y axis
26	12399.836 M	38.9	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	50.6	54.0	-3.4	Horiz	High, 8 DPSK 3Mbps, Z axis
27	12009.675 M	39.6	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	50.6	54.0	-3.4	Horiz	Low, 8 DPSK 3Mbps, Y axis
28	14412.844 M Ave	33.1	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	50.6	54.0	-3.4	Vert	Low, GFSK 1Mbps, Z axis
29	14651.025 M Ave	33.0	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	50.6	54.0	-3.4	Vert	Middle, 4 DPSK 2Mbps, X axis
30	12210.075 M	39.3	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	50.5	54.0	-3.5	Vert	Middle, 4 DPSK 2Mbps, X axis
31	4804.250M	51.3	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	50.5	54.0	-3.5	Vert	Low, 4 DPSK 2Mbps, Y axis
32	4804.292M	51.3	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	50.5	54.0	-3.5	Vert	Low, 8 DPSK 3Mbps, Y axis

33	12008.587 M	39.5	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	50.5	54.0	-3.5	Vert
									Low, 8 DPSK 3Mbps, Y axis		
34	12209.168 M	39.3	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	50.5	54.0	-3.5	Vert
									Middle, GFSK 1Mbps, X axis		
35	14410.867 M Ave	33.0	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	50.5	54.0	-3.5	Horiz
									Low, 8 DPSK 3Mbps, Z axis		
36	12210.558 M	39.3	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	50.5	54.0	-3.5	Horiz
									Middle, GFSK 1Mbps, Y axis		
37	4804.283M	51.2	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	50.4	54.0	-3.6	Vert
									Low, 8 DPSK 3Mbps, Z axis		
38	12401.858 M	38.7	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	50.4	54.0	-3.6	Vert
									High, 4 DPSK 2Mbps, X axis		
39	12399.050 M	38.7	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	50.4	54.0	-3.6	Vert
									High, 8 DPSK 3Mbps, Y axis		
40	12208.675 M	39.2	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	50.4	54.0	-3.6	Horiz
									Middle, 8 DPSK 3Mbps, Z axis		
41	12009.194 M	39.4	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	50.4	54.0	-3.6	Horiz
									Low, GFSK 1Mbps, Z axis		
42	4960.025M	51.3	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	50.3	54.0	-3.7	Vert
									High, 8 DPSK 3Mbps, X axis		
43	12012.208 M	39.3	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	50.3	54.0	-3.7	Vert
									Low, 8 DPSK 3Mbps, X axis		
44	9608.950M	40.4	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	50.3	54.0	-3.7	Horiz
									Low, GFSK 1Mbps, Y axis		
45	14880.833 M Ave	33.1	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	50.3	54.0	-3.7	Horiz
									High, GFSK 1Mbps, Y axis		

46	12400.492 M	38.6	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	50.3	54.0	-3.7	Vert
									High, 8 DPSK 3Mbps, X axis		
47	12208.981 M	39.0	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	50.2	54.0	-3.8	Vert
									Middle, 4 DPSK 2Mbps, Z axis		
48	12009.050 M	39.1	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	50.1	54.0	-3.9	Vert
									Low, 8 DPSK 3Mbps, Z axis		
49	12010.442 M	39.1	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	50.1	54.0	-3.9	Horiz
									Low, GFSK 1Mbps, Y axis		
50	12210.558 M	38.8	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	50.0	54.0	-4.0	Horiz
									Middle, 4 DPSK 2Mbps, Y axis		
51	14411.892 M Ave	32.5	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	50.0	54.0	-4.0	Vert
									Low, 8 DPSK 3Mbps, X axis		
^	14411.892 M	43.7	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	61.2	54.0	+7.2	Vert
									Low, 8 DPSK 3Mbps, X axis		
53	12009.317 M	38.9	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	49.9	54.0	-4.1	Horiz
									Low, 8 DPSK 3Mbps, X axis		
54	14651.183 M Ave	32.3	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	49.9	54.0	-4.1	Vert
									Middle, 8 DPSK 3Mbps, Z axis		
^	14651.183 M	44.5	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	62.1	54.0	+8.1	Vert
									Middle, 8 DPSK 3Mbps, Z axis		
56	12399.475 M	38.2	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	49.9	54.0	-4.1	Horiz
									High, 4 DPSK 2Mbps, X axis		
57	4960.317M	50.8	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	49.8	54.0	-4.2	Vert
									High, 4 DPSK 2Mbps, X axis		
58	14651.283 M Ave	32.2	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	49.8	54.0	-4.2	Vert
									Middle, GFSK 1Mbps, Z axis		

^	14651.283 M	42.4	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	60.0	54.0	+6.0	Vert Middle, GFSK 1Mbps, Z axis
60	14412.873 M Ave	32.3	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	49.8	54.0	-4.2	Vert Low, 4 DPSK 2Mbps, X axis
^	14412.873 M	43.8	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	61.3	54.0	+7.3	Vert Low, 4 DPSK 2Mbps, X axis
^	14412.844 M	43.1	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	60.6	54.0	+6.6	Vert Low, GFSK 1Mbps, Z axis
63	12009.117 M	38.8	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	49.8	54.0	-4.2	Vert Low, 4 DPSK 2Mbps, Y axis
64	12010.700 M	38.7	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	49.7	54.0	-4.3	Vert Low, 4 DPSK 2Mbps, Z axis
65	12400.043 M	38.0	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	49.7	54.0	-4.3	Vert High, 4 DPSK 2Mbps, Z axis
66	12209.618 M	38.5	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	49.7	54.0	-4.3	Vert Middle, 4 DPSK 2Mbps, Y axis
67	4884.368M	50.6	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	49.7	54.0	-4.3	Vert Middle, 4 DPSK 2Mbps, Y axis
68	12008.767 M	38.7	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	49.7	54.0	-4.3	Horiz Low, 8 DPSK 3Mbps, Z axis
69	12010.208 M	38.6	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	49.6	54.0	-4.4	Vert Low, GFSK 1Mbps, Z axis
70	14879.092 M Ave	32.4	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	49.6	54.0	-4.4	Horiz High, 4 DPSK 2Mbps, Y axis
71	14652.183 M Ave	31.9	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	49.6	54.0	-4.4	Horiz Middle, 8 DPSK 3Mbps, X axis

^	14652.183 M	43.8	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	61.5	54.0	+7.5	Horiz	Middle, 8 DPSK 3Mbps, X axis
73	4884.010M	50.4	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	49.5	54.0	-4.5	Vert	Middle, 8 DPSK 3Mbps, X axis
74	12208.817 M	38.3	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	49.5	54.0	-4.5	Vert	Middle, 8 DPSK 3Mbps, Y axis
75	14652.958 M Ave	31.7	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	49.4	54.0	-4.6	Horiz	Middle, GFSK 1Mbps, Y axis
^	14652.958 M	43.1	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	60.8	54.0	+6.8	Horiz	Middle, GFSK 1Mbps, Y axis
77	7206.557M	44.0	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	49.4	54.0	-4.6	Horiz	Low, GFSK 1Mbps, Y axis
78	12009.200 M	38.4	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	49.4	54.0	-4.6	Horiz	Low, 4 DPSK 2Mbps, Y axis
79	14880.842 M Ave	32.1	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	49.3	54.0	-4.7	Horiz	High, 4 DPSK 2Mbps, Z axis
80	12210.278 M	38.1	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	49.3	54.0	-4.7	Vert	Middle, 8 DPSK 3Mbps, X axis
81	9767.258M	39.3	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	49.3	54.0	-4.7	Horiz	Middle, GFSK 1Mbps, Y axis
82	4959.658M	50.2	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	49.2	54.0	-4.8	Horiz	High, 4 DPSK 2Mbps, Z axis
83	4883.613M	50.1	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	49.2	54.0	-4.8	Vert	Middle, 4 DPSK 2Mbps, X axis
84	12209.736 M	38.0	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	49.2	54.0	-4.8	Horiz	Middle, 4 DPSK 2Mbps, Z axis
85	12010.125 M	38.2	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	49.2	54.0	-4.8	Horiz	Low, 4 DPSK 2Mbps, Z axis

86	12009.625 M	38.2	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	49.2	54.0	-4.8	Vert
									Low, 8 DPSK 3Mbps, X axis		
87	7205.687M	41.2	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	49.0	54.0	-5.0	Horiz
									Low, GFSK 1Mbps, X axis		
88	14411.375 M Ave	31.5	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	49.0	54.0	-5.0	Horiz
									Low, 4 DPSK 2Mbps, X axis		
^	14411.375 M	42.6	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	60.1	54.0	+6.1	Horiz
									Low, 4 DPSK 2Mbps, X axis		
90	14410.942 M Ave	31.5	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	49.0	54.0	-5.0	Vert
									Low, 4 DPSK 2Mbps, Y axis		
91	14879.093 M Ave	31.7	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	48.9	54.0	-5.1	Vert
									High, 4 DPSK 2Mbps, Z axis		
92	12400.333 M	37.2	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	48.9	54.0	-5.1	Horiz
									High, GFSK 1Mbps, X axis		
93	14651.745 M Ave	31.3	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	48.9	54.0	-5.1	Vert
									Middle, 8 DPSK 3Mbps, X axis		
^	14651.745 M	43.6	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	61.2	54.0	+7.2	Vert
									Middle, 8 DPSK 3Mbps, X axis		
95	14879.283 M Ave	31.6	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	48.8	54.0	-5.2	Horiz
									High, 8 DPSK 3Mbps, Y axis		
^	14879.283 M	43.9	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	61.1	54.0	+7.1	Horiz
									High, 8 DPSK 3Mbps, Y axis		
97	4883.675M	49.6	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	48.7	54.0	-5.3	Vert
									Middle, 8 DPSK 3Mbps, Y axis		
98	14650.960 M Ave	31.1	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	48.7	54.0	-5.3	Horiz
									Middle, GFSK 1Mbps, Z axis		

99	9920.158M QP	38.4	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	48.7	54.0 High, 8 DPSK 3Mbps, Y axis	-5.3	Horiz
^	9920.158M	43.5	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	53.8	54.0 High, 8 DPSK 3Mbps, Y axis	-0.2	Horiz
101	12009.725 M	37.7	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	48.7	54.0 Low, 4 DPSK 2Mbps, X axis	-5.3	Horiz
102	14653.135 M Ave	31.0	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	48.7	54.0 Middle, 4 DPSK 2Mbps, Y axis	-5.3	Vert
^	14653.135 M	43.3	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	61.0	54.0 Middle, 4 DPSK 2Mbps, Y axis	+7.0	Vert
104	4804.153M	49.4	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	48.6	54.0 Low, 8 DPSK 3Mbps, X axis	-5.4	Vert
105	12210.238 M	37.4	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	48.6	54.0 Middle, 4 DPSK 2Mbps, X axis	-5.4	Horiz
106	7326.300M	43.6	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	48.6	54.0 Middle, GFSK 1Mbps, X axis	-5.4	Vert
107	14652.860 M Ave	30.6	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	48.3	54.0 Middle, GFSK 1Mbps, X axis	-5.7	Vert
^	14652.915 M	45.7	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	63.4	54.0 Middle, 4 DPSK 2Mbps, Z axis	+9.4	Vert
^	14652.860 M	41.8	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	59.5	54.0 Middle, GFSK 1Mbps, X axis	+5.5	Vert
110	12209.883 M	37.1	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	48.3	54.0 Middle, 8 DPSK 3Mbps, X axis	-5.7	Horiz
111	14412.883 M Ave	30.8	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	48.3	54.0 Low, GFSK 1Mbps, Y axis	-5.7	Horiz
112	14880.936 M Ave	31.1	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	48.3	54.0 High, 8 DPSK 3Mbps, Z axis	-5.7	Horiz

113	4959.775M	49.2	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	48.2	54.0 High, 4 DPSK 2Mbps, Y axis	-5.8	Vert
114	12209.758 M	37.0	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	48.2	54.0 Middle, 8 DPSK 3Mbps, Y axis	-5.8	Horiz
115	4803.460M	49.0	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	48.2	54.0 Low, 4 DPSK 2Mbps, X axis	-5.8	Vert
116	4804.342M	48.9	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	48.1	54.0 Low, 4 DPSK 2Mbps, Z axis	-5.9	Horiz
117	4883.892M	49.0	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	48.1	54.0 Middle, 4 DPSK 2Mbps, Z axis	-5.9	Horiz
118	4960.031M	49.1	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	48.1	54.0 High, 8 DPSK 3Mbps, Z axis	-5.9	Horiz
119	7206.033M	42.7	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	48.1	54.0 Low, 8 DPSK 3Mbps, Y axis	-5.9	Horiz
120	7326.625M	43.1	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	48.1	54.0 Middle, GFSK 1Mbps, Y axis	-5.9	Horiz
121	14880.067 M Ave	30.9	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	48.1	54.0 High, 8 DPSK 3Mbps, X axis	-5.9	Vert
^	14880.067 M	43.1	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	60.3	54.0 High, 8 DPSK 3Mbps, X axis	+6.3	Vert
123	7206.080M	42.5	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	47.9	54.0 Low, GFSK 1Mbps, X axis	-6.1	Vert
124	7206.293M	42.5	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	47.9	54.0 Low, 4 DPSK 2Mbps, X axis	-6.1	Vert
125	7205.583M	42.5	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	47.9	54.0 Low, 4 DPSK 2Mbps, Y axis	-6.1	Horiz
126	4804.267M	48.7	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	47.9	54.0 Low, 4 DPSK 2Mbps, Z axis	-6.1	Vert
127	14410.819 M Ave	30.3	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	47.8	54.0 Low, GFSK 1Mbps, Z axis	-6.2	Horiz

^	14410.867 M	46.4	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	63.9	54.0	+9.9	Horiz	Low, 8 DPSK 3Mbps, Z axis
^	14410.750 M	46.4	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	63.9	54.0	+9.9	Horiz	Low, 8 DPSK 3Mbps, Y axis
^	14410.819 M	41.7	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	59.2	54.0	+5.2	Horiz	Low, GFSK 1Mbps, Z axis
131	7326.040M	42.8	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	47.8	54.0	-6.2	Horiz	Middle, GFSK 1Mbps, X axis
132	14652.805 M Ave	30.0	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	47.7	54.0	-6.3	Horiz	Middle, 4 DPSK 2Mbps, X axis
^	14652.805 M	40.3	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	58.0	54.0	+4.0	Horiz	Middle, 4 DPSK 2Mbps, X axis
134	14880.893 M Ave	30.5	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	47.7	54.0	-6.3	Horiz	High, GFSK 1Mbps, Z axis
^	14880.833 M	42.9	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	60.1	54.0	+6.1	Horiz	High, GFSK 1Mbps, Y axis
^	14880.842 M	42.4	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	59.6	54.0	+5.6	Horiz	High, 4 DPSK 2Mbps, Z axis
137	7325.933M	42.5	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	47.5	54.0	-6.5	Vert	Middle, 8 DPSK 3Mbps, X axis
138	4883.917M	48.4	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	47.5	54.0	-6.5	Horiz	Middle, 8 DPSK 3Mbps, Z axis
139	14878.925 M Ave	30.3	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	47.5	54.0	-6.5	Vert	High, 4 DPSK 2Mbps, X axis
140	4803.833M	48.3	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	47.5	54.0	-6.5	Horiz	Low, 4 DPSK 2Mbps, X axis
141	14411.125 M Ave	30.0	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	47.5	54.0	-6.5	Vert	Low, GFSK 1Mbps, X axis

^	14411.117 M	45.2	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	62.7	54.0	+8.7	Vert	Low, 4 DPSK 2Mbps, Z axis
^	14411.125 M	40.2	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	57.7	54.0	+3.7	Vert	Low, GFSK 1Mbps, X axis
144	4804.042M	48.3	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	47.5	54.0	-6.5	Horiz	Low, 8 DPSK 3Mbps, Z axis
145	4884.000M	48.3	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	47.4	54.0	-6.6	Vert	Middle, 8 DPSK 3Mbps, Z axis
146	7325.408M	42.4	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	47.4	54.0	-6.6	Horiz	Middle, 8 DPSK 3Mbps, Y axis
147	7205.608M	41.9	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	47.3	54.0	-6.7	Horiz	Low, GFSK 1Mbps, Z axis
148	14412.883 M Ave	29.8	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	47.3	54.0	-6.7	Horiz	Low, GFSK 1Mbps, X axis
^	14412.883 M	45.4	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	62.9	54.0	+8.9	Horiz	Low, 4 DPSK 2Mbps, Y axis
^	14412.883 M	41.6	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	59.1	54.0	+5.1	Horiz	Low, GFSK 1Mbps, Y axis
^	14412.883 M	39.9	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	57.4	54.0	+3.4	Horiz	Low, GFSK 1Mbps, X axis
152	4959.817M	48.3	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	47.3	54.0	-6.7	Vert	High, 8 DPSK 3Mbps, Y axis
153	7440.020M	42.4	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	47.2	54.0	-6.8	Vert	High, 4 DPSK 2Mbps, X axis
154	7439.742M	42.4	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	47.2	54.0	-6.8	Vert	High, 8 DPSK 3Mbps, X axis
155	7439.183M	42.4	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	47.2	54.0	-6.8	Horiz	High, GFSK 1Mbps, Y axis
156	14881.142 M Ave	30.0	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	47.2	54.0	-6.8	Vert	High, 8 DPSK 3Mbps, Z axis

^	14881.142 M	43.0	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	60.2	54.0	+6.2	Vert High, 8 DPSK 3Mbps, Z axis
158	14413.092 M Ave	29.6	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	47.1	54.0	-6.9	Horiz Low, 8 DPSK 3Mbps, X axis
^	14413.092 M	43.7	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	61.2	54.0	+7.2	Horiz Low, 8 DPSK 3Mbps, X axis
160	7206.213M	41.7	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	47.1	54.0	-6.9	Vert Low, GFSK 1Mbps, Y axis
161	14650.980 M Ave	29.4	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	47.0	54.0	-7.0	Horiz Middle, GFSK 1Mbps, X axis
^	14650.960 M	42.6	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	60.2	54.0	+6.2	Horiz Middle, GFSK 1Mbps, Z axis
^	14650.980 M	41.4	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	59.0	54.0	+5.0	Horiz Middle, GFSK 1Mbps, X axis
164	7205.833M	41.6	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	47.0	54.0	-7.0	Horiz Low, 8 DPSK 3Mbps, X axis
165	4959.437M	48.0	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	47.0	54.0	-7.0	Horiz High, 4 DPSK 2Mbps, Y axis
166	7440.487M	42.2	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	47.0	54.0	-7.0	Vert High, GFSK 1Mbps, X axis
167	4804.360M	47.8	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	47.0	54.0	-7.0	Horiz Low, 8 DPSK 3Mbps, X axis
168	7440.503M	42.1	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	46.9	54.0	-7.1	Horiz High, 4 DPSK 2Mbps, Y axis
169	7206.025M	41.5	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	46.9	54.0	-7.1	Vert Low, 8 DPSK 3Mbps, Z axis
170	7205.650M	41.5	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	46.9	54.0	-7.1	Vert Low, 8 DPSK 3Mbps, X axis
171	14412.556 M Ave	29.4	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	46.9	54.0	-7.1	Vert Low, GFSK 1Mbps, Y axis

^	14412.556 M	40.4	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	57.9	54.0	+3.9	Vert
									Low, GFSK 1Mbps, Y axis		
173	4803.525M	47.6	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	46.8	54.0	-7.2	Horiz
									Low, 4 DPSK 2Mbps, Y axis		
174	4804.230M	47.6	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	46.8	54.0	-7.2	Horiz
									Low, 8 DPSK 3Mbps, Y axis		
175	7439.550M	42.0	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	46.8	54.0	-7.2	Horiz
									High, GFSK 1Mbps, X axis		
176	7205.550M	41.4	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	46.8	54.0	-7.2	Horiz
									Low, 4 DPSK 2Mbps, Z axis		
177	7326.025M	41.8	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	46.8	54.0	-7.2	Horiz
									Middle, 4 DPSK 2Mbps, Y axis		
178	7206.775M	41.4	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	46.8	54.0	-7.2	Vert
									Low, 4 DPSK 2Mbps, Z axis		
179	9767.483M Ave	36.7	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	46.7	54.0	-7.3	Horiz
									Middle, 4 DPSK 2Mbps, Z axis		
^	9767.483M	45.0	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	55.0	54.0	+1.0	Horiz
									Middle, 4 DPSK 2Mbps, Z axis		
181	7439.050M	41.9	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	46.7	54.0	-7.3	Vert
									High, 8 DPSK 3Mbps, Z axis		
182	4803.667M	47.5	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	46.7	54.0	-7.3	Horiz
									Low, GFSK 1Mbps, Z axis		
183	7326.325M	41.6	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	46.6	54.0	-7.4	Vert
									Middle, 8 DPSK 3Mbps, Z axis		
184	7326.575M	41.5	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	46.5	54.0	-7.5	Vert
									Middle, 4 DPSK 2Mbps, X axis		
185	7204.892M	41.1	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	46.5	54.0	-7.5	Vert
									Low, GFSK 1Mbps, Z axis		
186	7439.660M	41.6	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	46.4	54.0	-7.6	Vert
									High, GFSK 1Mbps, Y axis		
187	7206.850M	41.0	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	46.4	54.0	-7.6	Vert
									Low, 4 DPSK 2Mbps, Y axis		
188	7325.663M	41.4	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	46.4	54.0	-7.6	Horiz
									Middle, 8 DPSK 3Mbps, X axis		

189	4959.783M	47.4	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	46.4	54.0 High, 8 DPSK 3Mbps, Y axis	-7.6	Horiz
190	14410.860 M Ave	28.9	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	46.4	54.0 Low, 8 DPSK 3Mbps, Y axis	-7.6	Vert
^	14410.942 M	43.3	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	60.8	54.0 Low, 4 DPSK 2Mbps, Y axis	+6.8	Vert
^	14410.860 M	42.3	+0.0 +0.2	+11.5 +39.4	-35.3	+1.7	+0.0	59.8	54.0 Low, 8 DPSK 3Mbps, Y axis	+5.8	Vert
193	7438.867M	41.6	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	46.4	54.0 High, 8 DPSK 3Mbps, Y axis	-7.6	Horiz
194	4804.130M	47.1	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	46.3	54.0 Low, GFSK 1Mbps, X axis	-7.7	Vert
195	7326.203M	41.3	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	46.3	54.0 Middle, GFSK 1Mbps, Y axis	-7.7	Vert
196	4884.107M	47.2	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	46.3	54.0 Middle, 8 DPSK 3Mbps, X axis	-7.7	Horiz
197	14879.049 M Ave	29.0	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	46.2	54.0 High, GFSK 1Mbps, X axis	-7.8	Vert
^	14879.093 M	42.3	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	59.5	54.0 High, 4 DPSK 2Mbps, Z axis	+5.5	Vert
^	14879.049 M	40.6	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	57.8	54.0 High, GFSK 1Mbps, X axis	+3.8	Vert
200	4884.558M	47.1	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	46.2	54.0 Middle, 4 DPSK 2Mbps, Z axis	-7.8	Vert
201	14878.855 M Ave	28.9	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	46.1	54.0 High, GFSK 1Mbps, Z axis	-7.9	Vert
^	14878.925 M	41.7	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	58.9	54.0 High, 4 DPSK 2Mbps, X axis	+4.9	Vert

^	14878.855 M	40.2	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	57.4	54.0	+3.4	Vert	High, GFSK 1Mbps, Z axis
204	7205.100M	40.7	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	46.1	54.0	-7.9	Horiz	Low, 4 DPSK 2Mbps, X axis
205	7440.042M	41.3	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	46.1	54.0	-7.9	Horiz	High, 8 DPSK 3Mbps, X axis
206	4960.317M	47.0	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	46.0	54.0	-8.0	Vert	High, 8 DPSK 3Mbps, Z axis
207	4883.617M	46.9	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	46.0	54.0	-8.0	Vert	Middle, GFSK 1Mbps, X axis
208	7205.025M	40.6	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	46.0	54.0	-8.0	Horiz	Low, 8 DPSK 3Mbps, Z axis
209	4884.158M	46.8	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	45.9	54.0	-8.1	Horiz	Middle, 4 DPSK 2Mbps, Y axis
210	14650.943 M Ave	28.2	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	45.8	54.0	-8.2	Vert	Middle, GFSK 1Mbps, Y axis
^	14651.025 M	45.1	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	62.7	54.0	+8.7	Vert	Middle, 4 DPSK 2Mbps, X axis
^	14650.943 M	40.6	+0.0 +0.2	+11.6 +39.3	-35.2	+1.7	+0.0	58.2	54.0	+4.2	Vert	Middle, GFSK 1Mbps, Y axis
213	7326.680M	40.8	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	45.8	54.0	-8.2	Horiz	Middle, 4 DPSK 2Mbps, X axis
214	7440.800M	40.9	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	45.7	54.0	-8.3	Horiz	High, 4 DPSK 2Mbps, X axis
215	9608.507M Ave	35.7	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	45.6	54.0	-8.4	Vert	Low, 4 DPSK 2Mbps, X axis
^	9608.507M	45.9	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	55.8	54.0	+1.8	Vert	Low, 4 DPSK 2Mbps, X axis
^	9608.537M	41.3	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	51.2	54.0	-2.8	Vert	Low, GFSK 1Mbps, Y axis
218	4883.617M	46.5	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	45.6	54.0	-8.4	Horiz	Middle, 8 DPSK 3Mbps, Y axis

219	9607.525M Ave	35.6	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	45.5	54.0 Low, 8 DPSK 3Mbps, X axis	-8.5	Horiz
220	14881.025 M Ave	28.2	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	45.4	54.0 High, 4 DPSK 2Mbps, X axis	-8.6	Horiz
221	4959.220M	46.3	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	45.3	54.0 High, 8 DPSK 3Mbps, X axis	-8.7	Horiz
222	14652.700 M Ave	27.5	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	45.2	54.0 Middle, 8 DPSK 3Mbps, Y axis	-8.8	Vert
^	14652.700 M	40.3	+0.0 +0.3	+11.6 +39.3	-35.2	+1.7	+0.0	58.0	54.0 Middle, 8 DPSK 3Mbps, Y axis	+4.0	Vert
224	7325.317M	40.2	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	45.2	54.0 Middle, GFSK 1Mbps, Z axis	-8.8	Vert
225	9768.070M Ave	35.2	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	45.2	54.0 Middle, 8 DPSK 3Mbps, X axis	-8.8	Vert
^	9768.070M	45.7	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	55.7	54.0 Middle, 8 DPSK 3Mbps, X axis	+1.7	Vert
227	14879.289 M Ave	27.7	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	44.9	54.0 High, 4 DPSK 2Mbps, Y axis	-9.1	Vert
^	14879.289 M	38.5	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	55.7	54.0 High, 4 DPSK 2Mbps, Y axis	+1.7	Vert
229	4884.000M	45.8	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	44.9	54.0 Middle, 4 DPSK 2Mbps, X axis	-9.1	Horiz
230	4803.558M	43.7	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	44.8	54.0 Low, GFSK 1Mbps, X axis	-9.2	Horiz
231	9607.792M Ave	34.9	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	44.8	54.0 Low, 8 DPSK 3Mbps, Z axis	-9.2	Vert
^	9607.792M	45.3	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	55.2	54.0 Low, 8 DPSK 3Mbps, Z axis	+1.2	Vert
233	4959.675M	45.8	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	44.8	54.0 High, 4 DPSK 2Mbps, X axis	-9.2	Horiz

234	9768.497M Ave	34.7	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	44.7	54.0	-9.3	Middle, 4 DPSK 2Mbps, X axis	Horiz
235	9768.456M Ave	34.6	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	44.6	54.0	-9.4	Middle, 4 DPSK 2Mbps, Z axis	Vert
236	9607.308M Ave	34.7	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	44.6	54.0	-9.4	Low, 8 DPSK 3Mbps, X axis	Vert
237	14879.054 M Ave	27.2	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	44.4	54.0	-9.6	High, 8 DPSK 3Mbps, X axis	Horiz
^	14879.092 M	44.3	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	61.5	54.0	+7.5	High, 4 DPSK 2Mbps, Y axis	Horiz
^	14879.054 M	40.0	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	57.2	54.0	+3.2	High, 8 DPSK 3Mbps, X axis	Horiz
240	7207.050M	39.0	+0.0 +0.2	+7.8 +33.1	-36.9	+1.2	+0.0	44.4	54.0	-9.6	Low, 8 DPSK 3Mbps, Y axis	Vert
241	4960.090M	45.4	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	44.4	54.0	-9.6	High, GFSK 1Mbps, X axis	Vert
242	9607.400M Ave	34.4	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	44.3	54.0	-9.7	Low, 4 DPSK 2Mbps, Z axis	Vert
^	9607.308M	46.0	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	55.9	54.0	+1.9	Low, 8 DPSK 3Mbps, X axis	Vert
^	9607.400M	42.8	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	52.7	54.0	-1.3	Low, 4 DPSK 2Mbps, Z axis	Vert
^	9607.408M	41.9	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	51.8	54.0	-2.2	Low, 8 DPSK 3Mbps, Y axis	Vert
^	9607.483M	40.9	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	50.8	54.0	-3.2	Low, GFSK 1Mbps, Z axis	Vert
247	9767.842M Ave	34.3	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	44.3	54.0	-9.7	Middle, 8 DPSK 3Mbps, Z axis	Horiz
^	9767.842M	44.2	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	54.2	54.0	+0.2	Middle, 8 DPSK 3Mbps, Z axis	Horiz
249	9768.300M Ave	34.3	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	44.3	54.0	-9.7	Middle, 8 DPSK 3Mbps, Z axis	Vert

250	4959.777M	45.3	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	44.3	54.0	-9.7	Horiz High, GFSK 1Mbps, Z axis
251	4959.492M	45.2	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	44.2	54.0	-9.8	Vert High, 4 DPSK 2Mbps, Z axis
252	9920.575M Ave	33.9	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	44.2	54.0	-9.8	Horiz High, 4 DPSK 2Mbps, Z axis
253	4803.942M	45.0	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	44.2	54.0	-9.8	Horiz Low, GFSK 1Mbps, Y axis
254	14880.549 M Ave	27.0	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	44.2	54.0	-9.8	Vert High, GFSK 1Mbps, Y axis
^	14880.549 M	38.6	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	55.8	54.0	+1.8	Vert High, GFSK 1Mbps, Y axis
256	4884.400M	45.0	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	44.1	54.0	-9.9	Horiz Middle, GFSK 1Mbps, Z axis
257	9920.225M Ave	33.8	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	44.1	54.0	-9.9	Vert High, 8 DPSK 3Mbps, X axis
^	9920.225M	44.2	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	54.5	54.0	+0.5	Vert High, 8 DPSK 3Mbps, X axis
259	7325.733M	39.1	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	44.1	54.0	-9.9	Vert Middle, 4 DPSK 2Mbps, Z axis
260	9920.656M Ave	33.7	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	44.0	54.0	-10.0	Vert High, 4 DPSK 2Mbps, Y axis
261	4883.807M	44.9	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	44.0	54.0	-10.0	Vert Middle, GFSK 1Mbps, Y axis
262	4804.053M	44.7	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	43.9	54.0	-10.1	Vert Low, GFSK 1Mbps, Y axis
263	9608.092M Ave	34.0	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	43.9	54.0	-10.1	Horiz Low, 8 DPSK 3Mbps, Y axis
^	9608.092M	43.7	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	53.6	54.0	-0.4	Horiz Low, 8 DPSK 3Mbps, Y axis
265	4960.063M	44.9	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	43.9	54.0	-10.1	Horiz High, GFSK 1Mbps, X axis

266	9607.458M Ave	34.0	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	43.9	54.0 Low, 4 DPSK 2Mbps, X axis	-10.1	Horiz
267	4960.417M	44.9	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	43.9	54.0 High, GFSK 1Mbps, Y axis	-10.1	Vert
268	14880.947 M Ave	26.5	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	43.7	54.0 High, GFSK 1Mbps, X axis	-10.3	Horiz
^	14880.936 M	42.8	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	60.0	54.0 High, 8 DPSK 3Mbps, Z axis	+6.0	Horiz
^	14880.893 M	39.5	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	56.7	54.0 High, GFSK 1Mbps, Z axis	+2.7	Horiz
^	14880.947 M	38.8	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	56.0	54.0 High, GFSK 1Mbps, X axis	+2.0	Horiz
^	14881.025 M	38.3	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	55.5	54.0 High, 4 DPSK 2Mbps, X axis	+1.5	Horiz
273	7325.775M	38.7	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	43.7	54.0 Middle, 4 DPSK 2Mbps, Z axis	-10.3	Horiz
274	9607.517M Ave	33.6	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	43.5	54.0 Low, 4 DPSK 2Mbps, Y axis	-10.5	Horiz
^	9607.525M	46.0	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	55.9	54.0 Low, 8 DPSK 3Mbps, X axis	+1.9	Horiz
^	9607.458M	44.4	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	54.3	54.0 Low, 4 DPSK 2Mbps, X axis	+0.3	Horiz
^	9607.517M	43.9	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	53.8	54.0 Low, 4 DPSK 2Mbps, Y axis	-0.2	Horiz
278	12400.624 M Ave	31.7	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	43.4	54.0 High, GFSK 1Mbps, Y axis	-10.6	Vert
^	12400.624 M	41.9	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	53.6	54.0 High, GFSK 1Mbps, Y axis	-0.4	Vert
280	9608.517M Ave	33.4	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	43.3	54.0 Low, 4 DPSK 2Mbps, Z axis	-10.7	Horiz

281	14880.958 M Ave	26.0	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	43.2	54.0	-10.8	Vert High, 8 DPSK 3Mbps, Y axis
^	14880.958 M	39.0	+0.0 +0.3	+11.5 +38.8	-35.1	+1.7	+0.0	56.2	54.0	+2.2	Vert High, 8 DPSK 3Mbps, Y axis
283	7440.933M	38.4	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	43.2	54.0	-10.8	Vert High, 4 DPSK 2Mbps, Z axis
284	7325.583M	38.2	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	43.2	54.0	-10.8	Horiz Middle, 8 DPSK 3Mbps, Z axis
285	9919.542M Ave	32.8	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	43.1	54.0	-10.9	Vert High, 4 DPSK 2Mbps, X axis
^	9919.542M	43.6	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	53.9	54.0	-0.1	Vert High, 4 DPSK 2Mbps, X axis
287	4883.375M	44.0	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	43.1	54.0	-10.9	Horiz Middle, GFSK 1Mbps, Y axis
288	9768.692M Ave	33.0	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	43.0	54.0	-11.0	Horiz Middle, 8 DPSK 3Mbps, X axis
^	9768.692M	44.8	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	54.8	54.0	+0.8	Horiz Middle, 8 DPSK 3Mbps, X axis
290	7438.925M	38.2	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	43.0	54.0	-11.0	Vert High, GFSK 1Mbps, Z axis
291	9919.284M Ave	32.6	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	42.9	54.0	-11.1	Vert High, 4 DPSK 2Mbps, Z axis
^	9919.284M	42.6	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	52.9	54.0	-1.1	Vert High, 4 DPSK 2Mbps, Z axis
293	9768.442M Ave	32.9	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	42.9	54.0	-11.1	Vert Middle, 4 DPSK 2Mbps, X axis
^	9768.358M	41.1	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	51.1	54.0	-2.9	Vert Middle, GFSK 1Mbps, Z axis
295	12210.660 M Ave	31.7	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	42.9	54.0	-11.1	Vert Middle, GFSK 1Mbps, Y axis
^	12210.660 M	42.5	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	53.7	54.0	-0.3	Vert Middle, GFSK 1Mbps, Y axis

^	12210.625 M	38.8	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	50.0	54.0	-4.0	Vert Middle, 8 DPSK 3Mbps, Z axis
298	4959.692M	43.8	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	42.8	54.0	-11.2	Horiz High, GFSK 1Mbps, Y axis
299	9920.033M Ave	32.5	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	42.8	54.0	-11.2	Vert High, 8 DPSK 3Mbps, Y axis
^	9920.033M	43.6	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	53.9	54.0	-0.1	Vert High, 8 DPSK 3Mbps, Y axis
301	7326.109M	37.8	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	42.8	54.0	-11.2	Horiz Middle, GFSK 1Mbps, Z axis
302	9608.608M Ave	32.7	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	42.6	54.0	-11.4	Horiz Low, 8 DPSK 3Mbps, Z axis
303	9919.921M Ave	32.3	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	42.6	54.0	-11.4	Horiz High, 8 DPSK 3Mbps, X axis
^	9919.921M	44.4	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	54.7	54.0	+0.7	Horiz High, 8 DPSK 3Mbps, X axis
305	4884.640M	43.4	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	42.5	54.0	-11.5	Horiz Middle, GFSK 1Mbps, X axis
306	4804.192M	43.3	+0.0 +0.1	+6.1 +29.9	-37.8	+0.9	+0.0	42.5	54.0	-11.5	Vert Low, GFSK 1Mbps, Z axis
307	4959.875M	43.5	+0.0 +0.1	+6.0 +30.1	-38.1	+0.9	+0.0	42.5	54.0	-11.5	Vert High, GFSK 1Mbps, Z axis
308	9920.611M Ave	32.1	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	42.4	54.0	-11.6	Horiz High, 8 DPSK 3Mbps, Z axis
^	9920.575M	43.9	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	54.2	54.0	+0.2	Horiz High, 4 DPSK 2Mbps, Z axis
^	9920.611M	43.5	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	53.8	54.0	-0.2	Horiz High, 8 DPSK 3Mbps, Z axis
^	9920.575M	41.1	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	51.4	54.0	-2.6	Horiz High, GFSK 1Mbps, Z axis
312	7439.769M	37.5	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	42.3	54.0	-11.7	Horiz High, 8 DPSK 3Mbps, Z axis
313	9920.758M Ave	31.9	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	42.2	54.0	-11.8	Horiz High, 4 DPSK 2Mbps, Y axis

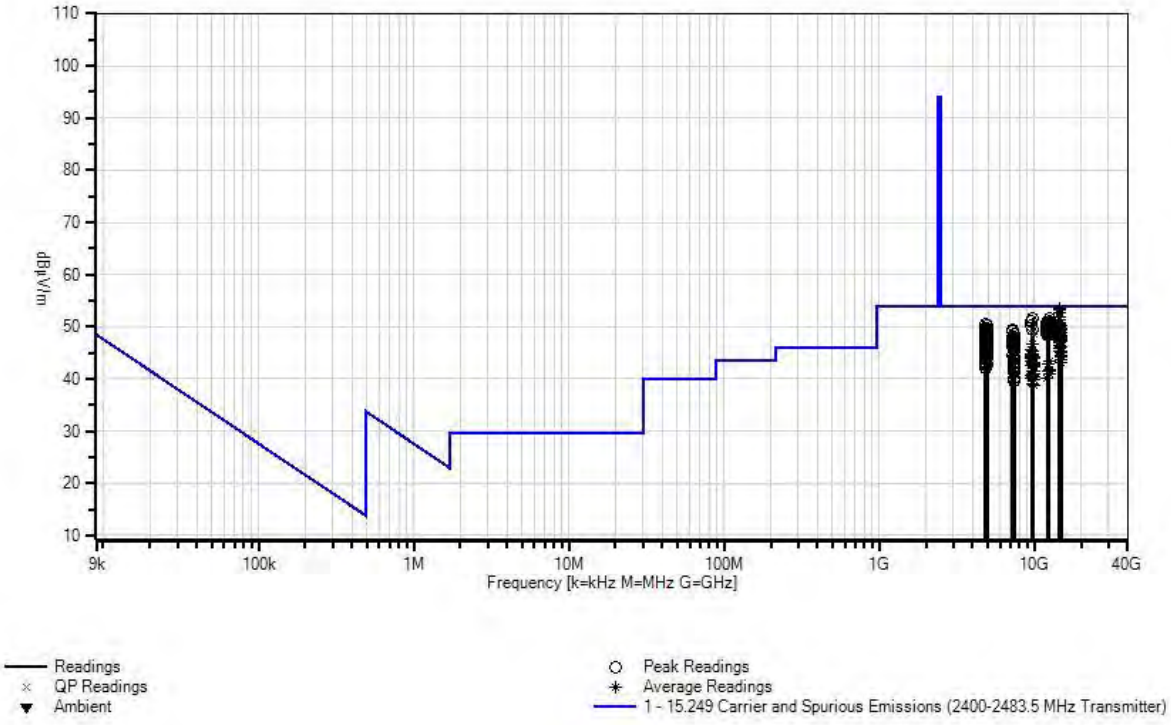
	^	9920.758M	43.1	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	53.4	54.0 High, 4 DPSK 2Mbps, Y axis	-0.6	Horiz
315		7439.797M	37.1	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	41.9	54.0 High, GFSK 1Mbps, Z axis	-12.1	Horiz
316		4884.158M	42.8	+0.0 +0.2	+6.0 +30.0	-38.0	+0.9	+0.0	41.9	54.0 Middle, GFSK 1Mbps, Z axis	-12.1	Vert
317		12399.178 M Ave	30.1	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	41.8	54.0 High, GFSK 1Mbps, X axis	-12.2	Vert
	^	12399.178 M	41.1	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	52.8	54.0 High, GFSK 1Mbps, X axis	-1.2	Vert
319		12400.785 M Ave	29.8	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	41.5	54.0 High, GFSK 1Mbps, Z axis	-12.5	Horiz
	^	12400.785 M	41.6	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	53.3	54.0 High, GFSK 1Mbps, Z axis	-0.7	Horiz
	^	12400.692 M	38.9	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	50.6	54.0 High, 4 DPSK 2Mbps, Z axis	-3.4	Horiz
322		9919.467M Ave	31.2	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	41.5	54.0 High, 4 DPSK 2Mbps, X axis	-12.5	Horiz
323		7326.033M	36.5	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	41.5	54.0 Middle, 8 DPSK 3Mbps, Y axis	-12.5	Vert
324		9768.718M Ave	31.5	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	41.5	54.0 Middle, 4 DPSK 2Mbps, Y axis	-12.5	Vert
	^	9768.718M	42.2	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	52.2	54.0 Middle, 4 DPSK 2Mbps, Y axis	-1.8	Vert
326		12210.727 M Ave	30.2	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	41.4	54.0 Middle, GFSK 1Mbps, Z axis	-12.6	Horiz
	^	12210.727 M	41.6	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	52.8	54.0 Middle, GFSK 1Mbps, Z axis	-1.2	Horiz

^	12210.788 M	37.5	+0.0 +0.2	+10.4 +35.7	-36.6	+1.5	+0.0	48.7	54.0	-5.3	Horiz	Middle, GFSK 1Mbps, X axis
329	7440.258M	36.5	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	41.3	54.0	-12.7	Horiz	High, 4 DPSK 2Mbps, Z axis
330	9920.667M Ave	30.7	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	41.0	54.0	-13.0	Vert	High, 8 DPSK 3Mbps, Z axis
331	12399.158 M Ave	29.3	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	41.0	54.0	-13.0	Horiz	High, GFSK 1Mbps, Y axis
^	12399.158 M	40.4	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	52.1	54.0	-1.9	Horiz	High, GFSK 1Mbps, Y axis
^	12399.246 M	38.6	+0.0 +0.4	+10.5 +35.8	-36.5	+1.5	+0.0	50.3	54.0	-3.7	Horiz	High, 8 DPSK 3Mbps, X axis
334	9768.582M Ave	30.9	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	40.9	54.0	-13.1	Horiz	Middle, GFSK 1Mbps, Z axis
335	9768.227M Ave	30.8	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	40.8	54.0	-13.2	Vert	Middle, GFSK 1Mbps, Y axis
^	9768.300M	45.3	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	55.3	54.0	+1.3	Vert	Middle, 8 DPSK 3Mbps, Z axis
^	9768.227M	42.5	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	52.5	54.0	-1.5	Vert	Middle, GFSK 1Mbps, Y axis
338	9767.275M Ave	30.7	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	40.7	54.0	-13.3	Vert	Middle, 8 DPSK 3Mbps, Y axis
^	9767.275M	42.2	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	52.2	54.0	-1.8	Vert	Middle, 8 DPSK 3Mbps, Y axis
340	9607.658M Ave	30.7	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	40.6	54.0	-13.4	Vert	Low, 4 DPSK 2Mbps, Y axis
^	9607.658M	42.2	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	52.1	54.0	-1.9	Vert	Low, 4 DPSK 2Mbps, Y axis
342	9768.493M Ave	30.5	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	40.5	54.0	-13.5	Vert	Middle, GFSK 1Mbps, X axis
^	9768.456M	42.9	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	52.9	54.0	-1.1	Vert	Middle, 4 DPSK 2Mbps, Z axis

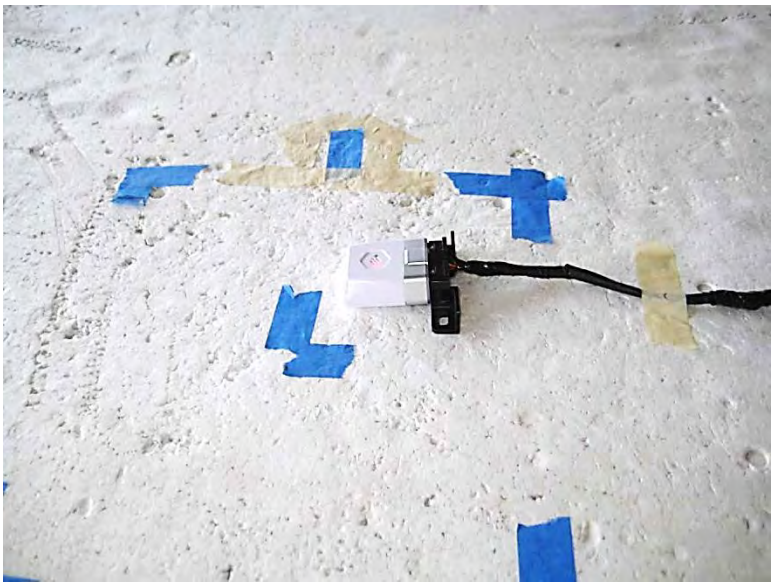
^	9768.493M	42.1	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	52.1	54.0	-1.9	Middle, GFSK 1Mbps, X axis	Vert
^	9768.442M	42.0	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	52.0	54.0	-2.0	Middle, 4 DPSK 2Mbps, X axis	Vert
346	9919.743M Ave	30.2	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	40.5	54.0	-13.5	High, GFSK 1Mbps, Y axis	Vert
^	9919.743M	42.3	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	52.6	54.0	-1.4	High, GFSK 1Mbps, Y axis	Vert
348	9608.583M Ave	27.6	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	40.2	54.0	-13.8	Low, GFSK 1Mbps, X axis	Horiz
^	9608.517M	43.6	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	53.5	54.0	-0.5	Low, 4 DPSK 2Mbps, Z axis	Horiz
^	9608.608M	43.2	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	53.1	54.0	-0.9	Low, 8 DPSK 3Mbps, Z axis	Horiz
^	9608.583M	38.6	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	51.2	54.0	-2.8	Low, GFSK 1Mbps, X axis	Horiz
^	9608.569M	40.6	+0.0 +0.0	+9.0 +35.6	-36.1	+1.4	+0.0	50.5	54.0	-3.5	Low, GFSK 1Mbps, Z axis	Horiz
353	7326.409M	35.1	+0.0 +0.2	+7.8 +33.2	-37.4	+1.2	+0.0	40.1	54.0	-13.9	Middle, 4 DPSK 2Mbps, Y axis	Vert
354	12010.031 M Ave	29.0	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	40.0	54.0	-14.0	Low, GFSK 1Mbps, Y axis	Vert
^	12010.031 M	42.2	+0.0 +0.0	+10.4 +35.6	-36.5	+1.5	+0.0	53.2	54.0	-0.8	Low, GFSK 1Mbps, Y axis	Vert
356	7439.762M	35.2	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	40.0	54.0	-14.0	High, 4 DPSK 2Mbps, Y axis	Vert
357	9920.586M Ave	29.6	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	39.9	54.0	-14.1	High, GFSK 1Mbps, X axis	Vert
^	9920.656M	45.5	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	55.8	54.0	+1.8	High, 4 DPSK 2Mbps, Y axis	Vert
^	9920.667M	42.9	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	53.2	54.0	-0.8	High, 8 DPSK 3Mbps, Z axis	Vert

^	9920.586M	41.8	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	52.1	54.0	-1.9	High, GFSK 1Mbps, X axis	Vert
^	9920.542M	41.1	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	51.4	54.0	-2.6	High, GFSK 1Mbps, Z axis	Vert
362	7441.592M	34.7	+0.0 +0.1	+7.8 +33.2	-37.5	+1.2	+0.0	39.5	54.0	-14.5	High, 8 DPSK 3Mbps, Y axis	Vert
363	9768.513M Ave	29.1	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	39.1	54.0	-14.9	Middle, GFSK 1Mbps, X axis	Horiz
^	9768.497M	44.0	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	54.0	54.0	+0.0	Middle, 4 DPSK 2Mbps, X axis	Horiz
^	9768.582M	42.3	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	52.3	54.0	-1.7	Middle, GFSK 1Mbps, Z axis	Horiz
^	9768.513M	41.7	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	51.7	54.0	-2.3	Middle, GFSK 1Mbps, X axis	Horiz
^	9768.550M	41.4	+0.0 +0.2	+9.0 +35.8	-36.4	+1.4	+0.0	51.4	54.0	-2.6	Middle, 4 DPSK 2Mbps, Y axis	Horiz
368	9919.517M Ave	28.4	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	38.7	54.0	-15.3	High, GFSK 1Mbps, X axis	Horiz
^	9919.467M	42.1	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	52.4	54.0	-1.6	High, 4 DPSK 2Mbps, X axis	Horiz
^	9919.517M	40.1	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	50.4	54.0	-3.6	High, GFSK 1Mbps, X axis	Horiz
^	9919.533M	39.5	+0.0 +0.1	+9.1 +36.0	-36.3	+1.4	+0.0	49.8	54.0	-4.2	High, GFSK 1Mbps, Y axis	Horiz

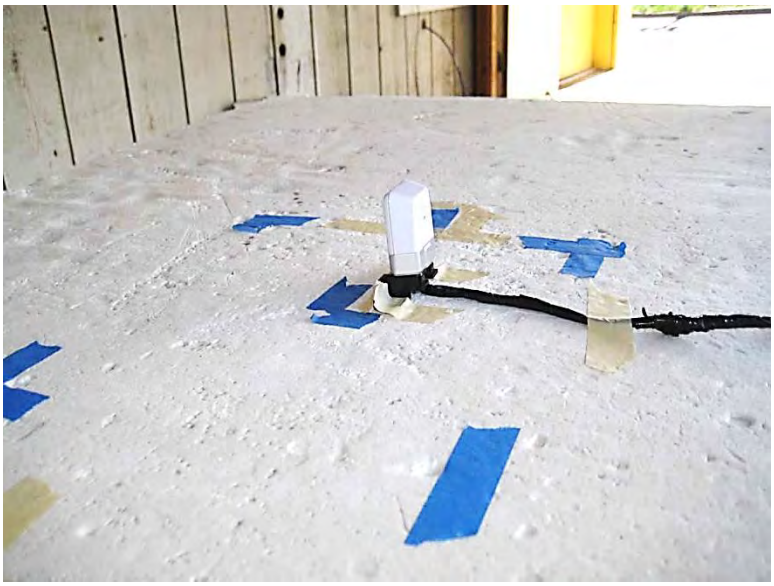
CKC Laboratories, Inc Date: 2/27/2015 Time: 13:54:46 Automatic Labs WO#: 96788
Test Distance: 3 Meters Sequence#: 2



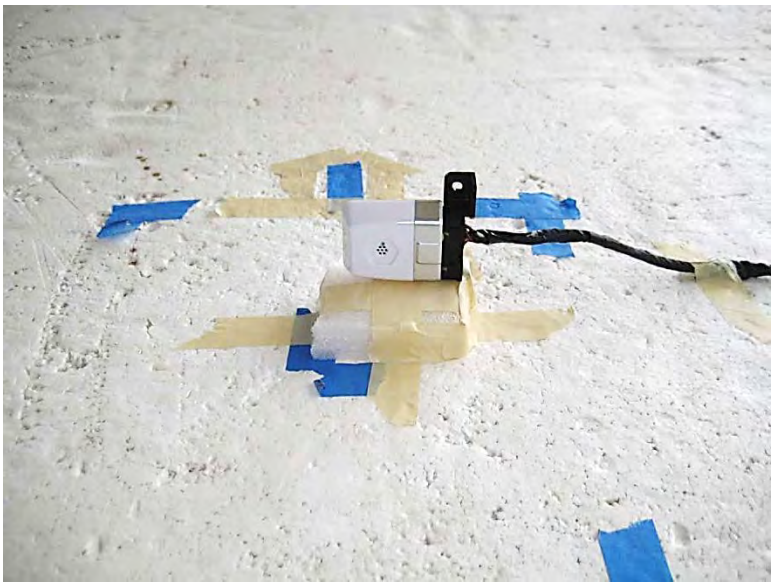
Test Setup Photos



X Axis



Y Axis



Z Axis

15.249(d) Spurious Emissions and Band Edge

Test Conditions / Setup / Data

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • (714) 993-6112

Customer: **Automatic Labs**
Specification: **15.249(d) / 15.209 Radiated Spurious Emissions**
Work Order #: **96788** Date: 3/2/2015
Test Type: **Maximized Emissions** Time: 16:17:45
Equipment: **OBD-II to Bluetooth Bridge Device** Sequence#: 3
Manufacturer: Automatic Labs Tested By: S. Yamamoto
Model: Link2
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02672	Spectrum Analyzer	E4446A	8/14/2013	8/14/2015
	ANP06661	Cable	LDF1-50	4/15/2014	4/15/2016
	AN00786	Preamp	83017A	4/25/2014	4/25/2016
	ANP06544	Cable	32026-29094K-29094K-36TC	11/20/2013	11/20/2015
	AN03385	High Pass Filter	11SH10-3000/T10000-O/O	6/5/2013	6/5/2015
	AN00849	Horn Antenna	3115	3/18/2014	3/18/2016
	AN00309	Preamp	8447D	3/12/2014	3/12/2016
	AN01995	Biconilog Antenna	CBL6111C	4/30/2014	4/30/2016
	ANP05050	Cable	RG223/U	1/15/2015	1/15/2017
	ANP05198	Cable-Amplitude 15 to 45degC (dB)	8268	12/22/2014	12/22/2016
	AN00314	Loop Antenna	6502	7/2/2014	7/2/2016
T1	AN02869	Spectrum Analyzer	E4440A	7/10/2014	7/10/2015
	AN01413	Horn Antenna	84125-80008	11/25/2014	11/25/2016
	AN00787	Preamp	83017A	5/31/2013	5/31/2015
	AN02945	Cable	32022-2-2909K-36TC	10/30/2013	10/30/2015
T2	ANP05555	Cable	RG223/U	5/7/2014	5/7/2016
T3	AN00010	Preamp	8447D	3/12/2014	3/12/2016
T4	ANP04382	Cable	LDF-50	7/30/2014	7/30/2016
T5	ANP05569	Cable	RG-214/U	5/7/2014	5/7/2016
T6	AN00851	Biconilog Antenna	CBL6111C	4/30/2014	4/30/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
OBD-II to Bluetooth Bridge Device*	Automatic Labs	Link2	NA

Support Devices:

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	6306D	988614

Test Conditions / Notes:

The equipment under test (EUT) is a standalone on the Styrofoam table top.
The EUT is connected to a remotely located DC power supply.

The DC power supply is providing 12.0VDC to the EUT.
The DC power supply is providing the nominal 12.0VDC to the EUT and is used in place of a battery which would be used in the actual installation.
The EUT low, middle and high channels are 2402MHz, 2442MHz, and 2480MHz.
Modulation types are GFSK 1Mbps, 4 DPSK 2Mbps, and 8 DPSK 3Mbps.
Data sheet contains the measurement of the spurious emissions amplitude of the EUT.
The EUT is transmitting continuously.
The emission levels reported in this data are representative of worst case emissions.

Temperature: 18°C
Relative Humidity: 45%
Pressure: 100kPa

Frequency range of data sheet 9kHz to 25GHz.
9kHz to 150kHz RBW=VBW=200Hz.
150kHz to 30MHz RBW=VBW=9kHz.
30MHz to 1000MHz RBW=VBW=120kHz.
1000MHz to 25000MHz RBW=VBW=1MHz.

Rated EUT RF output power: +2dBm
Data was maximized with EUT in each of three axis systems (X, Y, Z) and with each of the three modulation types.

Site A and D
Test method used ANSI C63.4 (2003)

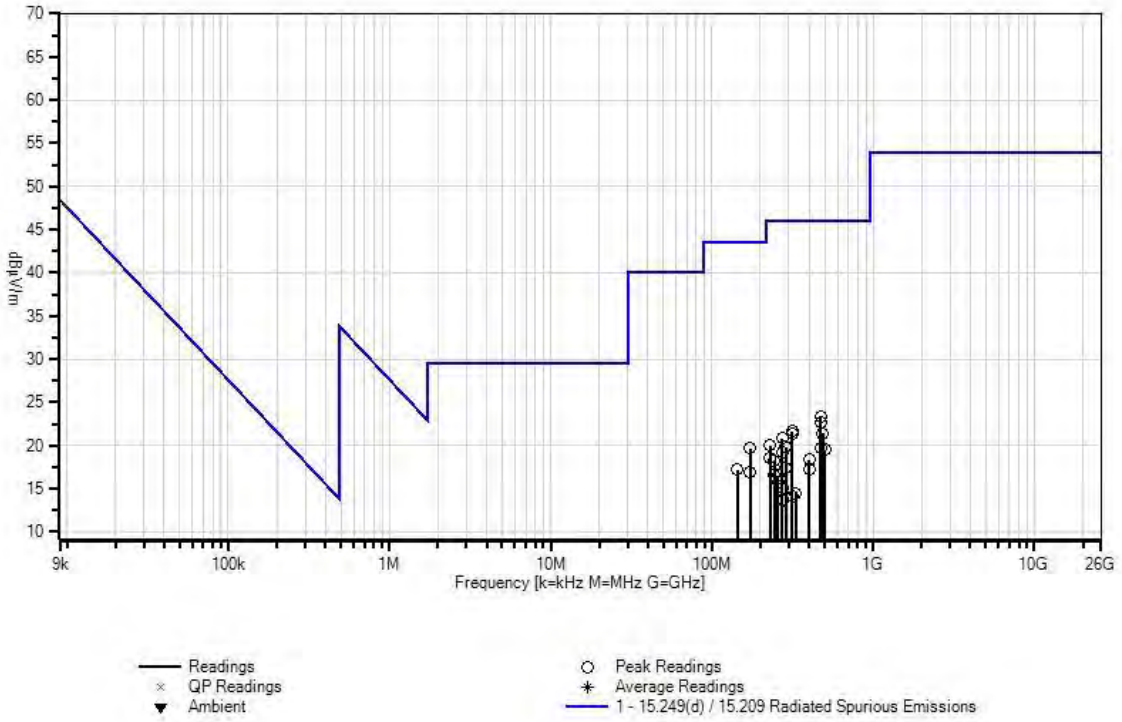
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	472.506M	28.6	+0.0 +2.3	+0.4 +17.4	-27.7	+2.4	+0.0	23.4	46.0	-22.6	Horiz
2	472.507M	27.9	+0.0 +2.3	+0.4 +17.4	-27.7	+2.4	+0.0	22.7	46.0	-23.3	Vert
3	171.821M	34.0	+0.0 +1.3	+0.2 +9.5	-26.8	+1.5	+0.0	19.7	43.5	-23.8	Vert
4	315.004M	30.4	+0.0 +1.8	+0.3 +13.8	-26.6	+2.0	+0.0	21.7	46.0	-24.3	Vert
5	486.823M	26.2	+0.0 +2.4	+0.4 +17.6	-27.7	+2.5	+0.0	21.4	46.0	-24.6	Vert
6	315.000M	30.0	+0.0 +1.8	+0.3 +13.8	-26.6	+2.0	+0.0	21.3	46.0	-24.7	Vert
7	272.049M	30.7	+0.0 +1.7	+0.2 +12.9	-26.5	+1.8	+0.0	20.8	46.0	-25.2	Vert
8	229.094M	32.0	+0.0 +1.5	+0.2 +11.2	-26.6	+1.7	+0.0	20.0	46.0	-26.0	Vert

9	286.367M	29.5	+0.0 +1.7	+0.3 +13.1	-26.5	+1.8	+0.0	19.9	46.0	-26.1	Horiz
10	143.182M	30.0	+0.0 +1.2	+0.2 +11.4	-26.9	+1.3	+0.0	17.2	43.5	-26.3	Vert
11	472.506M	24.9	+0.0 +2.3	+0.4 +17.4	-27.7	+2.4	+0.0	19.7	46.0	-26.3	Horiz
12	501.143M	24.2	+0.0 +2.4	+0.4 +17.8	-27.8	+2.5	+0.0	19.5	46.0	-26.5	Horiz
13	171.820M	31.2	+0.0 +1.3	+0.2 +9.5	-26.8	+1.5	+0.0	16.9	43.5	-26.6	Horiz
14	272.049M	29.1	+0.0 +1.7	+0.2 +12.9	-26.5	+1.8	+0.0	19.2	46.0	-26.8	Horiz
15	229.094M	30.6	+0.0 +1.5	+0.2 +11.2	-26.6	+1.7	+0.0	18.6	46.0	-27.4	Vert
16	243.412M	29.0	+0.0 +1.6	+0.2 +12.2	-26.5	+1.8	+0.0	18.3	46.0	-27.7	Vert
17	400.916M	24.8	+0.0 +2.1	+0.3 +16.1	-27.2	+2.2	+0.0	18.3	46.0	-27.7	Vert
18	286.368M	27.0	+0.0 +1.7	+0.3 +13.1	-26.5	+1.8	+0.0	17.4	46.0	-28.6	Horiz
19	286.368M	27.0	+0.0 +1.7	+0.3 +13.1	-26.5	+1.8	+0.0	17.4	46.0	-28.6	Vert
20	400.914M	23.8	+0.0 +2.1	+0.3 +16.1	-27.2	+2.2	+0.0	17.3	46.0	-28.7	Horiz
21	243.413M	27.4	+0.0 +1.6	+0.2 +12.2	-26.5	+1.8	+0.0	16.7	46.0	-29.3	Horiz
22	257.731M	26.8	+0.0 +1.6	+0.2 +12.7	-26.5	+1.8	+0.0	16.6	46.0	-29.4	Vert
23	257.731M	26.0	+0.0 +1.6	+0.2 +12.7	-26.5	+1.8	+0.0	15.8	46.0	-30.2	Vert
24	272.049M	25.1	+0.0 +1.7	+0.2 +12.9	-26.5	+1.8	+0.0	15.2	46.0	-30.8	Horiz
25	272.048M	25.0	+0.0 +1.7	+0.2 +12.9	-26.5	+1.8	+0.0	15.1	46.0	-30.9	Vert
26	329.323M	22.8	+0.0 +1.9	+0.3 +14.2	-26.7	+2.0	+0.0	14.5	46.0	-31.5	Horiz
27	315.004M	22.8	+0.0 +1.8	+0.3 +13.8	-26.6	+2.0	+0.0	14.1	46.0	-31.9	Horiz
28	272.049M	23.7	+0.0 +1.7	+0.2 +12.9	-26.5	+1.8	+0.0	13.8	46.0	-32.2	Horiz
29	272.049M	23.5	+0.0 +1.7	+0.2 +12.9	-26.5	+1.8	+0.0	13.6	46.0	-32.4	Vert

CKC Laboratories, Inc Date: 3/2/2015 Time: 16:17:45 Automatic Labs WO#: 96788
Test Distance: 3 Meters Sequence#: 3



Band Edge

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Pl. • Brea, CA 92823 • (714) 993-6112

Customer: **Automatic Labs**
Specification: **ITU-R 55/1 Band Edge Compliance (2400-2483.5 MHz Transmitter)**
Work Order #: **96788** Date: 2/27/2015
Test Type: **Maximized Emissions**
Equipment: **OBD-II to Bluetooth Bridge Device**
Manufacturer: Automatic Labs Tested By: S. Yamamoto
Model: Link2
S/N: NA

***Test Equipment*:**

Asset #	Description	Model	Calibration Date	Cal Due Date
AN02672	Spectrum Analyzer	E4446A	8/14/2013	8/14/2015
ANP05421	Cable	Sucoflex 104A	1/8/2014	1/8/2016
ANP06661	Cable	LDF1-50	4/15/2014	4/15/2016
AN00849	Horn Antenna	3115	3/18/2014	3/18/2016

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
OBD-II to Bluetooth Bridge Device*	Automatic Labs	Link2	NA

Support Devices:

Function	Manufacturer	Model #	S/N
AC to 12VDC Power Supply	ZW	ZW12V3A25RD	NA

Test Conditions / Notes:

The equipment under test (EUT) is a stand-alone on the Styrofoam table top.
The EUT is connected to a remotely located AC to 12VDC power adapter.

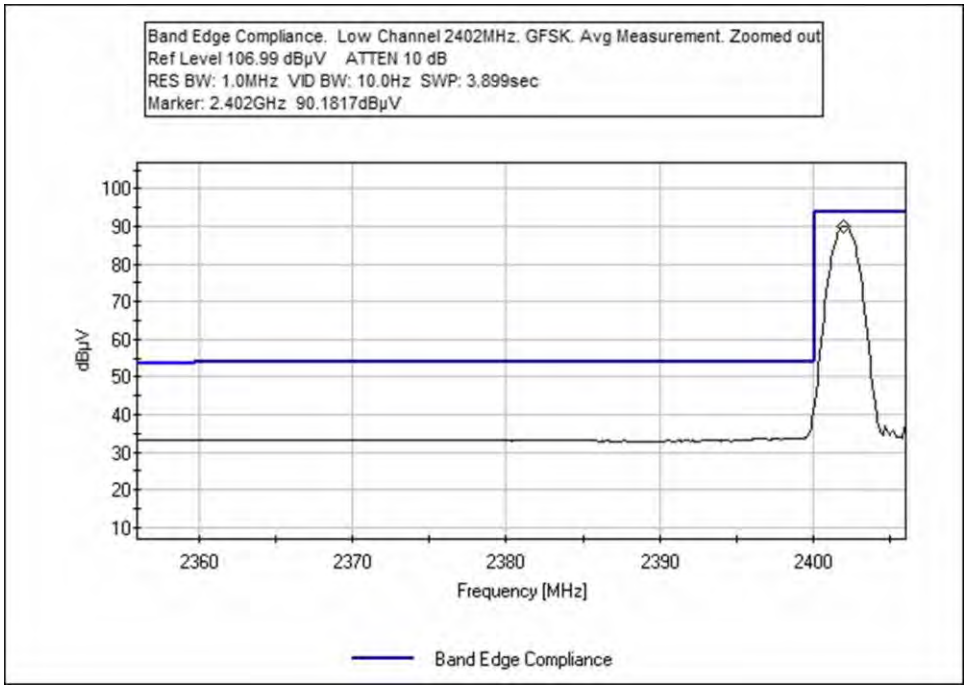
The EUT low and high channels (and data sheet test frequencies) are 2402MHz and 2480MHz.
Modulation types are GFSK 1Mbps, 4 DPSK 2Mbps, and 8 DPSK 3Mbps.
Data captures from the spectrum analyzer contain the Band Edge measurement of the EUT.
The EUT is transmitting continuously.

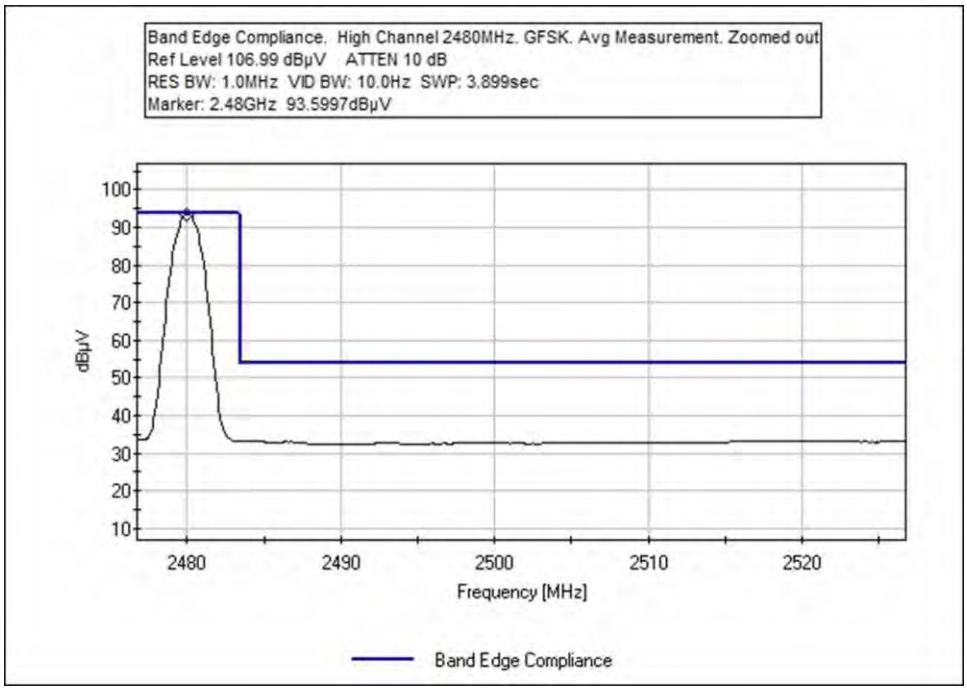
Temperature: 19°C
Relative Humidity: 44%
Pressure: 100kPa

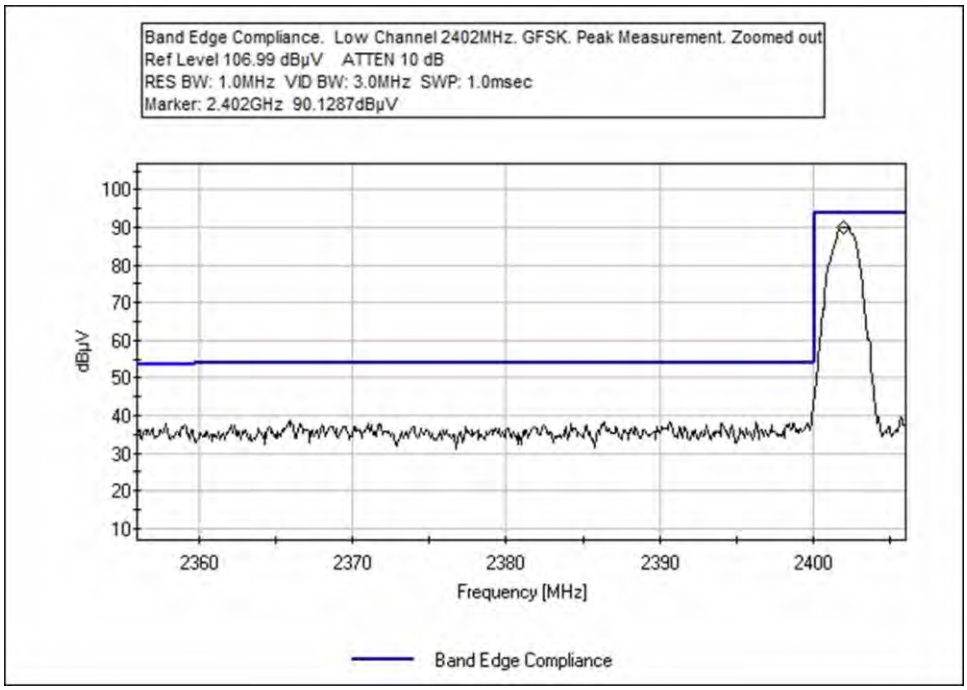
Frequency range of data is 2400MHz to 2483.5MHz.
RBW=1MHz and VBW=3MHz for peak
RBW=1MHz and VBW=10Hz for average
Rated EUT RF output power: +2dBm

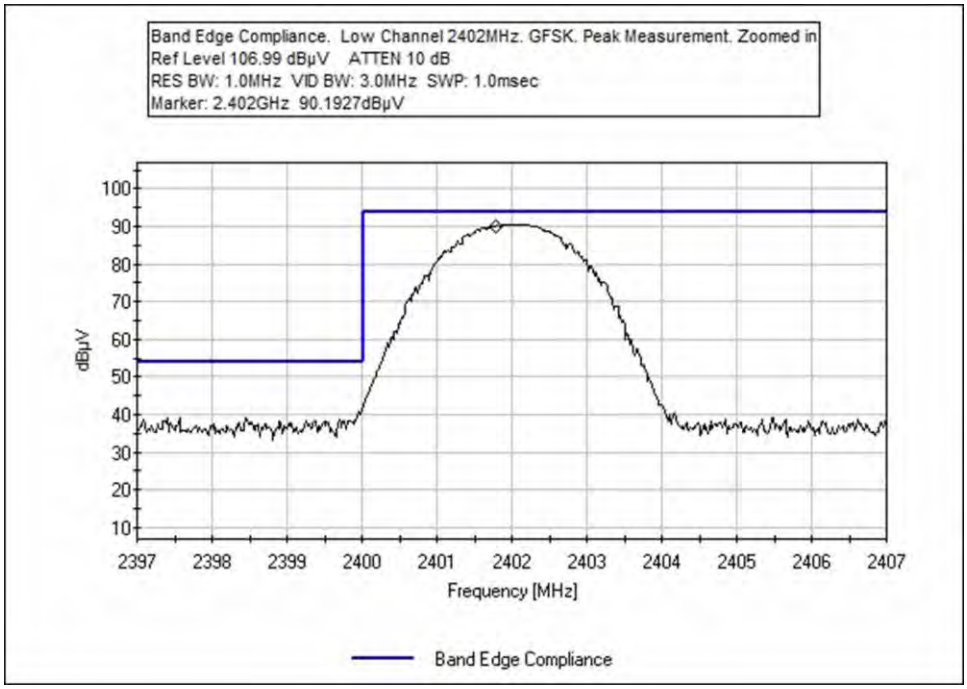
Site A

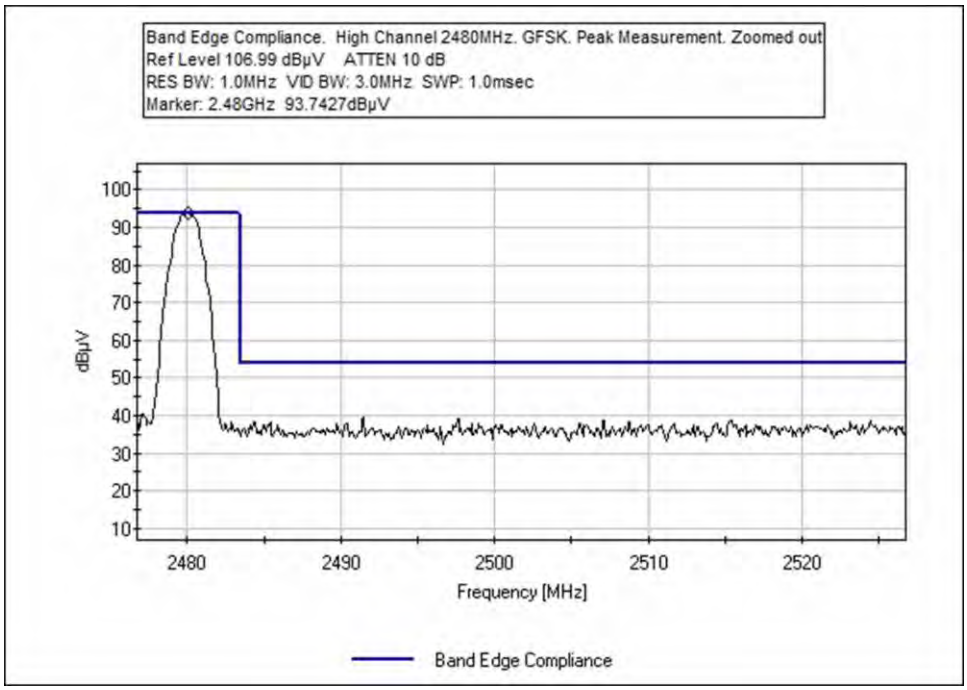
Test Data

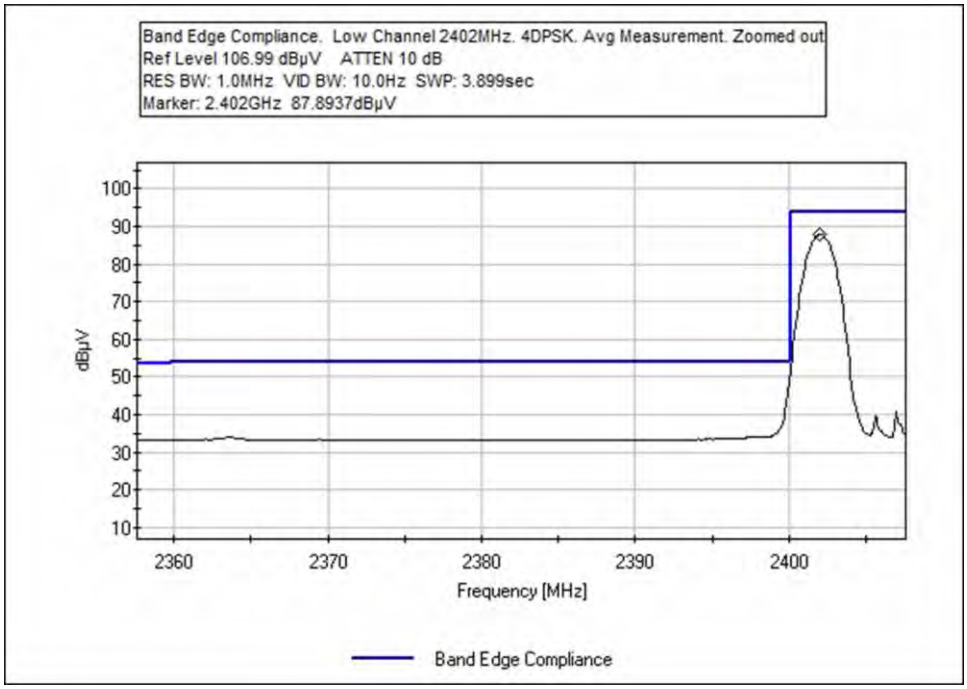

Band Edge Compliance. Low Channel 2402MHz. GFSK. Avg Measurement. Zoomed out
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 10.0Hz SWP: 3.899sec
Marker: 2.402GHz 90.1817dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
2360
2370
2380
2390
2400
Frequency [MHz]
Band Edge Compliance

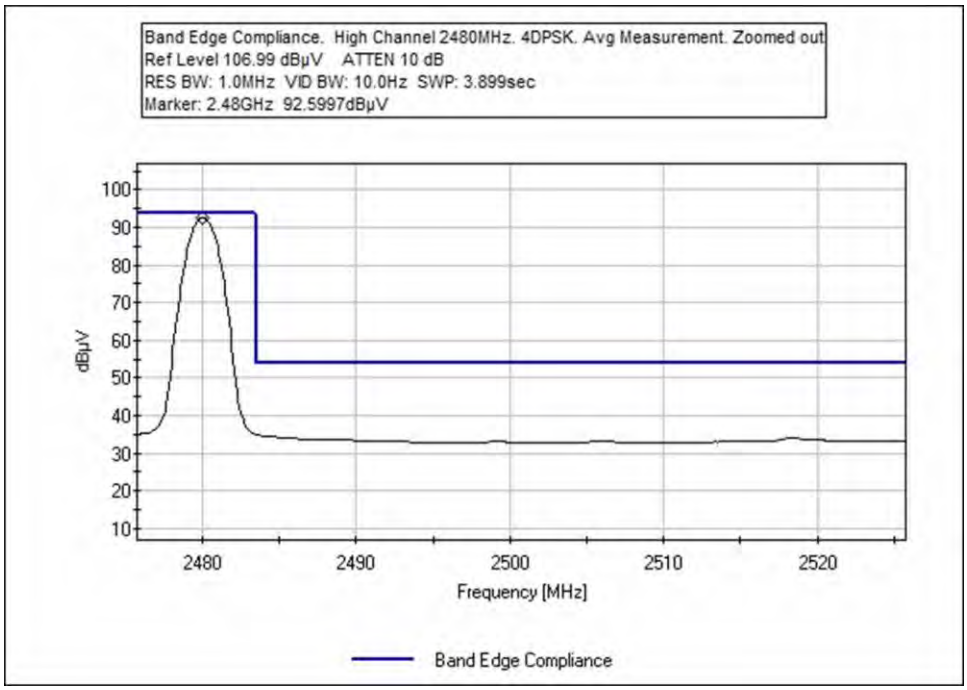

Band Edge Compliance. High Channel 2480MHz. GFSK. Avg Measurement. Zoomed out
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 10.0Hz SWP: 3.899sec
Marker: 2.48GHz 93.5997dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
2480
2490
2500
2510
2520
Frequency [MHz]
Band Edge Compliance

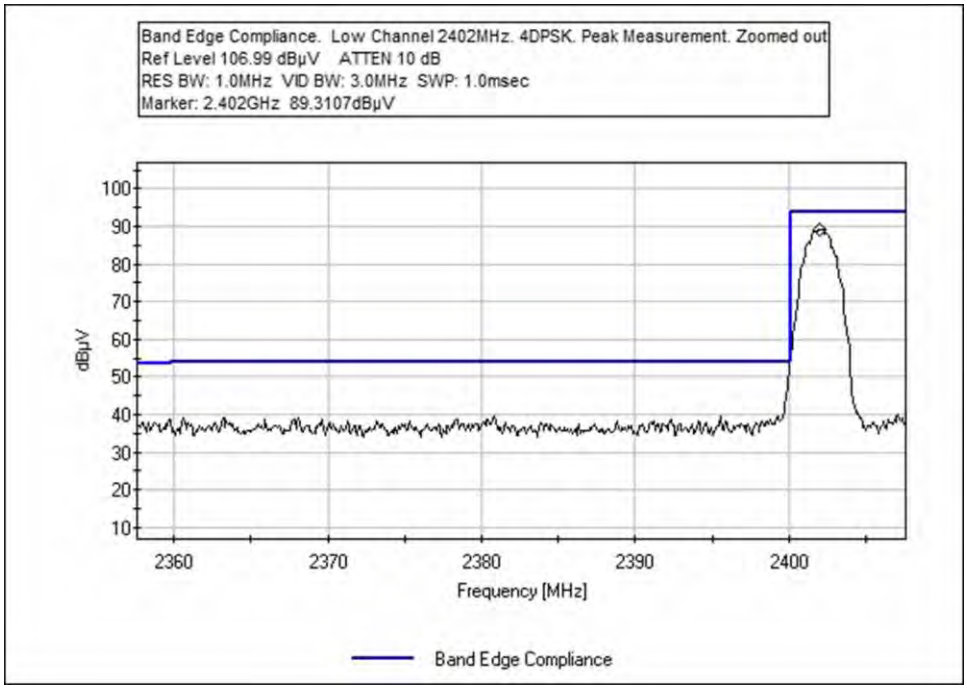

Band Edge Compliance. Low Channel 2402MHz. GFSK. Peak Measurement. Zoomed out
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 3.0MHz SWP: 1.0msec
Marker: 2.402GHz 90.1287dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
2360
2370
2380
2390
2400
Frequency [MHz]
Band Edge Compliance

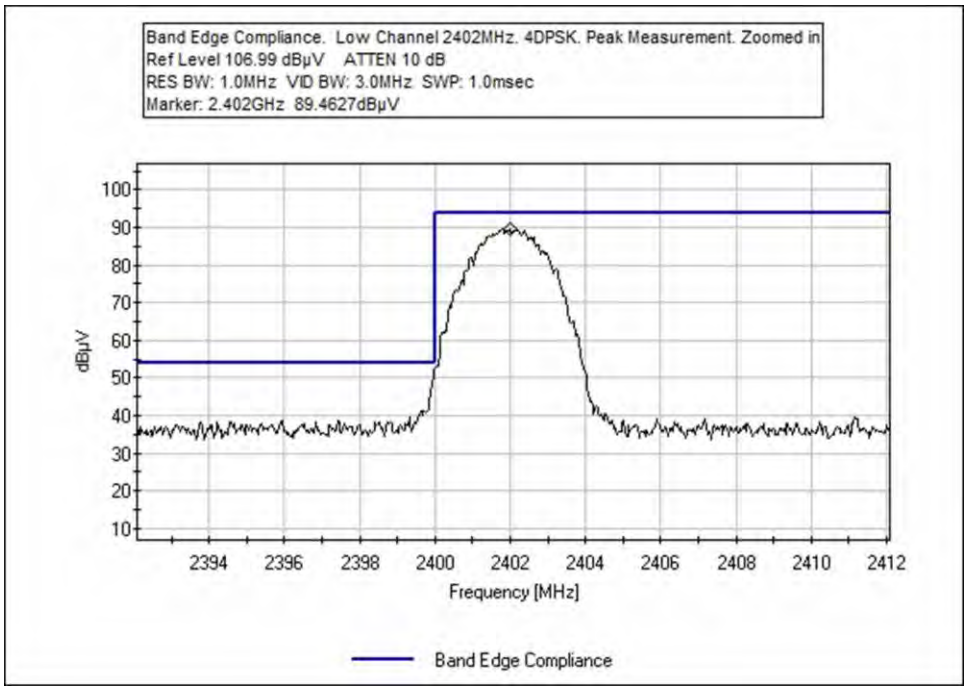

Band Edge Compliance. Low Channel 2402MHz. GFSK. Peak Measurement. Zoomed in
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 3.0MHz SWP: 1.0msec
Marker: 2.402GHz 90.1927dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
2397
2398
2399
2400
2401
2402
2403
2404
2405
2406
2407
Frequency [MHz]
Band Edge Compliance

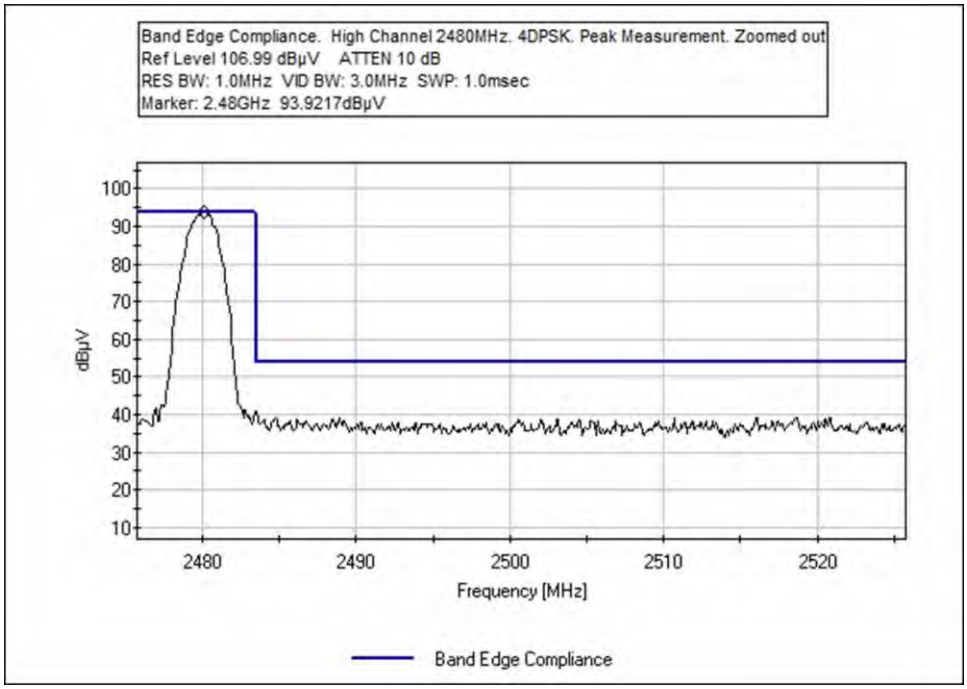

Band Edge Compliance. High Channel 2480MHz. GFSK. Peak Measurement. Zoomed out
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 3.0MHz SWP: 1.0msec
Marker: 2.48GHz 93.7427dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
2480
2490
2500
2510
2520
Frequency [MHz]
Band Edge Compliance

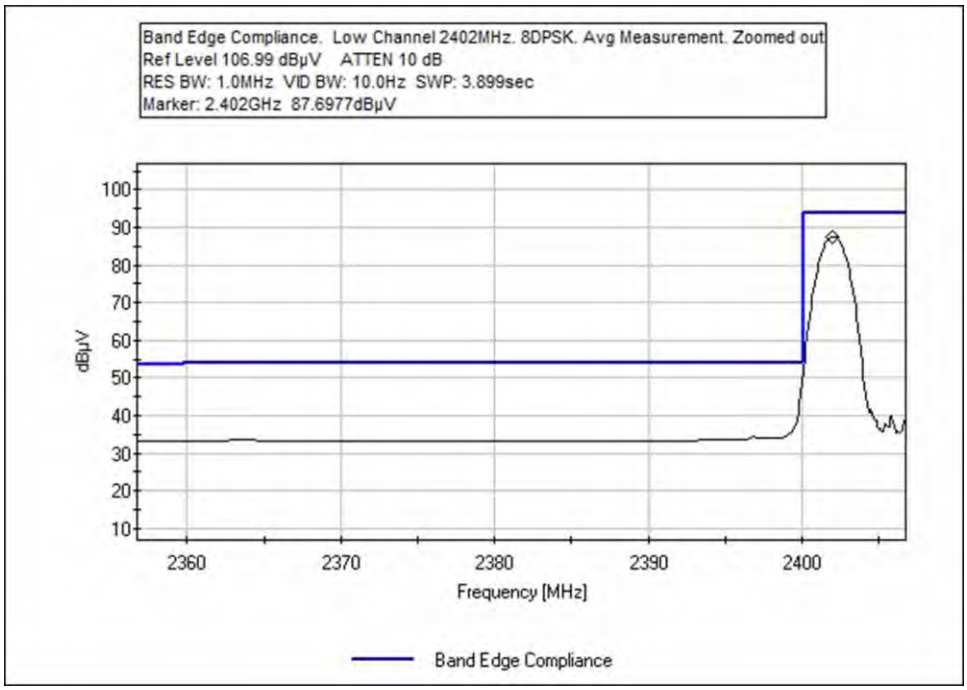

Band Edge Compliance. Low Channel 2402MHz. 4DPSK. Avg Measurement. Zoomed out
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 10.0Hz SWP: 3.899sec
Marker: 2.402GHz 87.8937dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
2360
2370
2380
2390
2400
Frequency [MHz]
Band Edge Compliance

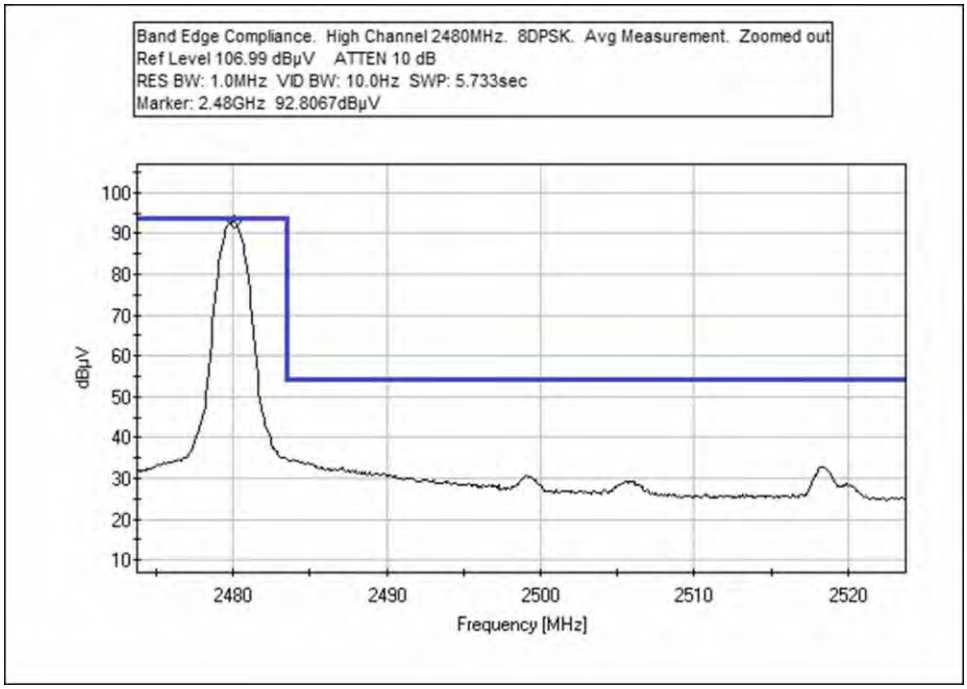

Band Edge Compliance. High Channel 2480MHz. 4DPSK. Avg Measurement. Zoomed out
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 10.0Hz SWP: 3.899sec
Marker: 2.48GHz 92.5997dBµV
dBµV
Frequency [MHz]
Band Edge Compliance

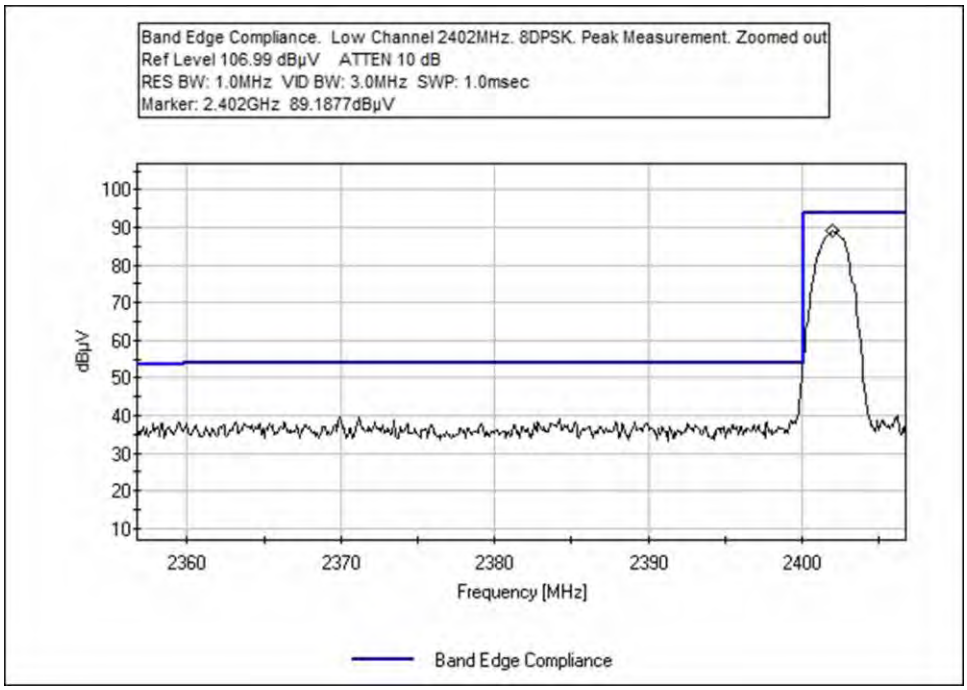

Band Edge Compliance. Low Channel 2402MHz. 4DPSK. Peak Measurement. Zoomed out
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 3.0MHz SWP: 1.0msec
Marker: 2.402GHz 89.3107dBµV
dBµV
Frequency [MHz]
Band Edge Compliance

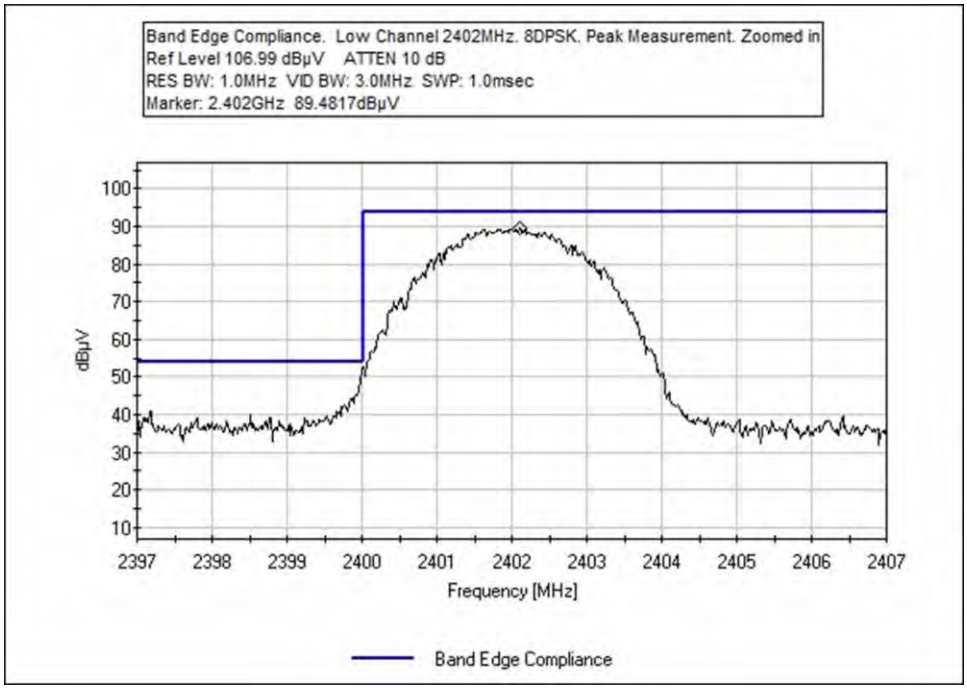

Band Edge Compliance. Low Channel 2402MHz. 4DPSK. Peak Measurement. Zoomed in
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 3.0MHz SWP: 1.0msec
Marker: 2.402GHz 89.4627dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
2394
2396
2398
2400
2402
2404
2406
2408
2410
2412
Frequency [MHz]
Band Edge Compliance

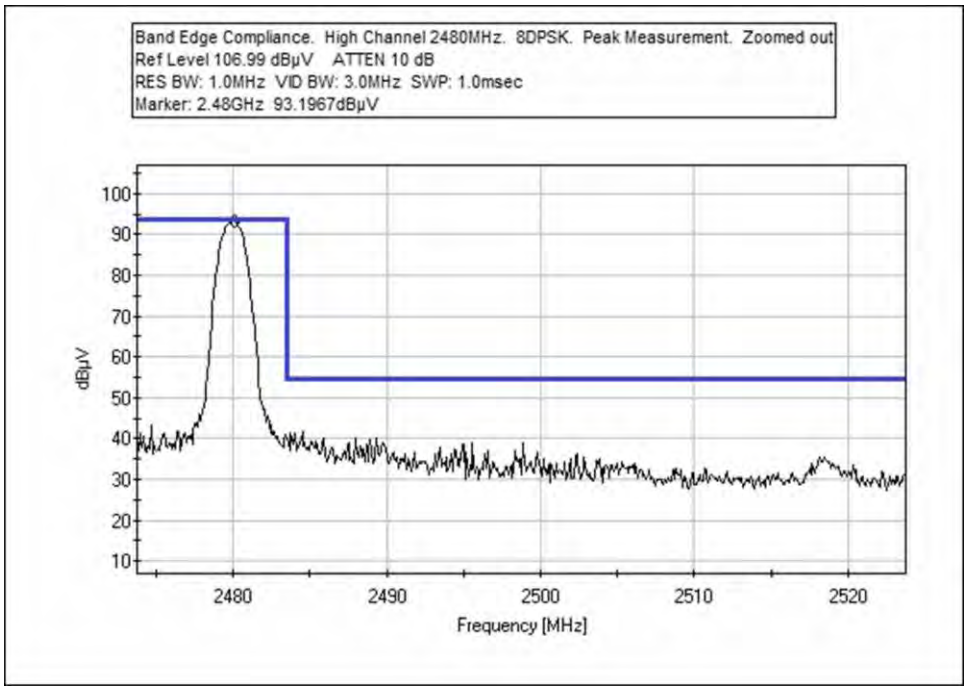

Band Edge Compliance. High Channel 2480MHz. 4DPSK. Peak Measurement. Zoomed out
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 3.0MHz SWP: 1.0msec
Marker: 2.48GHz 93.9217dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
2480
2490
2500
2510
2520
Frequency [MHz]
Band Edge Compliance


Band Edge Compliance. Low Channel 2402MHz. 8DPSK. Avg Measurement. Zoomed out
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 10.0Hz SWP: 3.899sec
Marker: 2.402GHz 87.6977dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
2360
2370
2380
2390
2400
Frequency [MHz]
Band Edge Compliance

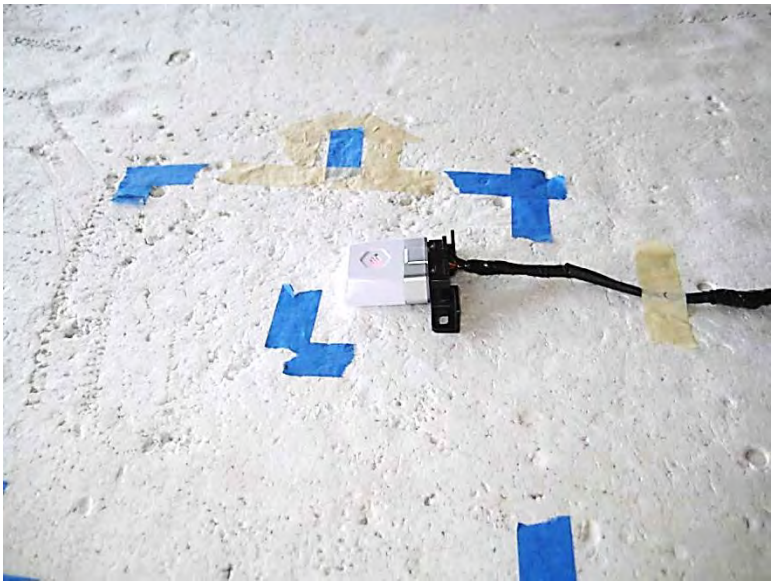

Band Edge Compliance. High Channel 2480MHz. 8DPSK. Avg Measurement. Zoomed out
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 10.0Hz SWP: 5.733sec
Marker: 2.48GHz 92.8067dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
2480
2490
2500
2510
2520
Frequency [MHz]


Band Edge Compliance. Low Channel 2402MHz. 8DPSK. Peak Measurement. Zoomed out
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 3.0MHz SWP: 1.0msec
Marker: 2.402GHz 89.1877dBµV
dBµV
Frequency [MHz]
Band Edge Compliance

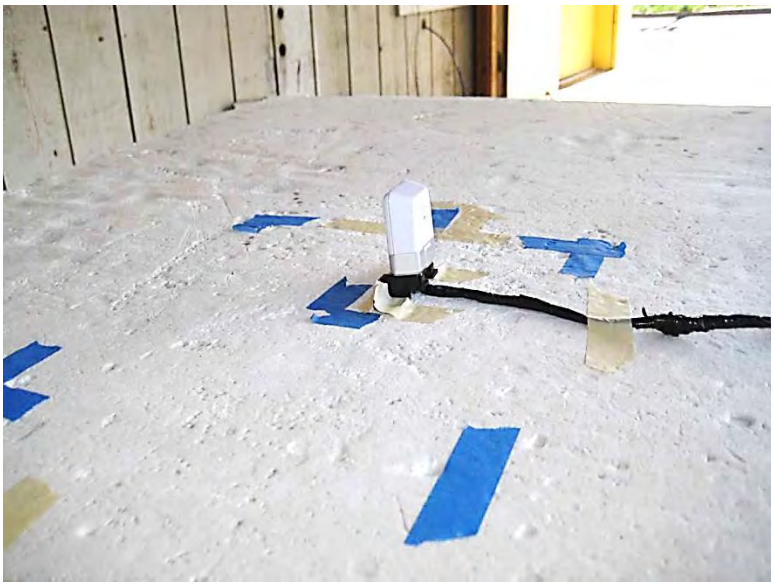

Band Edge Compliance. Low Channel 2402MHz. 8DPSK. Peak Measurement. Zoomed in
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 1.0MHz VID BW: 3.0MHz SWP: 1.0msec
Marker: 2.402GHz 89.4817dBµV
dBµV
Frequency [MHz]
Band Edge Compliance



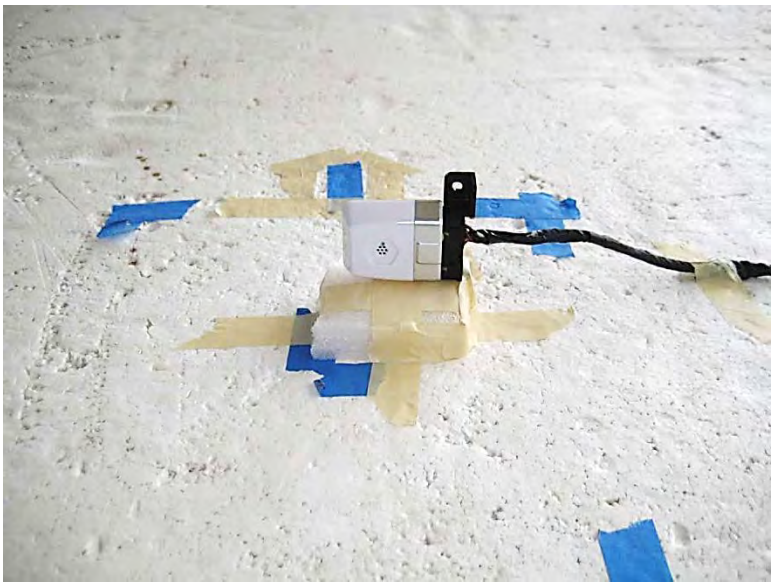
Test Setup Photos



X Axis



Y Axis



Z Axis

SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2.

Emissions Test Details

TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS		
	Meter reading	(dBµV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or carrot ("^") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.