

FCC PART 15, SUBPART B and C
TEST REPORT
for
TT10K SYSTEM TRANSMITTER
MODEL: TX10K

Prepared for

BINSFELD ENGINEERING INC.
4571 MACFARLANE ROAD
MAPLE CITY, MI 49664

Prepared by: _____

KYLE FUJIMOTO

Approved by: _____

JAMES ROSS

COMPATIBLE ELECTRONICS INC.
114 OLINDA DRIVE
BREA, CALIFORNIA 92823
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DATE: MAY 11, 2016

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the federal government.

Device Tested: TT10K System Transmitter
Model: TX10K
S/N: N/A

Product Description: The EUT is a transmitter used in a torque telemetry system.

Modifications: The EUT was not modified in order to meet the specifications.

Customer: Binsfeld Engineering Inc.
4571 W. MacFarlane Road
Maple City, MI 49664

Test Dates: March 3 and 23, 2016; and April 28, 2016

Test Specifications: Emissions requirements
CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.249

Test Procedure: ANSI C63.4, ANSI C63.10

Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Spurious Radiated RF Emissions, 10 kHz – 9300 MHz (Transmitter and Digital portion)	Complies with the Class B limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.249
2	Conducted RF Emissions, 150 kHz to 30 MHz	This test was not performed because the EUT operates on battery power and does not connect to the AC mains.

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the TT10K System Transmitter, Model: TX10K. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4 and ANSI C63.10. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.249.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

The emissions tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Binsfeld Engineering Inc.

Stephen Tarsa	CEO
Dave Tietz	R&D Director

Compatible Electronics Inc.

Kyle Fujimoto	Test Engineer
James Ross	Test Engineer

2.4 Date Test Sample was Received

The test sample was received on February 19, 2016.

2.5 Disposition of the Test Sample

The test sample has not been returned to Binsfeld Engineering Inc. as of the date of this test report.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
N/A	Not Applicable
DNF	Do Not Fit
URC	Universal Remote Control

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this emissions Test Report.

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules – Radio frequency devices (including digital devices) – Intentional Radiators
FCC Title 47, Part 15 Subpart B	FCC Rules – Radio frequency devices (including digital devices) – Unintentional Radiators
ANSI C63.4 2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10 2013	American National Standard for Testing Unlicensed Wireless Devices

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The TT10K System Transmitter, Model:TX10K (EUT) was connected to a battery and bridge simulator. During the testing, the EUT was continuously transmitting.

The EUT was tested for emissions at the low, middle, and high channels while in the X, Y and Z axis. The X orientation is when the EUT is parallel to the ground. The Y orientation is when the EUT is perpendicular to the ground mounted vertically. The Z orientation is when the EUT is perpendicular to the ground mounted horizontally.

The EUT was tested with a new battery.

The final radiated data for the EUT as was taken in the mode described above. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

- Cable 1** This is a 10-centimeter unshielded cable connecting the EUT's +B port to the battery. The cable is hard wired at each end.
- Cable 2** This is a 10-centimeter unshielded cable connecting the EUT's –B port to the battery. The cable is hard wired at each end.
- Cable 3** This is a 1-meter unshielded cable connecting the EUT's +E port to the bridge simulator. The cable is hard wired at each end.
- Cable 4** This is a 1-meter unshielded cable connecting the EUT's –E port to the bridge simulator. The cable is hard wired at each end.
- Cable 5** This is a 1-meter unshielded cable connecting the EUT's +S port to the bridge simulator. The cable is hard wired at each end.
- Cable 6** This is a 1-meter unshielded cable connecting the EUT's –S port to the bridge simulator. The cable is hard wired at each end.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT**5.1 EUT and Accessory List**

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
TT10K SYSTEM TRANSMITTER	BINSFELD ENGINEERING INC.	TX10K	N/A	HWN-TX10K-NT
BATTERY	BINSFELD ENGINEERING, INC.	N/A	N/A	N/A
BRIDGE SIMULATOR	BINSFELD ENGINEERING, INC.	BS900	N/A	N/A

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
GENERAL TEST EQUIPMENT USED IN LAB D					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A
EMI Receiver, 20 Hz – 26.5 GHz	Agilent Technologies	N9038A	MY51100115	April 3, 2015	1 Year
EMI Receiver	Rohde & Schwarz	ESIB40	100194	December 4, 2014	2 Year
RF RADIATED EMISSIONS TEST EQUIPMENT					
CombiLog Antenna	Com-Power	AC-220	61060	September 3, 2015	1 Year
Preamplifier	Com-Power	PA-118	551024	March 6, 2015	2 Year
Loop Antenna	Com-Power	AL-130	17089	February 6, 2015	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 26, 2016	2 Year
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1 of this report for emissions test location.

6.2 EUT Mounting, Bonding and Grounding

For frequencies 1 GHz and below: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

For frequencies above 1 GHz: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 1.5 meters above the ground plane.

The EUT was not grounded.

7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

7.1 RF Emissions

7.1.1 Radiated Emissions Test

The EMI Receiver was used as the measuring meter. A built-in, internal preamplifier was used to increase the sensitivity of the instrument. The EMI Receiver was initially used with the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. A quasi-peak reading was taken only for those readings, which are marked accordingly on the data sheets.

For frequencies above 1 GHz, the readings were averaged by using an average detector.

The measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 kHz to 150 kHz	200 Hz	Loop Antenna
150 kHz to 30 MHz	9 kHz	Loop Antenna
30 MHz to 1 GHz	120 kHz	Combilog Antenna
1 GHz to 9.3 GHz	1 MHz	Horn Antenna

The EMI test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is in full compliance with ANSI C63.4. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

Radiated Emissions Test (Continued)

The EUT was tested at a 3-meter test distance from 10 kHz to 9.3 GHz.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.249 for radiated emissions. Please see Appendix E for the data sheets.

7.1.2 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
TT10K System Transmitter, Model: TX10K

Frequency MHz	Corrected Reading* dBuV/m	Specification Limit dBuV/m	Delta (Cor. Reading – Spec. Limit) dB
902.58 (H) (Z-Axis)	92.72 (Qp)	93.97	-1.25
902.58 (H) (X-Axis)	91.74 (Qp)	93.97	-2.23
913.12 (V) (X-Axis)	91.59 (Qp)	93.97	-2.38
913.12 (V) (X-Axis)	91.42 (Qp)	93.97	-2.55
913.12 (H) (Z-Axis)	91.10 (Qp)	93.97	-2.87
35.40 (H) (Z-Axis)	36.60 (Qp)	40.00	-3.40

Notes:

(H) Horizontal

(V) Vertical

(Avg) Average

(Qp) Quasi-Peak

* The complete emissions data is given in Appendix E of this report.

8. CONCLUSIONS

The TT10K System Transmitter, Model: TX10K, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.249.



APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

LABORATORY ACCREDITATIONS AND RECOGNITIONS



For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025. Please follow the link to the NIST/NVLAP site for each of our facilities' NVLAP certificate and scope of accreditation

NVLAP listing links

[Agoura Division](#) / [Brea Division](#) / [Silverado/Lake Forest Division](#)

.Quote from ISO-ILAC-IAF Communiqué on 17025:

"A laboratory's fulfilment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 Quality Management Systems — Requirements."



ANSI listing [CETCB](#)



Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for EMC under the US/EU Mutual Recognition Agreement (MRA).

US/EU MRA list [NIST MRA site](#)



Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for Taiwan/BSMI under the US/APEC (Asia-Pacific Economic Cooperation) Mutual Recognition Agreement (MRA).

APEC MRA list [NIST MRA site](#)

We are also listed for IT products by the following country/agency:



VCCI Support member: Please visit http://www.vcci.jp/vcci_e/



FCC Listing, from FCC OET site

[FCC test lab search](#) <https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm>



Compatible Electronics IC listing can be found at:

<http://www.ic.gc.ca/eic/site/ic1.nsf/eng/home>

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
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Silverado Division
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Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.249 specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

No modifications were made to the EUT during the testing.



APPENDIX C

***ADDITIONAL MODELS COVERED
UNDER THIS REPORT***

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

TT10K System Transmitter
Model: TX10K
S/N: N/A

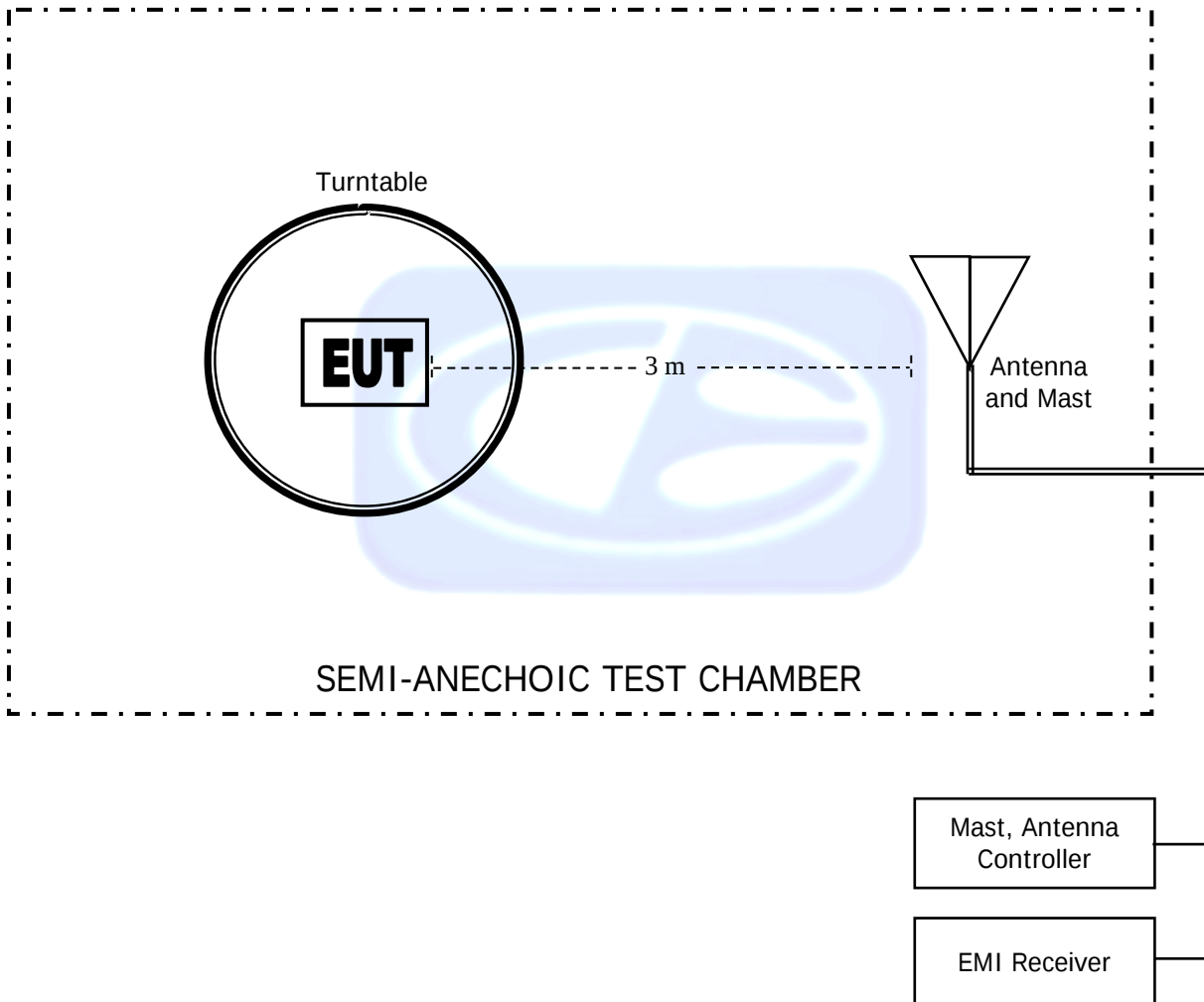
There are no additional models covered under this report.



APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER



COM-POWER AL-130**LOOP ANTENNA****S/N: 17089****CALIBRATION DATE: FEBRUARY 6, 2015**

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-33.18	18.32
0.01	-34.10	17.40
0.02	-38.65	12.85
0.03	-39.28	12.22
0.04	-40.09	11.41
0.05	-40.85	10.65
0.06	-40.88	10.62
0.07	-41.07	10.43
0.08	-41.04	10.46
0.09	-41.19	10.31
0.1	-41.20	10.30
0.2	-41.52	9.98
0.3	-41.53	9.97
0.4	-41.42	10.08
0.5	-41.53	9.97
0.6	-41.53	9.97
0.7	-41.43	10.07
0.8	-41.23	10.27
0.9	-41.13	10.37
1	-41.14	10.36
2	-40.80	10.70
3	-40.66	10.84
4	-40.61	10.89
5	-40.33	11.17
6	-40.53	10.97
7	-40.47	11.03
8	-40.48	11.02
9	-39.93	11.57
10	-39.81	11.69
15	-43.35	8.15
20	-39.16	12.34
25	-40.24	11.26
30	-43.18	8.32

COM-POWER AC-220**COMBILOG ANTENNA****S/N: 61060****CALIBRATION DATE: SEPTEMBER 3, 2015**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	24.00	200	13.00
35	24.30	250	15.30
40	25.40	300	18.20
45	21.50	350	17.90
50	22.50	400	18.60
60	15.40	450	19.80
70	12.70	500	21.60
80	11.10	550	22.40
90	13.40	600	23.70
100	13.80	650	24.30
120	15.40	700	24.00
125	15.40	750	24.50
140	13.10	800	24.30
150	17.20	850	26.30
160	13.20	900	26.90
175	14.20	950	26.00
180	14.30	1000	25.60

COM POWER AH-118**HORN ANTENNA****S/N: 071175****CALIBRATION DATE: FEBRUARY 26, 2016**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.93	10.0	39.33
1.5	25.54	10.5	39.64
2.0	28.09	11.0	41.04
2.5	30.21	11.5	44.29
3.0	30.15	12.0	41.22
3.5	30.17	12.5	41.50
4.0	31.90	13.0	41.62
4.5	33.51	13.5	40.63
5.0	33.87	14.0	39.94
5.5	35.08	14.5	41.84
6.0	34.81	15.0	42.69
6.5	34.26	15.5	39.03
7.0	36.33	16.0	39.07
7.5	37.03	16.5	41.40
8.0	37.56	17.0	43.18
8.5	40.07	17.5	47.01
9.0	38.92	18.0	46.48
9.5	38.21		

COM-POWER PA-118**PREAMPLIFIER**

S/N: 551024

CALIBRATION DATE: MARCH 6, 2015

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	39.76	6.0	38.77
1.1	40.46	6.5	38.46
1.2	40.05	7.0	38.27
1.3	40.58	7.5	38.77
1.4	39.50	8.0	39.25
1.5	39.92	8.5	38.63
1.6	40.40	9.0	39.58
1.7	40.10	9.5	42.12
1.8	40.49	10.0	38.53
1.9	38.86	11.0	40.21
2.0	41.53	12.0	41.15
2.5	41.05	13.0	40.51
3.0	40.29	14.0	40.32
3.5	40.82	15.0	39.47
4.0	40.88	16.0	39.88
4.5	41.37	17.0	39.79
5.0	40.73	18.0	40.61
5.5	39.05		



FRONT VIEW

BINSFELD ENGINEERING INC.
TT10K SYSTEM TRANSMITTER
MODEL: TX10K

FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

BINSFELD ENGINEERING INC.
TT10K SYSTEM TRANSMITTER
MODEL: TX10K
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

BINSFELD ENGINEERING INC.
TT10K SYSTEM TRANSMITTER
MODEL: TX10K

FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

BINSFELD ENGINEERING INC.
TT10K SYSTEM TRANSMITTER
MODEL: TX10K

FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

APPENDIX E

DATA SHEETS

***RADIATED EMISSIONS
DATA SHEETS***

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**Low Channel
X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
902.58	88.28	V	113.97	-25.69	Peak	89.75	176.59	
902.58	88.18	V	93.97	-5.79	QP	89.75	176.59	
1805.16	38.69	V	73.97	-35.28	Peak	216.00	152.17	
1805.16	27.39	V	53.97	-26.59	Avg	216.00	152.17	
2707.74	46.36	V	73.97	-27.61	Peak	220.50	146.98	
2707.74	38.45	V	53.97	-15.52	Avg	220.50	146.98	
3610.32	45.44	V	73.97	-28.53	Peak	100.25	151.88	
3610.32	33.45	V	53.97	-20.53	Avg	100.25	151.88	
4512.9	48.34	V	73.97	-25.63	Peak	346.75	168.00	
4512.9	36.07	V	53.97	-17.90	Avg	346.75	168.00	
5415.48	51.57	V	73.97	-22.40	Peak	236.50	159.10	
5415.48	39.38	V	53.97	-14.59	Avg	236.50	159.10	
6318.06								No Emission
6318.06								Detected
7220.64								No Emission
7220.64								Detected
8123.2								No Emission
8123.2								Detected
9025.8								No Emission
9025.8								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**Low Channel
X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
902.58	91.84	H	113.97	-22.13	Peak	250.50	161.19	
902.58	91.74	H	93.97	-2.23	QP	250.50	161.19	
1805.16	39.33	H	73.97	-34.64	Peak	334.50	150.14	
1805.16	27.17	H	53.97	-26.80	Avg	334.50	150.14	
2707.74	43.39	H	73.97	-30.59	Peak	355.00	152.58	
2707.74	32.06	H	53.97	-21.91	Avg	355.00	152.58	
3610.32	44.97	H	73.97	-29.00	Peak	129.00	156.71	
3610.32	33.29	H	53.97	-20.68	Avg	129.00	156.71	
4512.9	48.29	H	73.97	-25.68	Peak	142.00	152.23	
4512.9	36.33	H	53.97	-17.64	Avg	142.00	152.23	
5415.48	52.31	H	73.97	-21.66	Peak	364.75	152.71	
5415.48	39.31	H	53.97	-14.66	Avg	364.75	152.71	
6318.06								No Emission
6318.06								Detected
7220.64								No Emission
7220.64								Detected
8123.2								No Emission
8123.2								Detected
9025.8								No Emission
9025.8								Detected

FCC 15.249

Binsfeld Engineering Inc.
 TT10K System Transmitter
 Model: TX10K

Date: 03/04/2016
 Lab: D
 Tested By: Kyle Fujimoto

**Low Channel
 Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
902.58	89.20	V	113.97	-24.77	Peak	241.00	143.64	
902.58	89.11	V	93.97	-4.86	QP	241.00	143.64	
1805.16	39.26	V	73.97	-34.71	Peak	58.75	165.19	
1805.16	27.29	V	53.97	-26.68	Avg	58.75	165.19	
2707.74	45.41	V	73.97	-28.56	Peak	191.25	175.25	
2707.74	35.26	V	53.97	-18.71	Avg	191.25	175.25	
3610.32	45.64	V	73.97	-28.33	Peak	355.00	145.28	
3610.32	33.37	V	53.97	-20.60	Avg	355.00	145.28	
4512.9	48.44	V	73.97	-25.53	Peak	356.75	168.00	
4512.9	36.11	V	53.97	-17.86	Avg	356.75	168.00	
5415.48	52.33	V	73.97	-21.64	Peak	124.75	158.00	
5415.48	39.36	V	53.97	-14.61	Avg	124.75	158.00	
6318.06								No Emission
6318.06								Detected
7220.64								No Emission
7220.64								Detected
8123.2								No Emission
8123.2								Detected
9025.8								No Emission
9025.8								Detected

FCC 15.249

Binsfeld Engineering Inc.
 TT10K System Transmitter
 Model: TX10K

Date: 03/04/2016
 Lab: D
 Tested By: Kyle Fujimoto

**Low Channel
 Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
902.58	88.07	H	113.97	-25.90	Peak	159.25	143.40	
902.58	87.98	H	93.97	-5.99	QP	159.25	143.40	
1805.16	42.19	H	73.97	-31.78	Peak	251.75	193.79	
1805.16	29.88	H	53.97	-24.10	Avg	251.75	193.79	
2707.74	46.68	H	73.97	-27.29	Peak	89.25	181.37	
2707.74	36.06	H	53.97	-17.91	Avg	89.25	181.37	
3610.32	45.41	H	73.97	-28.56	Peak	225.25	185.55	
3610.32	33.31	H	53.97	-20.66	Avg	225.25	185.55	
4512.9	48.84	H	73.97	-25.13	Peak	54.75	176.53	
4512.9	36.05	H	53.97	-17.92	Avg	54.75	176.53	
5415.48	50.70	H	73.97	-23.28	Peak	192.50	155.34	
5415.48	39.33	H	53.97	-14.64	Avg	192.50	155.34	
6318.06								No Emission
6318.06								Detected
7220.64								No Emission
7220.64								Detected
8123.2								No Emission
8123.2								Detected
9025.8								No Emission
9025.8								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**Low Channel
Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
902.58	86.79	V	113.97	-27.18	Peak	239.50	159.40	
902.58	86.64	V	93.97	-7.33	QP	239.50	159.40	
1805.16	40.81	V	73.97	-33.16	Peak	179.25	152.11	
1805.16	31.72	V	53.97	-22.25	Avg	179.25	152.11	
2707.74	47.59	V	73.97	-26.38	Peak	281.75	135.00	
2707.74	35.43	V	53.97	-18.54	Avg	281.75	135.00	
3610.32	42.28	V	73.97	-31.69	Peak	175.51	182.68	
3610.32	33.27	V	53.97	-20.70	Avg	175.51	182.68	
4512.9	47.99	V	73.97	-25.98	Peak	53.50	169.58	
4512.9	36.13	V	53.97	-17.84	Avg	53.50	169.58	
5415.48	51.53	V	73.97	-22.44	Peak	73.50	182.68	
5415.48	39.30	V	53.97	-14.67	Avg	73.50	182.68	
6318.06								No Emission
6318.06								Detected
7220.64								No Emission
7220.64								Detected
8123.2								No Emission
8123.2								Detected
9025.8								No Emission
9025.8								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**Low Channel
Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
902.58	92.82	H	113.97	-21.15	Peak	345.50	159.46	
902.58	92.72	H	93.97	-1.25	QP	345.50	159.46	
1805.16	39.49	H	73.97	-34.48	Peak	71.25	155.34	
1805.16	26.99	H	53.97	-26.98	Avg	71.25	155.34	
2707.74	43.89	H	73.97	-30.08	Peak	357.00	156.58	
2707.74	34.36	H	53.97	-19.62	Avg	357.00	156.58	
3610.32	45.29	H	73.97	-28.69	Peak	119.50	145.25	
3610.32	33.35	H	53.97	-20.62	Avg	119.50	145.25	
4512.9	47.80	H	73.97	-26.17	Peak	112.00	158.58	
4512.9	36.04	H	53.97	-17.93	Avg	112.00	158.58	
5415.48	51.54	H	73.97	-22.43	Peak	340.00	125.25	
5415.48	39.35	H	53.97	-14.62	Avg	340.00	125.25	
6318.06								No Emission
6318.06								Detected
7220.64								No Emission
7220.64								Detected
8123.2								No Emission
8123.2								Detected
9025.8								No Emission
9025.8								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

Middle Channel
X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
913.12	91.68	V	113.97	-22.29	Peak	46.50	111.34	
913.12	91.59	V	93.97	-2.38	QP	46.50	111.34	
1826.24	39.36	V	73.97	-34.61	Peak	292.50	141.19	
1826.24	27.20	V	53.97	-26.77	Avg	292.50	141.19	
2739.36	48.65	V	73.97	-25.32	Peak	154.50	170.08	
2739.36	41.24	V	53.97	-12.73	Avg	154.50	170.08	
3652.48	45.86	V	73.97	-28.11	Peak	78.25	176.11	
3652.48	33.59	V	53.97	-20.39	Avg	78.25	176.11	
4565.60	49.65	V	73.97	-24.33	Peak	364.25	185.25	
4565.60	38.37	V	53.97	-15.60	Avg	364.25	185.25	
5478.72	51.38	V	73.97	-22.59	Peak	188.75	168.95	
5478.72	39.68	V	53.97	-14.30	Avg	188.75	168.95	
6391.84								No Emission
6391.80								Detected
7304.96								No Emission
7304.96								Detected
8218.08								No Emission
8218.08								Detected
9131.20								No Emission
9131.20								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**Middle Channel
X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
913.12	86.76	H	113.97	-27.21	Peak	255.50	144.41	
913.12	86.65	H	93.97	-7.32	QP	255.50	144.41	
1826.24	39.90	H	73.97	-34.07	Peak	64.00	119.94	
1826.24	27.13	H	53.97	-26.84	Avg	64.00	119.94	
2739.36	44.61	H	73.97	-29.36	Peak	188.00	139.34	
2739.36	33.56	H	53.97	-20.41	Avg	188.00	139.34	
3652.48	45.53	H	73.97	-28.44	Peak	14.50	158.58	
3652.48	33.64	H	53.97	-20.34	Avg	14.50	158.58	
4565.60	48.39	H	73.97	-25.58	Peak	137.75	140.25	
4565.60	36.39	H	53.97	-17.59	Avg	137.75	140.25	
5478.72	52.18	H	73.97	-21.79	Peak	5.00	140.25	
5478.72	39.68	H	53.97	-14.29	Avg	5.00	140.25	
6391.84								No Emission
6391.80								Detected
7304.96								No Emission
7304.96								Detected
8218.08								No Emission
8218.08								Detected
9131.20								No Emission
9131.20								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**Middle Channel
Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
913.12	86.69	V	113.97	-27.28	Peak	238.50	143.22	
913.12	86.52	V	93.97	-7.45	QP	238.50	143.22	
1826.24	39.25	V	73.97	-34.72	Peak	321.00	138.74	
1826.24	27.31	V	53.97	-26.66	Avg	321.00	138.74	
2739.36	46.58	V	73.97	-27.39	Peak	148.00	165.97	
2739.36	36.04	V	53.97	-17.93	Avg	148.00	165.97	
3652.48	45.87	V	73.97	-28.10	Peak	272.75	152.11	
3652.48	34.98	V	53.97	-18.99	Avg	272.75	152.11	
4565.60	48.22	V	73.97	-25.75	Peak	103.25	165.25	
4565.60	36.06	V	53.97	-17.91	Avg	103.25	165.25	
5478.72	51.30	V	73.97	-22.67	Peak	208.50	156.58	
5478.72	39.68	V	53.97	-14.29	Avg	208.50	156.58	
6391.84								No Emission
6391.80								Detected
7304.96								No Emission
7304.96								Detected
8218.08								No Emission
8218.08								Detected
9131.20								No Emission
9131.20								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**Middle Channel
Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
913.12	89.12	H	113.97	-24.85	Peak	159.50	143.28	
913.12	89.03	H	93.97	-4.94	QP	159.50	143.28	
1826.24	45.00	H	73.97	-28.97	Peak	244.75	146.62	
1826.24	33.03	H	53.97	-20.94	Avg	244.75	146.62	
2739.36	48.52	H	73.97	-25.45	Peak	100.50	178.32	
2739.36	41.90	H	53.97	-12.07	Avg	100.50	178.32	
3652.48	45.91	H	73.97	-28.06	Peak	202.00	159.04	
3652.48	33.92	H	53.97	-20.05	Avg	202.00	159.04	
4565.60	47.60	H	73.97	-26.37	Peak	79.25	192.47	
4565.60	36.28	H	53.97	-17.69	Avg	79.25	192.47	
5478.72	51.57	H	73.97	-22.40	Peak	210.50	180.11	
5478.72	39.67	H	53.97	-14.30	Avg	210.50	180.11	
6391.84								No Emission
6391.80								Detected
7304.96								No Emission
7304.96								Detected
8218.08								No Emission
8218.08								Detected
9131.20								No Emission
9131.20								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**Middle Channel
Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
913.12	84.82	V	113.97	-29.15	Peak	219.00	160.23	
913.12	84.66	V	93.97	-9.31	QP	219.00	160.23	
1826.24	40.95	V	73.97	-33.02	Peak	209.25	209.67	
1826.24	28.83	V	53.97	-25.14	Avg	209.25	209.67	
2739.36	45.10	V	73.97	-28.87	Peak	223.50	223.88	
2739.36	32.80	V	53.97	-21.17	Avg	223.50	223.88	
3652.48	45.34	V	73.97	-28.63	Peak	119.75	228.95	
3652.48	33.68	V	53.97	-20.29	Avg	119.75	228.95	
4565.60	45.57	V	73.97	-28.41	Peak	222.25	245.25	
4565.60	35.45	V	53.97	-18.52	Avg	222.25	245.25	
5478.72	48.64	V	73.97	-25.33	Peak	57.50	236.25	
5478.72	39.68	V	53.97	-14.29	Avg	57.50	236.25	
6391.84								No Emission
6391.80								Detected
7304.96								No Emission
7304.96								Detected
8218.08								No Emission
8218.08								Detected
9131.20								No Emission
9131.20								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016

Lab: D

Tested By: Kyle Fujimoto

**Middle Channel
Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
913.12	91.20	H	113.97	-22.77	Peak	0.00	114.25	
913.12	91.10	H	93.97	-2.87	QP	0.00	114.25	
1826.24	42.96	H	73.97	-31.01	Peak	230.25	112.59	
1826.24	36.07	H	53.97	-17.90	Avg	230.25	112.59	
2739.36	45.79	H	73.97	-28.18	Peak	361.25	137.73	
2739.36	35.42	H	53.97	-18.55	Avg	361.25	137.73	
3652.48	45.95	H	73.97	-28.02	Peak	35.25	158.25	
3652.48	33.62	H	53.97	-20.35	Avg	35.25	158.25	
4565.60	47.74	H	73.97	-26.23	Peak	149.75	141.91	
4565.60	36.13	H	53.97	-17.84	Avg	149.75	141.91	
5478.72	49.01	H	73.97	-24.96	Peak	141.91	83.25	
5478.72	39.71	H	53.97	-14.26	Avg	141.91	83.25	
6391.84								No Emission
6391.80								Detected
7304.96								No Emission
7304.96								Detected
8218.08								No Emission
8218.08								Detected
9131.20								No Emission
9131.20								Detected

FCC 15.249

Binsfeld Engineering Inc.
 TT10K System Transmitter
 Model: TX10K

Date: 03/04/2016
 Lab: D
 Tested By: Kyle Fujimoto

**High Channel
 X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
925.12	91.51	V	113.97	-22.46	Peak	67.25	112.41	
925.12	91.42	V	93.97	-2.55	QP	67.25	112.41	
1850.24	39.77	V	73.97	-34.20	Peak	158.75	182.62	
1850.24	28.24	V	53.97	-25.73	Avg	158.75	182.62	
2755.36	42.16	V	73.97	-31.81	Peak	100.50	188.05	
2755.36	32.76	V	53.97	-21.22	Avg	100.50	188.05	
3700.48	46.22	V	73.97	-27.75	Peak	250.50	189.52	
3700.48	36.59	V	53.97	-17.38	Avg	250.50	189.52	
4625.60	48.17	V	73.97	-25.80	Peak	7.25	188.05	
4625.60	36.92	V	53.97	-17.05	Avg	7.25	188.05	
5550.72	52.19	V	73.97	-21.78	Peak	314.75	198.58	
5550.72	39.97	V	53.97	-14.00	Avg	314.75	198.58	
6475.84								No Emission
6475.84								Detected
7400.96								No Emission
7400.96								Detected
8326.08								No Emission
8326.08								Detected
9251.20								No Emission
9251.20								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**High Channel
X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
925.12	88.40	H	113.97	-25.57	Peak	258.25	160.41	
925.12	88.28	H	93.97	-5.69	QP	258.25	160.41	
1850.24	43.86	H	73.97	-30.11	Peak	282.50	126.56	
1850.24	29.56	H	53.97	-24.41	Avg	282.50	126.56	
2755.36	50.47	H	73.97	-23.50	Peak	177.25	161.91	
2755.36	46.04	H	53.97	-7.93	Avg	177.25	161.91	
3700.48	44.95	H	73.97	-29.02	Peak	22.75	168.53	
3700.48	34.16	H	53.97	-19.81	Avg	22.75	168.53	
4625.60	47.81	H	73.97	-26.16	Peak	236.00	155.25	
4625.60	37.23	H	53.97	-16.74	Avg	236.00	155.25	
5550.72	50.59	H	73.97	-23.38	Peak	171.50	168.53	
5550.72	40.05	H	53.97	-13.92	Avg	171.50	168.53	
6475.84								No Emission
6475.84								Detected
7400.96								No Emission
7400.96								Detected
8326.08								No Emission
8326.08								Detected
9251.20								No Emission
9251.20								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**High Channel
Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
925.12	86.75	V	113.97	-27.22	Peak	115.25	112.35	
925.12	86.65	V	93.97	-7.32	QP	115.25	112.35	
1850.24	42.26	V	73.97	-31.71	Peak	112.00	217.37	
1850.24	29.74	V	53.97	-24.23	Avg	112.00	217.37	
2755.36	47.59	V	73.97	-26.38	Peak	136.00	187.28	
2755.36	41.14	V	53.97	-12.83	Avg	136.00	187.28	
3700.48	45.32	V	73.97	-28.65	Peak	355.00	177.61	
3700.48	34.55	V	53.97	-19.42	Avg	355.00	177.61	
4625.60	50.04	V	73.97	-23.93	Peak	270.50	207.22	
4625.60	37.57	V	53.97	-16.40	Avg	270.50	207.22	
5550.72	48.78	V	73.97	-25.19	Peak	102.00	215.25	
5550.72	38.58	V	53.97	-15.39	Avg	102.00	215.25	
6475.84								No Emission
6475.84								Detected
7400.96								No Emission
7400.96								Detected
8326.08								No Emission
8326.08								Detected
9251.20								No Emission
9251.20								Detected

FCC 15.249

Binsfeld Engineering Inc.
 TT10K System Transmitter
 Model: TX10K

Date: 03/04/2016
 Lab: D
 Tested By: Kyle Fujimoto

**High Channel
 Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
925.12	88.39	H	113.97	-25.58	Peak	87.25	160.59	
925.12	88.30	H	93.97	-5.67	QP	87.25	160.59	
1850.24	40.17	H	73.97	-33.80	Peak	279.50	109.13	
1850.24	29.13	H	53.97	-24.84	Avg	279.50	109.13	
2755.36	45.49	H	73.97	-28.49	Peak	172.00	171.28	
2755.36	36.90	H	53.97	-17.08	Avg	172.00	171.28	
3700.48	46.08	H	73.97	-27.89	Peak	106.25	162.80	
3700.48	33.80	H	53.97	-20.17	Avg	106.25	162.80	
4625.60	48.43	H	73.97	-25.54	Peak	21.50	150.98	
4625.60	36.84	H	53.97	-17.13	Avg	21.50	150.98	
5550.72	52.45	H	73.97	-21.52	Peak	187.50	146.50	
5550.72	39.92	H	53.97	-14.05	Avg	187.50	146.50	
6475.84								No Emission
6475.84								Detected
7400.96								No Emission
7400.96								Detected
8326.08								No Emission
8326.08								Detected
9251.20								No Emission
9251.20								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**High Channel
Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
925.12	84.43	V	113.97	-29.54	Peak	67.50	176.77	
925.12	84.29	V	93.97	-9.68	QP	67.50	176.77	
1850.24	39.05	V	73.97	-34.92	Peak	89.50	154.92	
1850.24	28.53	V	53.97	-25.44	Avg	89.50	154.92	
2755.36	47.00	V	73.97	-26.98	Peak	235.75	130.92	
2755.36	38.41	V	53.97	-15.56	Avg	235.75	130.92	
3700.48	46.43	V	73.97	-27.54	Peak	78.25	140.00	
3700.48	33.79	V	53.97	-20.18	Avg	78.25	140.00	
4625.60	49.48	V	73.97	-24.49	Peak	228.00	151.76	
4625.60	37.01	V	53.97	-16.96	Avg	228.00	151.76	
5550.72	51.17	V	73.97	-22.80	Peak	33.50	141.61	
5550.72	39.93	V	53.97	-14.04	Avg	33.50	141.61	
6475.84								No Emission
6475.84								Detected
7400.96								No Emission
7400.96								Detected
8326.08								No Emission
8326.08								Detected
9251.20								No Emission
9251.20								Detected

FCC 15.249

Binsfeld Engineering Inc.
TT10K System Transmitter
Model: TX10K

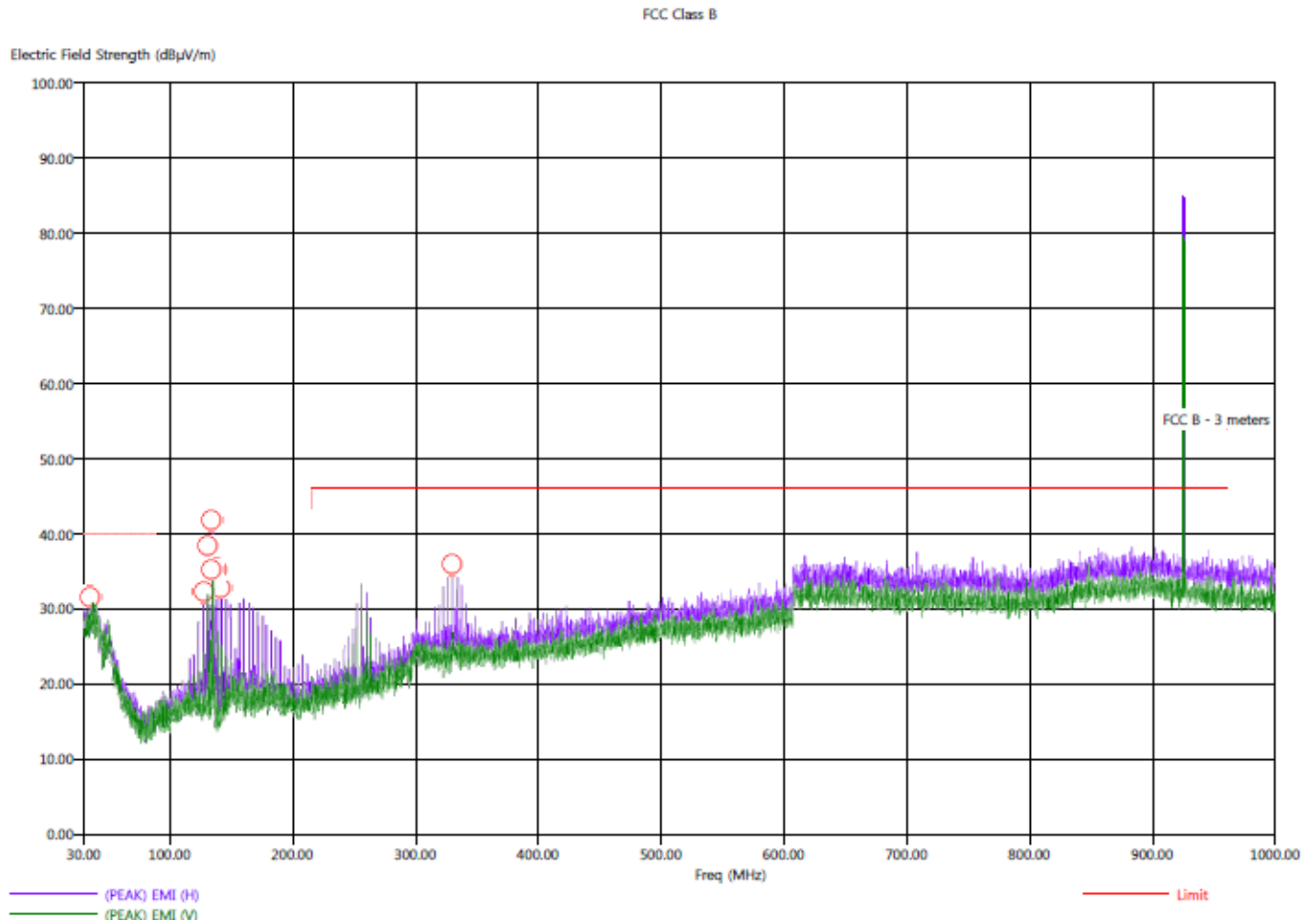
Date: 03/04/2016
Lab: D
Tested By: Kyle Fujimoto

**High Channel
Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
925.12	89.33	H	113.97	-24.64	Peak	329.25	144.23	
925.12	89.24	H	93.97	-4.73	QP	329.25	144.23	
1850.24	41.31	H	73.97	-32.66	Peak	98.00	116.17	
1850.24	28.91	H	53.97	-25.06	Avg	98.00	116.17	
2755.36	46.41	H	73.97	-27.56	Peak	115.25	101.37	
2755.36	36.34	H	53.97	-17.63	Avg	115.25	101.37	
3700.48	46.04	H	73.97	-27.93	Peak	311.75	107.10	
3700.48	34.95	H	53.97	-19.02	Avg	311.75	107.10	
4625.60	49.55	H	73.97	-24.42	Peak	102.00	114.02	
4625.60	36.97	H	53.97	-17.00	Avg	102.00	114.02	
5550.72	51.34	H	73.97	-22.63	Peak	283.25	115.55	
5550.72	39.93	H	53.97	-14.05	Avg	283.25	115.55	
6475.84								No Emission
6475.84								Detected
7400.96								No Emission
7400.96								Detected
8326.08								No Emission
8326.08								Detected
9251.20								No Emission
9251.20								Detected

Title: Pre-Scan - FCC Class B
File: Agilent - Pre-Scan - FCC Class B - Z-Axis - 30 MHz to 1000 MHz.set
Operator: Kyle Fujimoto
EUT Type: TT10K System Transmitter
EUT Condition: The EUT is continuously transmitting - Z-Axis
Comments: Company: Binsfeld Engineering, Inc.
Model: TX10K

4/28/2016 04:39:42 AM
Sequence: Preliminary Scan



Z-axis is the worst case axis. The peak that is shown above the limit is the fundamental.
No additional spurious emissions were found between 10 kHz – 30 MHz and 1 GHz – 9.3 GHz

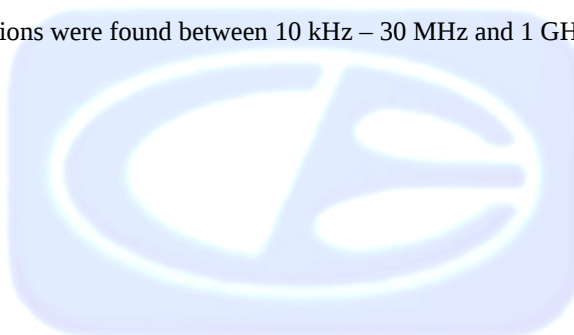
Title: Radiated Final - FCC Class B
 File: Aqilent - Final Scan - FCC Class B - 30 MHz to 1000 MHz.set
 Operator: Kyle Fujimoto
 EUT Type: TT10K System Transmitter
 EUT Condition: The EUT is continuously Receiving
 Comments: Company: Binsfeld Engineering, Inc.
 Model: TX10K

4/28/2016 4:56:34 AM
 Sequence: Final Measurements

FCC Class B										
Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(QP) EMI (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBμV/m)	Transducer (dB)	Cable (dB)	Ttbl Agl (deg)	Twr Ht (cm)
35.40	H	42.54	36.60	2.54	-3.40	40.00	24.43	0.40	130.00	288.92
127.20	H	36.87	34.55	-6.63	-8.95	43.50	15.05	0.81	355.50	320.02
130.90	H	32.26	27.35	-11.24	-16.15	43.50	14.48	0.82	18.75	384.56
134.60	H	32.71	29.48	-10.79	-14.02	43.50	13.91	0.84	359.00	223.43
134.60	V	30.37	24.81	-13.13	-18.69	43.50	13.89	0.84	239.25	111.13
138.30	H	32.23	28.16	-11.27	-15.34	43.50	13.35	0.86	24.00	159.67
142.00	H	32.84	28.98	-10.66	-14.52	43.50	13.91	0.87	360.00	207.85
330.00	H	39.51	33.81	-6.49	-12.19	46.00	18.01	1.41	157.50	127.19

Z-axis is the worst case axis.

No additional spurious emissions were found between 10 kHz – 30 MHz and 1 GHz – 9.3 GHz



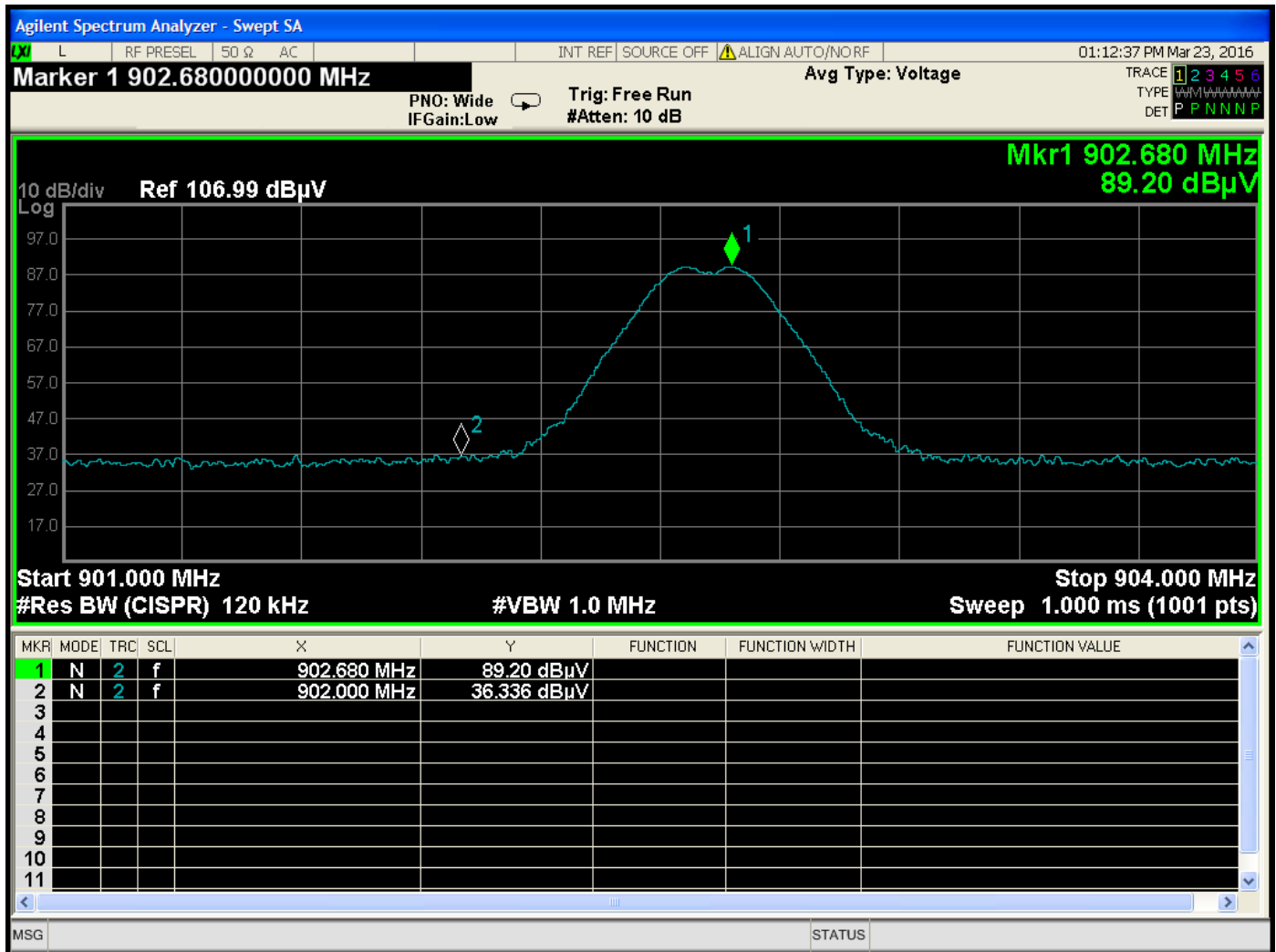
FCC 15.249

Binsfeld Engineering Inc.
 TT10K System Transmitter
 Model: TX10K

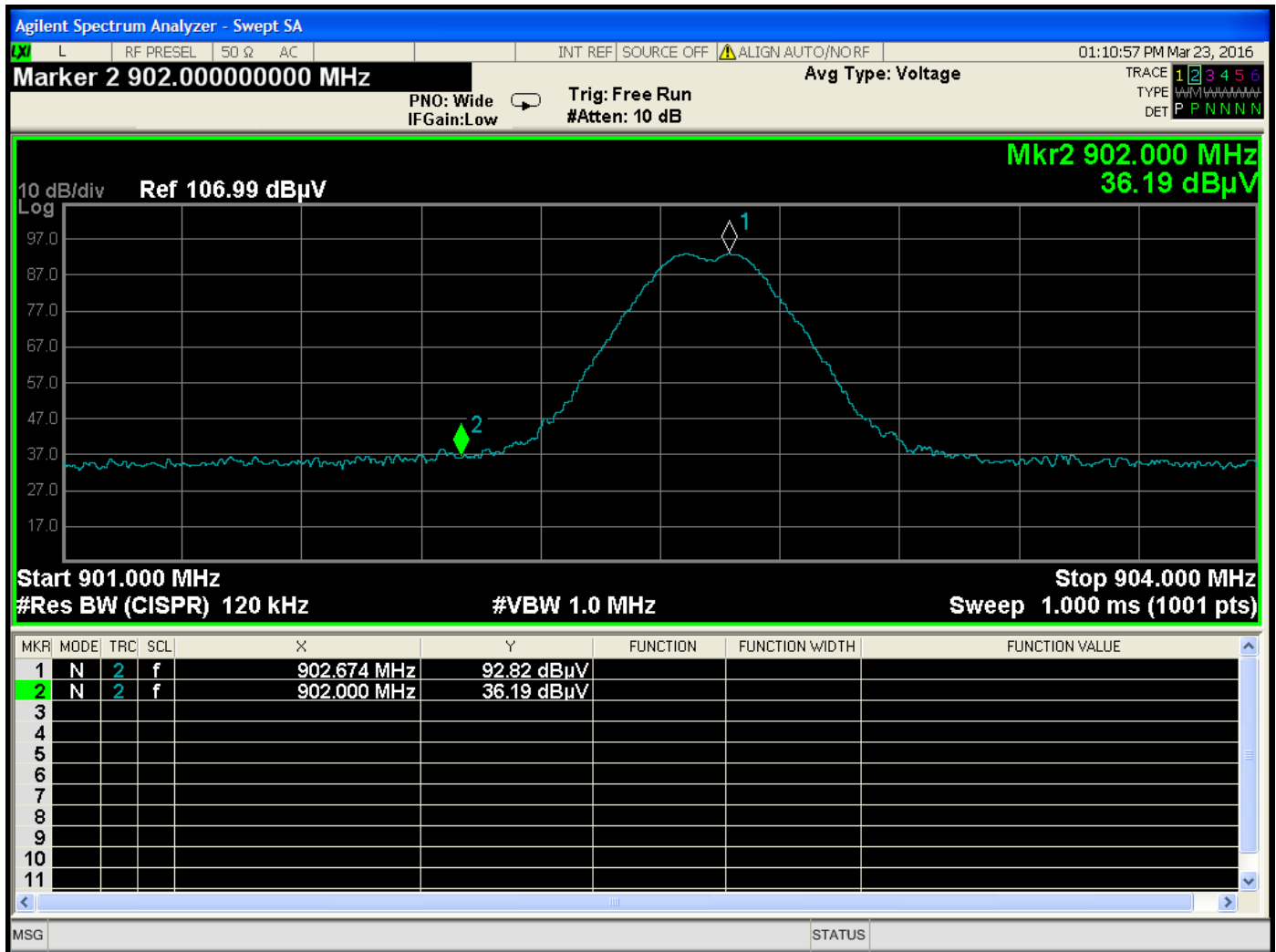
Date: 03/23/2016
 Lab: D
 Tested By: Kyle Fujimoto

Band Edges

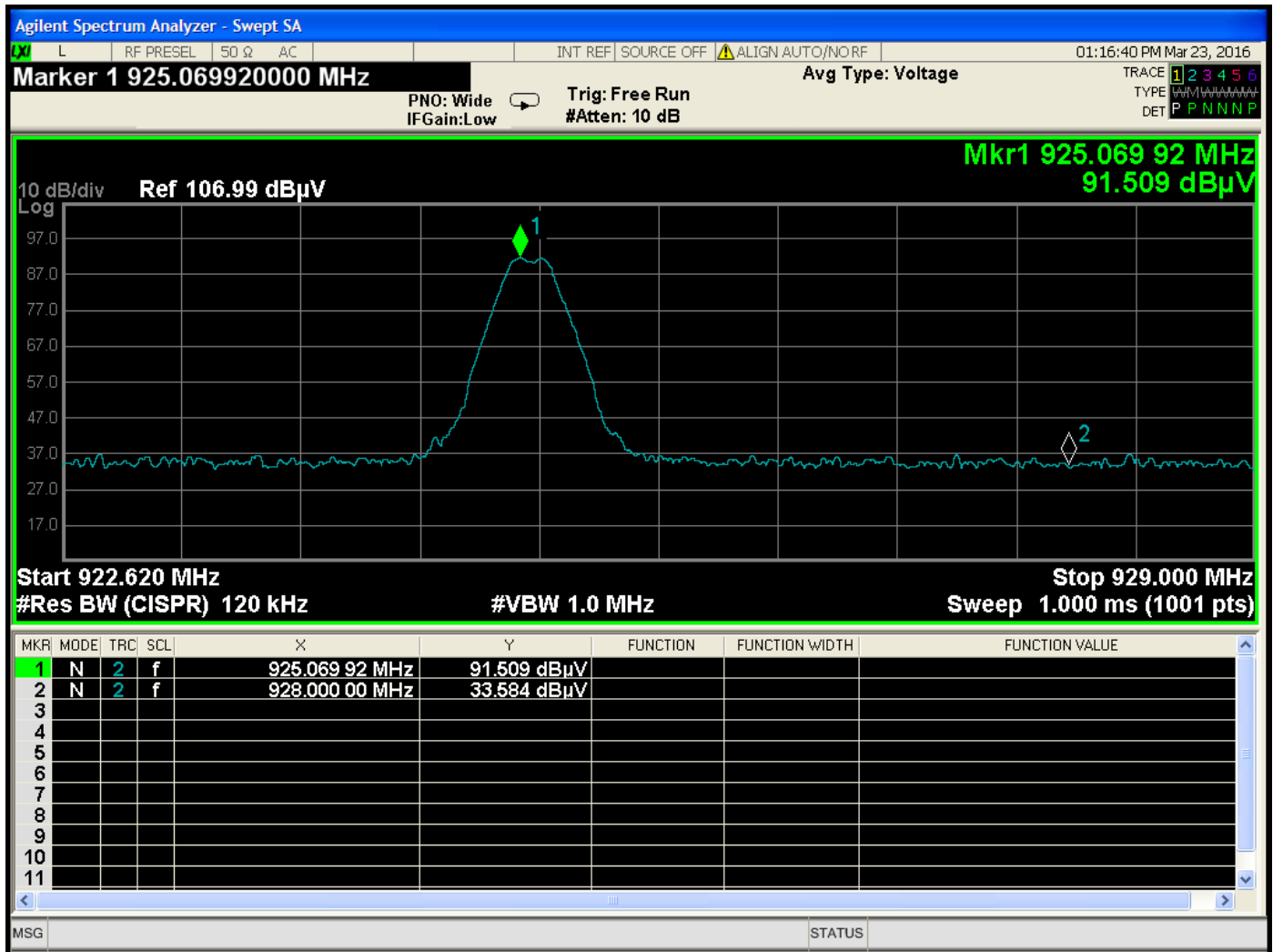
Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
902.58	89.20	V	113.97	-24.77	Peak	241.00	143.64	Fundamental of Low Ch.
902.58	89.11	V	93.97	-4.86	QP	241.00	143.64	Y-Axis
902.00	36.34	V	46.00	-9.66	Peak	241.00	143.64	Band Edge of Low Ch.
								Y-Axis
902.58	92.82	H	113.97	-21.15	Peak	345.50	159.46	Fundamental of Low Ch.
902.58	92.72	H	93.97	-1.25	QP	345.50	159.46	Z-Axis
902.00	36.19	V	46.00	-9.81	Peak	345.50	159.46	Band Edge of Low Ch.
								Z-Axis
925.12	91.51	V	113.97	-22.46	Peak	67.25	112.41	Fundamental of High Ch.
925.12	91.42	V	93.97	-2.55	QP	67.25	112.41	X-Axis
925.12	33.58	V	46.00	-12.42	Peak	67.25	112.41	Band Edge of High Ch.
								X-Axis
925.12	89.33	H	113.97	-24.64	Peak	329.25	144.23	Fundamental of High Ch.
925.12	89.24	H	93.97	-4.73	QP	329.25	144.23	Z-Axis
925.12	34.25	H	46.00	-11.75	Peak	329.25	144.23	Band Edge of High Ch.
								Z-Axis



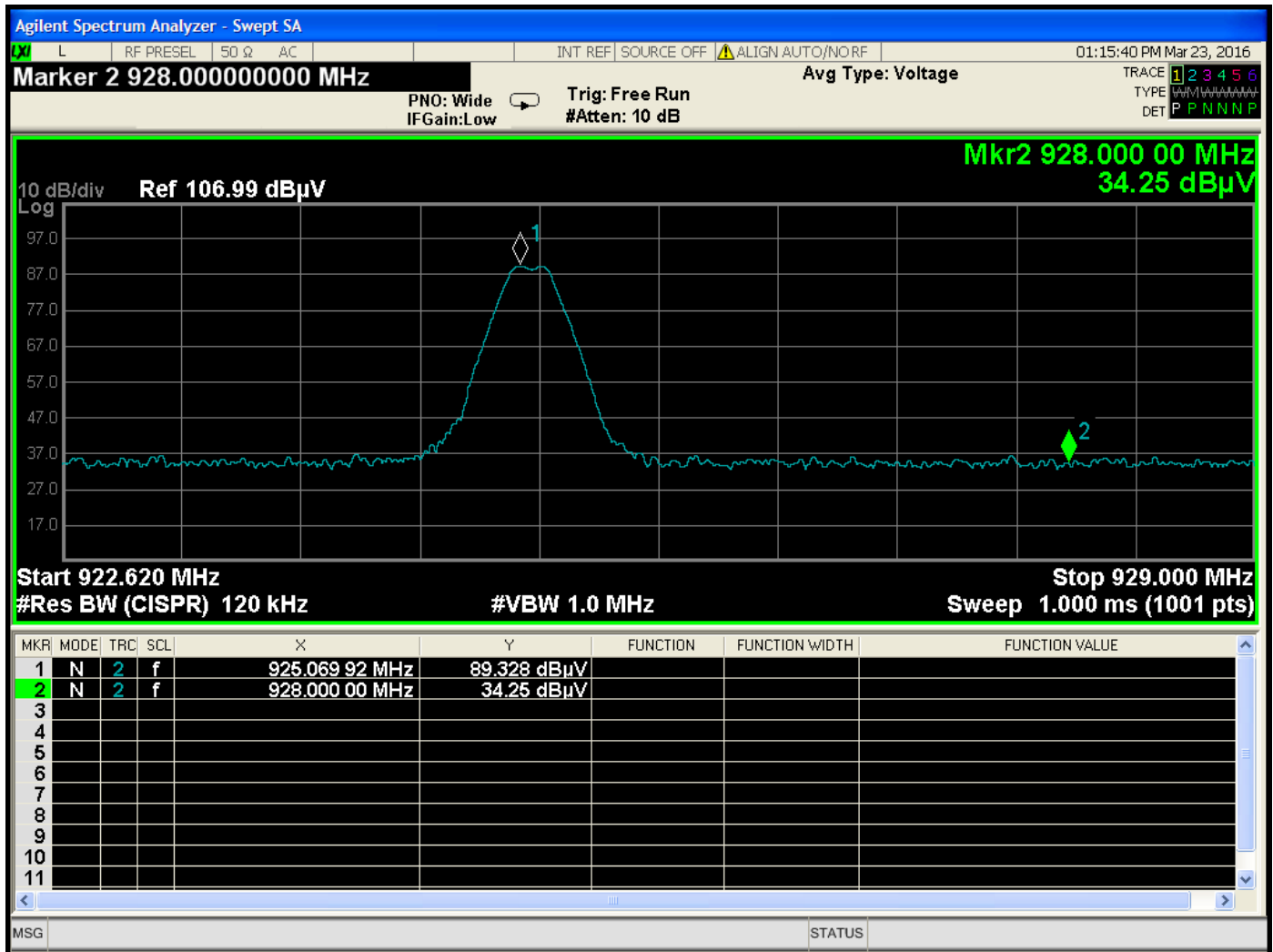
Band Edge – Low Channel – Vertical – Y-Axis



Band Edge – Low Channel – Horizontal – Z-Axis



Band Edge – High Channel – Vertical – X-Axis



Band Edge – High Channel – Horizontal – Z-Axis