FCC PART 15, SUBPART B and C
TEST REPORT

for

REMOTE ASSEMBLY, NIGHTHAWK

P/N: 2-601603-1

Prepared for

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DATE: NOVEMBER 17, 2015

	REPORT BODY	APPENDICES					TOTAL
		A	***B***	***C***	***D***	***E***	
PAGES	21	2	2	2	11	50	**88**

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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:	Remote Assembly, Nighthawk P/N: 2-601603-1 S/N: N/A
Product Description:	See Expository Statement.
Modifications:	The EUT was not modified in order to meet the specifications.
Customer:	Pacific Scientific Energetic Materials Company (California), LLC 3601 Union Road Hollister, California 95023
Test Dates:	October 8, 9, and 12, 2015
Test Specifications:	Emissions requirements CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.247
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	Conducted RF Emissions, 150 kHz – 30 MHz.	This test was not performed because the EUT operates on battery power only.
2	Radiated RF Emissions, 10 kHz – 9300 MHz	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, 15.209 and 15.247 (d)
3	20 dB Bandwidth	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (a)(1)(i)
4	Peak Power Output	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (b)(2)
5	RF Conducted Antenna Test	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (d)
6	Carrier Frequency Separation	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (a)(1)
7	Average Time of Occupancy	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (a)(1)(i)
8	Peak Power Spectral Density from the International Radiator to the Antenna	This test was not performed because the EUT is a frequency hopper.

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Remote Assembly, Nighthawk, P/N: 2-601603-1. The emissions measurements were performed according to the measurement procedure described in ANSI C63.10: 2013. 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, 15.207, 15.209, and 15.247.

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

Pacific Scientific Energetic Materials Company (California), LLC

Michael Hathaway	Electrical Engineer

Compatible Electronics Inc.

Kyle Fujimoto	Test Engineer
James Ross	Test Engineer

2.4 Date Test Sample was Received

The test sample was received on October 24, 2015.

2.5 Disposition of the Test Sample

The test sample has not been returned to Pacific Scientific Energetic Materials Company (California), LLC 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
DA 00-705: 2000	Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - Emissions

The Remote Assembly, Nighthawk, P/N: 2-601603-1 (EUT) was tested as a stand alone unit and continuously transmitting. The EUT's antenna is a Splatch style antenna directly soldered to the PCB. The EUT was tested in three orthogonal axis.

The EUT was programmed so that it could be tested at the low, middle, and high channels.

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

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	PART NUMBER	SERIAL NUMBER	FCC ID
REMOTE ASSEMBLY, NIGHTHAWK	PACIFIC SCIENTIFIC ENERGETIC MATERIALS COMPANY (CALIFORNIA), LLC	2-601603-1	N/A	RSJNIGHTHAWKV2-1

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
GENERAL TEST EQUIPMENT USED IN LAB B					
Computer	Compaq	CQ5210F	CNX9360CF9	N/A	N/A
Monitor	Hewlett Packard	HPs2031a	3CQ046N3MD	N/A	N/A
EMI Receiver	Rohde & Schwarz	ESIB40	100194	December 4, 2014	1 Year
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
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	1 Year
Loop Antenna	Com-Power	AL-130	17089	February 6, 2015	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 26, 2014	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 Below 1 GHz: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

For Frequencies 1 GHz and Above: 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 a "duty cycle correction factor", derived from 20 log (dwell time / 100 ms). This duty cycle correction factor was then subtracted from the peak reading.

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 9.3GHz	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, EN 50147-2 and CISPR 22. 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 15.247(d) for radiated emissions. Please see Appendix E for the data sheets.

7.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
Remote Assembly, Nighthawk, P/N: 2-601603-1

Frequency MHz	**Corrected Reading* dBuV**	**Specification Limit dBuV**	**Delta (Cor. Reading – Spec. Limit) dB**
7316.96 (V) (X-Axis)	49.32 (Avg)	54.00	-4.68
7316.96 (H) (Y-Axis)	48.82 (Avg)	54.00	-5.18
7316.96 (H) (Z-Axis)	48.55 (Avg)	54.00	-5.45
7268.96 (H) (Y-Axis)	47.19 (Avg)	54.00	-6.81
7268.96 (H) (X-Axis)	46.55 (Avg)	54.00	-7.45
7268.96 (V) (Z-Axis)	46.27 (Avg)	54.00	-7.73

Notes:

(H)	Horizontal
(V)	Vertical
(Avg)	Averaged Reading
*	The complete emissions data is given in Appendix E of this report.

7.2 20 dB Bandwidth

The 20 dB Bandwidth was measured using the EMI Receiver. The bandwidth was measured using a direct connection from the RF output of the EUT. The resolution bandwidth was 10 kHz and the video bandwidth was 30 kHz.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1)(i). The 20 dB bandwidth is less than the separation between channels. Please see the data sheets located in Appendix E.

7.3 Peak Output Power

The Peak Output Power was measured using the EMI Receiver. The peak output power was measured using a direct connection from the RF output of the EUT. The resolution bandwidth was 8 MHz and the video bandwidth was 50 MHz. The cable loss was also added back into the reading using the reference level offset.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (b)(2). The maximum peak output power is less than 250 mW. Please see the data sheets located in Appendix E.

7.4 RF Antenna Conducted Test

The RF antenna conducted test was performed using the EMI Receiver. The RF antenna conducted test measured using a direct connection from the RF out on the EUT into the input of the EMI Receiver. The resolution bandwidth was 100 kHz, and the video bandwidth was 300 kHz. The spans were wide enough to include all the harmonics and emissions that were produced by the intentional radiator.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). The RF power that is produced by the intentional radiator is at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of desired power. Please see the radiated emission data sheets located in Appendix E.

7.5 RF Band Edges

The RF band edges were taken at the edges of the ISM spectrum (902 MHz when the EUT was on the low channel and 928 MHz when the EUT was on the high channel) using the EMI Receiver. The RBW was set to 100 kHz and the VBW was set to 300 kHz. Plots of the fundamental were taken to ensure the amplitude at the band edges were at least 20 dB down from the peak of the fundamental emission.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). The RF power at the band edges at 902 MHz and 928 MHz meet the requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). Please see the data sheets located in Appendix E.

7.6 Carrier Frequency Separation

The Channel Hopping Separation Test was measured using the EMI Receiver. The EUT was operating in its normal operating mode. The resolution bandwidth was 20 kHz, and the video bandwidth 100 kHz. The frequency span was wide enough to include the peaks of two adjacent channels.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1). The Channel Hopping Separation is greater than the 20 dB bandwidth. Please see the data sheets located in Appendix E.

7.7 Number of Hopping Frequencies

The Channel Hopping Separation Test was measured using the EMI Receiver. The EUT was operating in its normal operating mode. The resolution bandwidth was 30 kHz, and the video bandwidth was 100 kHz. The frequency span was wide enough to include all of the peaks in the frequency band of operation.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1) and 15.247 (a)(1)(i). The number of hopping frequencies is 25. Please see the data sheets located in Appendix E.

7.8 Average Time of Occupancy Test

The Average Time of Occupancy Test was measured using the EMI Receiver. The EUT was operating in normal operating mode. The frequency span was taken to 0 Hz with a sweep time of 50 msec to determine the time for each transmission.

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 10 seconds.

The sweep time was then changed to 1 second and the number of pulses taken. The number of pulses was then multiplied by 10 to determine the number of pulses in a 10 second period. The number of pulses in a 10 second period was then multiplied by the time for each pulse to determine the average time of occupancy.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1)(i). The EUT does not transmit for more than 400 msec in a 10 second period on any frequency. Please see the data sheets located in Appendix E.

7.9 Spectral Density Test

The spectrum density output was measured using the EMI Receiver. The spectral density output was measured using a direct connection from the RF out on the EUT into the input of the EMI Receiver. The resolution bandwidth 3 kHz, and the video bandwidth was 10 kHz. The highest 1.5 MHz of the signal was used as the frequency span with the sweep rate being 1 second for every 3 kHz of span.

Test Results:

This test was not performed because the EUT is a frequency hopper.

8. CONCLUSIONS

The Remote Assembly, Nighthawk, P/N: 2-601603-1, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.247.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP LAB CODES 200063-0, 200528-0, 200527-0

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

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.247 and/or FCC **Class B** 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

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST	Remote Assembly, Nighthawk Model: 2-601603-1 S/N: N/A

There were no additional models covered under this report.

APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED SITE

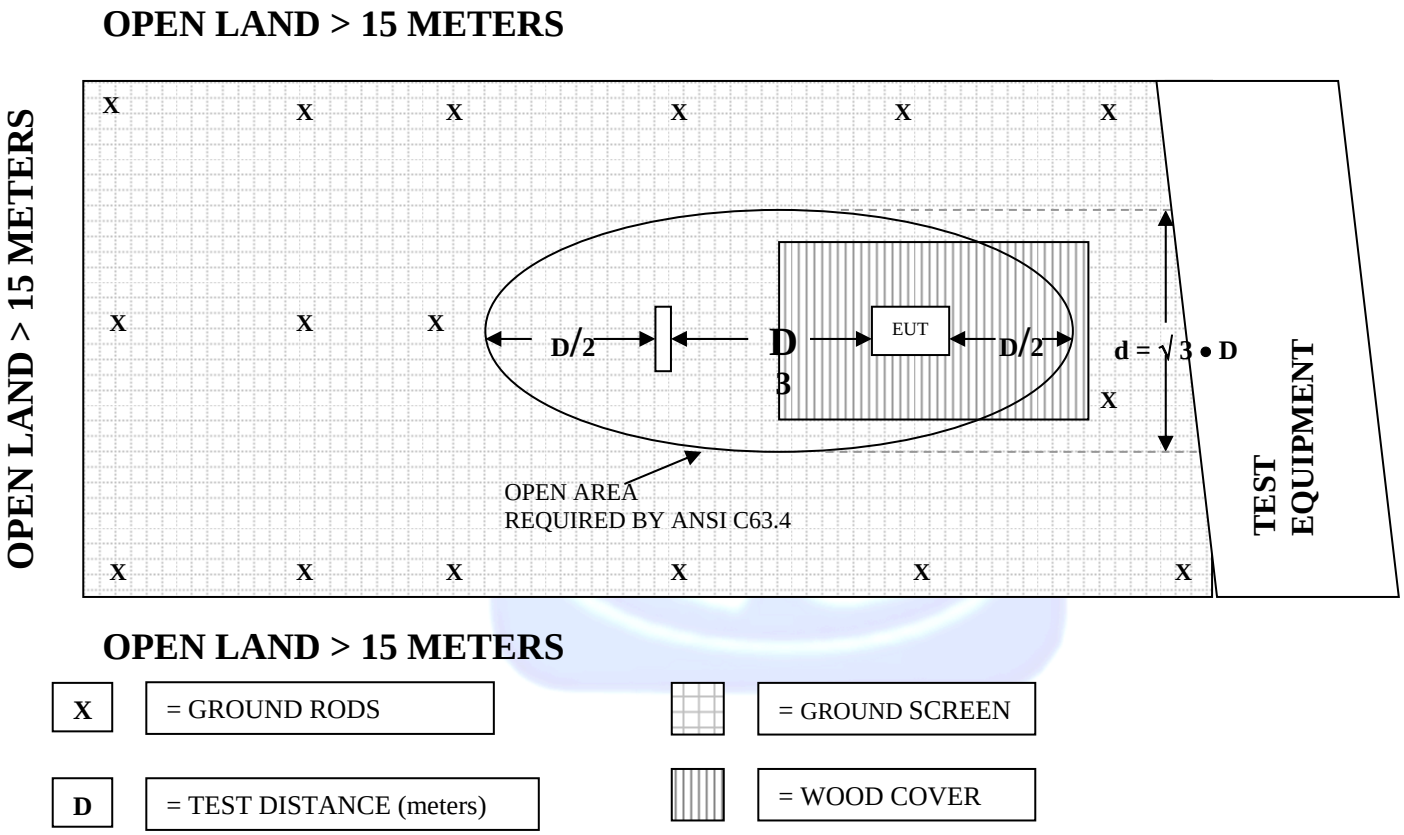
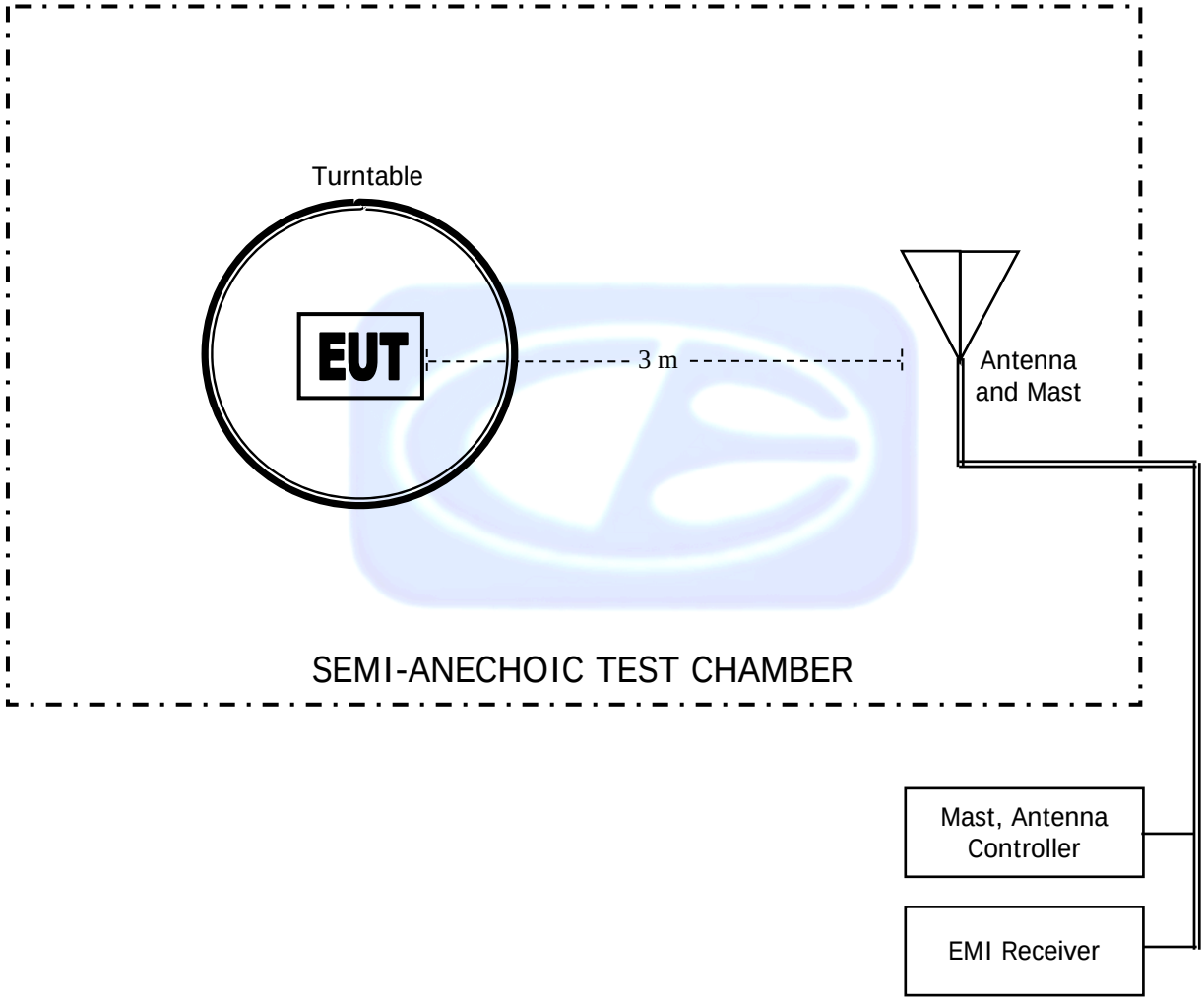


FIGURE 2: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER



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, 2014

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.23	10.0	38.43
1.5	25.84	10.5	40.19
2.0	28.14	11.0	40.49
2.5	29.51	11.5	41.39
3.0	31.20	12.0	42.02
3.5	32.17	12.5	43.30
4.0	31.40	13.0	42.77
4.5	31.86	13.5	40.18
5.0	34.82	14.0	42.59
5.5	34.38	14.5	41.74
6.0	36.31	15.0	41.84
6.5	34.81	15.5	38.48
7.0	37.48	16.0	39.52
7.5	36.98	16.5	37.85
8.0	36.66	17.0	41.33
8.5	38.47	17.5	44.96
9.0	37.22	18.0	48.50
9.5	37.86		

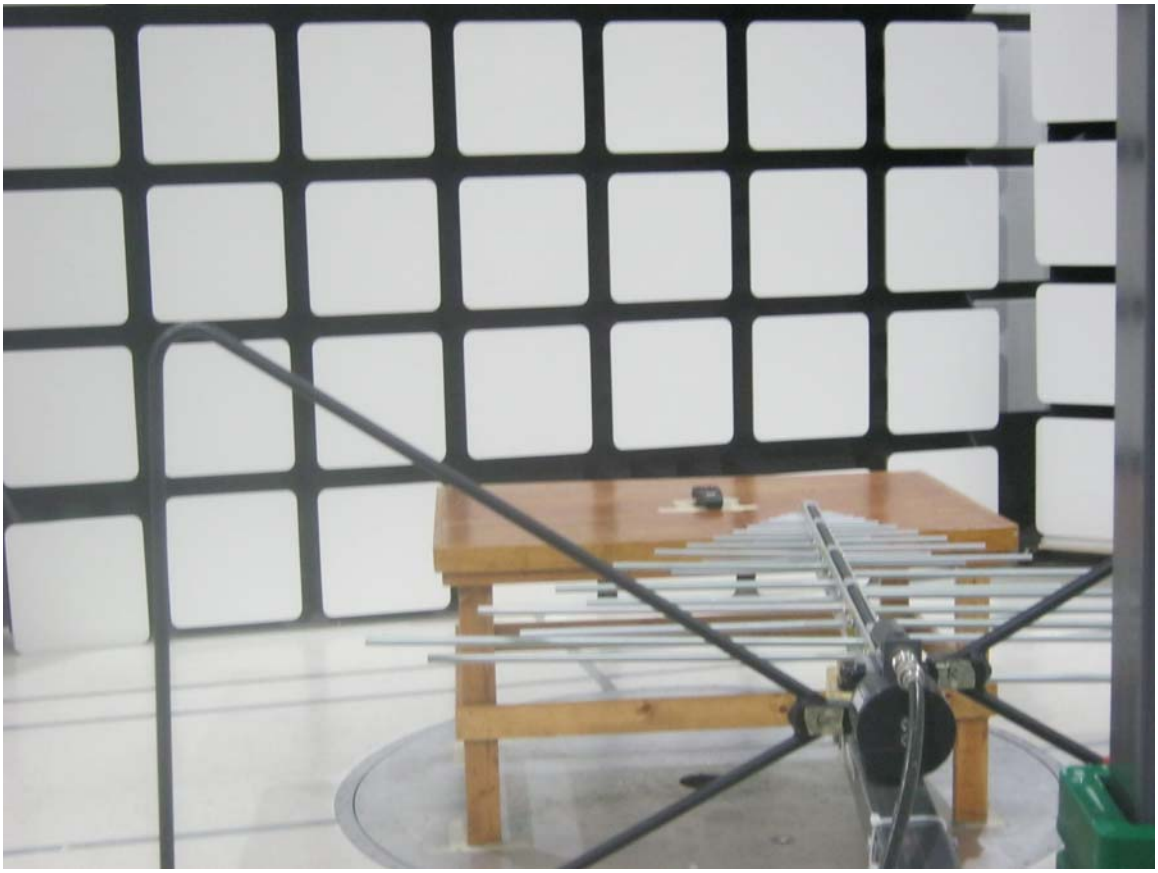
COM-POWER PA-118

PREAMPLIFIER

S/N: 551024

CALIBRATION DATE: MARCH 6, 2015

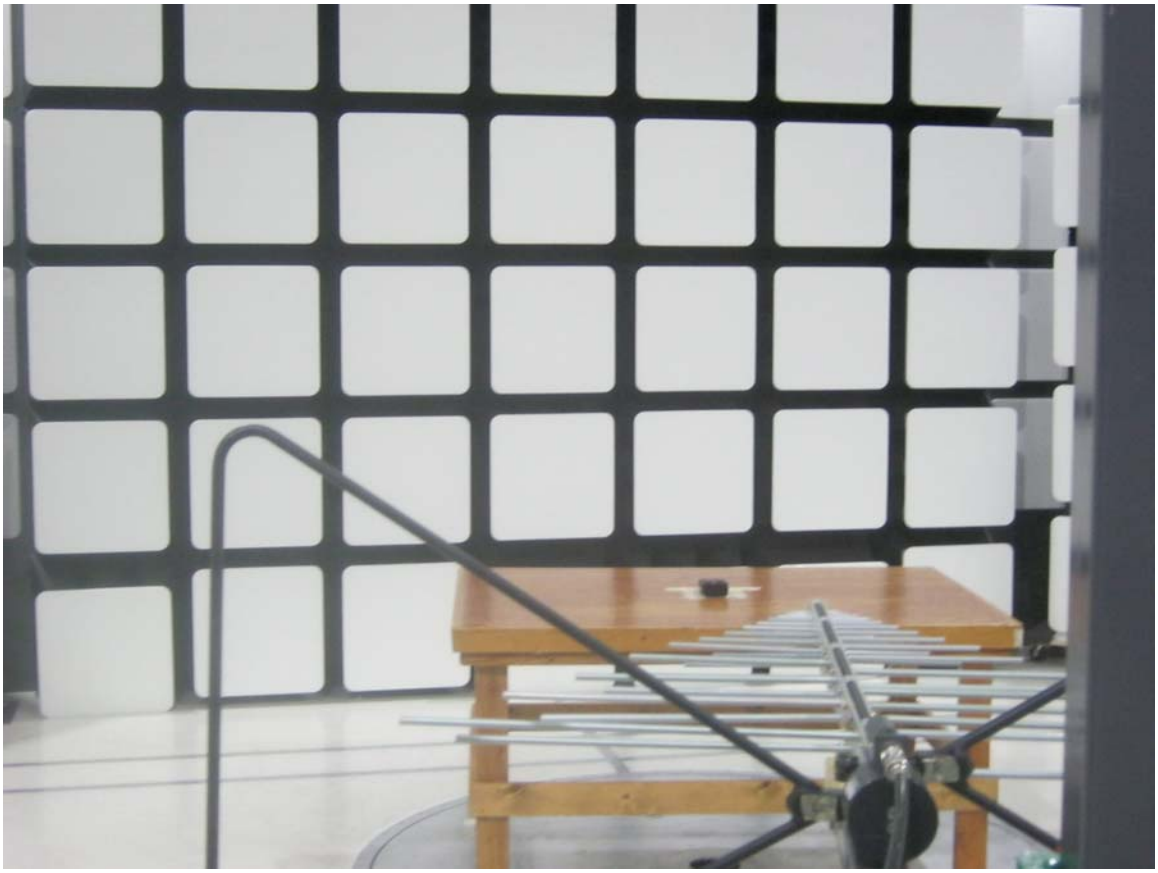
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	39.76	6.0	38.77
1.1	40.46	6.5	38.46
1.2	40.05	7.0	38.27
1.3	40.58	7.5	38.77
1.4	39.50	8.0	39.25
1.5	39.92	8.5	38.63
1.6	40.40	9.0	39.58
1.7	40.10	9.5	42.12
1.8	40.49	10.0	38.53
1.9	38.86	11.0	40.21
2.0	41.53	12.0	41.15
2.5	41.05	13.0	40.51
3.0	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

PACIFIC SCIENTIFIC ENERGETIC MATERIALS COMPANY (CALIFORNIA), LLC
REMOTE ASSEMBLY, NIGHTHAWK
P/N: 2-601603-1
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

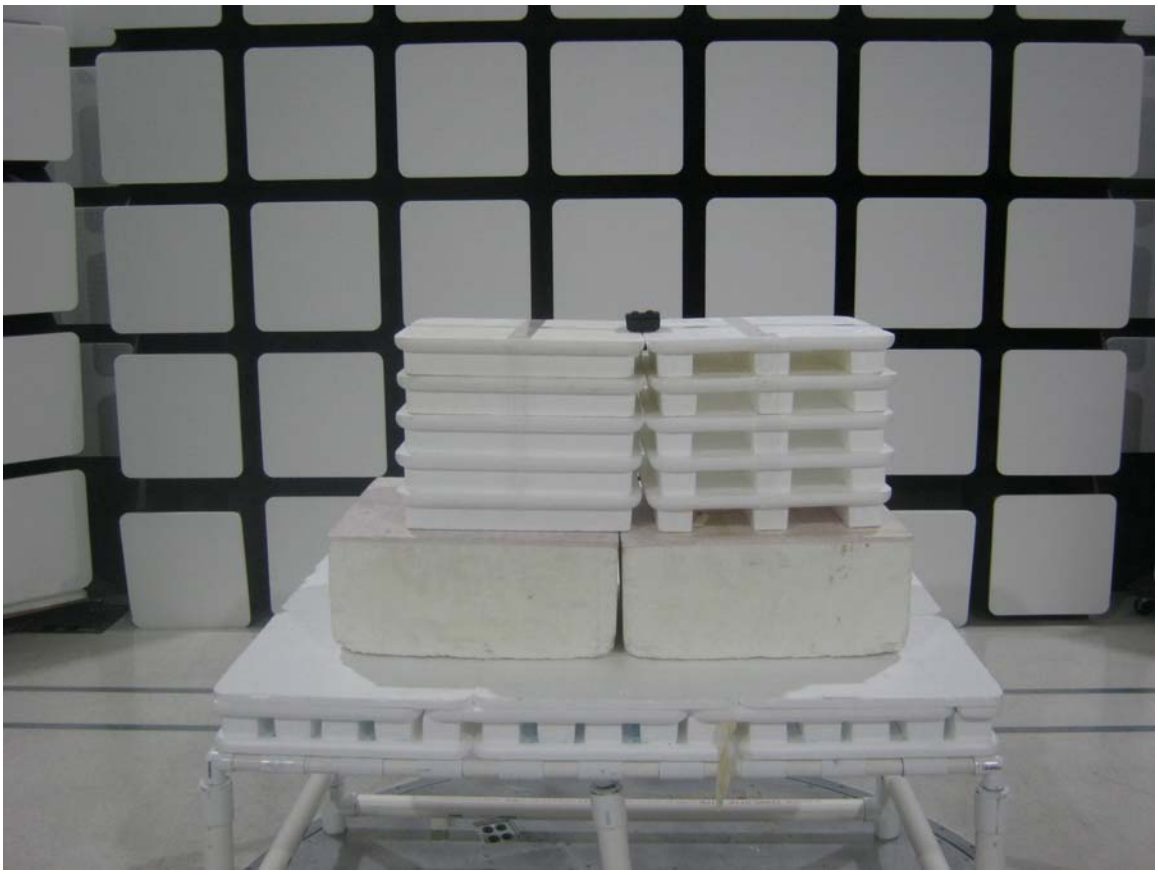
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

PACIFIC SCIENTIFIC ENERGETIC MATERIALS COMPANY (CALIFORNIA), LLC
REMOTE ASSEMBLY, NIGHTHAWK
P/N: 2-601603-1
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

PACIFIC SCIENTIFIC ENERGETIC MATERIALS COMPANY (CALIFORNIA), LLC
REMOTE ASSEMBLY, NIGHTHAWK
P/N: 2-601603-1
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

PACIFIC SCIENTIFIC ENERGETIC MATERIALS COMPANY (CALIFORNIA), LLC
REMOTE ASSEMBLY, NIGHTHAWK
P/N: 2-601603-1
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 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/27/2015
Lab: D
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.24								**Not in Restricted Band**
1805.24								**Done Via Conducted**
2707.86	52.81	V	74	-21.188	Peak	0.00	109.88	
2707.86	32.81	V	54	-21.188	Avg	0.00	109.88	
3610.48	57.13	V	74	-16.869	Peak	202.00	158.71	
3610.48	37.13	V	54	-16.869	Avg	202.00	158.71	
4513.1	56.80	V	74	-17.204	Peak	150.00	206.77	
4513.1	36.80	V	54	-17.204	Avg	150.00	206.77	
5415.72	54.71	V	74	-19.289	Peak	181.00	142.95	
5415.72	34.71	V	54	-19.289	Avg	181.00	142.95	
6318.34								**Not in Restricted Band**
6318.34								**Done Via Conducted**
7220.96								**Not in Restricted Band**
7220.96								**Done Via Conducted**
8123.58								**No Emission**
8123.58								**Detected**
9026.2								**No Emission**
9026.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.24								**Not in Restricted Band**
1805.24								**Done Via Conducted**
2707.86	52.68	V	74	-21.321	Peak	101.00	142.89	
2707.86	32.68	V	54	-21.321	Avg	101.00	142.89	
3610.48	52.31	V	74	-21.693	Peak	171.00	287.79	
3610.48	32.31	V	54	-21.693	Avg	171.00	287.79	
4513.1	57.09	V	74	-16.909	Peak	212.00	174.71	
4513.1	37.09	V	54	-16.909	Avg	212.00	174.71	
5415.72	54.85	V	74	-19.149	Peak	232.00	126.59	
5415.72	34.85	V	54	-19.149	Avg	232.00	126.59	
6318.34								**Not in Restricted Band**
6318.34								**Done Via Conducted**
7220.96								**Not in Restricted Band**
7220.96								**Done Via Conducted**
8123.58								**No Emission**
8123.58								**Detected**
9026.2								**No Emission**
9026.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.24								**Not in Restricted Band**
1805.24								**Done Via Conducted**
2707.86	55.32	V	74	-18.68	Peak	281.00	158.83	
2707.86	35.32	V	54	-18.68	Avg	281.00	158.83	
3610.48	51.45	V	74	-22.55	Peak	54.00	110.89	
3610.48	31.45	V	54	-22.55	Avg	54.00	110.89	
4513.1	54.45	V	74	-19.55	Peak	34.00	126.83	
4513.1	34.45	V	54	-19.55	Avg	34.00	126.83	
5415.72	52.71	V	74	-21.29	Peak	75.00	238.89	
5415.72	32.71	V	54	-21.29	Avg	75.00	238.89	
6318.34								**Not in Restricted Band**
6318.34								**Done Via Conducted**
7220.96								**Not in Restricted Band**
7220.96								**Done Via Conducted**
8123.58								**No Emission**
8123.58								**Detected**
9026.2								**No Emission**
9026.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.24								**Not in Restricted Band**
1805.24								**Done Via Conducted**
2707.86	55.01	H	74.00	-18.99	Peak	337.00	142.83	
2707.86	35.01	H	54.00	-18.99	Avg	337.00	142.83	
3610.48	50.58	H	74.00	-23.43	Peak	10.00	142.59	
3610.48	30.58	H	54.00	-23.43	Avg	10.00	142.59	
4513.1	53.75	H	74.00	-20.26	Peak	279.00	158.83	
4513.1	33.75	H	54.00	-20.26	Avg	279.00	158.83	
5415.72	53.50	H	74.00	-20.50	Peak	67.00	110.89	
5415.72	33.50	H	54.00	-20.50	Avg	67.00	110.89	
6318.34								**Not in Restricted Band**
6318.34								**Done Via Conducted**
7220.96								**Not in Restricted Band**
7220.96								**Done Via Conducted**
8123.58								**No Emission**
8123.58								**Detected**
9026.2								**No Emission**
9026.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.24								**Not in Restricted Band**
1805.24								**Done Via Conducted**
2707.86	53.69	H	74.00	-20.31	Peak	195.75	222.83	
2707.86	33.69	H	54.00	-20.31	Avg	195.75	222.83	
3610.48	52.18	H	74.00	-21.82	Peak	100.00	206.83	
3610.48	32.18	H	54.00	-21.82	Avg	100.00	206.83	
4513.1	53.77	H	74.00	-20.23	Peak	288.00	158.95	
4513.1	33.77	H	54.00	-20.23	Avg	288.00	158.95	
5415.72	53.75	H	74.00	-20.25	Peak	179.00	158.89	
5415.72	33.75	H	54.00	-20.25	Avg	179.00	158.89	
6318.34								**Not in Restricted Band**
6318.34								**Done Via Conducted**
7220.96								**Not in Restricted Band**
7220.96								**Done Via Conducted**
8123.58								**No Emission**
8123.58								**Detected**
9026.2								**No Emission**
9026.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.24								**Not in Restricted Band**
1805.24								**Done Via Conducted**
2707.86	52.63	H	74.00	-21.37	Peak	140.00	126.89	
2707.86	32.63	H	54.00	-21.37	Avg	140.00	126.89	
3610.48	53.94	H	74.00	-20.06	Peak	51.00	126.77	
3610.48	33.94	H	54.00	-20.06	Avg	51.00	126.70	
4513.1	55.20	H	74.00	-18.80	Peak	31.75	190.77	
4513.1	35.20	H	54.00	-18.80	Avg	31.75	190.77	
5415.72	51.69	H	74.00	-22.31	Peak	88.00	206.95	
5415.72	31.69	H	54.00	-22.31	Avg	88.00	206.95	
6318.34								**Not in Restricted Band**
6318.34								**Done Via Conducted**
7220.96								**Not in Restricted Band**
7220.96								**Done Via Conducted**
8123.58								**No Emission**
8123.58								**Detected**
9026.2								**No Emission**
9026.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1817.24								**Not in Restricted Band**
1817.24								**Done Via Conducted**
2725.86	49.89	V	74.00	-24.11	Peak	143.00	174.89	
2725.86	29.89	V	54.00	-24.11	Avg	143.00	174.89	
3634.48	58.11	V	74.00	-15.89	Peak	5.00	141.88	
3634.48	38.11	V	54.00	-15.89	Avg	5.00	141.88	
4543.1	58.20	V	74.00	-15.80	Peak	330.00	206.77	
4543.1	38.20	V	54.00	-15.80	Avg	330.00	206.77	
5451.72	53.47	V	74.00	-20.53	Peak	30.00	287.79	
5451.72	33.47	V	54.00	-20.53	Avg	30.00	287.79	
6360.34								**Not in Restricted Band**
6360.34								**Done Via Conducted**
7268.96	66.55	V	74.00	-7.45	Peak	320.00	255.01	
7268.96	46.55	V	54.00	-7.45	Avg	320.00	255.01	
8177.58								**No Emission**
8177.58								**Detected**
9086.2								**No Emission**
9086.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1817.24								**Not in Restricted Band**
1817.24								**Done Via Conducted**
2725.86	50.97	V	74.00	-23.03	Peak	27.00	126.95	
2725.86	30.97	V	54.00	-23.03	Avg	27.00	126.95	
3634.48	55.06	V	74.00	-18.94	Peak	135.00	143.73	
3634.48	35.06	V	54.00	-18.94	Avg	135.00	143.73	
4543.1	58.67	V	74.00	-15.33	Peak	28.00	143.79	
4543.1	38.67	V	54.00	-15.33	Avg	28.00	143.79	
5451.72	54.21	V	74.00	-19.79	Peak	61.00	175.79	
5451.72	34.21	V	54.00	-19.79	Avg	61.00	175.79	
6360.34								**Not in Restricted Band**
6360.34								**Done Via Conducted**
7268.96	65.44	V	74.00	-8.56	Peak	144.00	174.05	
7268.96	45.44	V	54.00	-8.56	Avg	144.00	174.05	
8177.58								**No Emission**
8177.58								**Detected**
9086.2								**No Emission**
9086.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1817.24								**Not in Restricted Band**
1817.24								**Done Via Conducted**
2725.86	55.21	V	74.00	-18.79	Peak	177.00	143.55	
2725.86	35.21	V	54.00	-18.79	Avg	177.00	143.55	
3634.48	54.14	V	74.00	-19.86	Peak	249.00	141.94	
3634.48	34.14	V	54.00	-19.86	Avg	249.00	141.94	
4543.1	54.41	V	74.00	-19.59	Peak	323.75	126.89	
4543.1	34.41	V	54.00	-19.59	Avg	323.75	126.89	
5451.72	52.03	V	74.00	-21.97	Peak	11.00	268.92	
5451.72	32.03	V	54.00	-21.97	Avg	11.00	268.92	
6360.34								**Not in Restricted Band**
6360.34								**Done Via Conducted**
7268.96	66.27	V	74.00	-7.73	Peak	264.00	207.85	
7268.96	46.27	V	54.00	-7.73	Avg	264.00	207.85	
8177.58								**No Emission**
8177.58								**Detected**
9086.2								**No Emission**
9086.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1817.24								**Not in Restricted Band**
1817.24								**Done Via Conducted**
2725.86	53.82	H	74.00	-20.18	Peak	118.25	127.49	
2725.86	33.82	H	54.00	-20.18	Avg	118.25	127.49	
3634.48	53.22	H	74.00	-20.78	Peak	28.00	174.89	
3634.48	33.22	H	54.00	-20.78	Avg	28.00	174.89	
4543.1	55.66	H	74.00	-18.34	Peak	107.00	126.77	
4543.1	35.66	H	54.00	-18.34	Avg	107.00	126.77	
5451.72	56.41	H	74.00	-17.59	Peak	334.00	126.89	
5451.72	36.41	H	54.00	-17.59	Avg	334.00	126.89	
6360.34								**Not in Restricted Band**
6360.34								**Done Via Conducted**
7268.96	65.72	H	74.00	-8.28	Peak	133.25	169.46	
7268.96	45.72	H	54.00	-8.28	Avg	133.25	169.46	
8177.58								**No Emission**
8177.58								**Detected**
9086.2								**No Emission**
9086.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1817.24								**Not in Restricted Band**
1817.24								**Done Via Conducted**
2725.86	53.47	H	74.00	-20.53	Peak	138.00	238.65	
2725.86	33.47	H	54.00	-20.53	Avg	138.00	238.65	
3634.48	55.54	H	74.00	-18.46	Peak	295.00	141.70	
3634.48	35.54	H	54.00	-18.46	Avg	295.00	141.70	
4543.1	56.71	H	74.00	-17.29	Peak	13.00	158.89	
4543.1	36.71	H	54.00	-17.29	Avg	13.00	158.89	
5451.72	55.14	H	74.00	-18.86	Peak	0.00	158.77	
5451.72	35.14	H	54.00	-18.86	Avg	0.00	158.77	
6360.34								**Not in Restricted Band**
6360.34								**Done Via Conducted**
7268.96	67.19	H	74.00	-6.81	Peak	351.00	141.88	
7268.96	47.19	H	54.00	-6.81	Avg	351.00	141.88	
8177.58								**No Emission**
8177.58								**Detected**
9086.2								**No Emission**
9086.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1817.24								**Not in Restricted Band**
1817.24								**Done Via Conducted**
2725.86	53.58	H	74.00	-20.42	Peak	127.00	173.94	
2725.86	33.58	H	54.00	-20.42	Avg	127.00	173.94	
3634.48	55.79	H	74.00	-18.21	Peak	202.00	126.00	
3634.48	35.79	H	54.00	-18.21	Avg	202.00	126.00	
4543.1	58.49	H	74.00	-15.51	Peak	212.00	174.89	
4543.1	38.49	H	54.00	-15.51	Avg	212.00	174.89	
5451.72	53.92	H	74.00	-20.08	Peak	306.00	110.95	
5451.72	33.92	H	54.00	-20.08	Avg	306.00	110.95	
6360.34								**Not in Restricted Band**
6360.34								**Done Via Conducted**
7268.96	63.22	H	74.00	-10.78	Peak	288.00	208.14	
7268.96	43.22	H	54.00	-10.78	Avg	288.00	208.14	
8177.58								**No Emission**
8177.58								**Detected**
9086.2								**No Emission**
9086.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

High Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24								**Not in Restricted Band**
1829.24								**Done Via Conducted**
2743.86	52.18	V	74.00	-21.82	Peak	349.00	126.95	
2743.86	32.18	V	54.00	-21.82	Avg	349.00	126.95	
3658.48	58.24	V	74.00	-15.76	Peak	26.00	223.97	
3658.48	38.24	V	54.00	-15.76	Avg	26.00	223.97	
4573.1	54.60	V	74.00	-19.40	Peak	342.00	174.89	
4573.1	34.60	V	54.00	-19.40	Avg	342.00	174.89	
5487.72	55.52	V	74.00	-18.48	Peak	5.00	142.95	
5487.72	35.52	V	54.00	-18.48	Avg	5.00	142.95	
6402.34								**Not in Restricted Band**
6402.34								**Done Via Conducted**
7316.96	69.32	V	74.00	-4.68	Peak	181.00	238.89	
7316.96	49.32	V	54.00	-4.68	Avg	181.00	238.89	
8231.58								**No Emission**
8231.58								**Detected**
9146.2								**No Emission**
9146.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

High Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24								**Not in Restricted Band**
1829.24								**Done Via Conducted**
2743.86	53.14	V	74.00	-20.87	Peak	235.00	126.71	
2743.86	33.14	V	54.00	-20.87	Avg	235.00	126.71	
3658.48	53.16	V	74.00	-20.84	Peak	213.00	110.77	
3658.48	33.16	V	54.00	-20.84	Avg	213.00	110.77	
4573.1	54.56	V	74.00	-19.44	Peak	0.00	142.89	
4573.1	34.56	V	54.00	-19.44	Avg	0.00	142.89	
5487.72	51.85	V	74.00	-22.15	Peak	30.00	174.89	
5487.72	31.85	V	54.00	-22.15	Avg	30.00	174.89	
6402.34								**Not in Restricted Band**
6402.34								**Done Via Conducted**
7316.96	65.91	V	74.00	-8.09	Peak	217.00	110.95	
7316.96	45.91	V	54.00	-8.09	Avg	217.00	110.95	
8231.58								**No Emission**
8231.58								**Detected**
9146.2								**No Emission**
9146.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

High Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24								**Not in Restricted Band**
1829.24								**Done Via Conducted**
2743.86	57.08	V	74.00	-16.92	Peak	42.00	207.67	
2743.86	37.08	V	54.00	-16.92	Avg	42.00	207.67	
3658.48	52.13	V	74.00	-21.88	Peak	77.00	206.89	
3658.48	32.13	V	54.00	-21.88	Avg	77.00	206.89	
4573.1	54.27	V	74.00	-19.73	Peak	54.00	110.89	
4573.1	34.27	V	54.00	-19.73	Avg	54.00	110.89	
5487.72	51.66	V	74.00	-22.34	Peak	0.00	223.79	
5487.72	31.66	V	54.00	-22.34	Avg	0.00	223.79	
6402.34								**Not in Restricted Band**
6402.34								**Done Via Conducted**
7316.96	65.95	V	74.00	-8.05	Peak	120.00	110.89	
7316.96	45.95	V	54.00	-8.05	Avg	120.00	110.89	
8231.58								**No Emission**
8231.58								**Detected**
9146.2								**No Emission**
9146.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

High Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24								**Not in Restricted Band**
1829.24								**Done Via Conducted**
2743.86	52.28	H	74.00	-21.72	Peak	343.00	206.89	
2743.86	32.28	H	54.00	-21.72	Avg	343.00	206.89	
3658.48	53.28	H	74.00	-20.72	Peak	213.00	206.89	
3658.48	33.28	H	54.00	-20.72	Avg	213.00	206.89	
4573.1	57.42	H	74.00	-16.58	Peak	307.00	175.67	
4573.1	37.42	H	54.00	-16.58	Avg	307.00	175.67	
5487.72	57.03	H	74.00	-16.97	Peak	152.00	191.79	
5487.72	37.03	H	54.00	-16.97	Avg	152.00	191.79	
6402.34								**Not in Restricted Band**
6402.34								**Done Via Conducted**
7316.96	61.64	H	74.00	-12.36	Peak	115.00	239.97	
7316.96	41.64	H	54.00	-12.36	Avg	115.00	239.97	
8231.58								**No Emission**
8231.58								**Detected**
9146.2								**No Emission**
9146.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

High Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24								**Not in Restricted Band**
1829.24								**Done Via Conducted**
2743.86	55.01	H	74.00	-18.99	Peak	331.00	271.97	
2743.86	35.01	H	54.00	-18.99	Avg	331.00	271.97	
3658.48	56.98	H	74.00	-17.02	Peak	129.00	223.73	
3658.48	36.98	H	54.00	-17.02	Avg	129.00	223.73	
4573.1	54.67	H	74.00	-19.33	Peak	184.00	110.95	
4573.1	34.67	H	54.00	-19.33	Avg	184.00	110.95	
5487.72	54.05	H	74.00	-19.95	Peak	187.00	110.95	
5487.72	34.05	H	54.00	-19.95	Avg	187.00	110.95	
6402.34								**Not in Restricted Band**
6402.34								**Done Via Conducted**
7316.96	68.82	H	74.00	-5.18	Peak	183.00	110.95	
7316.96	48.82	H	54.00	-5.18	Avg	183.00	110.95	
8231.58								**No Emission**
8231.58								**Detected**
9146.2								**No Emission**
9146.2								**Detected**

FCC 15.247

Pacific Scientific
Remote Assembly, Nighthawk
P/N: 2-601603-1

Date: 10/26/2015
Lab: D
Tested By: Kyle Fujimoto

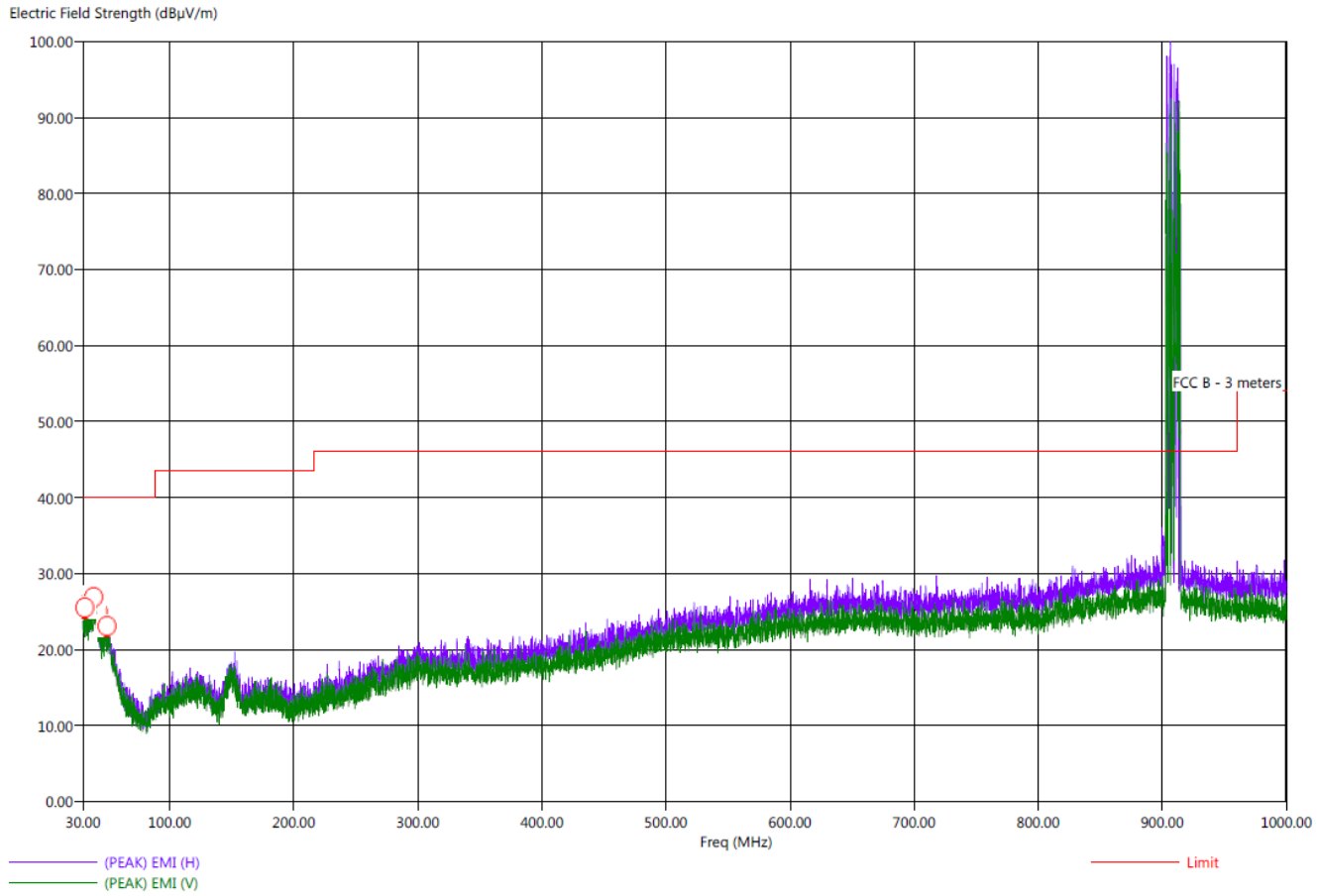
High Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24								**Not in Restricted Band**
1829.24								**Done Via Conducted**
2743.86	51.68	H	74.00	-22.32	Peak	125.00	158.69	
2743.86	31.68	H	54.00	-22.32	Avg	125.00	158.69	
3658.48	55.78	H	74.00	-18.22	Peak	45.00	110.77	
3658.48	35.78	H	54.00	-18.22	Avg	45.00	110.77	
4573.1	56.64	H	74.00	-17.36	Peak	42.00	174.89	
4573.1	36.64	H	54.00	-17.36	Avg	42.00	174.89	
5487.72	54.37	H	74.00	-19.63	Peak	341.00	207.79	
5487.72	34.37	H	54.00	-19.63	Avg	341.00	207.79	
6402.34								**Not in Restricted Band**
6402.34								**Done Via Conducted**
7316.96	68.55	H	74.00	-5.45	Peak	83.00	142.95	
7316.96	48.55	H	54.00	-5.45	Avg	83.00	142.95	
8231.58								**No Emission**
8231.58								**Detected**
9146.2								**No Emission**
9146.2								**Detected**

Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan 30-1000 MHz - FCC Class B.set Operator: Kyle Fujimoto
EUT Type: Remote Assembly, Nighthawk
EUT Condition: The EUT is continuously transmitting FHSS
Customer: Pacific Scientific
Part Number: 2-601603-1
Note: The Frequencies from 902 to 928 MHz are wanted emissions from the Tx and are subject to FCC 15.247 rules and not failing the spurious emissions.
Note #2: No Spurious Emissions Found Below 30 MHz or Above 1 GHz

10/30/2015 8:54:10 AM
Sequence: Preliminary Scan

FCC Class B



Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan 30-1000 MHz - FCC Class B.set
Operator: Kyle Fujimoto
EUT Type: Remote Assembly, Nighthawk
EUT Condition: The EUT is continuously transmitting FHSS
Customer: Pacific Scientific
P/N: 2-601603-1

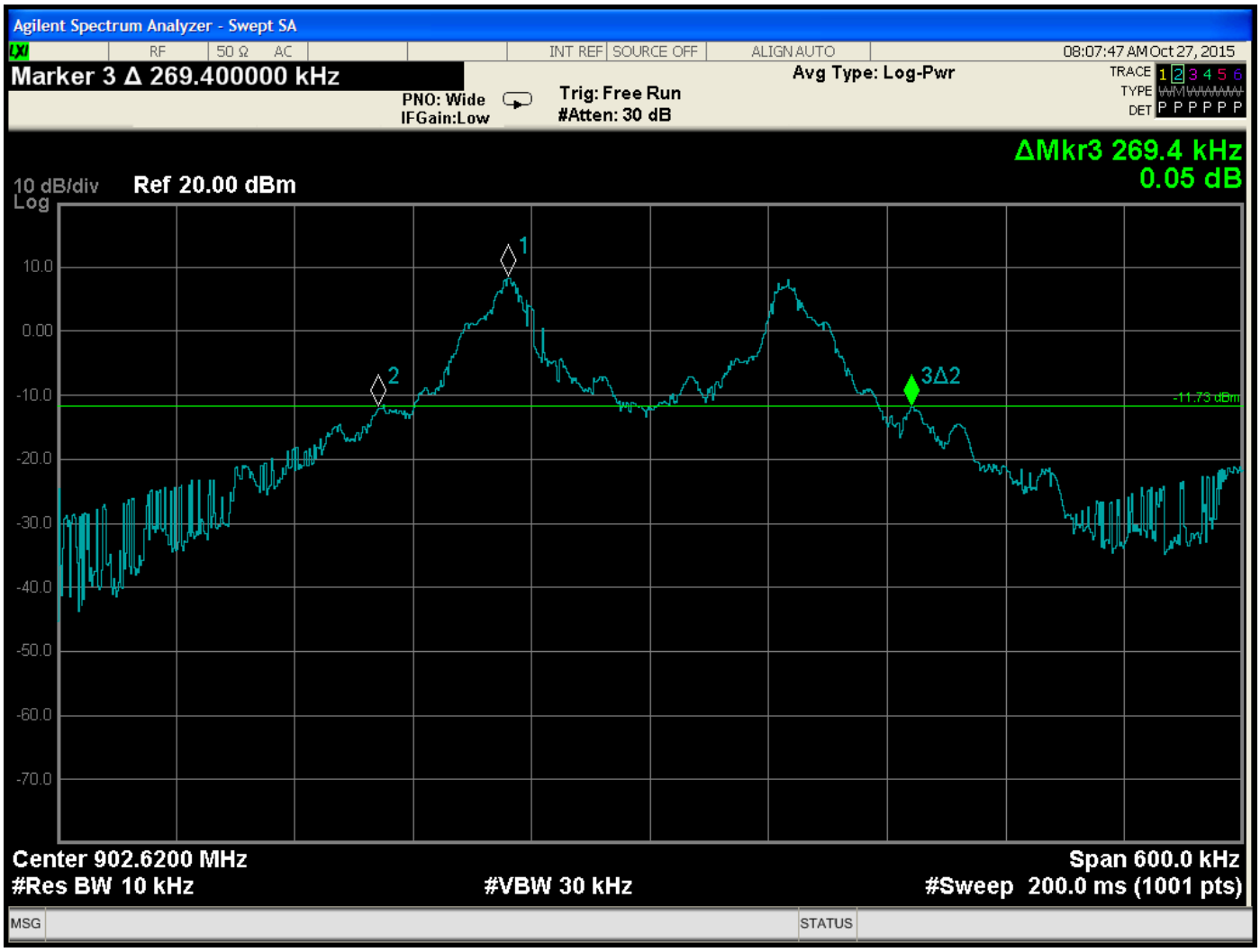
10/30/2015 9:05:48 AM
Sequence: Final Measurements

Final Scan - FCC Class B

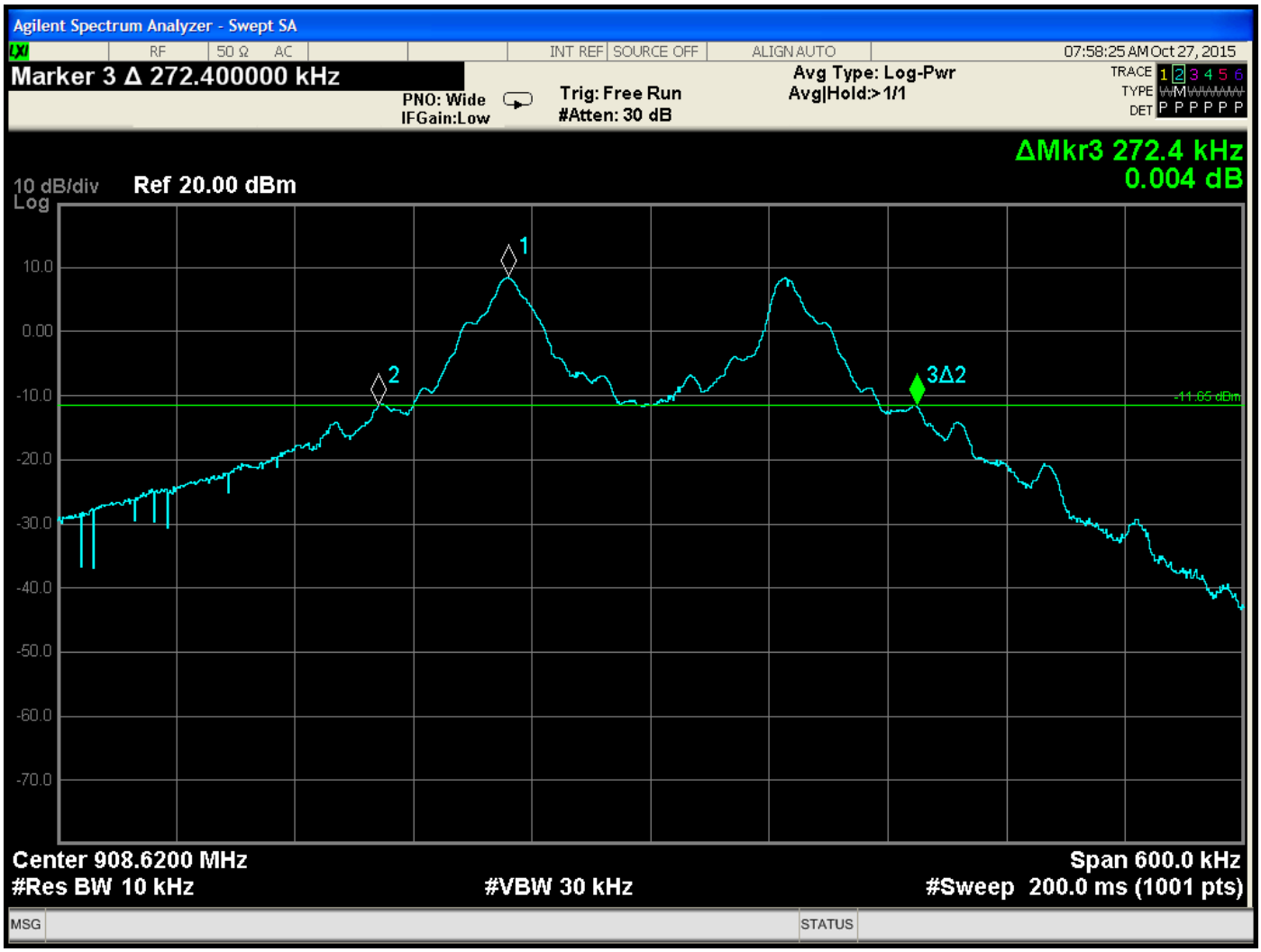
Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Twr Ht (cm)	Ttbl Agl (deg)
35.20	V	24.80	20.70	-15.20	-19.30	40.00	24.34	0.64	207.19	59.00
45.10	V	28.08	23.46	-15.42	-20.04	43.50	21.52	0.70	399.91	192.75
46.40	V	26.07	22.05	-17.43	-21.45	43.50	21.78	0.70	159.55	142.75
47.40	V	25.85	22.04	-17.65	-21.46	43.50	21.98	0.71	207.61	338.25
48.70	V	27.34	22.60	-16.16	-20.90	43.50	22.24	0.72	239.67	214.00
49.60	V	27.26	22.21	-16.24	-21.29	43.50	22.42	0.73	223.67	149.00
50.80	V	29.31	25.18	-14.19	-18.32	43.50	21.93	0.73	207.55	153.00

-20 dB BANDWIDTH

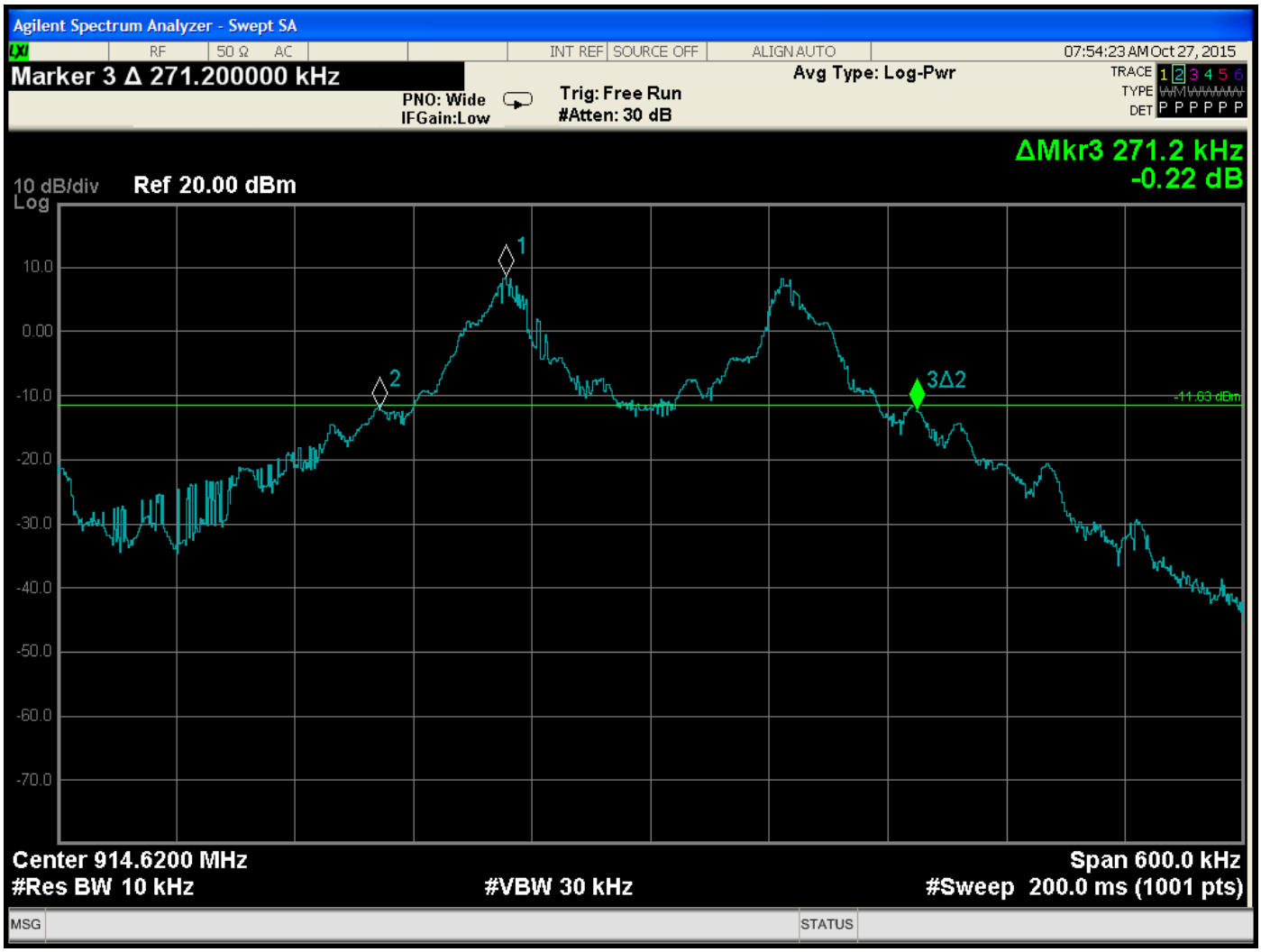
DATA SHEETS



20 dB Bandwidth of Fundamental – Low Channel



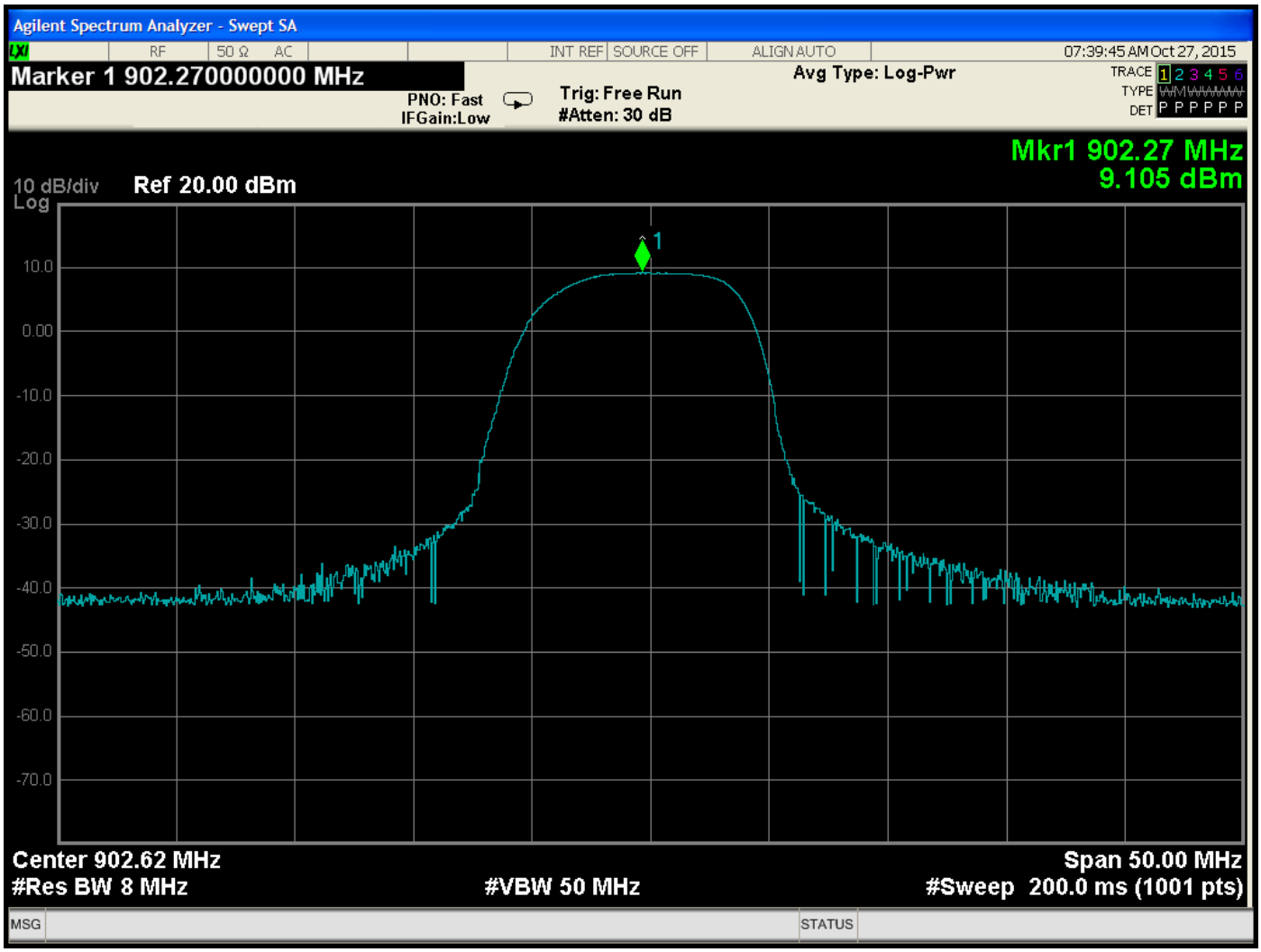
20 dB Bandwidth of Fundamental – Middle Channel



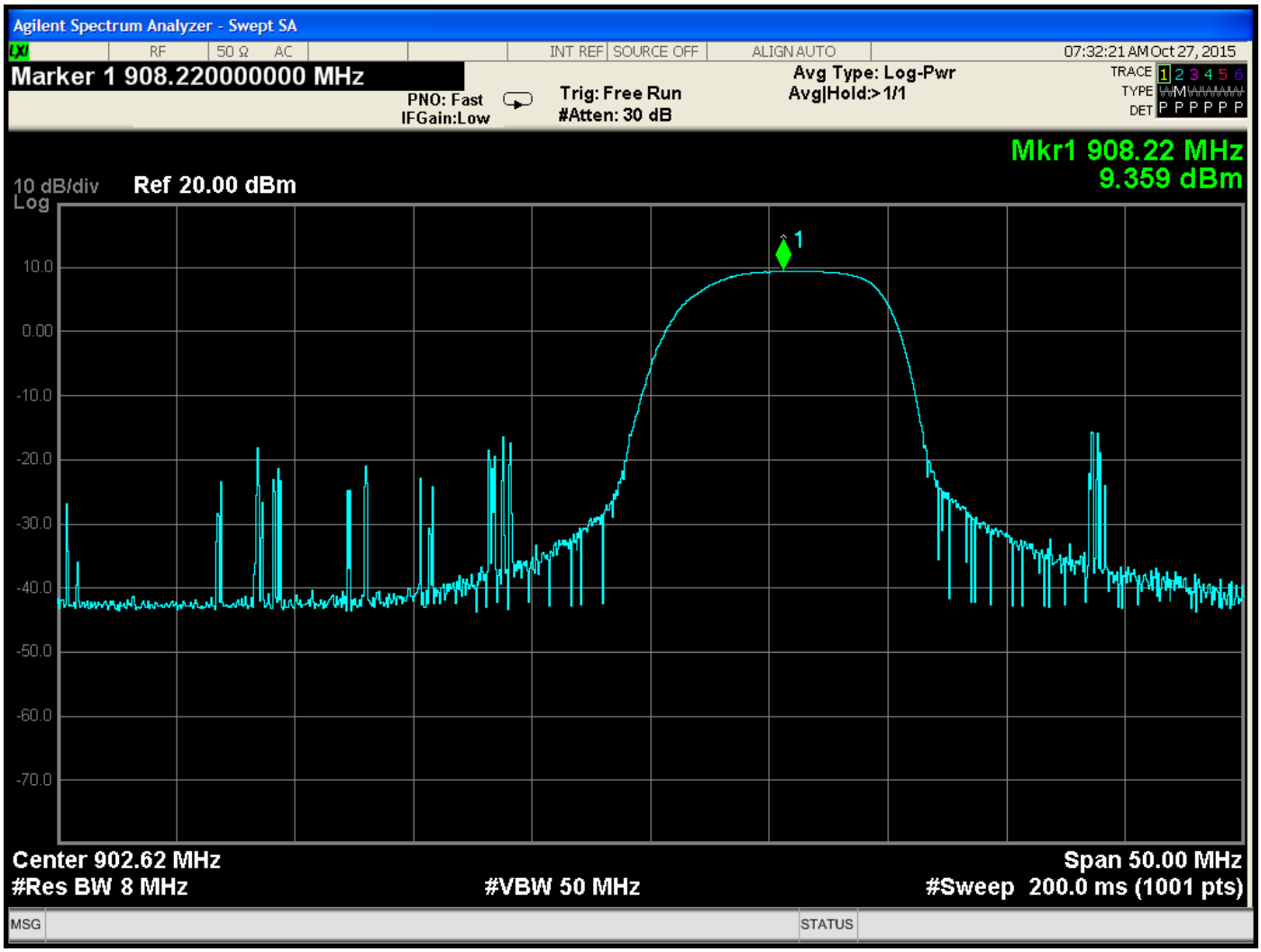
20 dB Bandwidth of Fundamental – High Channel

PEAK POWER

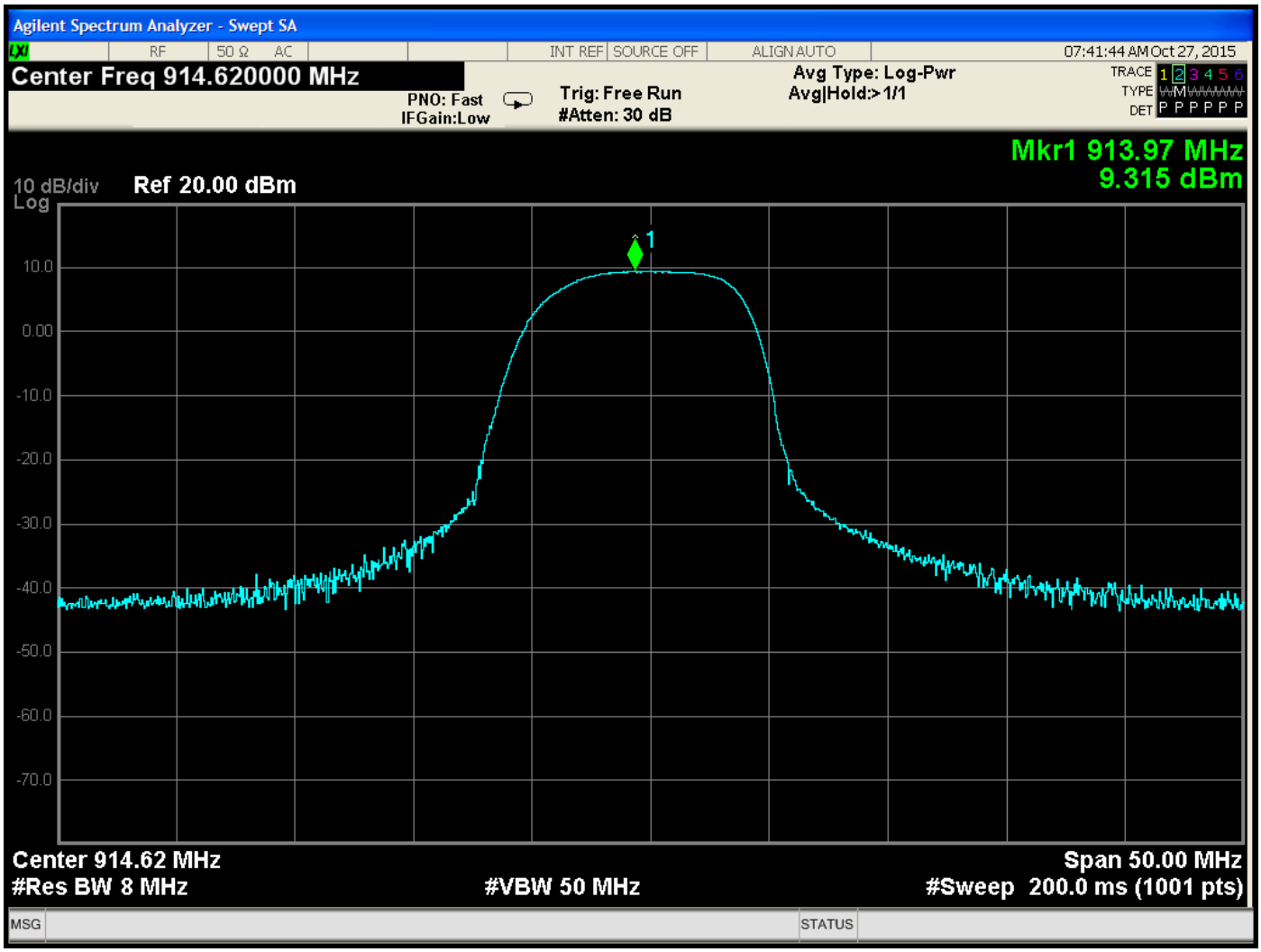
DATA SHEETS



Peak Power Output – Low Channel



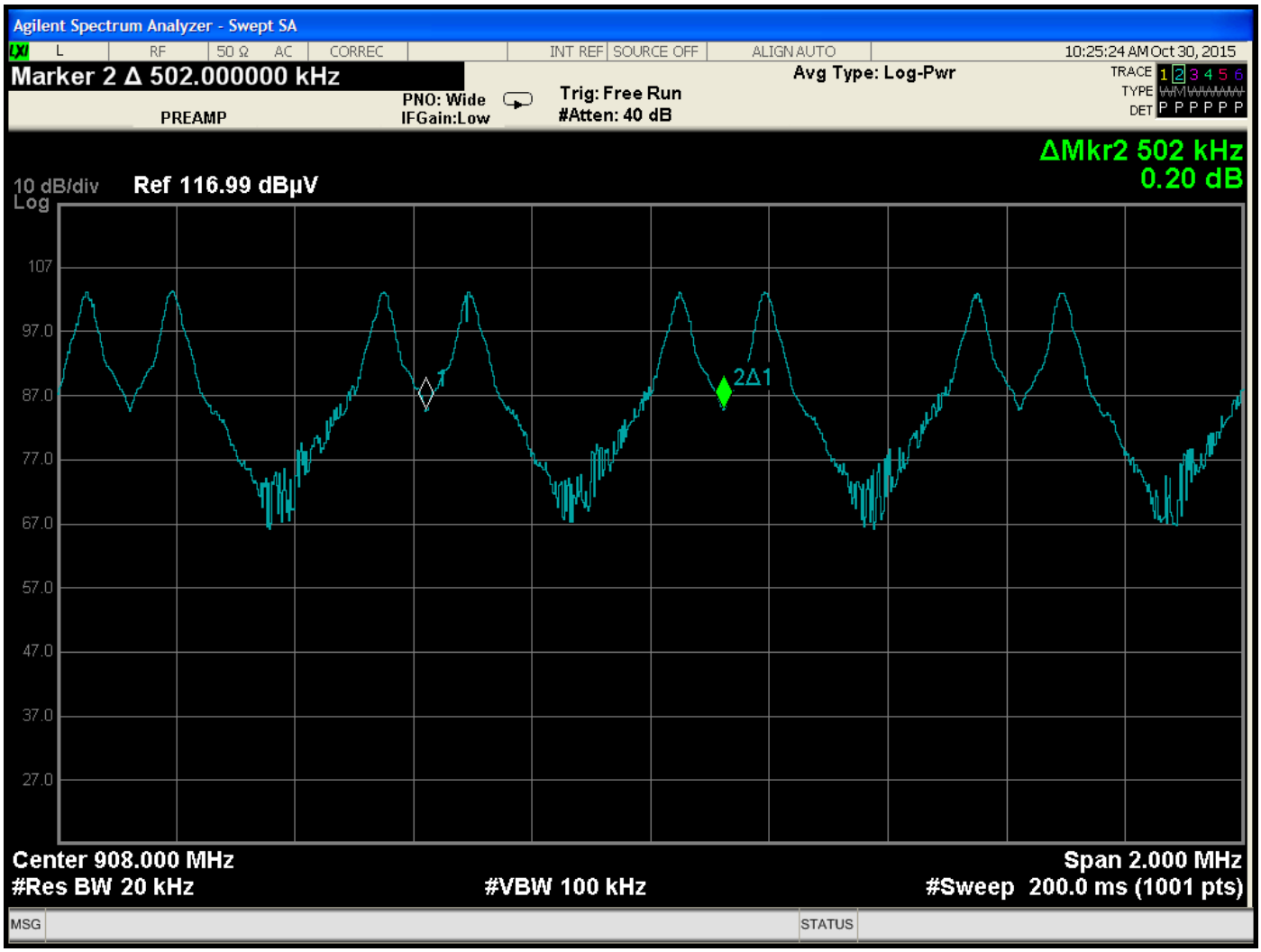
Peak Power Output – Middle Channel



Peak Power Output – High Channel

CHANNEL SEPARATION TEST

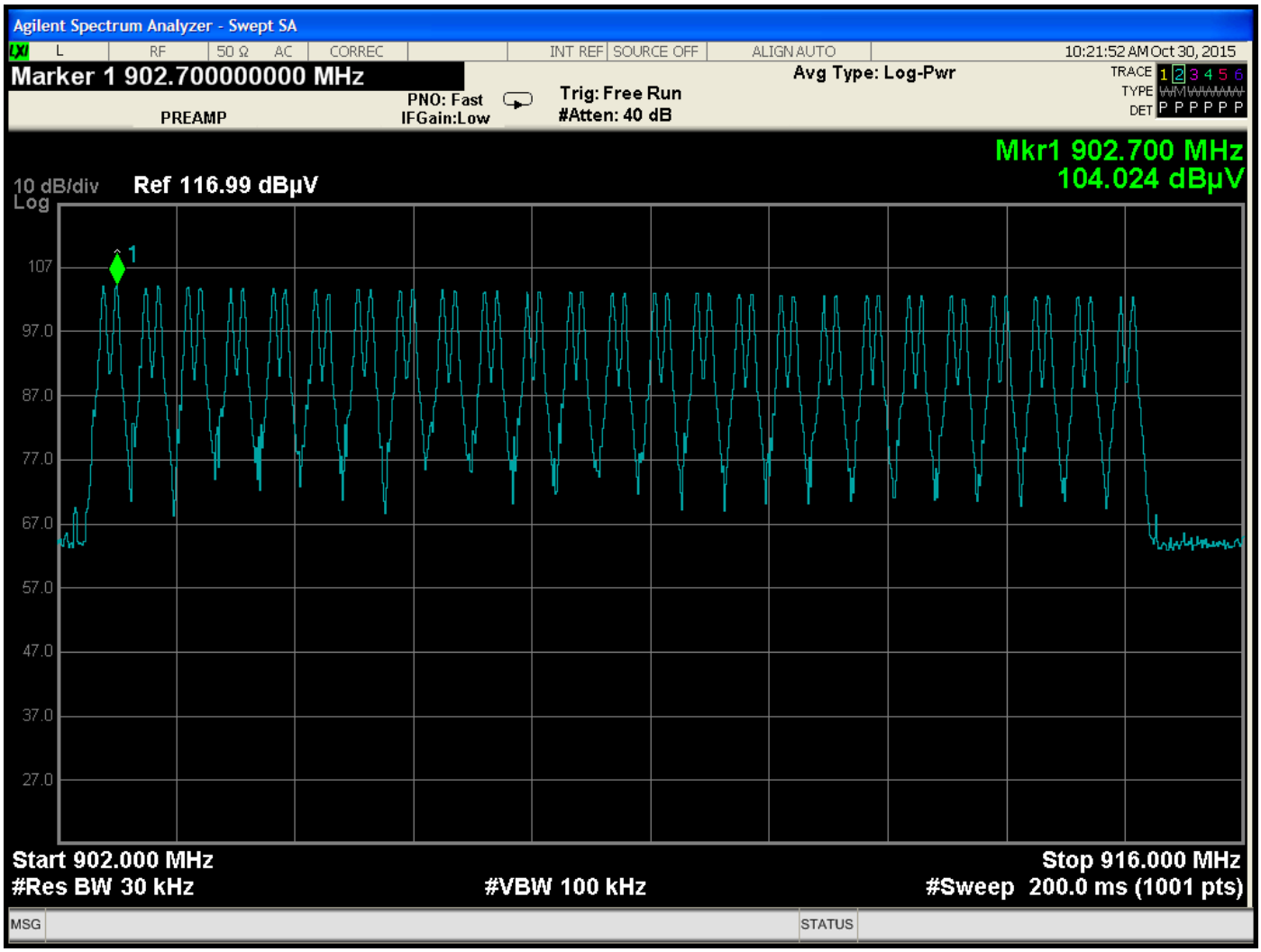
DATA SHEET



Channel Frequency Separation Test

NUMBER OF FREQUENCIES

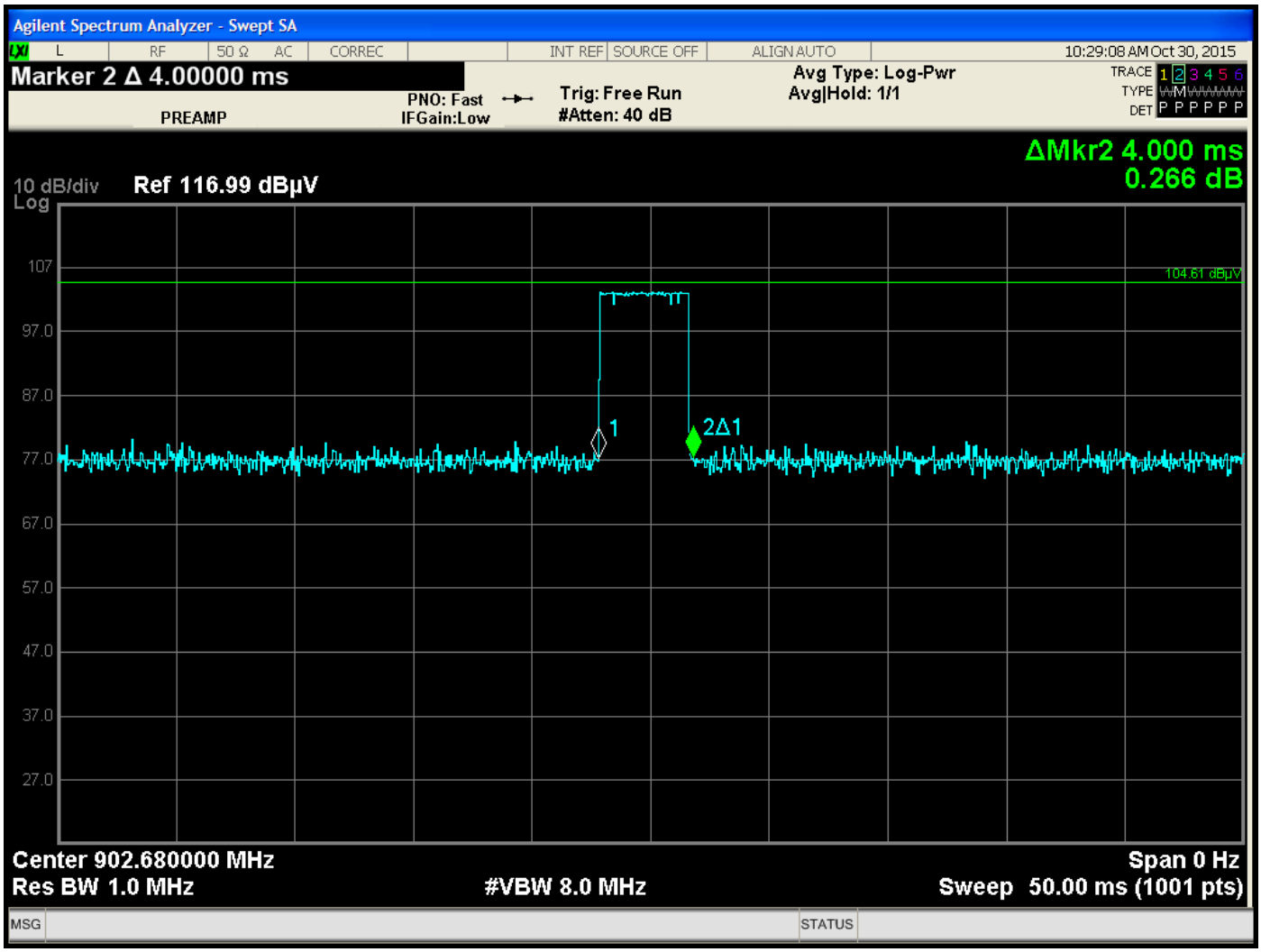
DATA SHEETS



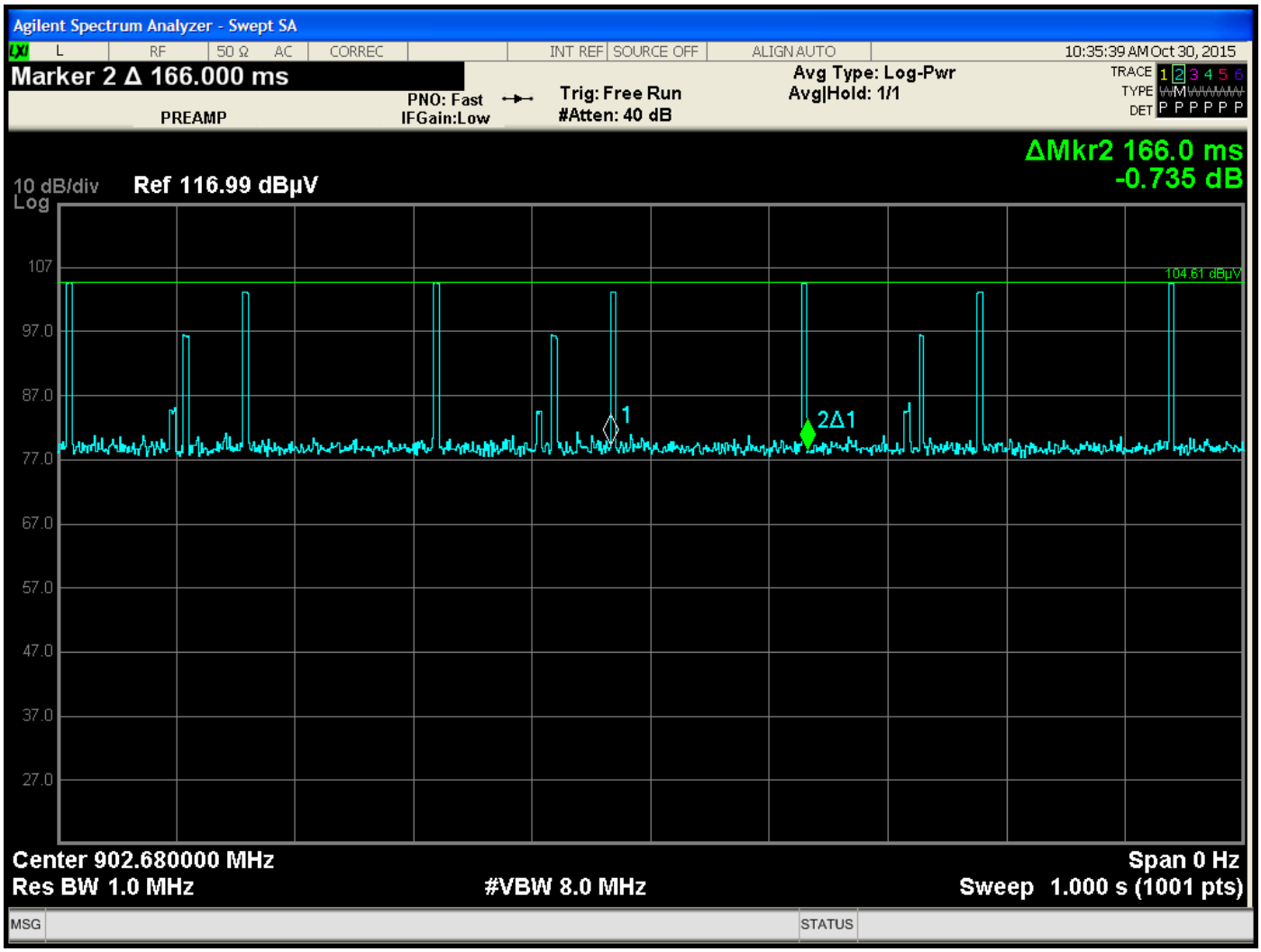
Number of Frequencies (25 Total)

TIME OF OCCUPANCY

DATA SHEETS



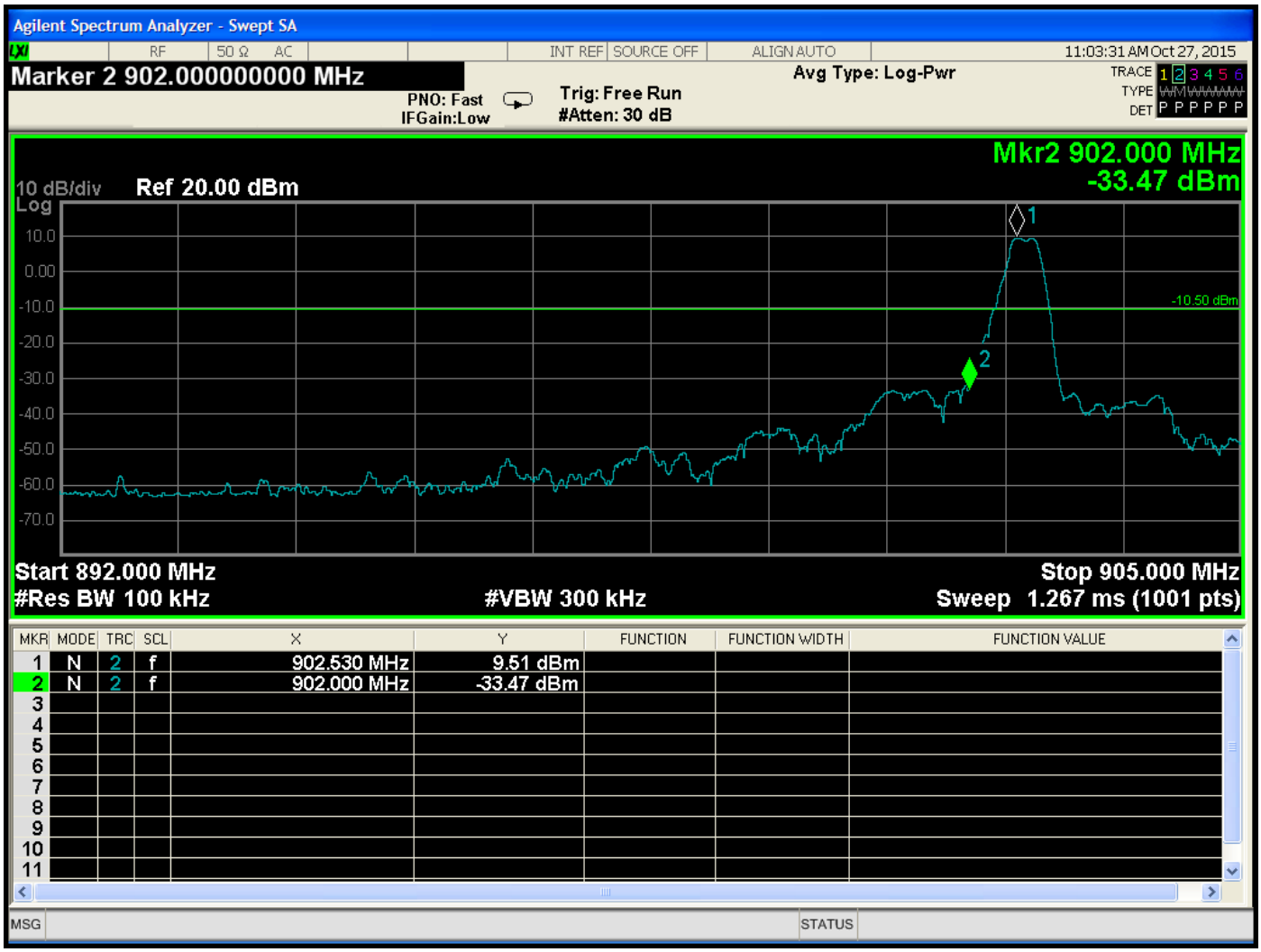
Time of One Pulse = 4.000 ms



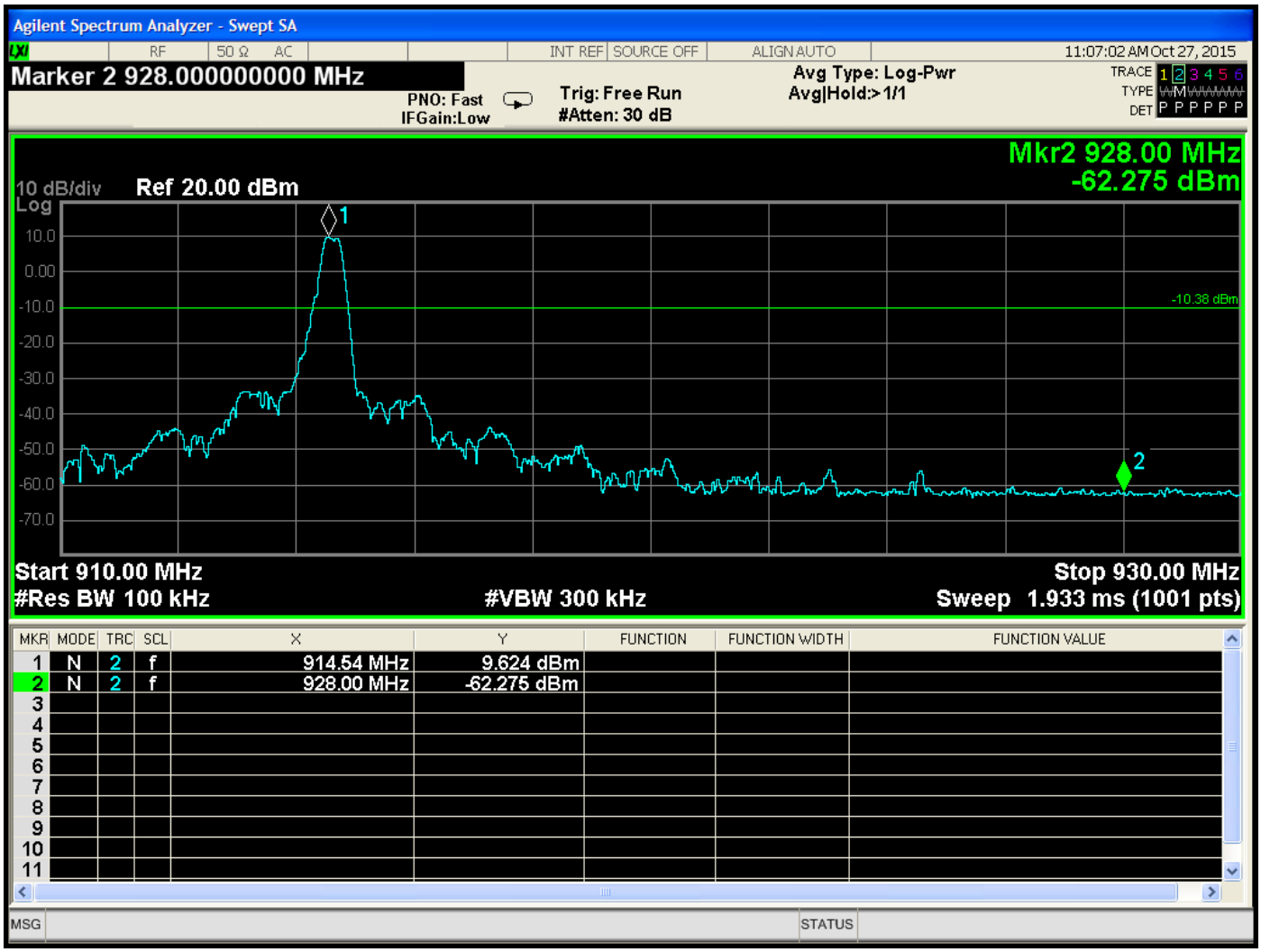
Number of Pulses in 1 Second = 7
Total Number of Pulses in 10 Seconds = 70
Time of Occupancy = 4.000 ms * 70 = 280.00 ms
Limit = 400 ms in a 10 Second Period

BAND EDGES

DATA SHEETS



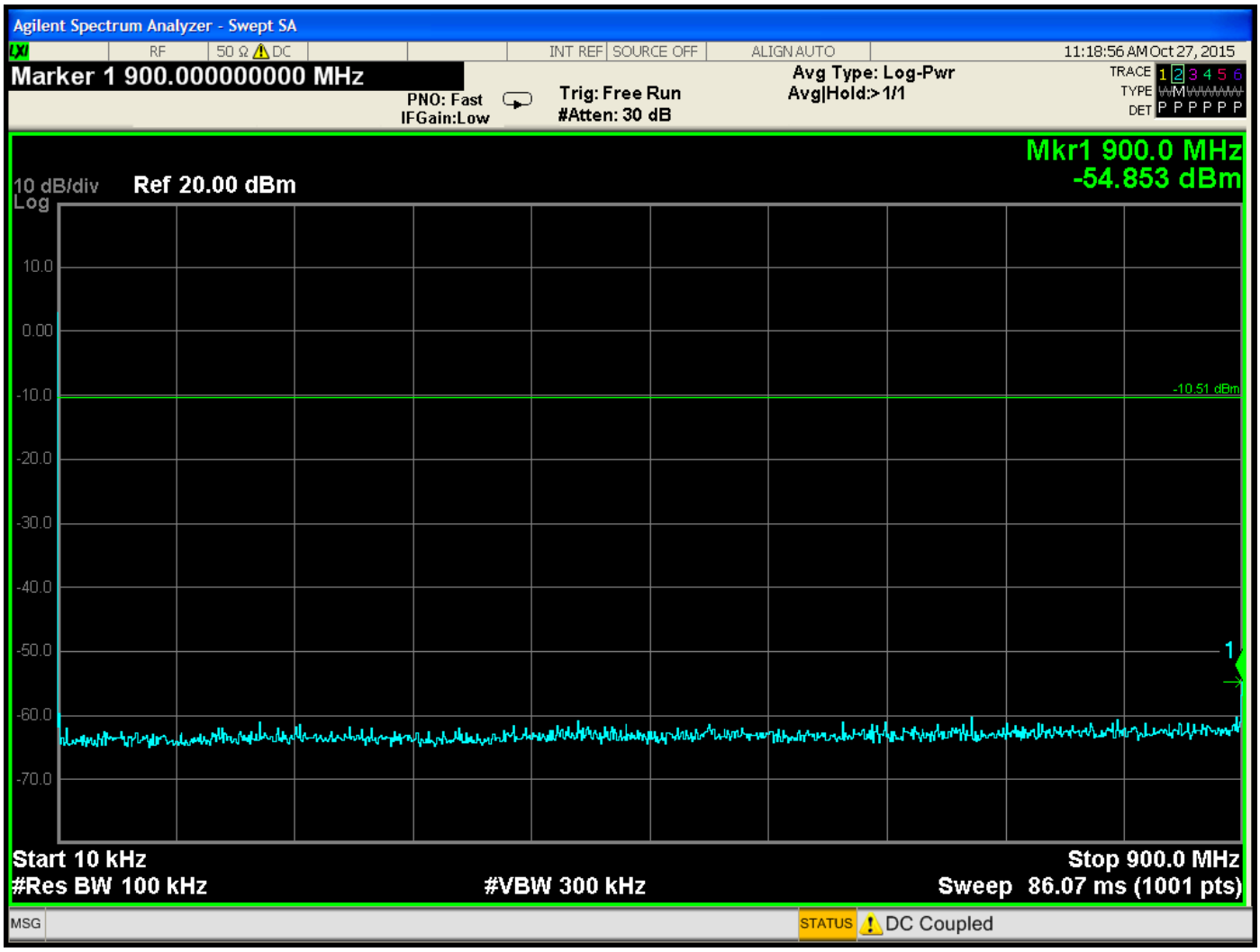
Band Edge – Low Channel



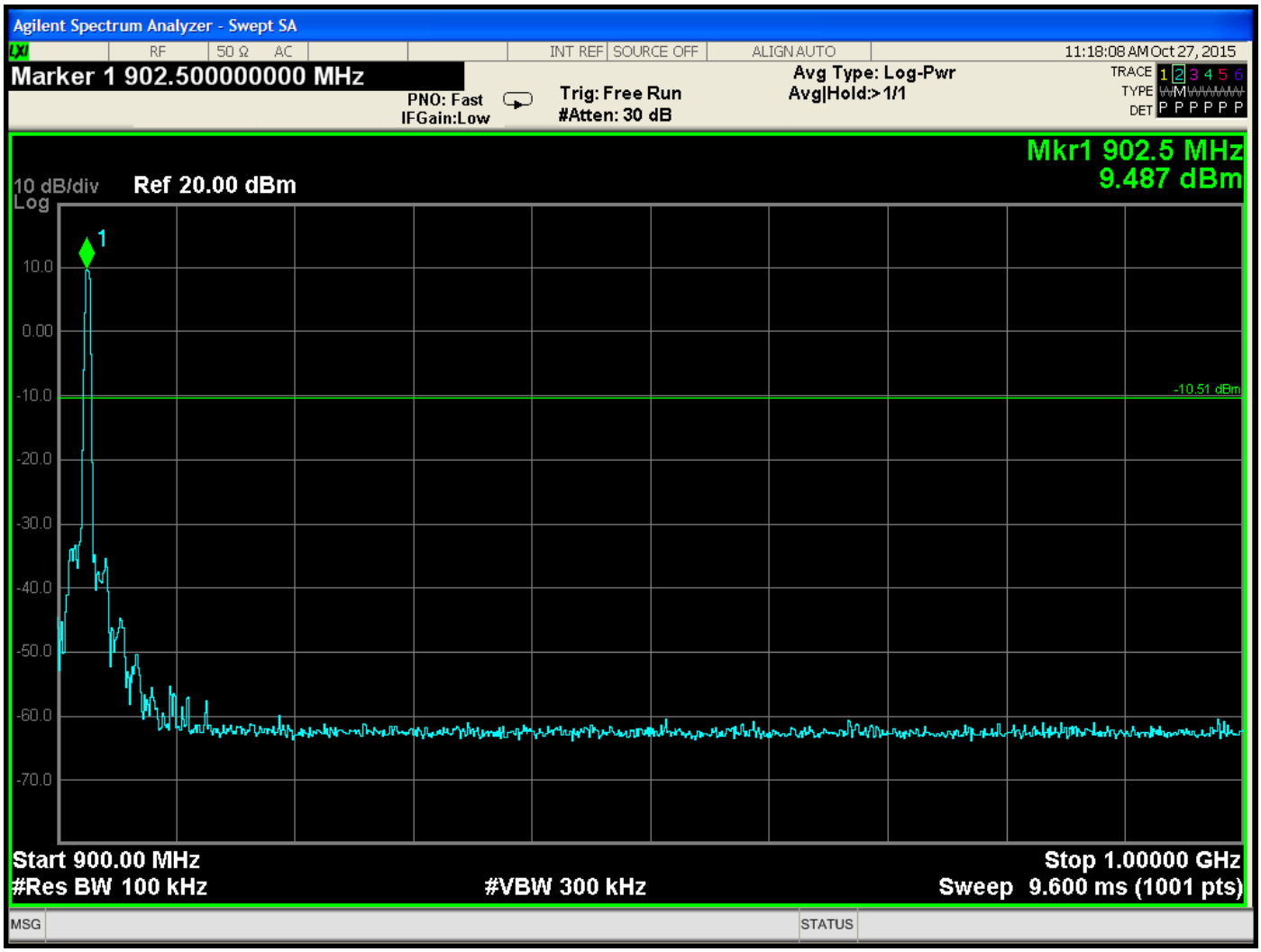
Band Edge – High Channel

RF ANTENNA CONDUCTED

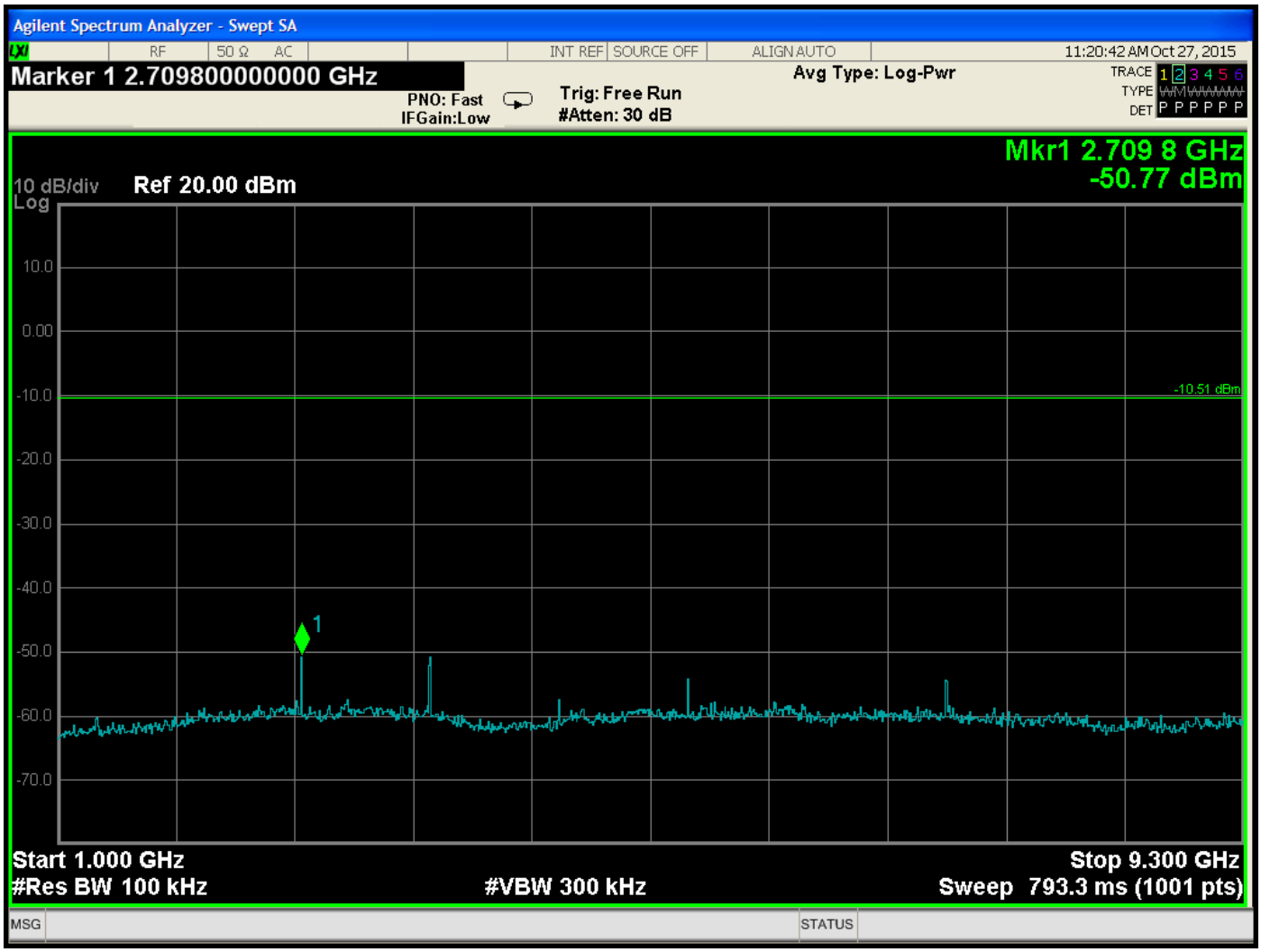
DATA SHEETS



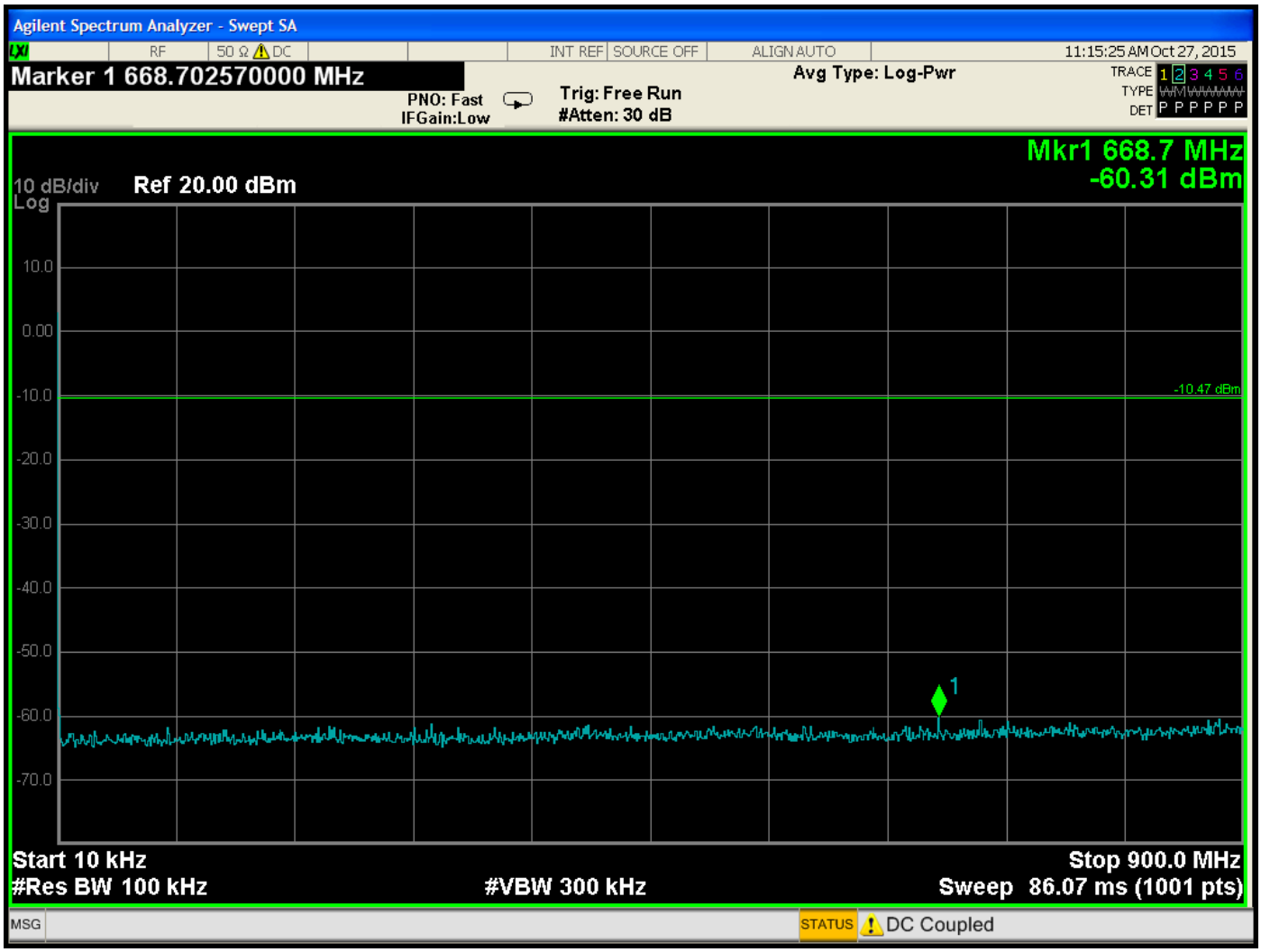
RF Antenna Conducted Test – Low Channel – 10 kHz to 900 MHz



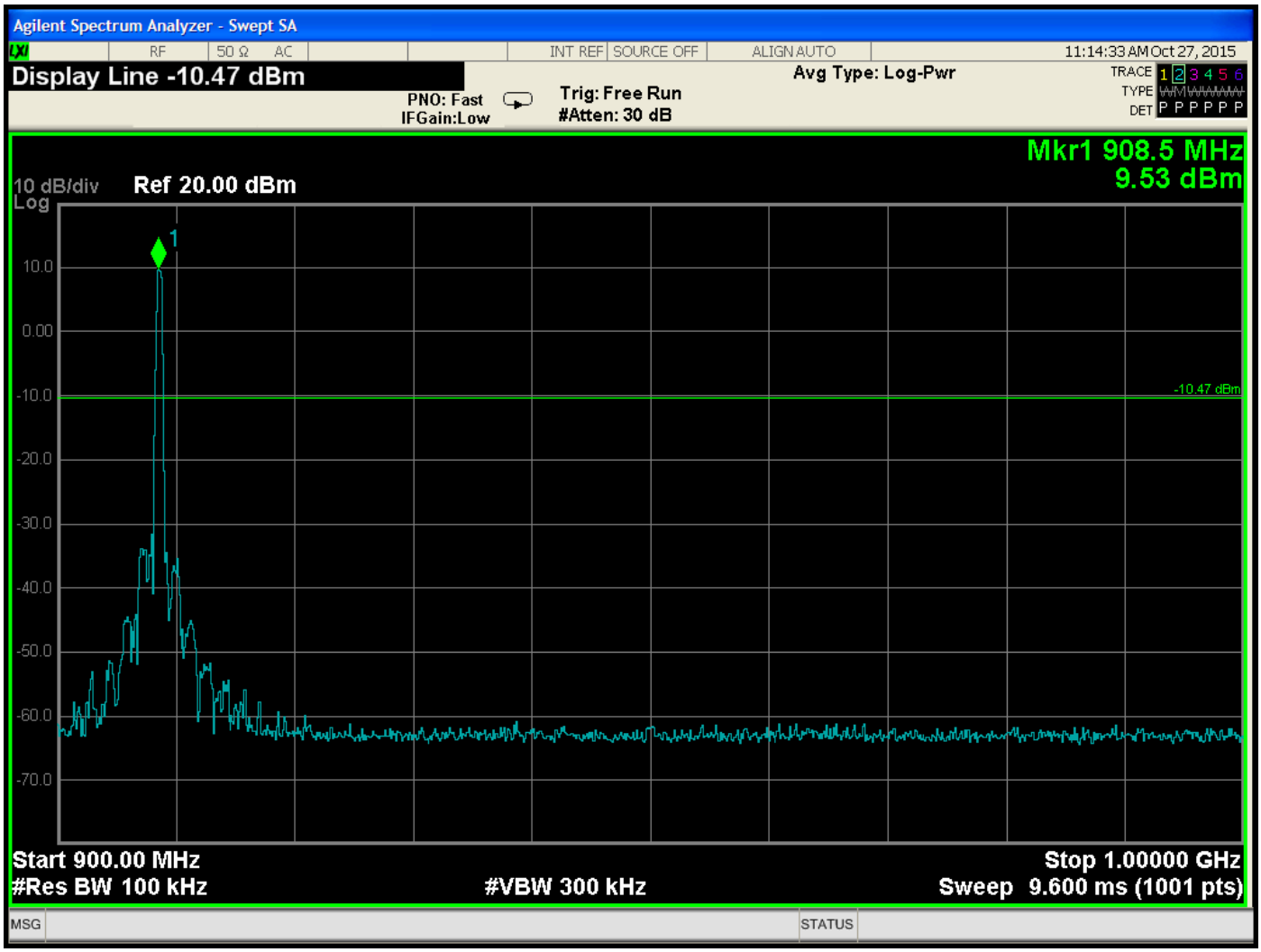
RF Antenna Conducted Test – Low Channel – 900 MHz to 1 GHz



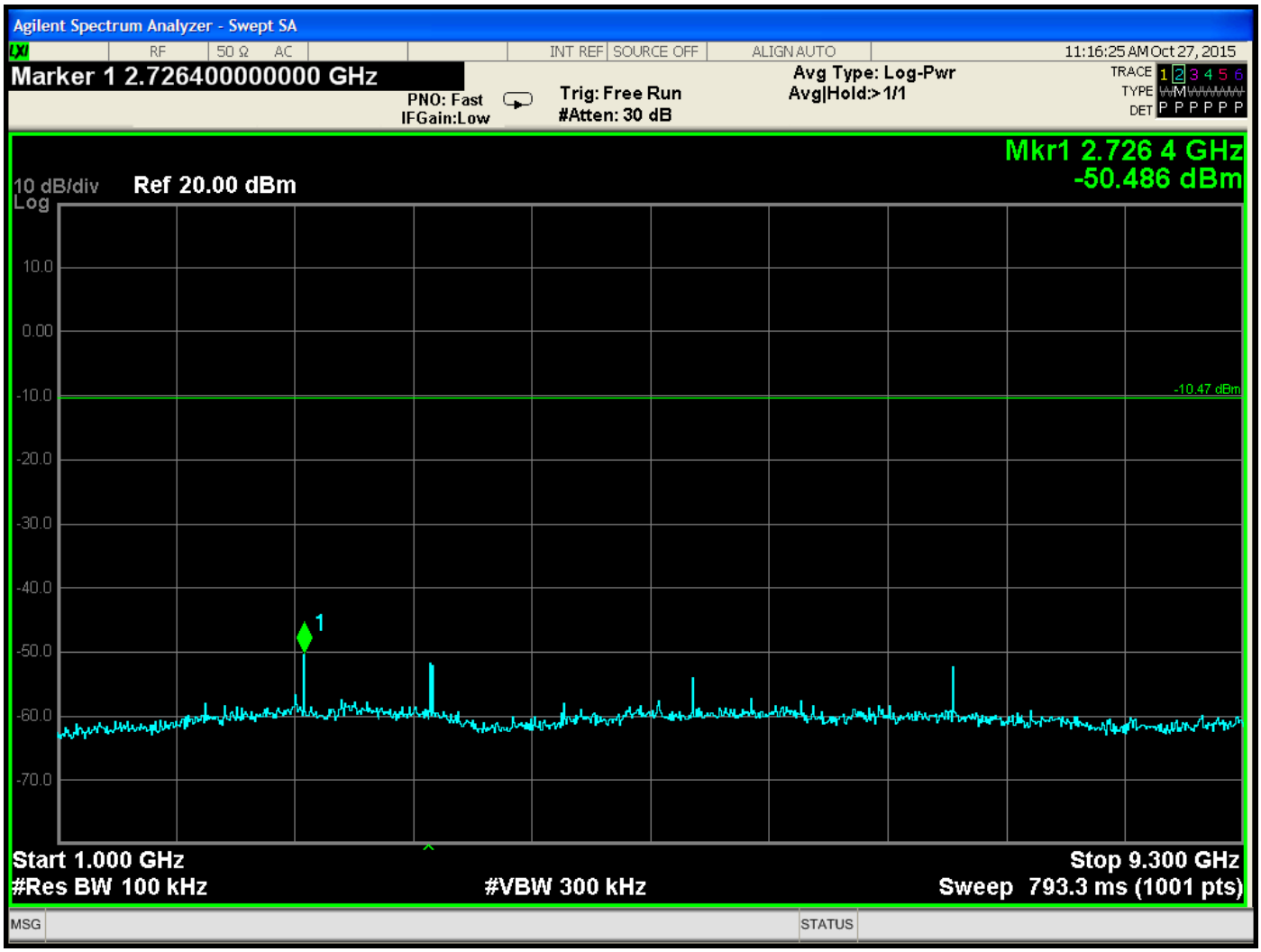
RF Antenna Conducted Test – Low Channel – 1 GHz to 9.3 GHz



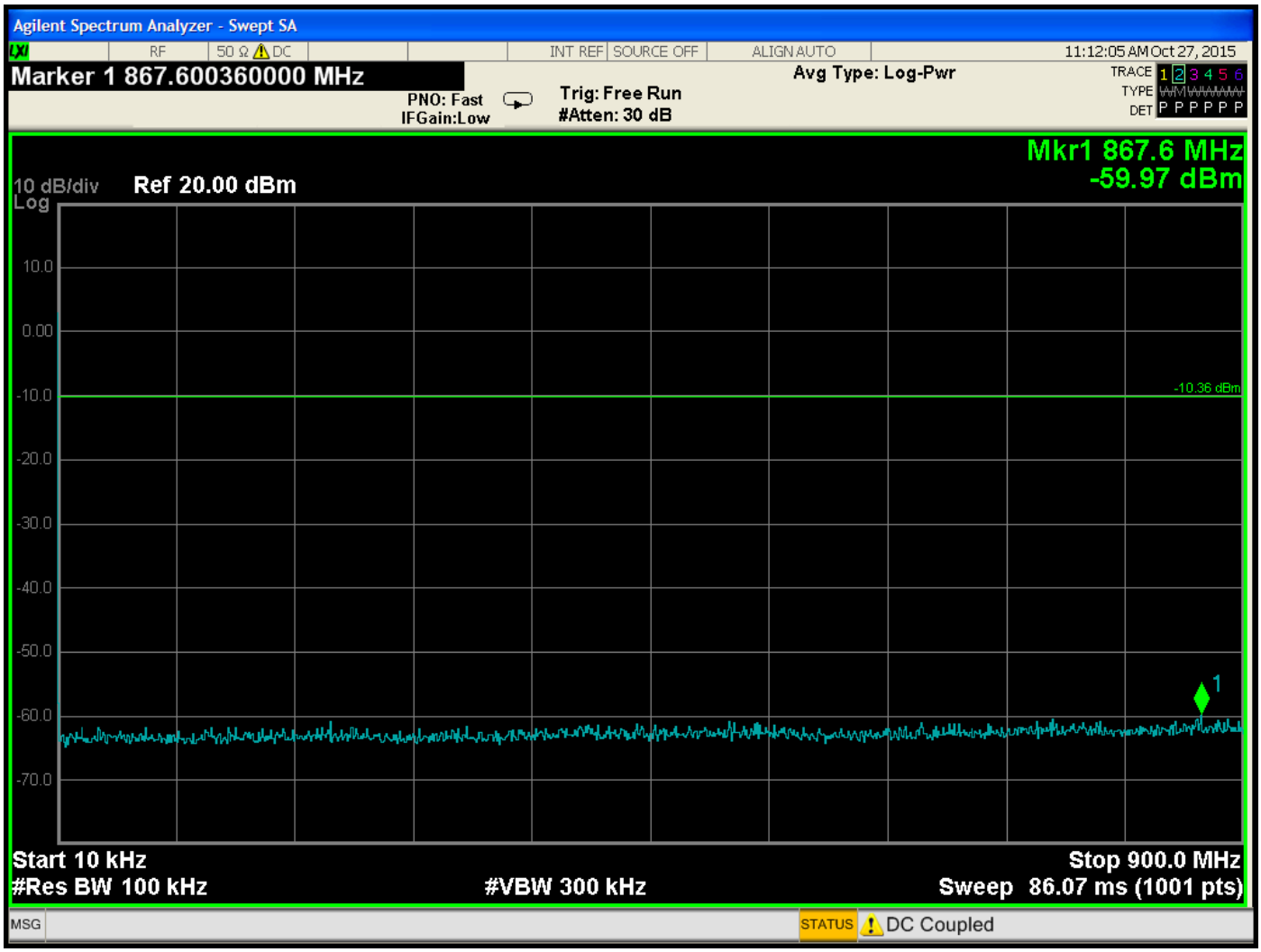
RF Antenna Conducted Test – Middle Channel – 10 kHz to 900 MHz



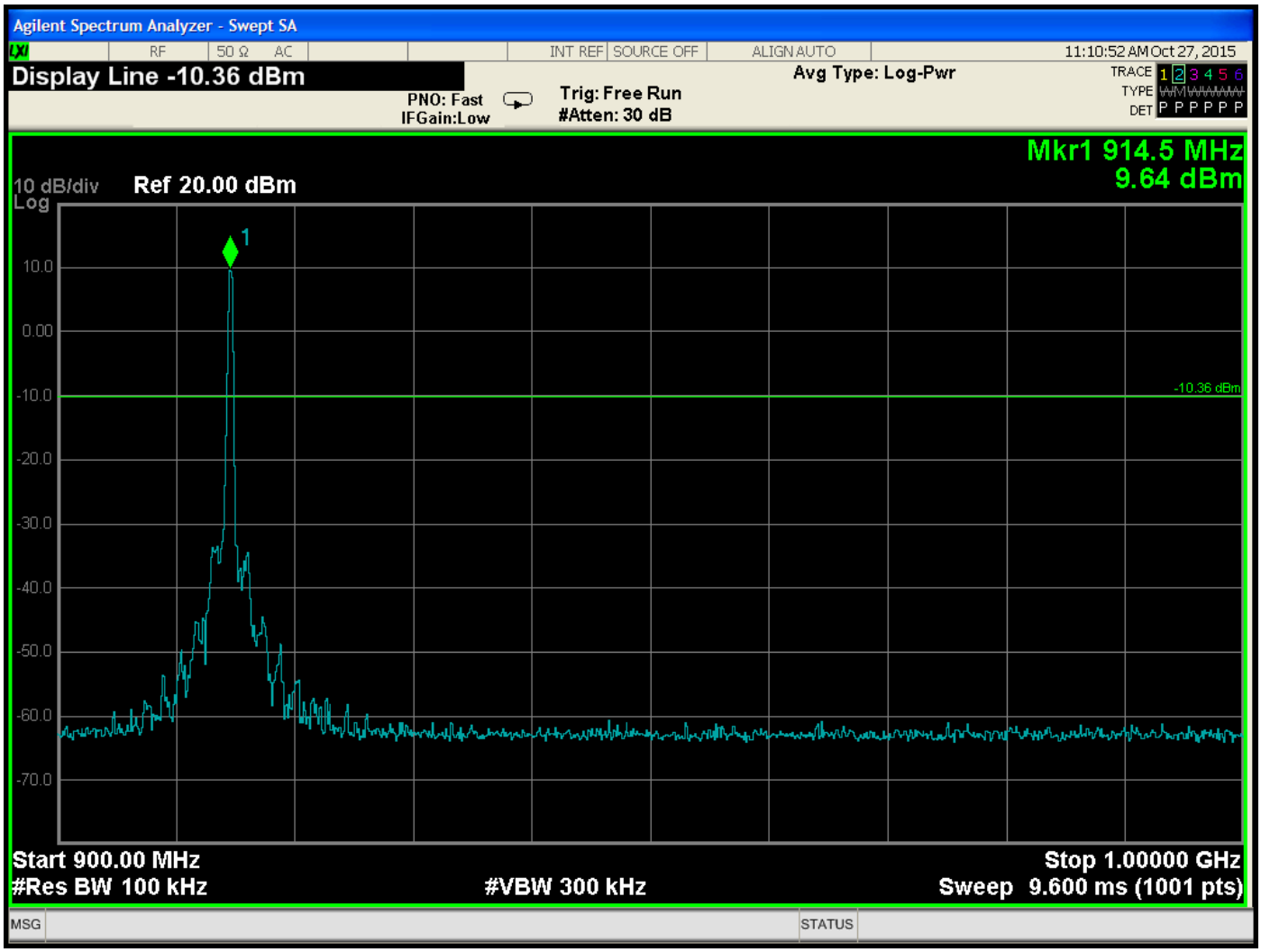
RF Antenna Conducted Test – Middle Channel – 900 MHz to 1 GHz



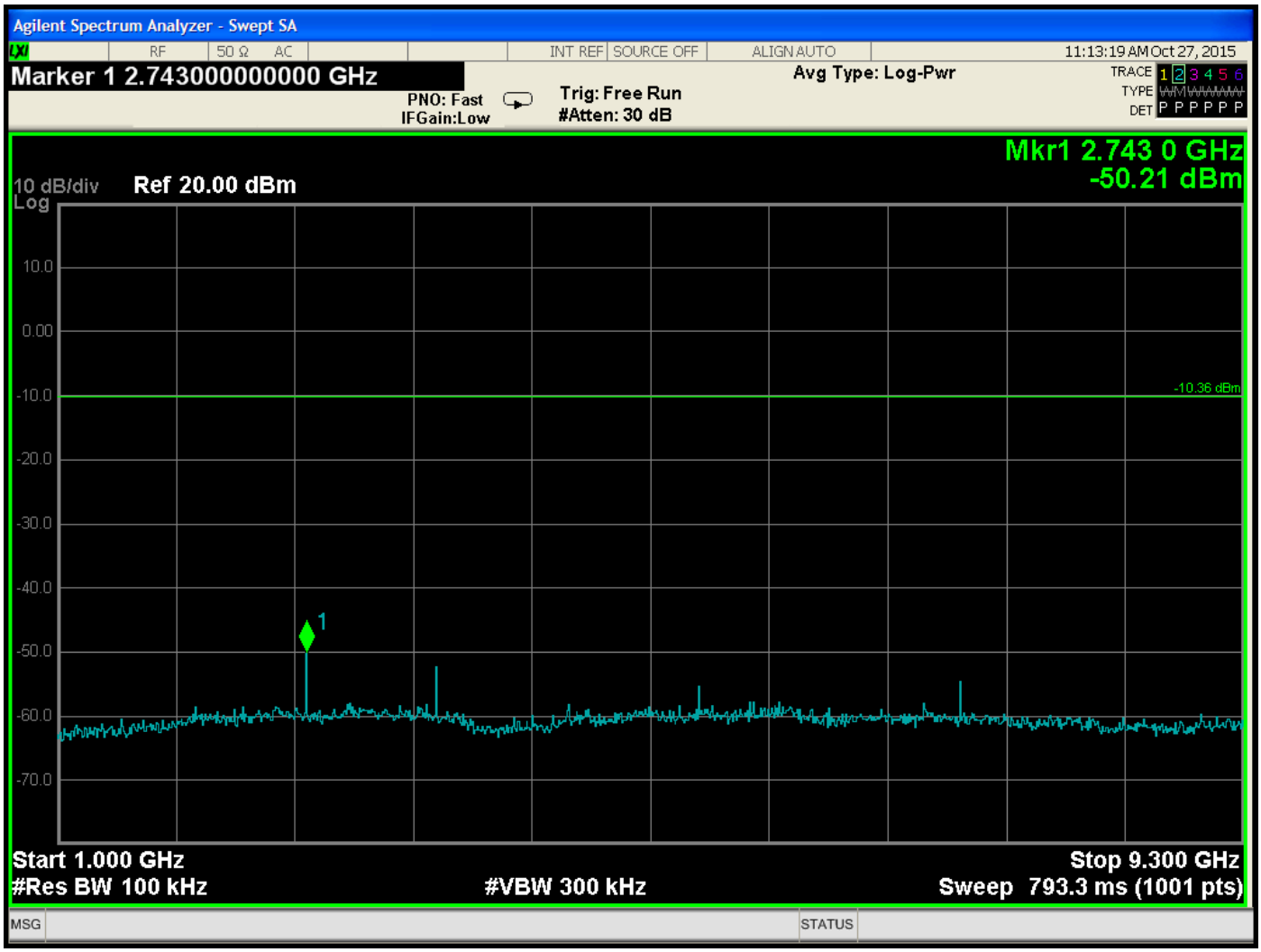
RF Antenna Conducted Test – Middle Channel – 1 GHz to 9.3 GHz



RF Antenna Conducted Test – High Channel – 10 kHz to 900 MHz



RF Antenna Conducted Test – High Channel – 900 MHz to 1 GHz



RF Antenna Conducted Test – High Channel – 1 GHz to 9.3 GHz