



FCC PART 90

TEST AND MEASUREMENT REPORT

For

SpotterRF, LLC

720 Timpanogos Parkway,

Orem, UT 84097, USA

FCC ID: CO6-A2000-LIC

Report Type: Original Report	Product Type: Ground Surveillance Radar
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Report Number: R1608263-90	
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* This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk “*” (Rev. 0)

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1608263-90	Original	2017-06-22

1 General Description

1.1 Product Description for Equipment Under Test (EUT)

This test and measurement report was prepared on behalf of *SpotterRF, LLC* and their product model: *A2000-LIC*, *FCC ID: CO6-A2000-LIC* or the “EUT” as referred to in this report. The EUT is 10-10.5 GHz surveillance radar that locates and tracks moving objects in front of it

1.2 Mechanical Description of EUT

The EUT measures approximately 17.5 cm (L) x 4.5 cm (W) x 23 cm (H) and weighs 700 g.

The test data gathered are from typical production sample, serial number: R1608263-1 assigned by BACL.

1.3 Objective

This report is prepared on behalf of *SpotterRF, LLC*. in accordance with FCC CFR 47 Part 2 and FCC CFR 47 Part 90 of the Federal Communication Commission’s rules.

The objective is to determine compliance with FCC Part 90 rules for Output Power, Occupied Bandwidth, Frequency Stability, and Radiated Spurious Emissions.

1.4 Related Submittal(s)/Grant(s)

N/A

1.5 Test Methodology

All measurements contained in this report were conducted in accordance with TIA-603-D

1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR16-4-2:2011, The Treatment of Uncertainty in EMC Measurements, the values ranging from ± 2.0 dB for Conducted Emissions tests and ± 4.0 dB for Radiated Emissions tests are the most accurate estimates pertaining to uncertainty of EMC measurements at BACL Corp.

1.7 Test Facility Registrations

BACLs test facilities that are used to perform Radiated and Conducted Emissions tests are currently recognized by the Federal Communications Commission as Accredited with NIST Designation Number US1129.

BACL's test facilities that are used to perform Radiated and Conducted Emissions tests are currently registered with Industry Canada under Registration Numbers: 3062A-1, 3062A-2, and 3062A-3.

BACL is a Chinese Taipei Bureau of Standards Metrology and Inspection (BSMI) validated Conformity Assessment Body (CAB), under Appendix B, Phase I Procedures of the APEC Mutual Recognition Arrangement (MRA). BACL's BSMI Lab Code Number is: SL2-IN-E-1002R

BACL's test facilities that are used to perform AC Line Conducted Emissions, Telecommunications Line Conducted Emissions, Radiated Emissions from 30 MHz to 1 GHz, and Radiated Emissions from 1 GHz to 6 GHz are currently recognized as Accredited in accordance with the Voluntary Control Council for Interference [VCCI] Article 15 procedures under Registration Number A-0027.

1.8 Test Facility Accreditations

Bay Area Compliance Laboratories Corp. (BACL) is:

A- An independent, 3rd-Party, Commercial Test Laboratory accredited to ISO/IEC 17025:2005 by A2LA (Test Laboratory Accreditation Certificate Number 3279.02), in the fields of: Electromagnetic Compatibility and Telecommunications. Unless noted by an Asterisk (*) in the Compliance Matrix (See Section 3 of this Test Report), BACL's ISO/IEC 17025:2005 Scope of Accreditation includes all of the Test Method Standards and/or the Product Family Standards detailed in this Test Report..

BACL's ISO/IEC 17025:2005 Scope of Accreditation includes a comprehensive suite of EMC Emissions, EMC Immunity, Radio, RF Exposure, Safety and wireline Telecommunications test methods applicable to a wide range of product categories. These product categories include Central Office Telecommunications Equipment [including NEBS - Network Equipment Building Systems], Unlicensed and Licensed Wireless and RF devices, Information Technology Equipment (ITE); Telecommunications Terminal Equipment (TTE); Medical Electrical Equipment; Industrial, Scientific and Medical Test Equipment; Professional Audio and Video Equipment; Industrial and Scientific Instruments and Laboratory Apparatus; Cable Distribution Systems, and Energy Efficient Lighting.

B- A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body Accreditation Certificate Number 3279.03) to certify

- For the USA (Federal Communications Commission):

- 1- All Unlicensed radio frequency devices within FCC Scopes A1, A2, A3, and A4;
- 2- All Licensed radio frequency devices within FCC Scopes B1, B2, B3, and B4;
- 3- All Telephone Terminal Equipment within FCC Scope C.

- For the Canada (Industry Canada):

- 1 All Scope 1-Licence-Exempt Radio Frequency Devices;
- 2 All Scope 2-Licensed Personal Mobile Radio Services;
- 3 All Scope 3-Licensed General Mobile & Fixed Radio Services;
- 4 All Scope 4-Licensed Maritime & Aviation Radio Services;
- 5 All Scope 5-Licensed Fixed Microwave Radio Services
- 6 All Broadcasting Technical Standards (BETS) in the Category I Equipment Standards List.

- For Singapore (Info-Communications Development Authority (IDA)):

- 1 All Line Terminal Equipment: All Technical Specifications for Line Terminal Equipment – Table 1 of IDA MRA Recognition Scheme: 2011, Annex 2
 2. All Radio-Communication Equipment: All Technical Specifications for Radio-Communication Equipment – Table 2 of IDA MRA Recognition Scheme: 2011, Annex 2
- For the Hong Kong Special Administrative Region:
- 1 All Radio Equipment, per KHCA 10XX-series Specifications;
 - 2 All GMDSS Marine Radio Equipment, per HKCA 12XX-series Specifications;
 - 3 All Fixed Network Equipment, per HKCA 20XX-series Specifications.
- For Japan:
- 1 MIC Telecommunication Business Law (Terminal Equipment):
 - All Scope A1 - Terminal Equipment for the Purpose of Calls;
 - All Scope A2 - Other Terminal Equipment
 - 2 Radio Law (Radio Equipment):
 - All Scope B1 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 1 of the Radio Law
 - All Scope B2 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 2 of the Radio Law
 - All Scope B3 - Specified Radio Equipment specified in Article 38-2-2, paragraph 1, item 3 of the Radio Law

C- A Product Certification Body accredited to ISO/IEC 17065:2012 by A2LA (Product Certification Body Accreditation Certificate Number 3279.01) to certify Products to USA's Environmental Protection Agency (EPA) ENERGY STAR Product Specifications for:

- 1 Electronics and Office Equipment:
 - for Telephony (ver. 3.0)
 - for Audio/Video (ver. 3.0)
 - for Battery Charging Systems (ver. 1.1)
 - for Set-top Boxes & Cable Boxes (ver. 4.1)
 - for Televisions (ver. 6.1)
 - for Computers (ver. 6.0)
 - for Displays (ver. 6.0)
 - for Imaging Equipment (ver. 2.0)
 - for Computer Servers (ver. 2.0)
- 2 Commercial Food Service Equipment
 - for Commercial Dishwashers (ver. 2.0)
 - for Commercial Ice Machines (ver. 2.0)
 - for Commercial Ovens (ver. 2.1)
 - for Commercial Refrigerators and Freezers
- 3 Lighting Products
 - For Decorative Light Strings (ver. 1.5)
 - For Luminaires (including sub-components) and Lamps (ver. 1.2)
 - For Compact Fluorescent Lamps (CFLs) (ver. 4.3)
 - For Integral LED Lamps (ver. 1.4)
- 4 Heating, Ventilation, and AC Products
 - for Residential Ceiling Fans (ver. 3.0)
 - for Residential Ventilating Fans (ver. 3.2)
- 5 Other
 - For Water Coolers (ver. 3.0)

D- A NIST Designated Phase-I and Phase-II Conformity Assessment Body (CAB) for the following economies and regulatory authorities under the terms of the stated MRAs/Treaties:

- Australia: ACMA (Australian Communication and Media Authority) – APEC Tel MRA -Phase I;
- Canada: (Innovation, Science and Economic development Canada - ISED) Foreign Certification Body – FCB – APEC Tel MRA -Phase I & Phase II;
- Chinese Taipei (Republic of China – Taiwan):
 - o BSMI (Bureau of Standards, Metrology and Inspection) APEC Tel MRA -Phase I;
 - o NCC (National Communications Commission) APEC Tel MRA -Phase I;
- European Union:
 - o EMC Directive 2014/30/EC US-EU EMC & Telecom MRA CAB
 - o Radio & Teleterminal Equipment (R&TTE) Directive 1995/5/EC
US -EU EMC & Telecom MRA CAB
- Hong Kong Special Administrative Region: (Office of the Telecommunications Authority – OFTA)
APEC Tel MRA -Phase I & Phase II
- Israel – US-Israel MRA Phase I
- Republic of Korea (Ministry of Communications - Radio Research Laboratory) APEC Tel MRA -Phase I
- Singapore: (Infocomm Development Authority - IDA) APEC Tel MRA -Phase I & Phase II;
- Japan: VCCI - Voluntary Control Council for Interference US-Japan Telecom Treaty VCCI Side Letter-
- USA:
 - o ENERGY STAR Recognized Test Laboratory – US EPA
 - o Telecommunications Certification Body (TCB) – US FCC;
- Vietnam: APEC Tel MRA -Phase I;

2 System Test Configuration

2.1 Justification

The EUT was configured for testing according to FCC CFR 47 part 2, FCC CFR 47 Part 90, and TIA 603D

The EUT was tested in a testing mode to represent worst-case results during the final qualification test.

2.2 EUT Exercise Software

The exercise software used was *SpotterRF GUI*, provided by SpotterRF, LLC. and was verified by Jin Yang to comply with the standard requirements being tested against.

2.3 Special Equipment

There were no special accessories required, included, or intended for use with EUT during these tests.

2.4 Equipment Modifications

No modifications were made to the EUT.

2.5 Local Support Equipment

Manufacturer	Description	Model	Serial Number
HP	Laptop	HP ProBook 4525s	2CE041168V
Spotter RF	P.O.E.	POE-IN-J-01	-

2.6 Interface Ports and Cables

Cable Description	Length (m)	To	From
RJ45	<1.0	EUT	POE
RJ45	>1.0	POE	Laptop

2.7 Power Supply List and Details

Manufacturer	Description	Model	Part Number
V-Infinity	AC/DC Adapter	ETSA200200UD	-

3 Summary of Test Results

Results reported relate only to the product tested.

FCC Rules	Description of Test	Results
§1.1310 & 2.1091	RF Exposure	Calculate
§2.1053, §90.210	Radiated Spurious Emissions	Compliant
§2.1049	Occupied Bandwidth	Compliant
§2.1046, §90.205(s), §90.103(c)(13)	Output Power	Compliant
§2.1055, §90.213(b)	Frequency Stability	Compliant

4 FCC §1.1310 & §2.1091 - RF Exposure

4.1 Applicable Standard

According to FCC §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	* (100)	30
1.34-30	824/f	2.19/f	* (180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

4.2 MPE Prediction

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

4.3 MPE Results

Maximum peak output power at antenna input terminal (dBm): 33

Maximum peak output power at antenna input terminal (mW): 1995.3

Prediction distance (cm): 63.3

Prediction frequency (MHz): 10250

Maximum Antenna Gain, typical (dBi): 14

Maximum Antenna Gain (numeric): 25.12

Power density of prediction frequency at 63.3 cm (mW/cm²): 0.9959

MPE limit for uncontrolled exposure at prediction frequency (mW/cm²): 1.0

The device is compliant with the requirement MPE limit for uncontrolled exposure. The maximum power density at the distance of 63.3 cm is 0.9959 mW/cm². Limit is 1.0 mW/cm².

5 FCC §2.1053 & §90.210 - Spurious Radiated Emissions

5.1 Applicable Standard

FCC §2.1053 and FCC §90.210

Emission Mask C. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier output power (P) as follows:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5 kHz, but not more than 10 kHz: At least $83 \log(f_d/5)$ dB;
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 10 kHz, but not more than 250 percent of the authorized bandwidth: At least $29 \log(f_d^2/11)$ dB or 50 dB, whichever is the lesser attenuation;
- (3) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log(P)$ dB.

5.2 Test Setup

The radiated emissions tests were performed in the 5-meter Chamber, using the setup in accordance with TIA-603D. The specification used was the FCC §2.1053 and FCC §90.210 limits.

External I/O cables were draped along the edge of the test table and bundle when necessary.

5.3 Test Procedure

TIA-603-D §2.2.12

5.4 Test Environmental Conditions

Temperature:	22 °C
Relative Humidity:	44 %
ATM Pressure:	102kPa

The testing was performed by Jin Yang on 2016-12-22 at 5 meter Chamber.

5.5 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Cycle
Agilent	Spectrum Analyzer	E4446A	US44300386	2016-10-29	1 year
Sunol Science Corp	System Controller	SC99V	122303-1	N/R	N/R
Sunol Science Corp	Combination Antenna	JB3	A020106-3	2016-07-24	1 year
Hewlett Packard	Pre-amplifier	8447D	2944A10187	2016-03-20	1 year
EMCO	Antenna, Horn	3115	9511-4627	2016-01-15	1 year
ARA	Antenna, Horn	DRG-118/A	1132	2015-09-21	2 years
HP	Generator, Signal	83650B	3614A00276	2016-08-06	1 year
Hewlett Packard	Pre-amplifier	8449B OPT H02	3008A01103	2016-03-11	1 year
AH Systems	Amplifier, Low Noise	PAM-1840VH	153	2016-12-01	1 years
WiseWave	Horn Antenna	ARH-4223-02	10555-01	2015-08-09	3 years
Wisewave	Antenna, Horn	ARH-2823-02	10555-01	2015-08-09	3 years
IW	Armored High Frequency Cable	DC 1531	KPS-1501A3960KPS	2016-08-05	1 Year
-	SMA cable	-	C0002	Each time1	N/A
-	N-Type Cable	-	C00013	2016-04-28	1 year
-	N-Type Cable	-	C00014	2016-05-28	1 year
Vasona	Test software	V6.0 build 11	10400213	N/R	N/R

Statement of Traceability: *BACL attests that all calibrations have been performed per the A2LA requirements, traceable to NIST.*

5.6 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Title 47, Part FCC §2.1053 and FCC §90.210 standards' radiated emissions limits, and had the worst margin of:

Mode: Transmitting			
Margin (dB)	Frequency (MHz)	Polarization (Horizontal/Vertical)	Mode, Channel
-4.252	23627	Vertical	High Channel

Please refer to the following table and plots for specific test result details

5.7 Test Results

Low Channel

Freq. (MHz)	S.A. Amp. (dBμV)	Table Azimuth (Degrees)	Test Antenna		Substitution				Absolute Level (dBm)	Result	
			Height (cm)	Polar (H/V)	Freq. (MHz)	S.G. Level (dBm)	Antenna Gain (dB)	Cable Loss (dB)		Limit (dBm)	Margin (dB)
2454	62.93	101	150	V	2454	-34	9.395	1.29	-25.895	-13	-12.895
1860	59.06	131	150	V	1860	-40.21	8.464	0.3	-32.046	-13	-19.046
1326	59.95	18	150	H	1326	-38.47	6.194	0.43	-32.706	-13	-19.706
13712	49.6	160	150	H	13712	-35.33	12.413	4.07	-26.987	-13	-13.987
13677	49.27	283	150	V	13677	-38.29	12.419	2.17	-28.041	-13	-15.041
15128	49.2	55	150	H	15128	-35.11	13.258	2.17	-24.022	-13	-11.022
20073	52.44	100	150	V	20073	-30.56	14.234	2.92	-19.246	-13	-6.246
20073	48.95	150	150	H	20073	-34.05	14.339	2.92	-22.631	-13	-9.631
25360	50.52	0	157	V	25360	-33.61	12.647	1.65	-22.613	-13	-9.613
25413	50.48	0	150	H	25413	-33.1	12.67	2.3	-22.73	-13	-9.73
975	56.25	140	150	V	975	-51.75	0	0.22	-51.97	-13	-38.97
490.8	45.26	196	150	H	490.8	-64.74	0	0.1	-64.84	-13	-51.84
949.9	58.77	112	150	V	949.9	-48.23	0	0.22	-48.45	-13	-35.45
925.6	56.48	0	150	H	925.6	-50.52	0	0.22	-50.74	-13	-37.74

Middle Channel

Freq. (MHz)	S.A. Amp. (dBμV)	Table Azimuth (Degrees)	Test Antenna		Substitution				Absolute Level (dBm)	Result	
			Height (cm)	Polar (H/V)	Freq. (MHz)	S.G. Level (dBm)	Antenna Gain (dB)	Cable Loss (dB)		Limit (dBm)	Margin (dB)
2127	56.35	168	150	V	2127	-40.64	8.762	0.35	-32.228	-13	-19.228
1335	60.39	152	150	H	1335	-38.03	6.194	0.2	-32.036	-13	-19.036
14343	53.44	4	150	V	14343	-32.51	11.243	2.17	-23.437	-13	-10.437
13687	48.62	307	150	H	13687	-37.13	12.413	4.06	-28.777	-13	-15.777
14888	52.71	309	150	V	14888	-32.48	12.273	2.4	-22.607	-13	-9.607
14803	47.24	127	150	H	14803	-36.97	11.776	2.65	-27.844	-13	-14.844
20509	48.83	10	150	V	20509	-36.53	14.125	2.76	-25.165	-13	-12.165
20507	47.8	331	150	H	20507	-37.6	14.343	2.29	-25.547	-13	-12.547
25333	50.28	0	150	V	25333	-36	12.647	1.26	-24.613	-13	-11.613
24320	49.99	357	150	H	24320	-35.93	13.356	1.68	-24.254	-13	-11.254
374.4	46.57	155	150	V	374.4	-64.43	0	0.1	-64.53	-13	-51.53
498.8	54.23	194	150	H	498.8	-52.77	0	0.12	-52.89	-13	-39.89
256.3	48.25	102	150	V	256.3	-61.75	0	0.09	-61.84	-13	-48.84
324.2	46.99	0	150	H	324.2	-63.01	0	0.1	-63.11	-13	-50.11

High Channel

Freq. (MHz)	S.A. Amp. (dBμV)	Table Azimuth (Degrees)	Test Antenna		Substitution				Absolute Level (dBm)	Result	
			Height (cm)	Polar (H/V)	Freq. (MHz)	S.G. Level (dBm)	Antenna Gain (dB)	Cable Loss (dB)		Limit (dBm)	Margin (dB)
1300	50.89	201	150	V	1300	-58.75	6.087	0.55	-53.213	-13	-40.213
1300	50.93	19	150	H	1300	-58.87	6.194	0.55	-53.226	-13	-40.226
13680	48.31	254	150	V	13680	-40.31	12.419	4.45	-32.341	-13	-19.341
13690	48.77	107	150	H	13690	-38.21	12.413	4.45	-30.247	-13	-17.247
14966	47.29	132	150	V	14966	-41.37	12.784	2.28	-30.866	-13	-17.866
23627	48.74	0	150	V	23627	-28.77	13.178	1.66	-17.252	-13	-4.252
25373	50.58	0	150	V	25373	-35.62	12.647	1.62	-24.593	-13	-11.593
25352	50.84	0	150	H	25352	-35.36	12.647	1.6	-24.313	-13	-11.313
225.6	60.27	191	100	V	225.6	-49.73	0	0.01	-49.74	-13	-36.74
925.6	62.41	143	100	H	925.6	-41.59	0	0.32	-41.91	-13	-28.91
975.8	60.53	183	100	V	975.8	-42.47	0	0.31	-42.78	-13	-29.78
324.2	52.37	186	100	H	324.2	-57.63	0	0.12	-57.75	-13	-44.75

6 FCC §2.1049 - Occupied Bandwidth

6.1 Applicable Standard

FCC §2.1049

6.2 Measurement Procedure

The transmitter output is connected to the spectrum analyzer. The sweep time is coupled. The spectrum analyzer internal 26dB bandwidth function is utilized.

KDB 971168 Occupied bandwidth measurement method is used.

6.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Cycle
Agilent	Spectrum Analyzer	E4446A	US44300386	2016-10-29	1 year
Sunol Science Corp	System Controller	SC99V	122303-1	N/R	N/R
EMCO	Antenna, Horn	3115	9511-4627	2016-01-15	1 year
ARA	Antenna, Horn	DRG-118/A	1132	2015-09-21	2 years
HP	Generator, Signal	83650B	3614A00276	2016-08-06	1 year
IW	Armored High Frequency Cable	DC 1531	KPS-1501A3960KPS	2016-08-05	1 Year

Statement of Traceability: *BACL attests that all calibrations have been performed per the A2LA requirements, traceable to NIST.*

6.4 Test Environmental Conditions

Temperature:	22 °C
Relative Humidity:	44 %
ATM Pressure:	102kPa

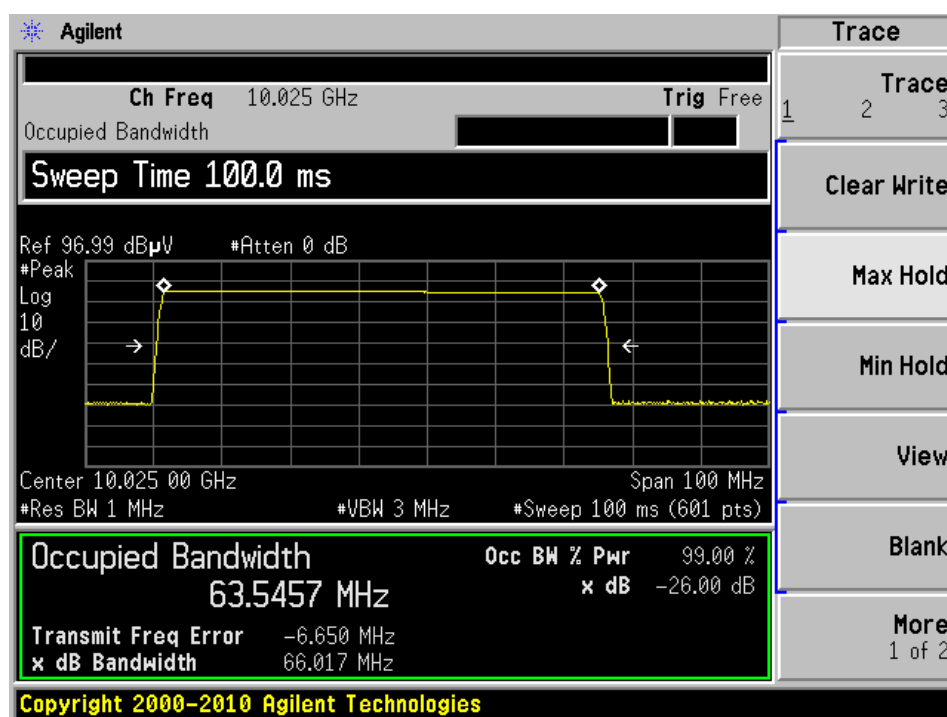
The testing was performed by Jin Yang on 2016-12-22 at 5 meter Chamber.

6.5 Test Results

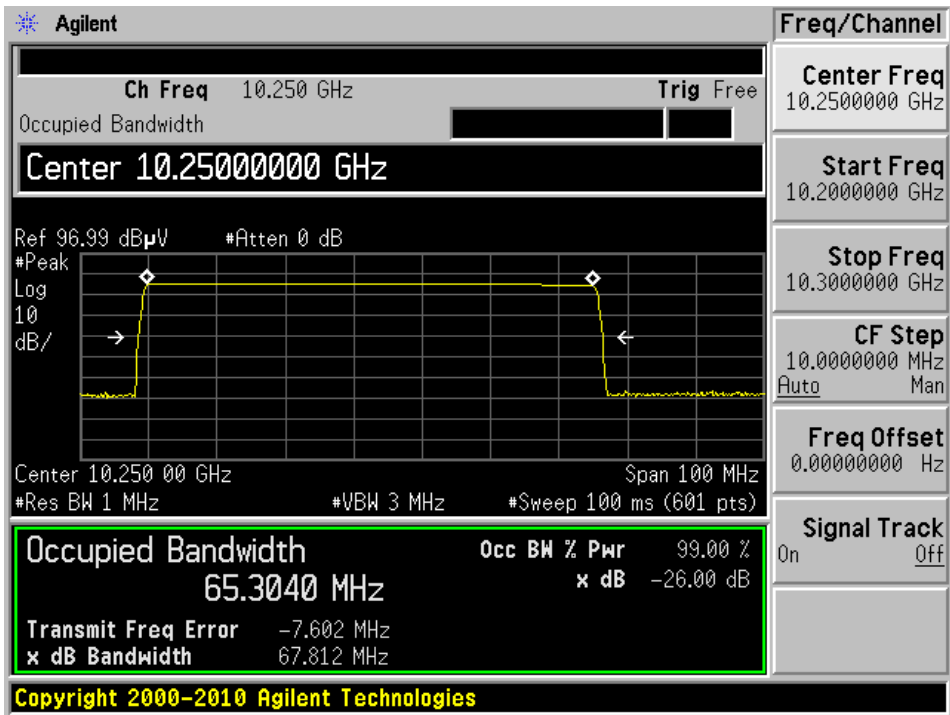
Channel	Frequency (MHz)	26 dB OBW (MHz)	99% OBW (MHz)	Note
Low	10025	66.017	63.5457	Sweeping Mode
Middle	10250	67.812	65.304	
High	10475	70.536	67.9361	

Please refer to the following plots for detailed test results

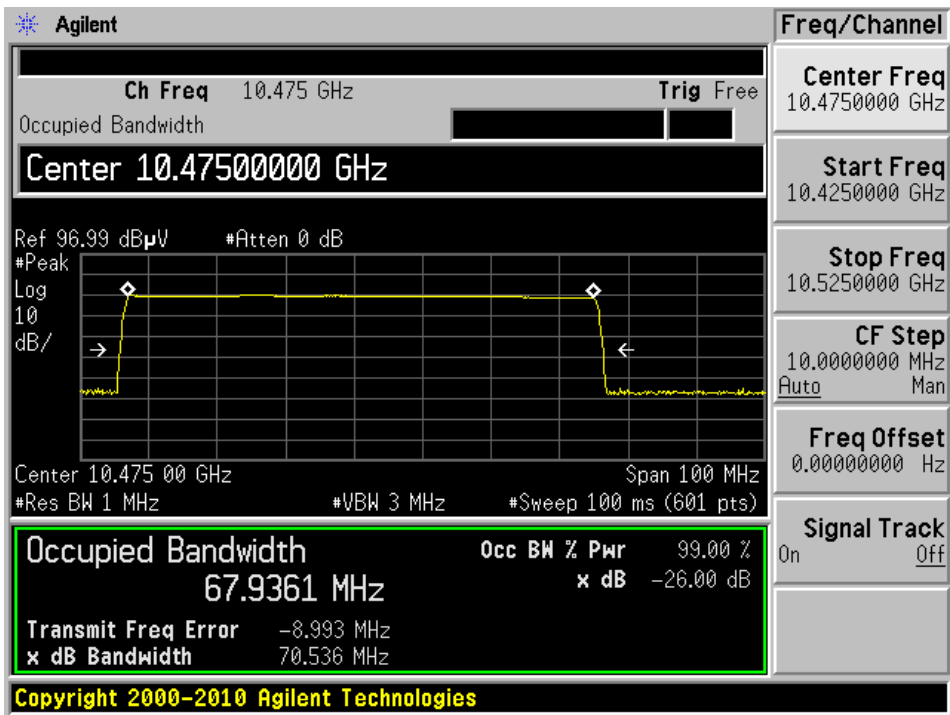
Low CH, 10025 MHz



Mid CH, 10250 MHz



High CH, 10475 MHz



7 FCC §2.1046, §90.205(s) & §90.103(c) - RF Output Power

7.1 Applicable Standard

FCC §2.1046

FCC §90.205 (s) The output power shall not exceed by more than 20 percent either the output power shown in the Radio Equipment List [available in accordance with §90.203(a)(1)] for transmitters included in this list or when not so listed, the manufacturer's rated output power for the particular transmitter specifically listed on the authorization.

FCC §90.103 (c) (13) Operations in this band are limited to survey operations using transmitters with a peak power not to exceed 5 watts into the antenna.

7.2 Measurement Procedure

The transmitter output was connected to the input terminal via calibrated coaxial cable. The output power was measured with the wideband power meter at the low, middle and high channel in each band.

KDB 9771168 wideband power measurement method is used.

7.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Cycle
Agilent	Spectrum Analyzer	E4446A	US44300386	2016-10-29	1 year
Sunol Science Corp	System Controller	SC99V	122303-1	N/R	N/R
EMCO	Antenna, Horn	3115	9511-4627	2016-01-15	1 year
ARA	Antenna, Horn	DRG-118/A	1132	2015-09-21	2 years
HP	Generator, Signal	83650B	3614A00276	2016-08-06	1 year
IW	Armored High Frequency Cable	DC 1531	KPS-1501A3960KPS	2016-08-05	1 Year

Statement of Traceability: *BACL attests that all calibrations have been performed per the A2LA requirements, traceable to NIST.*

7.4 Test Environmental Conditions

Temperature:	22 °C
Relative Humidity:	44 %
ATM Pressure:	102kPa

The testing was performed by Jin Yang on 2016-12-22 at 5 meter Chamber.

7.5 Test Results

Conducted Output Power

Frequency (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Margin (dB)
10025	31.57	37	-5.43
10250	31.85	37	-5.15
10475	30.15	37	-6.85

Note: Limit is 5 Watts, i.e. 37 dBm

8 FCC §2.1055 & §90.213(b) - Frequency Stability

8.1 Applicable Standard

FCC §2.1055

FCC §90.213 (b) For the purpose of determining the frequency stability limits, the power of a transmitter is considered to be the maximum rated output power as specified by the manufacturer

8.2 Measurement Procedure

ANSI/TIA/EIA 603-D clause 2.2.2

8.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4446A	US44300386	2016-10-29	1 year
EMCO	Antenna, Horn	3115	9511-4627	2016-01-15	1 year
Fluke	Multimeter	287	11820006	2016-04-05	1 year
IW	Armored High Frequency Cable	DC 1531	KPS-1501A3960KPS	2016-08-05	1 Year

Statement of Traceability: *BACL attests that all calibrations have been performed per the A2LA requirements, traceable to NIST.*

8.4 Test Environmental Conditions

Temperature:	22 °C
Relative Humidity:	44 %
ATM Pressure:	102kPa

The testing was performed by Jin Yang on 2016-12-22 at 5 meter Chamber.

8.5 Test Results

Reference Frequency: EUT Mid Channel (10250 MHz)			
Power Supply (Vac)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse	
		(MHz)	Delta (ppm)
120	60	10249.92488	-7.33
120	50	10249.92467	-7.35
120	40	10249.92359	-7.45
120	30	10249.92475	-7.34
120	20	10249.92572	-7.25
120	10	10249.92542	-7.28
120	0	10249.92487	-7.33
120	-10	10249.92278	-7.53
120	-20	10249.93105	-6.73