



FCC 47 CFR PART 15 SUBPART C TEST REPORT

For

Product Name: Lenovo S6000L

Brand Name: Lenovo

Model No.: 60049; Z0AN; Lenovo S6000L-F

FCC ID:O57S6000LF

IC:10407A-S6000LF

Test Report Number:

C130726E02-RPB

Issued for

Lenovo (Shanghai) Electronics Technology Co., Ltd.

No. 68 Building, 199 Fenju Road, Wai Gao Qiao FTZ , Shanghai , China

Issued by

Compliance Certification Services Inc.

Kun shan Laboratory

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TESTING CERT #2541.01

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result
3.1	15.247(a)(1)	RSS-210 A8.4(2)	Number of Channels	≥ 15Channels	Pass
3.2	15.247(a)(1)	RSS-210 A8.1(b)	Hopping Channel Separation	≥2/3 of 20dB BW	Pass
3.3	15.247(a)(1)	RSS-210 A8.1(d)	Dwell Time of Each Channel	≤0.4sec in 31.6sec period	Pass
3.4	15.247(a)(1)	RSS-210 A8.1(a)	20dB Bandwidth	NA	Pass
3.5		RSS-Gen 4.6.1	99% Bandwidth	-	Pass
3.2	15.247(d)	RSS-210 A8.5	Peak Output Power	≤ 1W for 1Mbps ≤125mW for 2,3Mbps	Pass
3.4	15.247(d)	RSS-210 A8.5	Conducted Band Edges and Spurious Emission	≤ 20dBc	Pass
3.5	15.247(d)	RSS-210 A8.5	Radiated Band Edges and Spurious Emission	15.209(a) &15.247(d)	Pass
3.6	15.207	RSS-210 Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass
3.7	15.203 &15.247(b)	RSS-210 A8.4	Antenna Requirement	N/A	Pass



1 TEST RESULT CERTIFICATION

Product Name:	Lenovo S6000L
Trade Name:	Lenovo
Model Name.:	60049; Z0AN; Lenovo S6000L-F
Applicant Discrepancy:	Initial
Device Category:	PORTABLE DEVICES
Exposure Category:	GENERAL POPULATION/UNCONTROLLED EXPOSURE
Date of Test:	July 22, 2013- July 26, 2013
Applicant:	Lenovo (Shanghai) Electronics Technology Co., Ltd. No. 68 Building, 199 Fenju Road, Wai Gao Qiao FTZ , Shanghai , China
Manufacturer:	Lenovo PC HK Limited 23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong
Application Type:	Certification

APPLICABLE STANDARDS

STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart C	No non-compliance noted
Canada RSS-210 Issue 8	No non-compliance noted
Canada RSS-Gen Issue 3	No non-compliance noted

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4:2009 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

Approved by:

Tested by:

Hui.Li
RF Manager
Compliance Certification Services Inc.

Blent.Wang
Test Engineer
Compliance Certification Services Inc.



2 EUT DESCRIPTION

Product Name:	Lenovo S6000L
Trade Name:	Lenovo
Model Name.:	60049; Z0AN; Lenovo S6000L-F
Model Discrepancy:	Only for market segment
Power Adapter Power Rating :	Power supply and ADP (rating): Brand: HuntKey Model: HKA00905015-2C INPUT: 100 - 240 50/60Hz 0.25A Vac OUTPUT: 5 Vdc, 1.5 A Battery(rating): Model Name:L11C2P32 Capacitance: 6340mAh Rated Voltage: 3.7 V Charging Limit: 4.2 V
Frequency Range :	Bluetooth:2402 ~ 2480 MHz Wifi b/g/n:2412~2462 MHz
Transmit Power :	7.21dBm(5.26mW)
Modulation Technique :	FHSS
Transmit Data Rate :	GFSK(1 Mbps), $\pi/4$ -DQPSK(2 Mbps),8-DPSK(3 Mbps)
Number of Channels :	79 Channels
Antenna Specification :	Fixed Internal Antenna

Remark:

1. This submittal(s) (test report) is intended for **FCC ID: O57S6000LF** to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.
2. This submittal(s) (test report) is intended for **IC:10407A-S6000LF** filing to comply with Canada RSS-210 Issue 8 and Canada RSS-Gen Issue 3 Rules.



3 TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 ,15.247, RSS-210 and RSS-Gen.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EXERCISE EUT

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4.

3.4 MODIFICATION

N/A



3.5 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.0900 - 0.1100	16.420 - 16.423	399.9 - 410.0	4.50 - 5.15
0.4950 - 0.505 ⁽¹⁾	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960.0 - 1240	7.25 - 7.75
4.1250 - 4.1280	25.50 - 25.67	1300 - 1427	8.025 - 8.500
4.17725 - 4.17775	37.50 - 38.25	1435.0 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73.0 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.2150 - 6.2180	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108.00 - 121.94	1718.8 - 1722.2	13.25 - 13.40
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.50
8.2910 - 8.2940	149.90 - 150.05	2310 - 2390	15.35 - 16.20
8.3620 - 8.3660	156.52475 - 156.52525	2483.5 - 2500.0	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.1700	3260 - 3267	23.6 - 24.0
12.2900 - 12.2930	167.72 - 173.20	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345 - 3358	36.43 - 36.5 ⁽²⁾
12.57675 - 12.57725	322.0 - 335.4	3600 - 4400	
13.3600 - 13.4100			

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



4 INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards, facilities and accreditations

5 FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at CCS China Kunshan Lab at 10#Weiye Rd, Innovation Park Eco. & Tec. Development Zone Kunshan city JiangSu, (215300), CHINA.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22.

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5.3 LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 200581-0 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC5743 for 10m chamber 10m, IC5743 for 10m chamber 3m.



5.4 TABLE OF ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

Taiwan	TAF
USA	A2LA

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
Japan	VCCI
Taiwan	BSMI
USA	FCC

Copies of granted accreditation certificates are available for downloading from our web site, <http://www.ccsrf.com>



5.5 LIST OF MEASURING EQUIPMENT

Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	RS	FSU26	200789	2014-6-30
Bluetooth Tester	RS	CBT	100189	N.C.R
OSCILLOSCOPE	Agilent	DSO6104A	MY44002585	2014-3-14
Peak and Avg Power Sensor	Agilent	E9327A	US40441788	2014-3-14
EPM-P Series Power Meter	Agilent	E4416A	GB41292714	2014-3-14
Power SPLITTER	Mini-Circuits	ZN2PD-9G	SF078500430	N.C.R
DC POWER SUPPLY	AGILENT	E3632A	MY50340053	2014-3-14
Temp. / Humidity Chamber	TERCHY	MHK-120AK	X30109	2014-1-24
Test Software	EZ-EMC			

977 Chamber				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY44020154	2014-4-16
Pre-Amplifier	MITEQ	JS41-00101800-32-10P	1675713	2013-10-8
Pre-Amplifier	MITEQ	NSP400-NF	870731	2014-4-26
Bilog Antenna	Sunol Sciences	JB1	A062604	2014-5-2
Horn-antenna	SCHWARZBECK	BBHA9120D	D:267	2014-4-28
Turn Table	CT	CT123	4165	N.C.R
Antenna Tower	CT	CTERG23	3256	N.C.R
Controller	CT	CT100	95637	N.C.R
Test Software	EZ-EMC			

Conducted Emission				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI TEST RECEIVER	R&S	ESCI3	100781	2014-3-14
V (V-LISN)	Schwarzbeck	NNLK 8129	8129-143	2014-3-14
LISN (EUT)	FCC	FCC-LISN-50/250-50-2-02	SN:05012	2014-3-14
TRANSIENT LIMITER	SCHAFFNER	CFL9206	1710	2014-3-14
Test Software	EZ-EMC			

Remark: Each piece of equipment is scheduled for calibration once a year.



5.6 SETUP CONFIGURATION

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

5.7 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID
1.	N/A	N/A	N/A	N/A	N/A

Remark:

- 1.All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2.Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



6 FCC PART 15.247 REQUIREMENTS

6.1 PEAK POWER

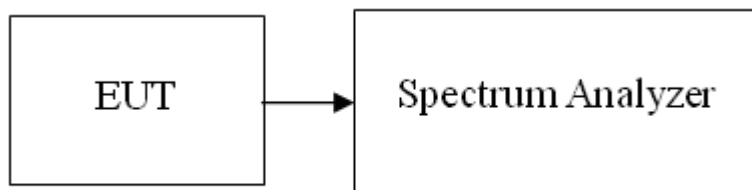
Limit

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
2. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
3. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Remark: Each piece of equipment is scheduled for calibration once a year.

Test Configuration



Test Procedure

The transmitter output is connected to the spectrum analyzer. Set the RBW = 3MHz , VBW = 3MHz, Detector = Peak, Trace mode = max hold, Sweep = auto couple. Record the max reading.

Repeat the above procedure until the measurements for all frequencies are completed.



Test Results

No non-compliance noted

Test RESULTS

1M GFSK Modulation mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Limit (mW)	Result
Low	2402	6.50	4.47	125	PASS
Mid	2441	7.11	5.14		PASS
High	2480	7.21	5.26		PASS

3M 8-DPSK Modulation mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Limit (mW)	Result
Low	2402	6.44	4.41	125	PASS
Mid	2441	6.98	4.99		PASS
High	2480	6.95	4.95		PASS



Compliance Certification Services Inc.

Report No: C130726E02-RPB

FCC ID: O57S6000LF

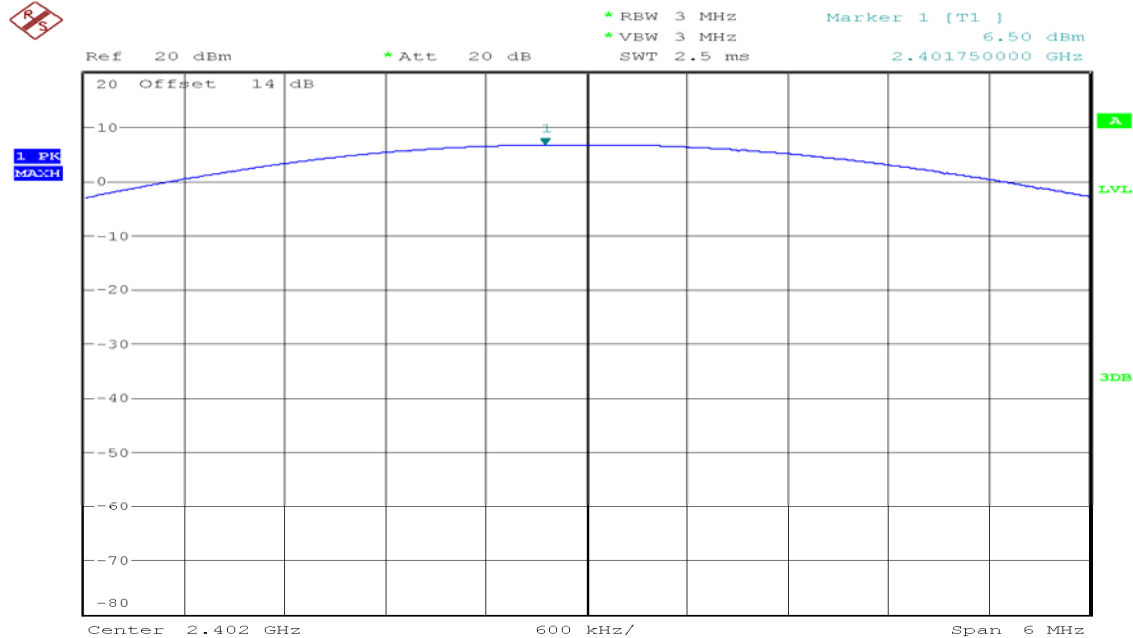
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Test Data

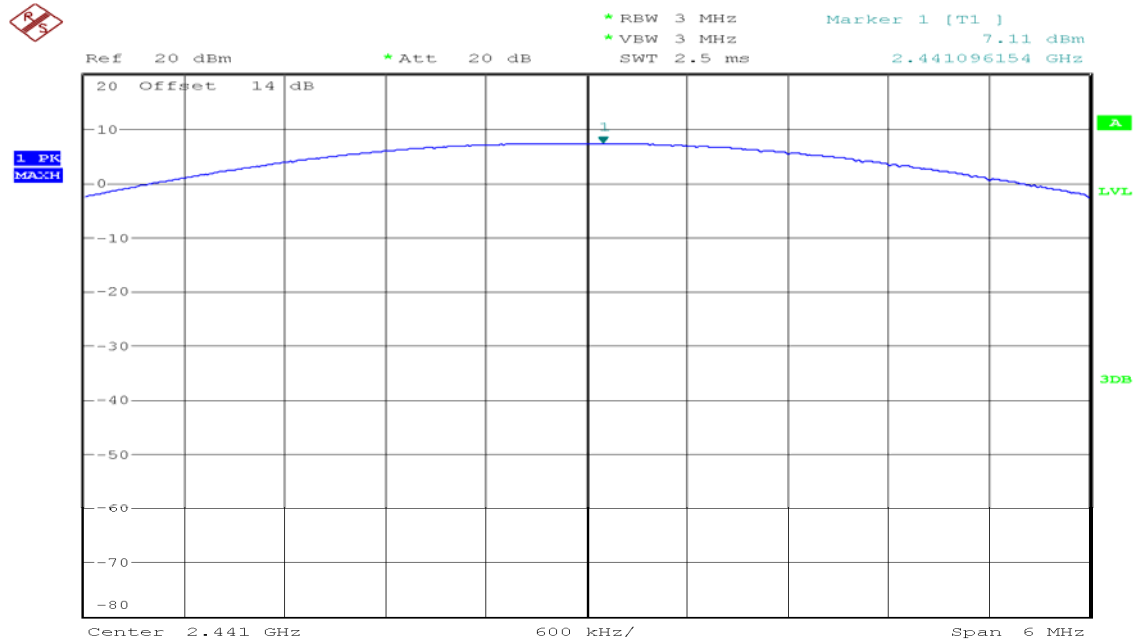
1M

Ch low



Date: 25.JUL.2013 12:12:07

CH Mid



Date: 25.JUL.2013 12:12:29



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Report No: C130726E02-RPB

FCC ID: O57S6000LF

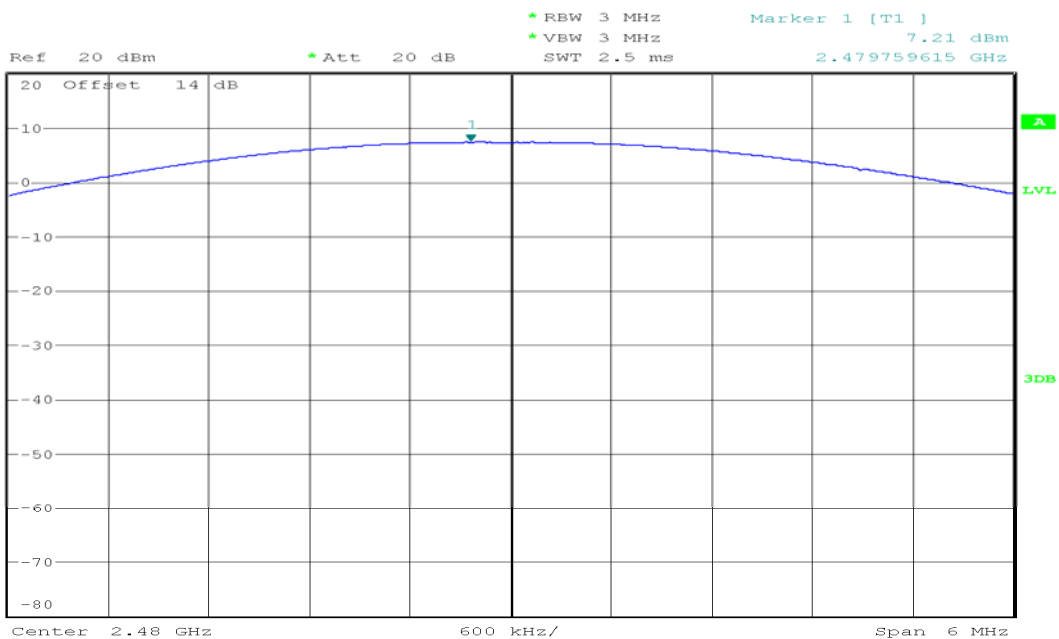
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IC:10407A-S6000LF

CH High



1 PK
MAGN



Date: 25.JUL.2013 12:12:55



Compliance Certification Services Inc.

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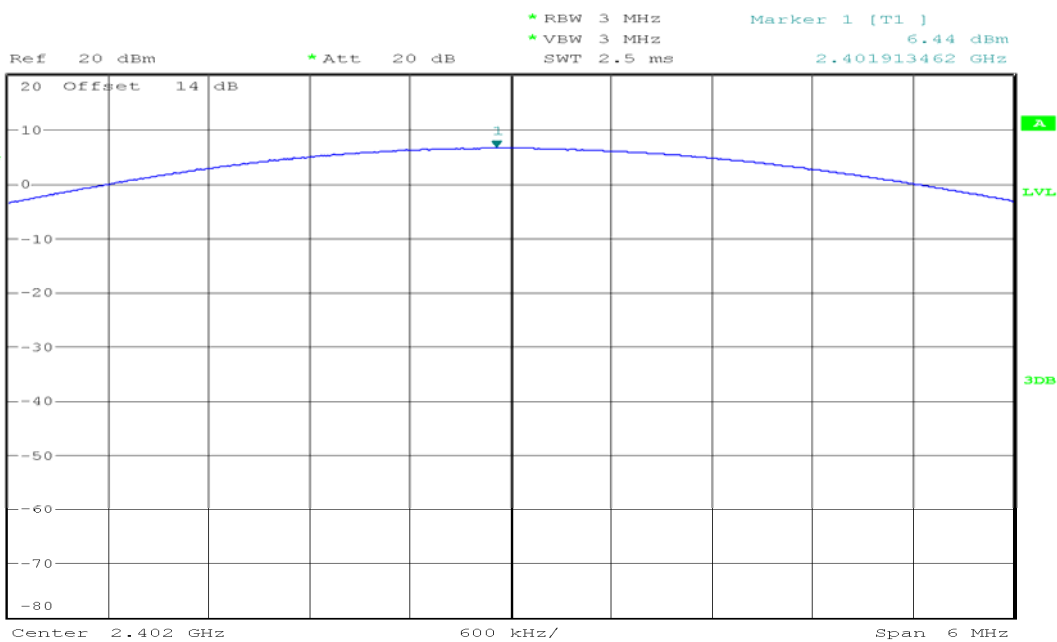
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Date of Issue :July 27, 2013

IC:10407A-S6000LF

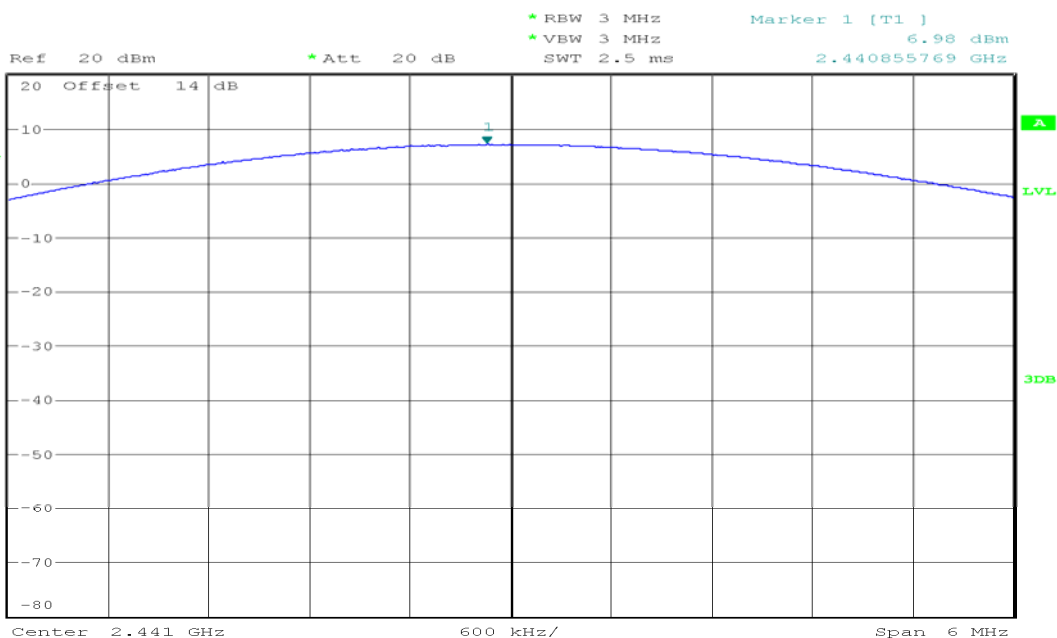
3M

Ch low



Date: 26.JUL.2013 15:02:27

Ch mid



Date: 26.JUL.2013 15:01:58



Compliance Certification Services Inc.

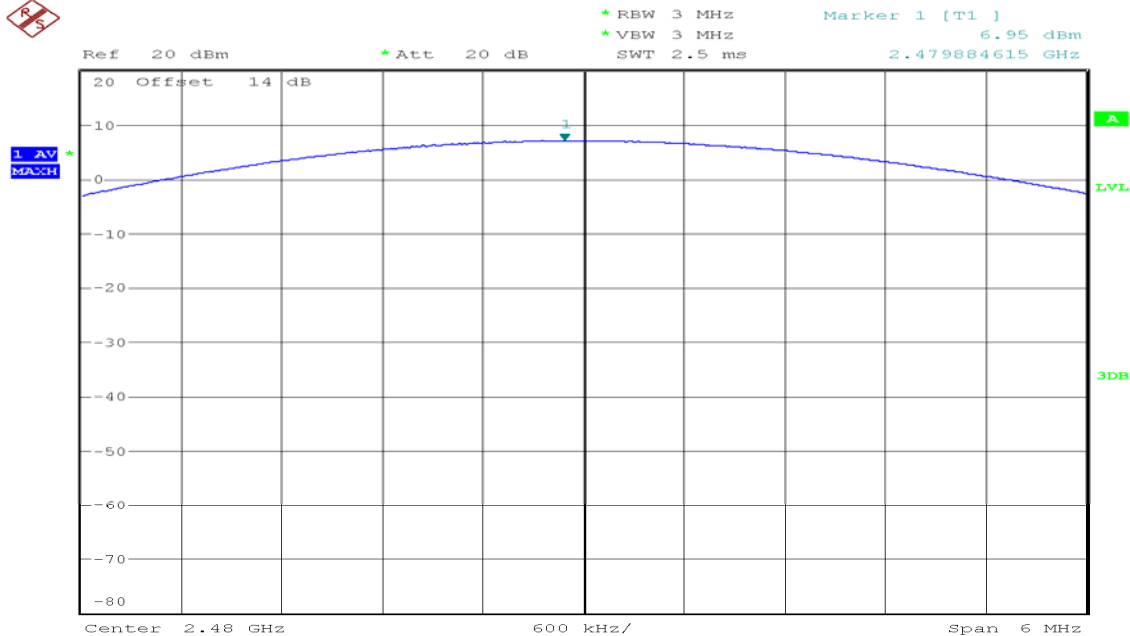
Report No: C130726E02-RPB

FCC ID: O57S6000LF

Date of Issue :July 27, 2013

IC:10407A-S6000LF

Ch High



Date: 26.JUL.2013 15:01:26

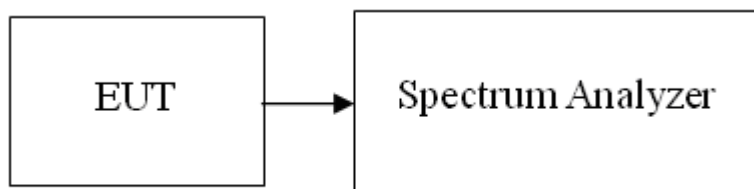


6.2 Conducted Band Edges Measurement

LIMIT

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

Test Configuration



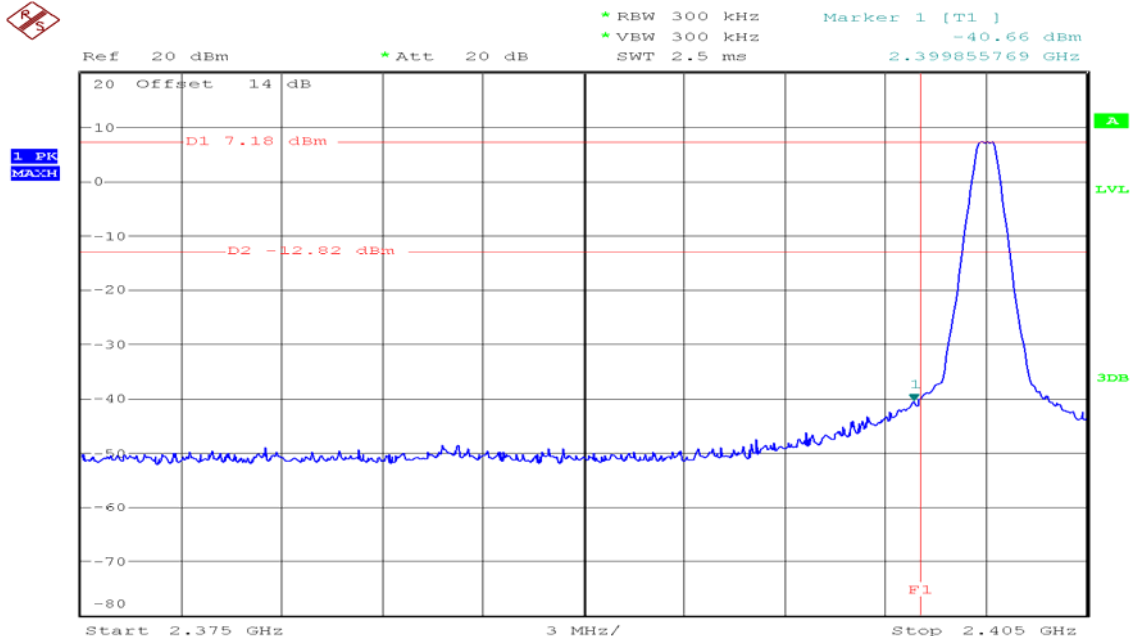
TEST PROCEDURE

1. The testing follows the guidelines in Band-edge Compliance of RF Conducted Emissions of FCC Public Notice DA 00-705 Measurement Guidelines.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Set RBW=300KHz($\geq 1\%$ span=30MHz), VBW=300KHz(\geq RBW). Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 300KHz RBW. The attenuation shall be 30 dB instead of 20 dB when RMS conducted output power procedure is used.
4. Enable hopping function of the EUT and then repeat step 2. and 3.
5. Measure and record the results in the test report.

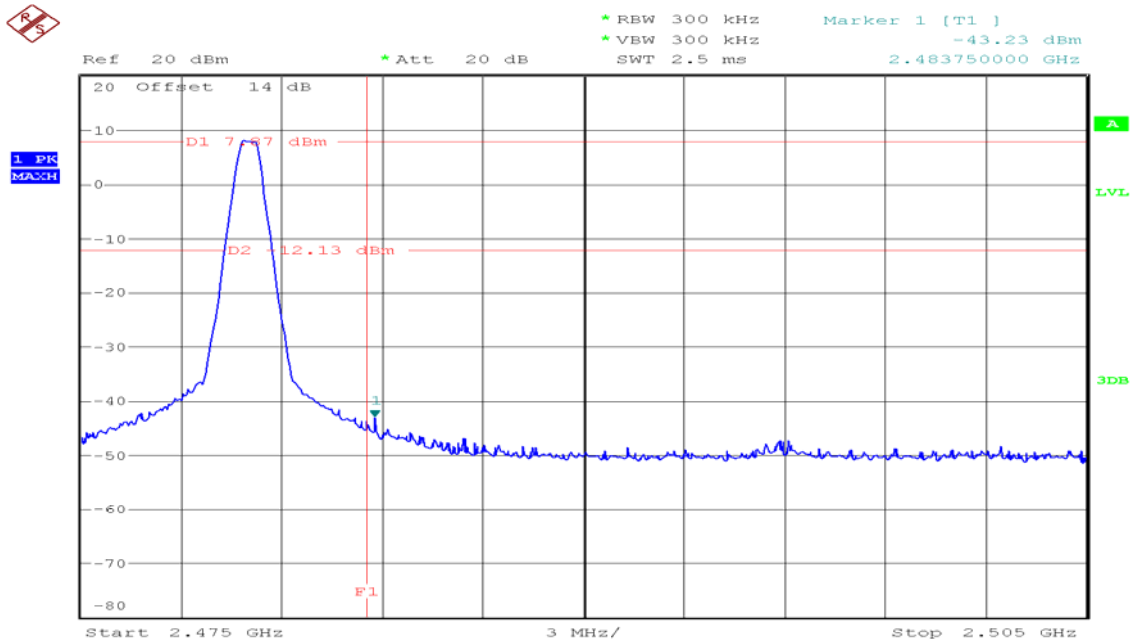


TEST RESULTS OF CONDUCTED BAND EDGES

Operation Mode:	1 Mbps	Test Date:	July 25, 2013
Test Channel:	00 and 78	Tested by:	Blent.Wang
Humidity:	52 % RH	Temperature:	24°C



Date: 25.JUL.2013 12:30:30



Date: 25.JUL.2013 12:32:06



Compliance Certification Services Inc.

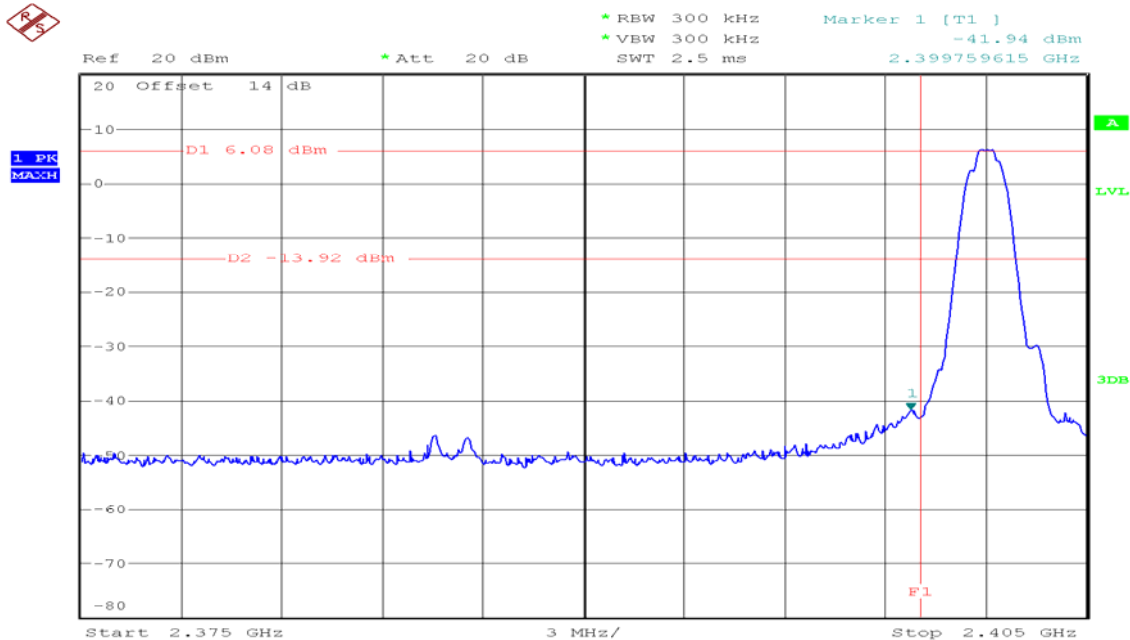
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FCC ID: O57S6000LF

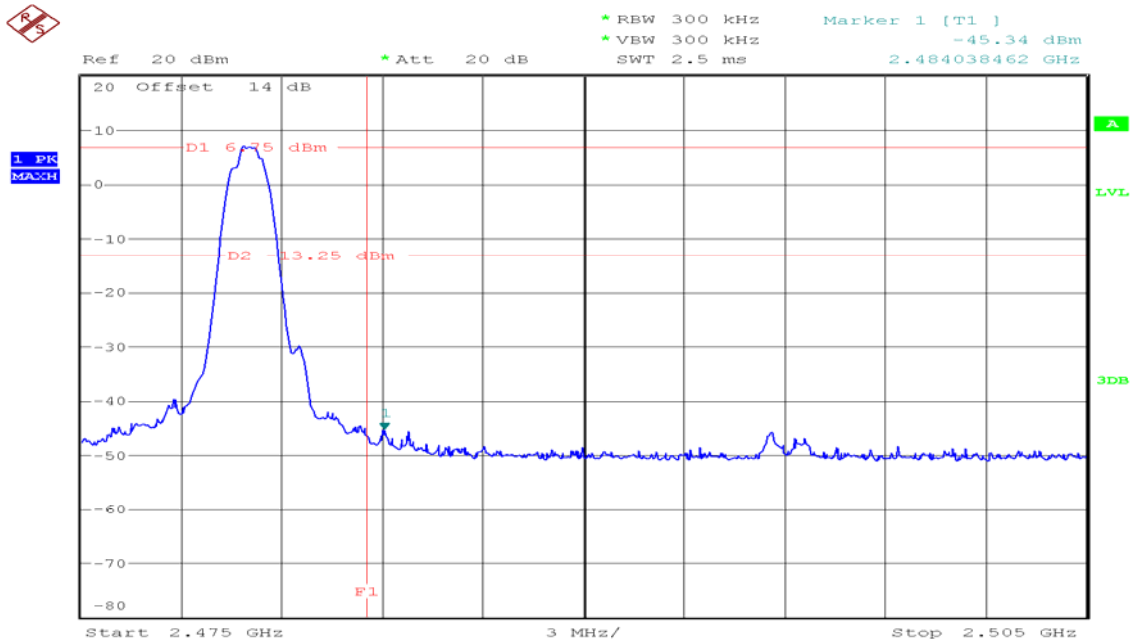
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	3 Mbps	Test Date:	July 25, 2013
Test Channel:	00 and 78	Tested by:	Blent.Wang
Humidity:	52 % RH	Temperature:	24°C



Date: 25.JUL.2013 12:35:46

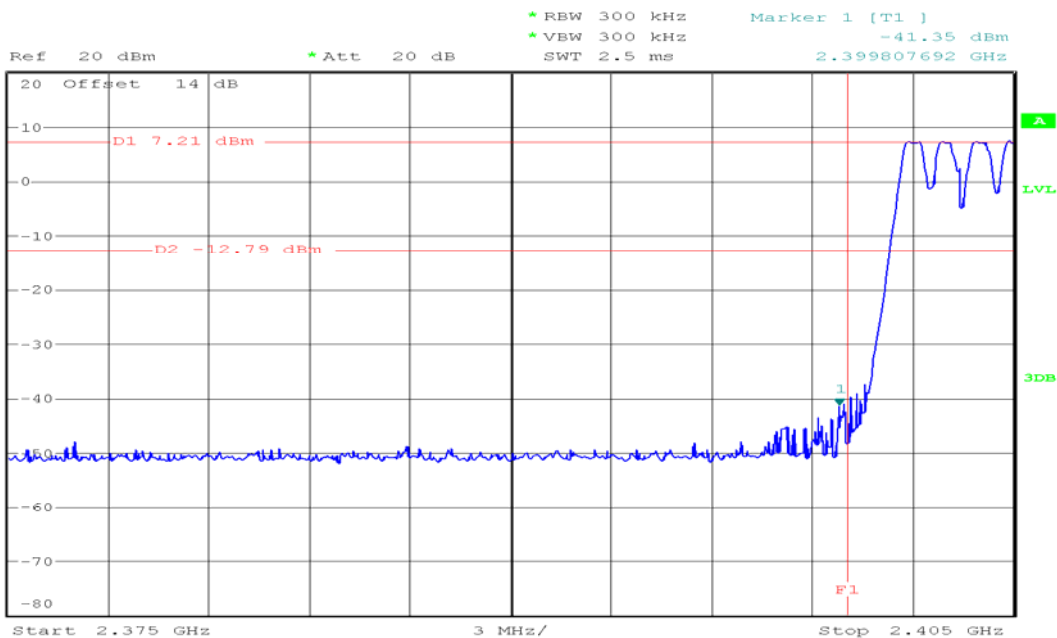


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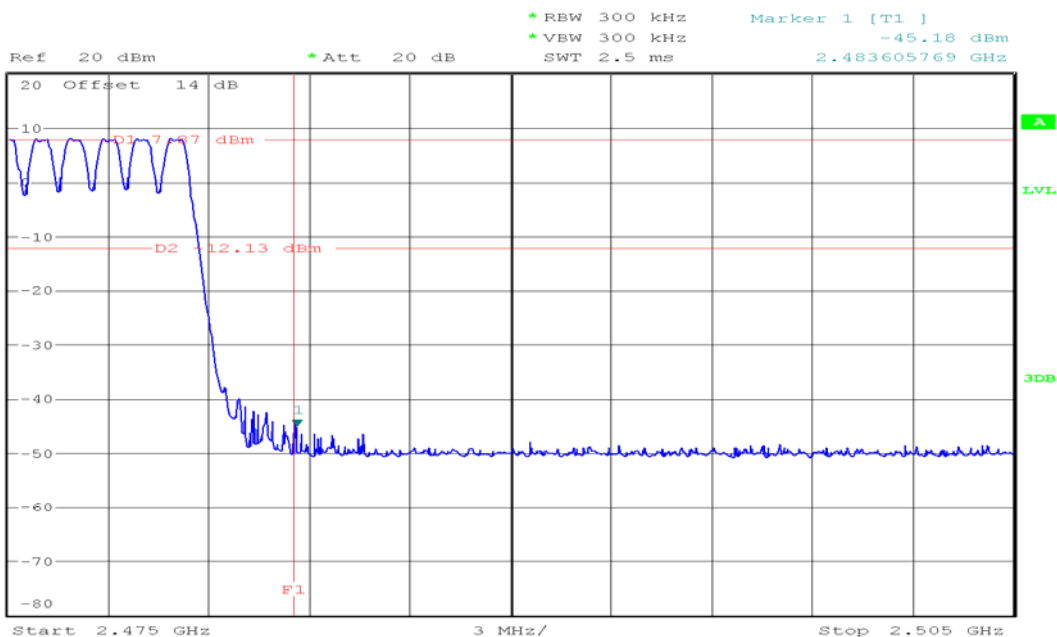


TEST RESULT OF CONDUCTED HOPPING MODE BAND EDGES

Operation Mode:	Hopping	Test Date:	July 25, 2013
Test Channel:	00 and 78	Tested by:	Blent.Wang
Humidity:	52 % RH	Temperature:	24°C



Date: 25.JUL.2013 12:39:49



Date: 25.JUL.2013 12:48:19



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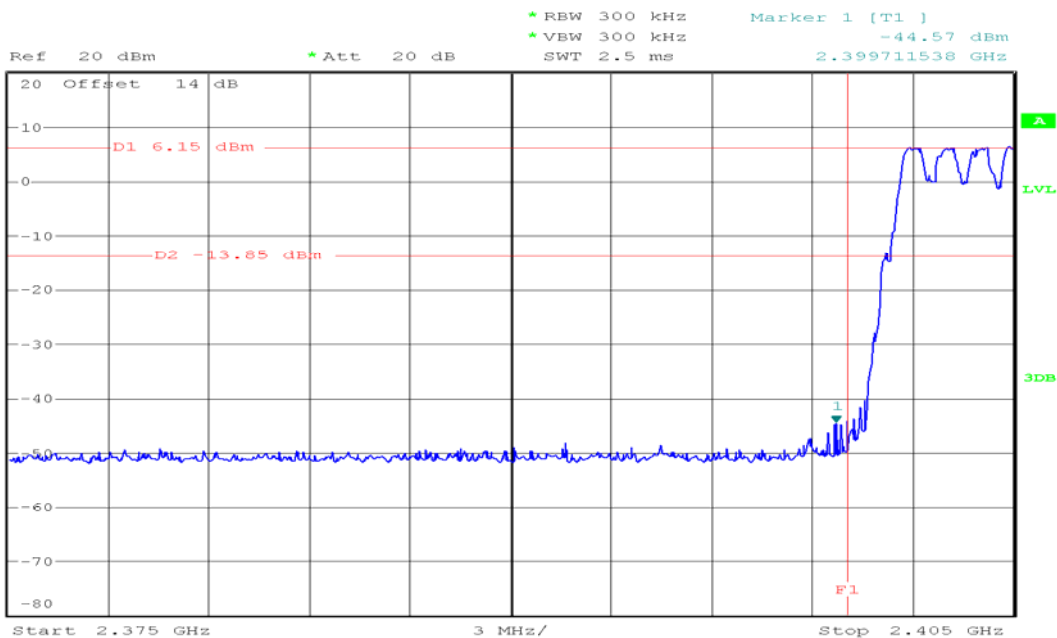
Report No: C130726E02-RPB

FCC ID: O57S6000LF

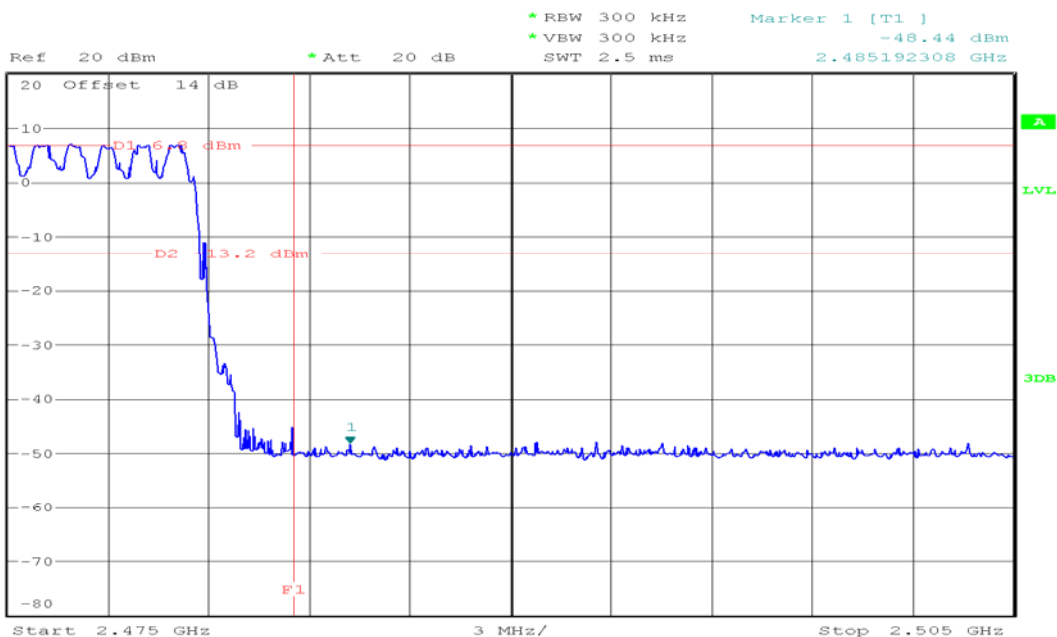
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	2 Mbps	Test Date:	July 25, 2013
Test Channel:	00 and 78	Tested by:	Blent.Wang
Humidity:	52 % RH	Temperature:	24°C



Date: 25.JUL.2013 12:41:25



Date: 25.JUL.2013 12:46:19



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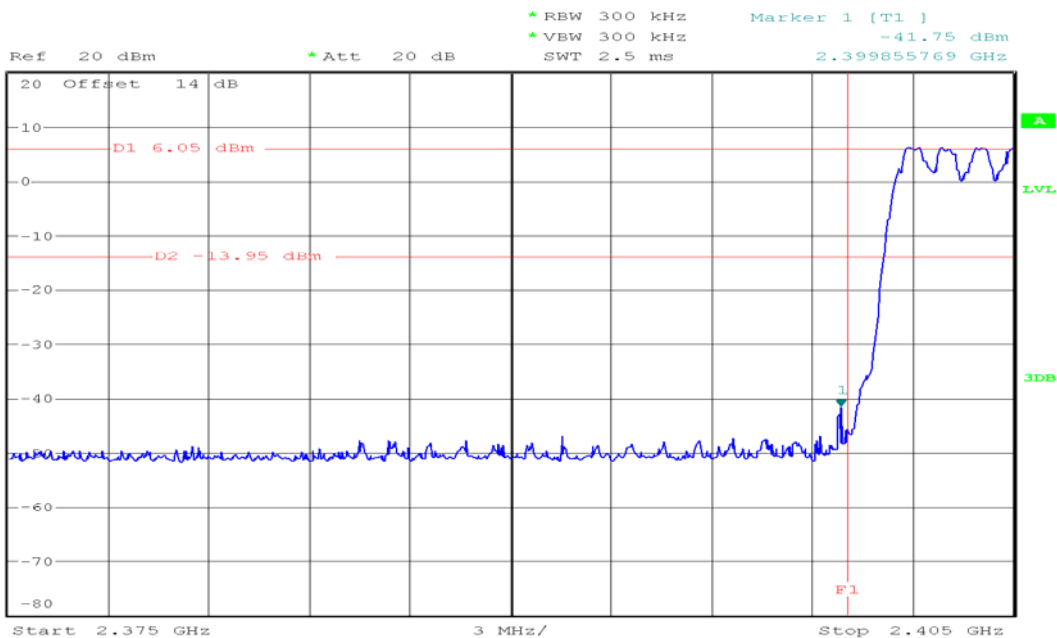
Report No: C130726E02-RPB

FCC ID: O57S6000LF

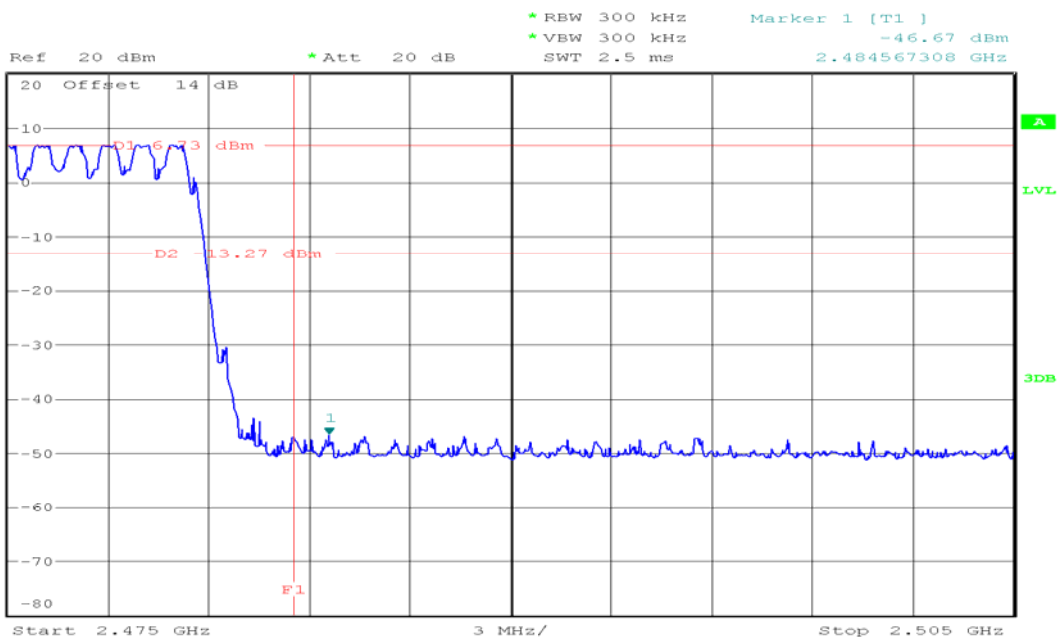
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	3 Mbps	Test Date:	July 25, 2013
Test Channel:	00 and 78	Tested by:	Blent.Wang
Humidity:	52 % RH	Temperature:	24°C



Date: 25.JUL.2013 12:42:41



Date: 25.JUL.2013 12:45:00

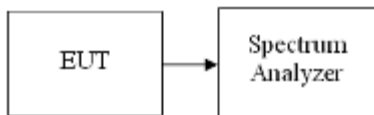


6.3 PEAK POWER SPECTRAL DENSITY

Limit

1. For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
2. The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

Test Configuration



Test Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, Span = 300kHz, Sweep=100s
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are completed.

Test Results

NA (this test item is not required for FHSS modulation technical)

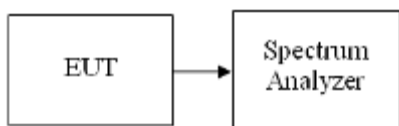


6.4 HOPPING CHANNEL BANDWIDTH

Limit

According to §15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Test Configuration



Test Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 30kHz, VBW = 100kHz, Span = 3MHz, Sweep = auto.
4. Max hold, mark 2 peaks of hopping channel and record the 2 peaks frequency.



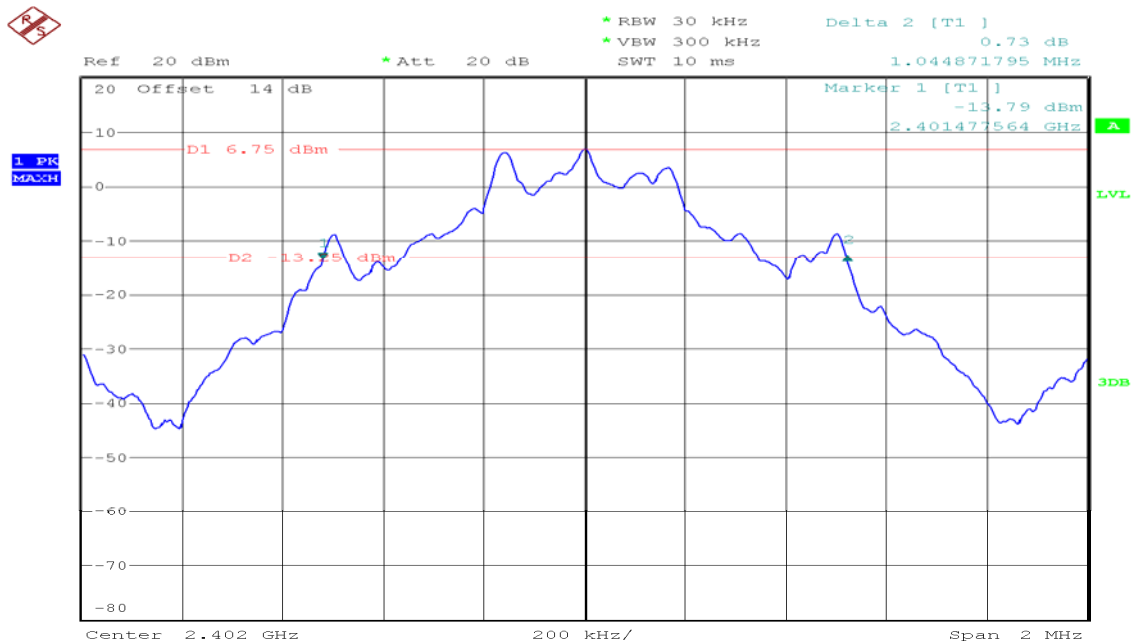
Test Results of 20dB Bandwidth

No non-compliance noted

Operation Mode:	1 Mbps	Test Date:	July 24, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Channel	Frequency(MHz)	20dB Bandwith(MHz)
00	2402	1.045
39	2441	1.045
78	2480	1.045

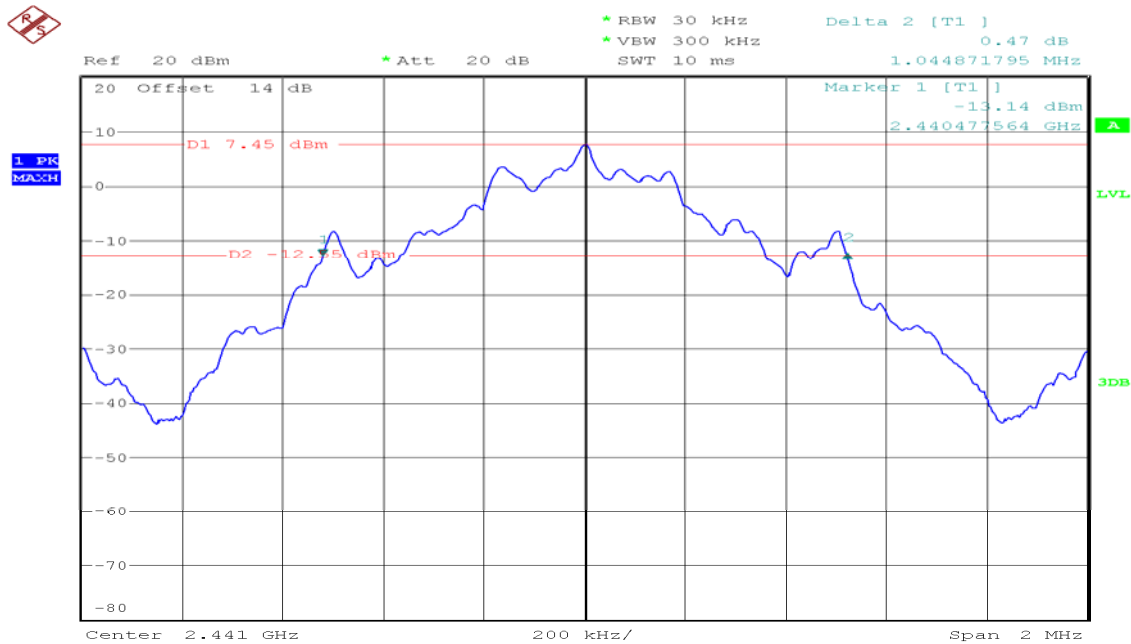
20 dB Bandwidth Plot on Channel 00



Date: 24.JUL.2013 23:50:59

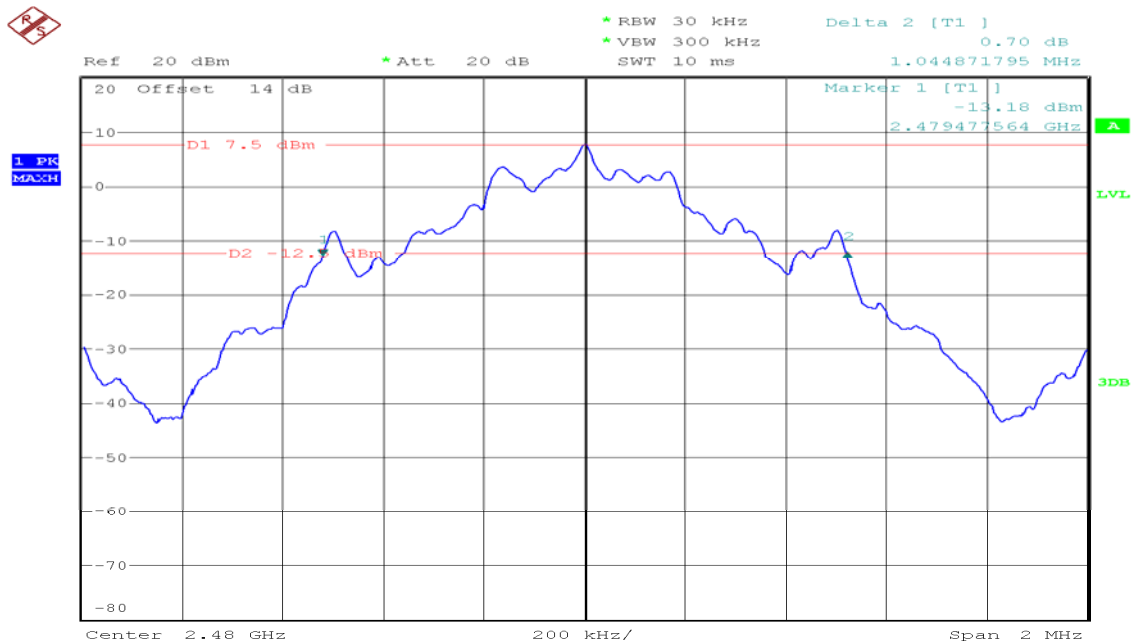


20 dB Bandwidth Plot on Channel 39



Date: 24.JUL.2013 23:52:03

20 dB Bandwidth Plot on Channel 78



Date: 24.JUL.2013 23:53:00



Compliance Certification Services Inc.

Report No: C130726E02-RPB

FCC ID: O57S6000LF

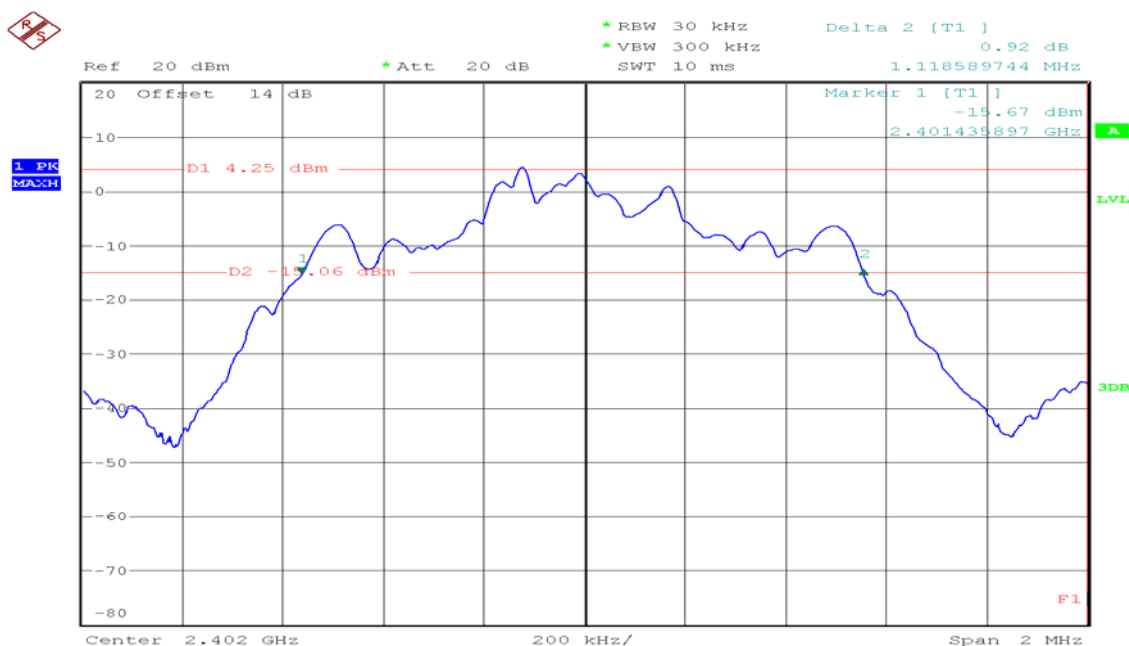
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	2 Mbps	Test Date:	July 24, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Channel	Frequency(MHz)	20dB Bandwith(MHz)
00	2402	1.119
39	2441	1.125
78	2480	1.115

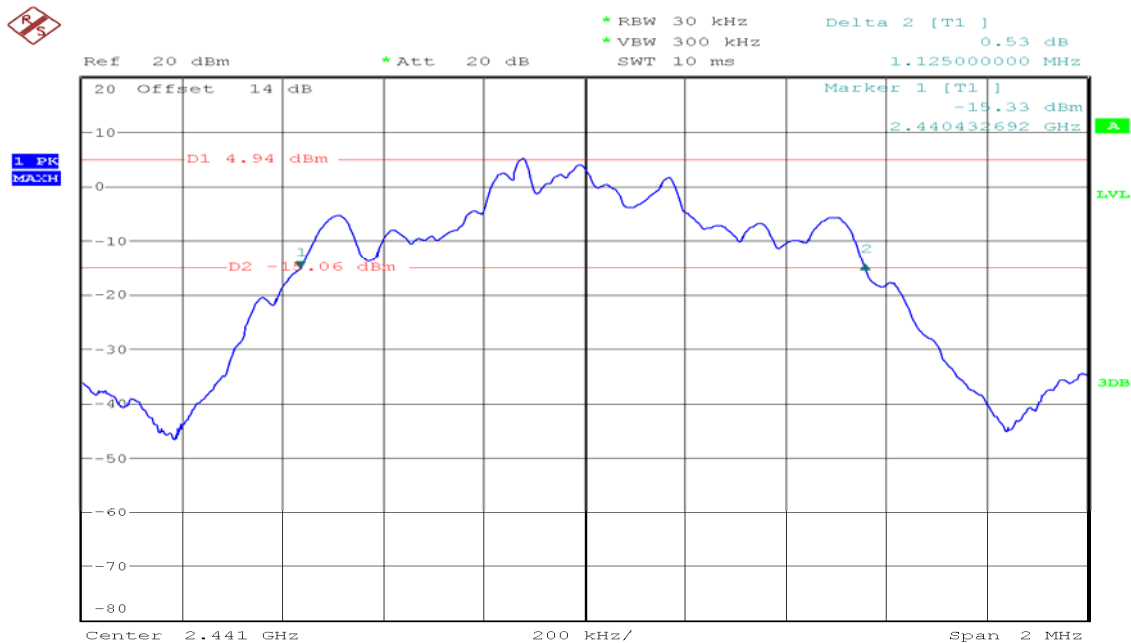
20 dB Bandwidth Plot on Channel 00



Date: 24.JUL.2013 23:55:37

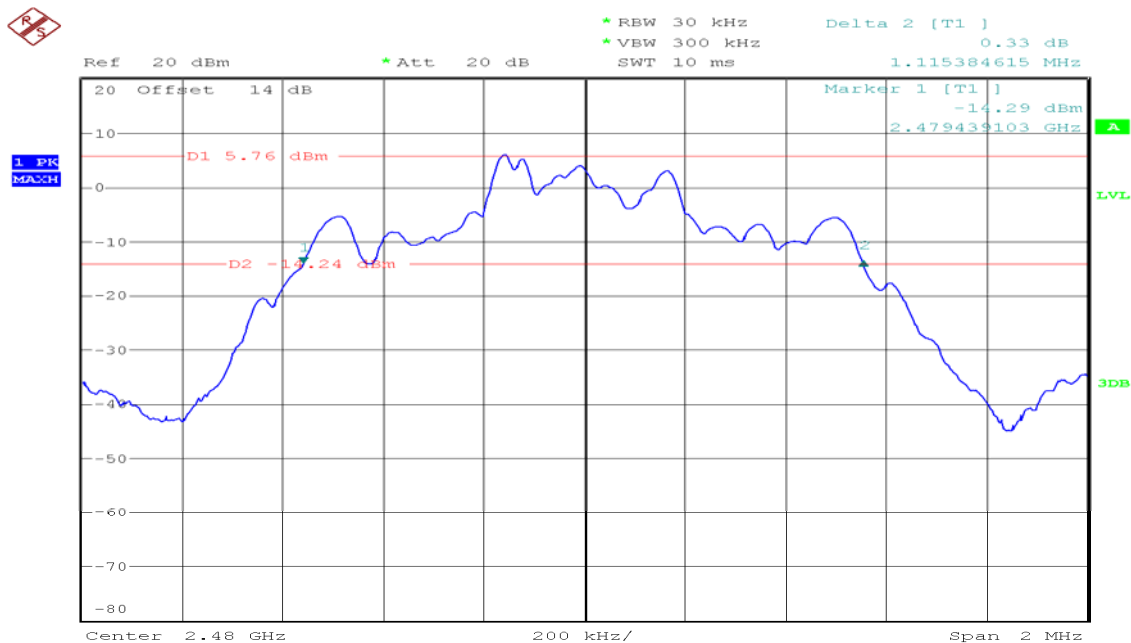


20 dB Bandwidth Plot on Channel 39



Date: 24.JUL.2013 23:54:42

20 dB Bandwidth Plot on Channel 78



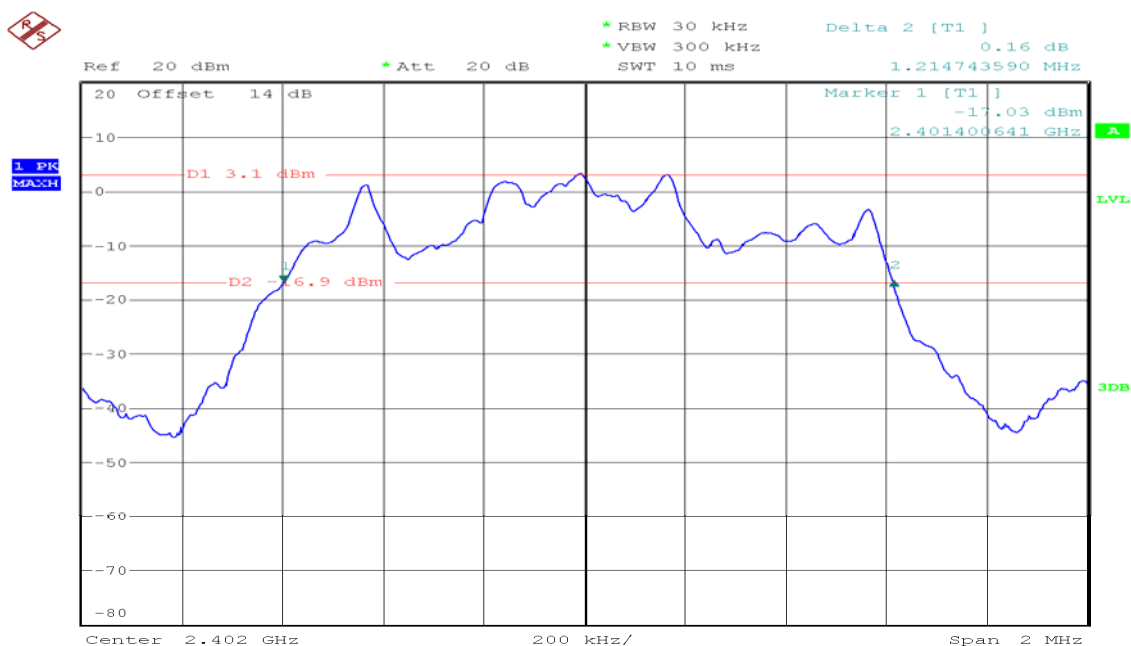
Date: 24.JUL.2013 23:53:53



Operation Mode:	3 Mbps	Test Date:	July 24, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Channel	Frequency(MHz)	20dB Bandwidth(MHz)
00	2402	1.215
39	2441	1.212
78	2480	1.215

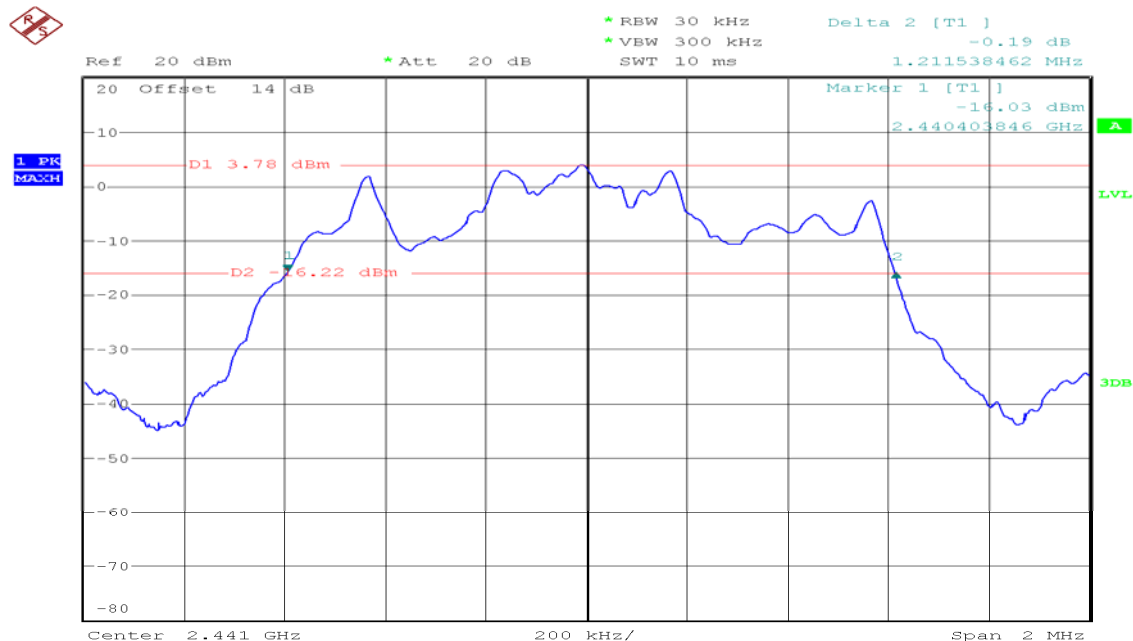
20 dB Bandwidth Plot on Channel 00



Date: 24.JUL.2013 23:56:37

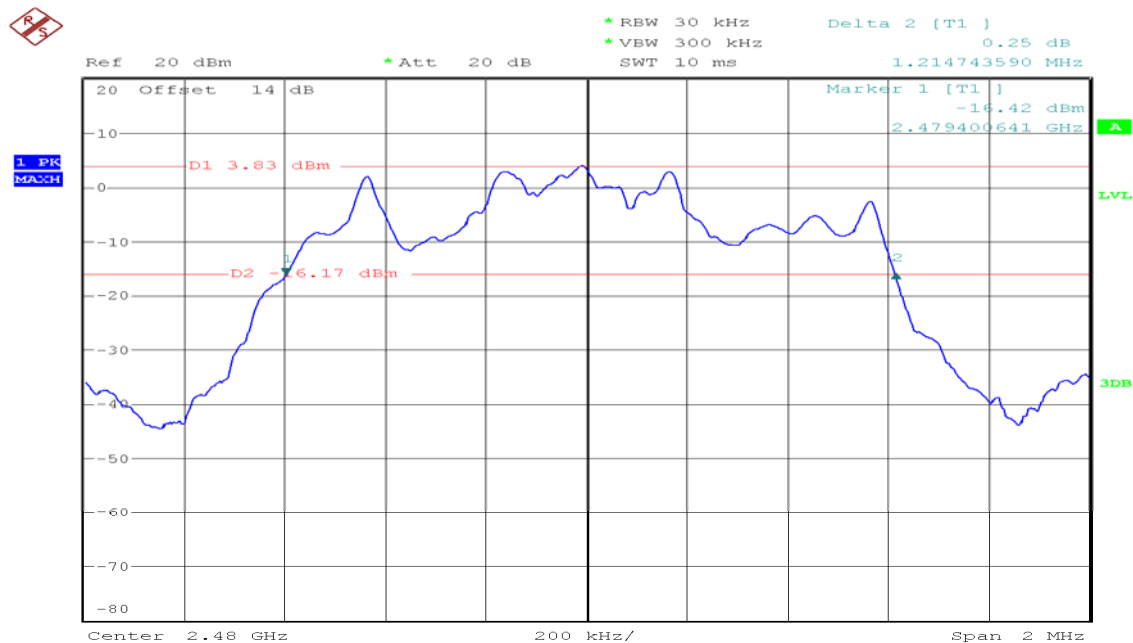


20 dB Bandwidth Plot on Channel 39



Date: 24.JUL.2013 23:57:31

20 dB Bandwidth Plot on Channel 78



Date: 24.JUL.2013 23:58:35

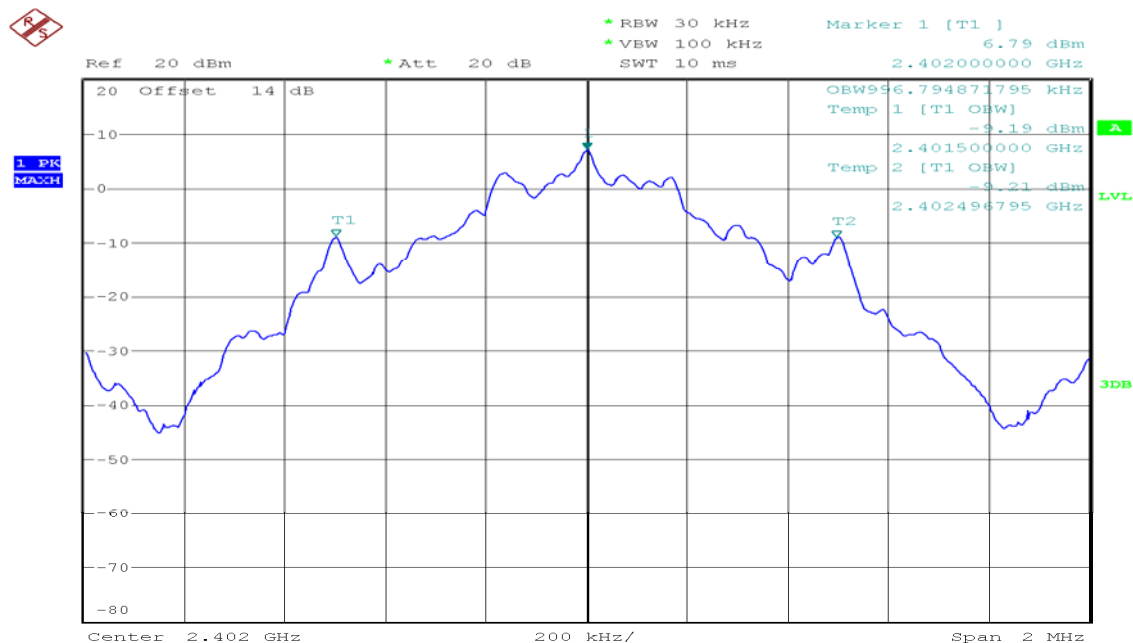


Test Result of 99% Occupied Bandwidth

Operation Mode:	1 Mbps	Test Date:	July 25, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Channel	Frequency(MHz)	99% Occupied Bandwidth(MHz)
00	2402	0.997
39	2441	1.000
78	2480	1.000

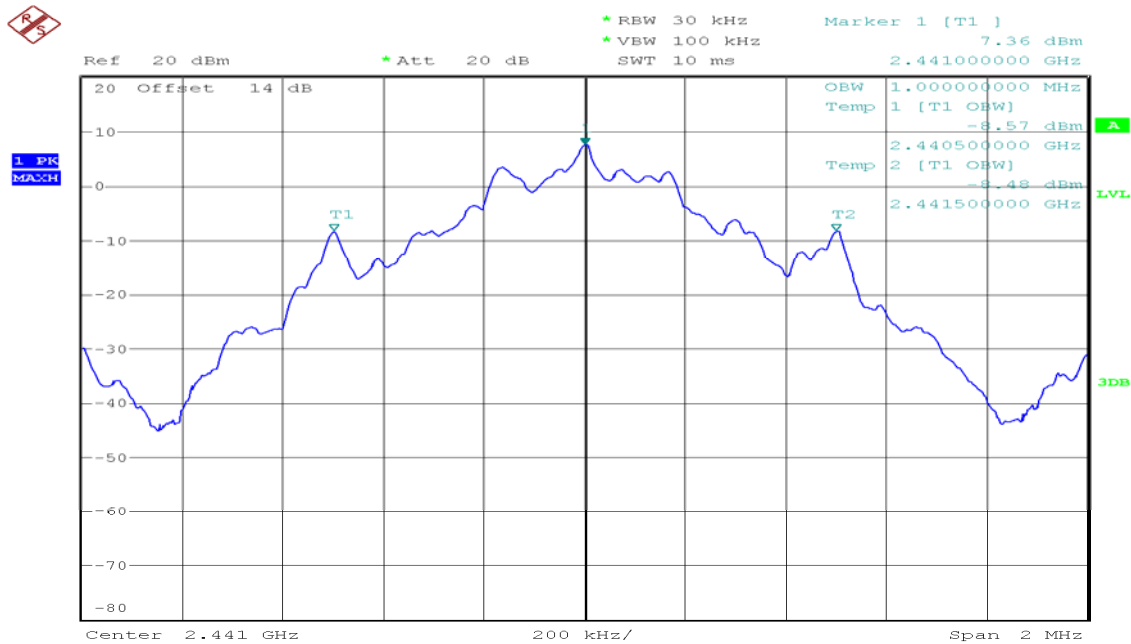
99% Bandwidth Plot on Channel 00



Date: 25.JUL.2013 11:48:47

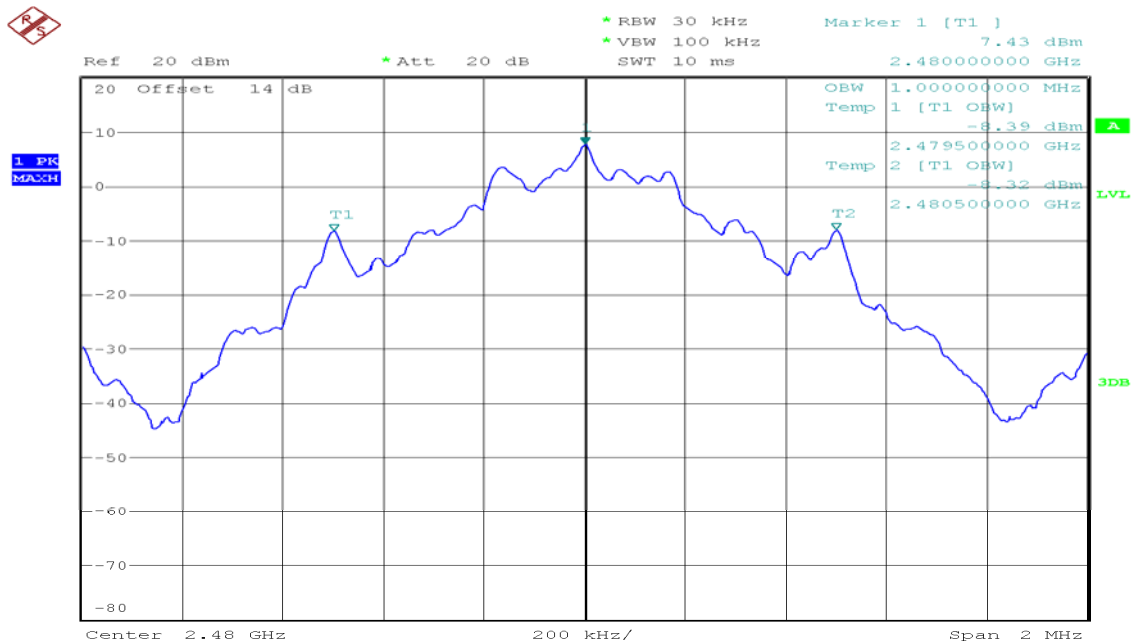


99% Bandwidth Plot on Channel 39



Date: 25.JUL.2013 11:49:26

99% Bandwidth Plot on Channel 78



Date: 25.JUL.2013 11:50:21



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FCC ID: O57S6000LF

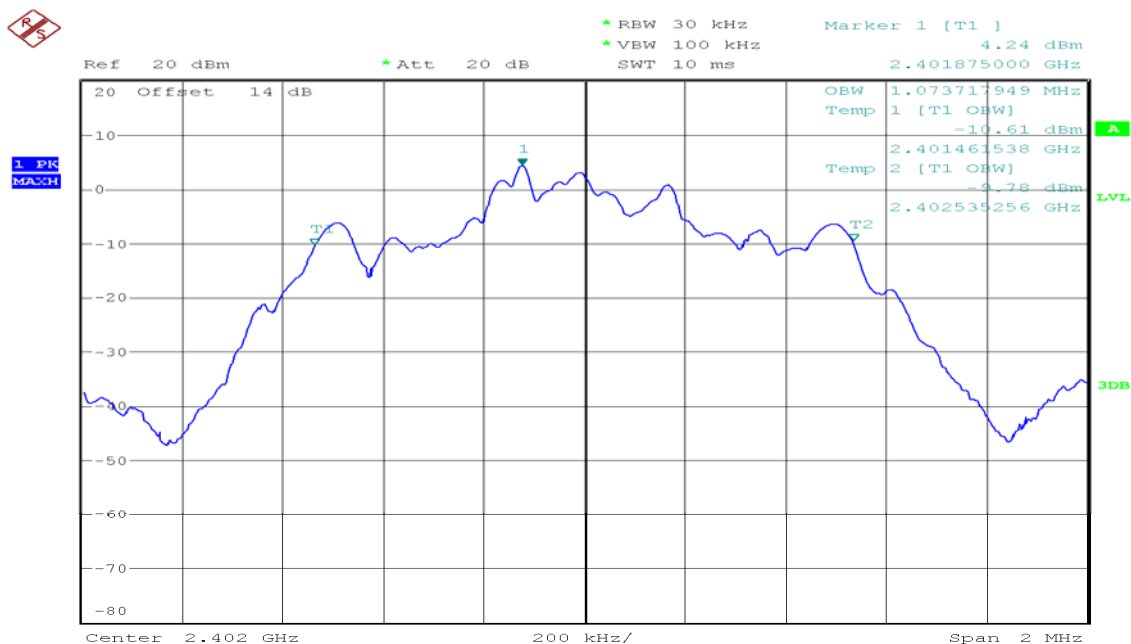
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	2 Mbps	Test Date:	July 25, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Channel	Frequency(MHz)	99% Occupied Bandwidth(MHz)
00	2402	1.074
39	2441	1.074
78	2480	1.067

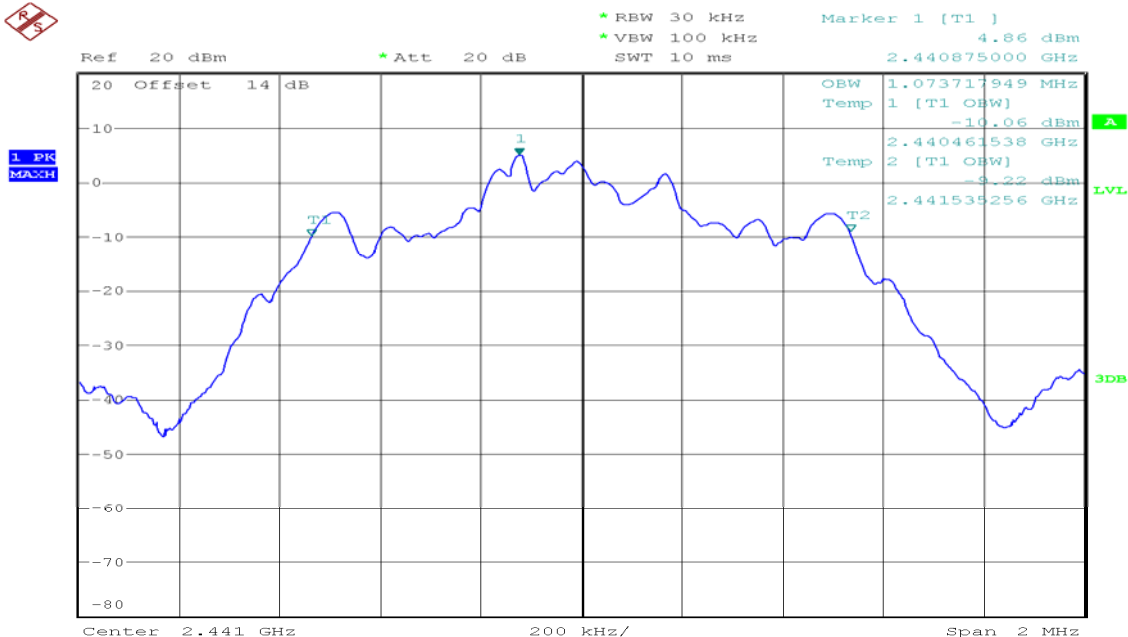
99% Bandwidth Plot on Channel 00



Date: 25.JUL.2013 11:53:10

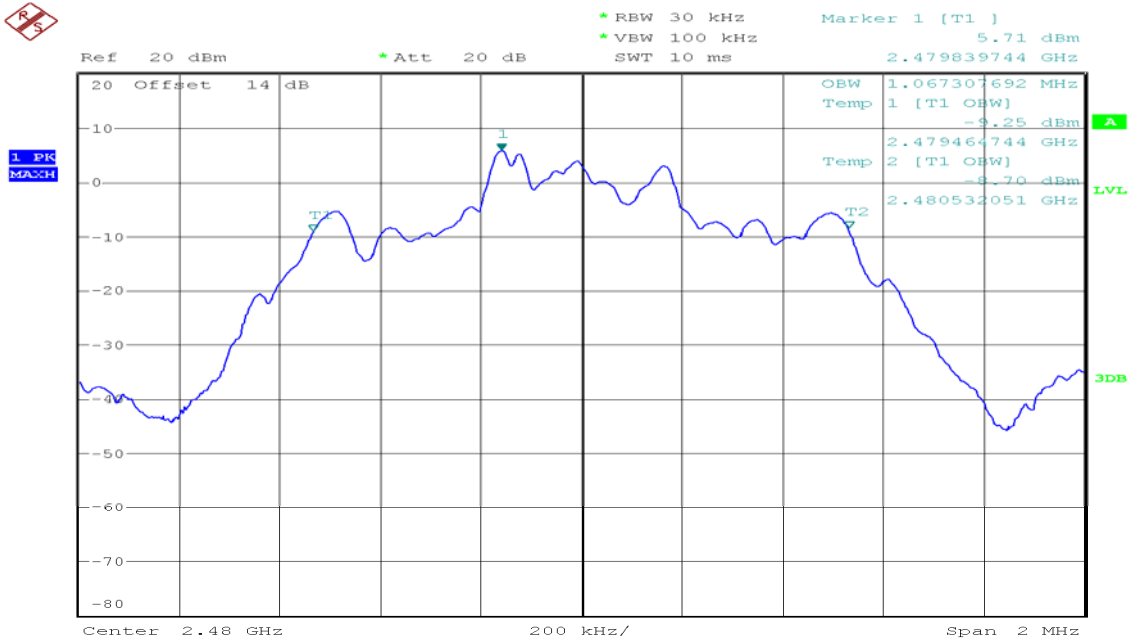


99% Bandwidth Plot on Channel 39



Date: 25.JUL.2013 11:51:37

99% Bandwidth Plot on Channel 78



Date: 25.JUL.2013 11:50:50



Compliance Certification Services Inc.

Report No: C130726E02-RPB

FCC ID: O57S6000LF

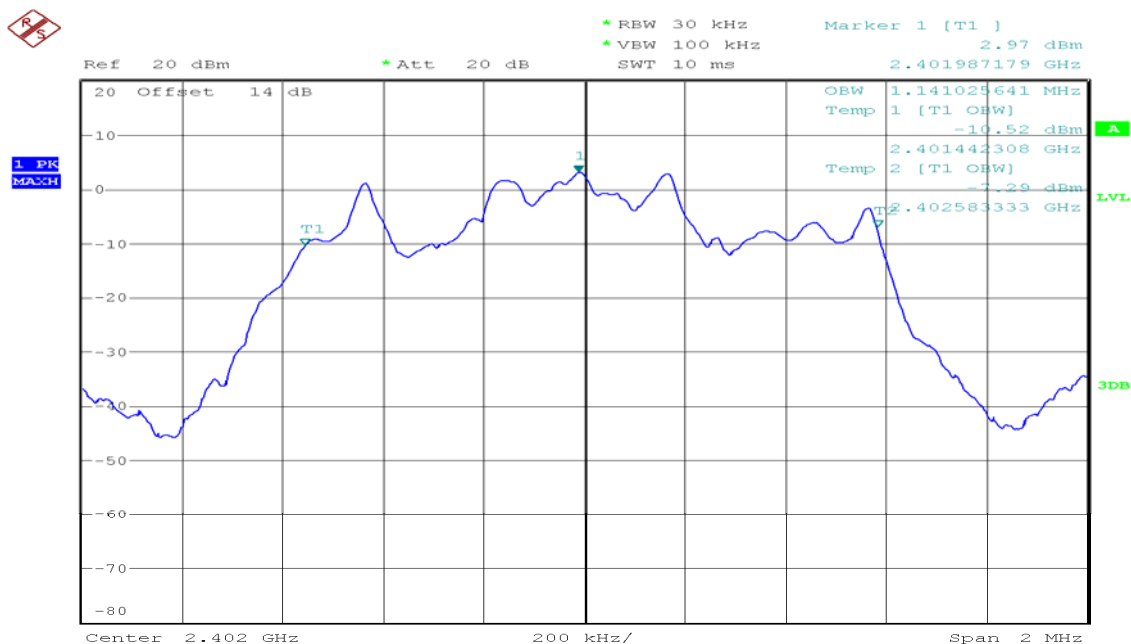
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	3 Mbps	Test Date:	July 25, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Channel	Frequency(MHz)	99% Occupied Bandwidth(MHz)
00	2402	1.141
39	2441	1.141
78	2480	1.141

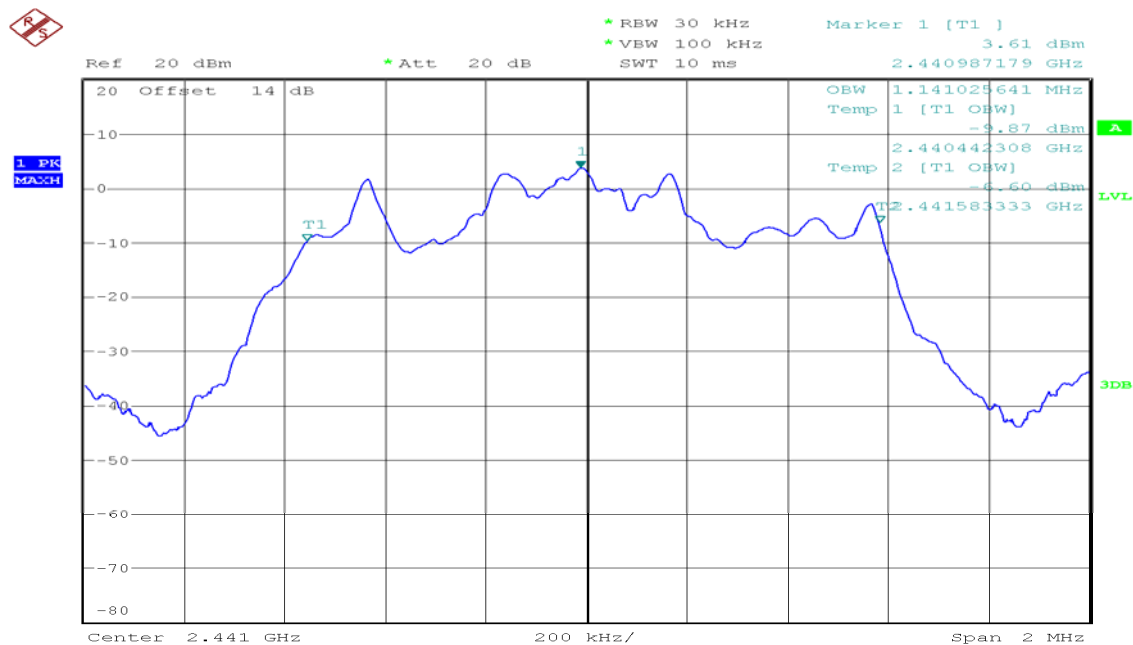
99% Bandwidth Plot on Channel 00



Date: 25.JUL.2013 11:53:45

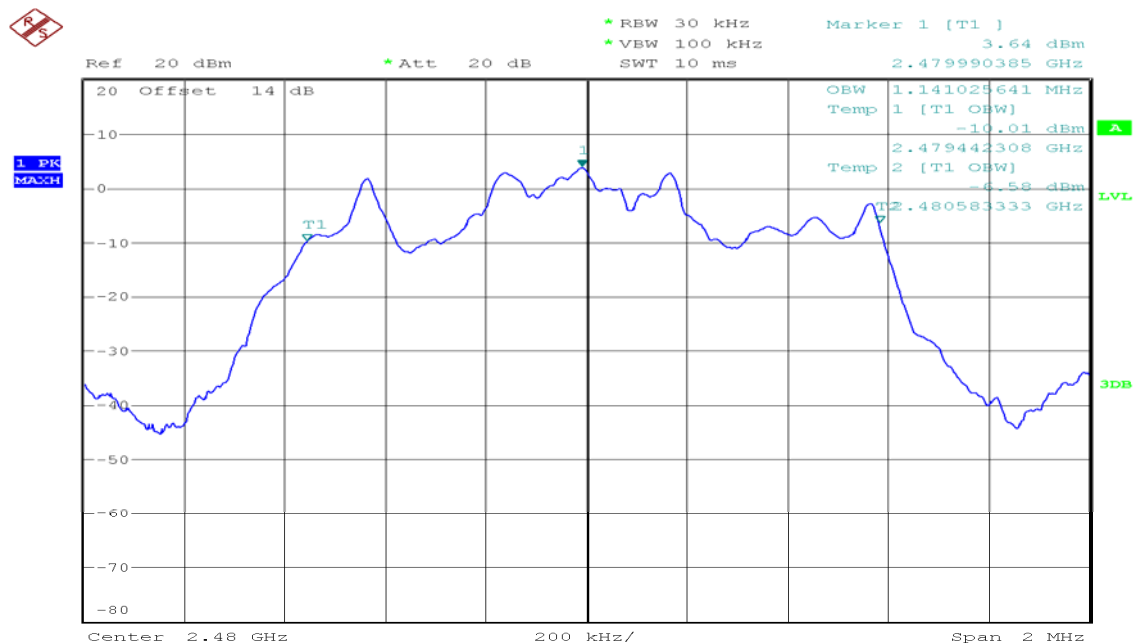


99% Bandwidth Plot on Channel 39



Date: 25.JUL.2013 11:54:37

99% Bandwidth Plot on Channel 78



Date: 25.JUL.2013 11:55:02

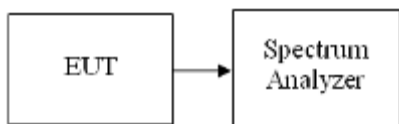


6.5 HOPPING CHANNEL SEPARATION

LIMIT

According to §15.247(a)(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = middle of hopping channel.
4. Set the spectrum analyzer as RBW = 30kHz, VBW = 100kHz, Span = 3MHz, Sweep = auto.
5. Max hold, mark 2 peaks of hopping channel and record the 2 peaks frequency.



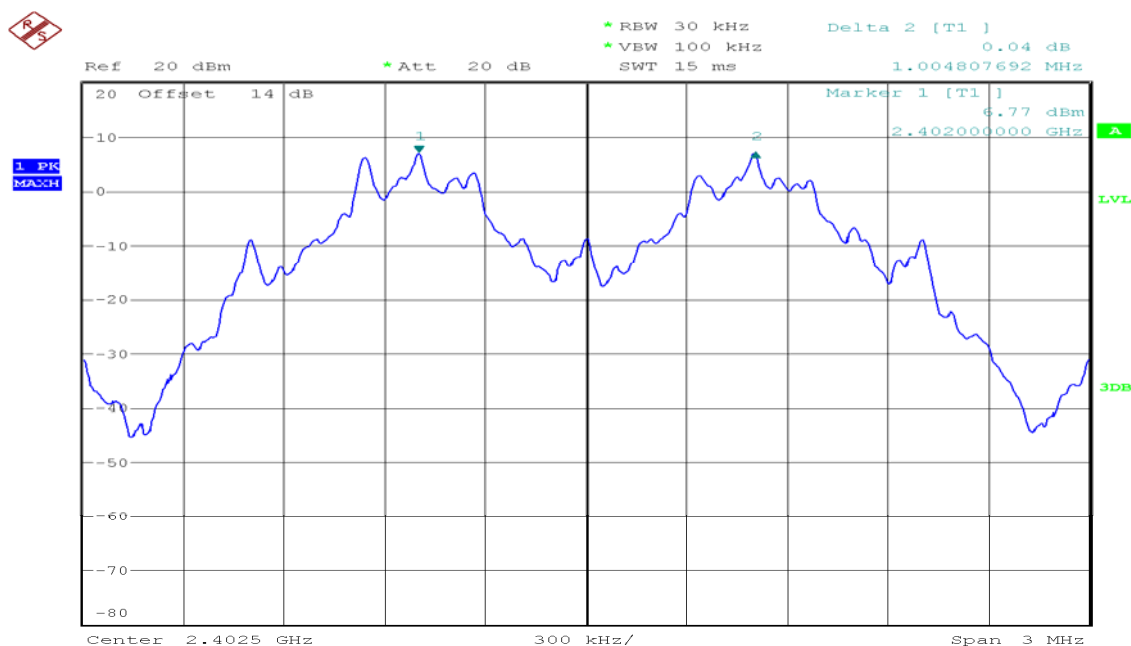
TEST RESULTS

No non-compliance noted

Operation Mode:	1 Mbps	Test Date:	July 24, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Channel	Frequency	Separation	(2/3 of 20dB BW)	Result
	(MHz)	(MHz)	Limits (MHz)	
0~1	2402~2403	1.005	0.697	Pass
38~39	2440~2441	1.005	0.697	Pass
77~78	2479~2480	1.005	0.697	Pass

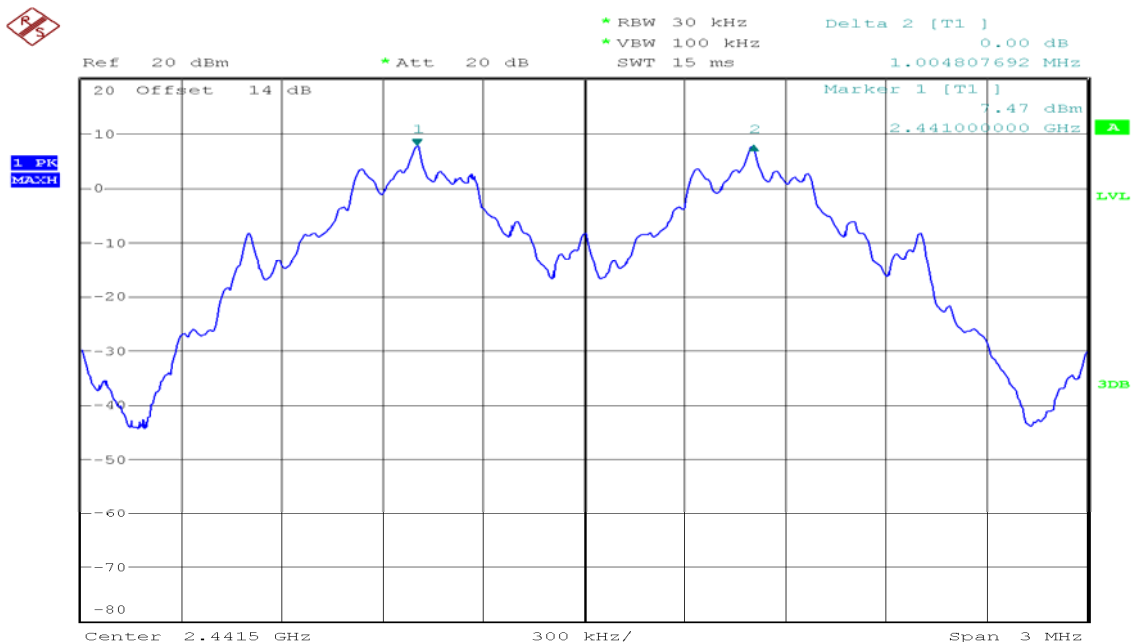
Channel Separation Plot on Channel 00-01



Date: 24.JUL.2013 23:24:37

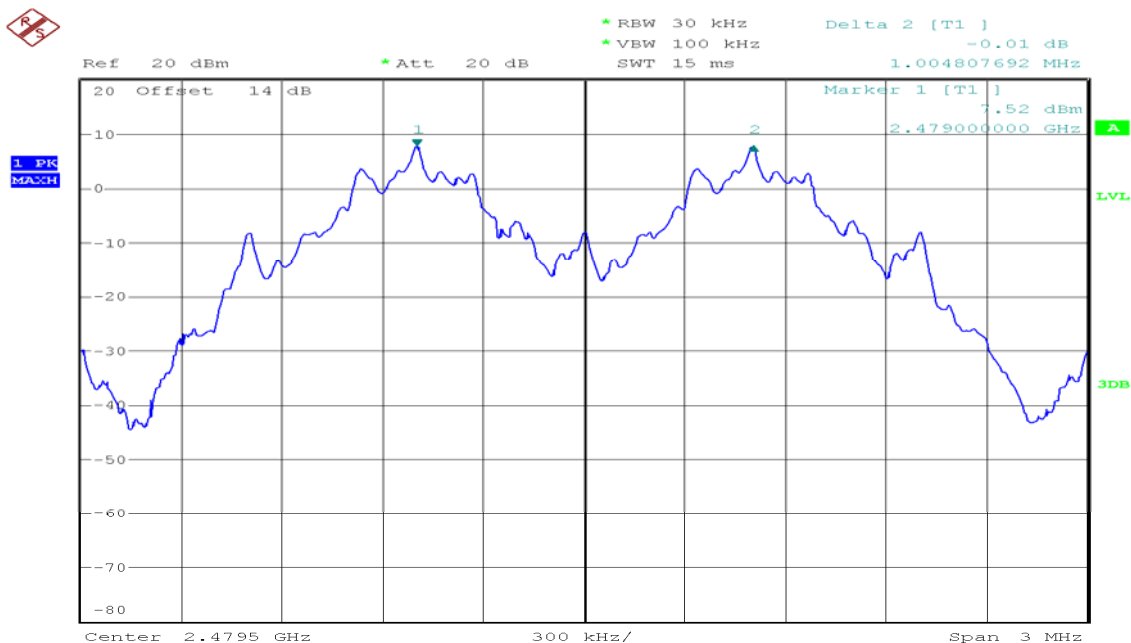


Channel Separation Plot on Channel 38-39



Date: 24.JUL.2013 23:25:56

Channel Separation Plot on Channel 77-78



Date: 24.JUL.2013 23:26:55



Compliance Certification Services Inc.

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FCC ID: O57S6000LF

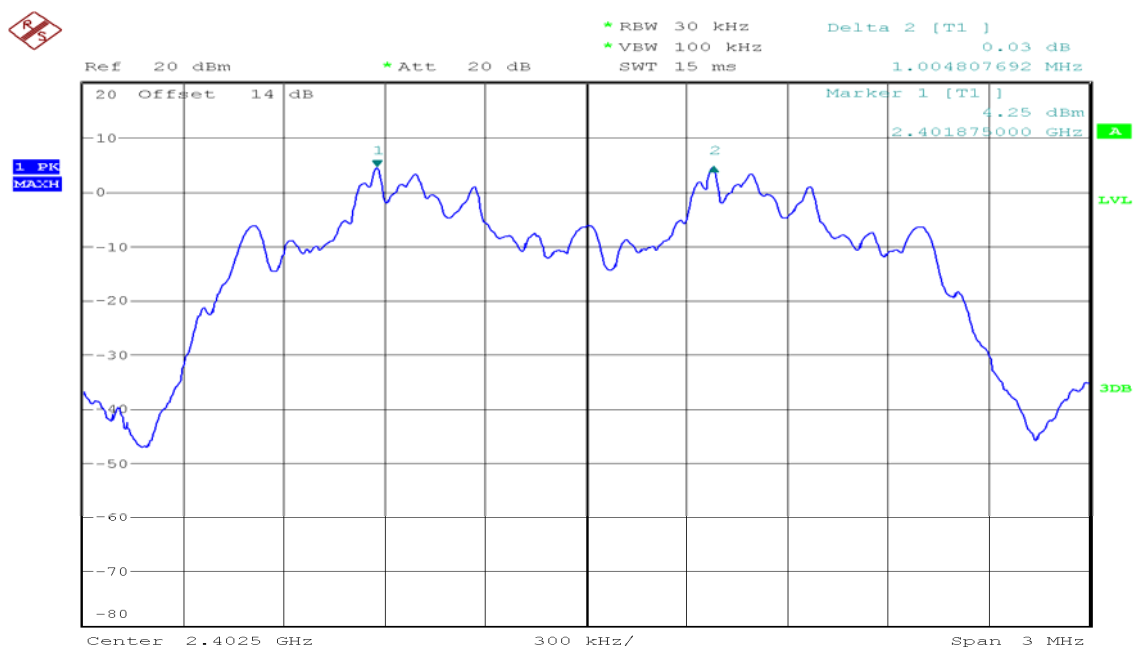
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	2 Mbps	Test Date:	July 24, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Channel	Frequency	Separation	(2/3 of 20dB BW)	Result
	(MHz)	(MHz)	Limits (MHz)	
0~1	2402~2403	1.005	0.746	Pass
38~39	2440~2441	1.000	0.750	Pass
77~78	2479~2480	1.005	0.743	Pass

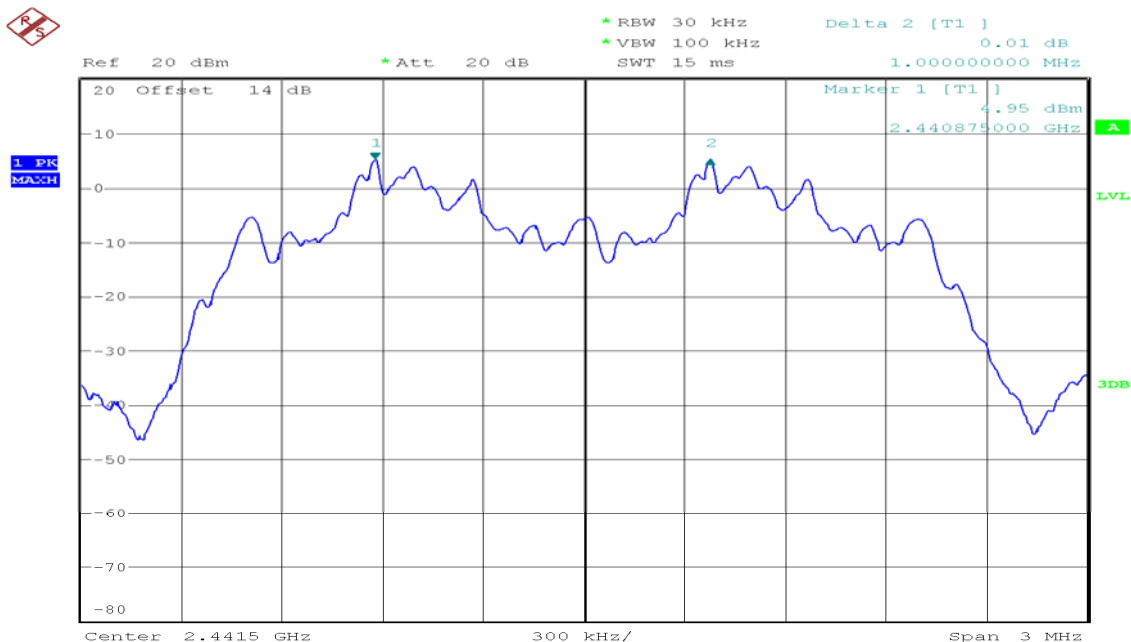
Channel Separation Plot on Channel 00-01



Date: 24.JUL.2013 23:29:19

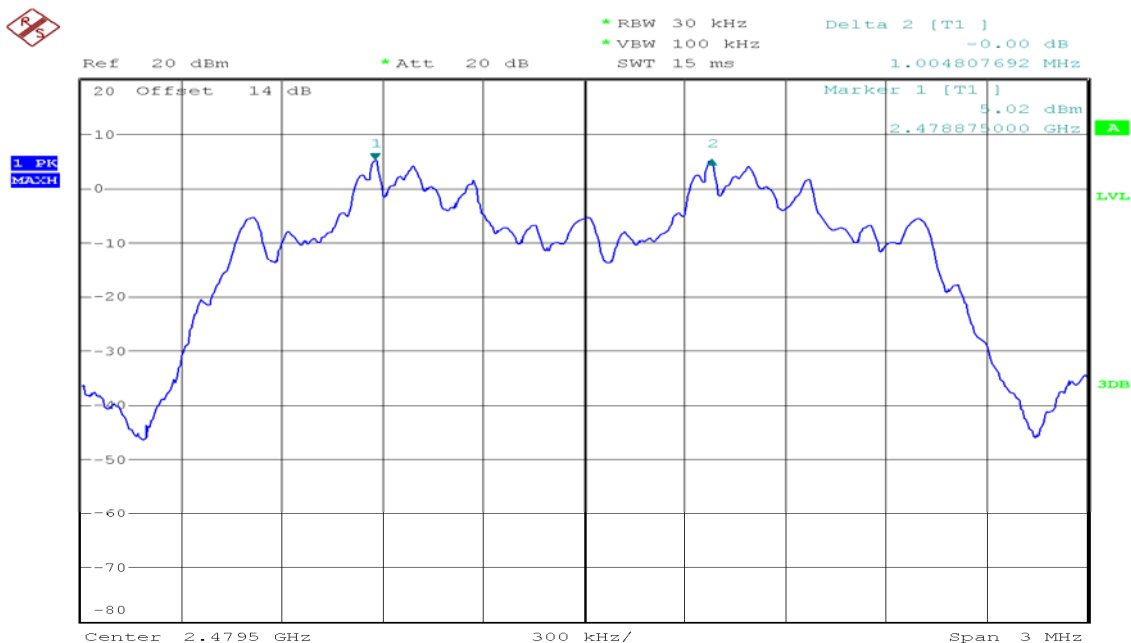


Channel Separation Plot on Channel 38-39



Date: 24.JUL.2013 23:28:33

Channel Separation Plot on Channel 78-79



Date: 24.JUL.2013 23:27:44



Compliance Certification Services Inc.

Report No: C130726E02-RPB

FCC ID: O57S6000LF

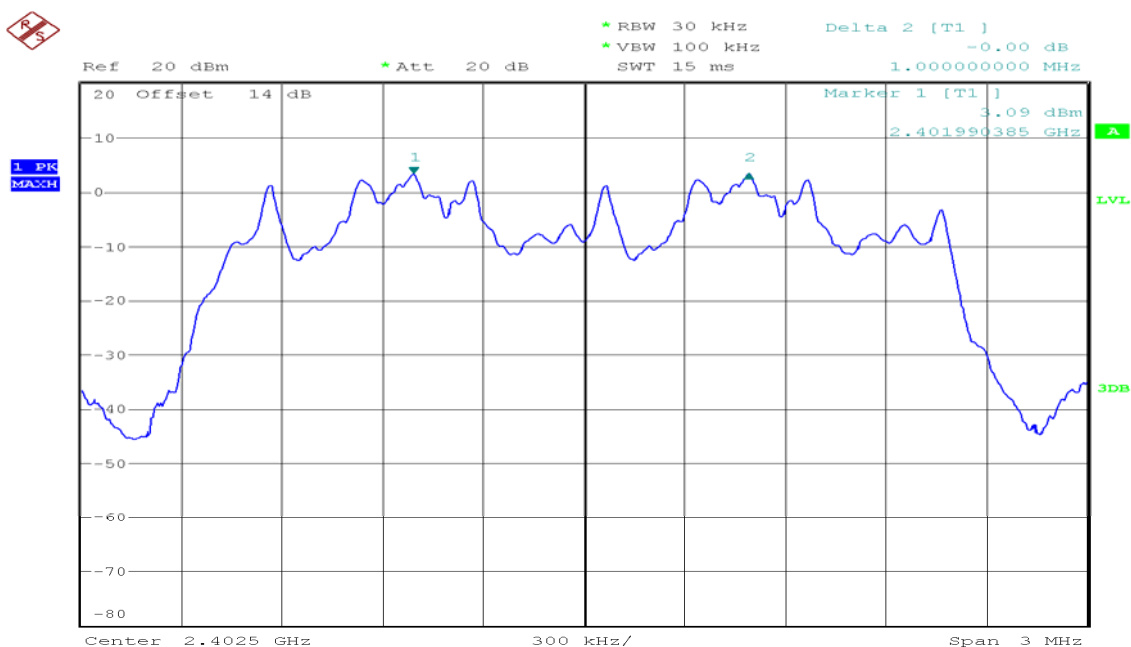
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	3 Mbps	Test Date:	July 24, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Channel	Frequency	Separation	(2/3 of 20dB BW)	Result
	(MHz)	(MHz)	Limits (MHz)	
0~1	2402~2403	1.000	0.810	Pass
38~39	2440~2441	1.005	0.808	Pass
77~78	2479~2480	1.000	0.810	Pass

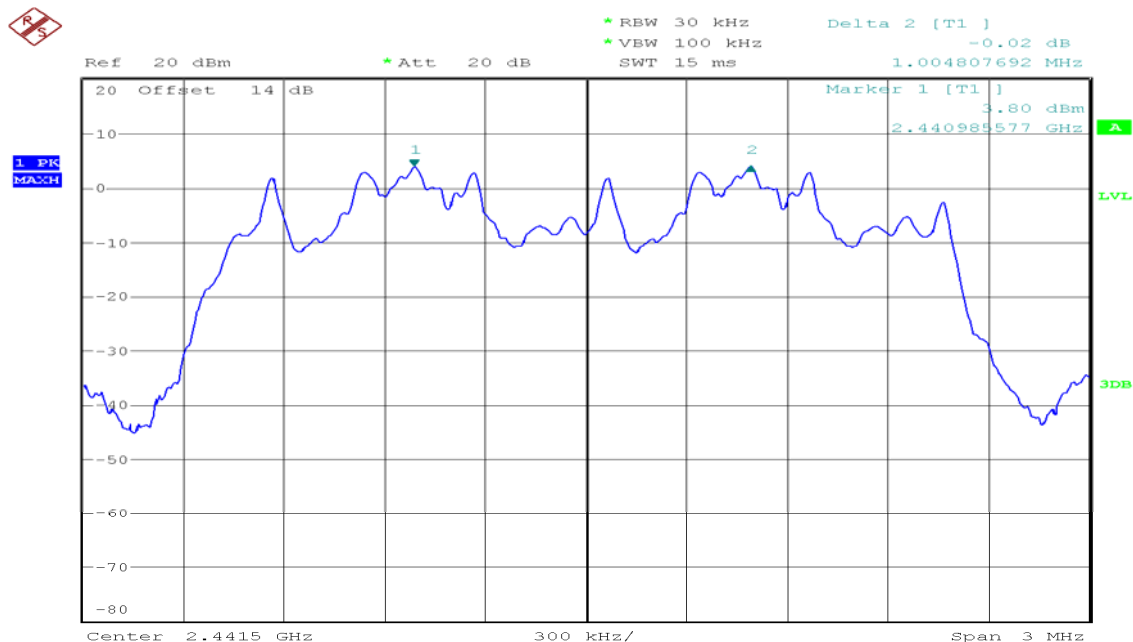
Channel Separation Plot on Channel 00-01



Date: 24.JUL.2013 23:30:11

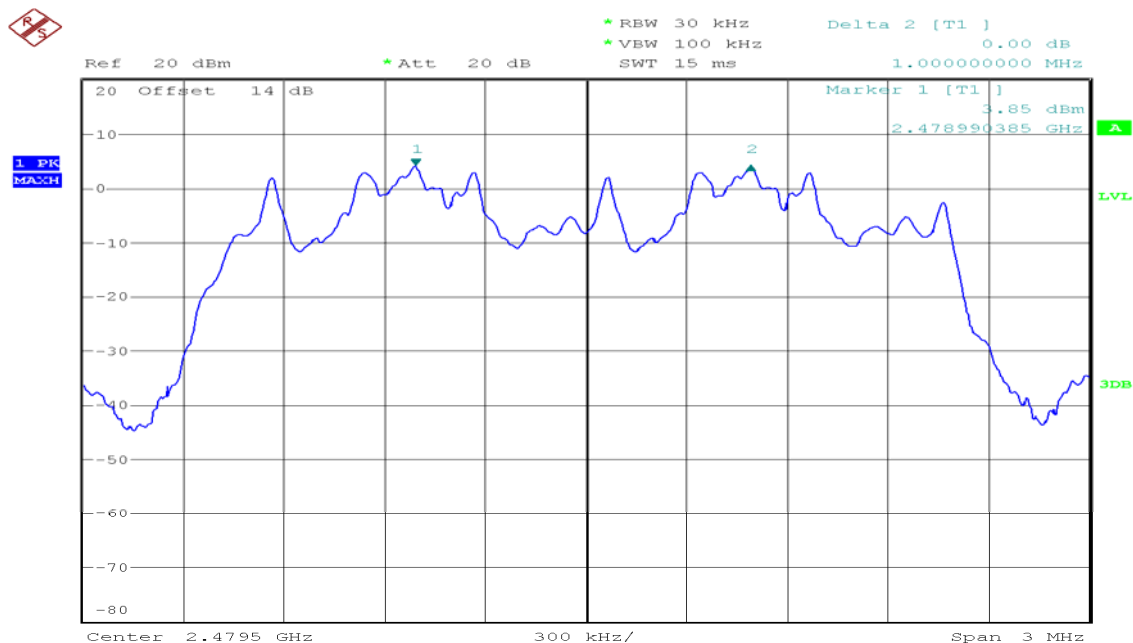


Channel Separation Plot on Channel 38-39



Date: 24.JUL.2013 23:30:58

Channel Separation Plot on Channel 77-78



Date: 24.JUL.2013 23:31:47

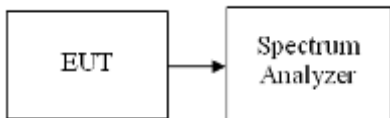


6.6 NUMBER OF HOPPING FREQUENCY

LIMIT

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands shall use at least 15 hopping frequencies.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set spectrum analyzer Start=2400MHz, Stop = 2441.5MHz, Sweep = auto and Start=2441.5MHz, Stop = 2483.5MHz, Sweep = auto.
4. Set the spectrum analyzer as RBW, VBW=1MHz.
5. Max hold, view and count how many channel in the band.

TEST RESULTS

No non-compliance noted

Test Data

Operation Mode:	1 Mbps	Test Date:	July 24, 2013
Temperature:	24°C	Tested by:	Blent.Wang

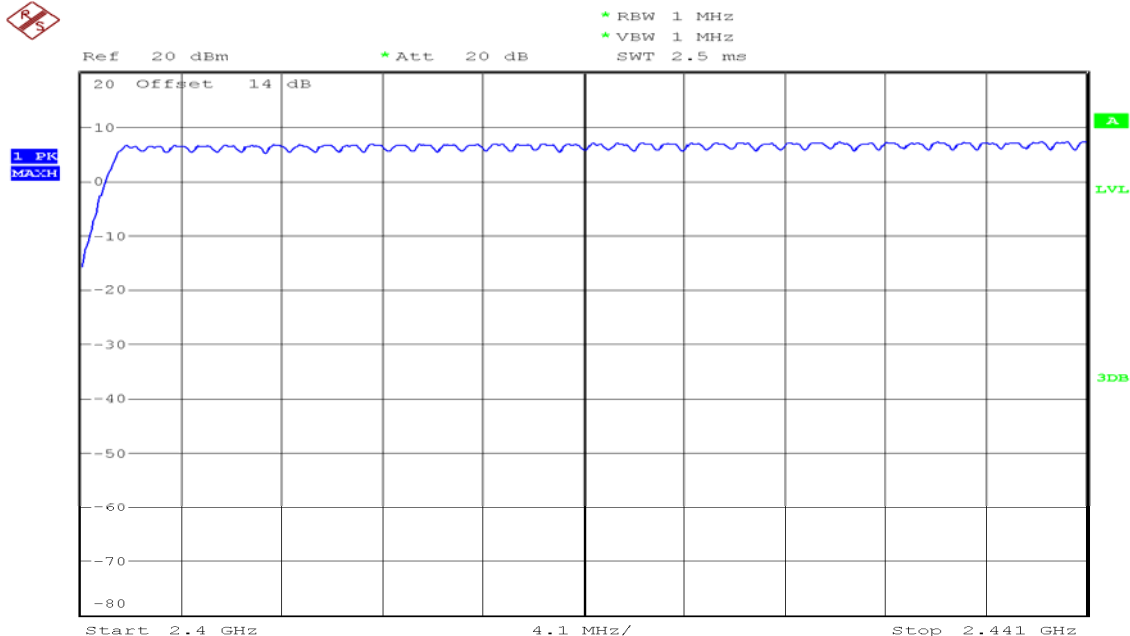
Result (No. of CH)	Limit (No. of CH)	Result
79	>15	PASS



Test Plot

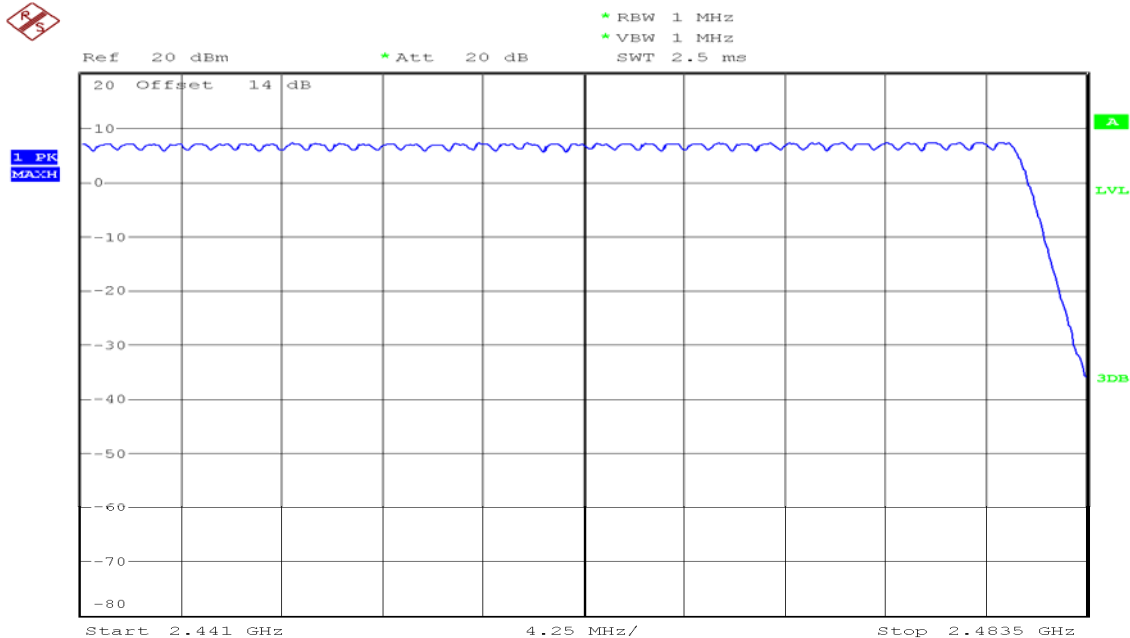
Channel Number

2.4 GHz – 2.4415 GHz



Date: 24.JUL.2013 23:19:40

2.4415 GHz – 2.4835 GHz



Date: 25.JUL.2013 00:00:48

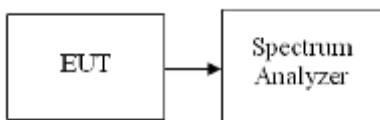


6.7 TIME OF OCCUPANCY (DWELL TIME)

LIMIT

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands. The average time of occupancy on any channels shall not greater than 0.4 s within a period 0.4 s multiplied by the number of hopping channels employed.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = operating frequency.
4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0Hz, Sweep = auto.
5. Repeat above procedures until all frequency measured were complete.

TEST RESULTS

No non-compliance noted

Test Data

Operation Mode:	1 Mbps DH1	Test Date:	July 25, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Mode	Hopping Channel Number	Hops Over Occupancy Time	Package Transfer Time(msec)	Dwell Time(sec)	Limits(sec)	Result
Normal	79	106.67	0.377	0.040	0.4	PASS
AFH	20	53.34	0.377	0.020	0.4	PASS

Operation Mode:	1 Mbps DH3	Test Date:	July 25, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Mode	Hopping Channel Number	Hops Over Occupancy Time	Package Transfer Time(msec)	Dwell Time(sec)	Limits(sec)	Result
Normal	79	106.67	2.627	0.280	0.4	PASS
AFH	20	53.34	2.627	0.140	0.4	PASS



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Date of Issue :July 27, 2013

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Operation Mode:	1 Mbps DH5	Test Date:	July 25, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Mode	Hopping Channel Number	Hops Over Occupancy Time	Package Transfer Time(msec)	Dwell Time(sec)	Limits(sec)	Result
Normal	79	106.67	2.877	0.307	0.4	PASS
AFH	20	53.34	2.877	0.153	0.4	PASS

Operation Mode:	3 Mbps DH1	Test Date:	July 25, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Mode	Hopping Channel Number	Hops Over Occupancy Time	Package Transfer Time(msec)	Dwell Time(sec)	Limits(sec)	Result
Normal	79	106.67	0.380	0.041	0.4	PASS
AFH	20	53.34	0.380	0.020	0.4	PASS

Operation Mode:	3 Mbps DH3	Test Date:	July 25, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Mode	Hopping Channel Number	Hops Over Occupancy Time	Package Transfer Time(msec)	Dwell Time(sec)	Limits(sec)	Result
Normal	79	106.67	1.630	0.174	0.4	PASS
AFH	20	53.34	1.630	0.087	0.4	PASS

Operation Mode:	3 Mbps DH5	Test Date:	July 25, 2013
Temperature:	24°C	Tested by:	Blent.Wang

Mode	Hopping Channel Number	Hops Over Occupancy Time	Package Transfer Time(msec)	Dwell Time(sec)	Limits(sec)	Result
Normal	79	106.67	2.880	0.307	0.4	PASS
AFH	20	53.34	2.880	0.154	0.4	PASS



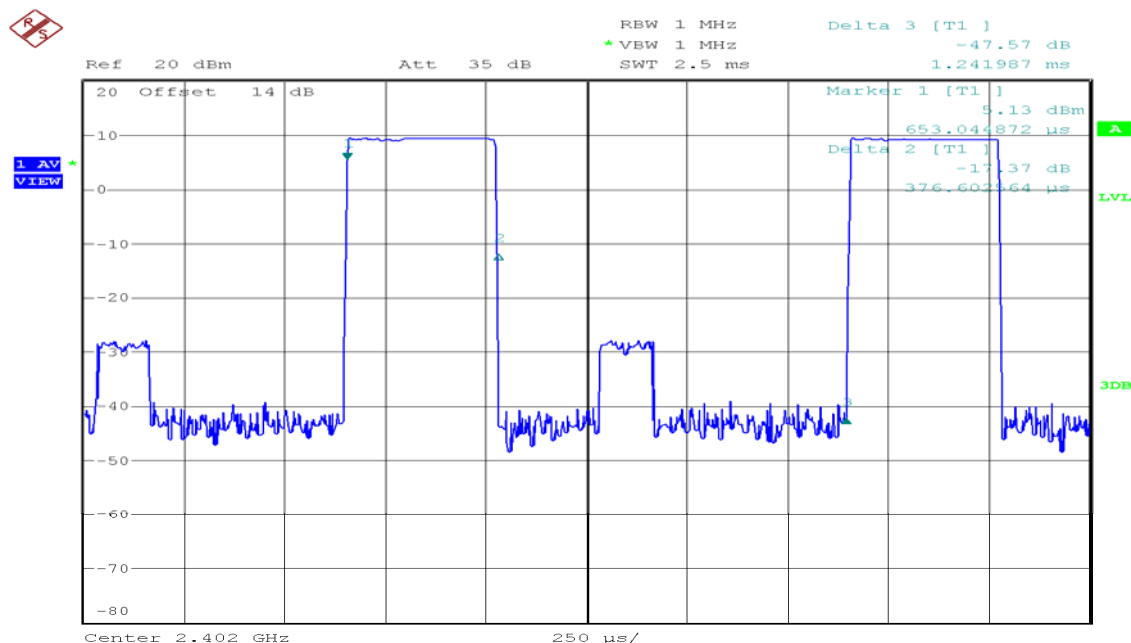
Remark:

1. In normal mode, hopping rate is 1600hops/s with 6 slots in 79 hopping channels. With channel hopping rate (1600/6/79) in Occupancy Time Limit (0.4x79)(s), Hops Over Occupancy Time comes to $(1600/6/79) \times (0.4 \times 79) = 106.67$ hops.

2. In AFH mode, hopping rate is 800hops/s with 6 slots in 20 hopping channels. With channel hopping rate (800/6/20) in Occupancy Time Limit (0.4x20)(s), Hops Over Occupancy Time comes to $(800/6/20) \times (0.4 \times 20) = 53.34$ hops.

3. Dwell Time(s) = Hops Over Occupancy Time(hops) x Package Transfer Time

1M-DH1



Date: 25.JUL.2013 19:08:24



Compliance Certification Services Inc.

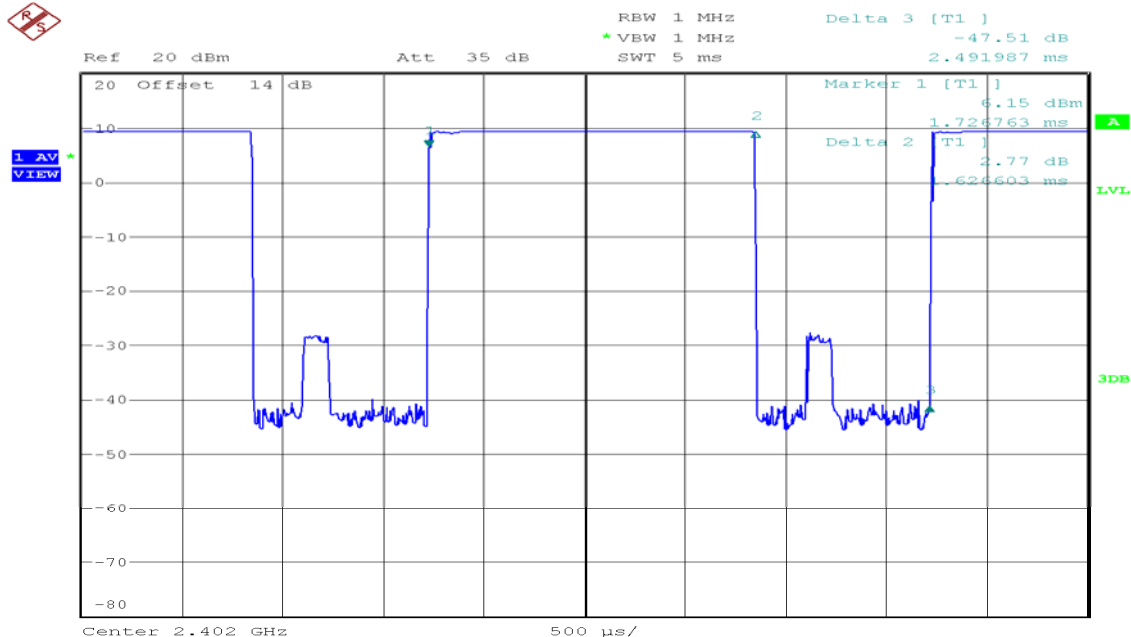
Report No: C130726E02-RPB

FCC ID: O57S6000LF

Date of Issue :July 27, 2013

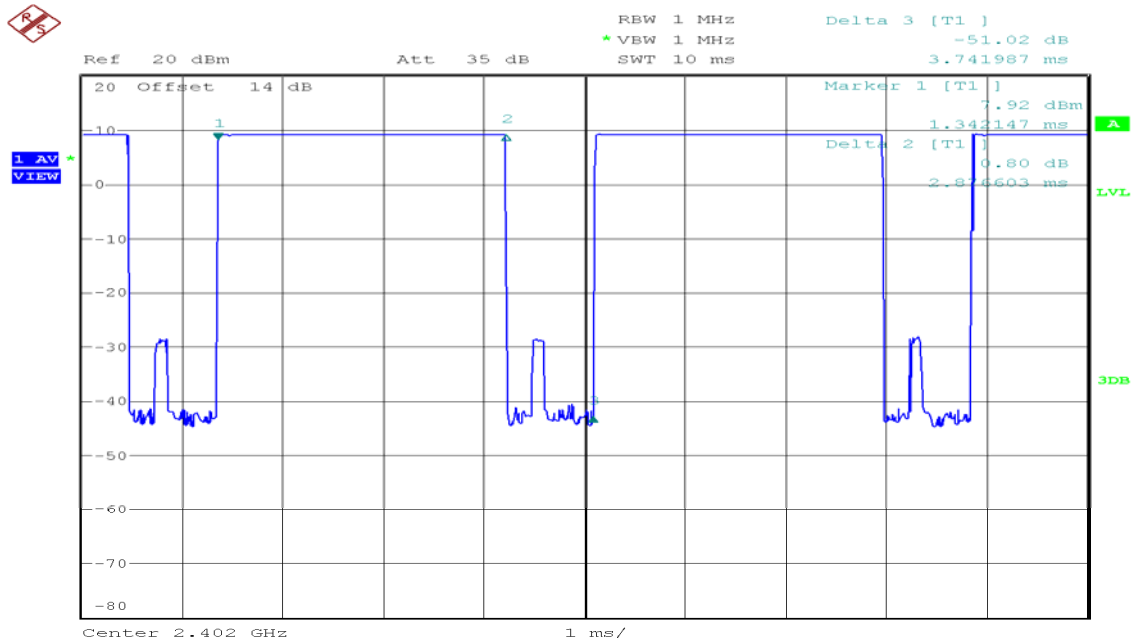
IC:10407A-S6000LF

1M-DH3



Date: 25.JUL.2013 19:09:34

1M-DH5



Date: 25.JUL.2013 19:10:41



Compliance Certification Services Inc.

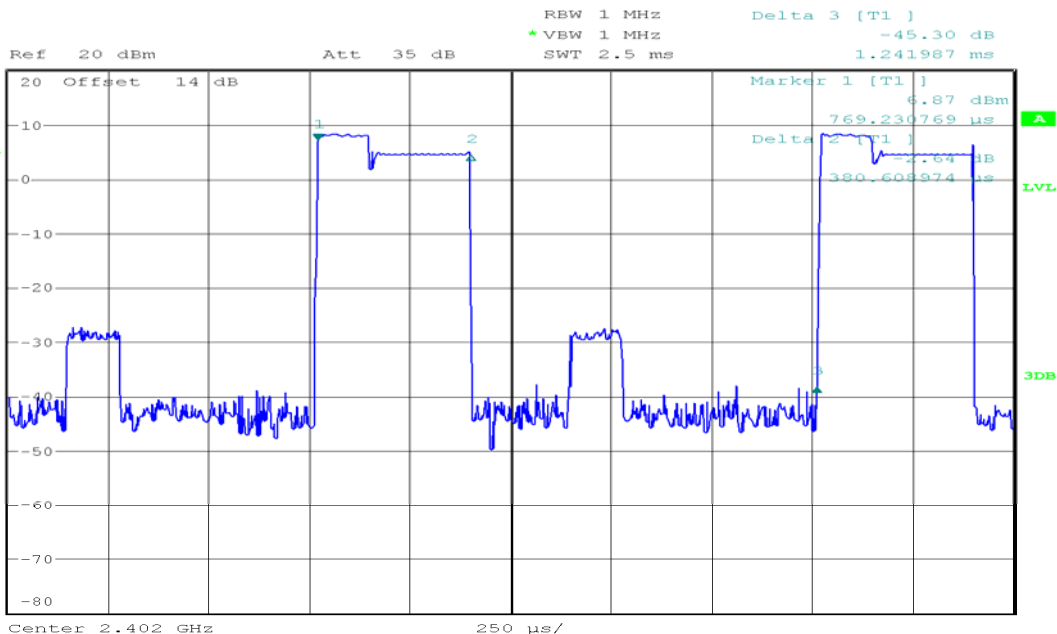
Report No: C130726E02-RPB

FCC ID: O57S6000LF

Date of Issue :July 27, 2013

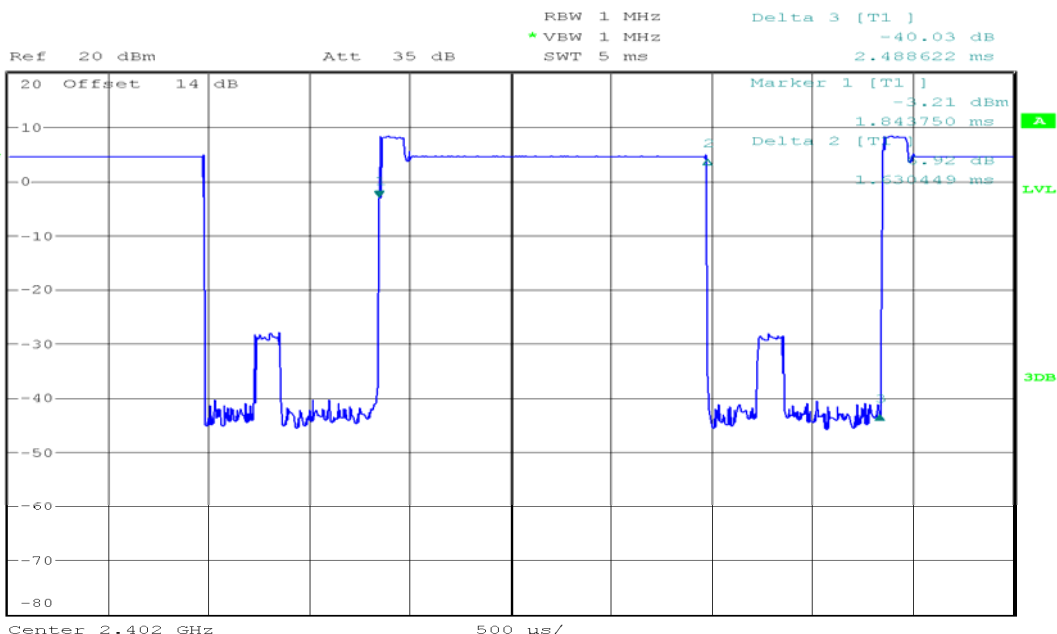
IC:10407A-S6000LF

3M-DH1



Date: 25.JUL.2013 19:15:44

3M-DH3



Date: 25.JUL.2013 19:13:40



Compliance Certification Services Inc.

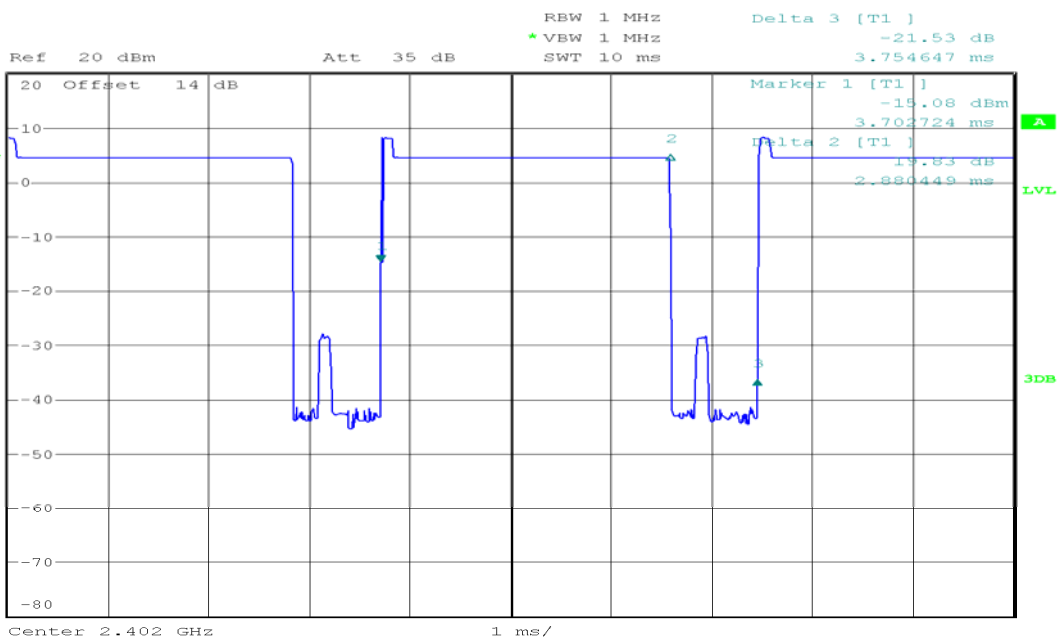
Report No: C130726E02-RPB

FCC ID: O57S6000LF

Date of Issue :July 27, 2013

IC:10407A-S6000LF

3M-DH5



Date: 25.JUL.2013 19:14:30



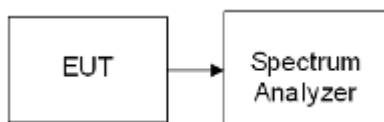
6.8 SPURIOUS EMISSION

Conducted Measurement

LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Test Configuration



TEST PROCEDURE

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 KHz. The video bandwidth is set to 100 KHz.

Measurements are made over the 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

TEST RESULTS

No non-compliance noted



Compliance Certification Services Inc.

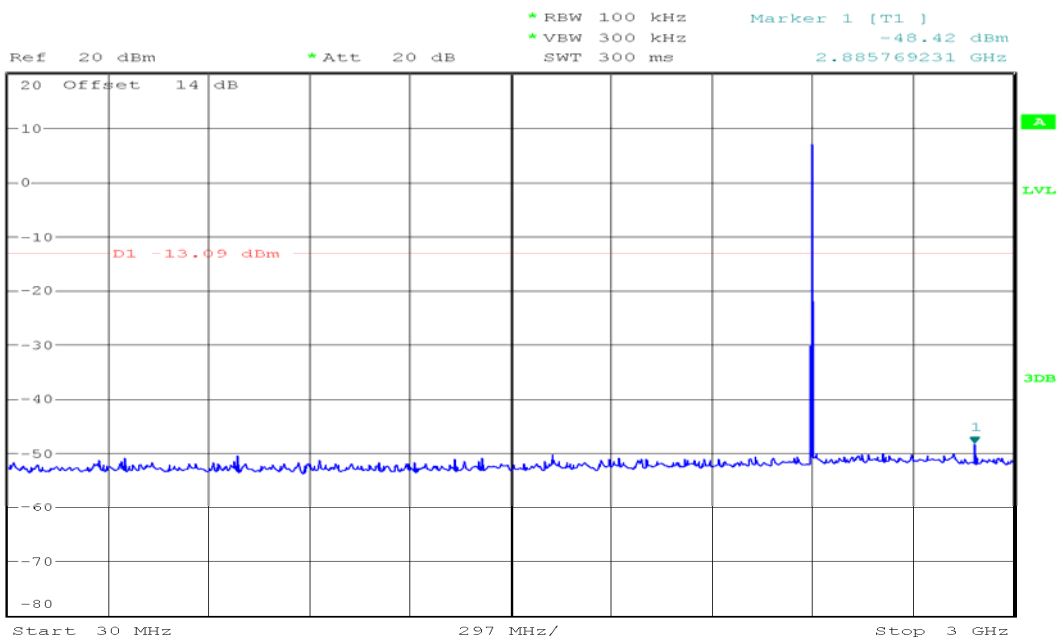
Report No: C130726E02-RPB

FCC ID: O57S6000LF

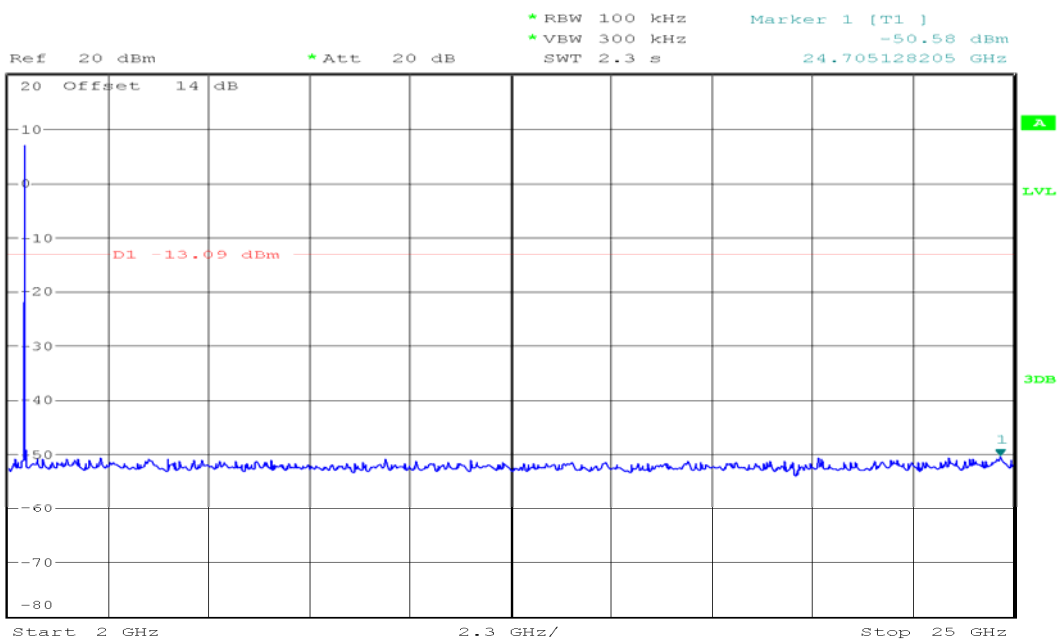
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	1 Mbps	Test Date:	July 25, 2013
Test Channel:	00	Tested by:	Blent.Wang
Humidity:	52 % RH	Temperature:	24°C



Date: 25.JUL.2013 12:59:53



Date: 25.JUL.2013 13:00:46



Compliance Certification Services Inc.

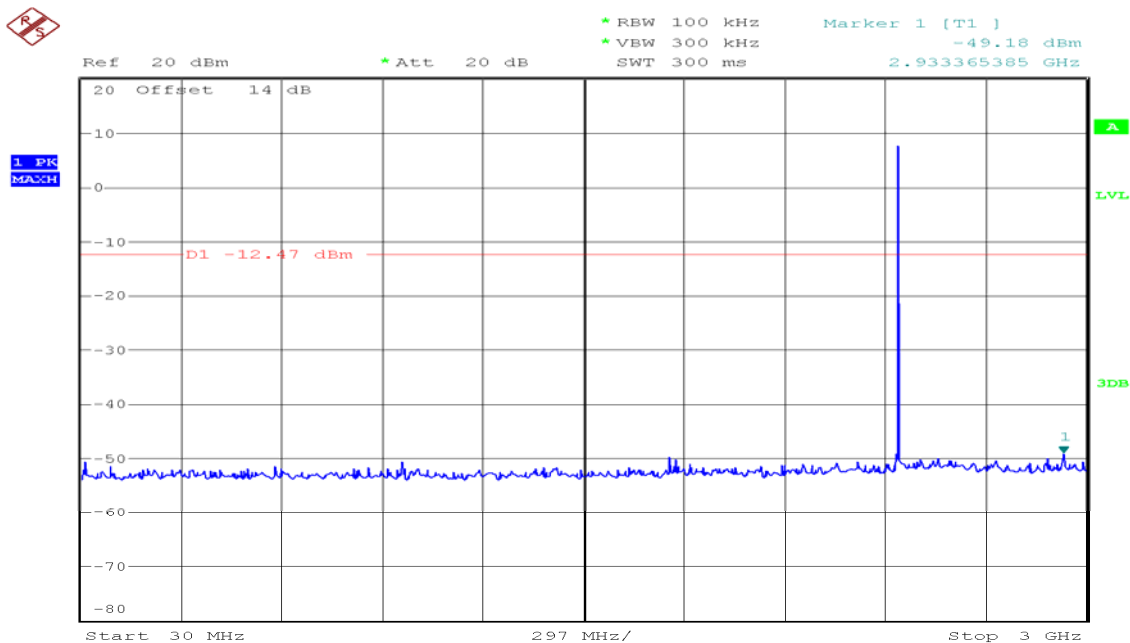
Report No: C130726E02-RPB

FCC ID: O57S6000LF

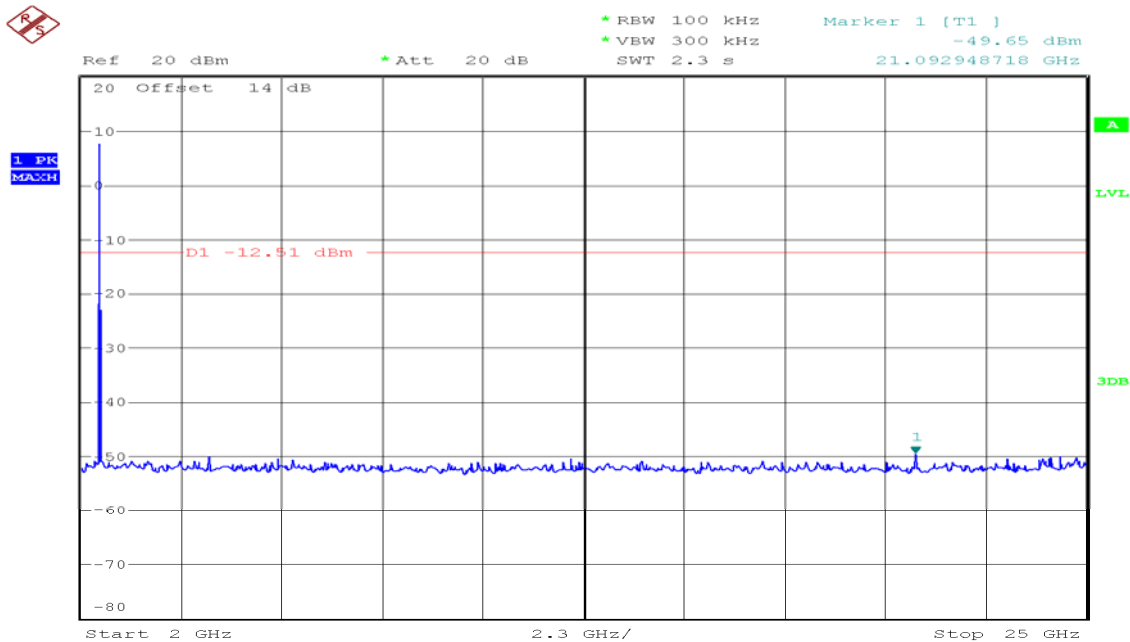
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	1 Mbps	Test Date:	July 25, 2013
Test Channel:	39	Tested by:	Blent.Wang
Humidity:	52 % RH	Temperature:	24°C



Date: 25.JUL.2013 13:02:57



Date: 25.JUL.2013 13:01:50



Compliance Certification Services Inc.

Report No: C130726E02-RPB

FCC ID: O57S6000LF

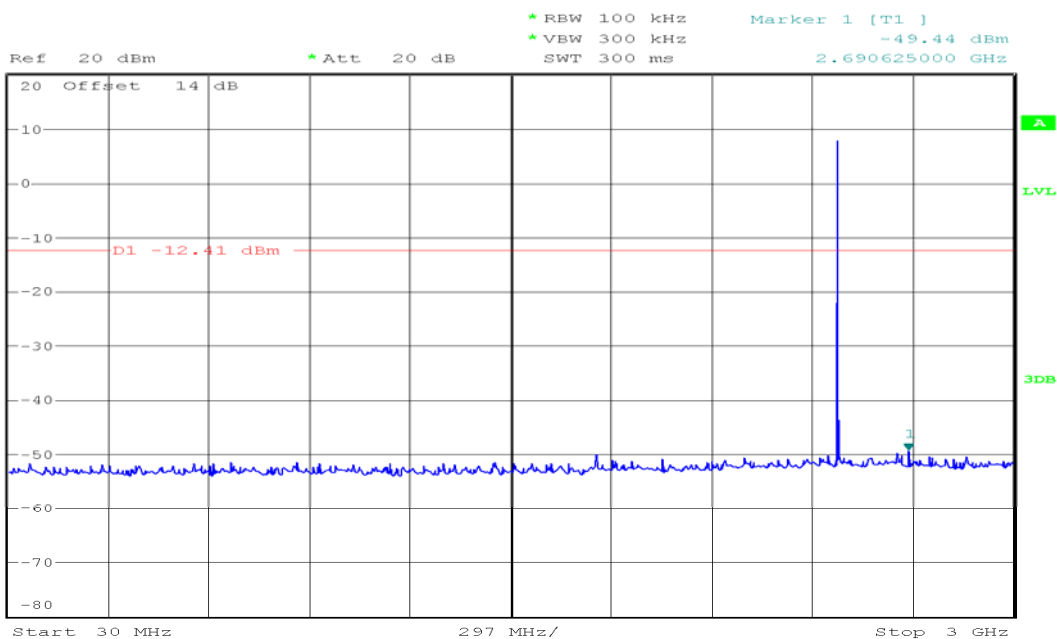
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	1 Mbps	Test Date:	July 25, 2013
Test Channel:	78	Tested by:	Blent.Wang
Humidity:	52 % RH	Temperature:	24°C



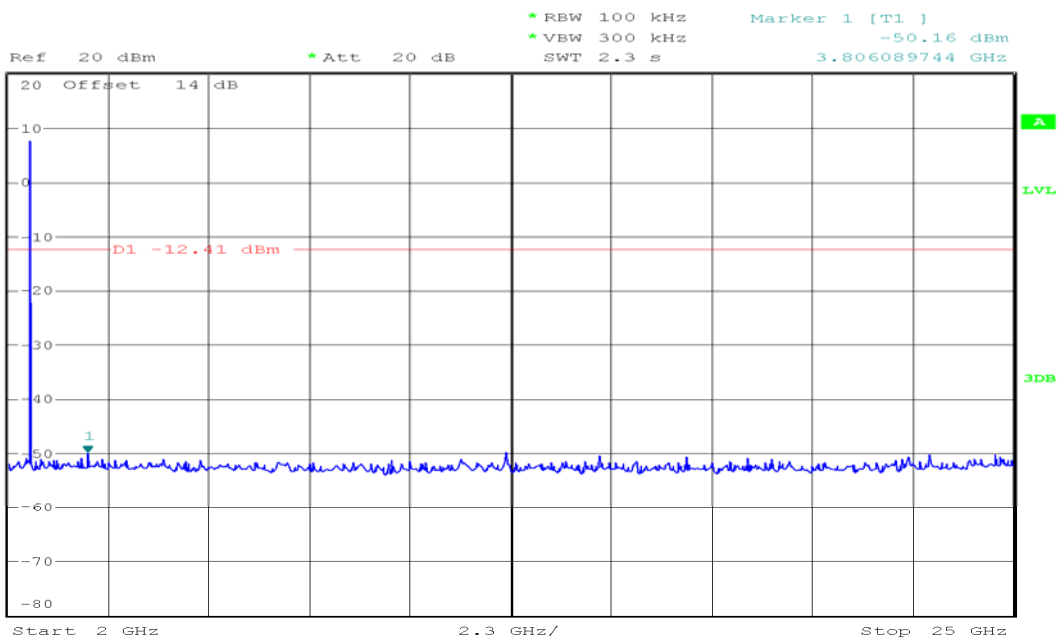
1 PK
MASH



Date: 25.JUL.2013 13:03:45



1 PK
MASH



Date: 25.JUL.2013 13:04:33



Compliance Certification Services Inc.

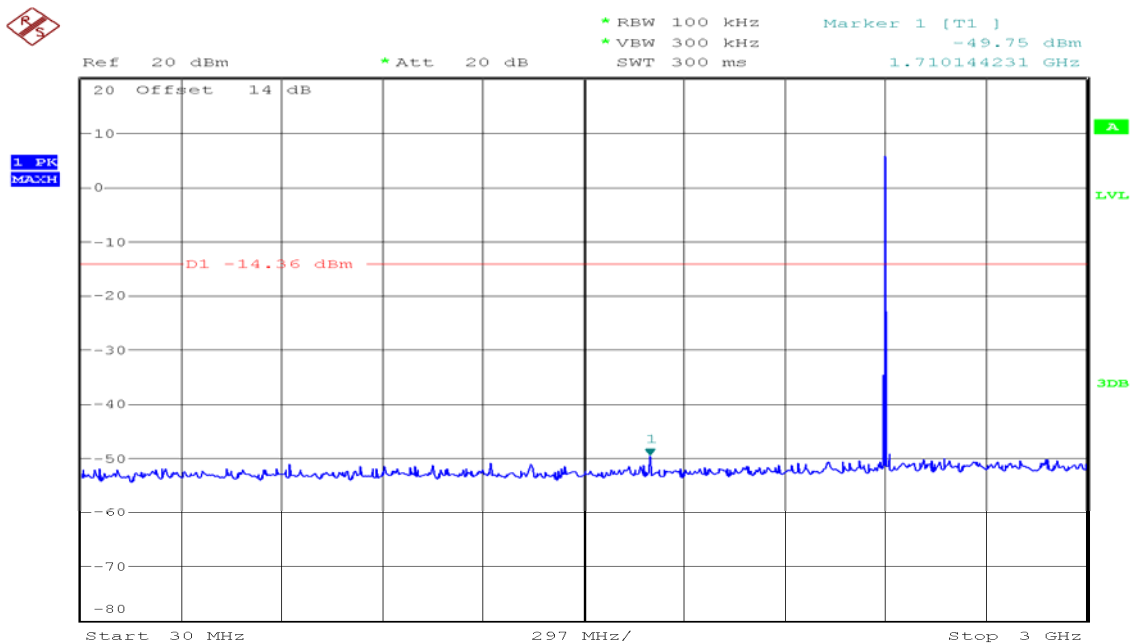
Report No: C130726E02-RPB

FCC ID: O57S6000LF

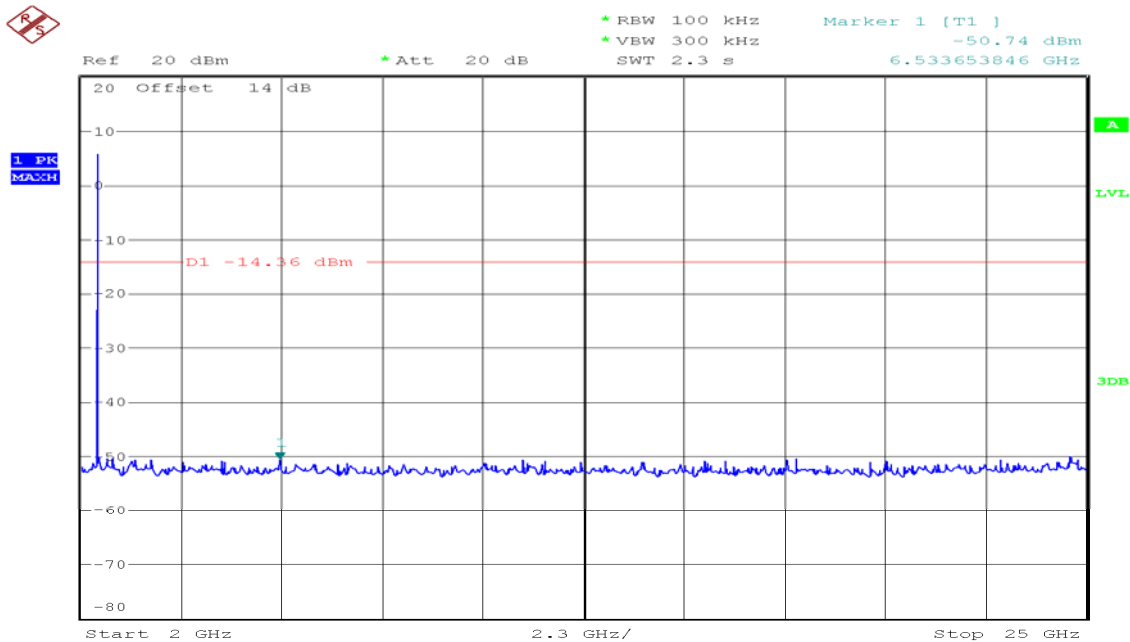
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	3 Mbps	Test Date:	July 25, 2013
Test Channel:	00	Tested by:	Blent.Wang
Humidity:	52 % RH	Temperature:	24°C



Date: 25.JUL.2013 13:08:26



Date: 25.JUL.2013 13:09:03



Compliance Certification Services Inc.

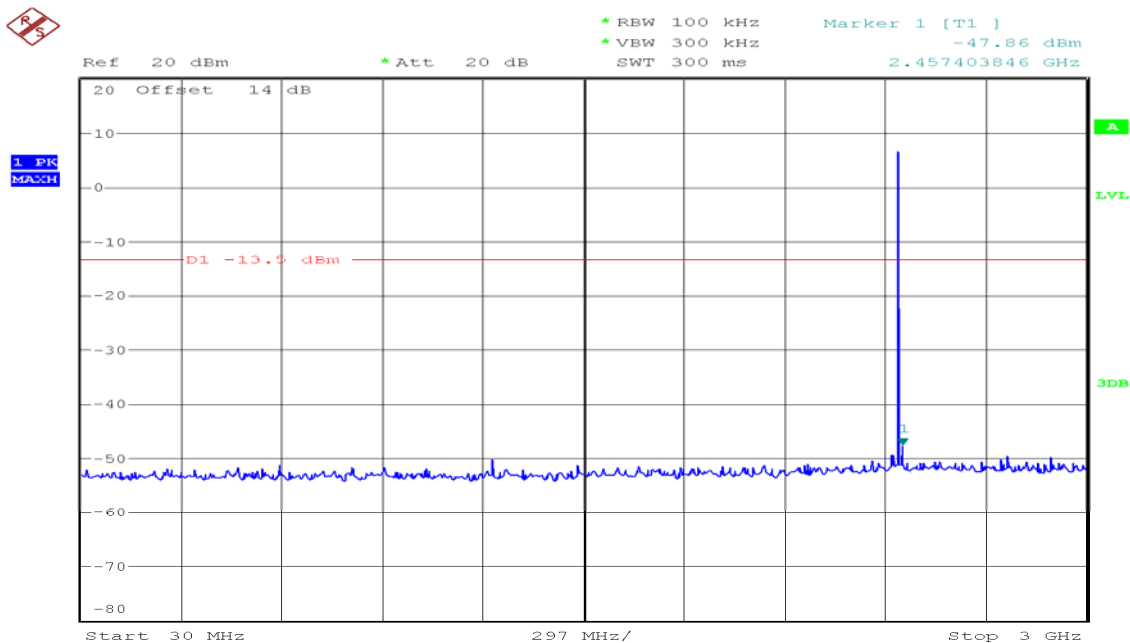
Report No: C130726E02-RPB

FCC ID: O57S6000LF

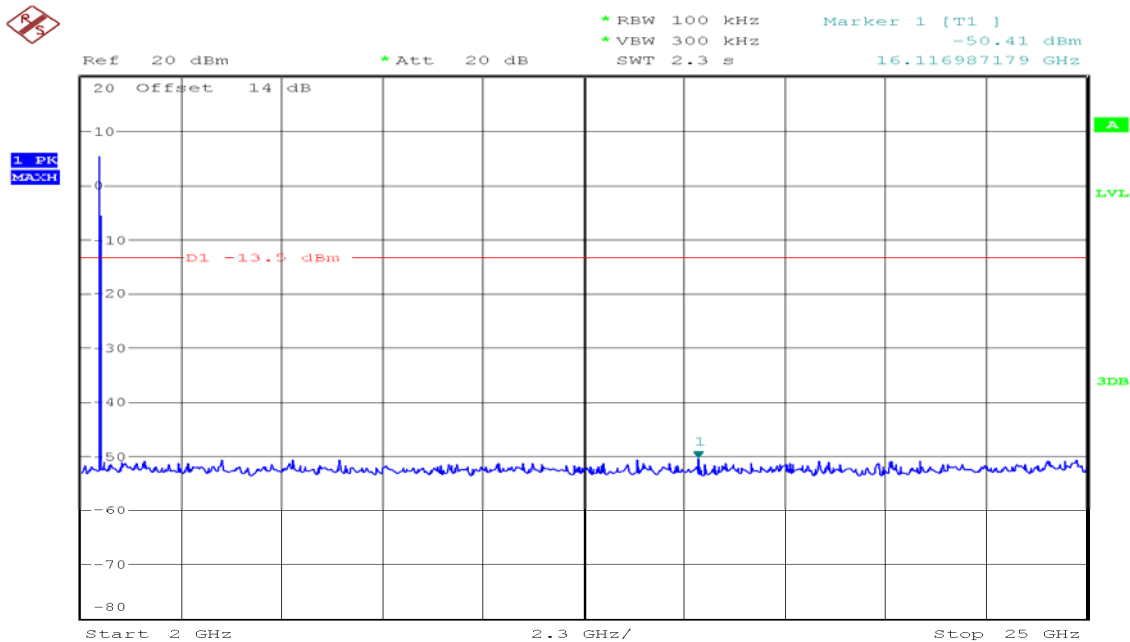
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	3 Mbps	Test Date:	July 25, 2013
Test Channel:	39	Tested by:	Blent.Wang
Humidity:	52 % RH	Temperature:	24°C



Date: 25.JUL.2013 13:10:05



Date: 25.JUL.2013 13:10:43



Compliance Certification Services Inc.

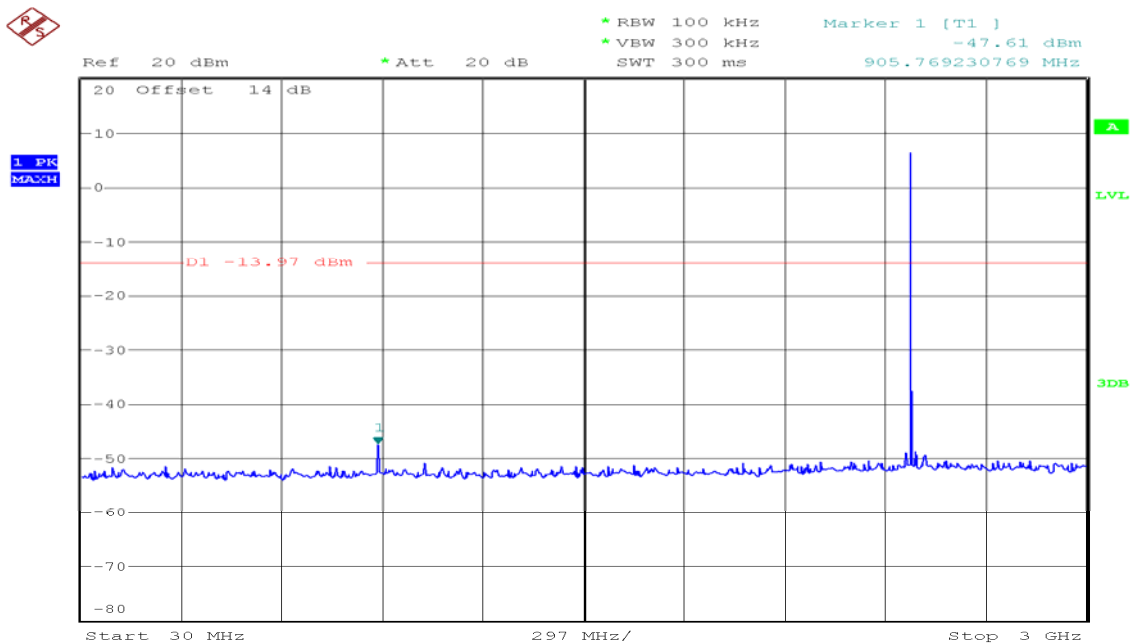
Report No: C130726E02-RPB

FCC ID: O57S6000LF

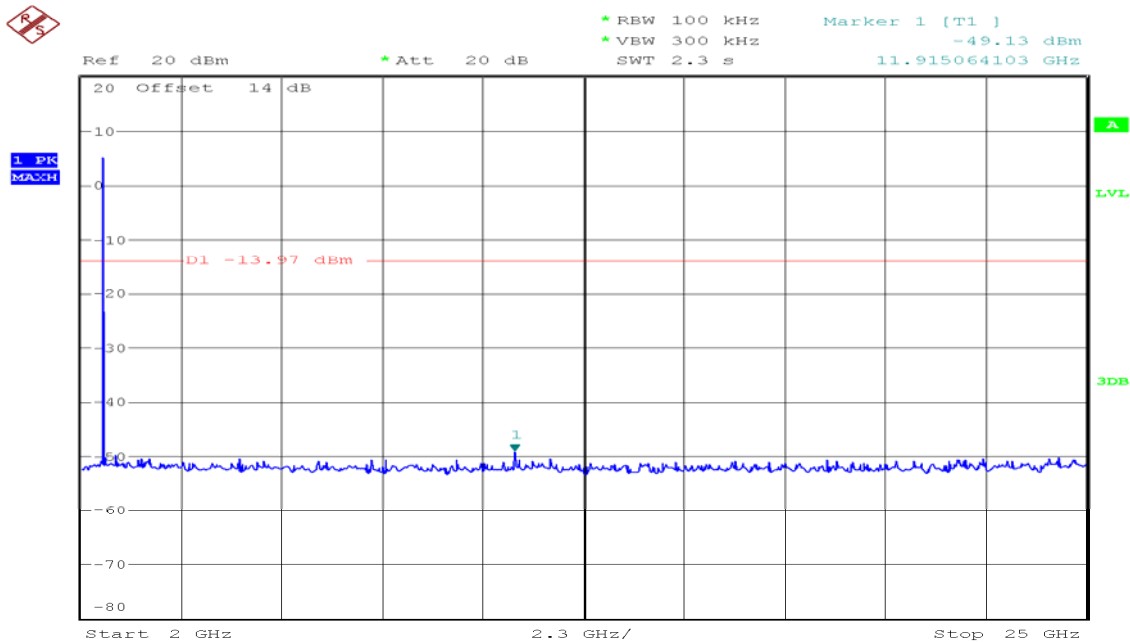
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Operation Mode:	3 Mbps	Test Date:	July 25, 2013
Test Channel:	78	Tested by:	Blent.Wang
Humidity:	52 % RH	Temperature:	24°C



Date: 25.JUL.2013 13:11:46



Date: 25.JUL.2013 13:13:00



6.9 Radiated Band Edge and Spurious Emission Measurement

LIMIT

1. Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (mV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

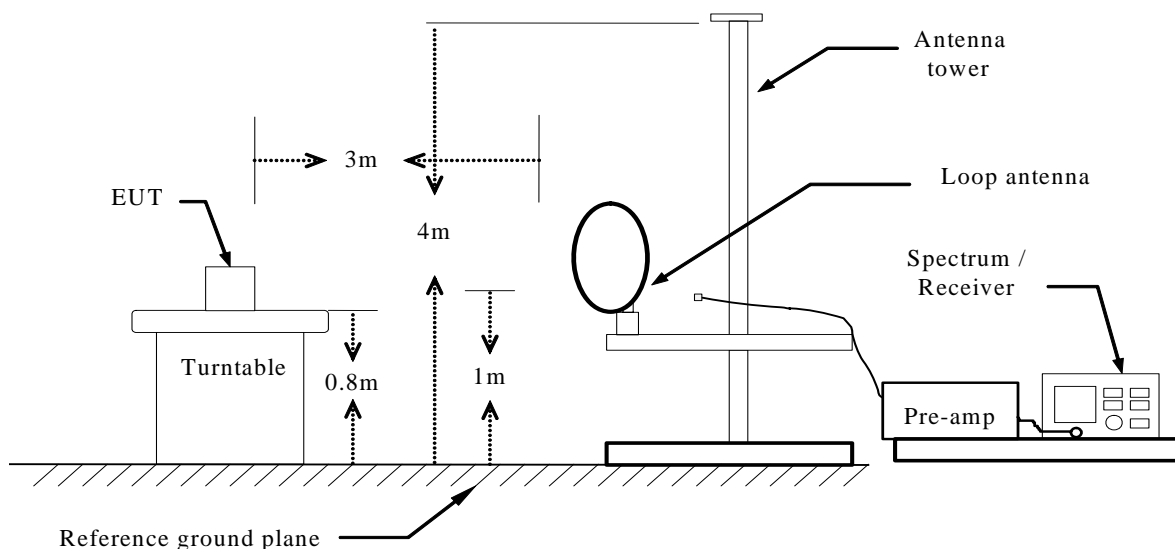
Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

2. In the above emission table, the tighter limit applies at the band edges.

Frequency (Hz)	Field Strength ($\mu\text{V/m}$ at 3-meter)	Field Strength (dB $\mu\text{V/m}$ at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

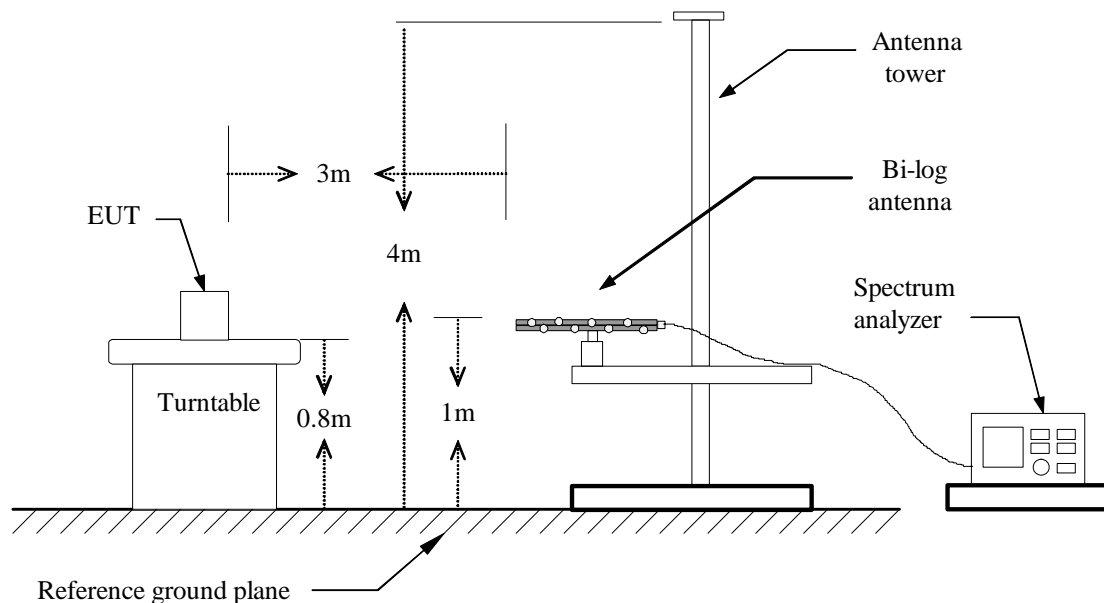
Test Configuration

Below 30MHz

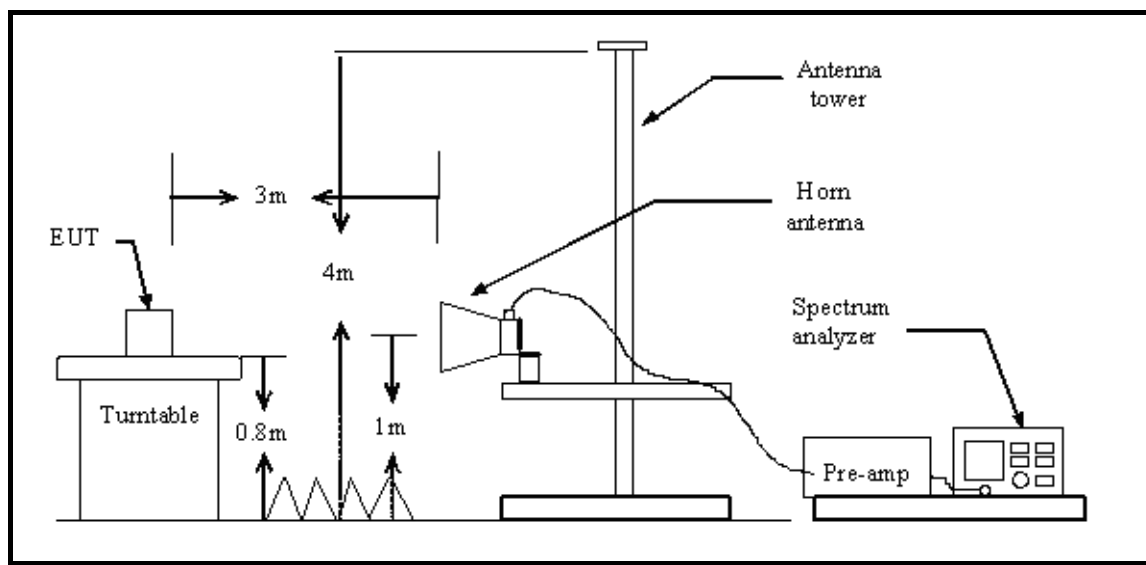




Below 1 GHz



Above 1 GHz





TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz:

(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

7. Repeat above procedures until the measurements for all frequencies are complete.



TEST RESULTS OF RADIATED BAND EDGES

Operation Mode: 1 Mbps**Test Date:** July 24, 2013**Test Channel:** CH00**Tested by:** Blent.Wang**Temperature:** 25°C**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBUV)	Correction Factor (dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Remark
2389.864	V	59.48	-14.28	45.20	74.00	-28.80	PEAK
2390.000	V	35.12	-14.28	20.84	54.00	-33.16	AVG
2389.960	H	53.99	-14.28	39.71	74.00	-34.29	PEAK
2390.000	H	35.20	-14.28	20.92	54.00	-33.08	AVG

Operation Mode: 1 Mbps**Test Date:** July 24, 2013**Test Channel:** CH78**Tested by:** Blent.Wang**Temperature:** 25°C**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBUV)	Correction Factor (dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Remark
2483.434	V	64.68	-13.65	51.03	74.00	-22.97	PEAK
2483.500	V	43.15	-13.65	29.50	54.00	-24.50	AVG
2483.500	H	63.98	-13.65	50.33	74.00	-23.67	PEAK
2483.500	H	37.13	-13.65	23.48	54.00	-30.52	AVG

Operation Mode: Hopping**Test Date:** July 24, 2013**Test Channel:** Normal**Tested by:** Blent.Wang**Temperature:** 25°C**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBUV)	Correction Factor (dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Remark
2386.070	V	58.36	-14.28	44.08	74.00	-29.92	PEAK
2386.070	V	35.12	-14.28	20.84	54.00	-33.16	AVG
2390.000	H	51.23	-14.29	36.94	74.00	-37.06	PEAK
2386.070	H	37.92	-14.28	23.64	54.00	-30.36	AVG
2483.472	V	65.36	-13.65	51.71	74.00	-22.29	PEAK
2483.500	V	37.63	-13.65	23.98	54.00	-30.02	AVG
2483.500	H	65.65	-13.65	52.00	74.00	-22.00	PEAK
2483.500	H	37.75	-13.65	24.10	54.00	-29.90	AVG



TEST RESULT OF RADIATED EMISSION

30MHz-1GHz

Operation Mode: 1 Mbps

Test Date: July 24, 2013

Test Channel: CH78

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.0000	13.06	22.71	35.77	40.00	-4.23	100	333	peak
2	125.0600	14.57	15.46	30.03	43.50	-13.47	100	24	peak
3	671.1700	15.10	22.17	37.27	46.00	-8.73	100	100	peak
4	728.4000	15.23	22.74	37.97	46.00	-8.03	100	62	peak
5	869.0500	15.16	24.95	40.11	46.00	-5.89	100	34	peak
6	959.2600	14.83	26.46	41.29	46.00	-4.71	100	153	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.9700	15.54	22.03	37.57	40.00	-2.43	100	0	peak
2	208.4800	20.81	13.16	33.97	43.50	-9.53	100	334	peak
3	672.1400	14.97	22.15	37.12	46.00	-8.88	100	98	peak
4	843.8300	14.59	25.20	39.79	46.00	-6.21	100	25	peak
5	930.1600	15.31	25.35	40.66	46.00	-5.34	100	133	peak
6	967.9900	15.26	26.36	41.62	54.00	-12.38	100	75	peak

Notes:

1. Measuring frequencies from 9 KHz to the 1GHz, No emission found between lowest internal used/generated frequency to 30 MHz.
2. Radiated emissions measured in frequency range from 9 KHz to 1000MHz were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.



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Above 1 GHz

Operation Mode: 1 Mbps

Test Date: July 24, 2013

Test Channel: CH00

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2402.000	V	45.91	-14.27	31.64	74.00	-42.36	PEAK
4804.000	V	45.50	-8.05	37.45	74.00	-36.55	PEAK
7206.000	V	43.73	-0.57	43.16	74.00	-30.84	PEAK
2402.000	H	45.27	-14.27	31.00	74.00	-43.00	PEAK
4804.000	H	44.94	-8.05	36.89	74.00	-37.11	PEAK
7206.000	H	42.92	-0.57	42.35	74.00	-31.65	PEAK

Operation Mode: 1 Mbps

Test Date: July 24, 2013

Test Channel: CH39

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2441.000	V	46.14	-13.98	32.16	74.00	-41.84	PEAK
4880.000	V	44.15	-7.66	36.49	74.00	-37.51	PEAK
7323.000	V	41.84	-0.83	41.01	74.00	-32.99	PEAK
2441.000	H	46.10	-13.98	32.12	74.00	-41.88	PEAK
4880.000	H	44.73	-7.66	37.07	74.00	-36.93	PEAK
7323.000	H	41.50	-0.83	40.67	74.00	-33.33	PEAK



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Operation Mode: 1 Mbps

Test Date: July 24, 2013

Test Channel: CH78

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2480.000	V	46.82	-13.67	33.15	74.00	-40.85	PEAK
4960.000	V	45.09	-7.58	37.51	74.00	-36.49	PEAK
7440.000	V	44.50	-0.51	43.99	74.00	-30.01	PEAK
2480.000	H	45.76	-13.67	32.09	74.00	-41.91	PEAK
4960.000	H	44.82	-7.58	37.24	74.00	-36.76	PEAK
7440.000	H	43.21	-0.51	42.70	74.00	-31.30	PEAK

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Spectrum setting:
 - a. Peak Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 1MHz, Sweep time = Auto.
 - b. AV Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.



6.10 POWERLINE CONDUCTED EMISSIONS

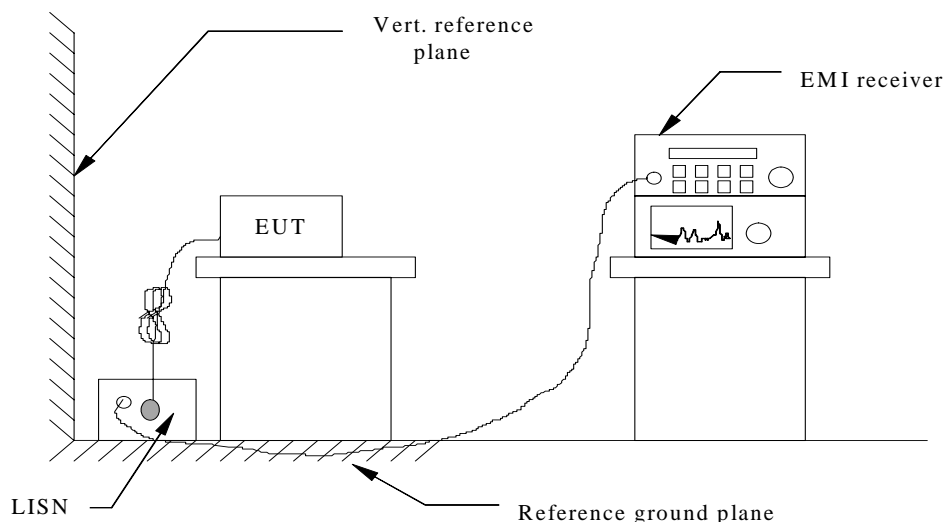
LIMIT

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration



See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.



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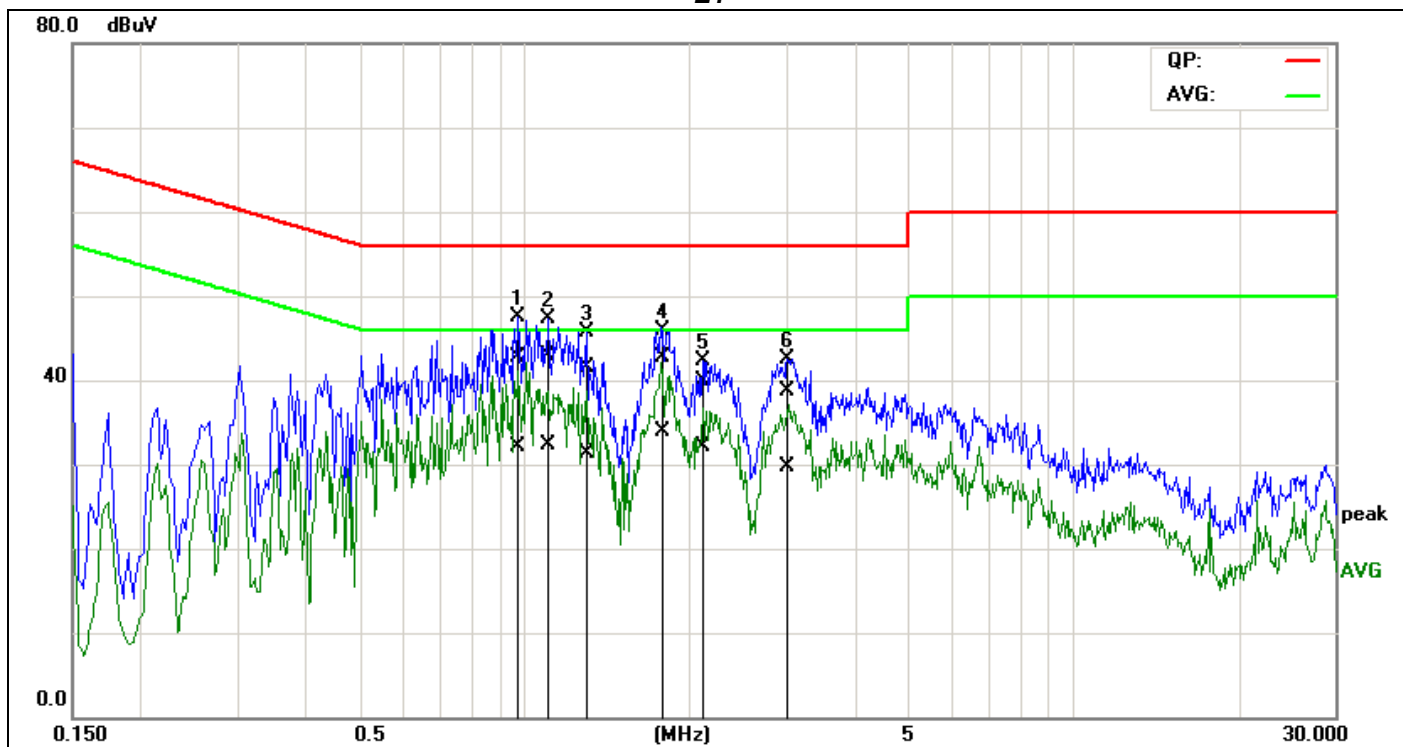
Date of Issue :July 27, 2013

IC:10407A-S6000LF

Test Data

Model: 60049	Test Mode: Mode 1
Temperature: 23°C	Humidity: 51% RH
Tested by: Blent.Wang	Test Results: Pass

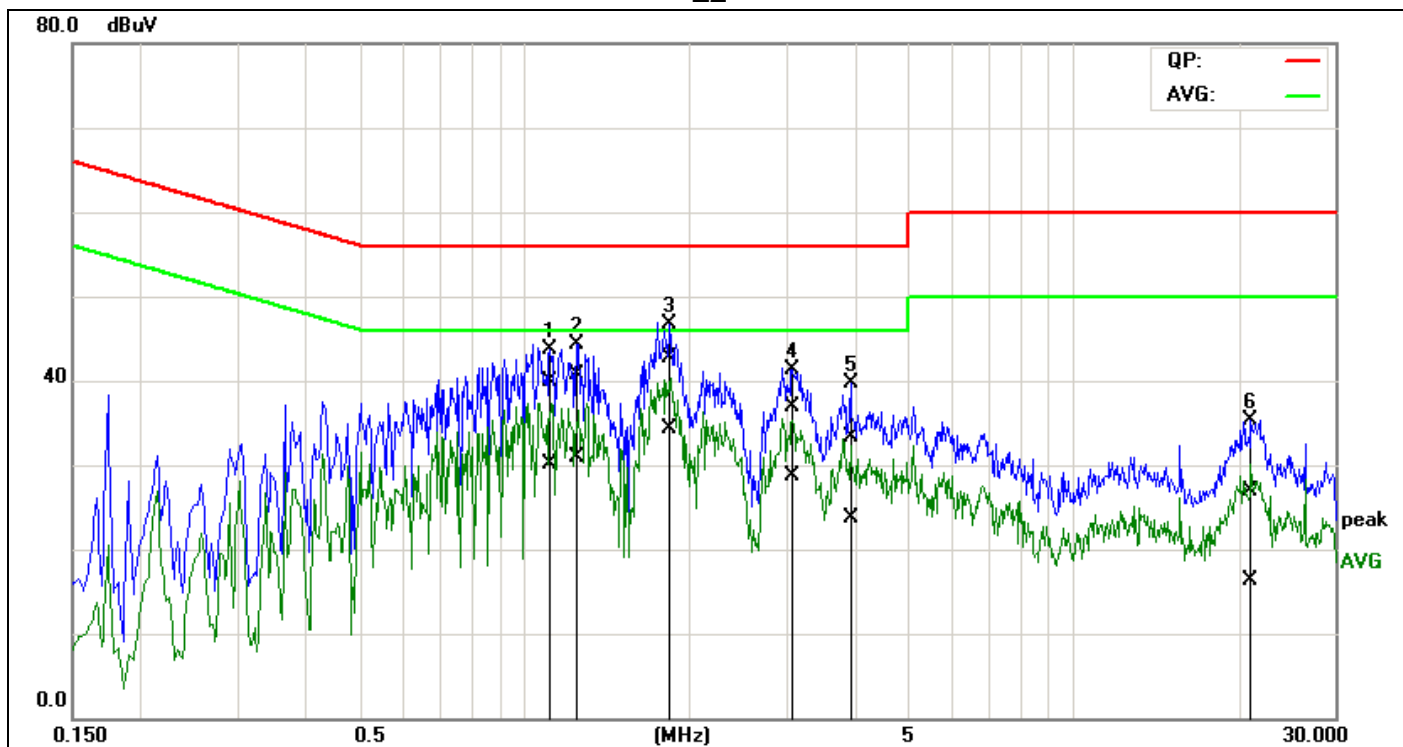
L1



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.9752	32.75	22.05	9.98	42.73	32.03	56.00	46.00	-13.27	-13.97	Pass
2	1.1060	32.82	22.29	9.99	42.81	32.28	56.00	46.00	-13.19	-13.72	Pass
3	1.3020	31.41	21.21	10.01	41.42	31.22	56.00	46.00	-14.58	-14.78	Pass
4	1.7974	32.69	23.80	10.07	42.76	33.87	56.00	46.00	-13.24	-12.13	Pass
5*	2.1182	29.80	21.95	10.10	39.90	32.05	56.00	46.00	-16.10	-13.95	Pass
6	3.0189	28.56	19.58	10.21	38.77	29.79	56.00	46.00	-17.23	-16.21	Pass



L2



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	1.1183	30.00	20.15	9.98	39.98	30.13	56.00	46.00	-16.02	-15.87	Pass
2	1.2460	30.62	20.81	10.00	40.62	30.81	56.00	46.00	-15.38	-15.19	Pass
3	1.8148	32.53	24.23	10.10	42.63	34.33	56.00	46.00	-13.37	-11.67	Pass
4	3.0972	26.71	18.44	10.24	36.95	28.68	56.00	46.00	-19.05	-17.32	Pass
5	3.9429	23.03	13.34	10.33	33.36	23.67	56.00	46.00	-22.64	-22.33	Pass
6*	21.0777	15.73	5.24	11.09	26.82	16.33	60.00	50.00	-33.18	-33.67	Pass

Remark:

- 1.The measuring frequencies range between 0.15 MHz and 30 MHz.
- 2.The emissions measured in the frequency range between 0.15 MHz and 30MHz were made with an instrument using Quasi-peak detector and Average detector.
- 3.“—” denotes the emission level was or more than 2dB below the Average limit, and no re-check was made.
- 4.The IF bandwidth of SPA between 0.15MHz and 30MHz was 10KHz. The IF bandwidth of Test Receiver between 0.15MHz and 30MHz was 9kHz.

END OF REPORT