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Report No.: SZEM160400205405
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FCC REPORT

Application No: SZEM1604002054RG
Applicant: Techvision Intelligent Technology Limited
Manufacturer: Medion AG
Factory: ShenZhen Xinwujie Technology Company Limited
Product Name: LIFETAB
Model No.(EUT): PIC A1051.00
Add Model No.: PIC A1051.xx (PIC A1051.xx where x can be number 0 to 9)
Trade Mark: MEDION AG
FCC ID: 2AHYJA1051
Standards: 47 CFR Part 15, Subpart E (2015)
Date of Receipt: 2016-04-11
Date of Test: 2016-04-13 to 2016-04-24
Date of Issue: 2016-06-13

Test Result:	PASS *
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. * In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2016-06-13		Original

Authorized for issue by:				
Tested By		 <hr/> (Hank yan) /Project Engineer		2016-04-13
				Date
Prepared By		 <hr/> (Joyce Shi) /Clerk		2016-06-13
				Date
Checked By		 <hr/> (Eric Fu) /Reviewer		2016-06-13
				Date



3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Section 15.203	ANSI C63.10: 2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Section 15.407(b)	ANSI C63.10: 2013	PASS
Conducted Output Power	47 CFR Part 15 Section 15.407(a)	ANSI C63.10: 2013	PASS
Equivalent Isotropic Radiated Power (e.i.r.p.)	47 CFR Part 15 Section 15.407(a)	ANSI C63.10: 2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15 Section 15.407(e)	ANSI C63.10: 2013	PASS
26 dB Emission Bandwidth & 99% Occupied Bandwidth	47 CFR Part 15 Section 15.407(a)	ANSI C63.10: 2013	PASS
Power Spectral Density	47 CFR Part 15 Section 15.407(a)	ANSI C63.10: 2013	PASS
Radiated Spurious Emissions	47 CFR Part 15 Section 15.407(b)	ANSI C63.10: 2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15 Section 15.407(b)	ANSI C63.10: 2013	PASS
Frequency Stability	47 CFR Part 15 Section 15.407(g)	ANSI C63.10: 2013	PASS



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5 General Information

5.1 Client Information

Applicant:	Techvision Intelligent Technology Limited
Address of Applicant:	5F, No.2 Building, District D, TCL international E City, Nanshan, ShenZhen, China
Manufacturer:	Medion AG
Address of Manufacturer:	Am Zehnthof 77 D-45307 Essen.Germany
Factory:	ShenZhen Xinwujie Technology Company Limited
Address of Factory:	5-6/F, Building No.3, Hongfa hi-tech industrial park, interchange of Genyu Road and Nanming Road, Guangming New district, ShenZhen City, GuangDong Province P.R. China

5.2 General Description of EUT

Product Name:	LIFETAB			
Model No.:	PIC A1051.00			
Trade Mark:	MEDION AG			
Operation Frequency:	Band	Mode	Frequency Range(MHz)	Number of channels
	UNII Band I	IEEE 802.11a	5180-5240	4
		IEEE 802.11n 20MHz	5180-5240	4
	UNII Band II-A	IEEE 802.11a	5260-5320	4
		IEEE 802.11n 20MHz	5260-5320	4
	UNII Band II-C	IEEE 802.11a	5500-5700	11
		IEEE 802.11n 20MHz	5500-5700	11
Type of Modulation:	IEEE 802.11a: OFDM(BPSK/QPSK/16QAM/64QAM) IEEE 802.11n: OFDM(BPSK/QPSK/16QAM/64QAM)			
Sample Type:	Portable production			
Antenna Type:	FPCB			
Antenna Gain:	1.6dBi			
Power Supply:	Adaptor: Model: KSA29B0500200HU Input: AC 100~240V, 50/60Hz, 0.5A Output: DC 5.0V, 2.0A Or DC 3.7V Li-ion Battery			
Test Voltage:	DC 3.7V			



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Remark:

Model No.: PIC A1051.xx (PIC A1051.xx where x can be number 0 to 9)

Only the model **PIC A1051.00** was tested, since the appearance, circuitry design, PCB layout, electrical components used, internal wiring and functions were identical for the above models.

And the accessories have different colors as below for marketing purpose.

Accessories	Model No.	Color
OTG Cable	ASDA666006	black
	ASDA666007	white
USB Cable	02-GE05-1511002 (MSN 40050707)	white
	02-GE05-1511001 (MSN 40050706)	black
Charger	KSA29B0500200HU	black & white

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Note:

In FCC 15.31, for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table, and the selected channel to perform the test as below:

Frequency Range of Operation Operating Frequency Range (in each Band)	Number of Measurement Frequencies Required	Location of Measurement Frequency in Band of Operation
1 MHz or less	1	centre
1 MHz to 10 MHz	2	1 near high end, 1 near low end
Greater than 10 MHz	3	1 near high end, 1 near centre

For UNII Band I:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n 20MHz	The Lowest channel	5180
	The Middle channel	5200
	The Highest channel	5240

For UNII Band II-A:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n 20MHz	The Lowest channel	5260
	The Middle channel	5300
	The Highest channel	5320

For UNII Band II-C:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n 20MHz	The Lowest channel	5500
	The Middle channel	5600
	The Highest channel	5700



5.3 Test Environment and Mode

Operating Environment:	
Temperature:	24.8 °C
Humidity:	53 % RH
Atmospheric Pressure:	1016mbar
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.

5.4 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Earphone	PHILIPS	SHE6000	REF. No.SEA1000

5.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch E&E Lab,
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.
518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.



5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

5.7 Deviation from Standards

None.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.



5.10 Equipment List

RE in Chamber (30MHz to 1GHz)						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2015-05-13	2016-05-13
2	EMI Test Receiver	Agilent Technologies	N9038A	SEM004-05	2015-09-16	2016-09-16
3	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2014-11-01	2017-11-01
4	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEM003-11	2015-10-17	2018-10-17
5	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2015-05-13	2016-05-13
6	Band filter	Amindeon	Asi 3314	SEM023-01	N/A	N/A
7	DC Power Supply	Zhao Xin	RXN-305D	SEM011-02	2015-10-09	2016-10-09

RE in Chamber (Above 1GHz)						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2015-05-13	2016-05-13
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEM004-04	2015-05-13	2016-05-13
3	BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-02	2014-11-15	2017-11-15
4	Amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2015-10-09	2016-10-09
5	Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2015-06-14	2018-06-14
6	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEM003-12	2014-11-24	2017-11-24
7	Low Noise Amplifier	Black Diamond Series	BDLNA-0118-352810	SEM005-05	2015-10-09	2016-10-09
8	Band filter	Amindeon	Asi 3314	SEM023-01	N/A	N/A



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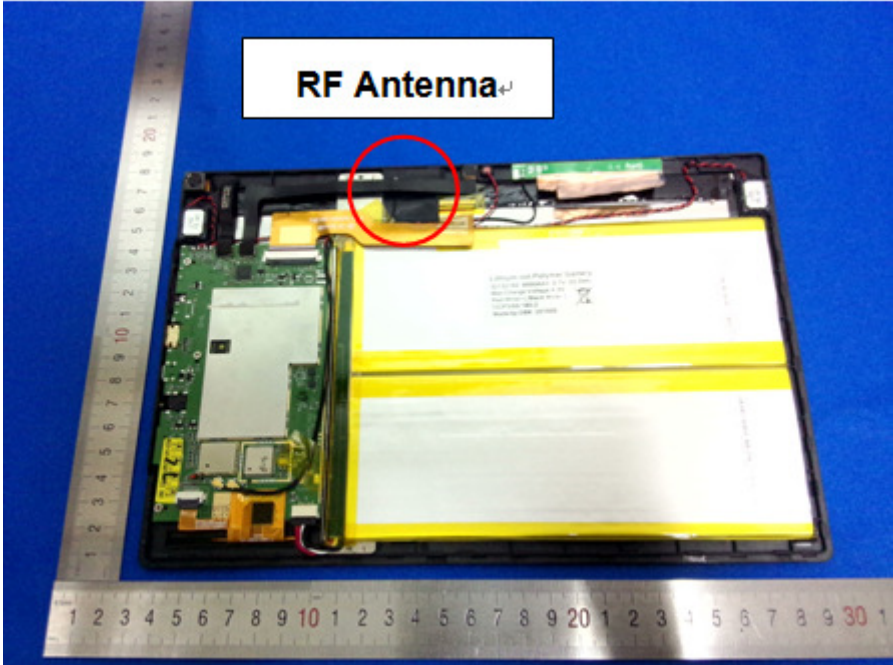
Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2015-05-13	2016-05-13
2	LISN	Rohde & Schwarz	ENV216	SEM007-01	2015-10-09	2016-10-09
3	LISN	ETS-LINDGREN	3816/2	SEM007-02	2015-05-13	2016-05-13
4	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	EMC0120	2015-08-30	2016-08-30
5	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	EMC0121	2015-08-30	2016-08-30
6	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	2015-08-30	2016-08-30
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2015-05-13	2016-05-13
8	DC Power Supply	Zhao Xin	RXN-305D	SEM011-02	2015-10-09	2016-10-09

RF connected test						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2015-10-09	2016-10-09
2	Humidity/ Temperature Indicator	HYGRO	ZJ1-2B	SEL0033	2015-10-24	2016-10-24
3	Spectrum Analyzer	Rohde & Schwarz	FSP	SEL0154	2015-10-17	2016-10-17
4	Coaxial cable	SGS	N/A	SEL0178	2015-05-13	2016-05-13
5	Coaxial cable	SGS	N/A	SEL0179	2015-05-13	2016-05-13
6	Barometer	ChangChun	DYM3	SEL0088	2015-05-13	2016-05-13
7	Signal Generator	Rohde & Schwarz	SML03	SEL0068	2015-05-13	2016-05-13
8	Power Meter	R & S	NRVS	SEL0144	2015-10-09	2016-10-09
9	Attenuator	Beijin feihang taida	TST-2-6dB	SEL0205	2015-05-13	2016-05-13

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6 Test results and Measurement Data

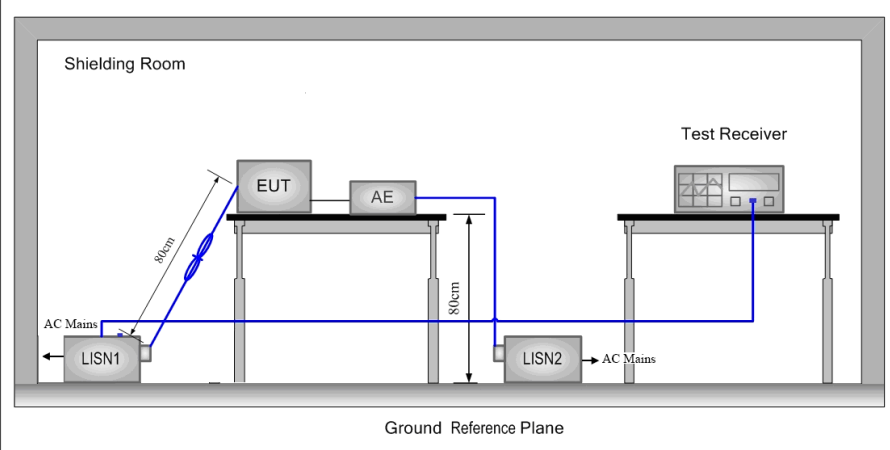
6.1 Antenna Requirement

Test Requirement:	47 CFR Part 15 Section 15.203
EUT Antenna:	
The antenna is integrated on the main FPCB and no consideration of replacement. The best case gain of the antenna is 1.6dBi.	



6.2 Conducted Emissions

Test Requirement:	47 CFR Part 15 Section 15.407(b)		
Test Method:	ANSI C63.10: 2013		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
* Decreases with the logarithm of the frequency.			
Test Procedure:	<ol style="list-style-type: none">1) The mains terminal disturbance voltage test was conducted in a shielded room.2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.		

Test Setup:	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate of 802.11a at lowest channel is the worst case. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

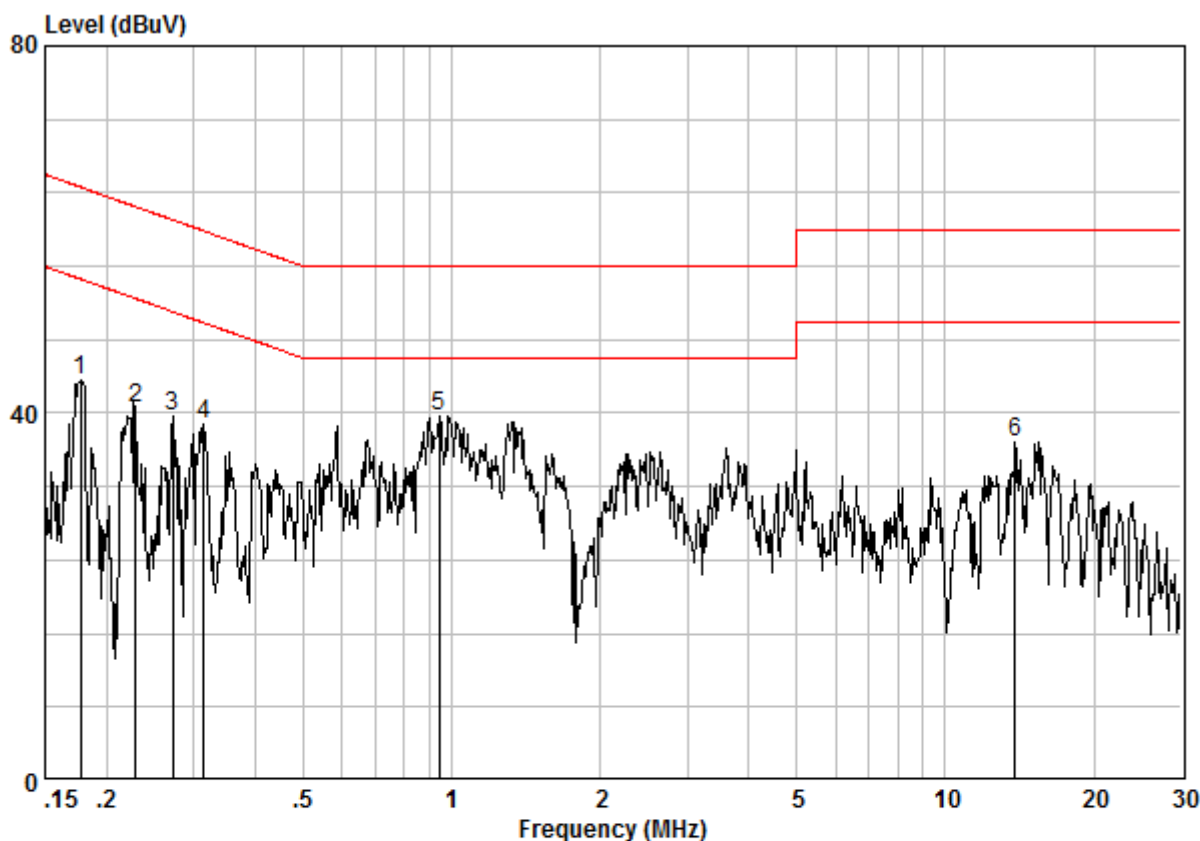
Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.



Live Line:

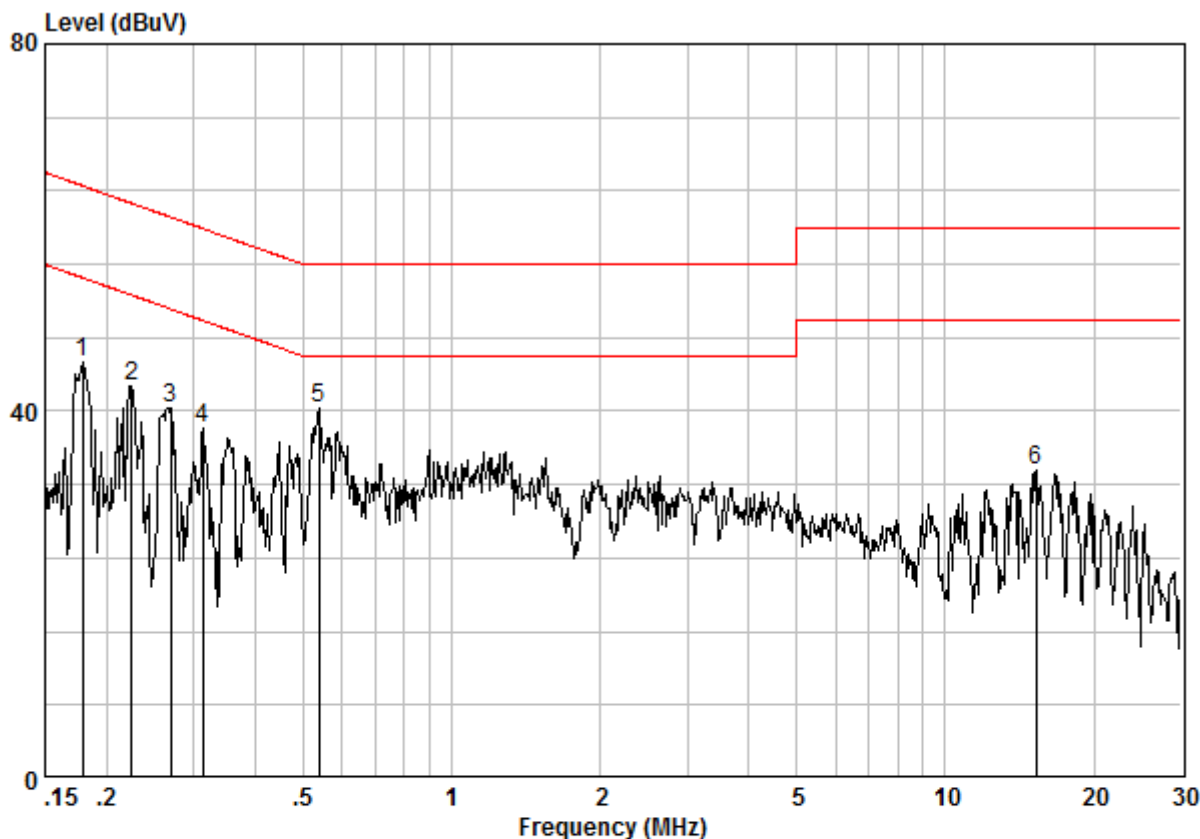


Site : Shielding Room
Condition : CE LINE
Job No. : 2054RG
Test Mode : Charge+TX mode

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.17678	0.02	9.61	34.01	43.64	54.64	-11.00	Peak
2	0.22918	0.02	9.61	31.00	40.63	52.48	-11.85	Peak
3	0.27152	0.01	9.61	30.10	39.73	51.07	-11.34	Peak
4	0.31495	0.01	9.62	29.27	38.90	49.84	-10.94	Peak
5	0.94308	0.02	9.64	30.01	39.66	46.00	-6.34	Peak
6	13.841	0.01	9.88	27.04	36.93	50.00	-13.07	Peak



Neutral Line:



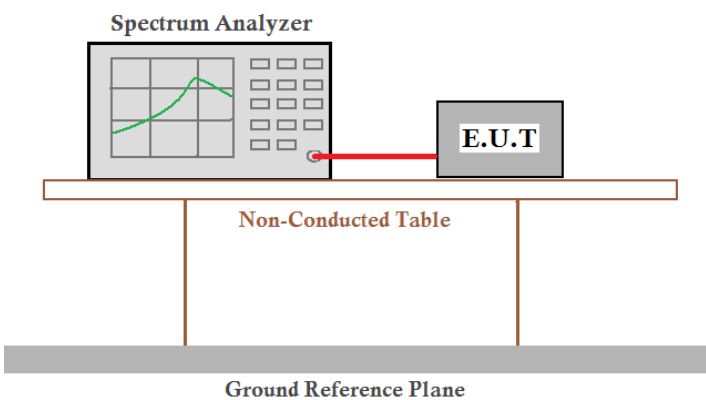
Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 2054RG
Test Mode : Charge+TX mode

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.17866	0.02	9.61	35.62	45.24	54.55	-9.31	Peak
2	0.22437	0.02	9.62	33.04	42.67	52.66	-9.98	Peak
3	0.27009	0.01	9.61	30.78	40.41	51.12	-10.71	Peak
4	0.31328	0.01	9.62	28.55	38.18	49.88	-11.70	Peak
5 @	0.53782	0.01	9.63	30.64	40.28	46.00	-5.72	Peak
6	15.307	0.02	9.91	23.58	33.50	50.00	-16.50	Peak

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

6.3 Conducted Output Power

Test Requirement:	47 CFR Part 15 Section 15.407(a)	
Test Method:	ANSI C63.10: 2013	
Test Setup:	 <p><i>Remark:</i> Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</p>	
Test Procedure:	Refer to ANSI C63.10 Section 12.3.2.2	
Test Instruments:	Refer to section 5.10 for details	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates	
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCS0 of rate is the worst case of 802.11n(HT20); Only the worst case is recorded in the report.	
Limit:	Frequency Band	Limit
	5150-5250MHz	Not exceed 250mW(24dBm)
	5250-5350MHz	The lesser of 250mW(24dBm) or $11 + 10\log B$
	5470-5725MHz	The lesser of 250mW(24dBm) or $11 + 10\log B$
	5725-5850MHz	Not exceed 1W(30dBm)
	*Where B is the 26dB emission bandwidth in MHz	
Test Results:	Pass	



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Measurement Data:

802.11a mode			
Frequency (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Result
5180	8.42	24.00	Pass
5200	8.12	24.00	Pass
5240	7.88	24.00	Pass
5260	7.90	24.00	Pass
5300	7.32	24.00	Pass
5320	7.15	24.00	Pass
5500	6.34	24.00	Pass
5600	7.33	24.00	Pass
5700	6.47	24.00	Pass

802.11n(HT20) mode			
Frequency (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Result
5180	7.08	24.00	Pass
5200	6.87	24.00	Pass
5240	6.69	24.00	Pass
5260	6.75	24.00	Pass
5300	6.06	24.00	Pass
5320	5.74	24.00	Pass
5500	5.23	24.00	Pass
5600	6.19	24.00	Pass
5700	5.55	24.00	Pass

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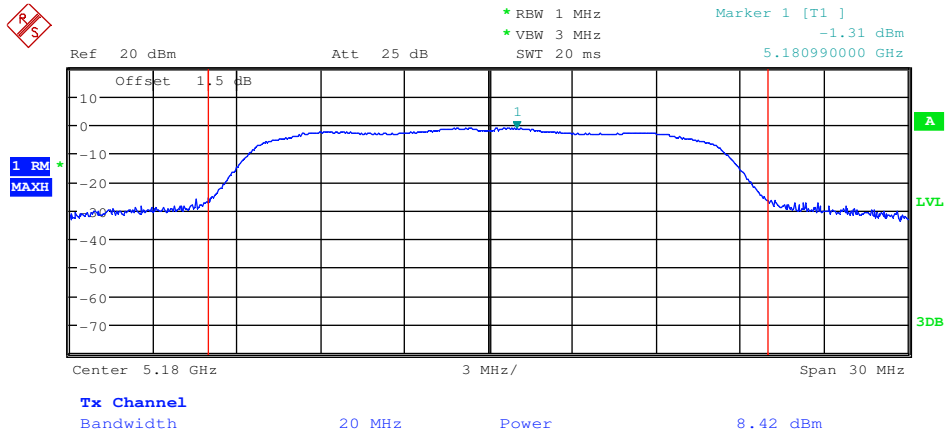
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM160400205405

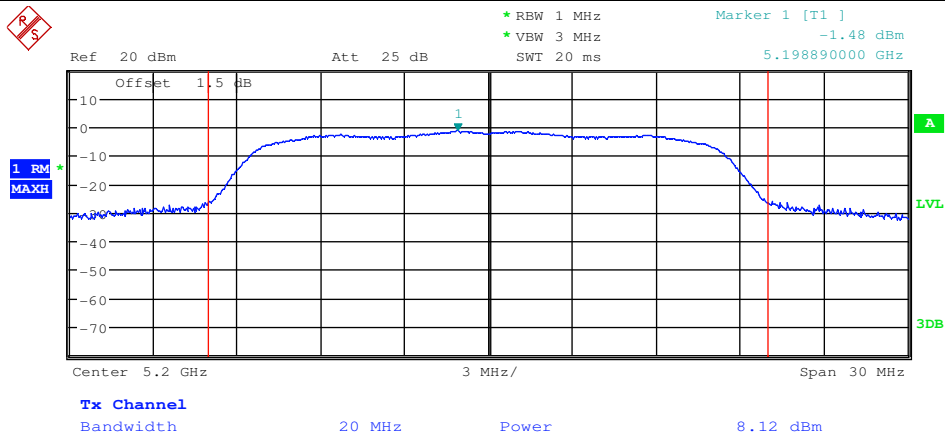
Page: 19 of 109

Test plot as follows:

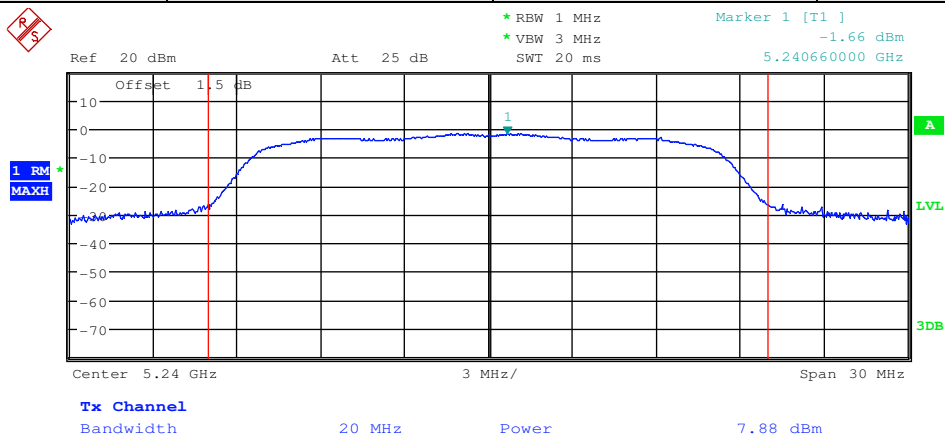
Test mode:	802.11a	Frequency(MHz):	5180
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Test mode:	802.11a	Frequency(MHz):	5200
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Test mode:	802.11a	Frequency(MHz):	5240
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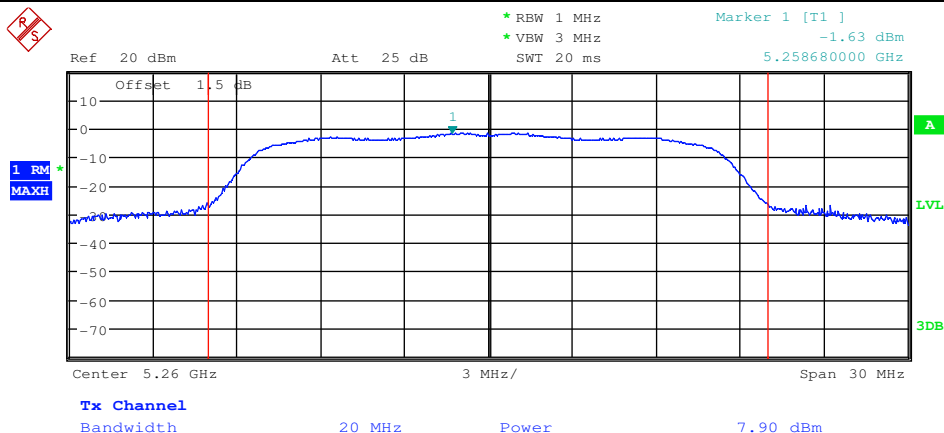


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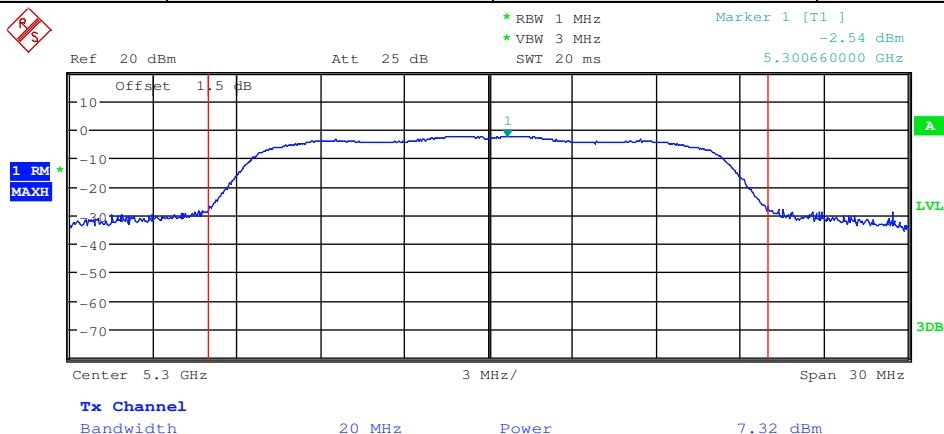
Report No.: SZEM160400205405

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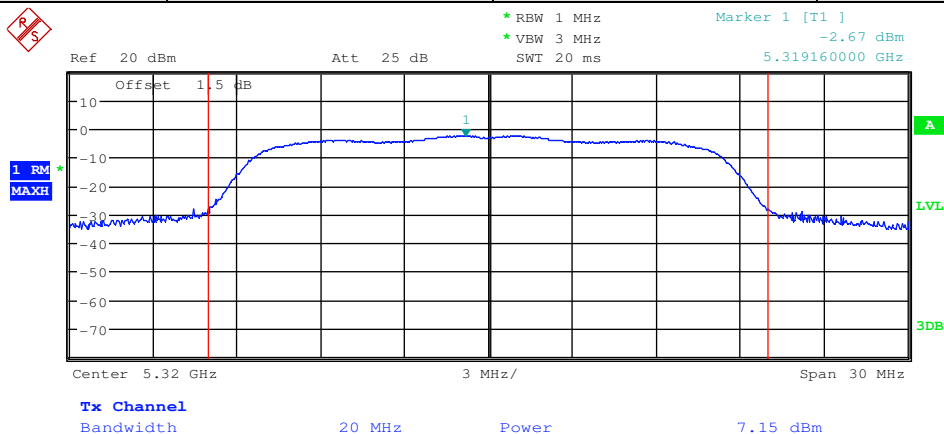
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Test mode:	802.11a	Frequency(MHz):	5300
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Test mode:	802.11a	Frequency(MHz):	5320
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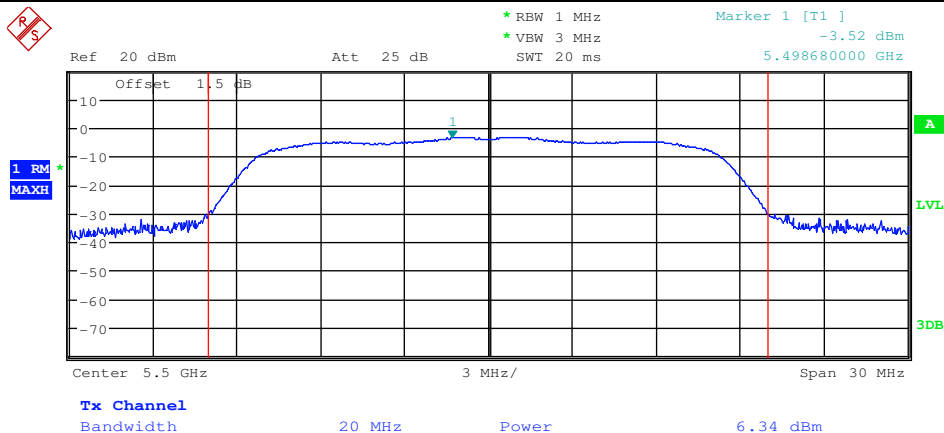


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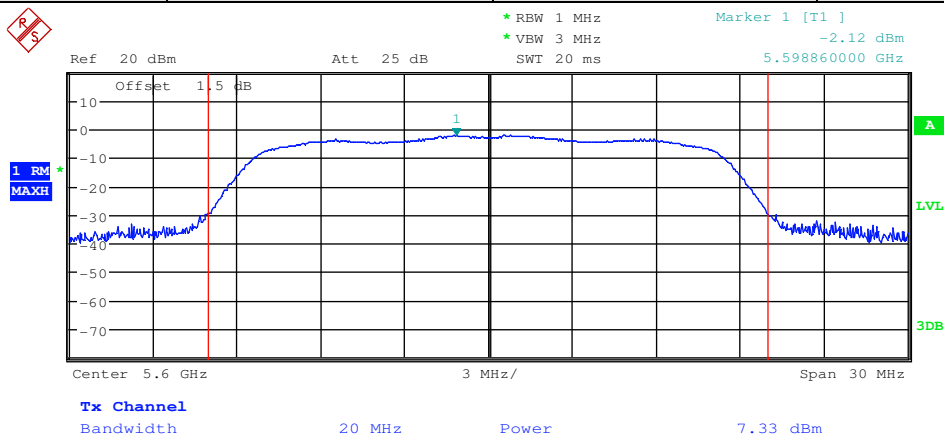
Report No.: SZEM160400205405

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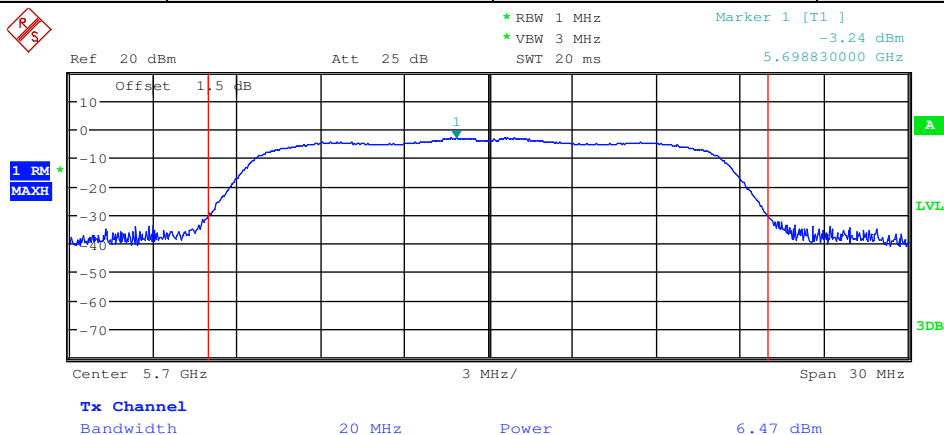
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Test mode:	802.11a	Frequency(MHz):	5600
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Test mode:	802.11a	Frequency(MHz):	5700
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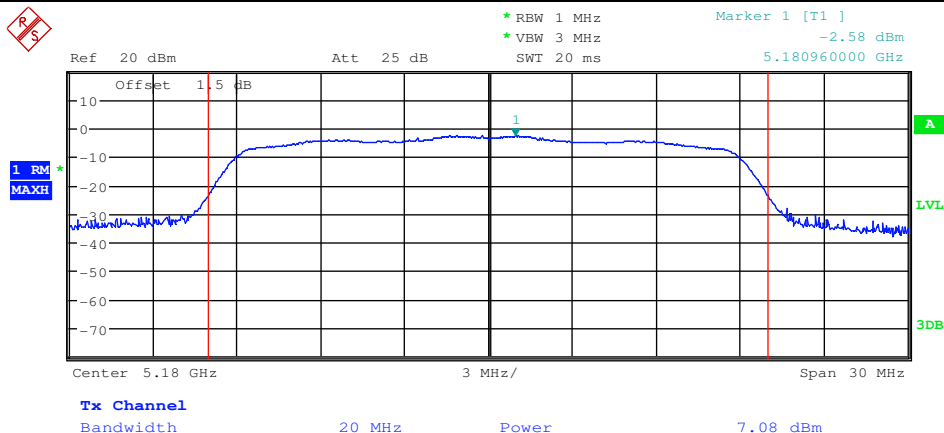


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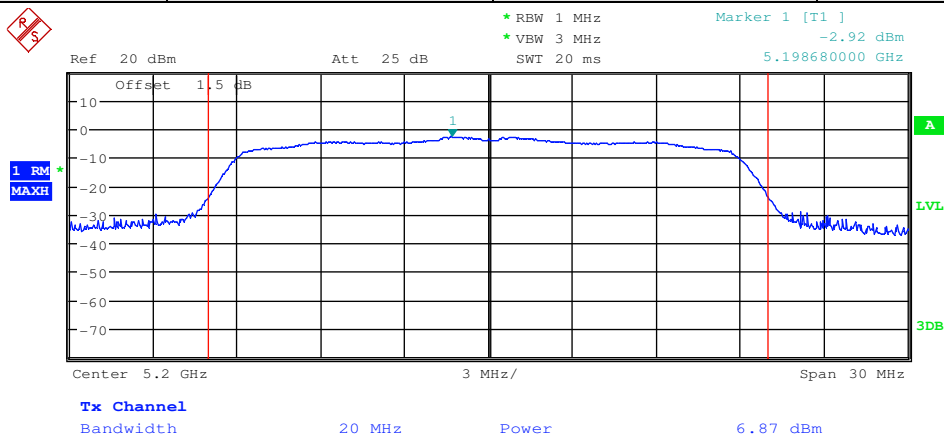
Report No.: SZEM160400205405

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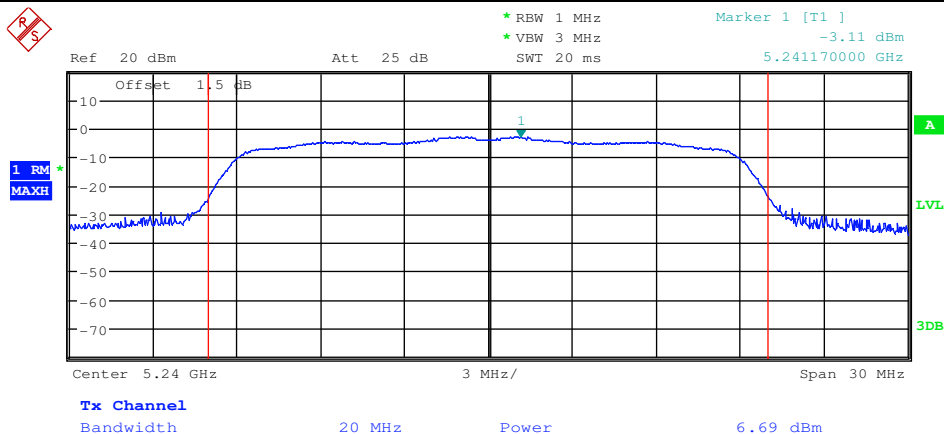
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Test mode:	802.11n(HT20)	Frequency(MHz):	5200
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Test mode:	802.11n(HT20)	Frequency(MHz):	5240
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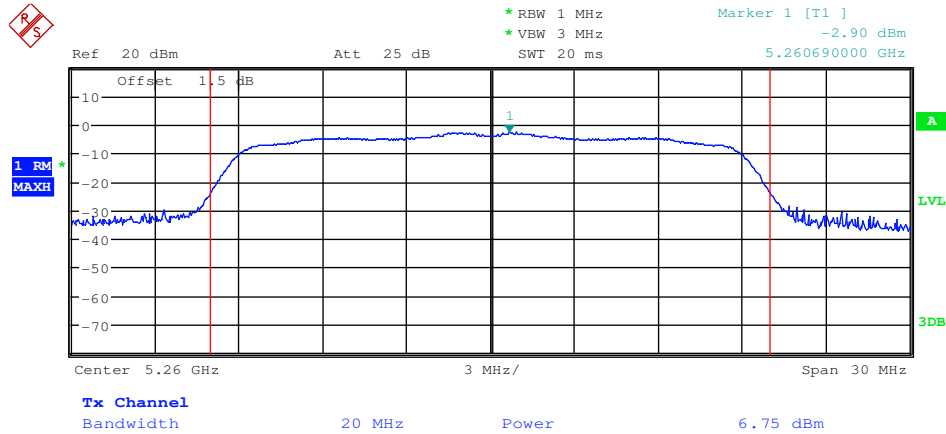


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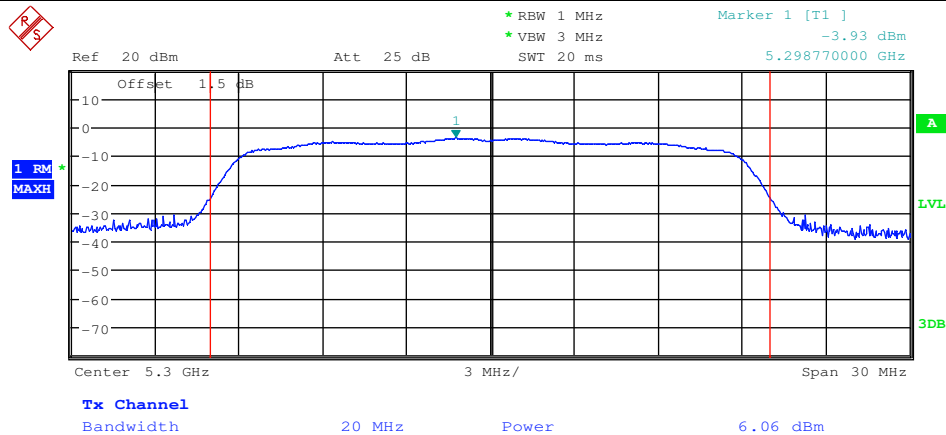
Report No.: SZEM160400205405

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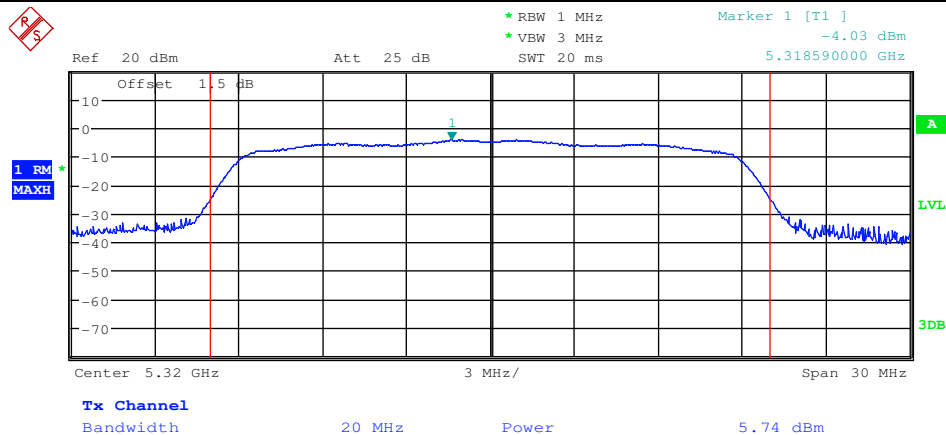
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Test mode:	802.11n(HT20)	Frequency(MHz):	5300
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Test mode:	802.11n(HT20)	Frequency(MHz):	5320
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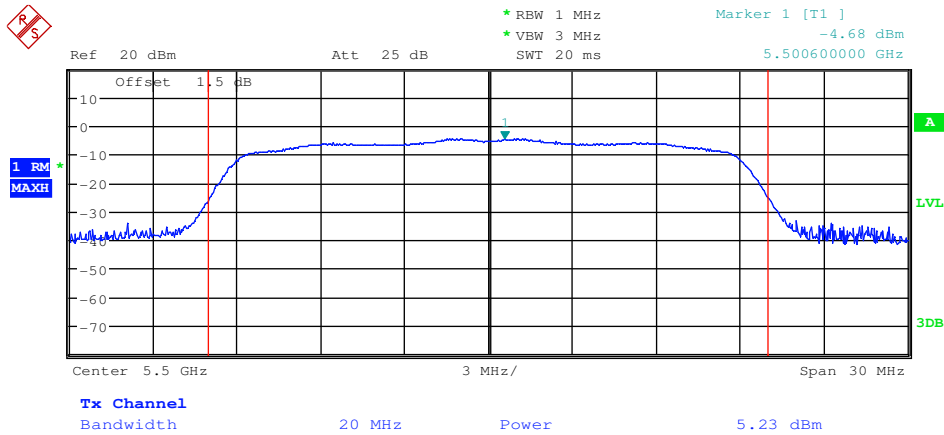


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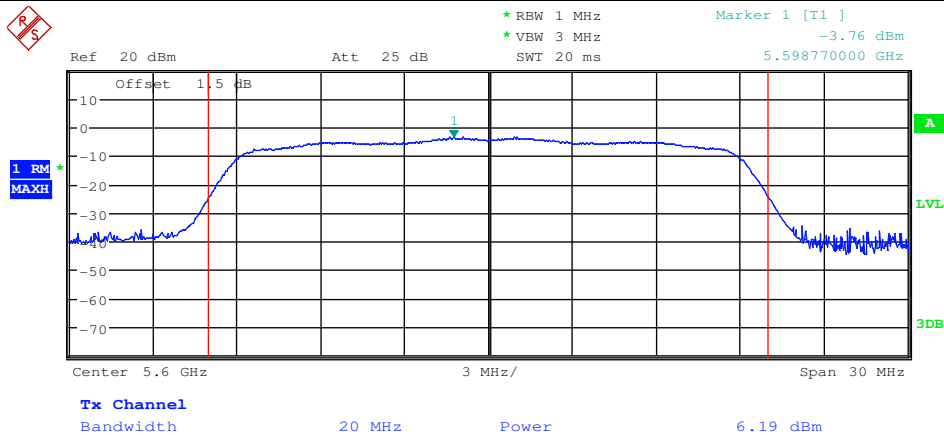
Report No.: SZEM160400205405

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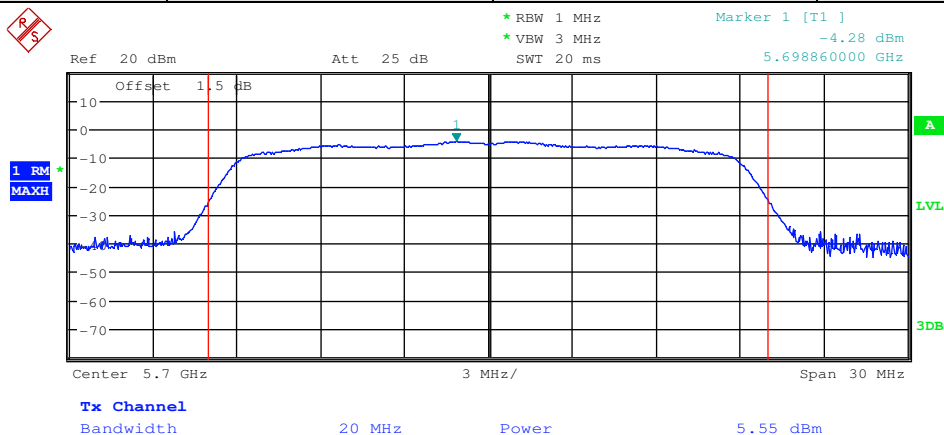
Test mode:	802.11n(HT20)	Frequency(MHz):	5500
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Test mode:	802.11n(HT20)	Frequency(MHz):	5600
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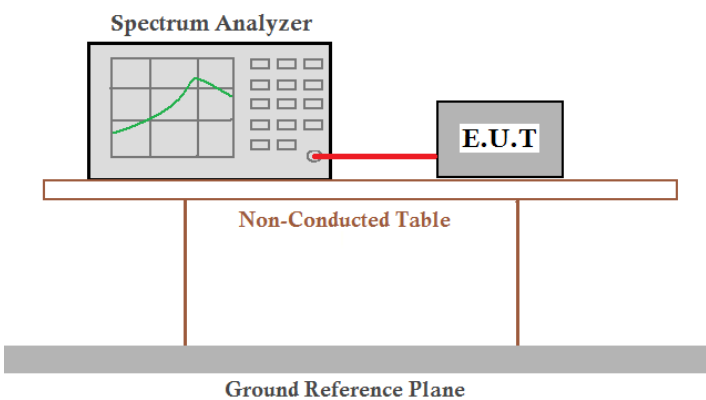


Test mode:	802.11n(HT20)	Frequency(MHz):	5700
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6.4 Equivalent Isotropic Radiated Power (e.i.r.p.)

Test Requirement:	47 CFR Part 15 Section 15.407(a)	
Test Method:	ANSI C63.10: 2013	
Test Setup:	 <p><i>Remark:</i> Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</p>	
Test Instruments:	Refer to section 5.10 for details	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates	
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCS0 of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report.	
Limit:	Frequency Band	Limit
	5150-5250MHz	4W(36dBm) with 6dBi antenna
	5250-5350MHz	1W(30dBm) with 6dBi antenna
	5470-5725MHz	1W(30dBm) with 6dBi antenna
	5725-5850MHz	4W(36dBm) with 6dBi antenna
	*The limit =the maximum output conducted power limit+ actual antenna gain	
Test Results:	Pass	



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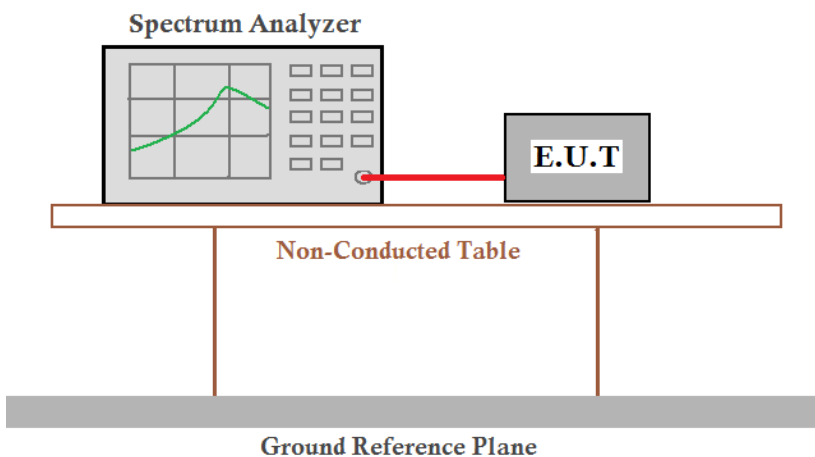
Measurement Data:

802.11a mode			
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Result
5180	8.12	36	Pass
5200	7.82	36	Pass
5240	7.58	36	Pass
5260	7.60	30	Pass
5300	7.02	30	Pass
5320	6.85	30	Pass
5500	6.04	30	Pass
5600	7.03	30	Pass
5700	6.17	30	Pass

802.11n(HT20) mode			
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Result
5180	6.78	36	Pass
5200	6.57	36	Pass
5240	6.39	36	Pass
5260	6.45	30	Pass
5300	5.76	30	Pass
5320	5.44	30	Pass
5500	4.93	30	Pass
5600	5.89	30	Pass
5700	5.25	30	Pass

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6.5 26dB Emission Bandwidth and 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15 Section 15.407(a)
Test Method:	ANSI C63.10: 2013
Test Setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by two vertical legs. Below the table is a Ground Reference Plane.</p>
Instruments Used:	Refer to section 5.10 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCS0 of rate is the worst case of 802.11n(HT20) Only the worst case is recorded in the report.
Limit:	No restriction limits
Test Results:	Pass



Measurement Data:

802.11a mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5180	19.54	16.38
5200	22.32	16.41
5240	20.72	16.41
5260	19.86	16.41
5300	19.22	16.38
5320	18.90	16.38
5500	18.59	16.35
5600	18.59	16.35
5700	18.51	16.35

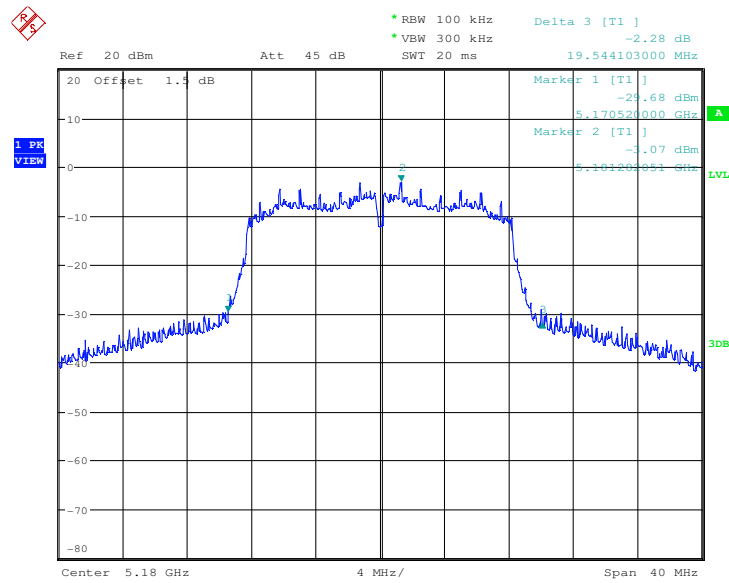
802.11n(HT20) mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5180	19.14	17.52
5200	18.97	17.52
5240	18.97	17.52
5260	18.97	17.52
5300	18.93	17.52
5320	18.90	17.52
5500	18.92	17.49
5600	18.92	17.49
5700	18.90	17.49



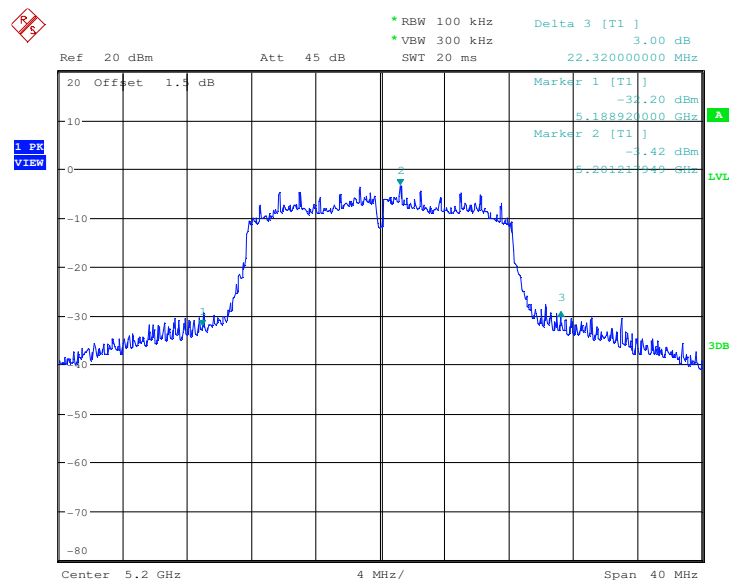
26dB Emission Bandwidth

Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5180
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Test mode:	802.11a	Frequency(MHz):	5200
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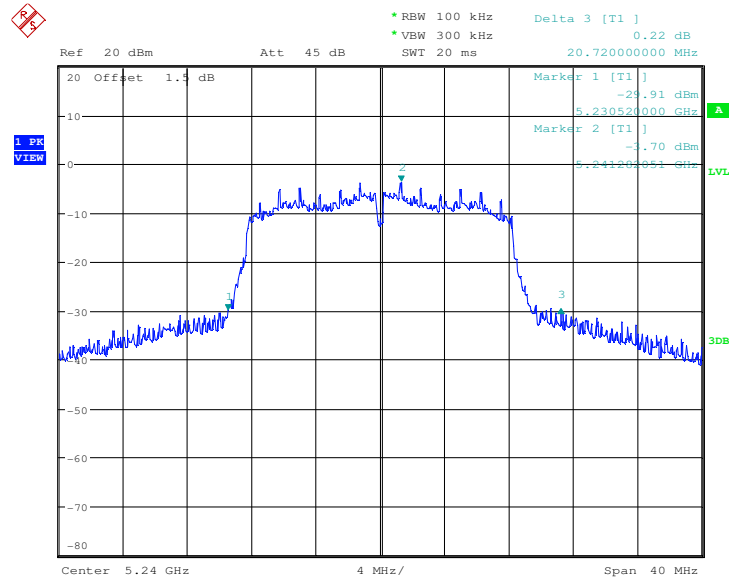


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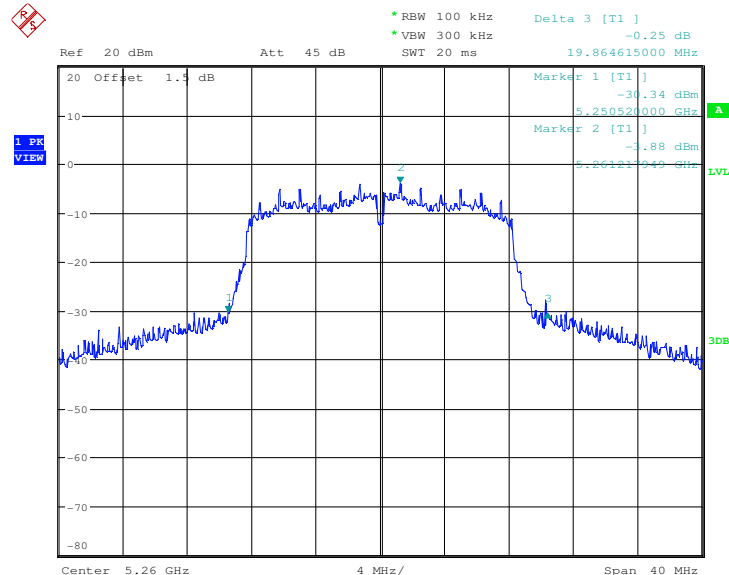
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Test mode:	802.11a	Frequency(MHz):	5240
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Test mode:	802.11a	Frequency(MHz):	5260
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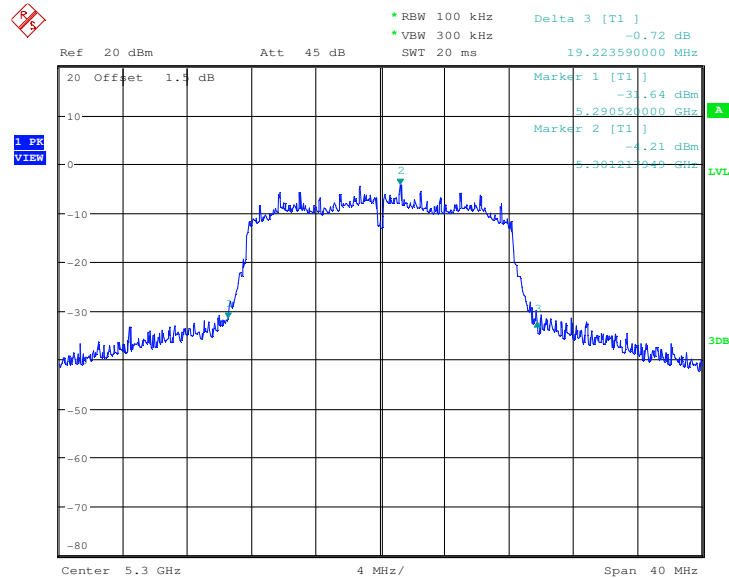


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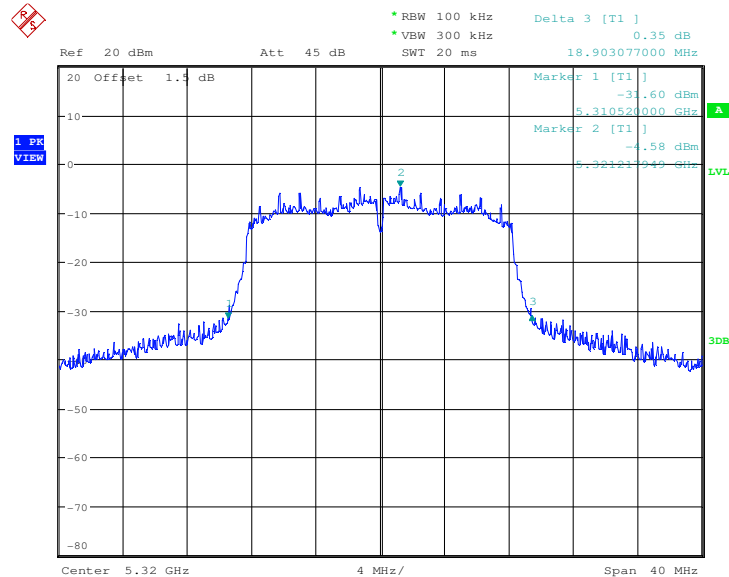
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Test mode:	802.11a	Frequency(MHz):	5300
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Test mode:	802.11a	Frequency(MHz):	5320
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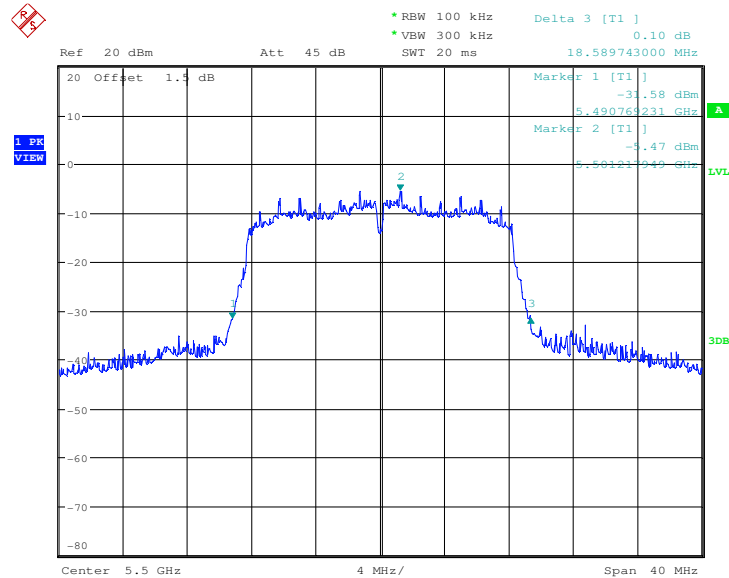


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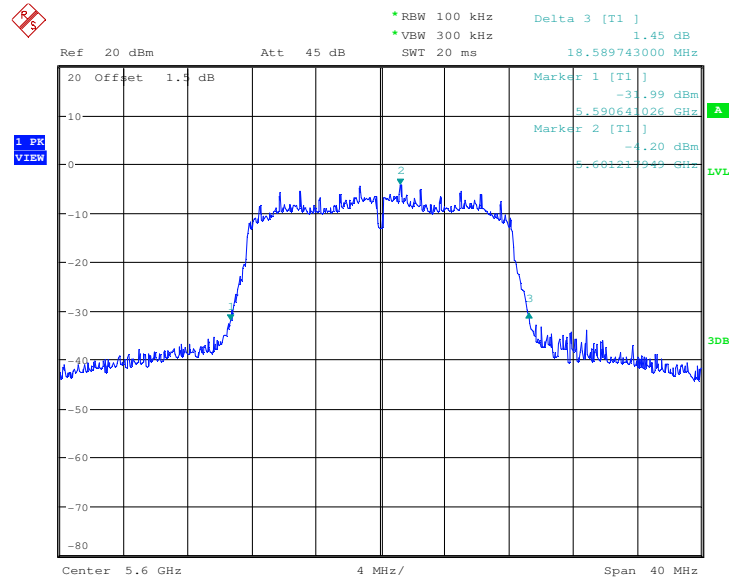
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Test mode:	802.11a	Frequency(MHz):	5500
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Test mode:	802.11a	Frequency(MHz):	5600
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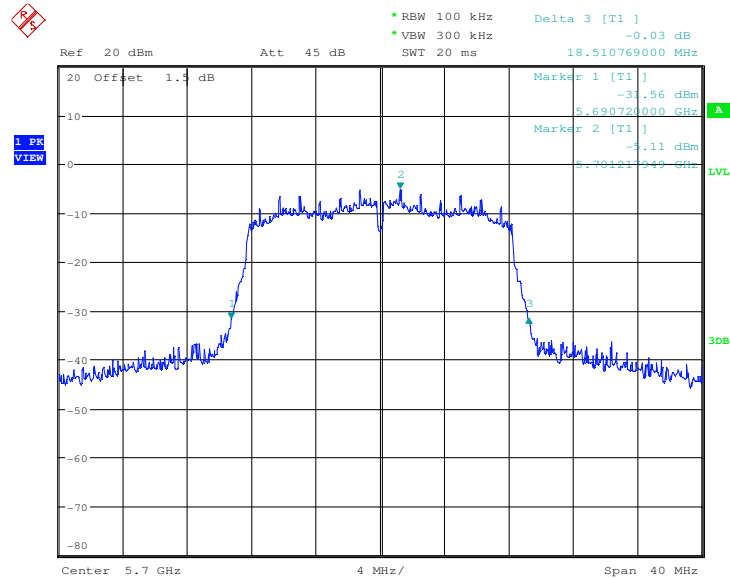


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Test mode:	802.11a	Frequency(MHz):	5700
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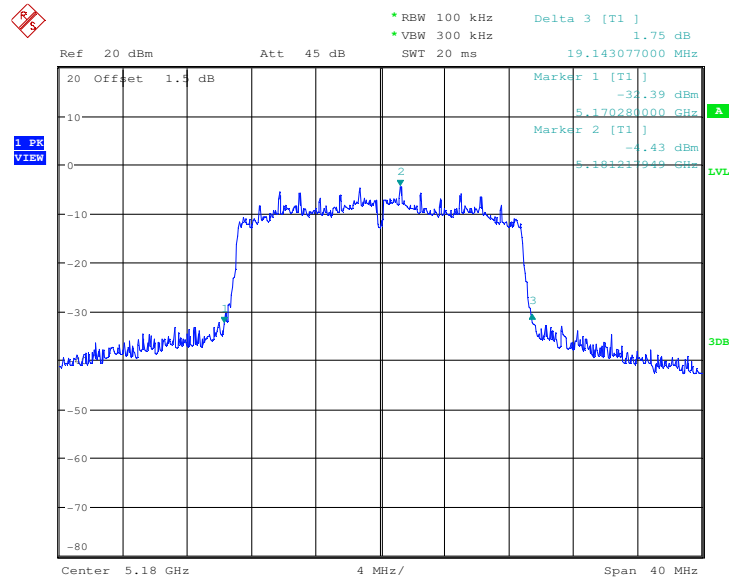


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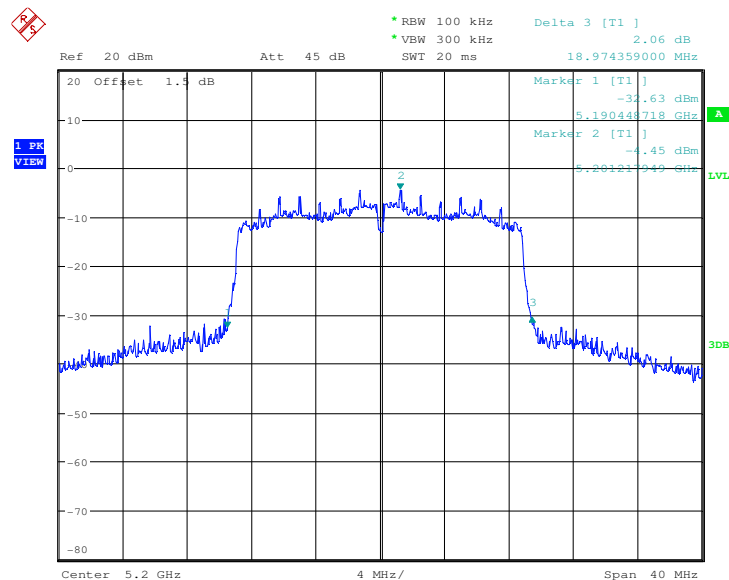
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Test mode:	802.11n(HT20)	Frequency(MHz):	5180
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Test mode:	802.11n(HT20)	Frequency(MHz):	5200
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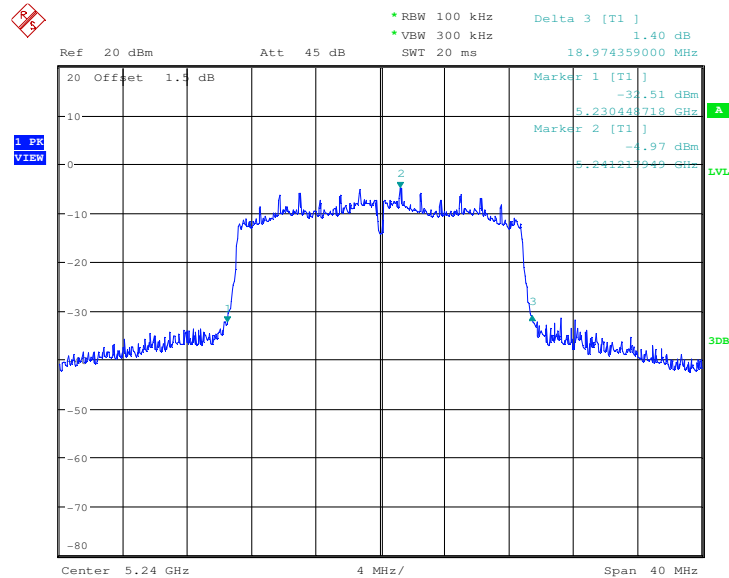


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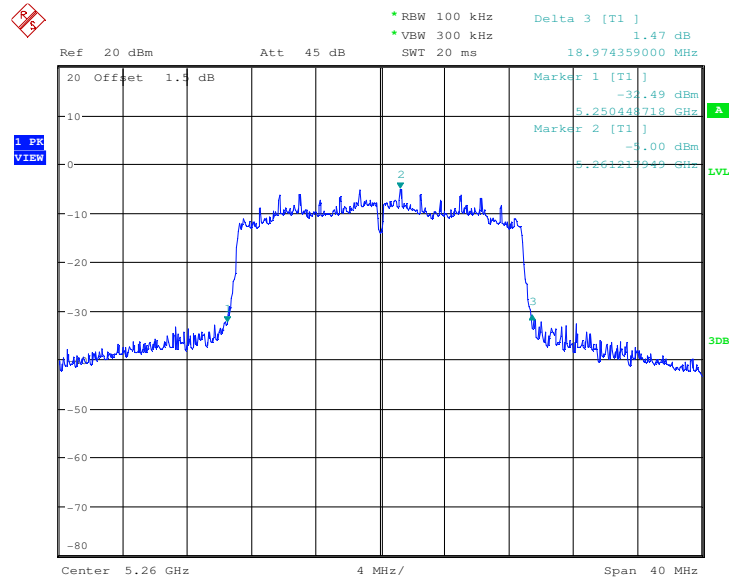
Report No.: SZEM160400205405

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Test mode:	802.11n(HT20)	Frequency(MHz):	5240
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Test mode:	802.11n(HT20)	Frequency(MHz):	5260
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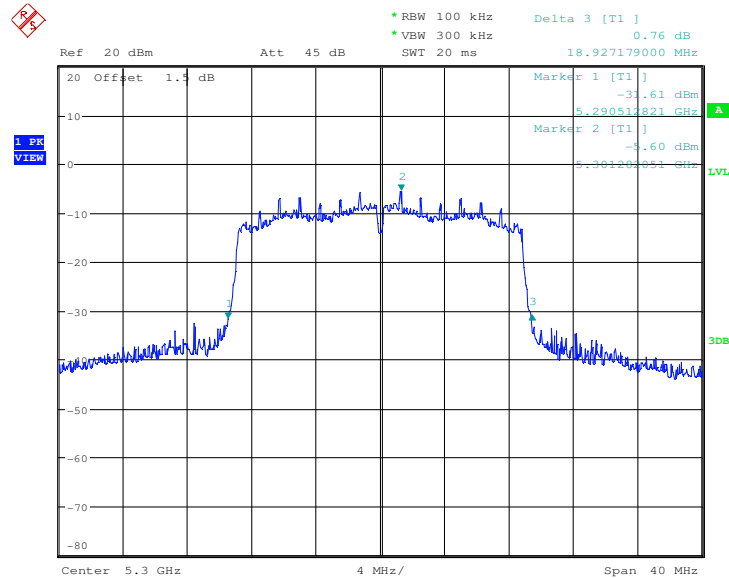


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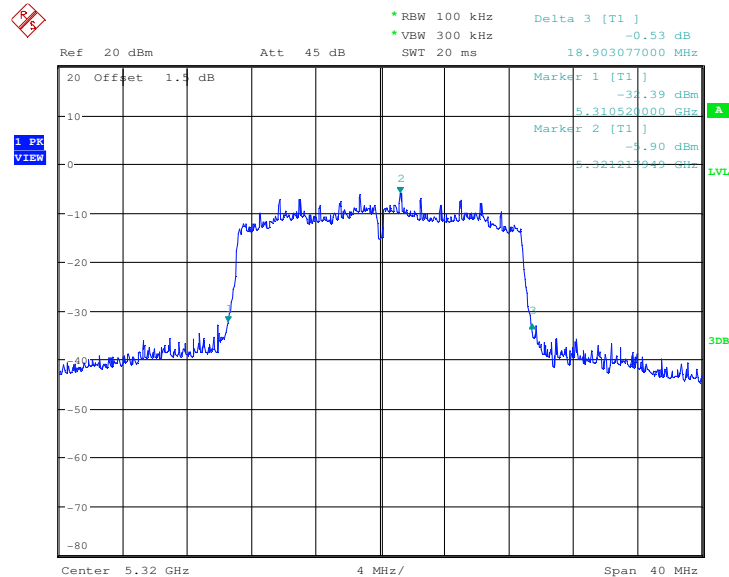
Report No.: SZEM160400205405

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Test mode:	802.11n(HT20)	Frequency(MHz):	5300
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Test mode:	802.11n(HT20)	Frequency(MHz):	5320
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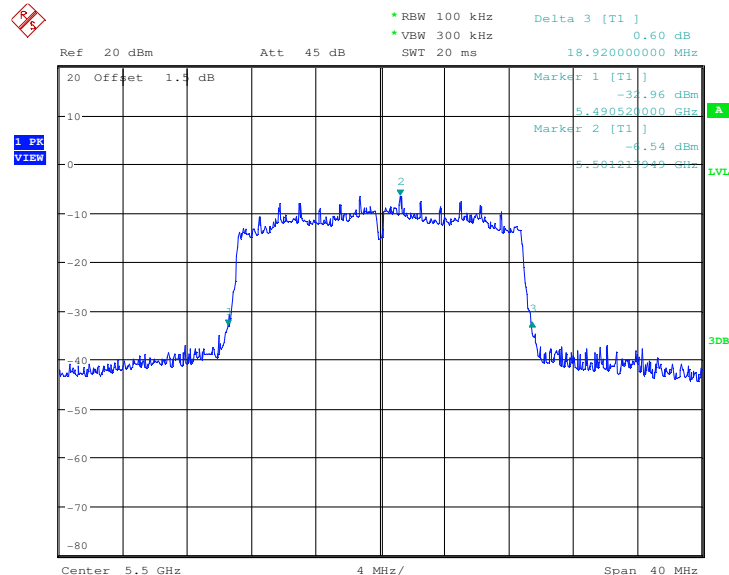


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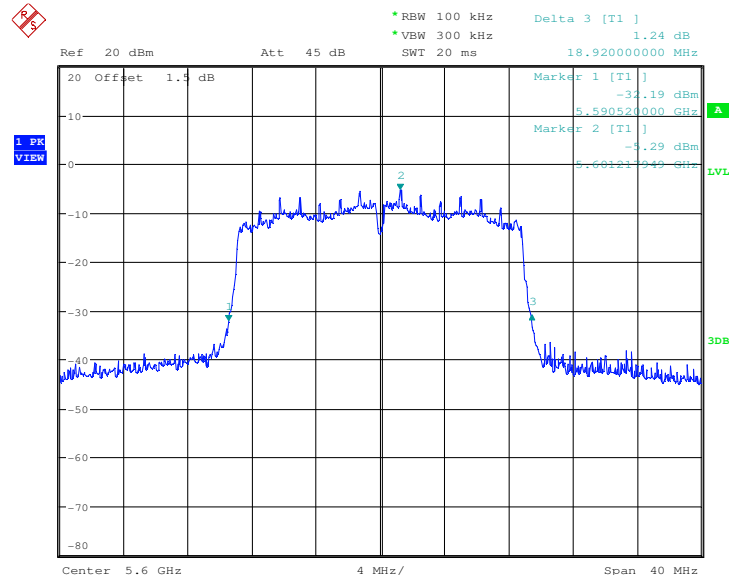
Report No.: SZEM160400205405

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Test mode:	802.11n(HT20)	Frequency(MHz):	5500
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Test mode:	802.11n(HT20)	Frequency(MHz):	5600
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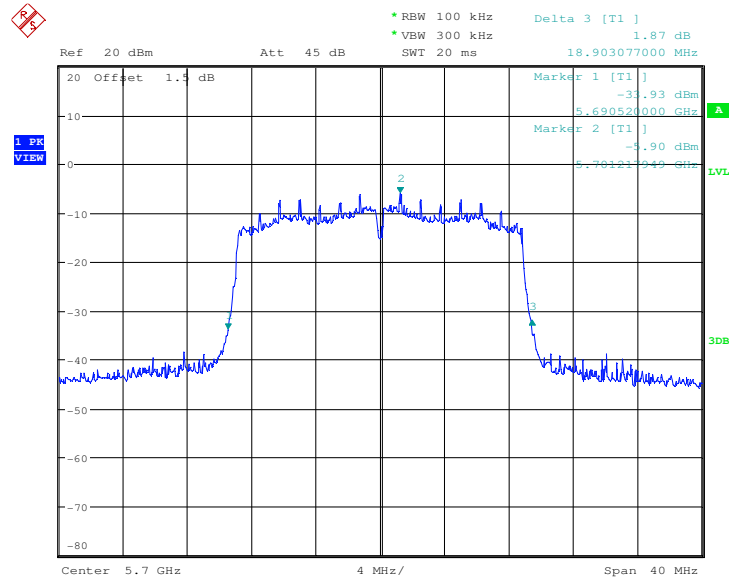


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Test mode:	802.11n(HT20)	Frequency(MHz):	5700
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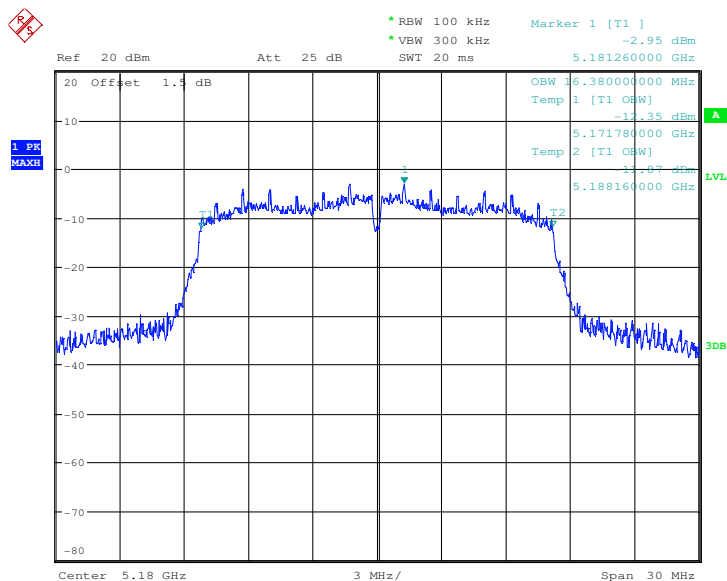
Report No.: SZEM160400205405

Page: 39 of 109

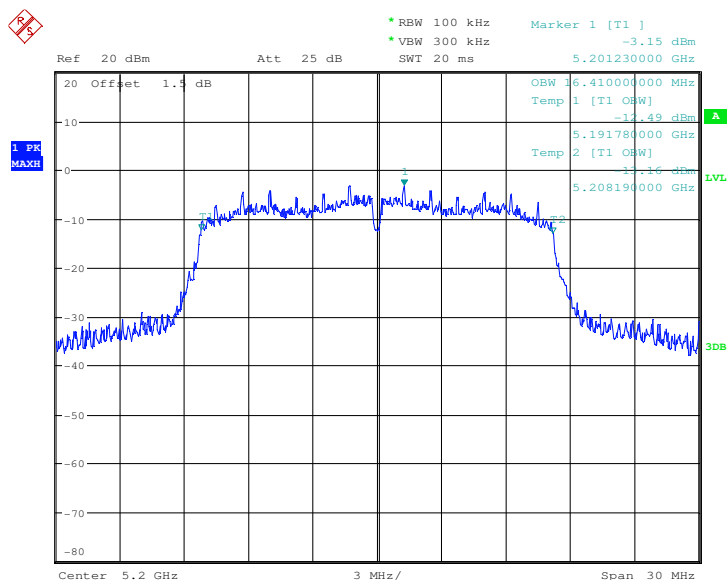
99% occupied bandwidth

Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5180
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Test mode:	802.11a	Frequency(MHz):	5200
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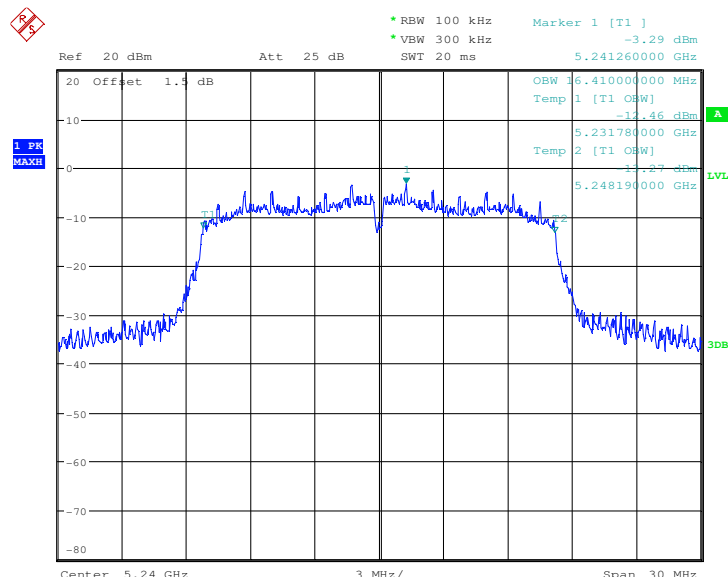


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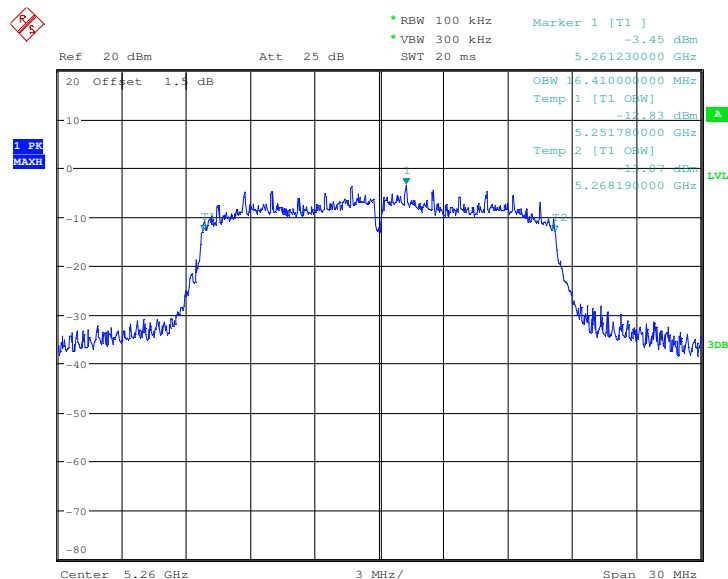
Report No.: SZEM160400205405

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Test mode:	802.11a	Frequency(MHz):	5240
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Test mode:	802.11a	Frequency(MHz):	5260
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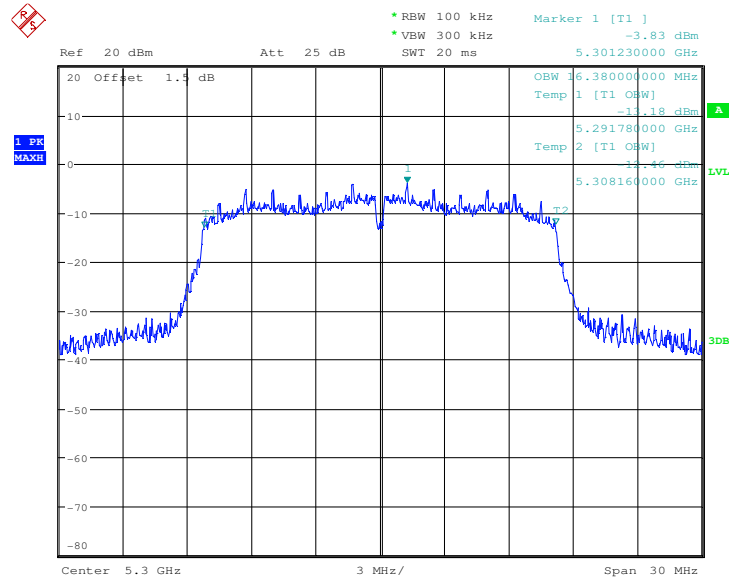


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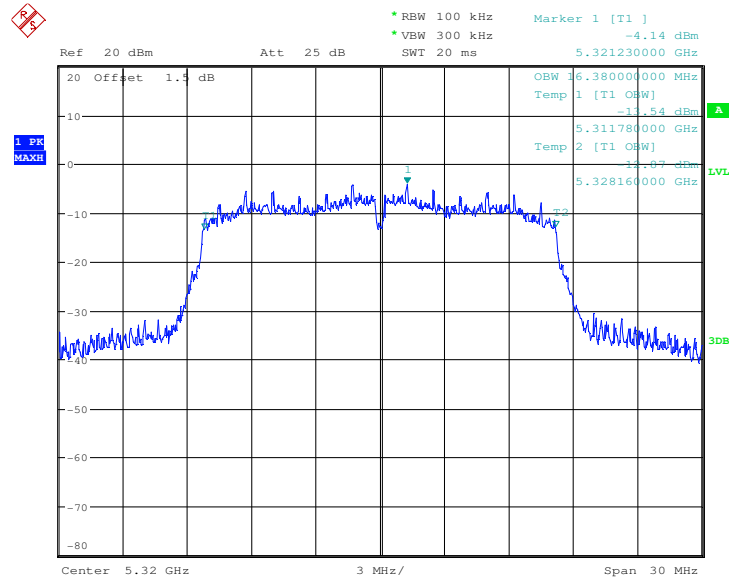
Report No.: SZEM160400205405

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Test mode:	802.11a	Frequency(MHz):	5300
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Test mode:	802.11a	Frequency(MHz):	5320
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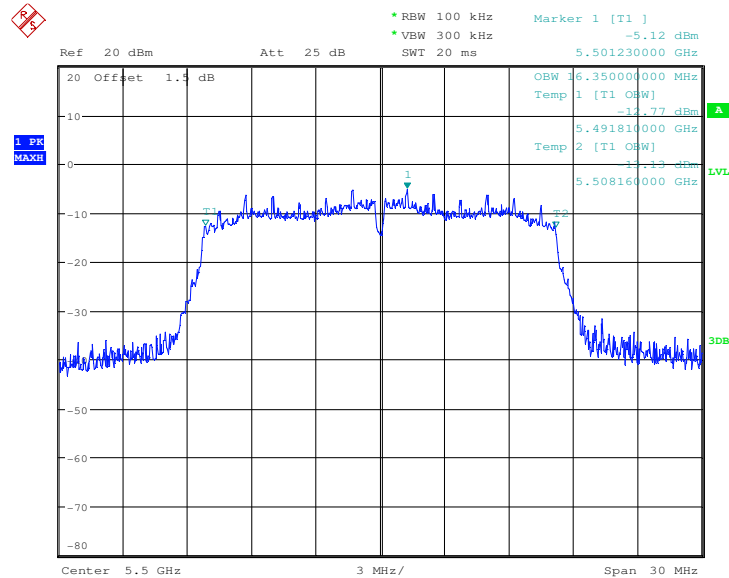


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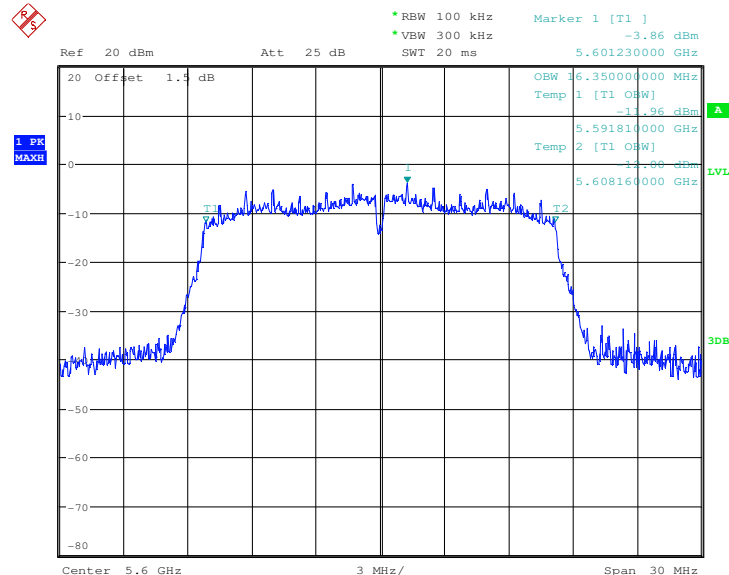
Report No.: SZEM160400205405

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Test mode:	802.11a	Frequency(MHz):	5500
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Test mode:	802.11a	Frequency(MHz):	5600
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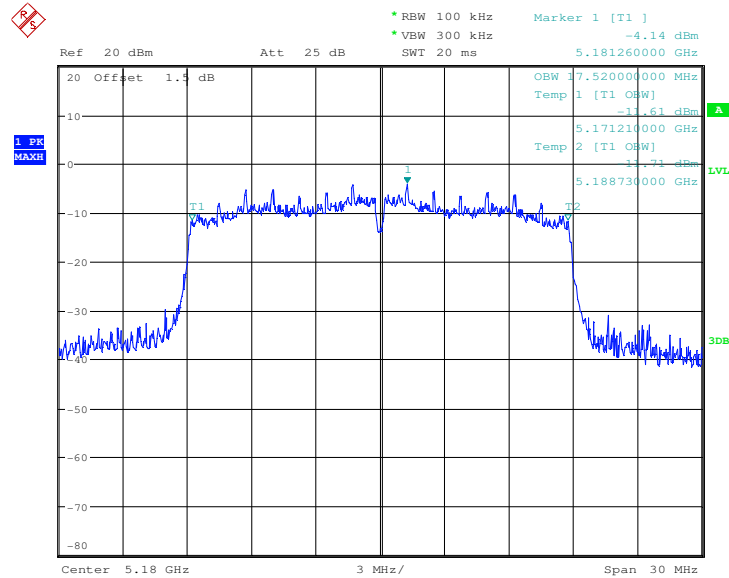


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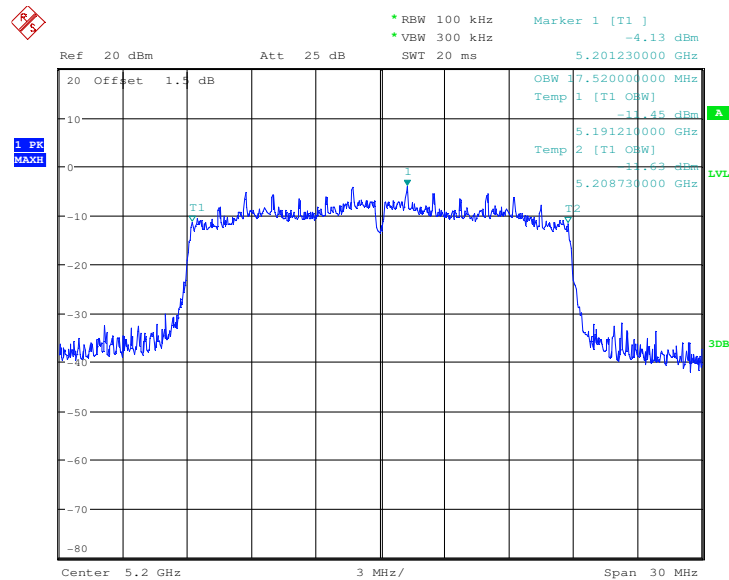
Report No.: SZEM160400205405

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Test mode:	802.11n(HT20)	Frequency(MHz):	5180
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Test mode:	802.11n(HT20)	Frequency(MHz):	5200
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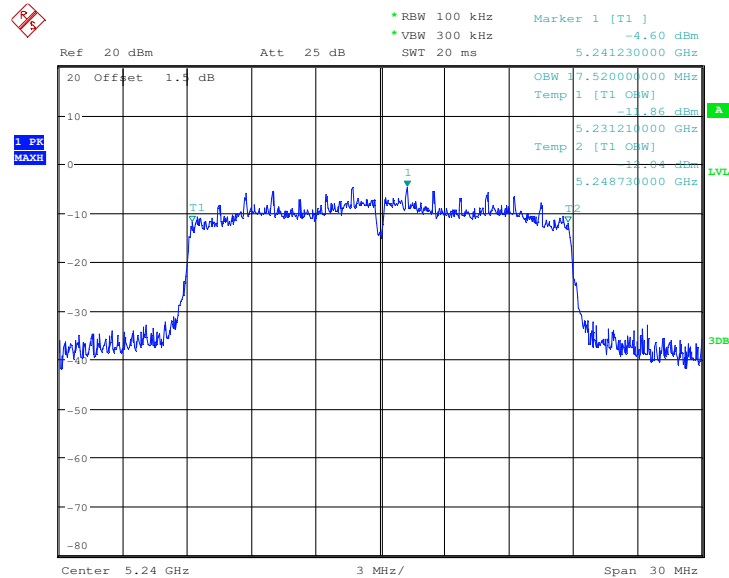


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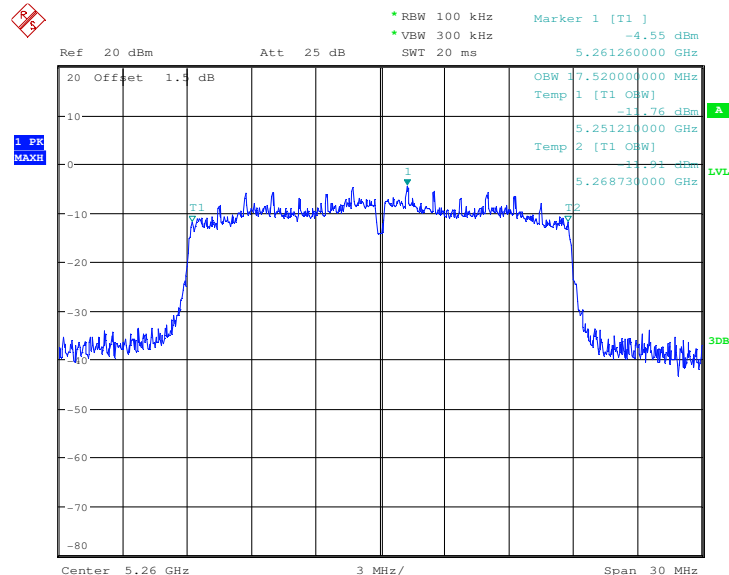
Report No.: SZEM160400205405

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Test mode:	802.11n(HT20)	Frequency(MHz):	5240
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Test mode:	802.11n(HT20)	Frequency(MHz):	5260
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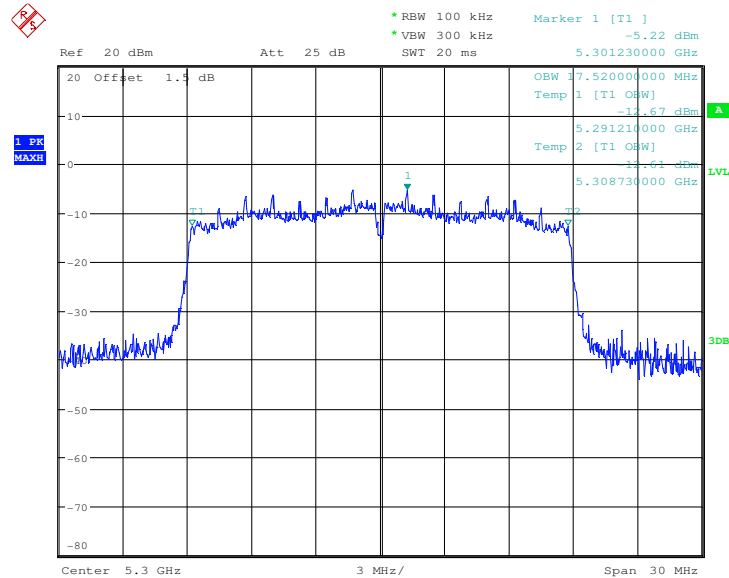


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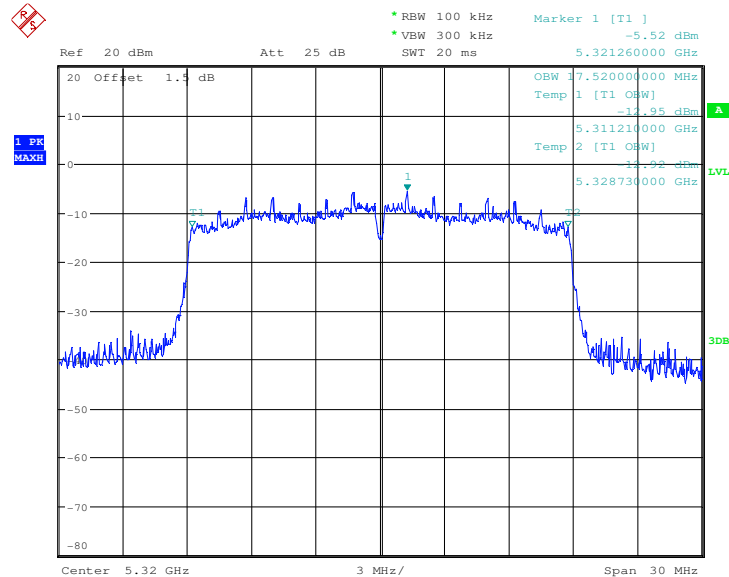
Report No.: SZEM160400205405

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Test mode:	802.11n(HT20)	Frequency(MHz):	5300
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Test mode:	802.11n(HT20)	Frequency(MHz):	5320
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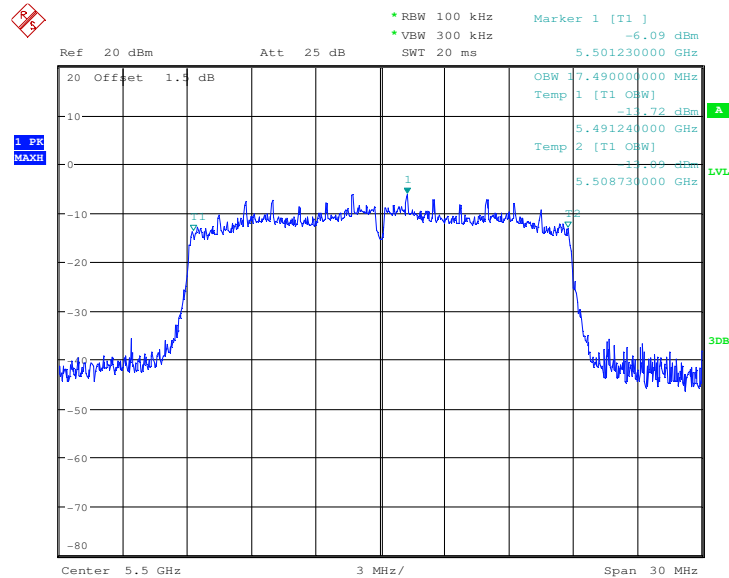


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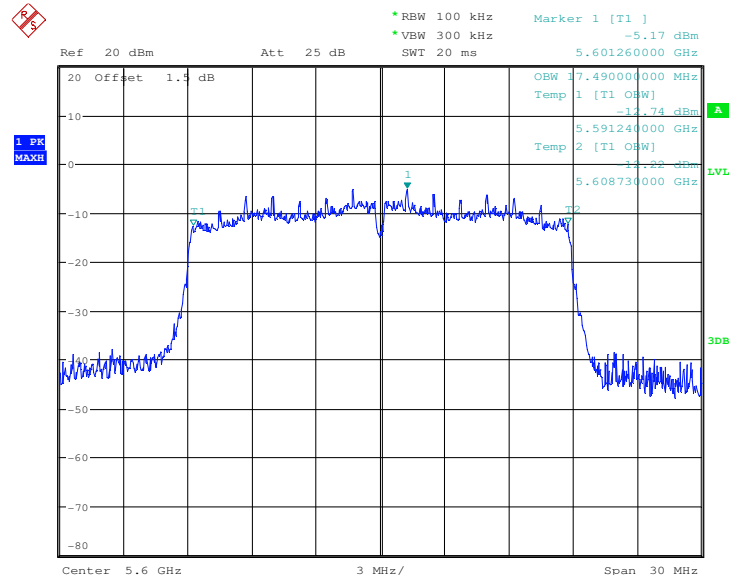
Report No.: SZEM160400205405

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Test mode:	802.11n(HT20)	Frequency(MHz):	5500
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Test mode:	802.11n(HT20)	Frequency(MHz):	5600
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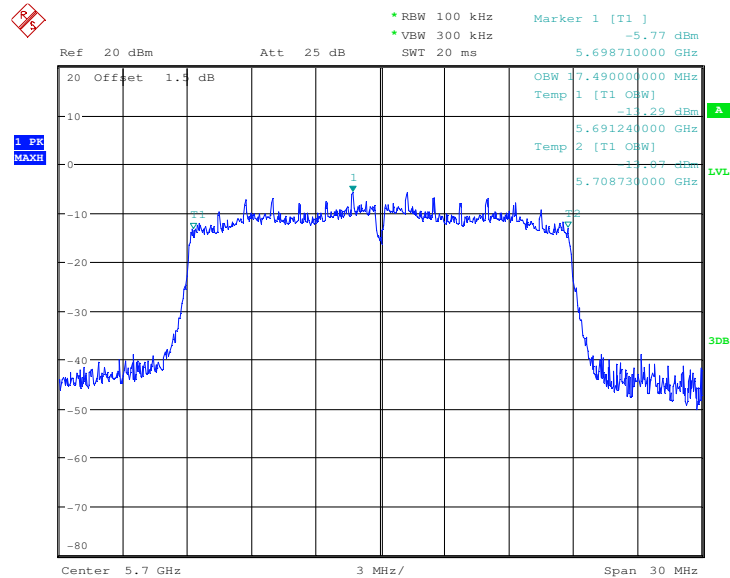


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Report No.: SZEM160400205405

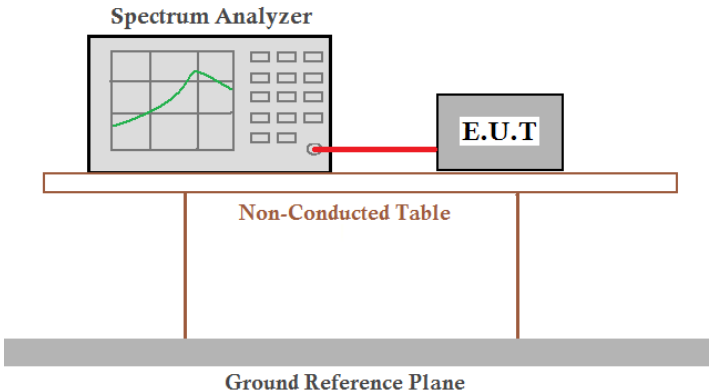
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Test mode:	802.11n(HT20)	Frequency(MHz):	5700
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6.6 Power Spectral Density

Test Requirement:	47 CFR Part 15 Section 15.407(a)	
Test Method:	ANSI C63.10: 2013	
Test Setup:	 <p><i>Remark:</i> Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</p>	
Test Procedure:	Refer to ANSI C63.10 Section 12.5	
Test Instruments:	Refer to section 5.10 for details	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates	
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCS0 of rate is the worst case of 802.11n(HT20); Only the worst case is recorded in the report.	
Limit:	Frequency Band	Limit
	5150-5250MHz	The power spectral density less than 11dBm/1MHz
	5250-5350MHz	The power spectral density less than 11dBm/1MHz
	5470-5725MHz	The power spectral density less than 11dBm/1MHz
	5725-5850MHz	The power spectral density less than 30dBm/500kHz
Test Results:	Pass	



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Measurement Data:

802.11a mode			
Frequency (MHz)	Power Spectral Density	Limit	Result
5180	-1.85	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5200	-1.89	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5240	-2.25	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5260	-2.38	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5300	-2.89	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5320	-2.98	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5500	-4.00	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5600	-2.83	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5700	-3.51	$\leq 11\text{dBm}/1\text{MHz}$	Pass

802.11n(HT20) mode			
Frequency (MHz)	Power Spectral Density	Limit	Result
5180	-3.23	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5200	-3.30	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5240	-3.67	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5260	-3.51	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5300	-4.33	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5320	-4.60	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5500	-5.17	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5600	-4.00	$\leq 11\text{dBm}/1\text{MHz}$	Pass
5700	-4.76	$\leq 11\text{dBm}/1\text{MHz}$	Pass

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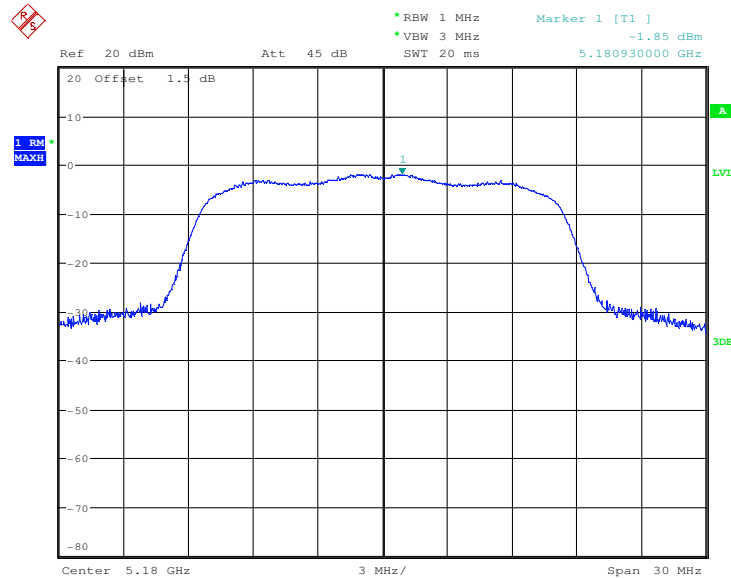
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Report No.: SZEM160400205405

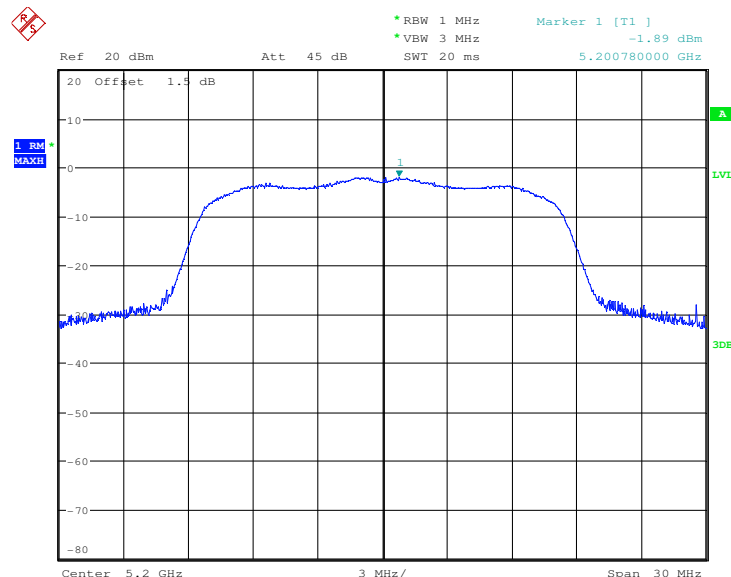
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Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5180
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Test mode:	802.11a	Frequency(MHz):	5200
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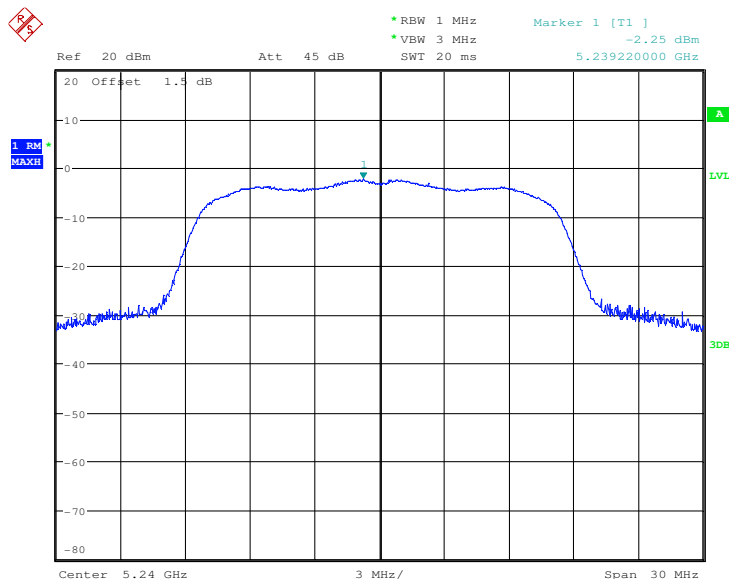


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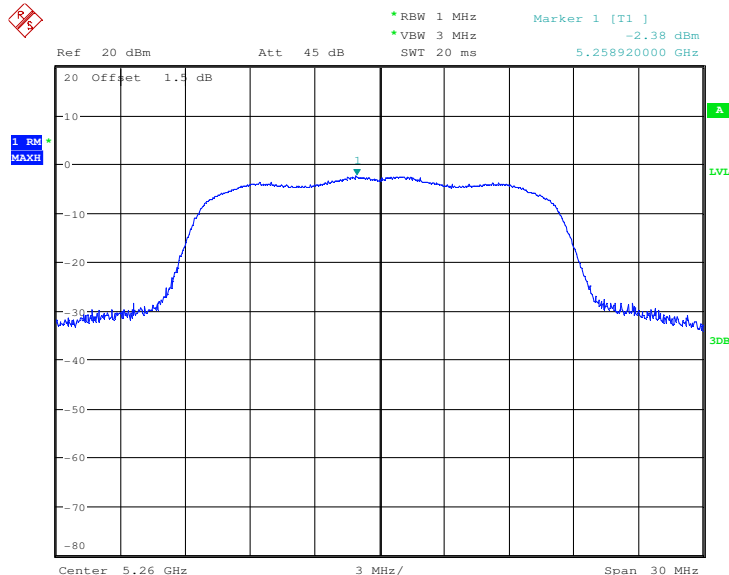
Report No.: SZEM160400205405

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Test mode:	802.11a	Frequency(MHz):	5240
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Test mode:	802.11a	Frequency(MHz):	5260
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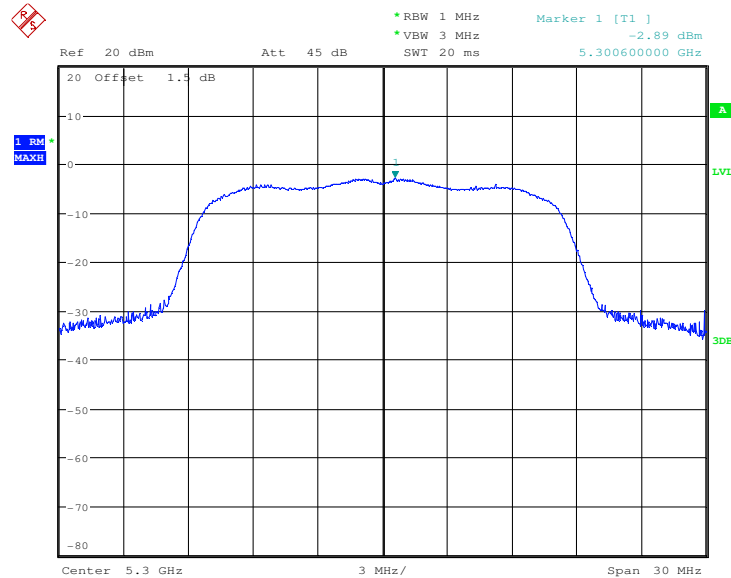


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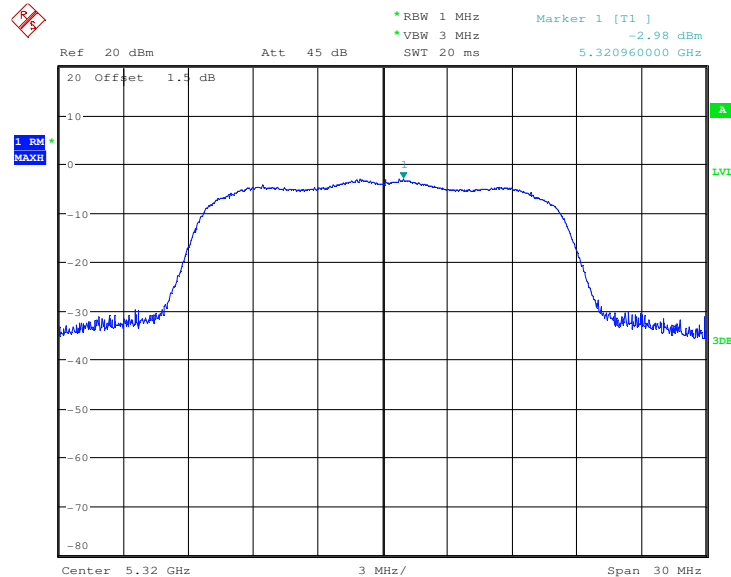
Report No.: SZEM160400205405

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Test mode:	802.11a	Frequency(MHz):	5300
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Test mode:	802.11a	Frequency(MHz):	5320
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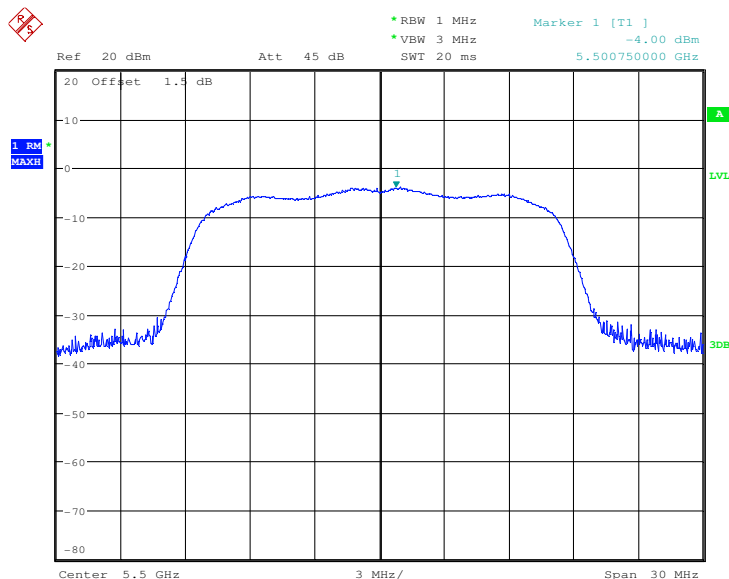


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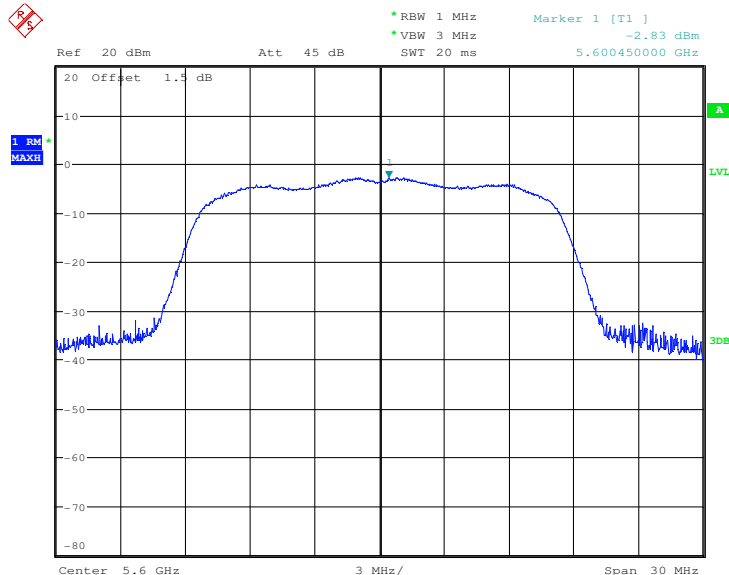
Report No.: SZEM160400205405

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Test mode:	802.11a	Frequency(MHz):	5500
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Test mode:	802.11a	Frequency(MHz):	5600
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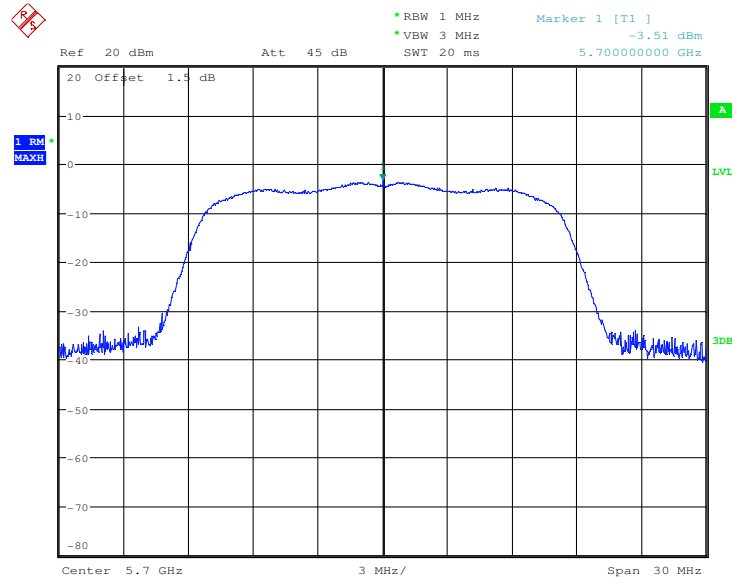


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Test mode:	802.11a	Frequency(MHz):	5700
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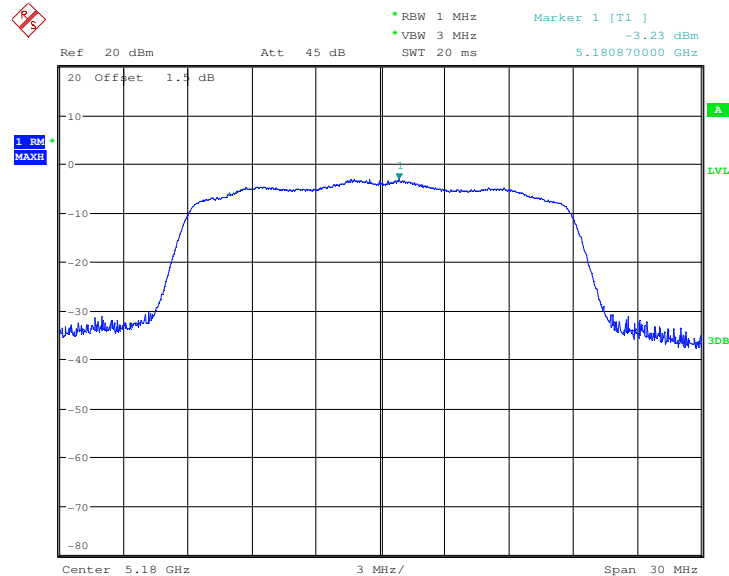


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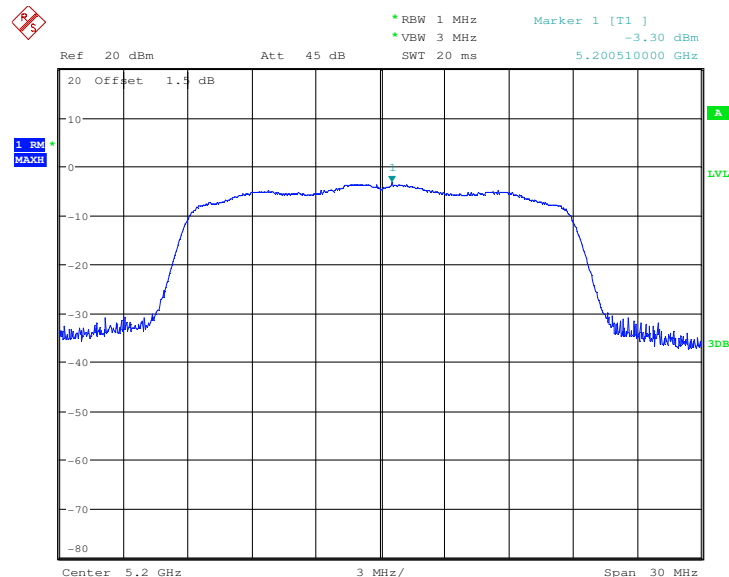
Report No.: SZEM160400205405

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Test mode:	802.11n(HT20)	Frequency(MHz):	5180
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Test mode:	802.11n(HT20)	Frequency(MHz):	5200
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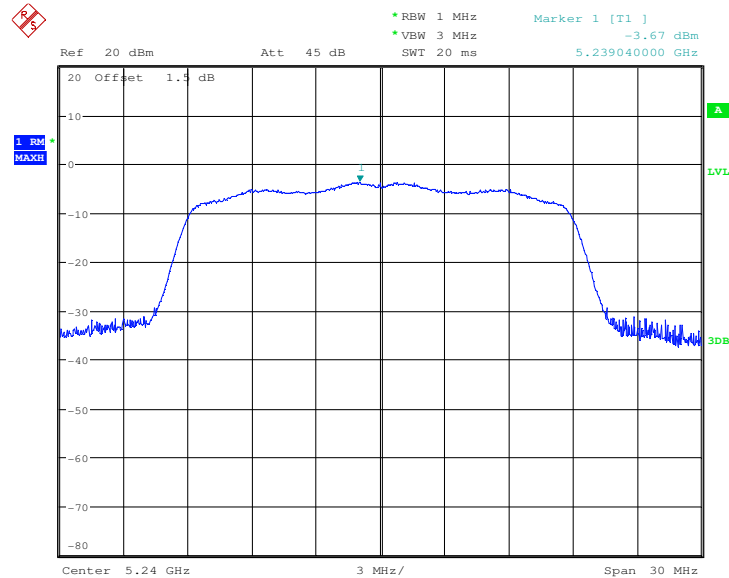


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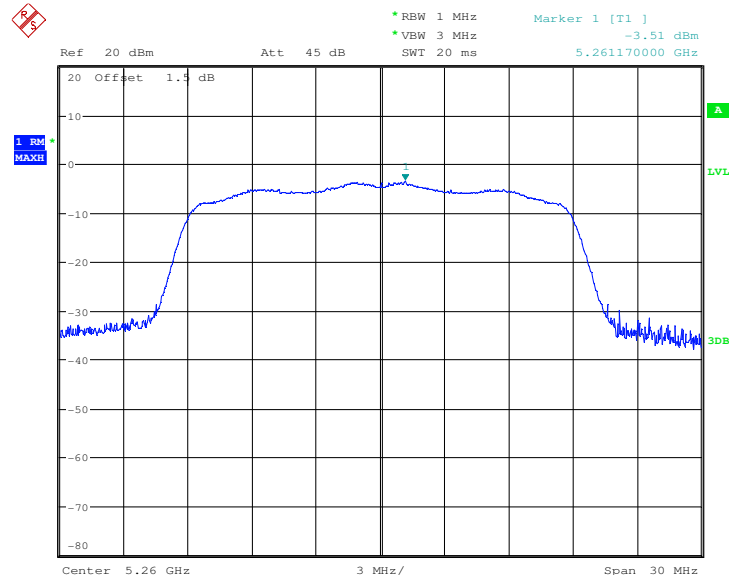
Report No.: SZEM160400205405

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Test mode:	802.11n(HT20)	Frequency(MHz):	5240
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Test mode:	802.11n(HT20)	Frequency(MHz):	5260
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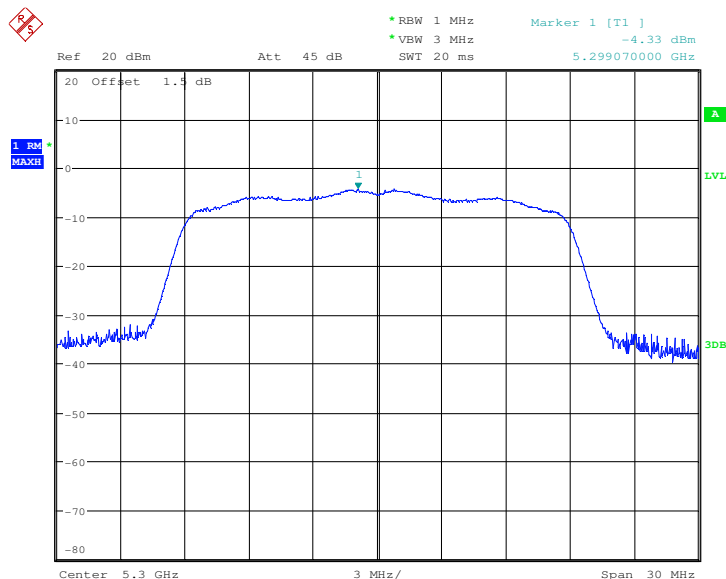


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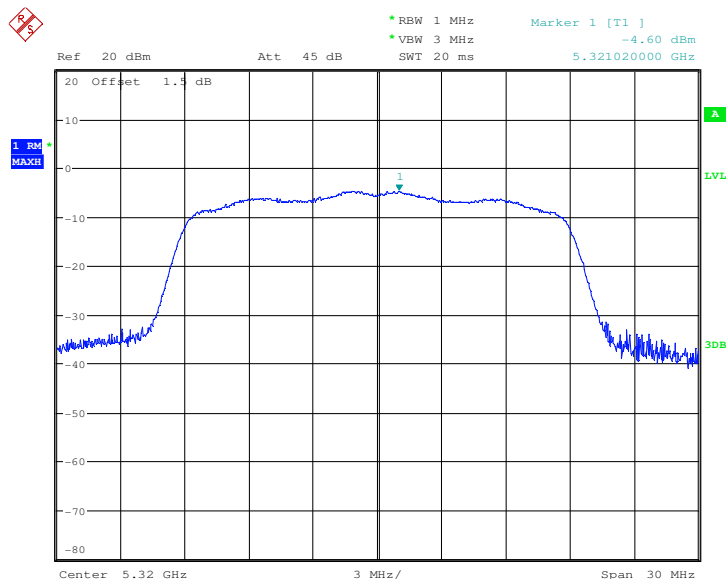
Report No.: SZEM160400205405

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Test mode:	802.11n(HT20)	Frequency(MHz):	5300
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Test mode:	802.11n(HT20)	Frequency(MHz):	5320
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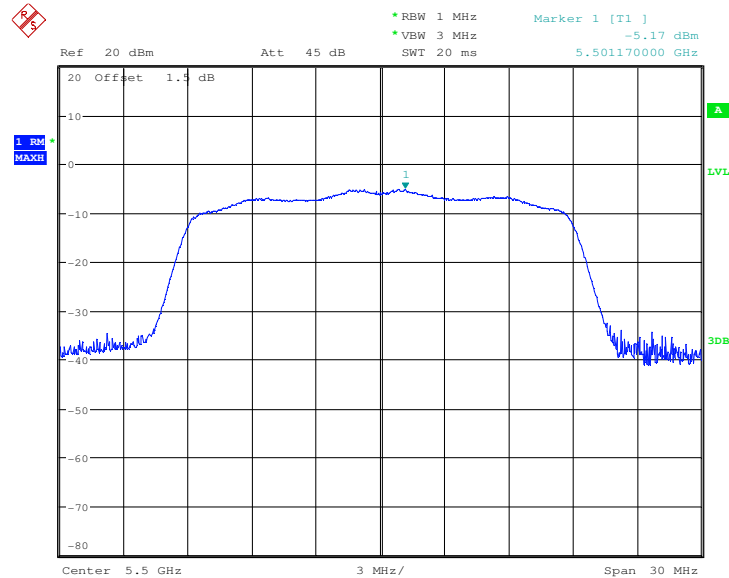


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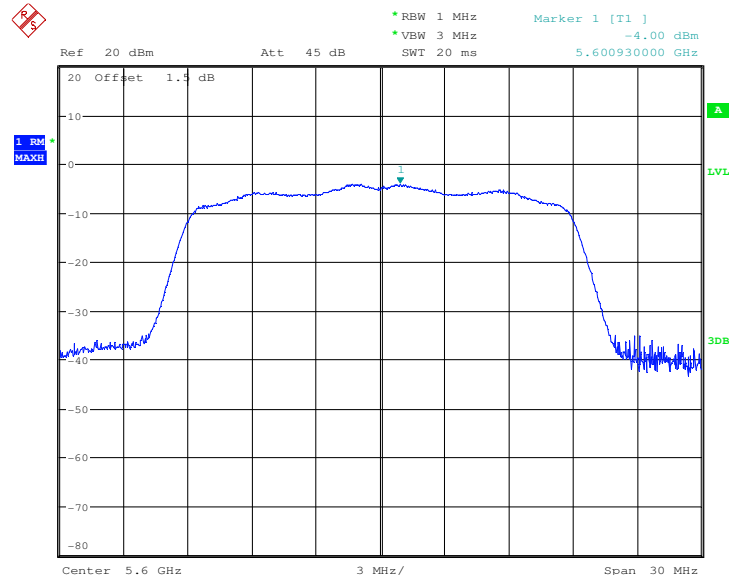
Report No.: SZEM160400205405

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Test mode:	802.11n(HT20)	Frequency(MHz):	5500
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Test mode:	802.11n(HT20)	Frequency(MHz):	5600
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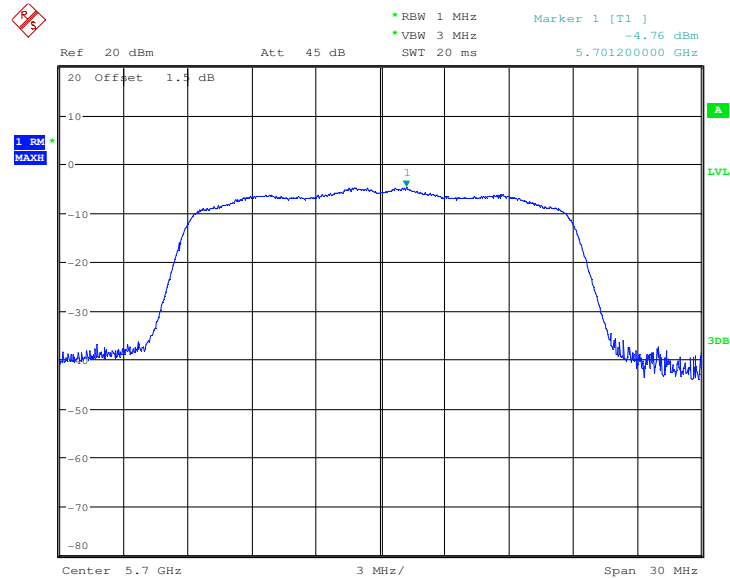


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Test mode:	802.11n(HT20)	Frequency(MHz):	5700
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6.7 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15 Section 15.407(b)
Test Method:	ANSI C63.10: 2013
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Test Setup:	

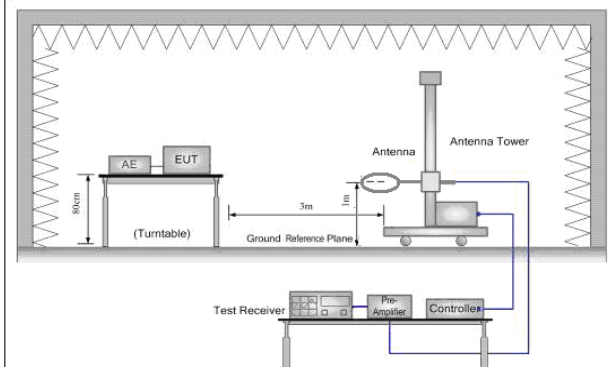


Figure 1. 30MHz to 1GHz

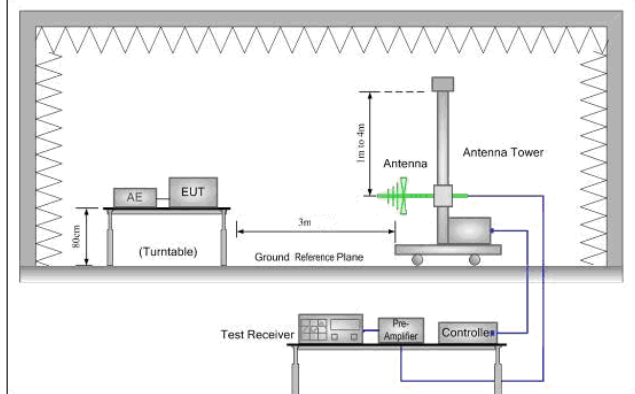


Figure 2. Above 1 GHz

Test Procedure:	<ol style="list-style-type: none"> For below 1GHz test, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. For above 1GHz test, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. Test the EUT in the outermost channels. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the Y axis positioning which it is worse case. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCS0 of rate is the worst case of 802.11n(HT20);



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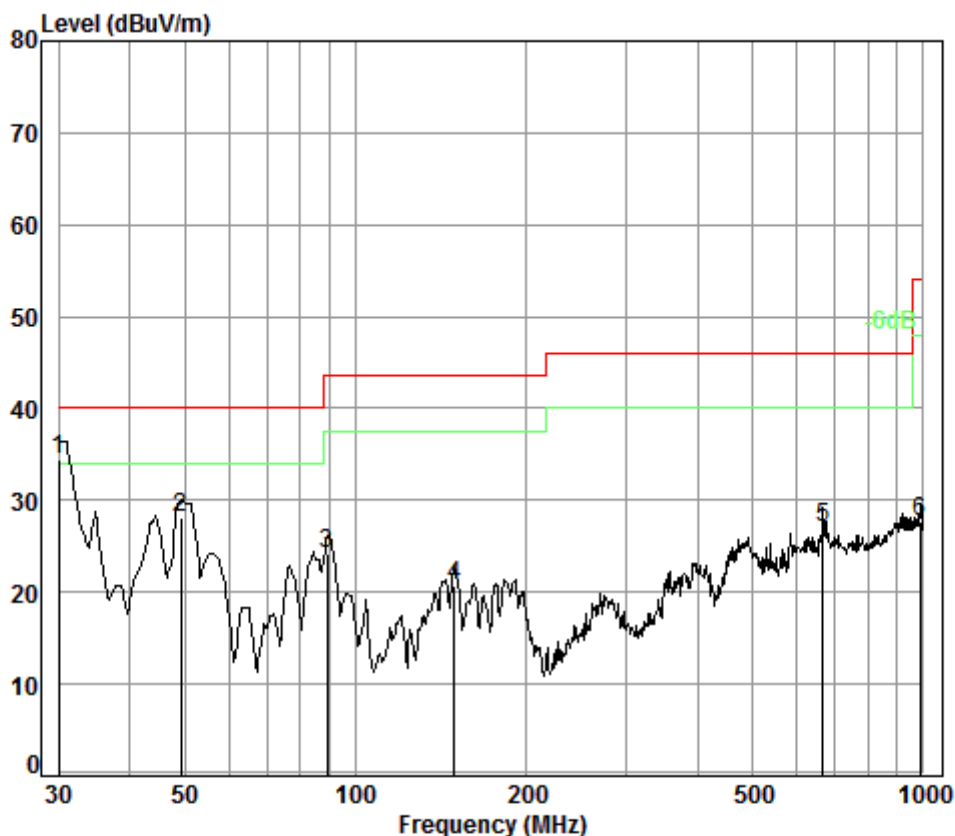
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	For below 1GHz, through Pre-scan, find the 1Mbps of rate of 802.11a at lowest channel is the worst case. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass



6.7.1 Radiated emission below 1GHz

30MHz~1GHz (QP)		
Test mode:	Transmitting mode	Vertical



Condition: 3m VERTICAL

Job No. : 2054RG

Test mode: Charge + TX

		Cable	Ant	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	30.00	0.60	19.00	26.00	40.91	34.51	40.00	-5.49
2	49.36	0.79	9.15	25.96	44.09	28.07	40.00	-11.93
3	89.28	1.10	8.73	25.91	40.25	24.17	43.50	-19.33
4	149.49	1.32	9.26	25.83	36.04	20.79	43.50	-22.71
5	665.80	2.84	20.97	25.67	28.99	27.13	46.00	-18.87
6	986.07	3.69	23.88	24.49	24.66	27.74	54.00	-26.26

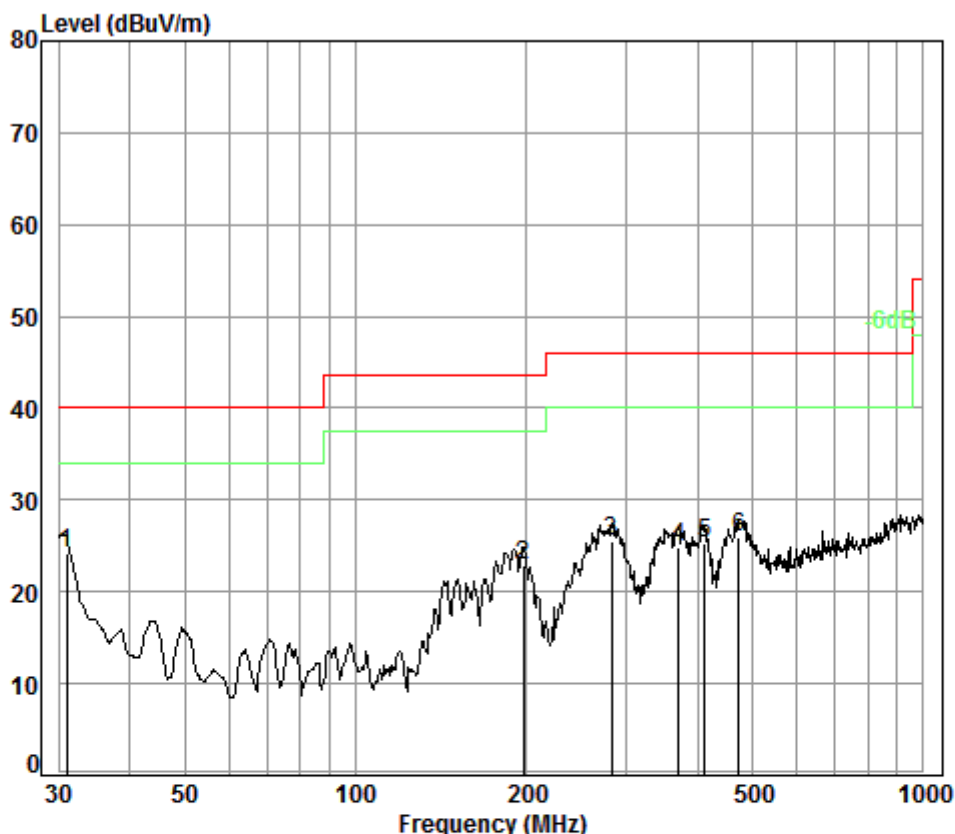


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Test mode:	Transmitting mode	Horizontal
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Condition: 3m HORIZONTAL

Job No. : 2054RG

Test mode: Charge + TX

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	30.96	0.60	18.36	26.00	31.21	24.17	40.00	-15.83
2	197.89	1.40	10.18	25.78	37.13	22.93	43.50	-20.57
3	281.99	1.82	12.96	25.71	36.34	25.41	46.00	-20.59
4	370.70	2.12	15.83	25.67	32.66	24.94	46.00	-21.06
5	411.82	2.25	16.35	25.65	32.41	25.36	46.00	-20.64
6	473.83	2.50	17.66	25.63	31.32	25.85	46.00	-20.15

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6.7.2 Transmitter emission above 1GHz

Test plot as follows:

Test mode:		802.11a		Frequency(MHz):		5180		Remark:		Peak	
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
7678.83	36.04	10.89	37.44	43.41	52.90	74.00	-21.10	Vertical			
9007.72	37.00	11.80	37.18	39.79	51.41	74.00	-22.59	Vertical			
10360.00	37.08	12.98	35.96	37.18	51.28	74.00	-22.72	Vertical			
12751.43	37.98	14.86	37.89	38.20	53.15	74.00	-20.85	Vertical			
15540.00	40.94	17.07	38.92	34.37	53.46	74.00	-20.54	Vertical			
17797.15	43.90	21.44	36.95	23.75	52.14	74.00	-21.86	Vertical			
7214.79	35.59	10.68	37.63	40.98	49.62	74.00	-24.38	Horizontal			
9007.72	37.00	11.80	37.18	40.26	51.88	74.00	-22.12	Horizontal			
10360.00	37.08	12.98	35.96	36.59	50.69	74.00	-23.31	Horizontal			
13179.99	38.28	15.60	38.40	36.20	51.68	74.00	-22.32	Horizontal			
15540.00	40.94	17.07	38.92	34.60	53.69	74.00	-20.31	Horizontal			
17864.51	44.06	21.66	36.94	24.37	53.15	74.00	-20.85	Horizontal			

Test mode:		802.11a		Frequency(MHz):		5200		Remark:		Peak	
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
7093.17	35.49	10.64	37.69	42.53	50.97	74.00	-23.03	Vertical			
8990.72	37.00	11.79	37.19	39.23	50.83	74.00	-23.17	Vertical			
10400.00	37.10	13.04	35.99	36.11	50.26	74.00	-23.74	Vertical			
13217.38	38.32	15.61	38.46	37.65	53.12	74.00	-20.88	Vertical			
15600.00	41.06	17.18	38.73	33.71	53.22	74.00	-20.78	Vertical			
17864.51	44.06	21.66	36.94	24.22	53.00	74.00	-21.00	Vertical			
7093.17	35.49	10.64	37.69	41.86	50.30	74.00	-23.70	Horizontal			
9007.72	37.00	11.80	37.18	39.70	51.32	74.00	-22.68	Horizontal			
10400.00	37.10	13.04	35.99	37.44	51.59	74.00	-22.41	Horizontal			
13217.38	38.32	15.61	38.46	37.18	52.65	74.00	-21.35	Horizontal			
15600.00	41.06	17.18	38.73	34.04	53.55	74.00	-20.45	Horizontal			
17864.51	44.06	21.66	36.94	24.04	52.82	74.00	-21.18	Horizontal			



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Test mode:		802.11a		Frequency(MHz):		5240	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7093.17	35.49	10.64	37.69	42.76	51.20	74.00	-22.80	Vertical	
9007.72	37.00	11.80	37.18	38.86	50.48	74.00	-23.52	Vertical	
10480.00	37.10	13.07	36.00	34.20	48.37	74.00	-25.63	Vertical	
12751.43	37.98	14.86	37.89	37.71	52.66	74.00	-21.34	Vertical	
15720.00	41.12	17.24	38.63	33.84	53.57	74.00	-20.43	Vertical	
17864.51	44.06	21.66	36.94	23.74	52.52	74.00	-21.48	Vertical	
7678.83	36.04	10.89	37.44	41.95	51.44	74.00	-22.56	Horizontal	
8990.72	37.00	11.79	37.19	38.74	50.34	74.00	-23.66	Horizontal	
10480.00	37.10	13.07	36.00	34.41	48.58	74.00	-25.42	Horizontal	
13217.38	38.32	15.61	38.46	36.45	51.92	74.00	-22.08	Horizontal	
15720.00	41.12	17.24	38.63	33.83	53.56	74.00	-20.44	Horizontal	
17932.13	44.23	21.89	36.93	23.22	52.41	74.00	-21.59	Horizontal	

Test mode:		802.11a		Frequency(MHz):		5260	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7093.17	35.49	10.64	37.69	41.60	50.04	74.00	-23.96	Vertical	
8990.72	37.00	11.79	37.19	39.02	50.62	74.00	-23.38	Vertical	
10520.00	37.10	13.10	36.02	33.82	48.00	74.00	-26.00	Vertical	
12775.54	37.99	14.93	37.91	36.72	51.73	74.00	-22.27	Vertical	
15780.00	41.18	17.29	38.54	32.99	52.92	74.00	-21.08	Vertical	
17797.15	43.90	21.44	36.95	24.25	52.64	74.00	-21.36	Vertical	
7678.83	36.04	10.89	37.44	41.78	51.27	74.00	-22.73	Horizontal	
9007.72	37.00	11.80	37.18	38.82	50.44	74.00	-23.56	Horizontal	
10520.00	37.10	13.10	36.02	34.83	49.01	74.00	-24.99	Horizontal	
12751.43	37.98	14.86	37.89	36.14	51.09	74.00	-22.91	Horizontal	
15780.00	41.18	17.29	38.54	32.77	52.70	74.00	-21.30	Horizontal	
17730.04	43.83	21.21	36.96	25.21	53.29	74.00	-20.71	Horizontal	

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Test mode:		802.11a		Frequency(MHz):		5300		Remark:	Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7093.17	35.49	10.64	37.69	42.54	50.98	74.00	-23.02	Vertical	
9007.72	37.00	11.80	37.18	39.45	51.07	74.00	-22.93	Vertical	
10600.00	37.10	13.16	36.04	33.42	47.64	74.00	-26.36	Vertical	
12751.43	37.98	14.86	37.89	37.20	52.15	74.00	-21.85	Vertical	
15900.00	41.25	17.41	38.35	31.85	52.16	74.00	-21.84	Vertical	
17830.80	43.98	21.55	36.94	24.90	53.49	74.00	-20.51	Vertical	
7664.34	36.03	10.88	37.44	42.78	52.25	74.00	-21.75	Horizontal	
9007.72	37.00	11.80	37.18	38.88	50.50	74.00	-23.50	Horizontal	
10600.00	37.10	13.16	36.04	33.73	47.95	74.00	-26.05	Horizontal	
13217.38	38.32	15.61	38.46	35.81	51.28	74.00	-22.72	Horizontal	
15900.00	41.25	17.41	38.35	31.73	52.04	74.00	-21.96	Horizontal	
17797.15	43.90	21.44	36.95	24.53	52.92	74.00	-21.08	Horizontal	

Test mode:		802.11a		Frequency(MHz):		5320		Remark:	Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7120.02	35.52	10.65	37.68	41.98	50.47	74.00	-23.53	Vertical	
9007.72	37.00	11.80	37.18	38.71	50.33	74.00	-23.67	Vertical	
10640.00	37.12	13.19	36.06	34.44	48.69	74.00	-25.31	Vertical	
12763.48	37.98	14.89	37.90	36.63	51.60	74.00	-22.40	Vertical	
15960.00	41.28	17.46	38.26	32.32	52.80	74.00	-21.20	Vertical	
17797.15	43.90	21.44	36.95	24.76	53.15	74.00	-20.85	Vertical	
7678.83	36.04	10.89	37.44	41.48	50.97	74.00	-23.03	Horizontal	
9007.72	37.00	11.80	37.18	38.51	50.13	74.00	-23.87	Horizontal	
10640.00	37.12	13.19	36.06	34.63	48.88	74.00	-25.12	Horizontal	
13217.38	38.32	15.61	38.46	36.36	51.83	74.00	-22.17	Horizontal	
15960.00	41.28	17.46	38.26	31.70	52.18	74.00	-21.82	Horizontal	
17730.04	43.83	21.21	36.96	25.38	53.46	74.00	-20.54	Horizontal	

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Test mode:		802.11a		Frequency(MHz):		5500	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7106.58	35.51	10.64	37.68	42.47	50.94	74.00	-23.06	Vertical	
9007.72	37.00	11.80	37.18	39.59	51.21	74.00	-22.79	Vertical	
11000.00	37.30	13.45	36.18	33.23	47.80	74.00	-26.20	Vertical	
12751.43	37.98	14.86	37.89	37.65	52.60	74.00	-21.40	Vertical	
14845.57	40.42	16.50	39.77	35.73	52.88	74.00	-21.12	Vertical	
16500.00	42.00	17.59	37.62	31.41	53.38	74.00	-20.62	Vertical	
7678.83	36.04	10.89	37.44	41.74	51.23	74.00	-22.77	Horizontal	
9659.79	37.10	12.53	36.28	39.56	52.91	74.00	-21.09	Horizontal	
11000.00	37.30	13.45	36.18	33.68	48.25	74.00	-25.75	Horizontal	
12536.48	37.84	14.25	37.69	37.51	51.91	74.00	-22.09	Horizontal	
14761.68	40.34	16.47	39.76	35.30	52.35	74.00	-21.65	Horizontal	
16500.00	42.00	17.59	37.62	31.37	53.34	74.00	-20.66	Horizontal	

Test mode:		802.11a		Frequency(MHz):		5600	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7093.17	35.49	10.64	37.69	42.37	50.81	74.00	-23.19	Vertical	
9007.72	37.00	11.80	37.18	39.08	50.70	74.00	-23.30	Vertical	
11200.00	37.30	13.68	36.39	34.79	49.38	74.00	-24.62	Vertical	
12775.54	37.99	14.93	37.91	36.77	51.78	74.00	-22.22	Vertical	
14512.85	40.01	16.40	39.72	36.11	52.80	74.00	-21.20	Vertical	
16800.00	42.50	18.24	37.28	29.49	52.95	74.00	-21.05	Vertical	
7678.83	36.04	10.89	37.44	41.29	50.78	74.00	-23.22	Horizontal	
9007.72	37.00	11.80	37.18	38.87	50.49	74.00	-23.51	Horizontal	
11200.00	37.30	13.68	36.39	34.83	49.42	74.00	-24.58	Horizontal	
13192.44	38.29	15.60	38.42	37.22	52.69	74.00	-21.31	Horizontal	
15157.26	40.66	16.70	39.53	34.20	52.03	74.00	-21.97	Horizontal	
16800.00	42.50	18.24	37.28	30.42	53.88	74.00	-20.12	Horizontal	

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Test mode:		802.11a		Frequency(MHz):		5700		Remark:	Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7228.43	35.59	10.69	37.63	40.08	48.73	74.00	-25.27	Vertical	
9007.72	37.00	11.80	37.18	38.78	50.40	74.00	-23.60	Vertical	
11400.00	37.40	13.91	36.59	35.85	50.57	74.00	-23.43	Vertical	
13093.14	38.19	15.57	38.27	35.93	51.42	74.00	-22.58	Vertical	
15157.26	40.66	16.70	39.53	34.21	52.04	74.00	-21.96	Vertical	
17100.00	42.90	19.02	37.05	28.23	53.10	74.00	-20.90	Vertical	
7678.83	36.04	10.89	37.44	42.90	52.39	74.00	-21.61	Horizontal	
8990.72	37.00	11.79	37.19	39.76	51.36	74.00	-22.64	Horizontal	
11400.00	37.40	13.91	36.59	34.88	49.60	74.00	-24.40	Horizontal	
13217.38	38.32	15.61	38.46	36.95	52.42	74.00	-21.58	Horizontal	
15071.61	40.57	16.61	39.67	35.67	53.18	74.00	-20.82	Horizontal	
17100.00	42.90	19.02	37.05	28.21	53.08	74.00	-20.92	Horizontal	

Test mode:		802.11n(HT20)		Frequency(MHz):		5180		Remark:	Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7678.83	36.04	10.89	37.44	43.41	52.90	74.00	-21.10	Vertical	
9007.72	37.00	11.80	37.18	39.79	51.41	74.00	-22.59	Vertical	
10360.00	37.08	12.98	35.96	38.18	52.28	74.00	-21.72	Vertical	
12751.43	37.98	14.86	37.89	38.20	53.15	74.00	-20.85	Vertical	
15540.00	40.94	17.07	38.92	34.37	53.46	74.00	-20.54	Vertical	
17596.58	43.69	20.75	36.98	24.87	52.33	74.00	-21.67	Vertical	
7678.83	36.04	10.89	37.44	42.17	51.66	74.00	-22.34	Horizontal	
9007.72	37.00	11.80	37.18	40.26	51.88	74.00	-22.12	Horizontal	
10360.00	37.08	12.98	35.96	36.59	50.69	74.00	-23.31	Horizontal	
12775.54	37.99	14.93	37.91	37.11	52.12	74.00	-21.88	Horizontal	
15540.00	40.94	17.07	38.92	34.60	53.69	74.00	-20.31	Horizontal	
17563.38	43.63	20.64	36.98	25.43	52.72	74.00	-21.28	Horizontal	

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Test mode:		802.11n(HT20)		Frequency(MHz):		5200	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7678.83	36.04	10.89	37.44	41.83	51.32	74.00	-22.68	Vertical	
8889.40	36.94	11.80	37.20	34.76	46.30	74.00	-27.70	Vertical	
10400.00	37.10	13.04	35.99	35.11	49.26	74.00	-24.74	Vertical	
12751.43	37.98	14.86	37.89	36.78	51.73	74.00	-22.27	Vertical	
15600.00	41.06	17.18	38.73	33.71	53.22	74.00	-20.78	Vertical	
17864.51	44.06	21.66	36.94	24.22	53.00	74.00	-21.00	Vertical	
7093.17	35.49	10.64	37.69	41.86	50.30	74.00	-23.70	Horizontal	
9007.72	37.00	11.80	37.18	39.70	51.32	74.00	-22.68	Horizontal	
10400.00	37.10	13.04	35.99	35.44	49.59	74.00	-24.41	Horizontal	
13217.38	38.32	15.61	38.46	37.18	52.65	74.00	-21.35	Horizontal	
15600.00	41.06	17.18	38.73	34.04	53.55	74.00	-20.45	Horizontal	
17864.51	44.06	21.66	36.94	24.04	52.82	74.00	-21.18	Horizontal	

Test mode:		802.11n(HT20)		Frequency(MHz):		5240	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7678.83	36.04	10.89	37.44	42.45	51.94	74.00	-22.06	Vertical	
9007.72	37.00	11.80	37.18	38.86	50.48	74.00	-23.52	Vertical	
10480.00	37.10	13.07	36.00	36.20	50.37	74.00	-23.63	Vertical	
12751.43	37.98	14.86	37.89	37.71	52.66	74.00	-21.34	Vertical	
15720.00	41.12	17.24	38.63	33.84	53.57	74.00	-20.43	Vertical	
17864.51	44.06	21.66	36.94	24.74	53.52	74.00	-20.48	Vertical	
7678.83	36.04	10.89	37.44	41.95	51.44	74.00	-22.56	Horizontal	
8990.72	37.00	11.79	37.19	38.74	50.34	74.00	-23.66	Horizontal	
10480.00	37.10	13.07	36.00	34.41	48.58	74.00	-25.42	Horizontal	
12775.54	37.99	14.93	37.91	38.55	53.56	74.00	-20.44	Horizontal	
15720.00	41.12	17.24	38.63	33.83	53.56	74.00	-20.44	Horizontal	
17932.13	44.23	21.89	36.93	24.22	53.41	74.00	-20.59	Horizontal	

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Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7664.34	36.03	10.88	37.44	42.65	52.12	74.00	-21.88	Vertical	
8990.72	37.00	11.79	37.19	39.40	51.00	74.00	-23.00	Vertical	
10520.00	37.10	13.10	36.02	34.37	48.55	74.00	-25.45	Vertical	
13217.38	38.32	15.61	38.46	36.77	52.24	74.00	-21.76	Vertical	
15780.00	41.18	17.29	38.54	33.09	53.02	74.00	-20.98	Vertical	
17730.04	43.83	21.21	36.96	25.80	53.88	74.00	-20.12	Vertical	
7093.17	35.49	10.64	37.69	42.11	50.55	74.00	-23.45	Horizontal	
9007.72	37.00	11.80	37.18	39.03	50.65	74.00	-23.35	Horizontal	
10520.00	37.10	13.10	36.02	35.62	49.80	74.00	-24.20	Horizontal	
12751.43	37.98	14.86	37.89	37.42	52.37	74.00	-21.63	Horizontal	
15780.00	41.18	17.29	38.54	32.40	52.33	74.00	-21.67	Horizontal	
17763.56	43.86	21.32	36.95	25.55	53.78	74.00	-20.22	Horizontal	

Test mode:		802.11n(HT20)		Frequency(MHz):		5300	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7093.17	35.49	10.64	37.69	42.11	50.55	74.00	-23.45	Vertical	
9007.72	37.00	11.80	37.18	39.51	51.13	74.00	-22.87	Vertical	
10600.00	37.10	13.16	36.04	34.55	48.77	74.00	-25.23	Vertical	
13217.38	38.32	15.61	38.46	36.99	52.46	74.00	-21.54	Vertical	
15900.00	41.25	17.41	38.35	32.91	53.22	74.00	-20.78	Vertical	
17730.04	43.83	21.21	36.96	24.97	53.05	74.00	-20.95	Vertical	
7678.83	36.04	10.89	37.44	42.04	51.53	74.00	-22.47	Horizontal	
9007.72	37.00	11.80	37.18	38.57	50.19	74.00	-23.81	Horizontal	
10600.00	37.10	13.16	36.04	35.04	49.26	74.00	-24.74	Horizontal	
13204.91	38.30	15.60	38.44	36.56	52.02	74.00	-21.98	Horizontal	
15900.00	41.25	17.41	38.35	31.94	52.25	74.00	-21.75	Horizontal	
17797.15	43.90	21.44	36.95	24.91	53.30	74.00	-20.70	Horizontal	

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Test mode:		802.11n(HT20)		Frequency(MHz):		5320	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7133.48	35.53	10.65	37.67	40.62	49.13	74.00	-24.87	Vertical	
9007.72	37.00	11.80	37.18	39.57	51.19	74.00	-22.81	Vertical	
10640.00	37.12	13.19	36.06	34.20	48.45	74.00	-25.55	Vertical	
13192.44	38.29	15.60	38.42	35.63	51.10	74.00	-22.90	Vertical	
15960.00	41.28	17.46	38.26	32.03	52.51	74.00	-21.49	Vertical	
17864.51	44.06	21.66	36.94	24.97	53.75	74.00	-20.25	Vertical	
7664.34	36.03	10.88	37.44	41.67	51.14	74.00	-22.86	Horizontal	
9007.72	37.00	11.80	37.18	38.87	50.49	74.00	-23.51	Horizontal	
10640.00	37.12	13.19	36.06	35.60	49.85	74.00	-24.15	Horizontal	
13093.14	38.19	15.57	38.27	37.26	52.75	74.00	-21.25	Horizontal	
15960.00	41.28	17.46	38.26	32.03	52.51	74.00	-21.49	Horizontal	
17830.80	43.98	21.55	36.94	24.35	52.94	74.00	-21.06	Horizontal	

Test mode:		802.11n(HT20)		Frequency(MHz):		5500	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7099.87	35.50	10.64	37.69	41.45	49.90	74.00	-24.10	Vertical	
9007.72	37.00	11.80	37.18	39.41	51.03	74.00	-22.97	Vertical	
11000.00	37.30	13.45	36.18	34.12	48.69	74.00	-25.31	Vertical	
12775.54	37.99	14.93	37.91	36.91	51.92	74.00	-22.08	Vertical	
14650.57	40.18	16.44	39.74	34.75	51.63	74.00	-22.37	Vertical	
16500.00	42.00	17.59	37.62	30.97	52.94	74.00	-21.06	Vertical	
7678.83	36.04	10.89	37.44	42.15	51.64	74.00	-22.36	Horizontal	
9659.79	37.10	12.53	36.28	38.80	52.15	74.00	-21.85	Horizontal	
11000.00	37.30	13.45	36.18	34.28	48.85	74.00	-25.15	Horizontal	
12751.43	37.98	14.86	37.89	36.86	51.81	74.00	-22.19	Horizontal	
14512.85	40.01	16.40	39.72	36.11	52.80	74.00	-21.20	Horizontal	
16500.00	42.00	17.59	37.62	30.74	52.71	74.00	-21.29	Horizontal	

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Test mode:		802.11n(HT20)		Frequency(MHz):		5600	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7678.83	36.04	10.89	37.44	41.64	51.13	74.00	-22.87	Vertical	
9007.72	37.00	11.80	37.18	39.29	50.91	74.00	-23.09	Vertical	
11200.00	37.30	13.68	36.39	34.77	49.36	74.00	-24.64	Vertical	
12751.43	37.98	14.86	37.89	37.95	52.90	74.00	-21.10	Vertical	
14512.85	40.01	16.40	39.72	36.11	52.80	74.00	-21.20	Vertical	
16800.00	42.50	18.24	37.28	29.56	53.02	74.00	-20.98	Vertical	
7187.58	35.59	10.67	37.65	38.93	47.54	74.00	-26.46	Horizontal	
8990.72	37.00	11.79	37.19	39.48	51.08	74.00	-22.92	Horizontal	
11200.00	37.30	13.68	36.39	34.65	49.24	74.00	-24.76	Horizontal	
13192.44	38.29	15.60	38.42	36.26	51.73	74.00	-22.27	Horizontal	
15128.66	40.63	16.67	39.58	35.45	53.17	74.00	-20.83	Horizontal	
16800.00	42.50	18.24	37.28	29.95	53.41	74.00	-20.59	Horizontal	

Test mode:		802.11n(HT20)		Frequency(MHz):		5700	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
7133.48	35.53	10.65	37.67	40.91	49.42	74.00	-24.58	Vertical	
9659.79	37.10	12.53	36.28	40.16	53.51	74.00	-20.49	Vertical	
11400.00	37.40	13.90	36.58	35.70	50.42	74.00	-23.58	Vertical	
13179.99	38.28	15.60	38.40	36.21	51.69	74.00	-22.31	Vertical	
14929.94	40.47	16.52	39.78	35.69	52.90	74.00	-21.10	Vertical	
17100.00	42.91	19.04	37.04	28.67	53.58	74.00	-20.42	Vertical	
7671.58	36.04	10.88	37.44	41.83	51.31	74.00	-22.69	Horizontal	
9659.79	37.10	12.53	36.28	39.60	52.95	74.00	-21.05	Horizontal	
11400.00	37.40	13.90	36.58	36.05	50.77	74.00	-23.23	Horizontal	
13217.38	38.32	15.61	38.46	36.59	52.06	74.00	-21.94	Horizontal	
15157.26	40.66	16.70	39.53	35.68	53.51	74.00	-20.49	Horizontal	
17100.00	42.91	19.04	37.04	28.88	53.79	74.00	-20.21	Horizontal	

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Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

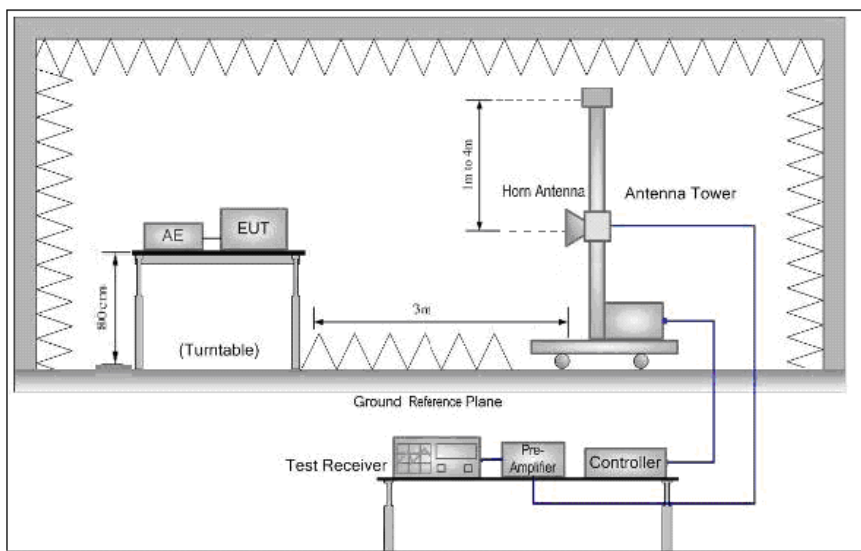
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

2) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported .

3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

6.8 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15 Section 15.407(b)		
Test Method:	ANSI C63.10: 2013		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m @3m)	Remark
	30MHz-88MHz	40.0	Quasi-peak Value
	88MHz-216MHz	43.5	Quasi-peak Value
	216MHz-960MHz	46.0	Quasi-peak Value
	960MHz-1GHz	54.0	Quasi-peak Value
	Above 1GHz	54.0	Average Value
		74.0	Peak Value
Test Setup:			





Test Procedure:	<ul style="list-style-type: none">a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channelg. Test the EUT in the outermost channels.h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the Y axis positioning which it is worse case.i. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCS0 of rate is the worst case of 802.11n(HT20); Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass



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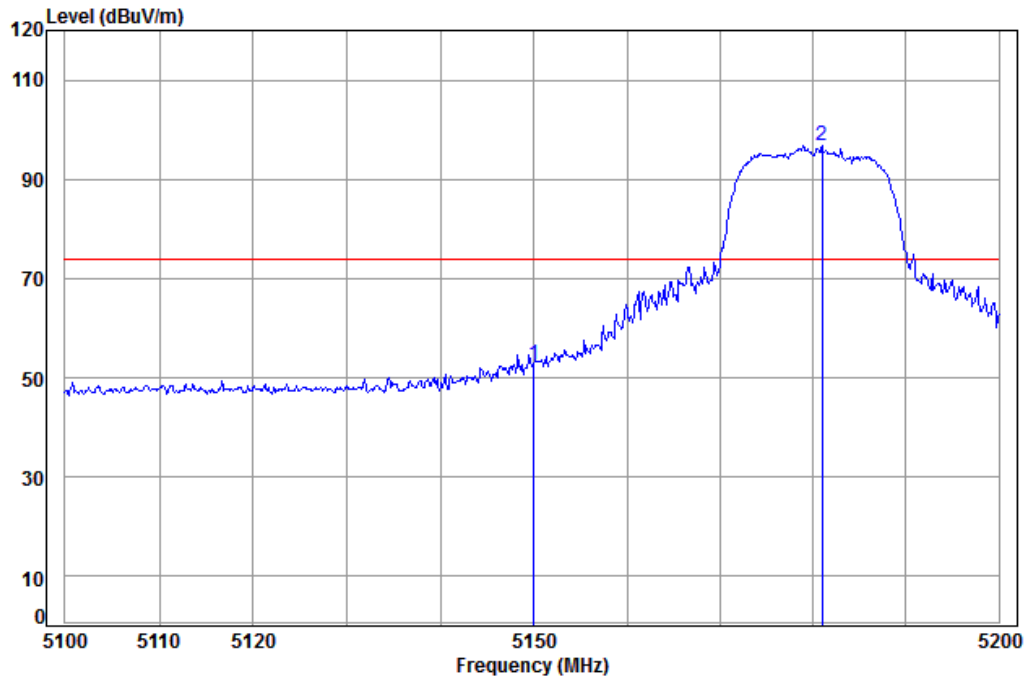
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Test plot as follows:

Test mode: 802.11a

Test Frequency:

Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5180 Band edge
: A20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	5150.00	8.08	34.07	38.82	49.37	52.70	74.00 -21.30
2 pp	5180.95	8.09	34.03	38.82	93.52	96.82	74.00 22.82



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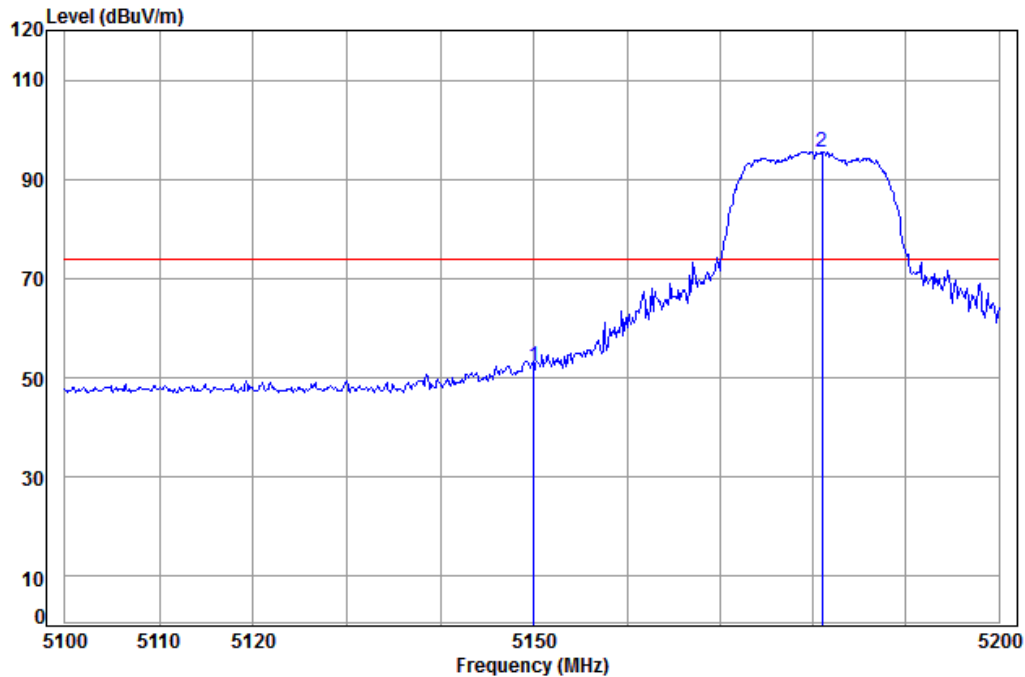
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Test mode: 802.11a

Test Frequency:

Antenna Polarization: Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5180 Band edge
: A20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	5150.00	8.08	34.07	38.82	49.13	52.46	74.00 -21.54
2 pp	5180.95	8.09	34.03	38.82	92.32	95.62	74.00 21.62



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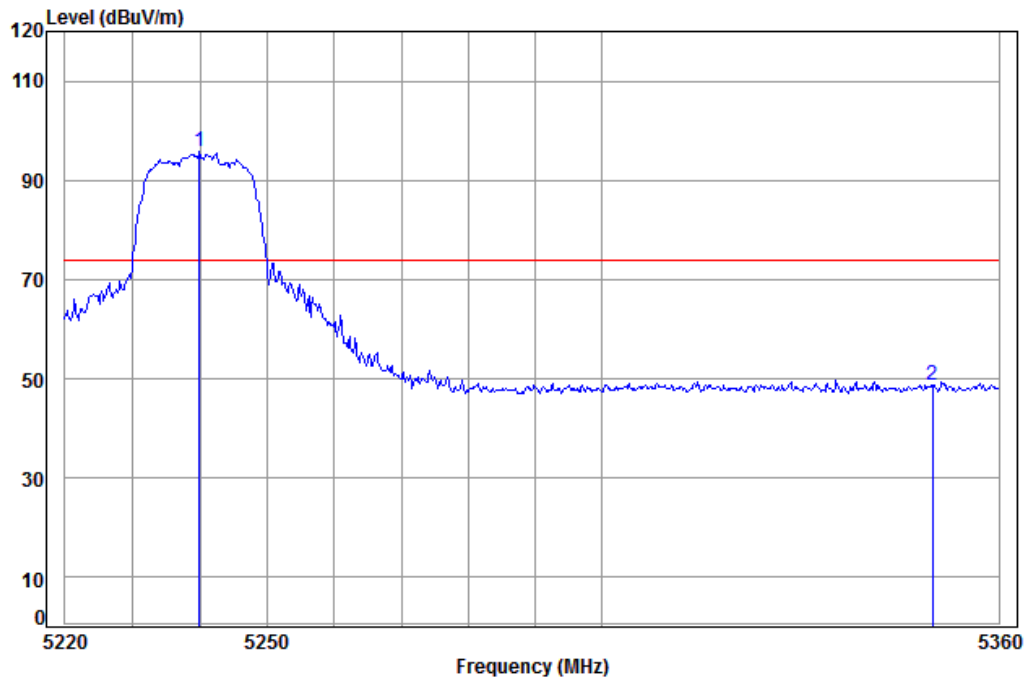
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Test mode: 802.11a

Test Frequency:

Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5240 Band edge

: A20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	pp 5239.93	8.12	34.08	38.83	92.43	95.80	74.00 21.80
2	5350.00	8.18	34.30	38.85	45.15	48.78	74.00 -25.22

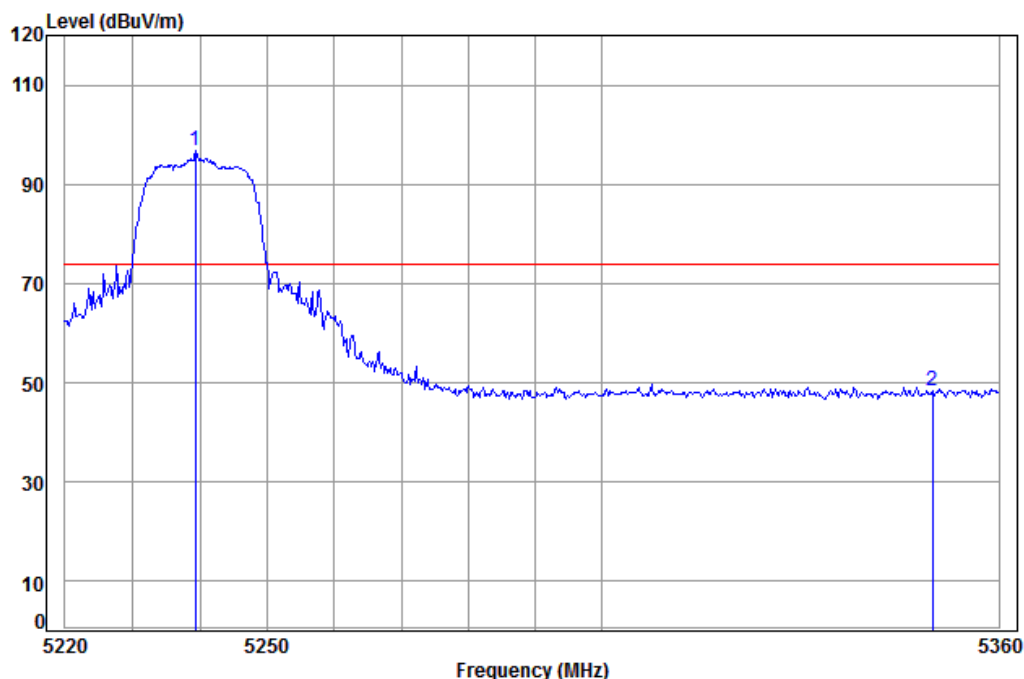


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Test mode: 802.11a Test Frequency: Antenna Polarization: Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5240 Band edge
: A20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	pp 5239.38	8.12	34.08	38.83	93.40	96.77	74.00 22.77
2	5350.00	8.18	34.30	38.85	44.67	48.30	74.00 -25.70



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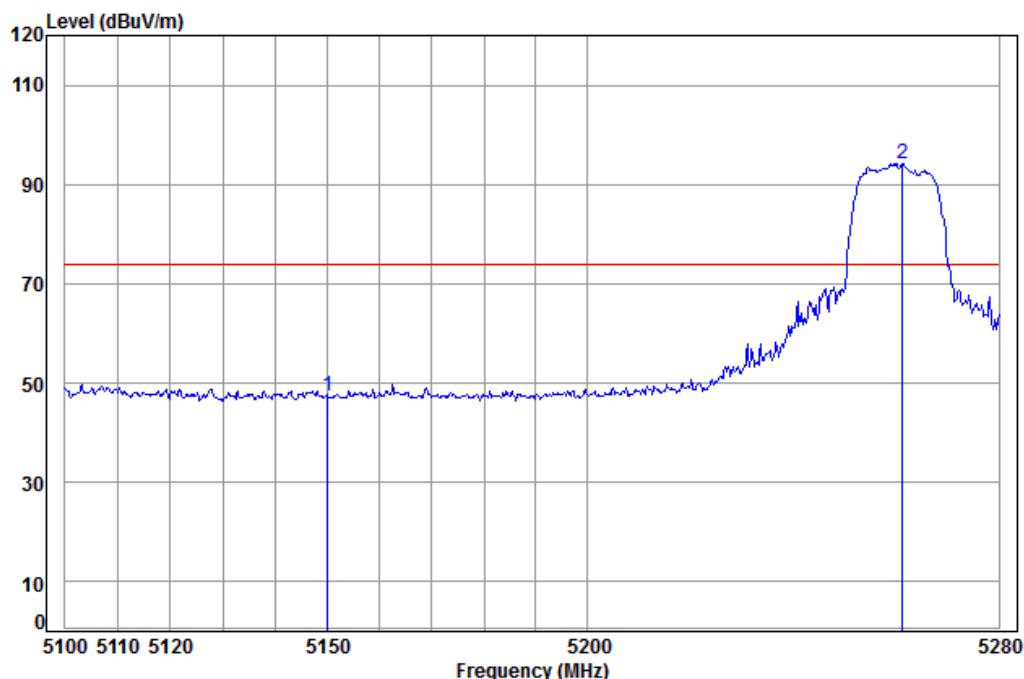
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Test mode: 802.11a

Test Frequency:

Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5260 Band edge

: A20

		Cable	Ant	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5150.00	8.08	34.07	38.82	43.97	47.30	74.00	-26.70
2 pp	5261.17	8.13	34.12	38.84	90.88	94.29	74.00	20.29



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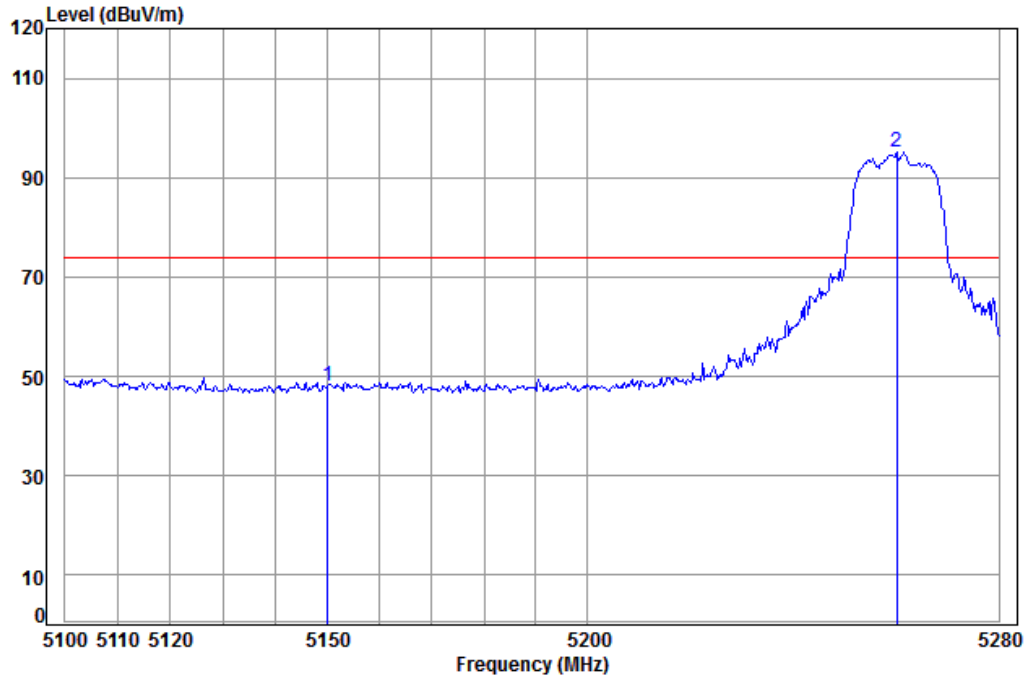
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Test mode: 802.11a

Test Frequency:

Antenna Polarization:

Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5260 Band edge

: A20

		Cable	Ant	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5150.00	8.08	34.07	38.82	44.64	47.97	74.00	-26.03
2 pp	5260.08	8.13	34.12	38.84	91.75	95.16	74.00	21.16



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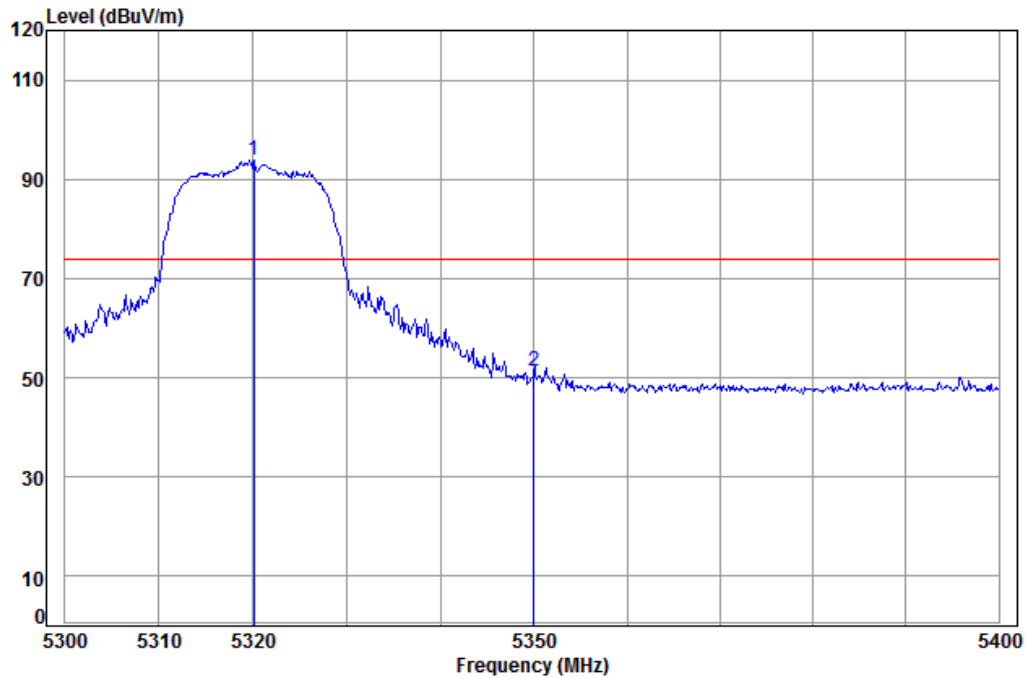
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Test mode: 802.11a

Test Frequency:

Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5320 Band edge

: A20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1 pp	5320.05	8.16	34.24	38.85	90.42	93.97	74.00 19.97
2	5350.00	8.18	34.30	38.85	47.58	51.21	74.00 -22.79



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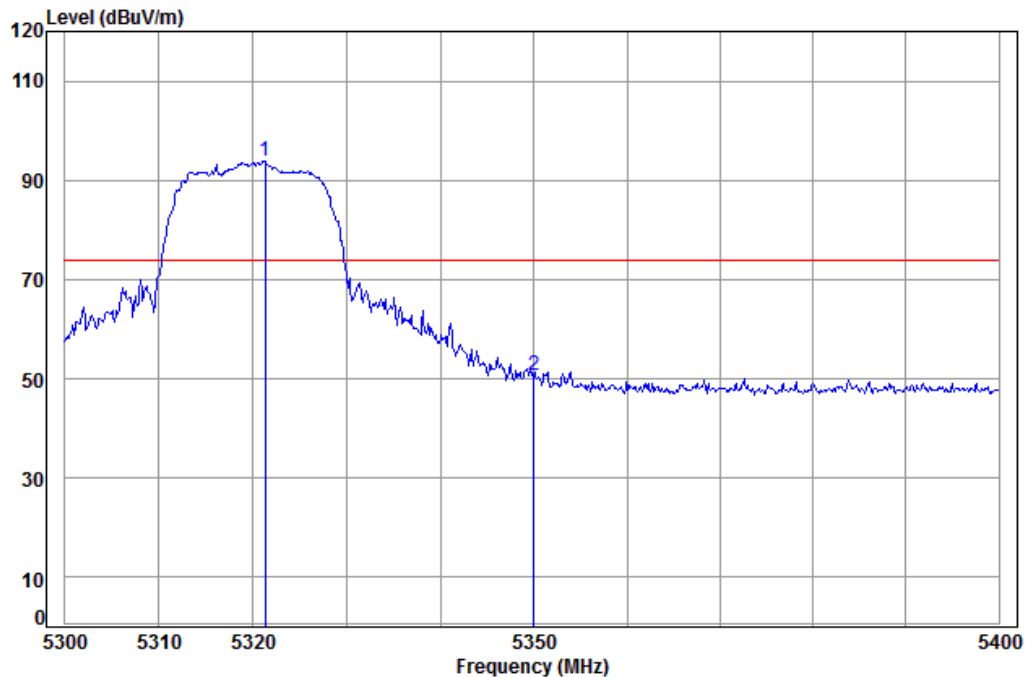
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Test mode: 802.11a

Test Frequency:

Antenna Polarization: Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5320 Band edge

: A20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	pp 5321.24	8.16	34.24	38.85	90.23	93.78	74.00 19.78
2	5350.00	8.18	34.30	38.85	46.99	50.62	74.00 -23.38



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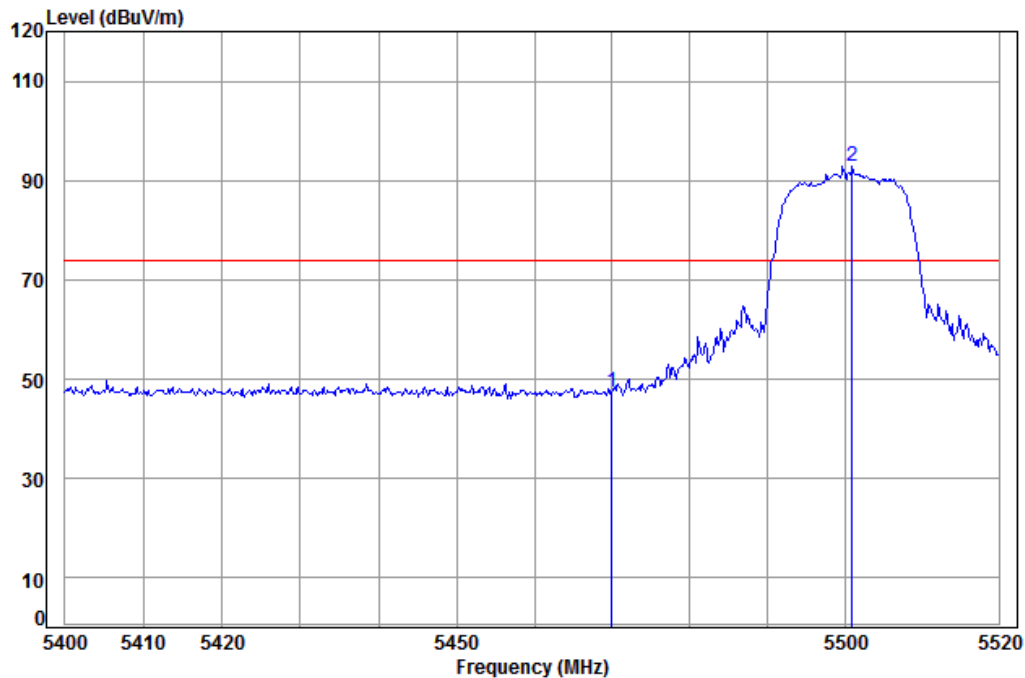
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Test mode: 802.11a

Test Frequency:

Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5500 Band edge
: A20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	5470.00	8.24	34.36	38.87	43.60	47.33	74.00 -26.67
2 pp	5500.99	8.25	34.35	38.88	89.27	92.99	74.00 18.99

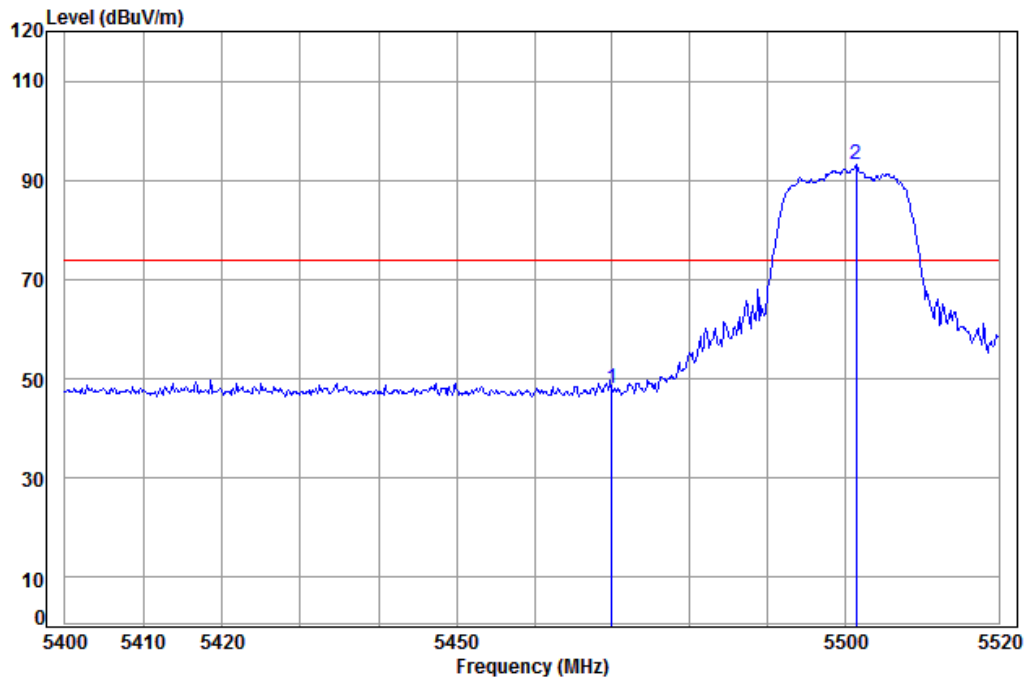


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Test mode: 802.11a Test Frequency: Antenna Polarization: Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5500 Band edge
: A20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5470.00	8.24	34.36	38.87	44.37	48.10	74.00	-25.90
2 pp	5501.47	8.25	34.35	38.88	89.37	93.09	74.00	19.09



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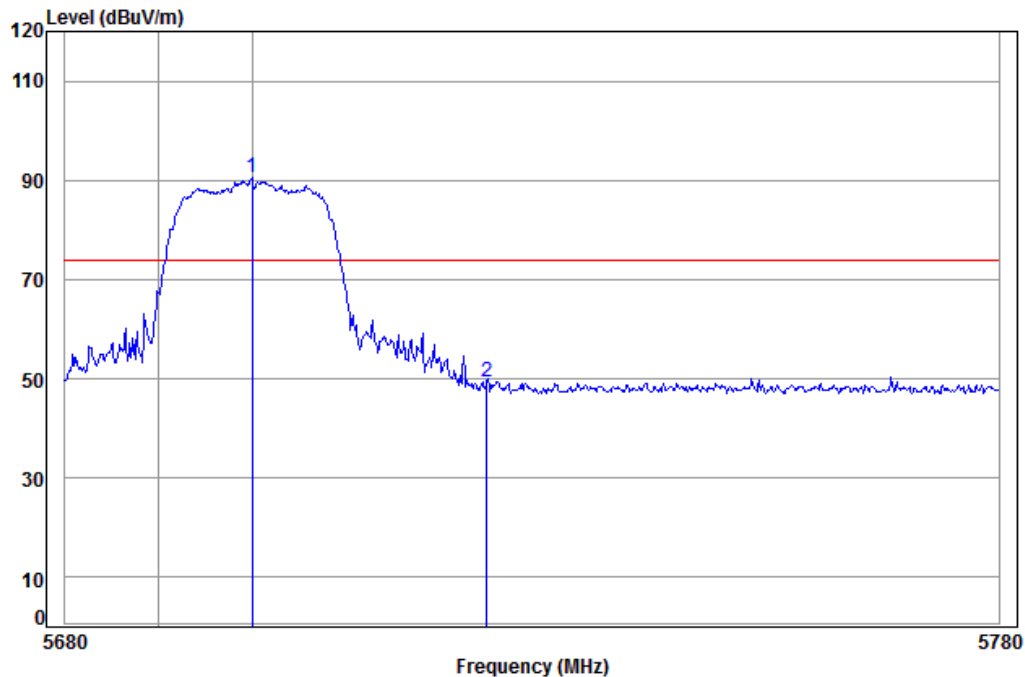
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Test mode: 802.11a

Test Frequency:

Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5700 Band edge

: A20

		Cable	Ant	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5699.86	8.46	34.25	38.91	86.87	90.67	74.00	16.67
2	5725.00	8.48	34.24	38.92	45.64	49.44	74.00	-24.56

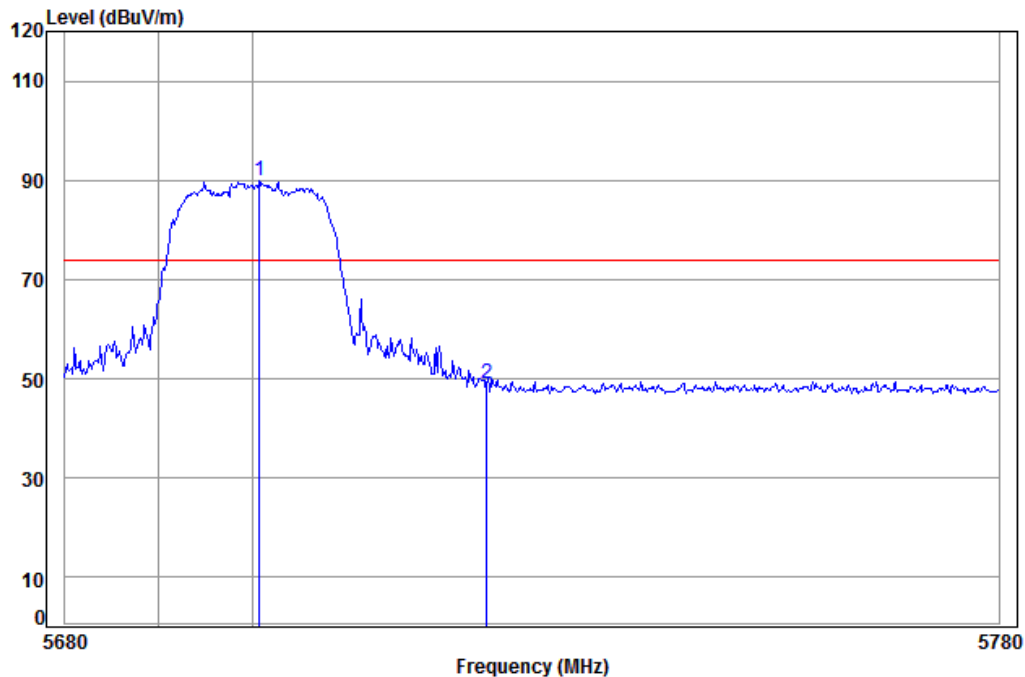


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Test mode: 802.11a Test Frequency: Antenna Polarization: Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5700 Band edge

: A20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	pp 5700.66	8.46	34.25	38.91	86.01	89.81	74.00 15.81
2	5725.00	8.48	34.24	38.92	45.31	49.11	74.00 -24.89

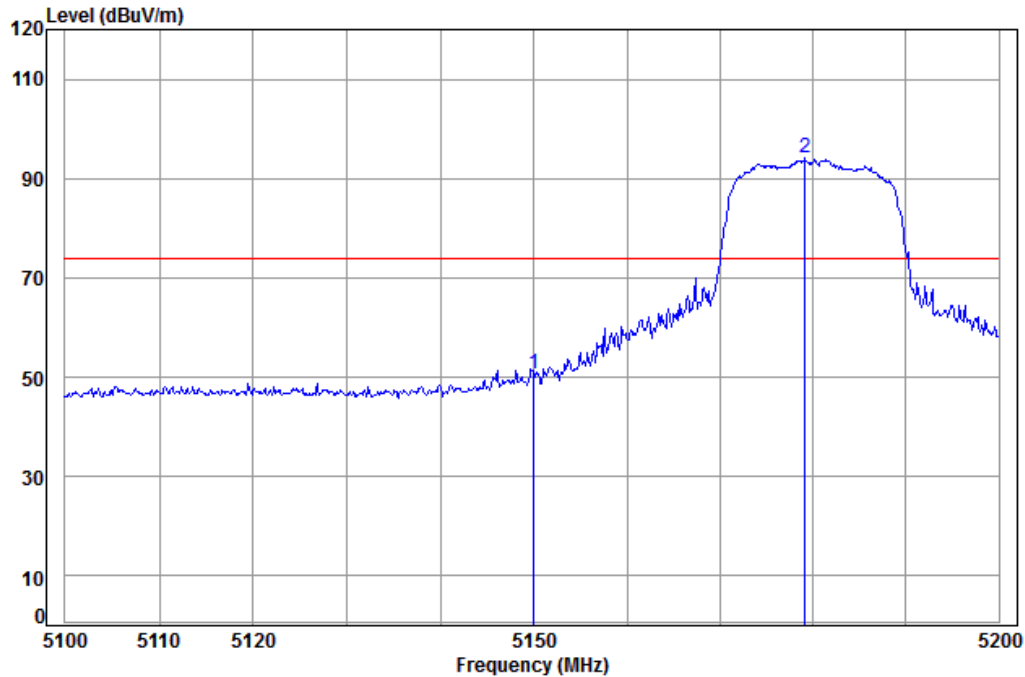


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5180 Band edge

: N20

		Cable	Ant	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5150.00	8.08	34.07	38.82	47.30	50.63	74.00	-23.37
2 pp	5179.14	8.09	34.03	38.82	90.74	94.04	74.00	20.04

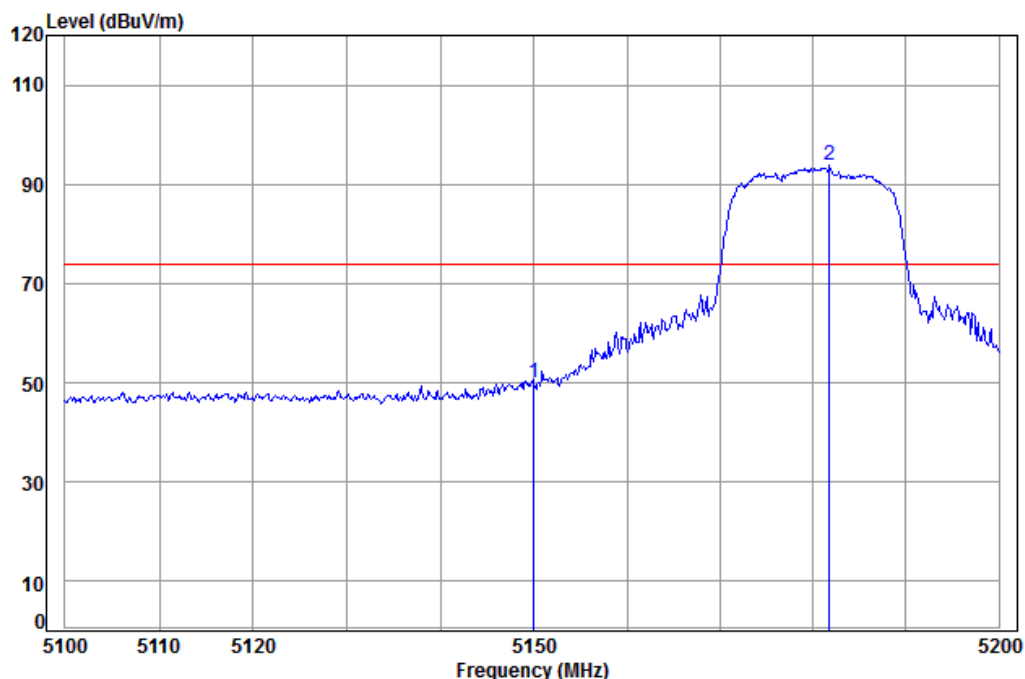


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5180 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5150.00	8.08	34.07	38.82	46.73	50.06	74.00	-23.94
2 pp	5181.76	8.09	34.03	38.82	90.42	93.72	74.00	19.72

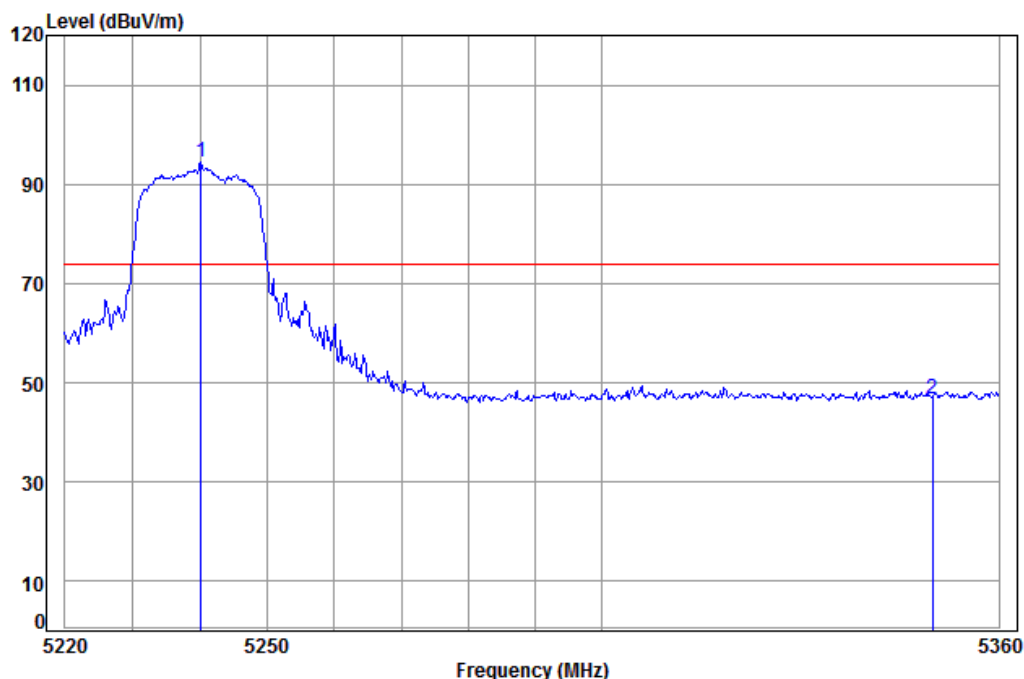


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5240 Band edge
: N20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	pp 5240.21	8.12	34.08	38.83	91.08	94.45	74.00 20.45
2	5350.00	8.18	34.30	38.85	43.21	46.84	74.00 -27.16

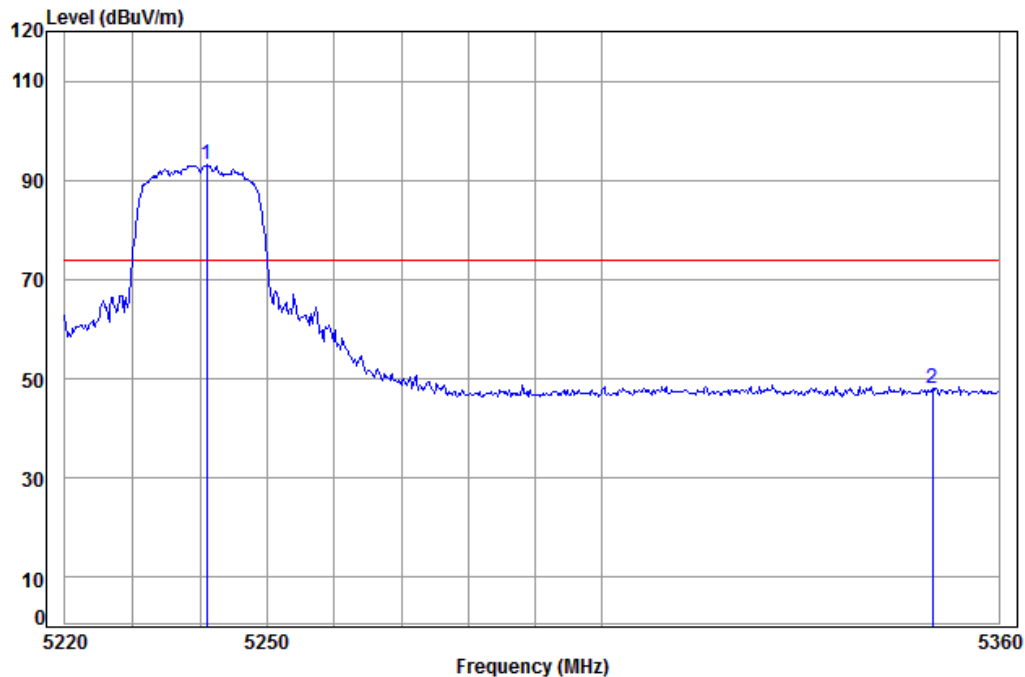


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5240 Band edge
: N20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	pp 5241.04	8.12	34.08	38.83	89.74	93.11	74.00 19.11
2	5350.00	8.18	34.30	38.85	44.45	48.08	74.00 -25.92

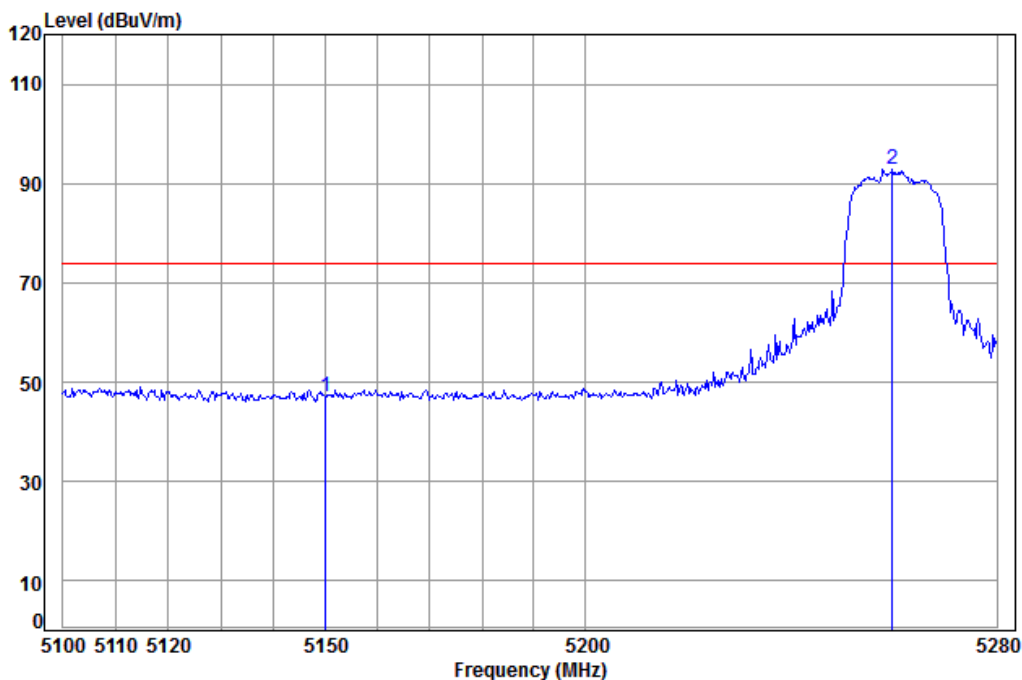


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5260 Band edge

: N20

		Cable	Ant	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5150.00	8.08	34.07	38.82	43.84	47.17	74.00	-26.83
2 pp	5259.53	8.13	34.12	38.84	89.43	92.84	74.00	18.84

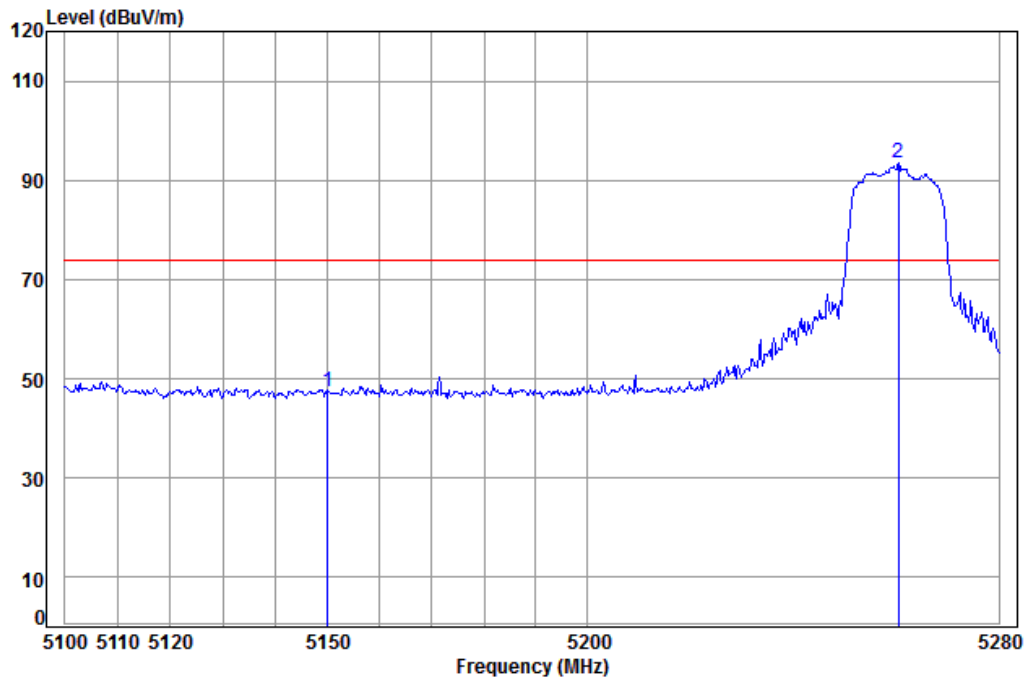


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5260 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5150.00	8.08	34.07	38.82	44.20	47.53	74.00	-26.47
2 pp	5260.44	8.13	34.12	38.84	90.02	93.43	74.00	19.43

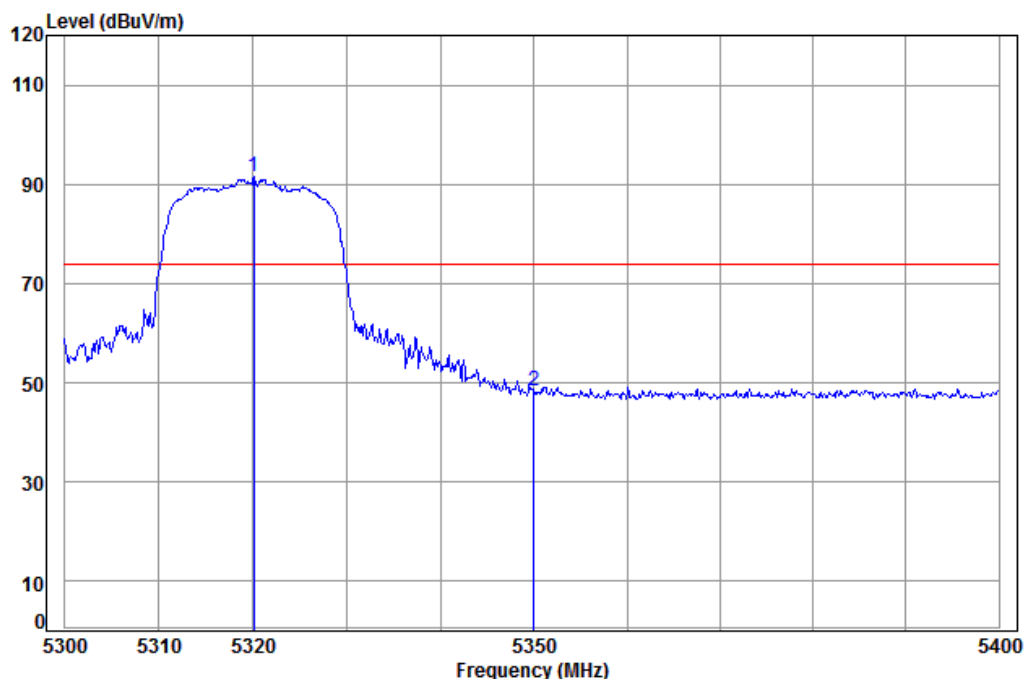


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5320 Band edge
: N20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	pp 5320.05	8.16	34.24	38.85	87.98	91.53	74.00 17.53
2	5350.00	8.18	34.30	38.85	44.68	48.31	74.00 -25.69

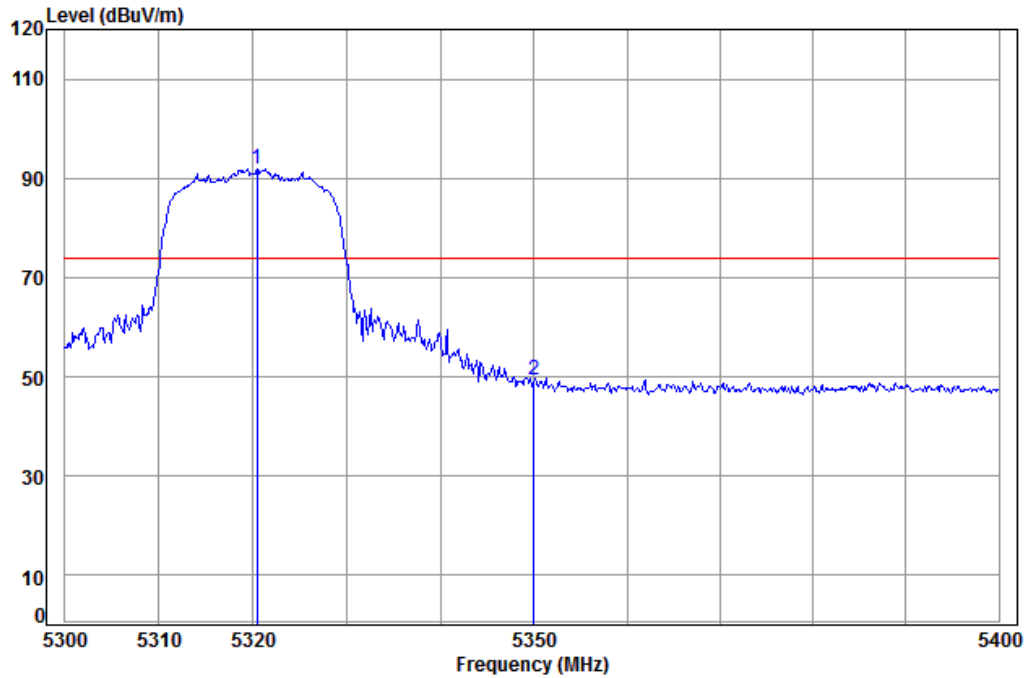


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5320 Band edge
: N20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	pp 5320.45	8.16	34.24	38.85	88.39	91.94	74.00 17.94
2	5350.00	8.18	34.30	38.85	45.90	49.53	74.00 -24.47

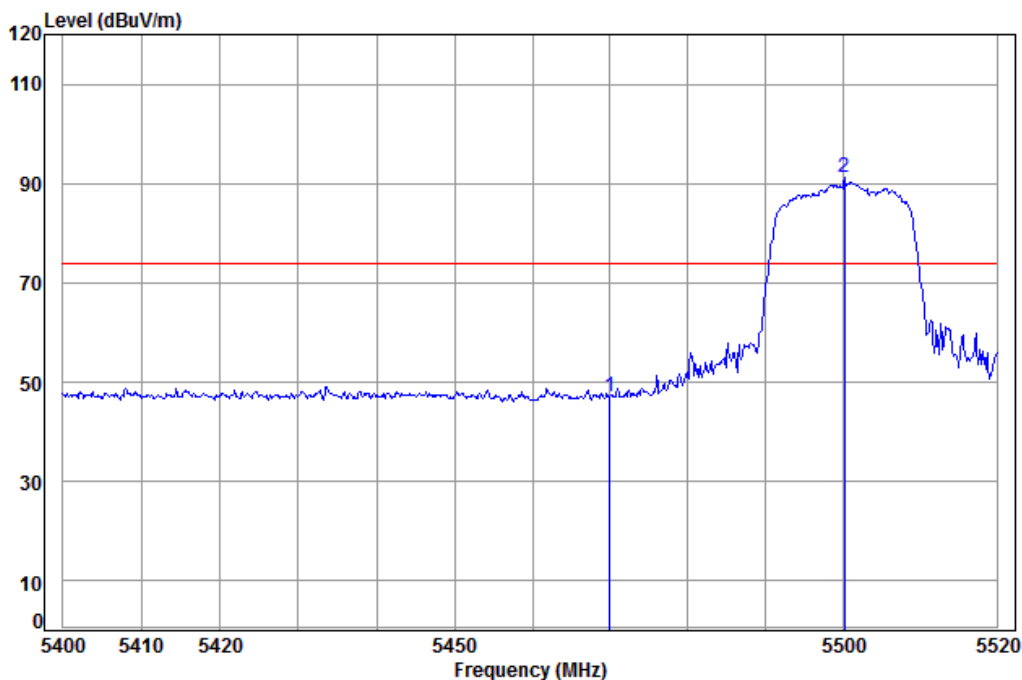


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5500 Band edge

: N20

		Cable	Ant	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5470.00	8.24	34.36	38.87	43.44	47.17	74.00	-26.83
2 pp	5500.26	8.25	34.35	38.88	87.57	91.29	74.00	17.29

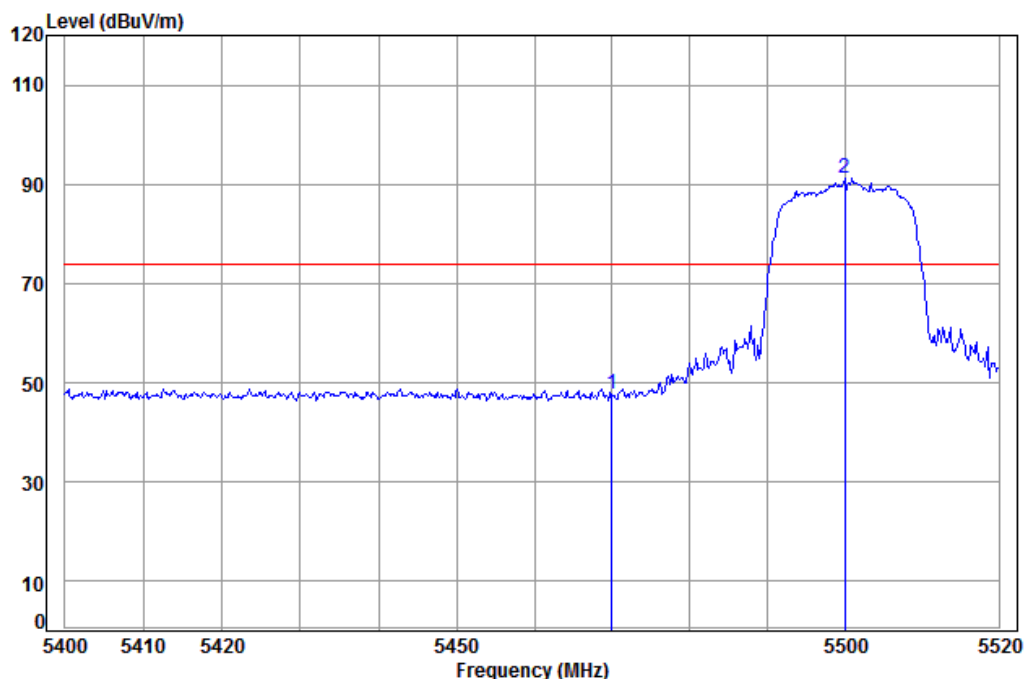


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5500 Band edge
: N20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	5470.00	8.24	34.36	38.87	43.89	74.00	-26.38
2 pp	5500.02	8.25	34.35	38.88	87.44	91.16	17.16

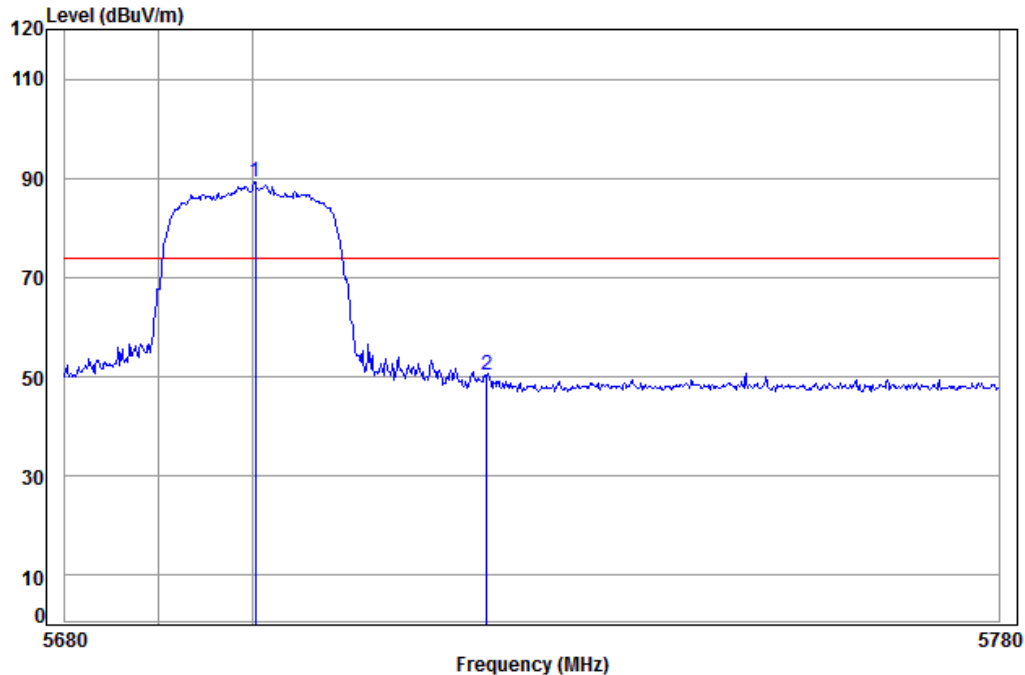


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Vertical



Condition: 3m Vertical

Job No: : 2054RG

Mode: : 5700 Band edge
: N20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	pp 5700.26	8.46	34.25	38.91	85.53	89.33	74.00 15.33
2	5725.00	8.48	34.24	38.92	46.50	50.30	74.00 -23.70

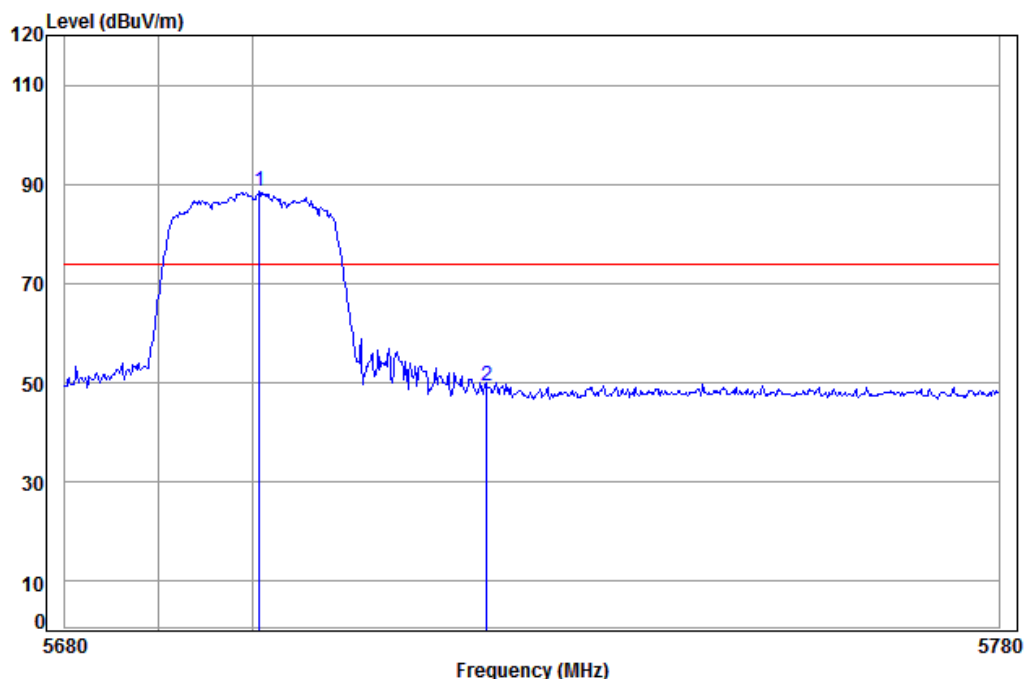


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Test mode: 802.11n(HT20) Test Frequency: Antenna Polarization: Horizontal



Condition: 3m Horizontal

Job No: : 2054RG

Mode: : 5700 Band edge
: N20

		Cable	Ant	Preamp	Read	Limit	Over
	Freq	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1 pp	5700.66	8.46	34.25	38.91	84.79	88.59	74.00 14.59
2	5725.00	8.48	34.24	38.92	45.67	49.47	74.00 -24.53

Note:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor



6.9 Frequency Stability

Test Requirement:	47 CFR Part 15 Section 15.407(g)
Test Method:	ANSI C63.10: 2013
Test Setup:	<pre>graph LR SA[Spectrum Analyzer] --- EUT[EUT] subgraph TC [Temperature Chamber] EUT end P[AC/DC Power supply] --- EUT</pre>
Limit:	The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of 0 degrees to 35 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.
Test Procedure:	<ol style="list-style-type: none">The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage.Turn the EUT on and couple its output to a spectrum analyzer.Turn the EUT off and set the chamber to the highest temperature specified.Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize.Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCS0 of rate is the worst case of 802.11n(HT20); Only the worst case is recorded in the report.



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Test plot as follows:

Test mode:		802.11a	Frequency(MHz):	5180
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5181.2592		Pass
25		5181.2600		Pass
15		5181.2609		Pass
5		5181.2603		Pass
0		5181.2594		Pass
20	3.145	5181.2599		Pass
	3.7	5181.2600		Pass
	4.255	5181.2610		Pass

Test mode:		802.11a	Frequency(MHz):	5200
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5201.2594		Pass
25		5201.2600		Pass
15		5201.2601		Pass
5		5201.2594		Pass
0		5201.2592		Pass
20	3.145	5201.2596		Pass
	3.7	5201.2600		Pass
	4.255	5201.2605		Pass

Test mode:		802.11a	Frequency(MHz):	5240
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5241.2596		Pass
25		5241.2600		Pass
15		5241.2602		Pass
5		5241.2593		Pass
0		5241.2584		Pass
20	3.145	5241.2596		Pass
	3.7	5241.2600		Pass
	4.255	5241.2602		Pass

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Test mode:		802.11a	Frequency(MHz):	5260
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5261.2591		Pass
25		5261.2600		Pass
15		5261.2609		Pass
5		5261.2604		Pass
0		5261.2601		Pass
20	3.145	5261.2593		Pass
	3.7	5261.2600		Pass
	4.255	5261.2605		Pass

Test mode:		802.11a	Frequency(MHz):	5300
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5301.2595		Pass
25		5301.2600		Pass
15		5301.2603		Pass
5		5301.2598		Pass
0		5301.2592		Pass
20	3.145	5301.2593		Pass
	3.7	5301.2600		Pass
	4.255	5301.2603		Pass

Test mode:		802.11a	Frequency(MHz):	5320
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5321.2593		Pass
25		5321.2600		Pass
15		5321.2601		Pass
5		5321.2595		Pass
0		5321.2594		Pass
20	3.145	5321.2597		Pass
	3.7	5321.2600		Pass
	4.255	5321.2604		Pass

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Test mode:		802.11a	Frequency(MHz):	5500
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5501.2591		Pass
25		5501.2600		Pass
15		5501.2603		Pass
5		5501.2593		Pass
0		5501.2586		Pass
20	3.145	5501.2598		Pass
	3.7	5501.2600		Pass
	4.255	5501.2607		Pass

Test mode:		802.11a	Frequency(MHz):	5600
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5601.1993		Pass
25		5601.2000		Pass
15		5601.2005		Pass
5		5601.1999		Pass
0		5601.1991		Pass
20	3.145	5601.1995		Pass
	3.7	5601.2000		Pass
	4.255	5601.2009		Pass

Test mode:		802.11a	Frequency(MHz):	5700
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5701.2591		Pass
25		5701.2600		Pass
15		5701.2608		Pass
5		5701.2606		Pass
0		5701.2598		Pass
20	3.145	5701.2592		Pass
	3.7	5701.2600		Pass
	4.255	5701.2608		Pass

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Test mode:		802.11n(HT20)	Frequency(MHz):	5180
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5181.2592		Pass
25		5181.2600		Pass
15		5181.2606		Pass
5		5181.2604		Pass
0		5181.2596		Pass
20	3.145	5181.2595		Pass
	3.7	5181.2600		Pass
	4.255	5181.2605		Pass

Test mode:		802.11n(HT20)	Frequency(MHz):	5200
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5201.2594		Pass
25		5201.2600		Pass
15		5201.2601		Pass
5		5201.2594		Pass
0		5201.2590		Pass
20	3.145	5201.2597		Pass
	3.7	5201.2600		Pass
	4.255	5201.2605		Pass

Test mode:		802.11n(HT20)	Frequency(MHz):	5240
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5241.2591		Pass
25		5241.2600		Pass
15		5241.2607		Pass
5		5241.2601		Pass
0		5241.2599		Pass
20	3.145	5241.2597		Pass
	3.7	5241.2600		Pass
	4.255	5241.2603		Pass

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Test mode:		802.11n(HT20)	Frequency(MHz):	5260
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5261.2593		Pass
25		5261.2600		Pass
15		5261.2602		Pass
5		5261.2597		Pass
0		5261.2596		Pass
20	3.145	5261.2595		Pass
	3.7	5261.2600		Pass
	4.255	5261.2603		Pass

Test mode:		802.11n(HT20)	Frequency(MHz):	5300
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5301.2596		Pass
25		5301.2600		Pass
15		5301.2607		Pass
5		5301.2601		Pass
0		5301.2592		Pass
20	3.145	5301.2593		Pass
	3.7	5301.2600		Pass
	4.255	5301.2609		Pass

Test mode:		802.11n(HT20)	Frequency(MHz):	5320
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5321.2594		Pass
25		5321.2600		Pass
15		5321.2609		Pass
5		5321.2606		Pass
0		5321.2602		Pass
20	3.145	5321.2595		Pass
	3.7	5321.2600		Pass
	4.255	5321.2603		Pass

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Test mode:		802.11n(HT20)	Frequency(MHz):	5500
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5501.2591		Pass
25		5501.2600		Pass
15		5501.2609		Pass
5		5501.2601		Pass
0		5501.2596		Pass
20	3.145	5501.2594		Pass
	3.7	5501.2600		Pass
	4.255	5501.2606		Pass

Test mode:		802.11n(HT20)	Frequency(MHz):	5600
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5601.2590		Pass
25		5601.2600		Pass
15		5601.2606		Pass
5		5601.2601		Pass
0		5601.2596		Pass
20	3.145	5601.2591		Pass
	3.7	5601.2600		Pass
	4.255	5601.2601		Pass

Test mode:		802.11n(HT20)	Frequency(MHz):	5700
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)		Result
35	3.7	5701.2594		Pass
25		5701.2600		Pass
15		5701.2602		Pass
5		5701.2594		Pass
0		5701.2589		Pass
20	3.145	5701.2593		Pass
	3.7	5701.2600		Pass
	4.255	5701.2610		Pass

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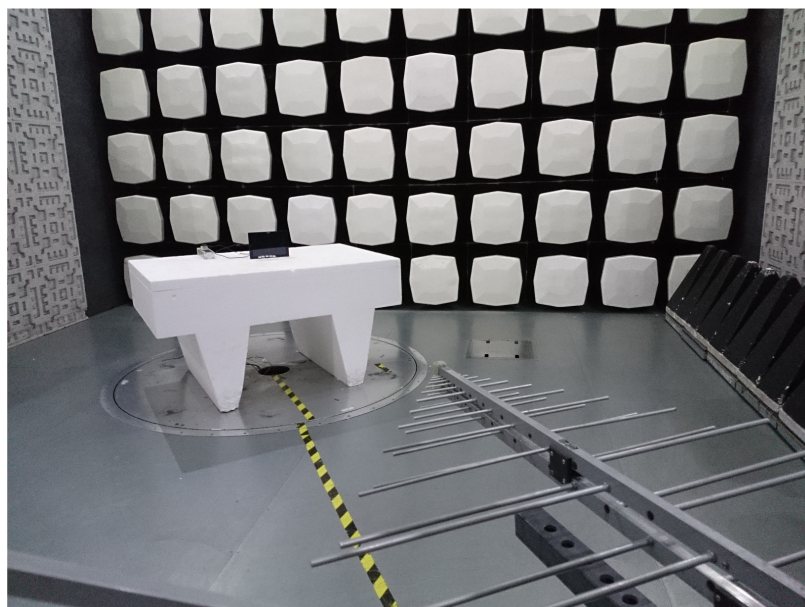
7 Photographs - EUT Test Setup

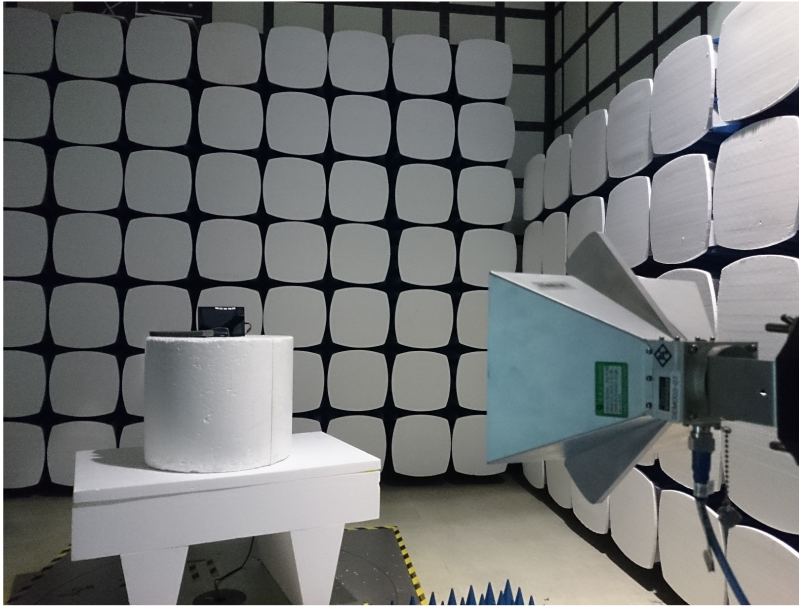
Test model No.: PIC A1051.00

7.1 Conducted Emission



7.2 Radiated Spurious Emission





8 Photographs - EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for SZEM1604002054CR.