Neutron Engineering Inc.

FCC Radio Test Report

FCC ID: HLEPA520BTNF

This report concerns (check one) : ☒ **Original Grant** ☐ **Class II Change**

Issued Date : Feb. 11, 2014
Project No. : 1312155
Equipment : Rugged Mobile Computer
Model Name : PA520

Applicant : unitech electronics co., ltd.
Address : 5F, No. 136, Lane 235, Pao-Chiao Rd.,
Hsin-Tien Dist., New Taipei City, Taiwan

Tested by: Neutron Engineering Inc. EMC Laboratory
Date of Receipt: Dec. 23, 2013
Date of Test: Dec. 23, 2013 ~ Jan. 22, 2014

Testing Engineer : (Josh Lin)

Technical Manager : (Jeff Yang)

Authorized Signatory : (Andy Chiu)

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Testing Laboratory
0659

Declaration

Neutron represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**., or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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Neutron's laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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REPORT ISSUED HISTORY

Revised Version No.	Description	Issued Date
-	Initial Issue.	Feb. 11, 2014

1 CERTIFICATION

Equipment	:	Rugged Mobile Computer
Brand Name	:	unitech
Model Name	:	PA520
Applicant	:	unitech electronics co., ltd.
Date of Test	:	Dec. 23, 2013 ~ Jan. 22, 2014
Standards	:	FCC Part 15, Subpart C: 2012 ANSI C63.4: 2009

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-1312155) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Standard Clause	Test Item	Result
15.207	Conducted Emission	**PASS**
15.247 (c)	Antenna conducted Spurious Emission	**PASS**
15.247 (a)(2)	6dB Bandwidth	**PASS**
15.247 (b)	Maximum Peak Conducted Output Power	**PASS**
15.247 (c)	Radiated Spurious Emission	**PASS**
15.247 (d)(e)	Power Spectral Density	**PASS**
15.205	Restricted Bands	**PASS**
15.203	Antenna Requirement	**PASS**

NOTE:

(1) N/A: denotes test is not applicable in this Test Report

(2) This test report only covers radio operating bands: 2400-2483.5 MHz (IEEE 802.11b/g/n) and 5725-5825 MHz (IEEE 802.11a/n).
The test for radio operating bands: 5150-5250 MHz, 5250-5350 MHz and 5470-5725 MHz (IEEE 802.11a/n) is covered in another test report: NEI-FCCP-2-1312155.

(3) The test follows FCC KDB Publication NO. 558074 D01 DTS Meas Guidance v03r01(Measurement Guidelines of DTS)

2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

Conducted emission Test:

C02: (VCCI RN: C-3477; FCC RN: 614388; FCC DN: TW1054)
1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

Radiated emission Test (Below 1 GHz):

CB08: (FCC RN: 614388; FCC DN: TW1054; IC Assigned Code: 4428C-1)
1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

Radiated emission Test (Above 1 GHz):

CB08: (VCCI RN: G-91; FCC RN: 614388; FCC DN: TW1054; IC Assigned Code: 4428C-1)
1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty is not specified by FCC rules and for reference only.

The reported uncertainty of measurement **y ± U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95**%.

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2.

A. Conducted emission test:

Test Site	Measurement Frequency Range	U，(dB)	NOTE
C02	150 kHz ~ 30 MHz	2.59	

B. Radiated emission test:

Test Site	Item	Measurement Frequency Range		Uncertainty	NOTE
CB08	Radiated emission at 3m	Horizontal Polarization	30 - 200MHz	3.35 dB	
			200 - 1000MHz	3.11 dB	
			1 - 18GHz	3.97 dB	
			18 - 40GHz	4.01 dB	
		Vertical Polarization	30 - 200MHz	3.22 dB	
			200 - 1000MHz	3.24 dB	
			1 - 18GHz	4.05 dB	
			18 - 40GHz	4.04 dB	

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our U_{lab} values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called U_{CISPR}, as follows:

Conducted Disturbance (mains port) – 150 kHz – 30 MHz: 3.6 dB
Radiated Disturbance (electric field strength on an open area test site or alternative test site) – 30 MHz – 1000 MHz: 5.2 dB

It can be seen that our U_{lab} values are smaller than U_{CISPR}.

If U_{lab} is less than or equal to U_{CISPR}, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{CISPR}, then:

- compliance is deemed to occur if no measured disturbance level, increased by (U_{lab} - U_{CISPR}), exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by (U_{lab} - U_{CISPR}), exceeds the disturbance limit.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>Rugged Mobile Computer</td></tr>
<tr><td>Brand Name</td><td>unitech</td></tr>
<tr><td>Model Name</td><td>PA520</td></tr>
<tr><td>OEM Brand/Model Name</td><td>N/A</td></tr>
<tr><td>Model Difference</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>The EUT is a Rugged Mobile Computer.
<table>
<tr><td>Operation Frequency</td><td>2412~2462 MHz, 5745~5825 MHz</td></tr>
<tr><td>Modulation Type</td><td>DBPSK, DQPSK, CCK, BPSK, QPSK, 16QAM, 64QAM, MIMO
2412~2462 MHz:
IEEE 802.11b: DSSS
IEEE 802.11g: OFDM
IEEE 802.11n: OFDM (1 TX & 1 RX)
5745~5825 MHz:
IEEE 802.11a: OFDM
IEEE 802.11n: BPSK (1 TX & 1 RX)</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>IEEE 802.11b: 1, 2, 5.5, 11 Mbps
IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
IEEE 802.11n: HT20: 6.5, 7.2, 13.0, 14.4, 19.5, 21.7, 26.0, 28.9, 39.0, 43.3, 52.0, 57.8, 58.5, 65.0, 72.2 Mbps</td></tr>
<tr><td>Number Of Channel</td><td>Please refer to the Note 2.</td></tr>
<tr><td>Antenna Designation</td><td>Please refer to the Note 3.</td></tr>
<tr><td>Antenna Gain(Peak)</td><td>Please refer to the Note 3.</td></tr>
<tr><td>Maximum Conducted Output Power</td><td>Peak Output Power:
2412~2462 MHz:
IEEE 802.11b/g: 20.30 dBm (0.1072 W)
IEEE 802.11n (20 MHz): 21.00 dBm (0.1259 W)
5745~5825 MHz:
IEEE 802.11a: 15.50 dBm (0.0355 W)
IEEE 802.11n (20 MHz): 15.41 dBm (0.0348 W)</td></tr>
</table>
More details of EUT technical specification, please refer to the User's Manual.</td></tr>
<tr><td>Power Source</td><td>1. Battery supplied.
2. DC Voltage supplied from External Power Supply.</td></tr>
<tr><td>Power Rating</td><td>1. Li-ion BATTERY PACK: DC 3.7V
2. External Power Supply:
I/P: AC 100-240V 50-60Hz 0.6A / O/P: DC 5V 3.0A</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
<tr><td>Products Covered</td><td>1 * Reader (optional): 2D or 1D
1 * WLAN + Bluetooth Module
1 * RFID Module
1 * Li-ion BATTERY PACK: 3.7V 2200mAh, 8.14Wh
1 * USB Charging Cable
1 * External Power Supply: ENG, 3A-182WP05</td></tr>
<tr><td>EUT Modification(s)</td><td>N/A</td></tr>
</table>

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. Channel List:

2412-2462 MHz Band (IEEE 802.11b/g/n (20MHz))					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	08	2447		

5745-5825 MHz Band (IEEE 802.11a/n (20MHz))					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785	165	5825
153	5765	161	5805		

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
					2.4G	5G
1	SINBON Electronics Co., Ltd.	204842G	Monopole antenna	N/A	2.40	5.60

4. The EUT incorporates MIMO function. Physically, the EUT provides two completed transmitters and two receivers (1T1R).

2412-2462 MHz Band	
Modulated type	TX Function
IEEE 802.11b	1 TX
IEEE 802.11g	1 TX
IEEE 802.11n (20MHz)	1 TX

5745-5825 MHz Band	
Modulated type	TX Function
IEEE 802.11a	1 TX
IEEE 802.11n (20MHz)	1 TX

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

2412-2462 MHz Band					
Test Items	**IEEE**	**Mode**	**Data Rate**	**Channel**	**Note**
Conducted Emission	802.11b	DSSS	1 Mbps	06	
Antenna conducted Spurious Emission	802.11b	DSSS	1 Mbps	01/06/11	
	802.11g	OFDM	6 Mbps	01/06/11	
	802.11n (20 MHz)	BPSK	MCS8	01/06/11	
6 dB Bandwidth	802.11b	DSSS	1 Mbps	01/06/11	
	802.11g	OFDM	6 Mbps	01/06/11	
	802.11n (20 MHz)	BPSK	MCS8	01/06/11	
Maximum Peak Conducted Output Power	802.11b	DSSS	1 Mbps	01/06/11	
	802.11g	OFDM	6 Mbps	01/06/11	
	802.11n (20 MHz)	BPSK	MCS8	01/06/11	
Radiated Spurious Emission (30 MHz to 1 GHz)	802.11n (20 MHz)	OFDM	MCS8	06	
Radiated Spurious Emission (above 1 GHz)	802.11b	DSSS	1 Mbps	01/06/11	
	802.11g	OFDM	6 Mbps	01/06/11	
	802.11n (20 MHz)	BPSK	MCS8	01/06/11	
Restricted Bands	802.11b	DSSS	1 Mbps	01/06/11	
	802.11g	OFDM	6 Mbps	01/06/11	
	802.11n (20 MHz)	BPSK	MCS8	01/06/11	
Antenna Requirement	---		---	---	

5745-5825 MHz Band					
Test Items	**IEEE**	**Mode**	**Data Rate**	**Channel**	**Note**
Conducted Emission	802.11a	OFDM	6 Mbps	157	
Antenna conducted Spurious Emission	802.11a	OFDM	6 Mbps	149/157/165	
	802.11n (20 MHz)	BPSK	MCS8	149/157/165	
6 dB Bandwidth	802.11a	OFDM	6 Mbps	149/157/165	
	802.11n (20 MHz)	BPSK	MCS8	149/157/165	
Maximum Peak Conducted Output Power	802.11a	OFDM	6 Mbps	149/157/165	
	802.11n (20 MHz)	BPSK	MCS8	149/157/165	
Radiated Spurious Emission (30 MHz to 1 GHz)	802.11n (20 MHz)	OFDM	MCS8	157	
Radiated Spurious Emission (above 1 GHz)	802.11a	OFDM	6 Mbps	149/157/165	
	802.11n (20 MHz)	BPSK	MCS8	149/157/165	
Antenna Requirement	---		---	---	

NOTE: The measurements are performed at the highest, middle, lowest available channels.

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

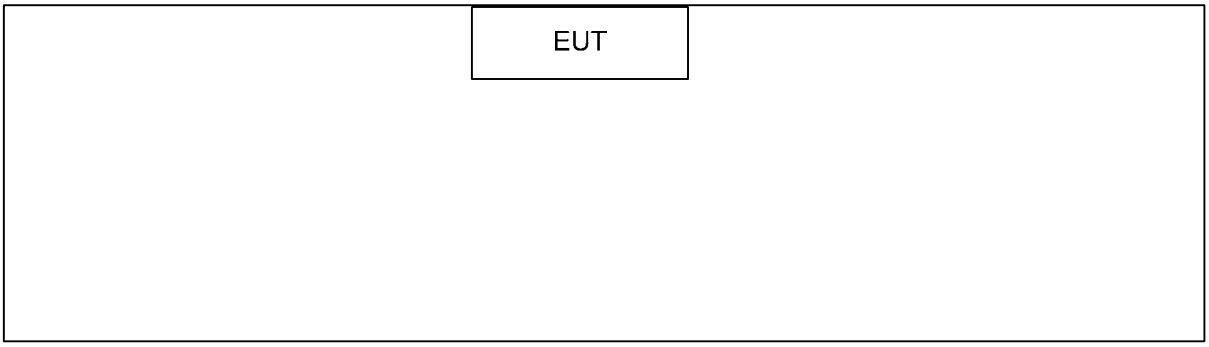
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

2412-2462 MHz Band						
IEEE	802.11b			802.11g		
Test software Version	SRU v3.03.10			SRU v3.03.10		
Frequency	2412 MHz	2437 MHz	2462 MHz	2412 MHz	2437 MHz	2462 MHz
Parameter	100	100	100	100	100	100

2412-2462 MHz Band						
IEEE	802.11n (20 MHz)					
Test software Version	SRU v3.03.10					
Frequency	2412 MHz	2437 MHz	2462 MHz			
Parameter	90	90	90			

5745-5825 MHz Band						
IEEE	802.11a			802.11n (20 MHz)		
Test software Version	SRU v3.03.10			SRU v3.03.10		
Frequency	5745 MHz	5785 MHz	5825 MHz	5745 MHz	5785 MHz	5825 MHz
Parameter	50	100	100	50	100	100

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Rugged Mobile Computer	unitech	PA520	HLEPA520BTNF	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note
N/A	-	-	-	-

NOTE: The support equipment was authorized by Declaration of Conformity (DOC).

4 CONDUCTED EMISSION

4.1 LIMIT

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 - 5.0	73.00	60.00	56.00	46.00
5.0 - 30.0	73.00	60.00	60.00	50.00

NOTE:

1. The tighter limit applies at the band edges.
2. The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
3. The test result calculated as following:
   Measurement Value = Reading Level + Correct Factor
   Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
   Margin Level = Measurement Value – Limit Value

4.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	Schwarzbeck	NSLK 8127	8127685	Feb. 24, 2014
2	Test Cable	TIMES	CFD300-NL	C01	Jun. 16, 2014
3	EMI Test Receiver	Agilent	N9038A	MY51210215	Mar. 21, 2014
4	Measurement Software	EZ	EZ_EMC (Version NB-02A)	N/A	N/A

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

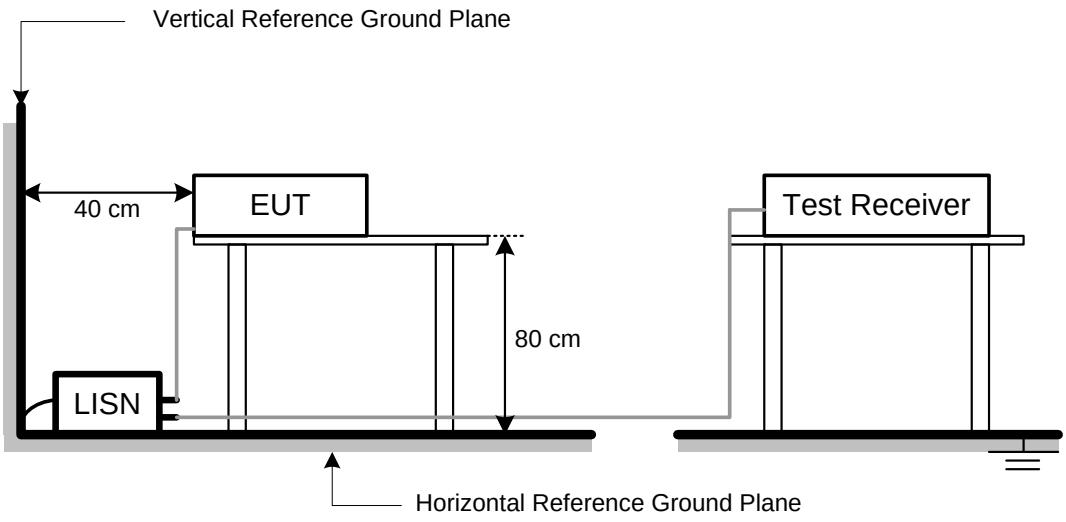
4.3 TEST PROCEDURES

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

NOTE:

a. Reading in which marked as Peak, QP or AVG means measurements by using are Quasi-Peak or Average Mode with Detector BW=9 kHz (6 dB Bandwidth).
b. All readings are Peak Mode value unless otherwise stated QP or AVG in column of Note. If the Peak or QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only Peak or QP Mode was measured, but AVG Mode didn‘t perform.

4.4 TEST SETUP LAYOUT



4.5 DEVIATION FROM TEST STANDARD

No deviation

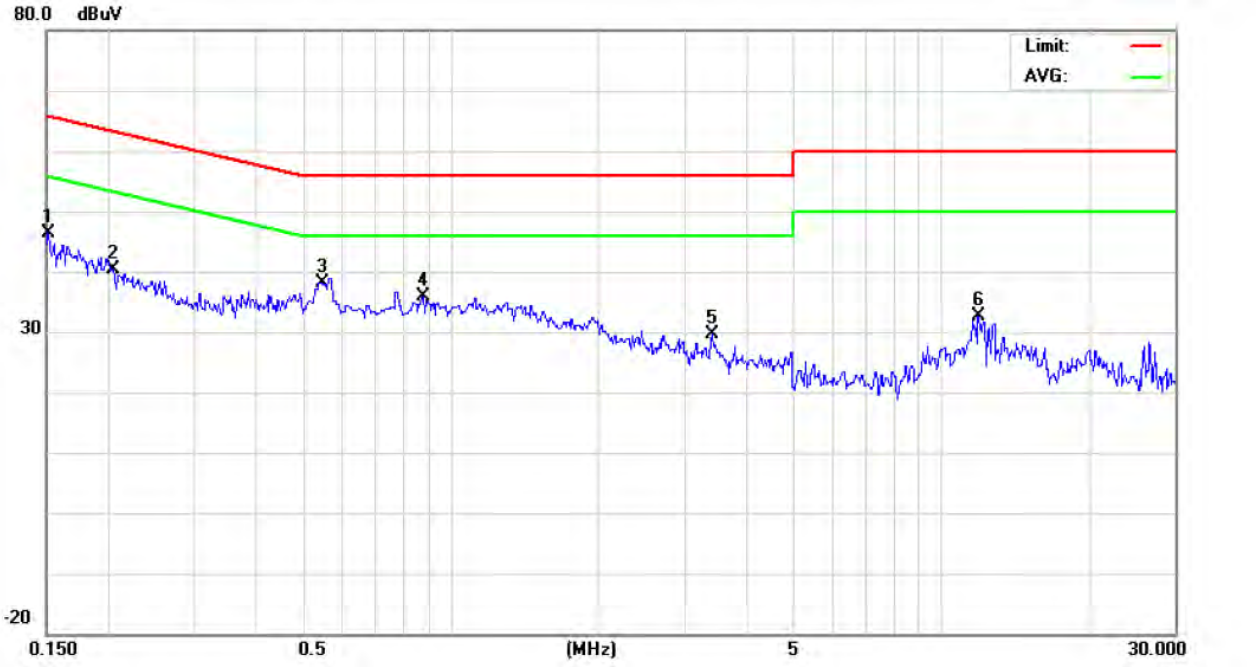
4.6 EUT OPERATING CONDITIONS

The EUT used during radiated and/or conducted emission measurement was designed to exercise in a manner similar to a typical use.

4.7 TEST RESULTS - 2412-2462 MHZ

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24° C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

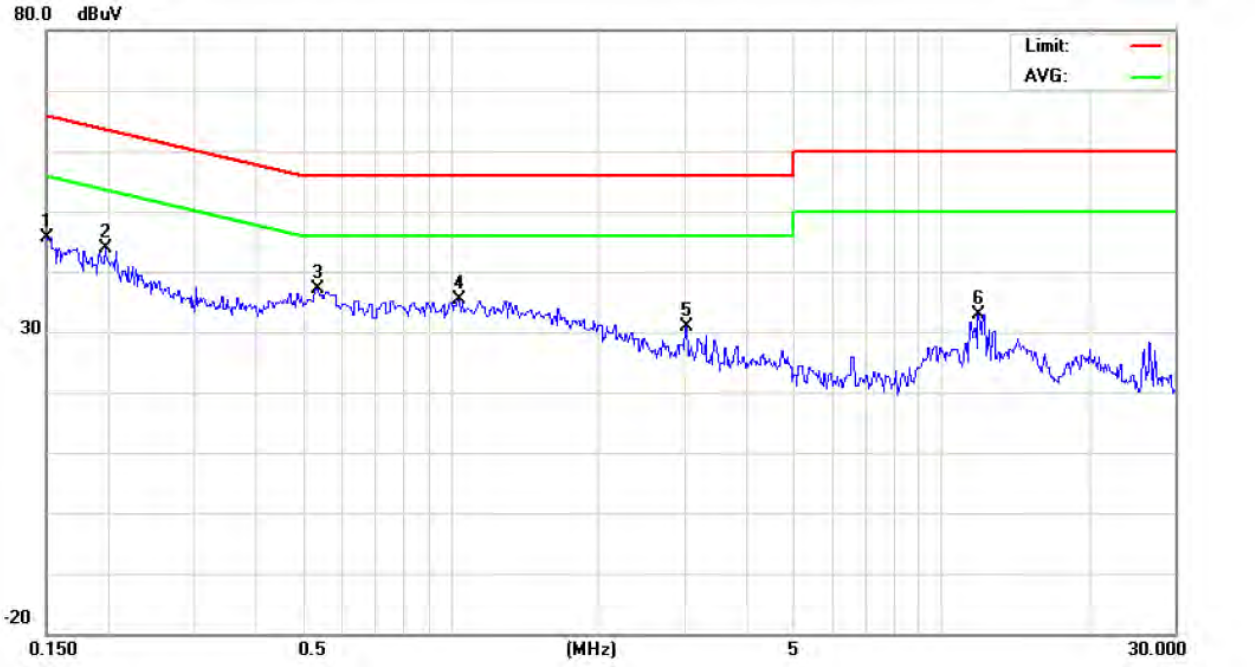
Phase: Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1513	37.61	8.70	46.31	65.93	-19.62	peak	
2		0.2045	30.84	9.43	40.27	63.43	-23.16	peak	
3	*	0.5450	29.62	8.63	38.25	56.00	-17.75	peak	
4		0.8780	26.47	9.40	35.87	56.00	-20.13	peak	
5		3.4160	20.32	9.41	29.73	56.00	-26.27	peak	
6		11.9000	23.35	9.35	32.70	60.00	-27.30	peak	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24° C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

Phase: Neutral

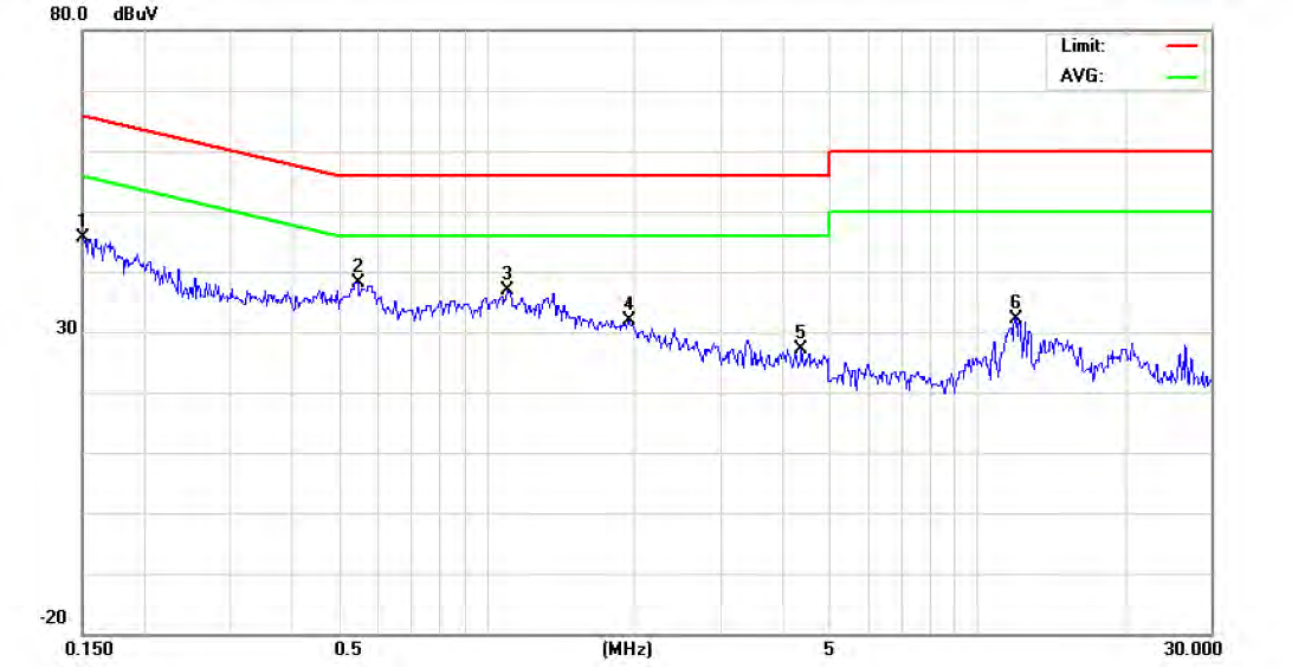


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	37.03	8.68	45.71	66.00	-20.29	peak	
2		0.1975	33.35	10.41	43.76	63.72	-19.96	peak	
3	*	0.5360	28.65	8.60	37.25	56.00	-18.75	peak	
4		1.0399	25.77	9.68	35.45	56.00	-20.55	peak	
5		3.0110	21.49	9.40	30.89	56.00	-25.11	peak	
6		11.9000	23.64	9.35	32.99	60.00	-27.01	peak	

4.8 TEST RESULTS - 5745-5825 MHZ

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24° C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5785 MHz		

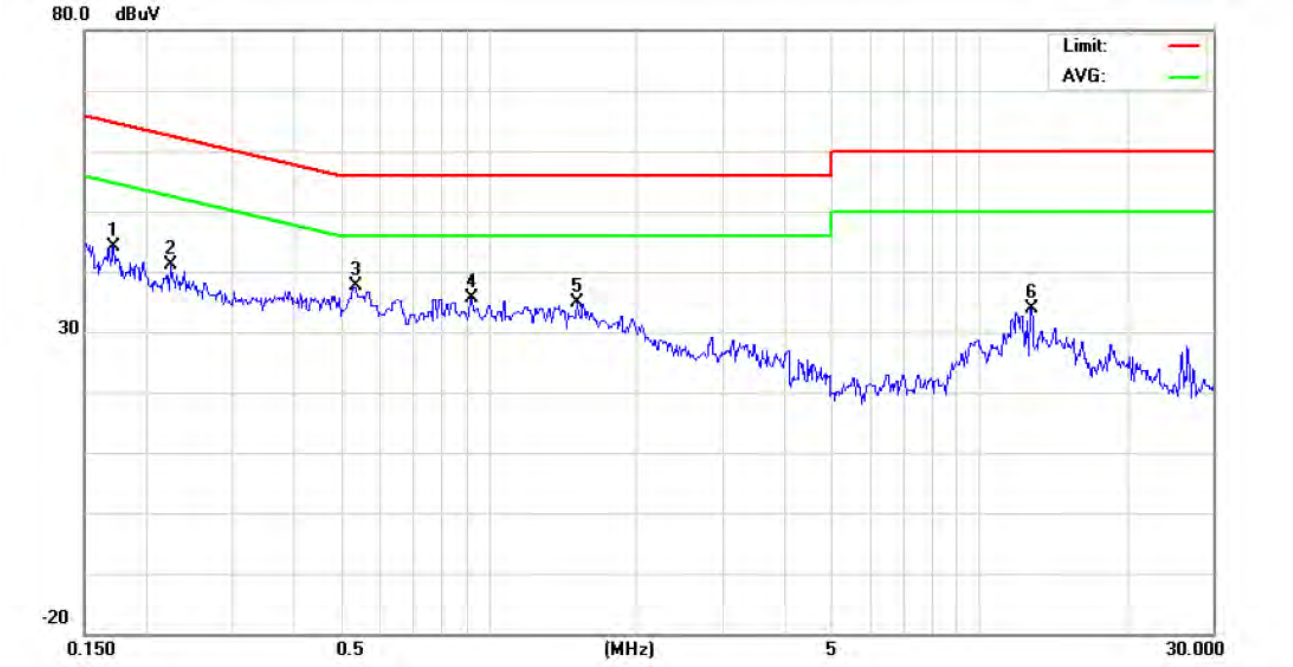
Phase: Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	37.07	8.68	45.75	66.00	-20.25	peak	
2	*	0.5450	29.53	8.63	38.16	56.00	-17.84	peak	
3		1.1029	27.14	9.66	36.80	56.00	-19.20	peak	
4		1.9399	22.52	9.36	31.88	56.00	-24.12	peak	
5		4.3699	17.64	9.48	27.12	56.00	-28.88	peak	
6		11.9498	22.74	9.35	32.09	60.00	-27.91	peak	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24° C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5785 MHz		

Phase: Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1714	34.59	9.46	44.05	64.89	-20.84	peak	
2		0.2248	31.26	9.84	41.10	62.64	-21.54	peak	
3	*	0.5360	29.15	8.60	37.75	56.00	-18.25	peak	
4		0.9229	26.14	9.51	35.65	56.00	-20.35	peak	
5		1.5168	25.26	9.50	34.76	56.00	-21.24	peak	
6		12.7500	24.55	9.39	33.94	60.00	-26.06	peak	

5 ANTENNA CONDUCTED SPURIOUS EMISSION

5.1 LIMIT

Test Item	Frequency Range (MHz)	Limit
Antenna conducted Spurious Emission	30-25000	20 dB less than the peak value of fundamental frequency

5.2 MEASUREMENT INSTRUMENTS LIST

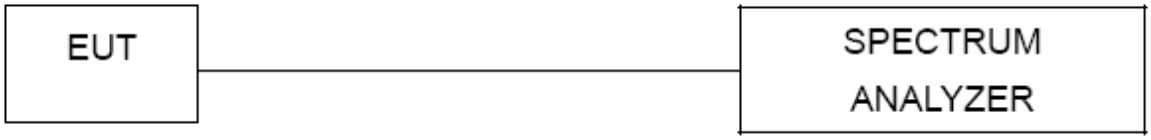
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Sep. 08, 2014

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

5.3 TEST PROCEDURES

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = Auto.

5.4 TEST SETUP LAYOUT



5.5 DEVIATION FROM TEST STANDARD

No deviation

5.6 EUT OPERATING CONDITIONS

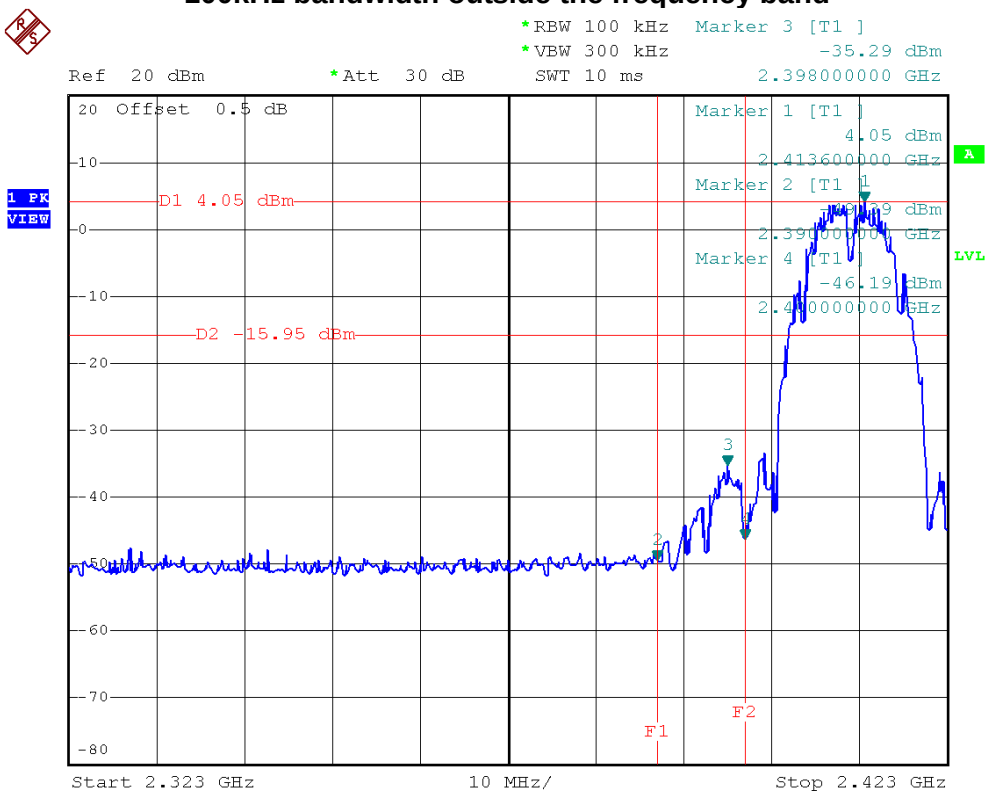
The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

5.7 TEST RESULTS - 2412-2462 MHZ

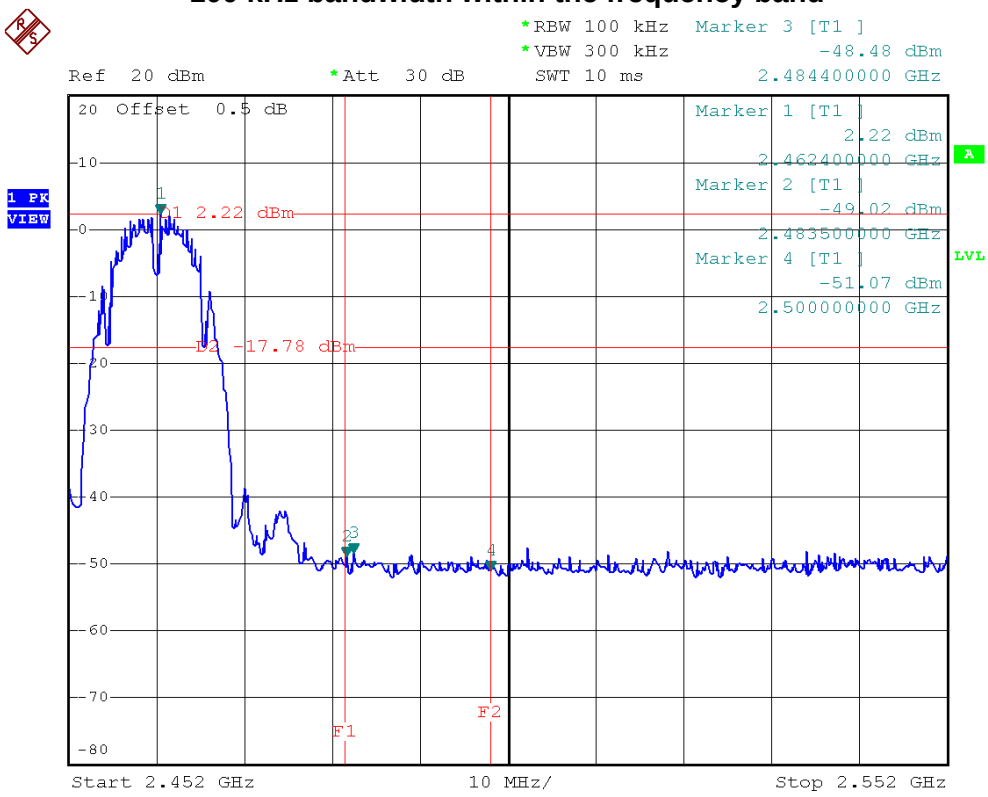
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b		

Channel of Worst Data			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2398.00	-35.29	2484.00	-48.48
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

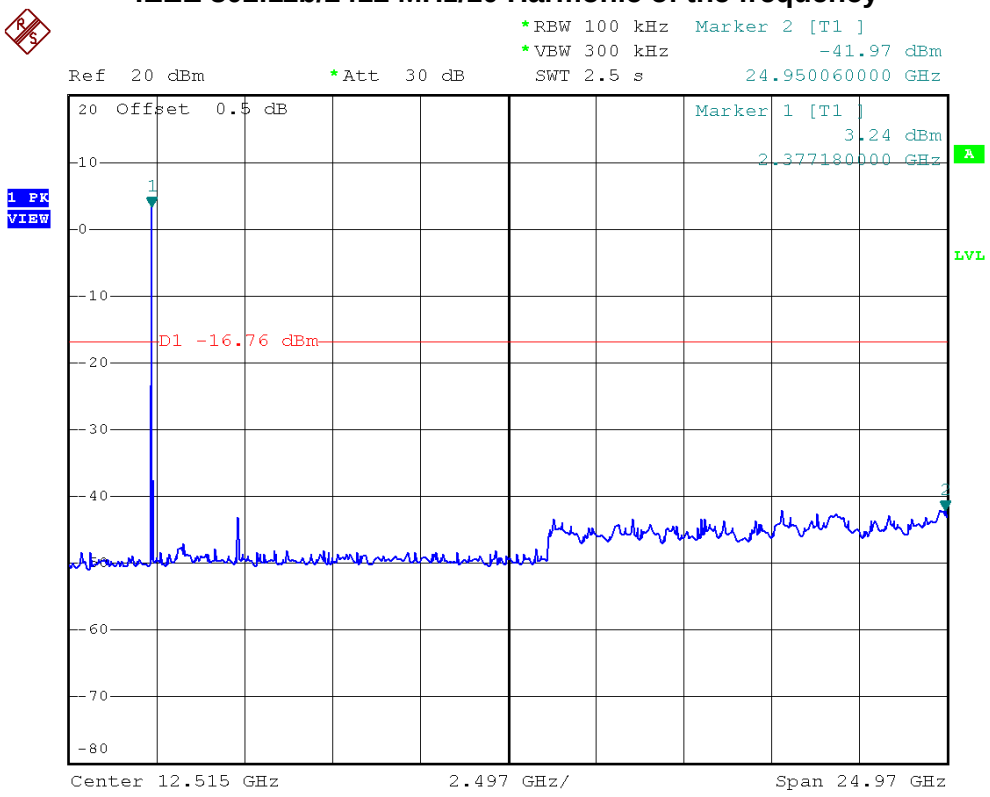
IEEE 802.11b/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



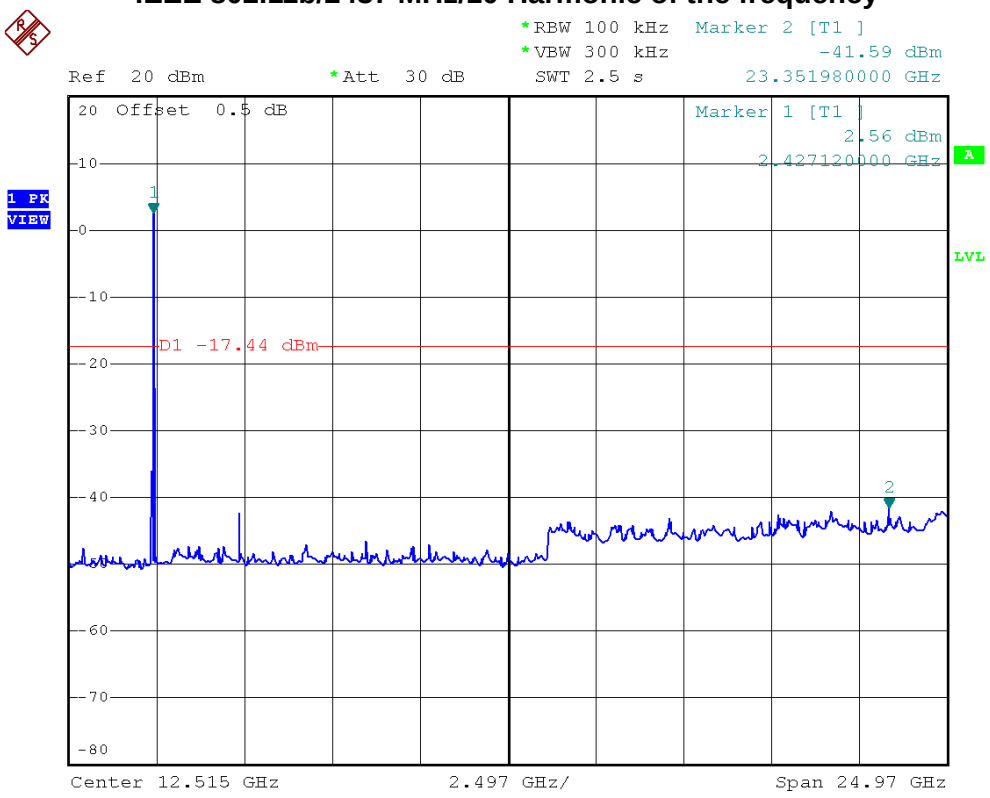
IEEE 802.11b/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



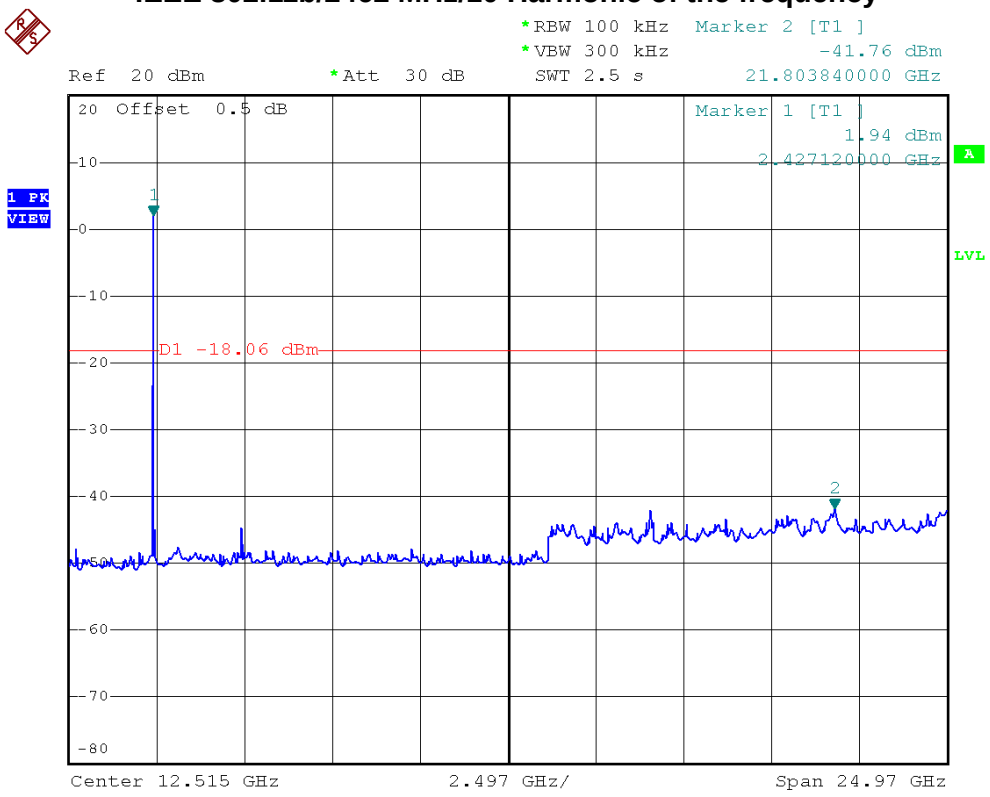
IEEE 802.11b/2412 MHz/10 Harmonic of the frequency



IEEE 802.11b/2437 MHz/10 Harmonic of the frequency



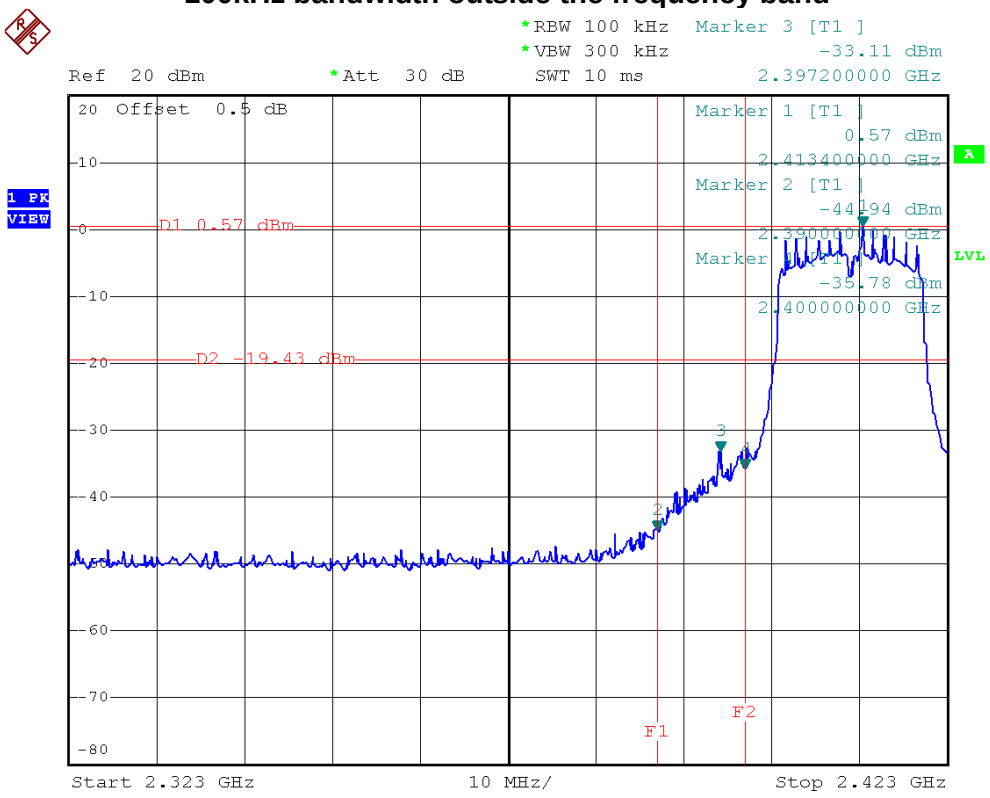
IEEE 802.11b/2462 MHz/10 Harmonic of the frequency



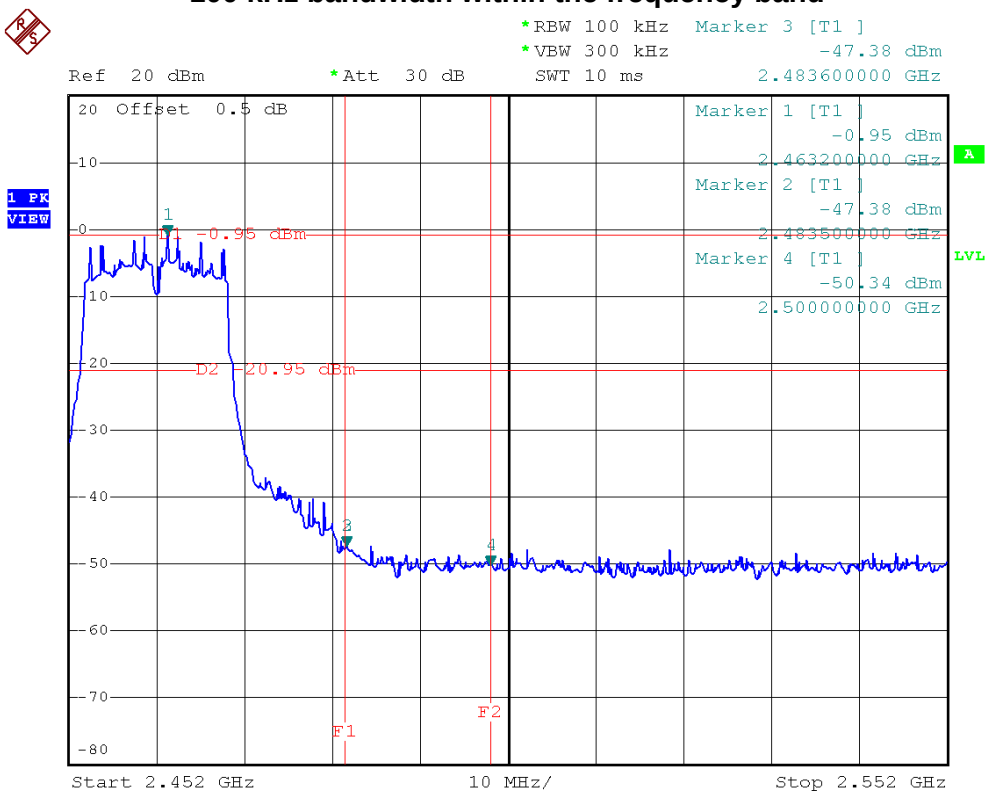
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g		

Channel of Worst Data			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2397.20	-33.11	2483.60	-47.38
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

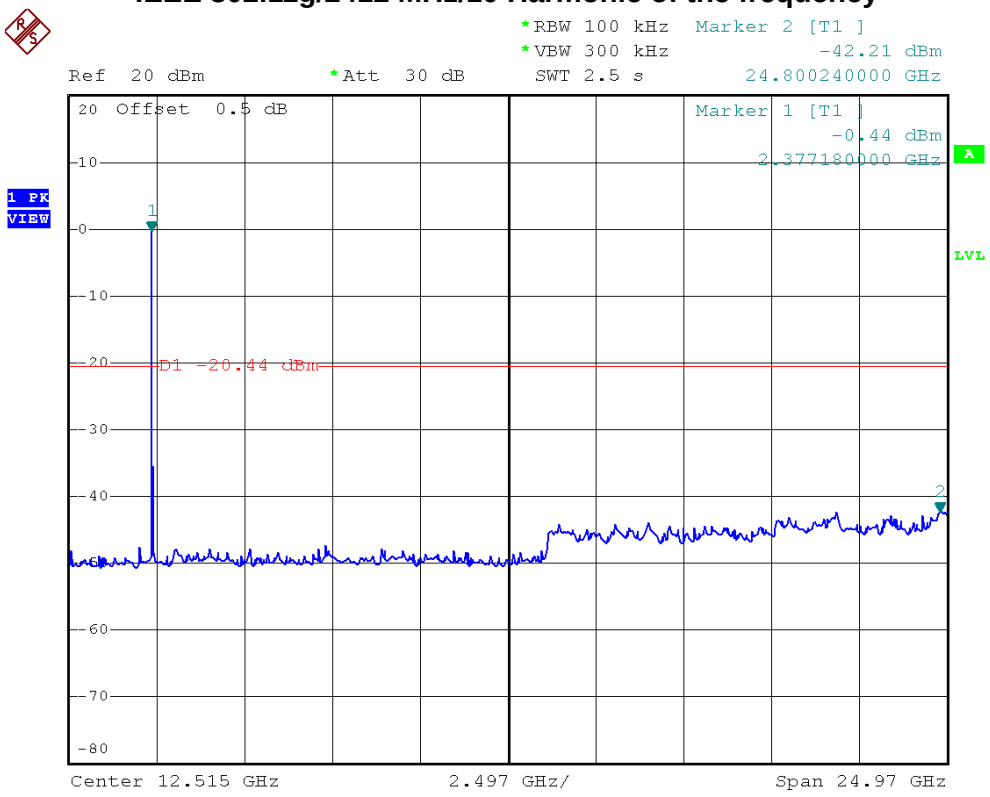
IEEE 802.11g/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



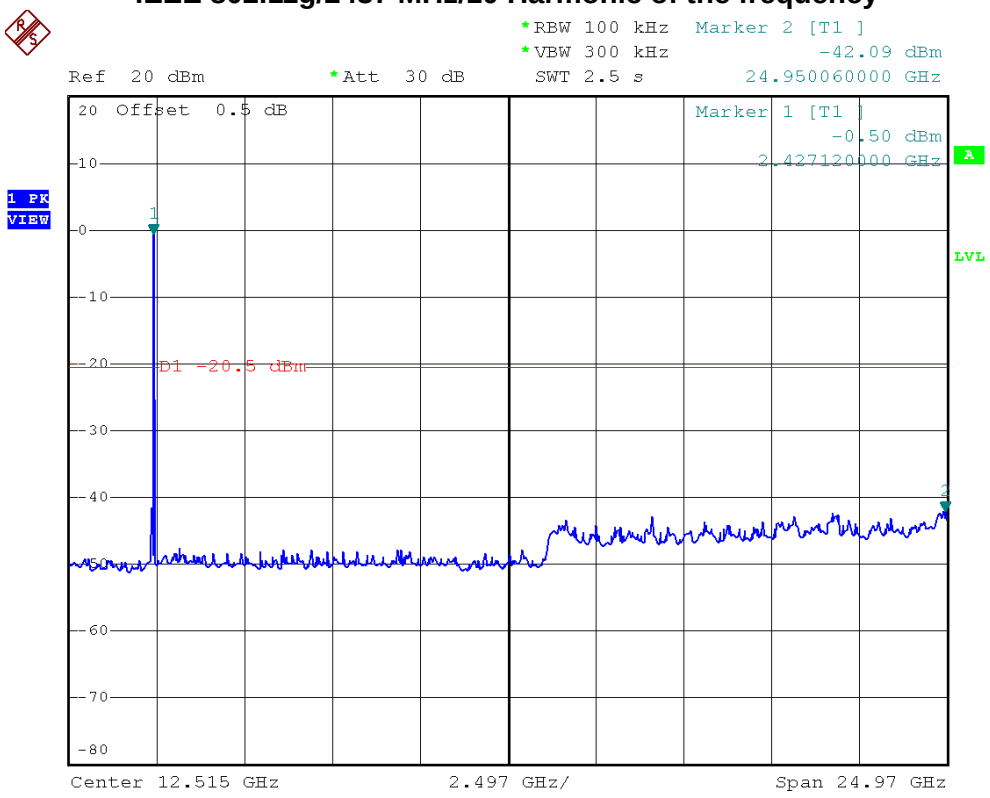
IEEE 802.11g/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



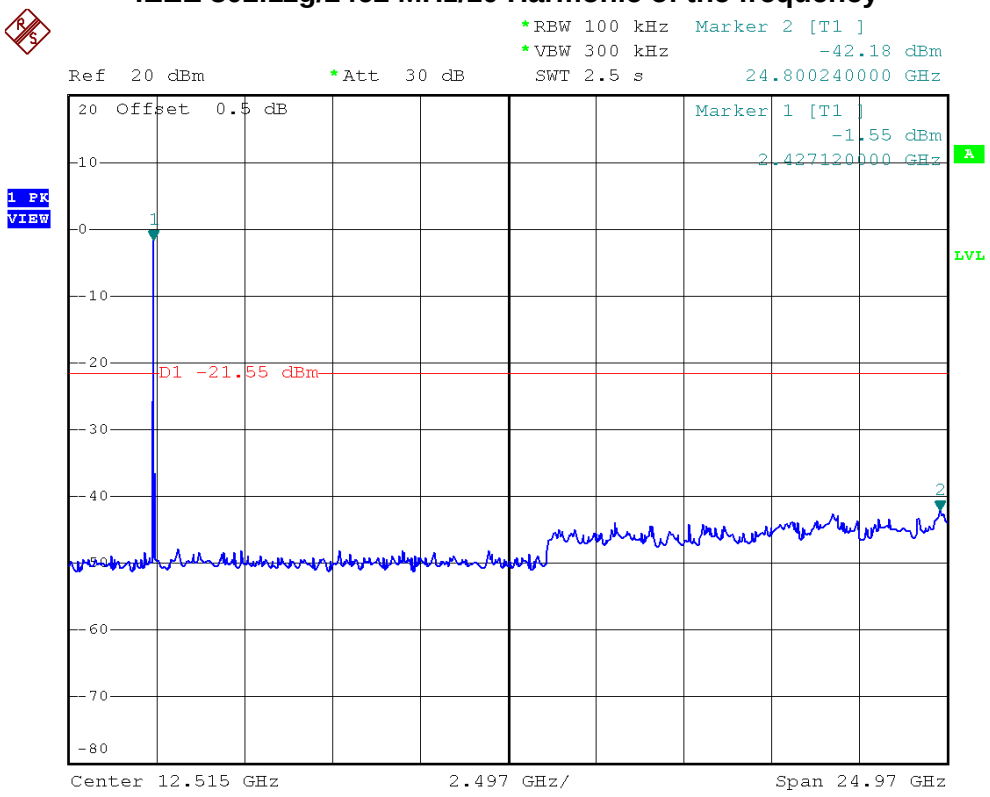
IEEE 802.11g/2412 MHz/10 Harmonic of the frequency



IEEE 802.11g/2437 MHz/10 Harmonic of the frequency



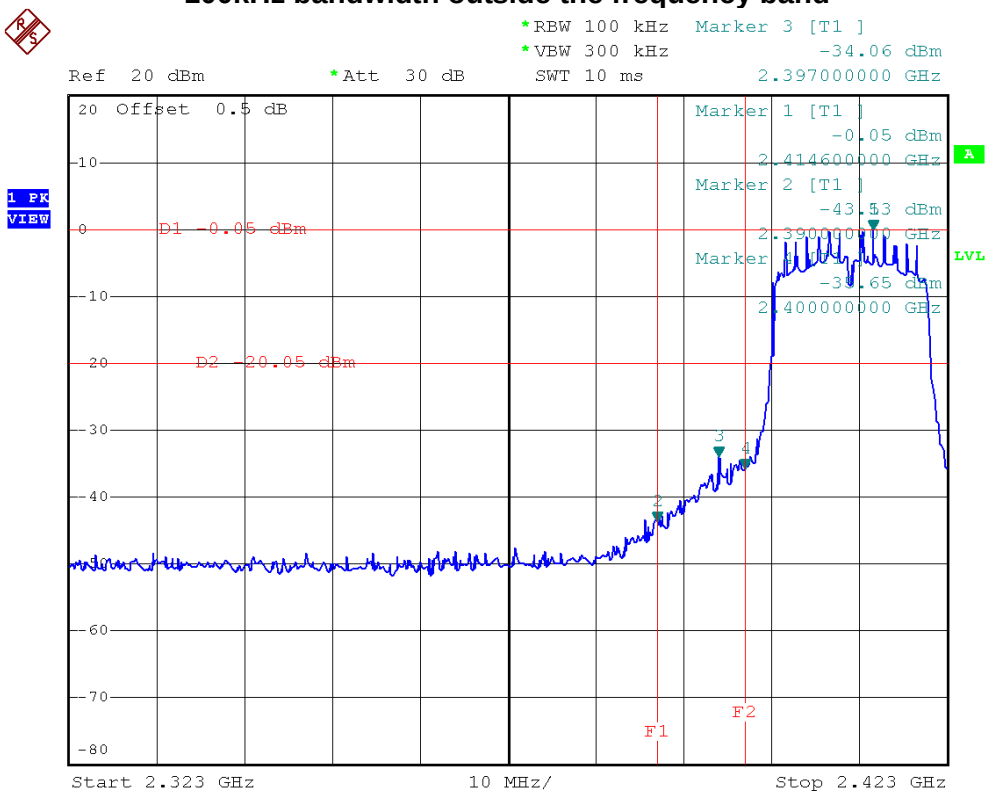
IEEE 802.11g/2462 MHz/10 Harmonic of the frequency



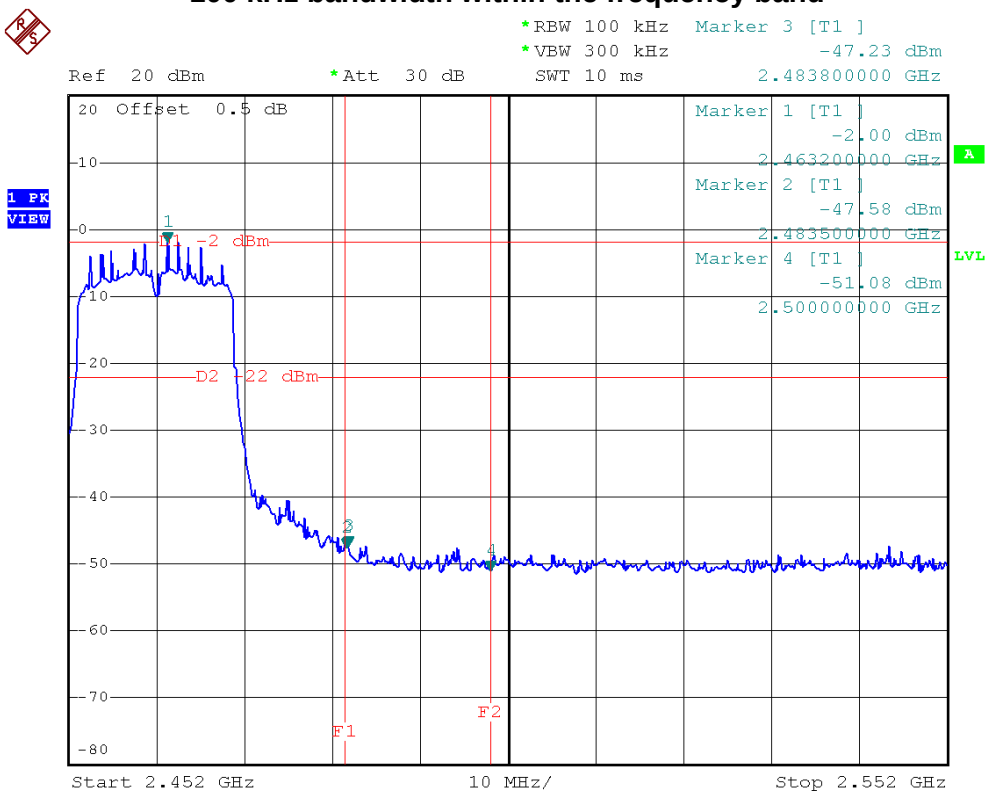
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		

Channel of Worst Data			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2397.00	-34.06	2483.80	-47.23
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

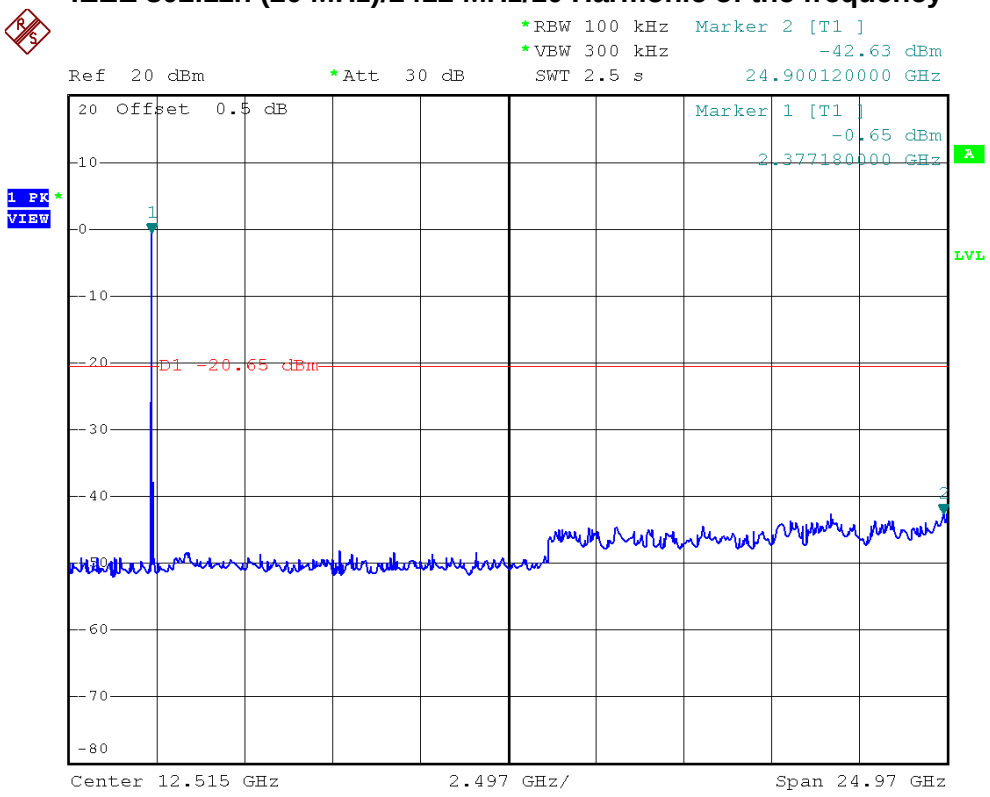
IEEE 802.11n (20 MHz)/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



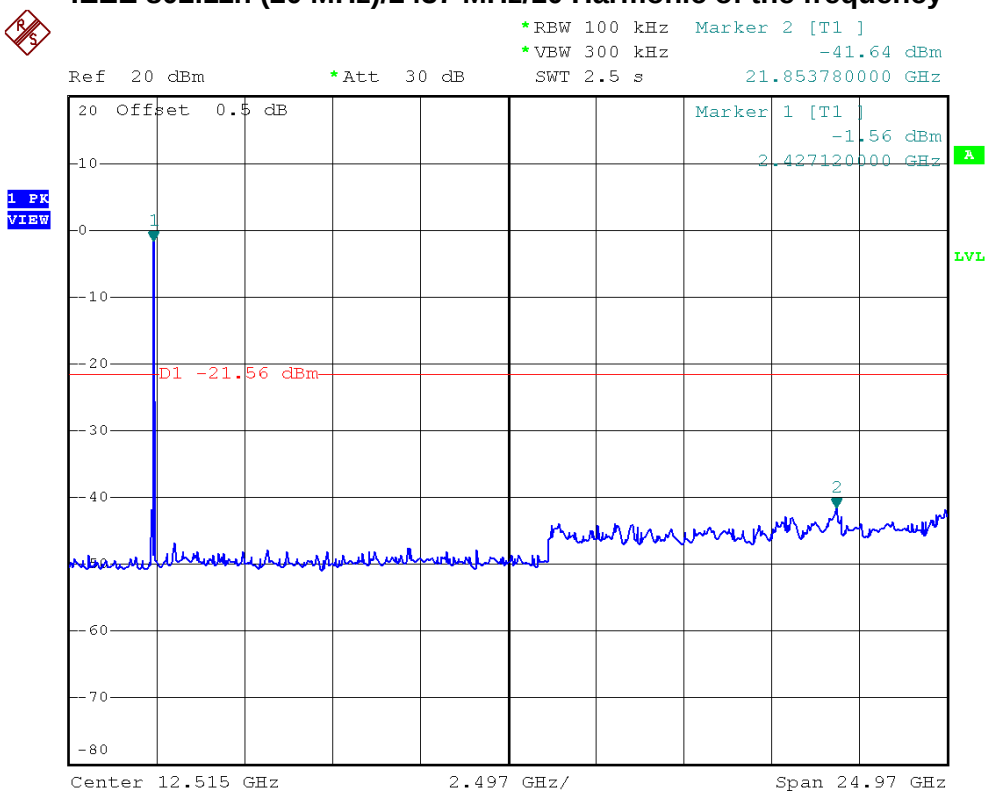
IEEE 802.11n (20 MHz)/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



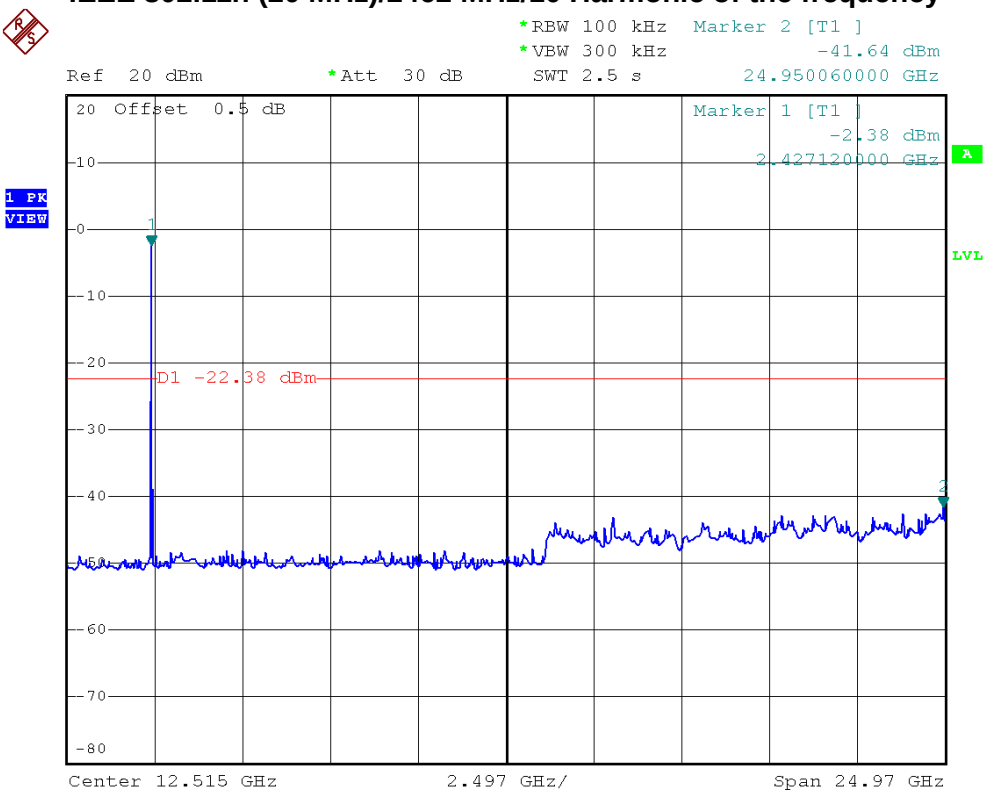
IEEE 802.11n (20 MHz)/2412 MHz/10 Harmonic of the frequency



IEEE 802.11n (20 MHz)/2437 MHz/10 Harmonic of the frequency



IEEE 802.11n (20 MHz)/2462 MHz/10 Harmonic of the frequency

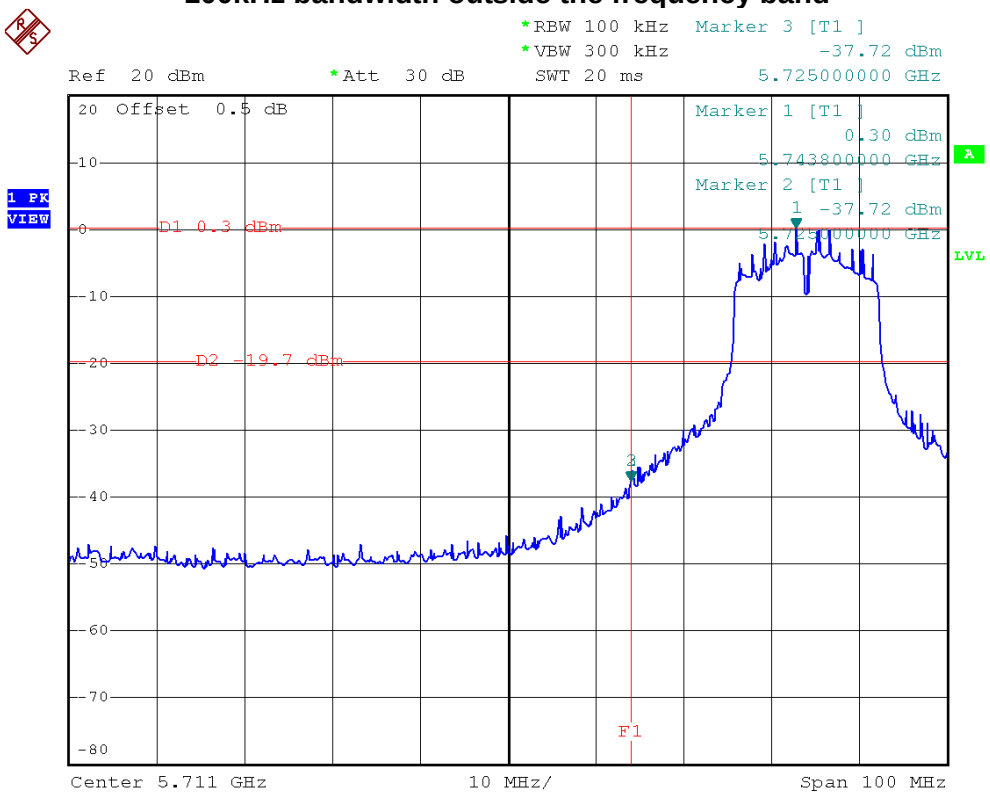


5.8 TEST RESULTS - 5745-5825 MHZ

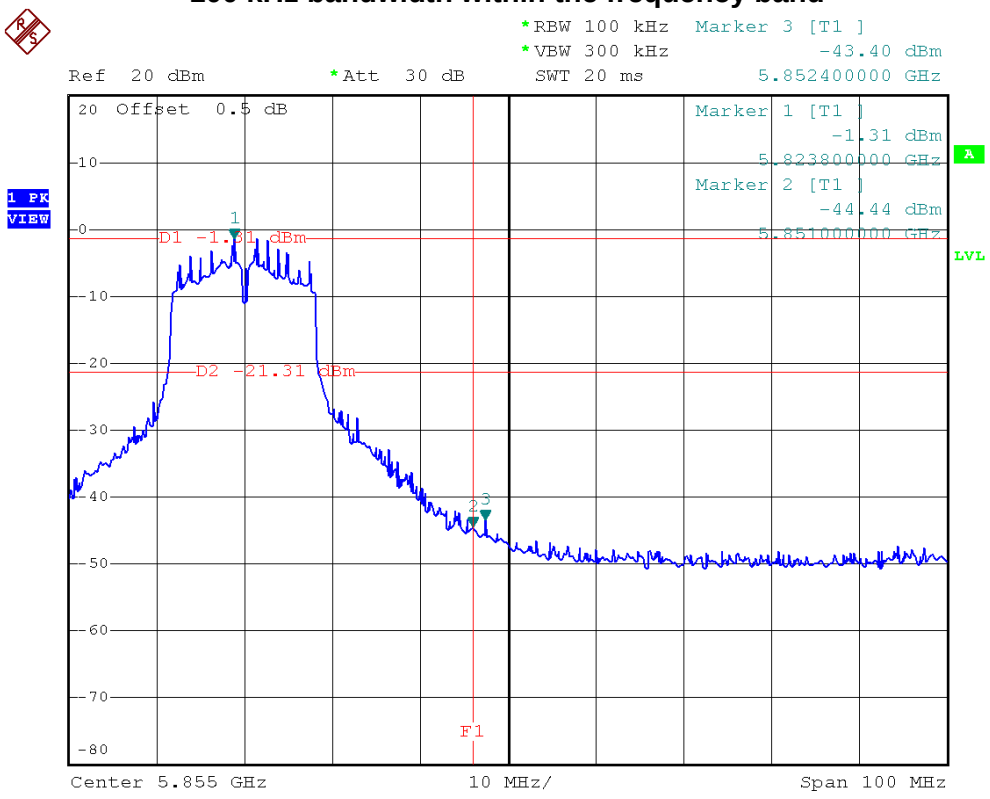
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a		

Channel of Worst Data			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5725.00	-37.72	5852.40	-43.40
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

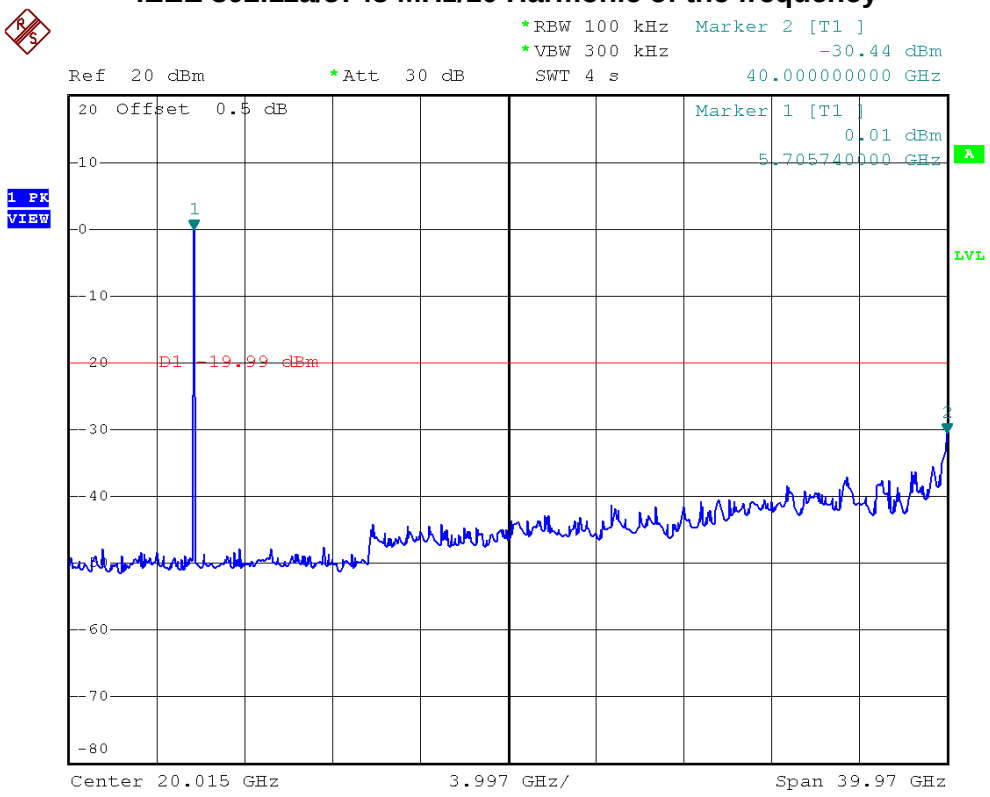
IEEE 802.11a/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



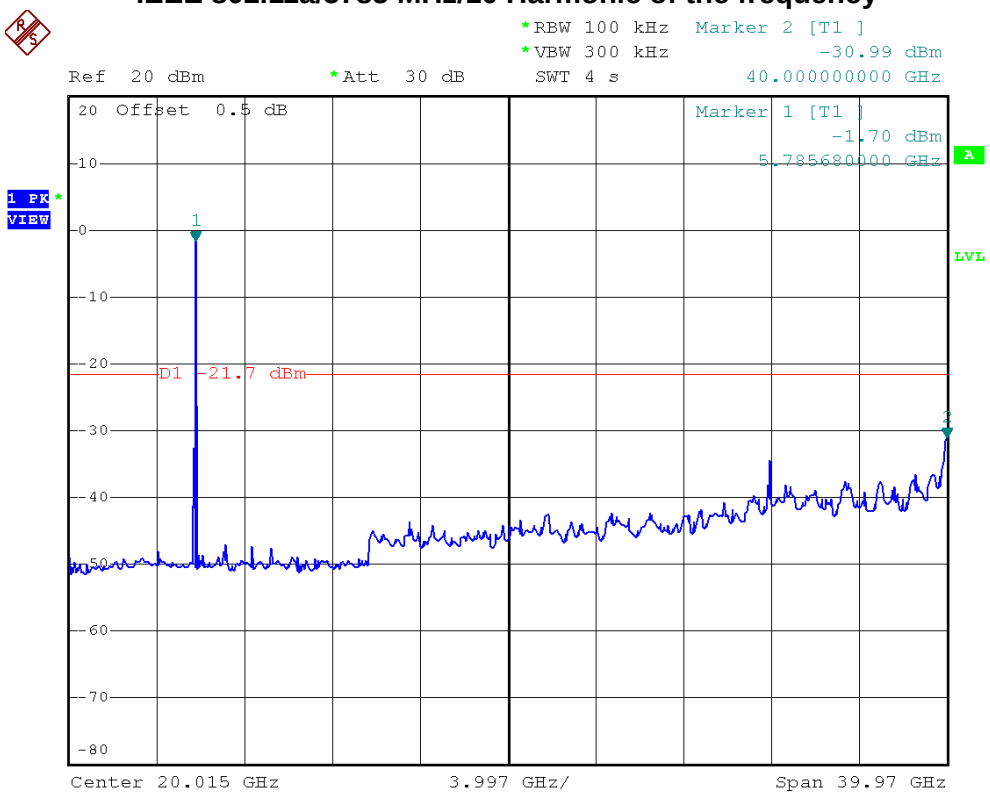
IEEE 802.11a/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



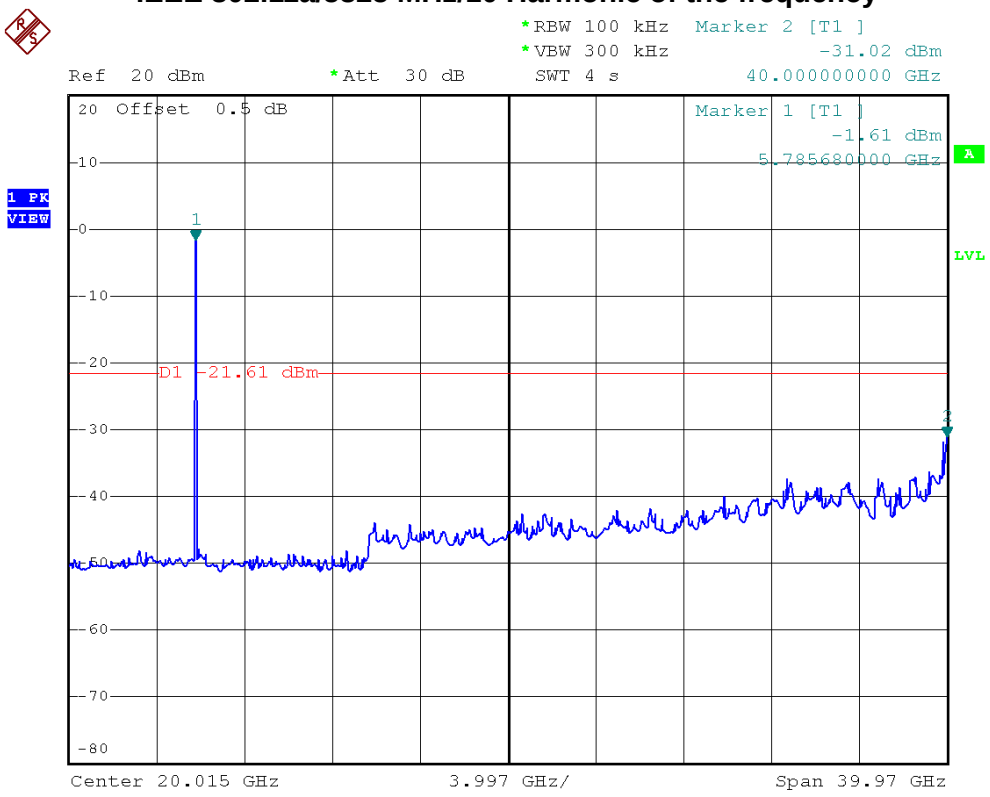
IEEE 802.11a/5745 MHz/10 Harmonic of the frequency



IEEE 802.11a/5785 MHz/10 Harmonic of the frequency



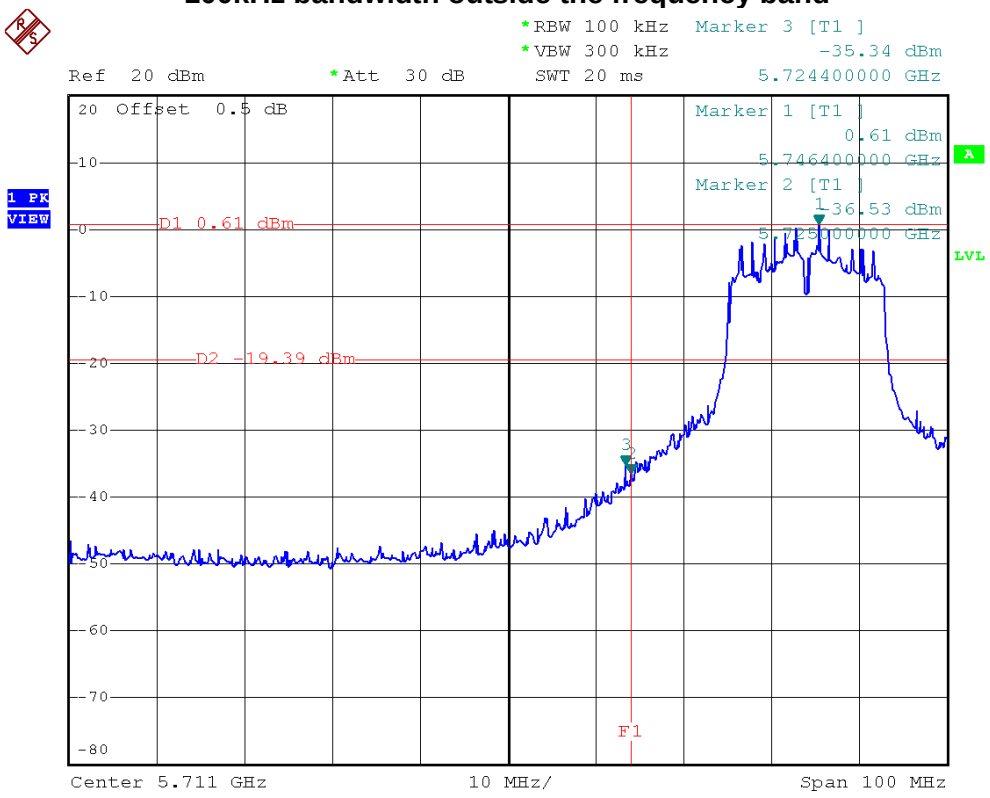
IEEE 802.11a/5825 MHz/10 Harmonic of the frequency



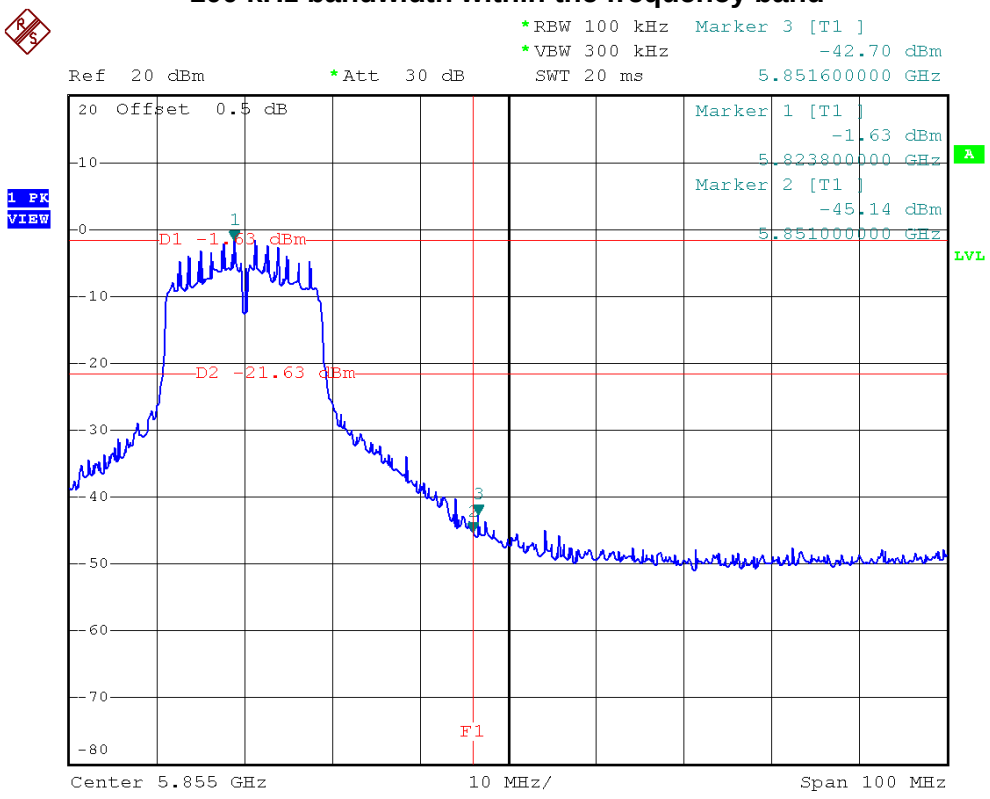
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		

Channel of Worst Data			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5724.40	-35.34	5851.60	-42.70
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

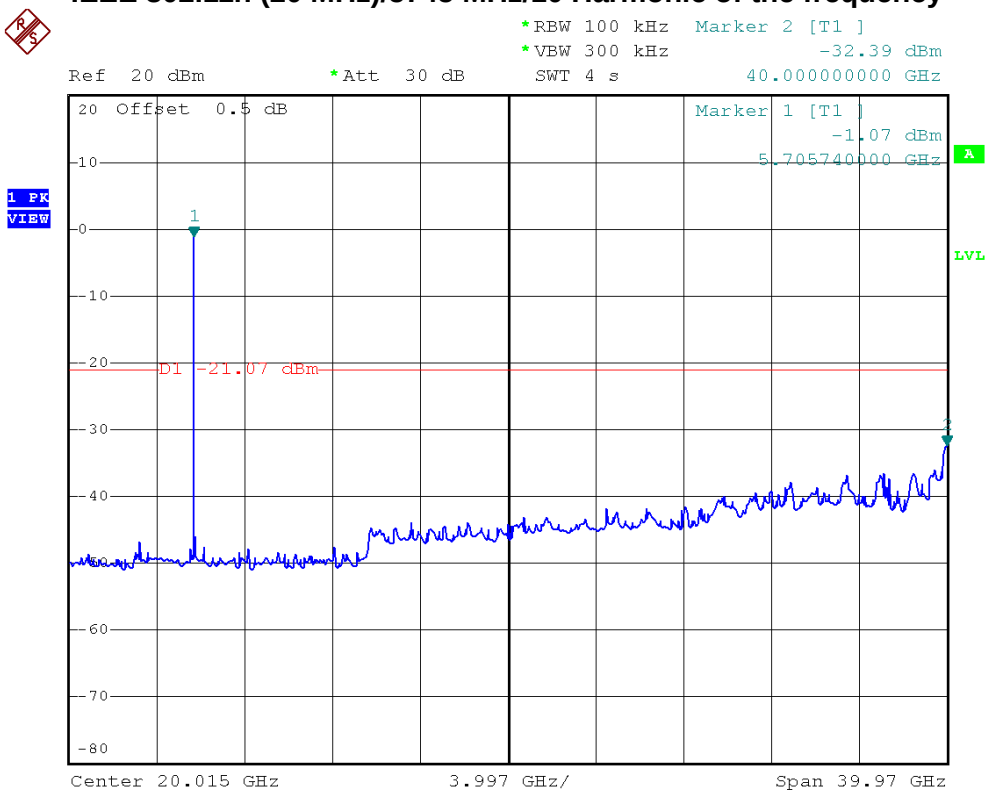
IEEE 802.11n (20 MHz)/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



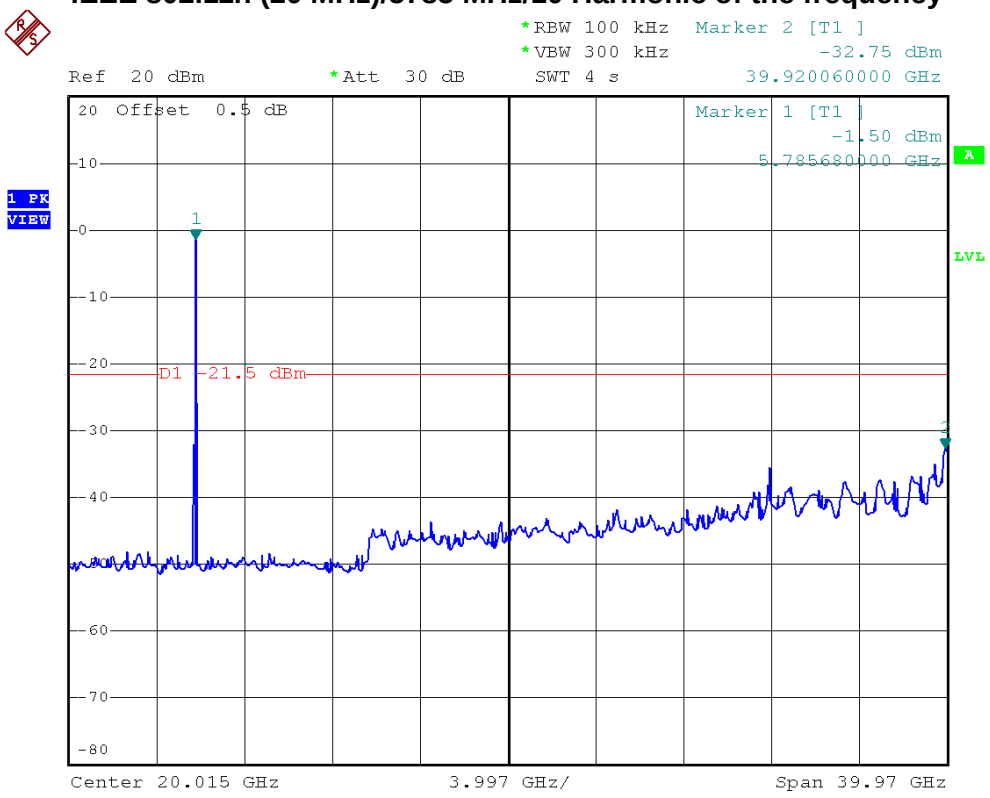
IEEE 802.11n (20 MHz)/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



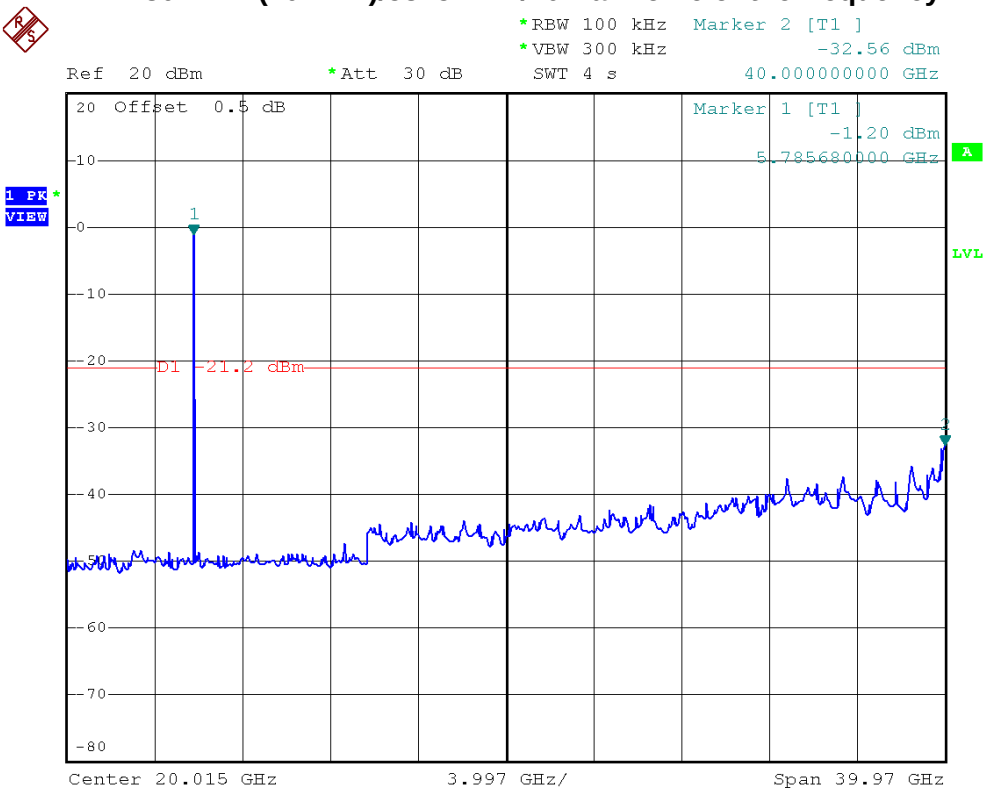
IEEE 802.11n (20 MHz)/5745 MHz/10 Harmonic of the frequency



IEEE 802.11n (20 MHz)/5785 MHz/10 Harmonic of the frequency



IEEE 802.11n (20 MHz)/5825 MHz/10 Harmonic of the frequency



6 6 DB BANDWIDTH

6.1 LIMIT

Test Item	Frequency Range (MHz)	Limit
Bandwidth	2400-2483.5	>= 500KHz (6dB bandwidth)

6.2 MEASUREMENT INSTRUMENTS LIST

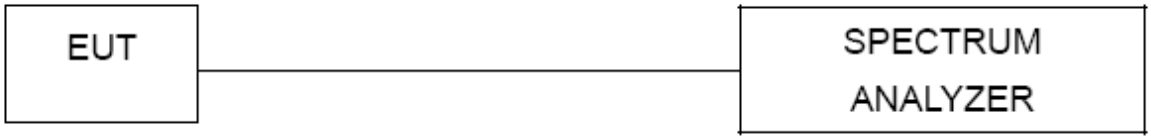
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Sep. 08, 2014

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

6.3 TEST PROCEDURES

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = Auto.

6.4 TEST SETUP LAYOUT



6.5 DEVIATION FROM TEST STANDARD

No deviation

6.6 EUT OPERATING CONDITIONS

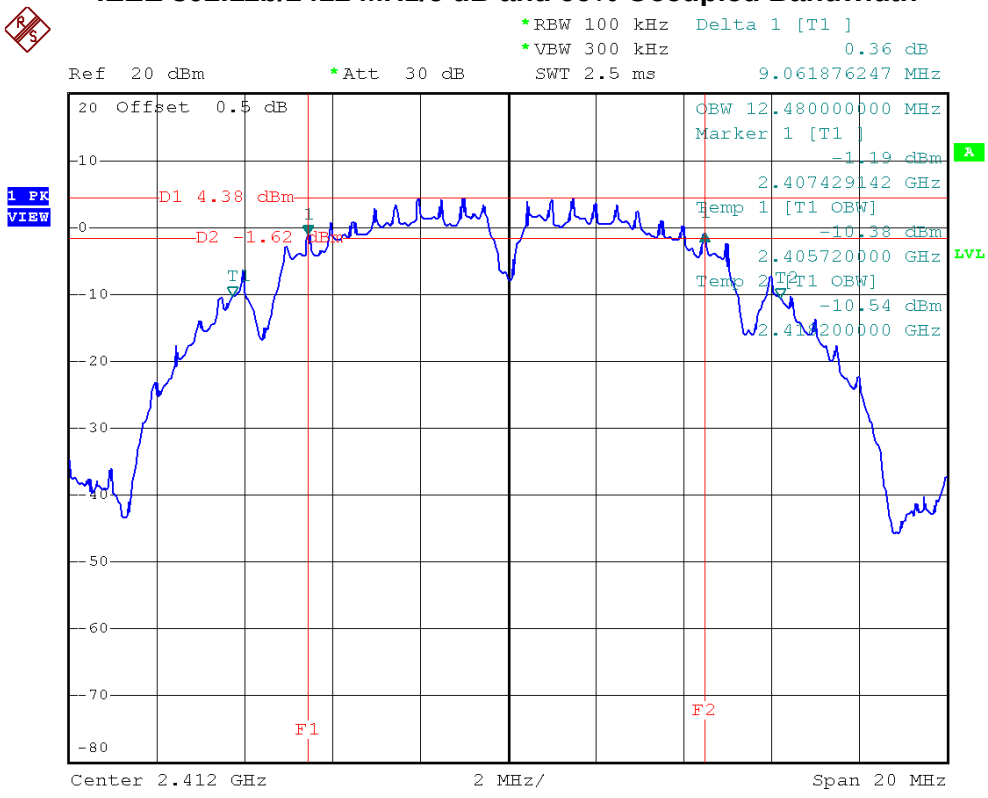
The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

6.7 TEST RESULTS - 2412-2462 MHZ

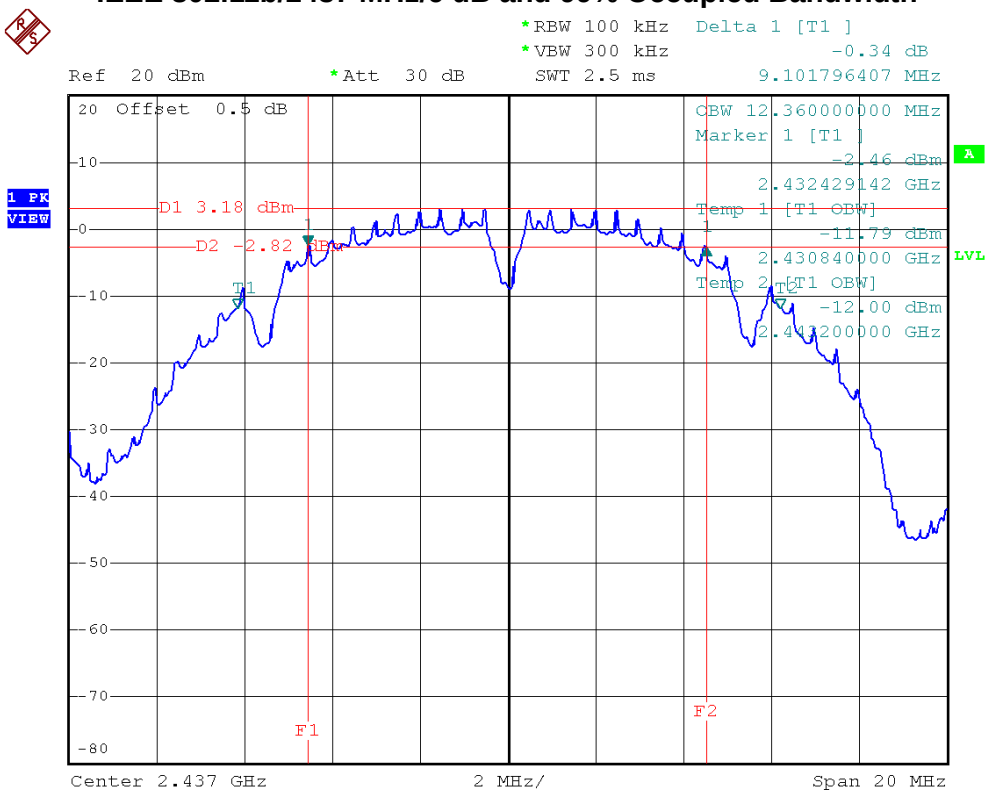
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	9.06	12.48	>=500 kHz	PASS
2437 MHz	9.10	12.36	>=500 kHz	PASS
2462 MHz	8.54	12.48	>=500 kHz	PASS

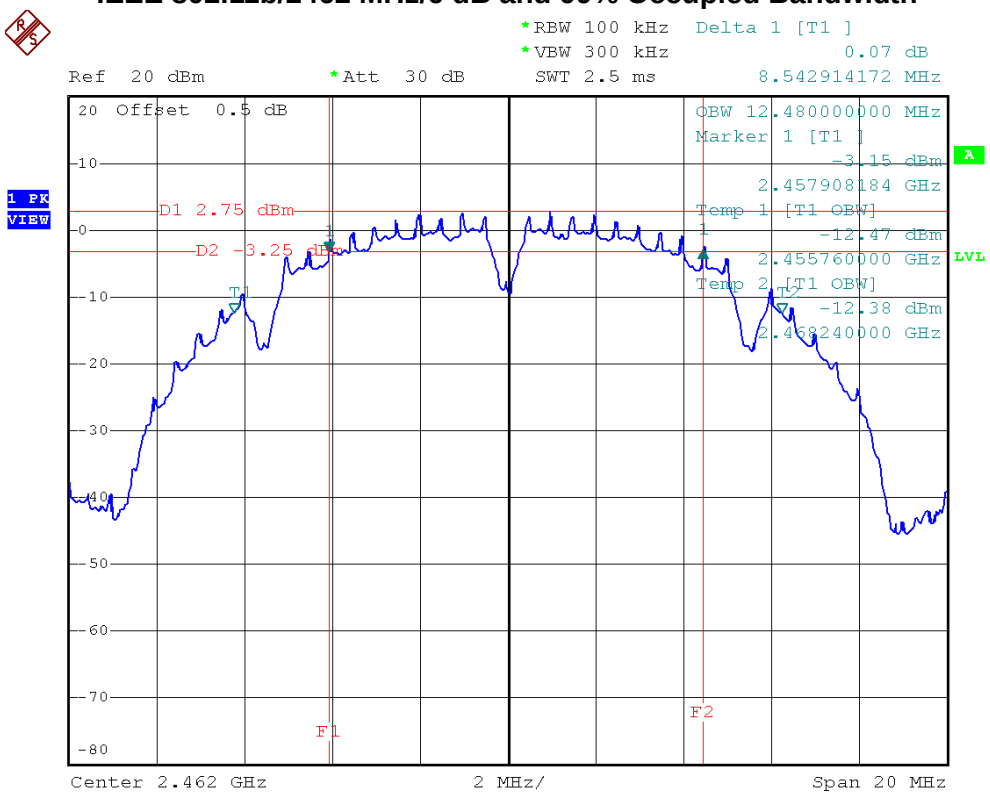
IEEE 802.11b/2412 MHz/6 dB and 99% Occupied Bandwidth



IEEE 802.11b/2437 MHz/6 dB and 99% Occupied Bandwidth



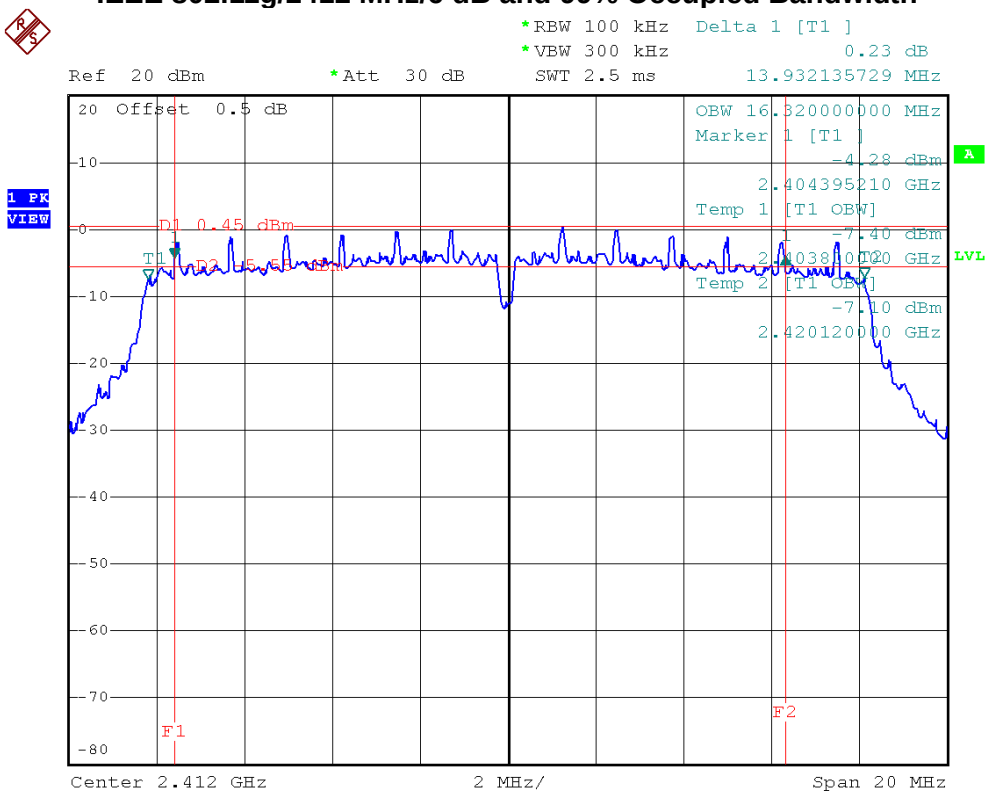
IEEE 802.11b/2462 MHz/6 dB and 99% Occupied Bandwidth



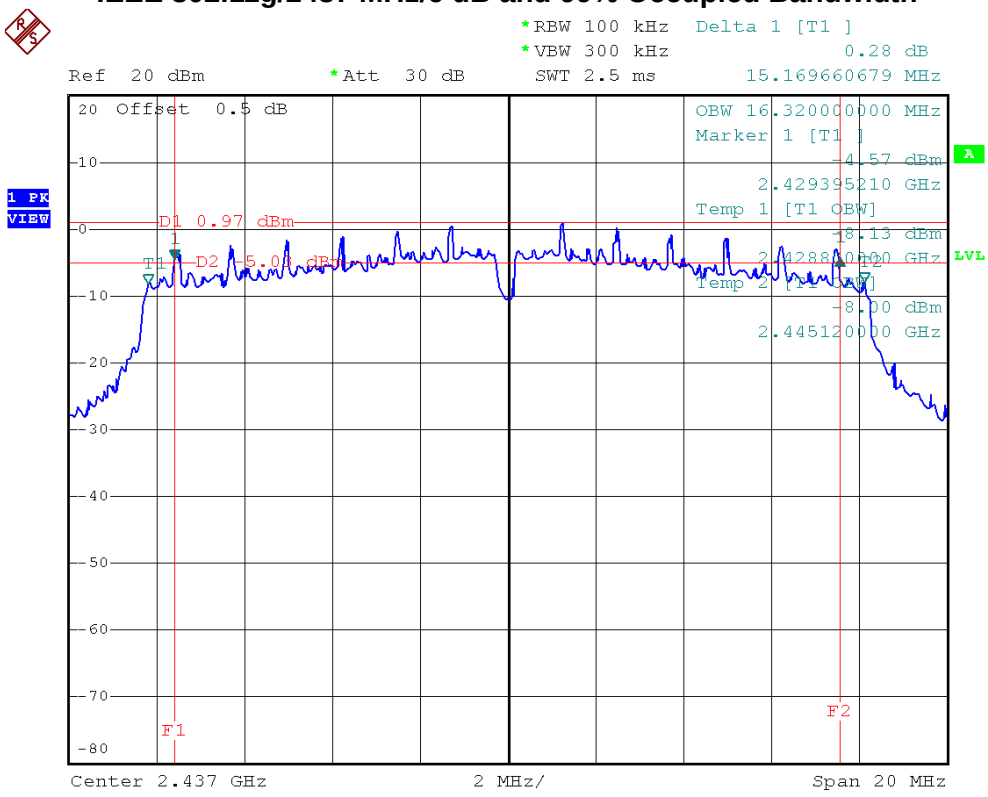
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	13.93	16.32	>=500 kHz	PASS
2437 MHz	15.17	16.32	>=500 kHz	PASS
2462 MHz	15.17	16.36	>=500 kHz	PASS

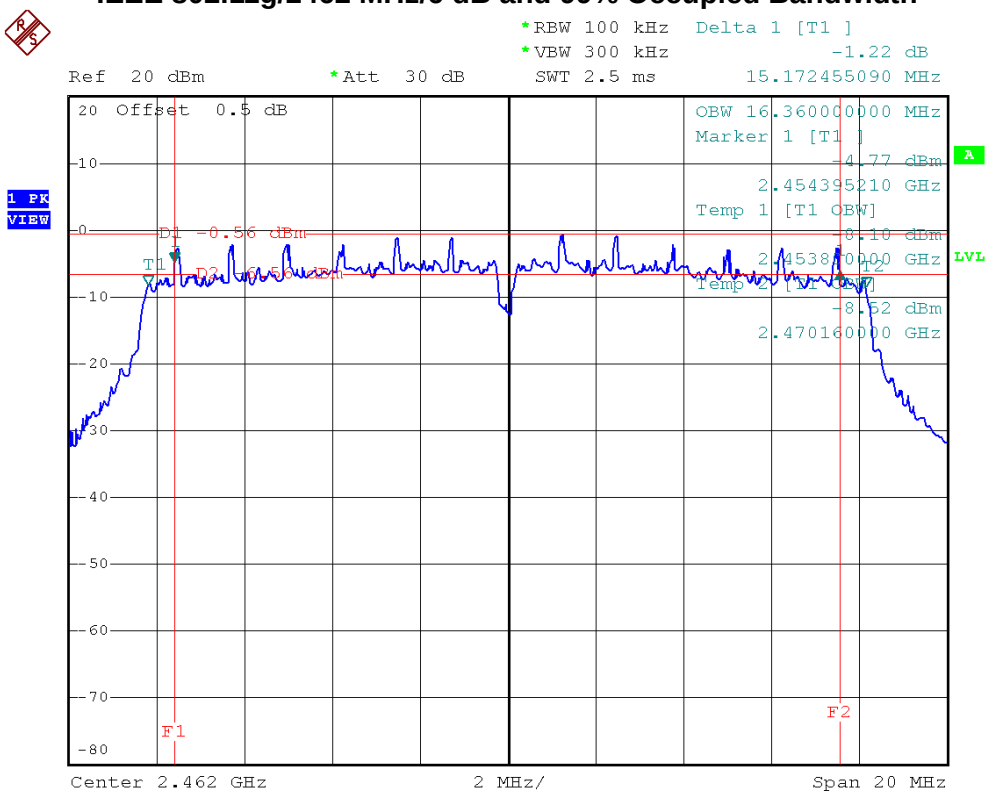
IEEE 802.11g/2412 MHz/6 dB and 99% Occupied Bandwidth



IEEE 802.11g/2437 MHz/6 dB and 99% Occupied Bandwidth



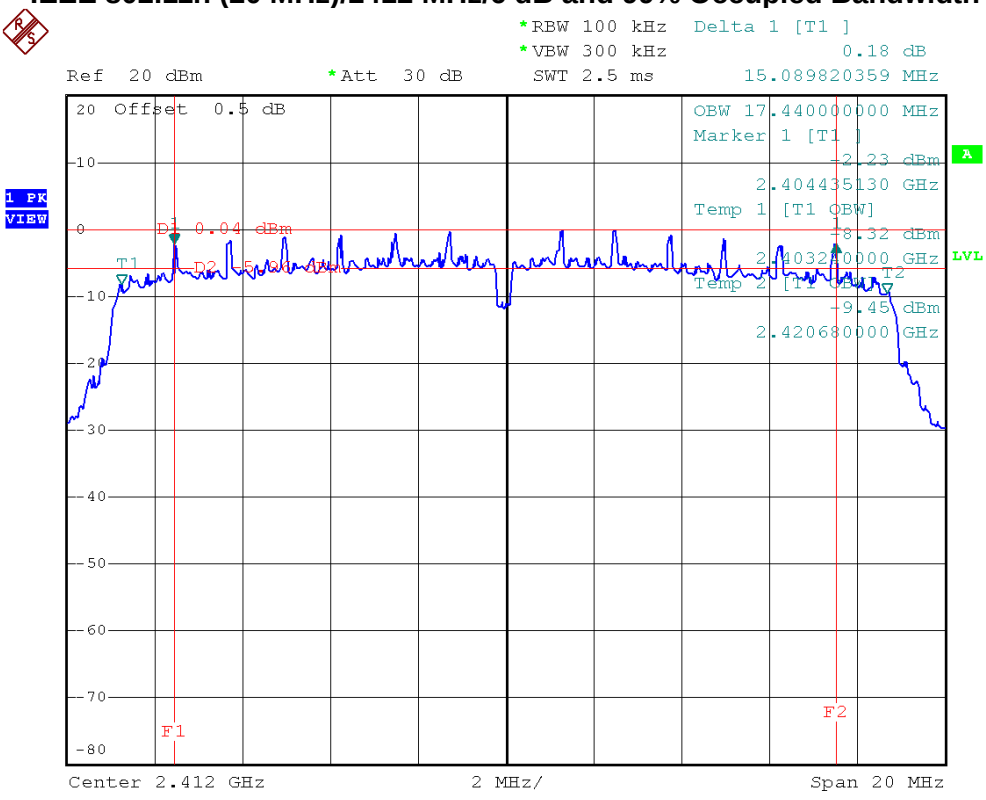
IEEE 802.11g/2462 MHz/6 dB and 99% Occupied Bandwidth



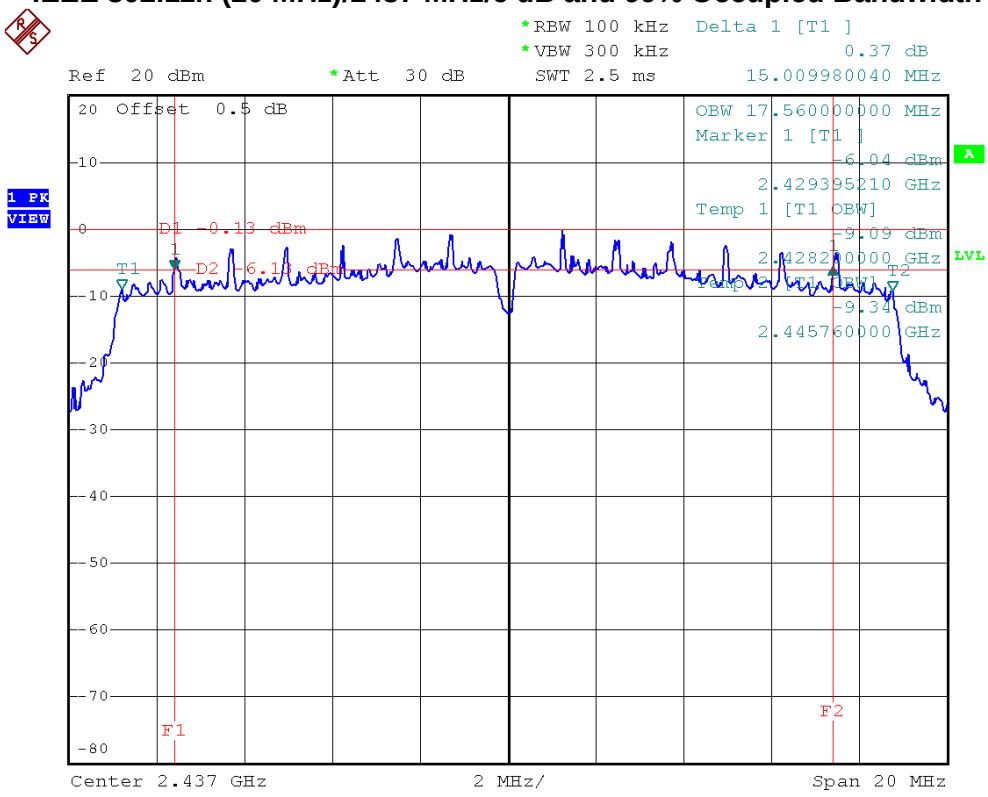
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	15.09	17.44	>=500 kHz	PASS
2437 MHz	15.01	17.56	>=500 kHz	PASS
2462 MHz	15.05	17.44	>=500 kHz	PASS

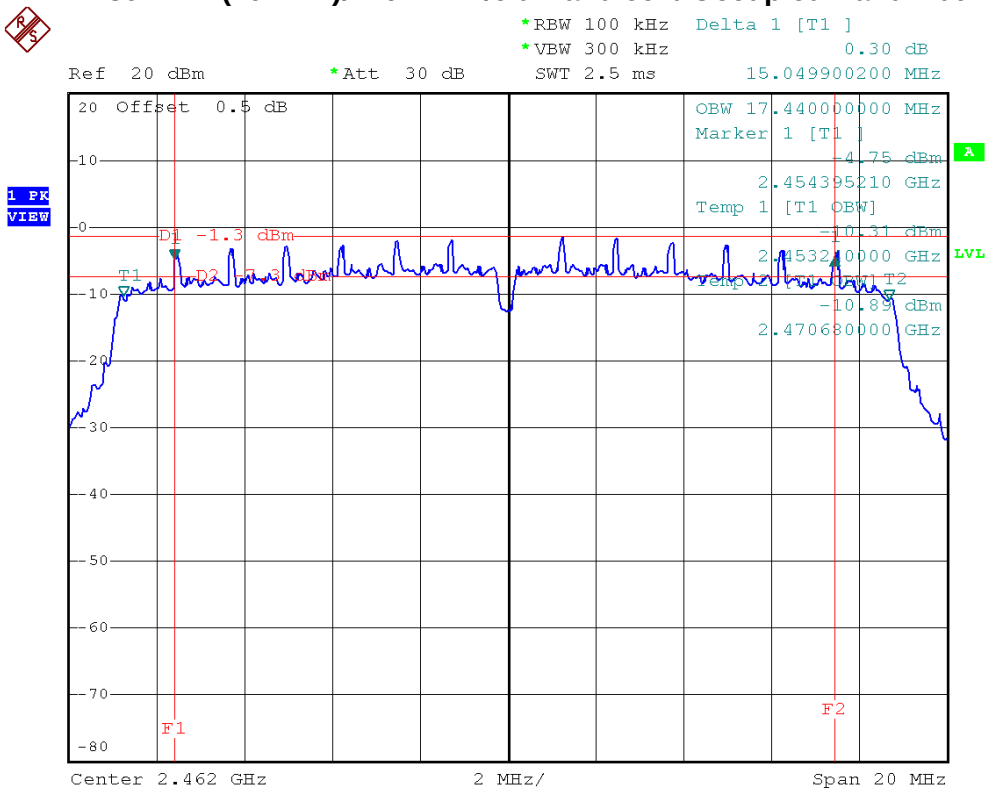
IEEE 802.11n (20 MHz)/2412 MHz/6 dB and 99% Occupied Bandwidth



IEEE 802.11n (20 MHz)/2437 MHz/6 dB and 99% Occupied Bandwidth



IEEE 802.11n (20 MHz)/2462 MHz/6 dB and 99% Occupied Bandwidth

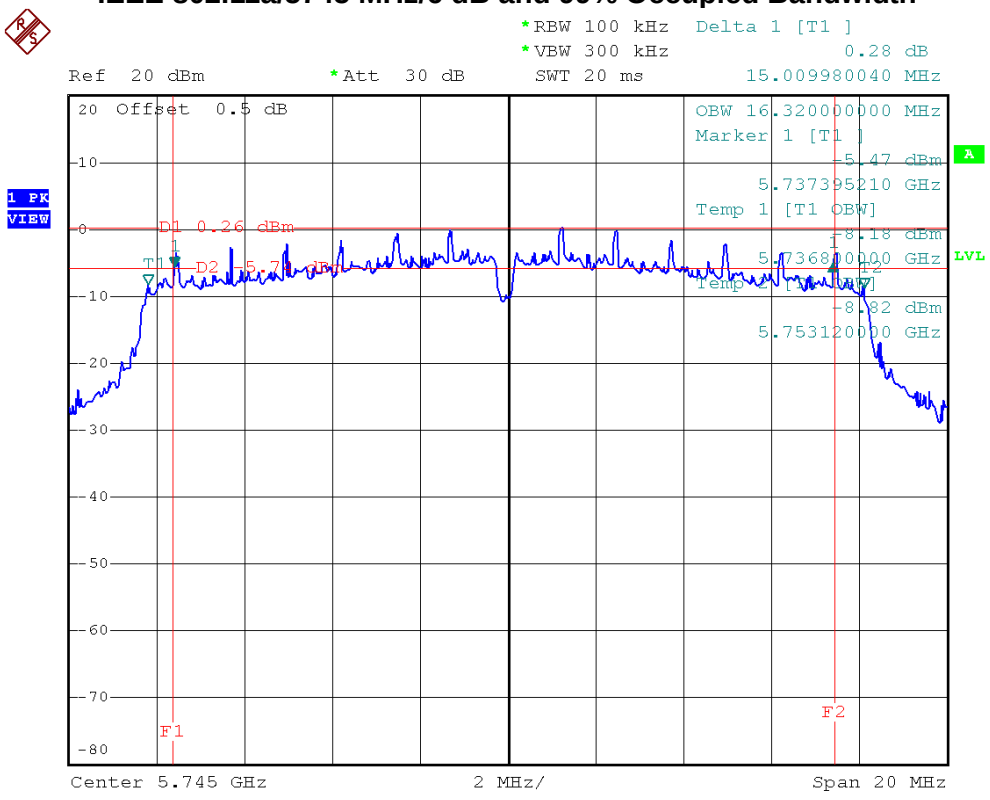


6.8 TEST RESULTS - 5745-5825 MHZ

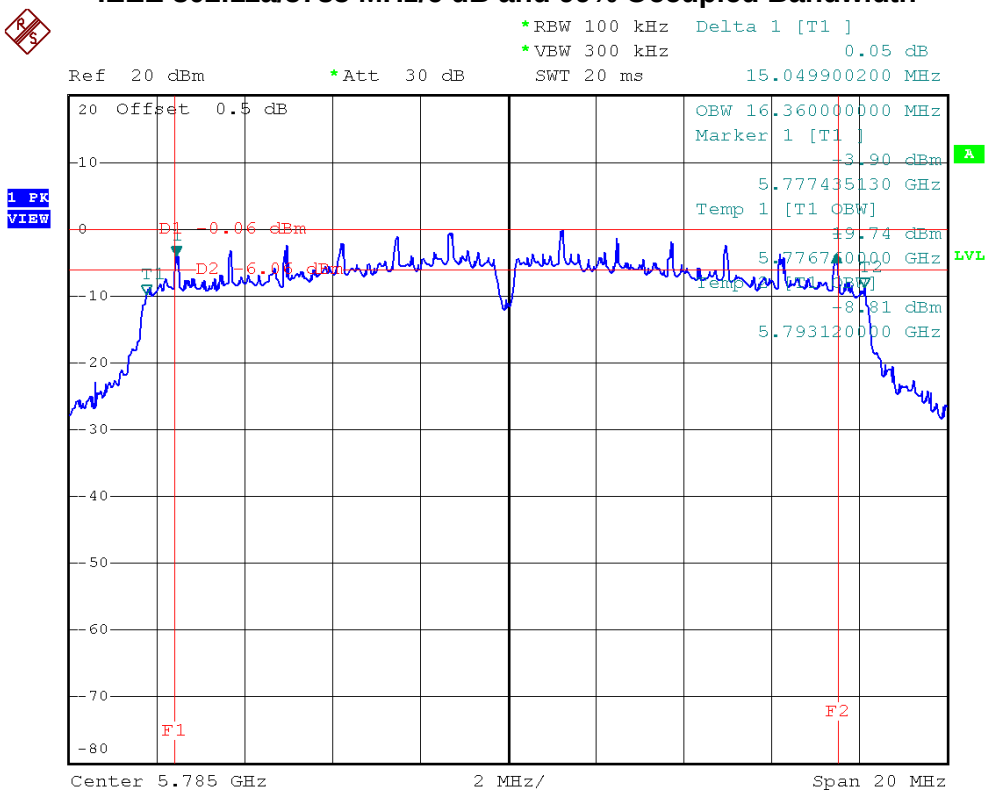
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5745 MHz, 5785 MHz, 5825 MHz		

Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
5745 MHz	15.01	16.32	>=500 kHz	PASS
5785 MHz	15.05	16.36	>=500 kHz	PASS
5825 MHz	15.05	16.32	>=500 kHz	PASS

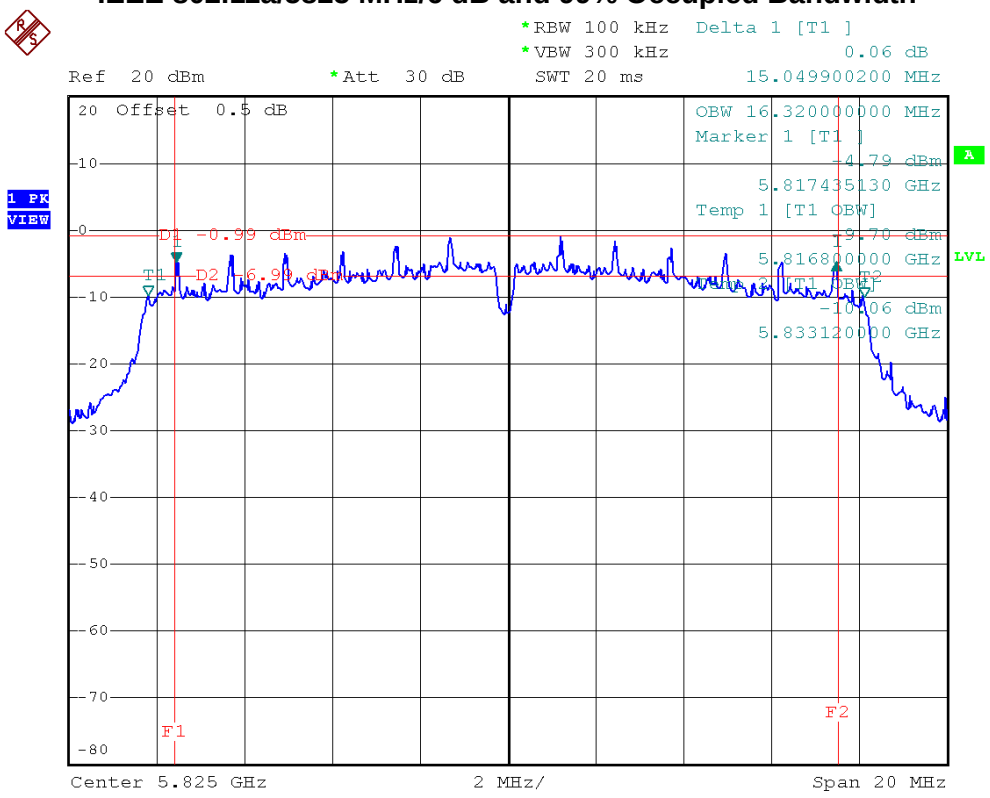
IEEE 802.11a/5745 MHz/6 dB and 99% Occupied Bandwidth



IEEE 802.11a/5785 MHz/6 dB and 99% Occupied Bandwidth



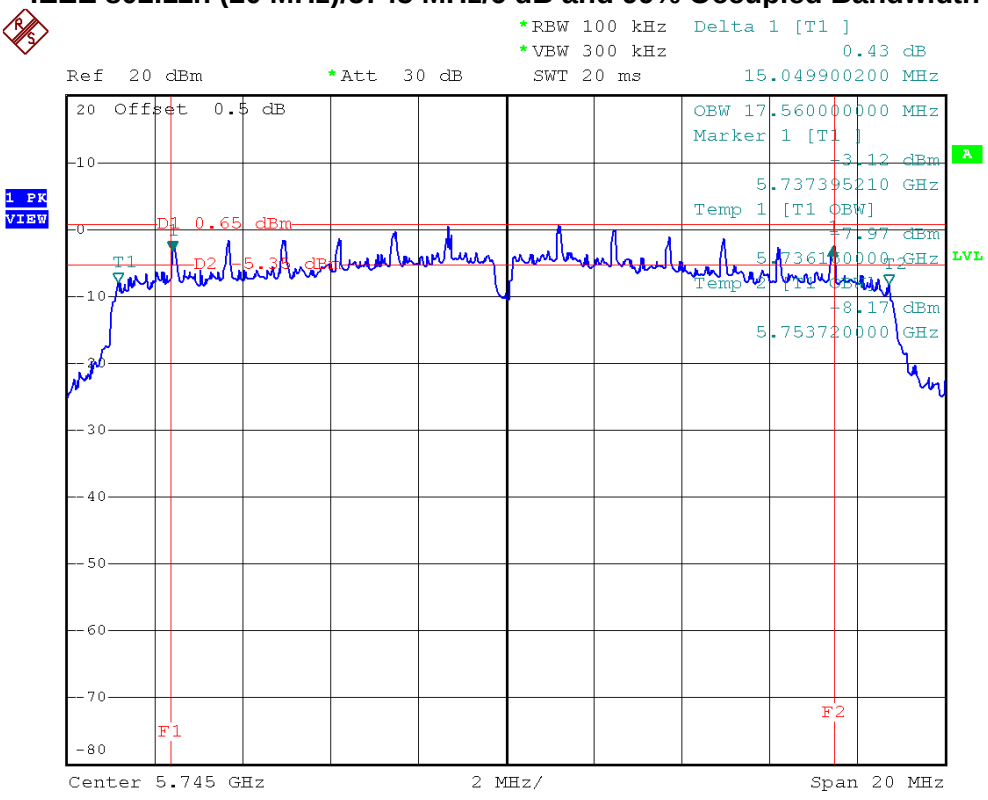
IEEE 802.11a/5825 MHz/6 dB and 99% Occupied Bandwidth



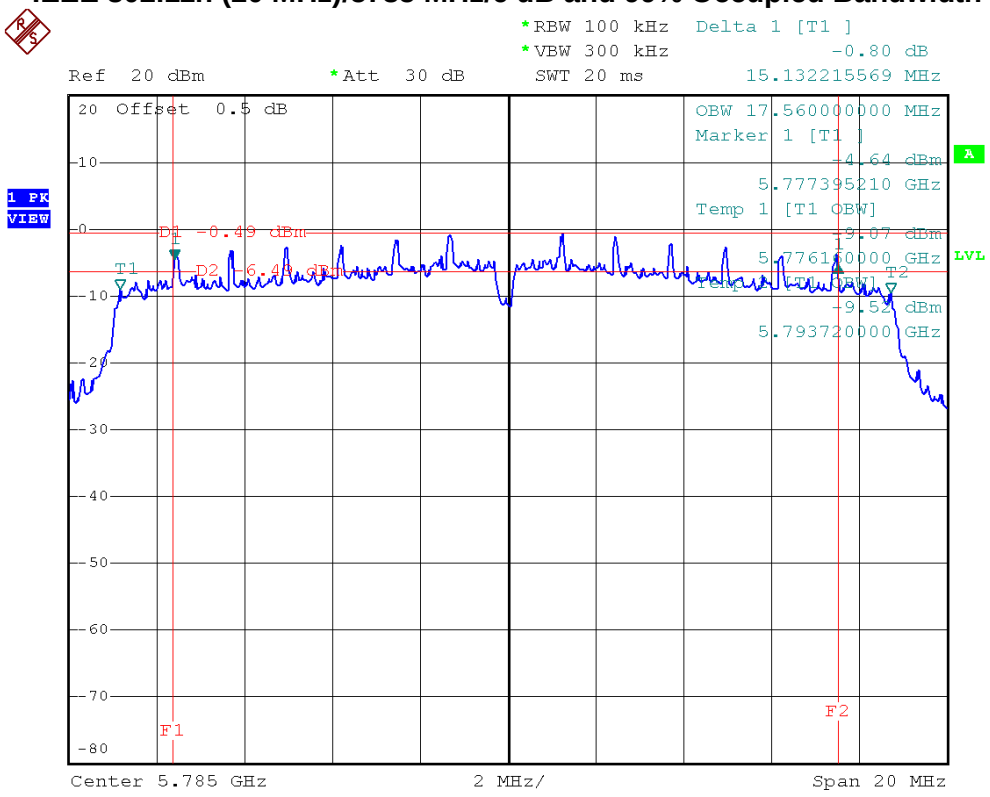
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5745 MHz, 5785 MHz, 5825 MHz		

Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
5745 MHz	15.05	17.56	>=500 kHz	PASS
5785 MHz	15.13	17.56	>=500 kHz	PASS
5825 MHz	15.21	17.56	>=500 kHz	PASS

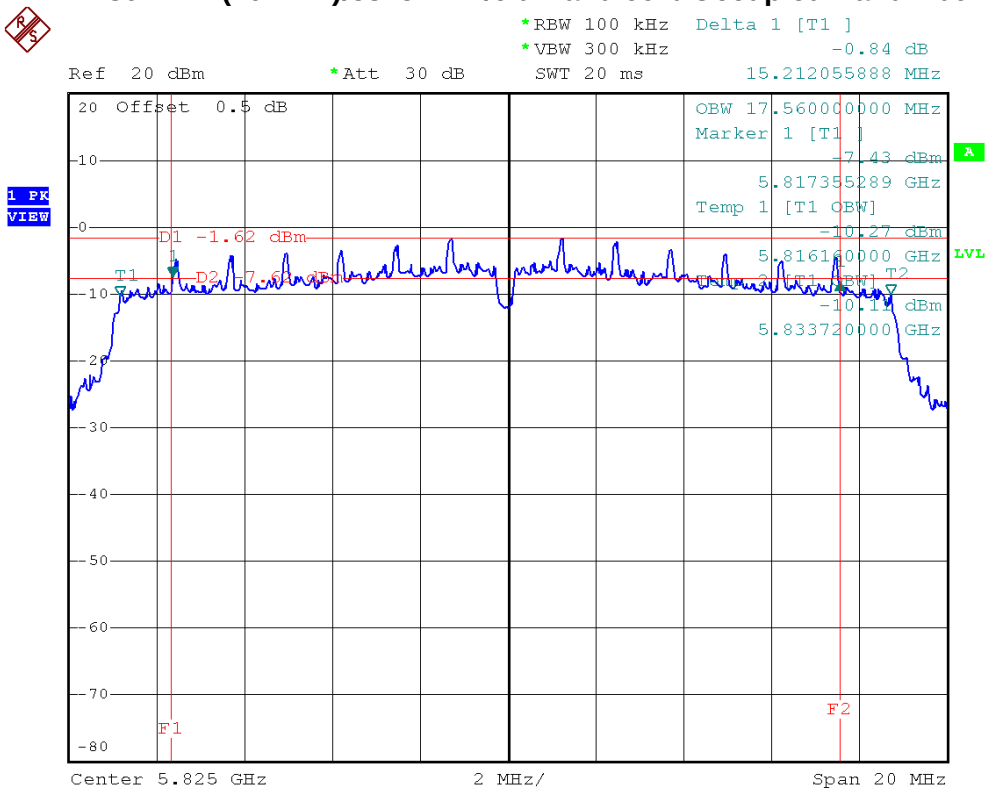
IEEE 802.11n (20 MHz)/5745 MHz/6 dB and 99% Occupied Bandwidth



IEEE 802.11n (20 MHz)/5785 MHz/6 dB and 99% Occupied Bandwidth



IEEE 802.11n (20 MHz)/5825 MHz/6 dB and 99% Occupied Bandwidth



7 MAXIMUM PEAK CONDUCTED OUTPUT POWER

7.1 LIMIT

Test Item	Frequency Range (MHz)	Limit
Maximum Peak Conducted Output Power	2400-2483.5	1 watt or 30 dBm

7.2 MEASUREMENT INSTRUMENTS LIST

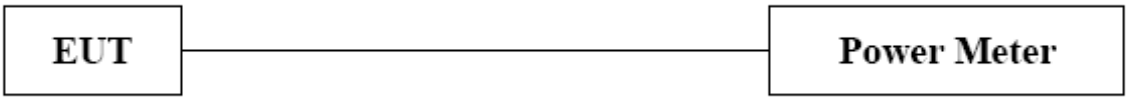
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2495A	1128008	Aug. 15, 2014
2	Power Meter Sensor	Anritsu	MA2411B	1126001	Aug. 15, 2014
3	Spectrum Analyzer	R&S	FSP-30	100854	Sep. 08, 2014

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

7.3 TEST PROCEDURES

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

7.4 TEST SETUP LAYOUT



7.5 DEVIATION FROM TEST STANDARD

No deviation

7.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.

7.7 TEST RESULTS - 2412-2462 MHZ

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
2412 MHz	16.85	30	PASS
2437 MHz	16.12	30	PASS
2462 MHz	15.63	30	PASS

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
2412 MHz	20.30	30	PASS
2437 MHz	19.75	30	PASS
2462 MHz	19.22	30	PASS

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
2412 MHz	21.00	30	PASS
2437 MHz	20.34	30	PASS
2462 MHz	19.74	30	PASS

7.8 TEST RESULTS - 5745-5825 MHZ

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5745 MHz, 5785 MHz, 5825 MHz		

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
5745 MHz	13.34	30	PASS
5785 MHz	15.50	30	PASS
5825 MHz	14.45	30	PASS

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5745 MHz, 5785 MHz, 5825 MHz		

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
5745 MHz	13.27	30	PASS
5785 MHz	15.41	30	PASS
5825 MHz	14.49	30	PASS

8 RADIATED SPURIOUS EMISSION (9 KHZ TO 1 GHZ)

8.1 LIMIT

20 dB in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency Range: 9 kHz to 1 GHz		
FREQUENCY (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Frequency Range: above 1 GHz				
FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
above 1 GHz	80	60	74	54

NOTE:

1. The limit for radiated test was performed according to FCC PART 15B.
2. The tighter limit applies at the band edges.
3. Emission level (dBuV/m)=20log Emission level (uV/m).
4. The test result calculated as following:
   Measurement Value = Reading Level + Correct Factor
   Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain(if use)
   Margin Level = Measurement Value – Limit Value

8.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Sep. 08, 2014
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Apr. 15, 2014
3	Microwave Pre_amplifier	Agilent	8449B	3008A01714	Apr. 16, 2014
4	Microflex Cable	Harbour industries	27478LL142	1m	May. 13, 2014
5	Microflex Cable	EMC	S104-SMA	8m	May. 13, 2014
6	Microflex Cable	Harbour industries	27478LL142	3m	May. 13, 2014
7	Test Cable	LMR	LMR-400	12m	May. 14, 2014
8	Test Cable	LMR	LMR-400	3m	May. 14, 2014
9	Pre-Amplifier	Anritsu	MH648A	M92649	Jun. 18, 2014
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jun. 11, 2014
11	Preamplifier With Adaptor	EMC	EMC2654045	980030	Feb. 18, 2014
12	Horn Antenna	Schwarzbeck	BBHA 9170	340	Nov. 14, 2014

Remark: “N/A” denotes No Model Name, No Serial No. or No Calibration specified.

8.3 MEASURING INSTRUMENTS SETTING

EMI Test Receiver	Parameter Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

8.4 TEST PROCEDURES

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1 GHz. For frequencies above 1 GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
g. The testing follows the guidelines in ANSI C63.4 and FCC Public Notice DA 00-705 Measurement Guidelines. In case the emission is fail due to the used RBW/VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

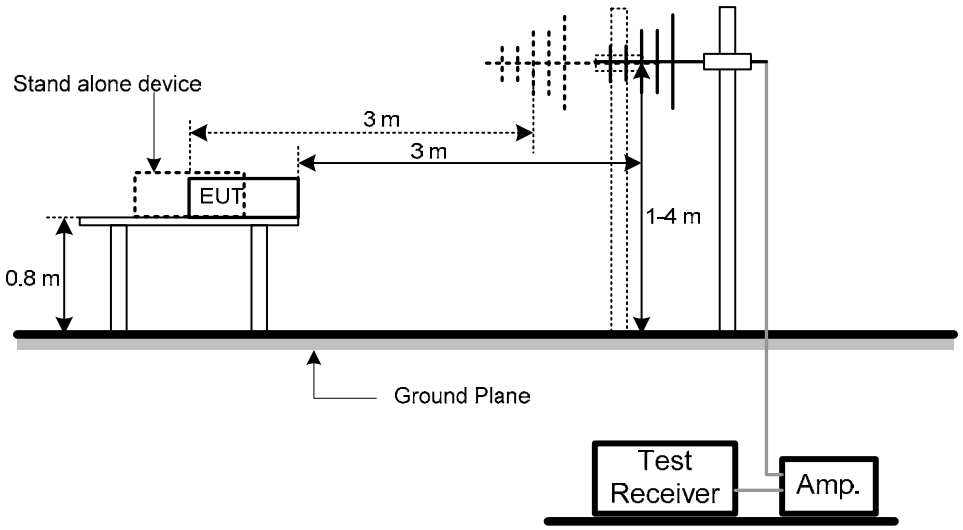
NOTE:

a. Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode with Detector BW=120 kHz; SPA setting in RBW=100 kHz, VBW =100 kHz, Swp. Time = 0.3 sec./ MHz.
b. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform.

8.5 DEVIATION FROM TEST STANDARD

No deviation

8.6 TEST SETUP LAYOUT



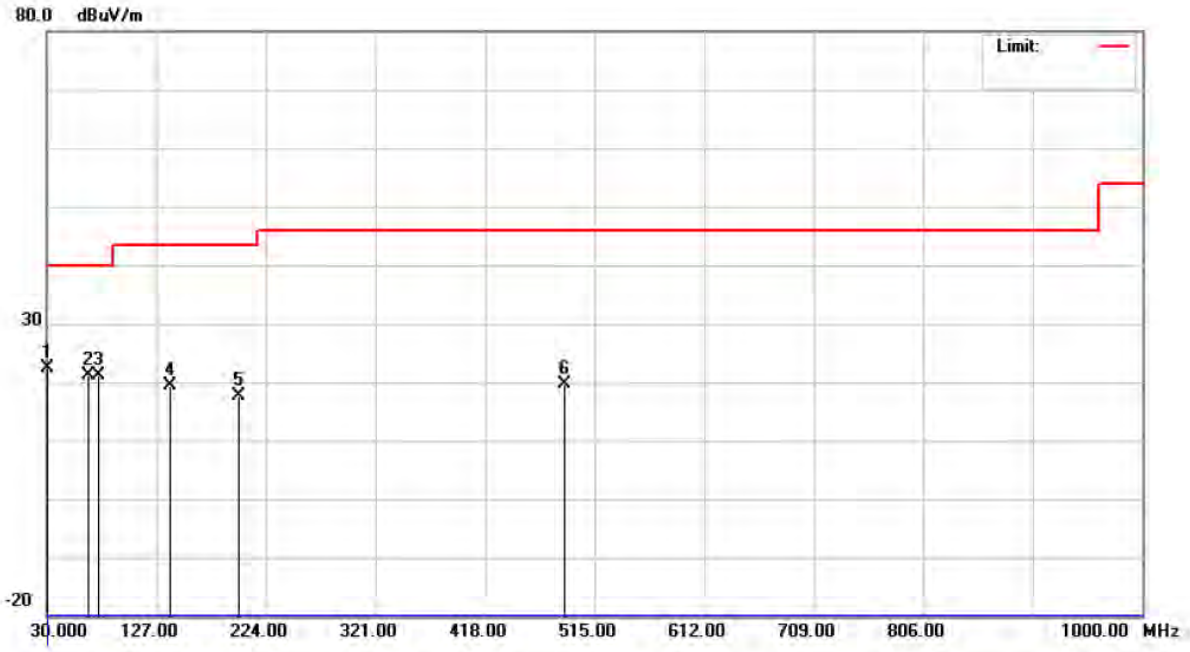
8.7 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.

8.8 TEST RESULTS

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

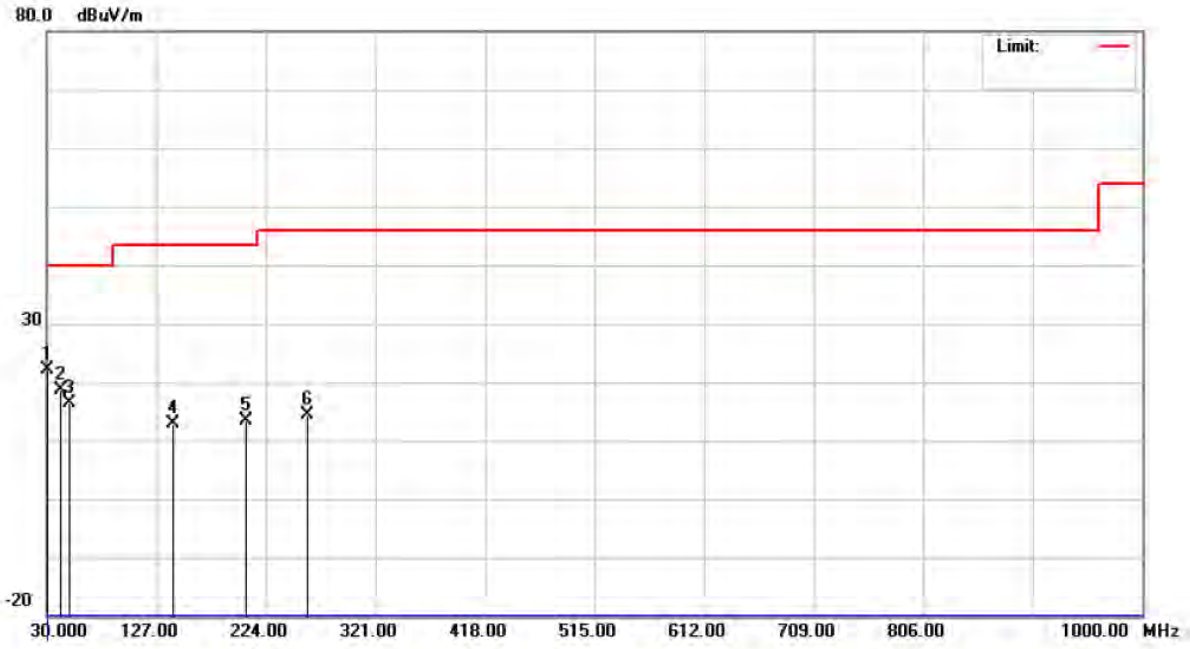
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	32.4249	37.38	-14.93	22.45	40.00	-17.55	peak	
2		66.3750	36.59	-15.50	21.09	40.00	-18.91	peak	
3		76.0748	38.85	-17.75	21.10	40.00	-18.90	peak	
4		139.1250	34.22	-14.75	19.47	43.50	-24.03	peak	
5		199.7500	34.56	-16.89	17.67	43.50	-25.83	peak	
6		488.3250	29.15	-9.55	19.60	46.00	-26.40	peak	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	32.4249	37.16	-14.93	22.23	40.00	-17.77	peak	
2		42.1250	32.89	-14.25	18.64	40.00	-21.36	peak	
3		49.4000	29.94	-13.64	16.30	40.00	-23.70	peak	
4		141.5500	27.48	-14.56	12.92	43.50	-30.58	peak	
5		207.0249	30.38	-16.98	13.40	43.50	-30.10	peak	
6		260.3750	28.89	-14.52	14.37	46.00	-31.63	peak	

9 RADIATED SPURIOUS EMISSION (ABOVE 1 GHZ)

9.1 LIMIT

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency Range: 9 kHz to 1 GHz		
FREQUENCY (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Frequency Range: above 1 GHz				
FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
above 1 GHz	80	60	74	54

NOTE:

(1) The limit for radiated test was performed according to FCC PART 15B.
(2) The tighter limit applies at the band edges.
(3) Emission level (dBuV/m)=20log Emission level (uV/m).
(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain(if use)
Margin Level = Measurement Value – Limit Value

9.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Sep. 08, 2014
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Apr. 15, 2014
3	Microwave Pre_amplifier	Agilent	8449B	3008A01714	Apr. 16, 2014
4	Microflex Cable	Harbour industries	27478LL142	1m	May. 13, 2014
5	Microflex Cable	EMC	S104-SMA	8m	May. 13, 2014
6	Microflex Cable	Harbour industries	27478LL142	3m	May. 13, 2014
7	Test Cable	LMR	LMR-400	12m	May. 14, 2014
8	Test Cable	LMR	LMR-400	3m	May. 14, 2014
9	Pre-Amplifier	Anritsu	MH648A	M92649	Jun. 18, 2014
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jun. 11, 2014
11	Preamplifier With Adaptor	EMC	EMC2654045	980030	Feb. 18, 2014
12	Horn Antenna	Schwarzbeck	BBHA 9170	340	Nov. 14, 2014

Remark: “N/A” denotes No Model Name, No Serial No. or No Calibration specified.

9.3 MEASURING INSTRUMENTS SETTING

Spectrum Analyzer	Parameter Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (other emission)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average

9.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
c. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
d. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.
f. The testing follows the guidelines in ANSI C63.4 and FCC Public Notice DA 00-705 Measurement Guidelines. In case the emission is fail due to the used RBW/VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

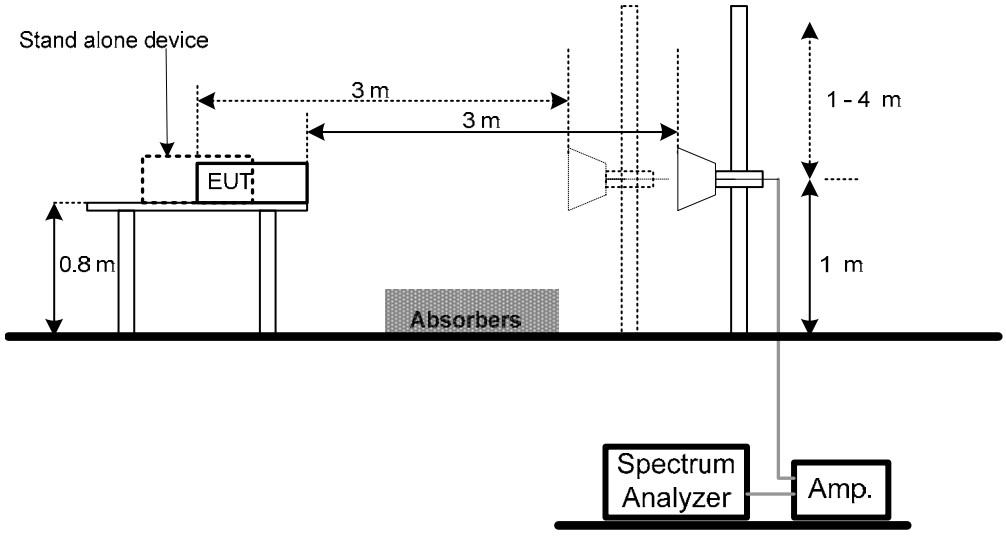
NOTE:

a. Reading in which marked as Peak means measurements by using are Peak Mode with instrument setting in RBW= 1 MHz, VBW= 1 MHz, Swp. Time = Auto.
Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW= 1 MHz, VBW= 10 Hz, Swp. Time = Auto.
b. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform.

9.5 DEVIATION FROM TEST STANDARD

No deviation

9.6 TEST SETUP LAYOUT



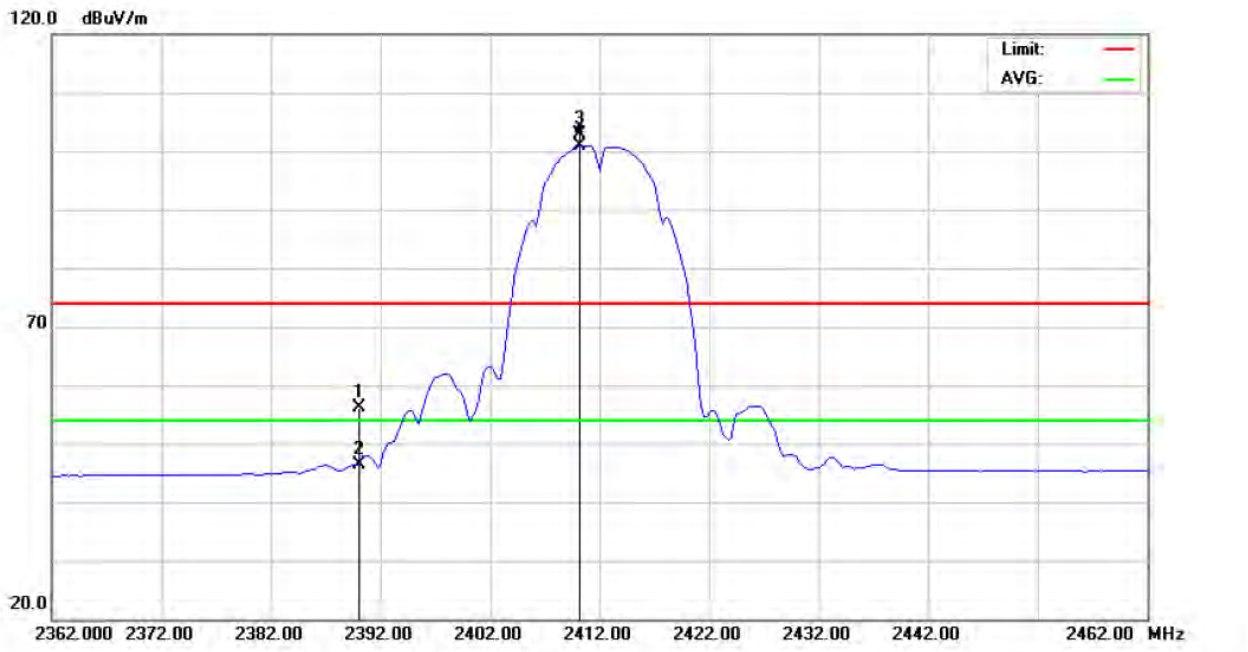
9.7 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.

9.8 TEST RESULTS - 2412-2462 MHZ

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

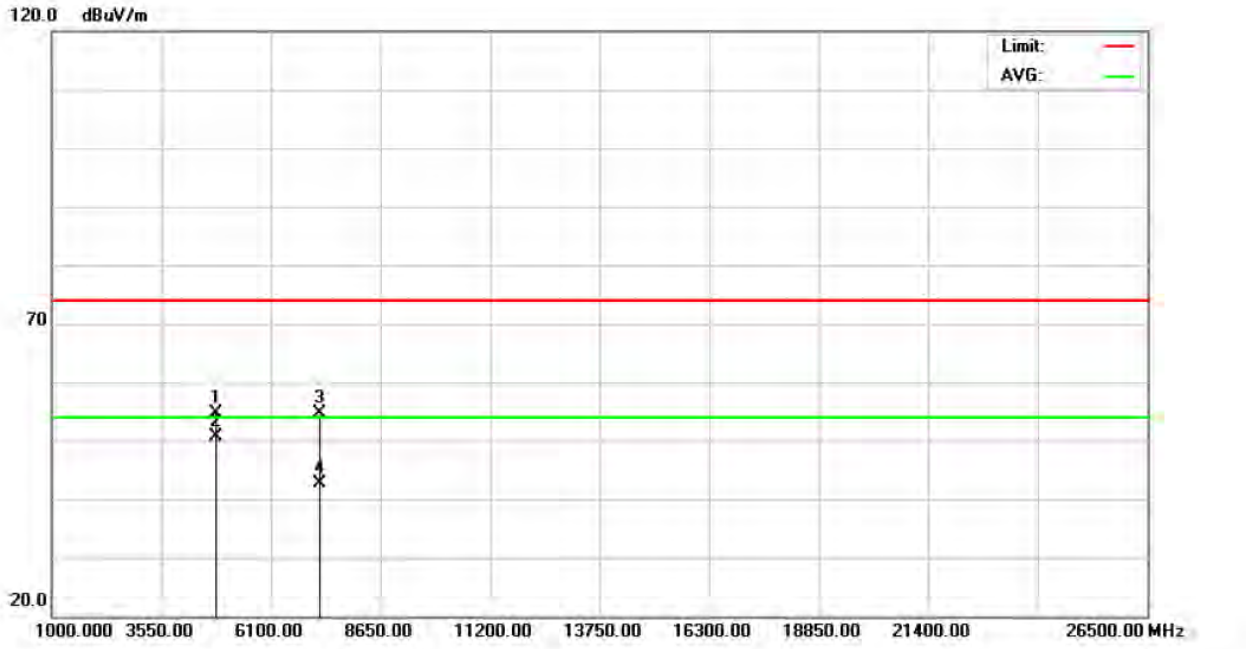
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	24.56	31.67	56.23	74.00	-17.77	peak	
2		2390.000	14.80	31.67	46.47	54.00	-7.53	AVG	
3	X	2410.250	71.04	31.76	102.80	74.00	28.80	peak	
4	*	2410.250	69.10	31.76	100.86	54.00	46.86	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

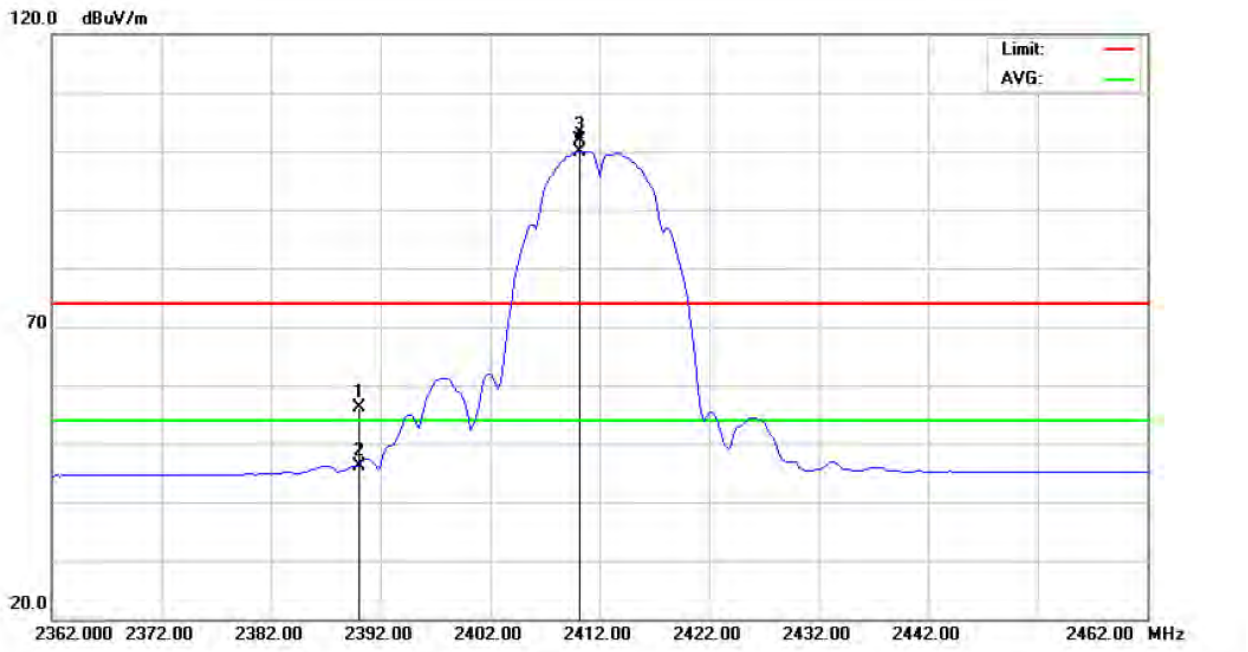
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4823.965	48.85	5.71	54.56	74.00	-19.44	peak	
2	*	4823.965	44.97	5.71	50.68	54.00	-3.32	AVG	
3		7236.030	42.29	12.29	54.58	74.00	-19.42	peak	
4		7236.030	30.23	12.29	42.52	54.00	-11.48	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

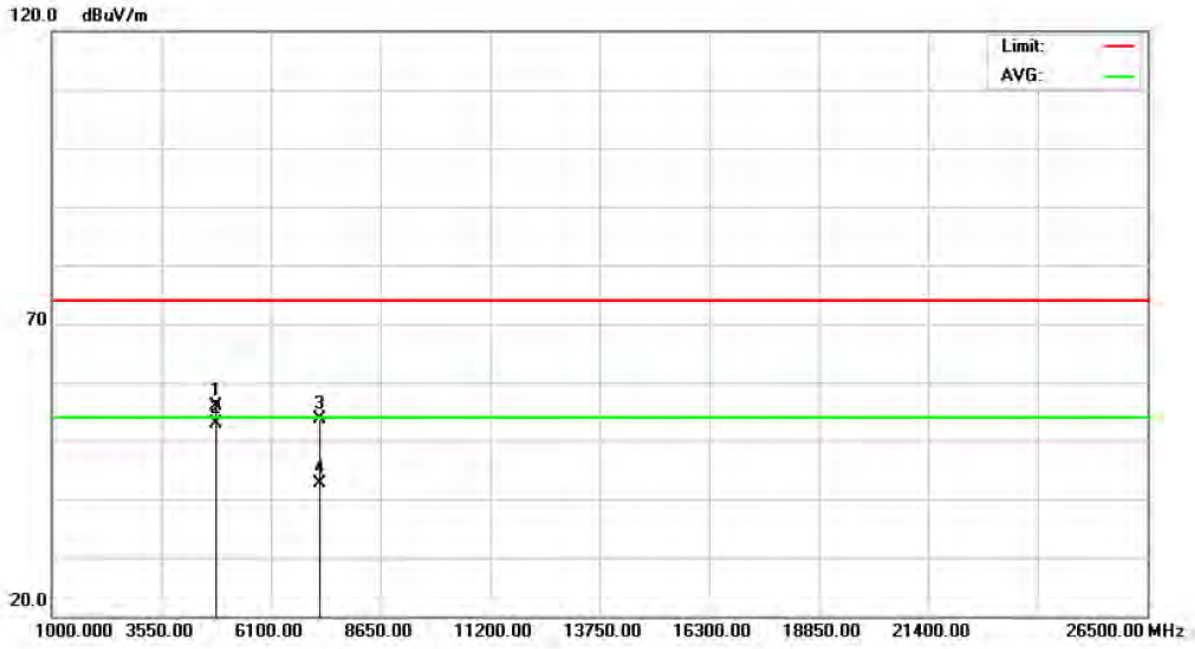
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	24.54	31.67	56.21	74.00	-17.79	peak	
2		2390.000	14.50	31.67	46.17	54.00	-7.83	AVG	
3	X	2410.250	70.13	31.76	101.89	74.00	27.89	peak	
4	*	2410.250	68.23	31.76	99.99	54.00	45.99	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

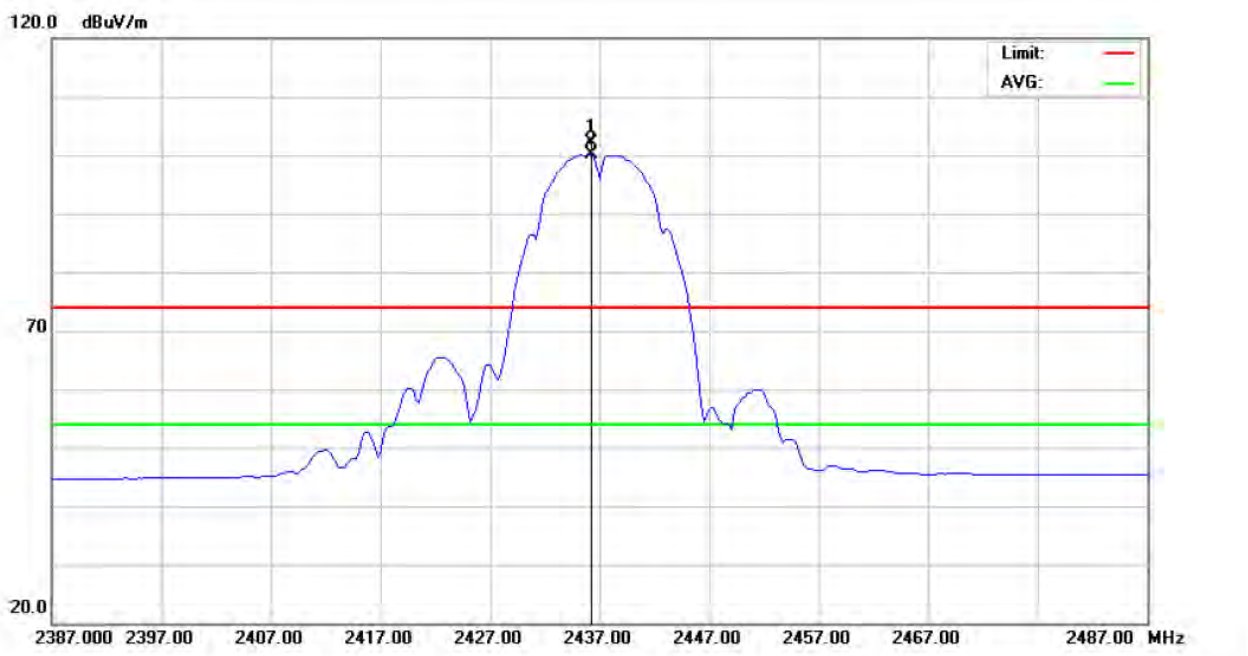
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4823.940	50.06	5.71	55.77	74.00	-18.23	peak	
2	*	4823.940	47.13	5.71	52.84	54.00	-1.16	AVG	
3		7235.970	41.44	12.29	53.73	74.00	-20.27	peak	
4		7235.970	30.25	12.29	42.54	54.00	-11.46	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

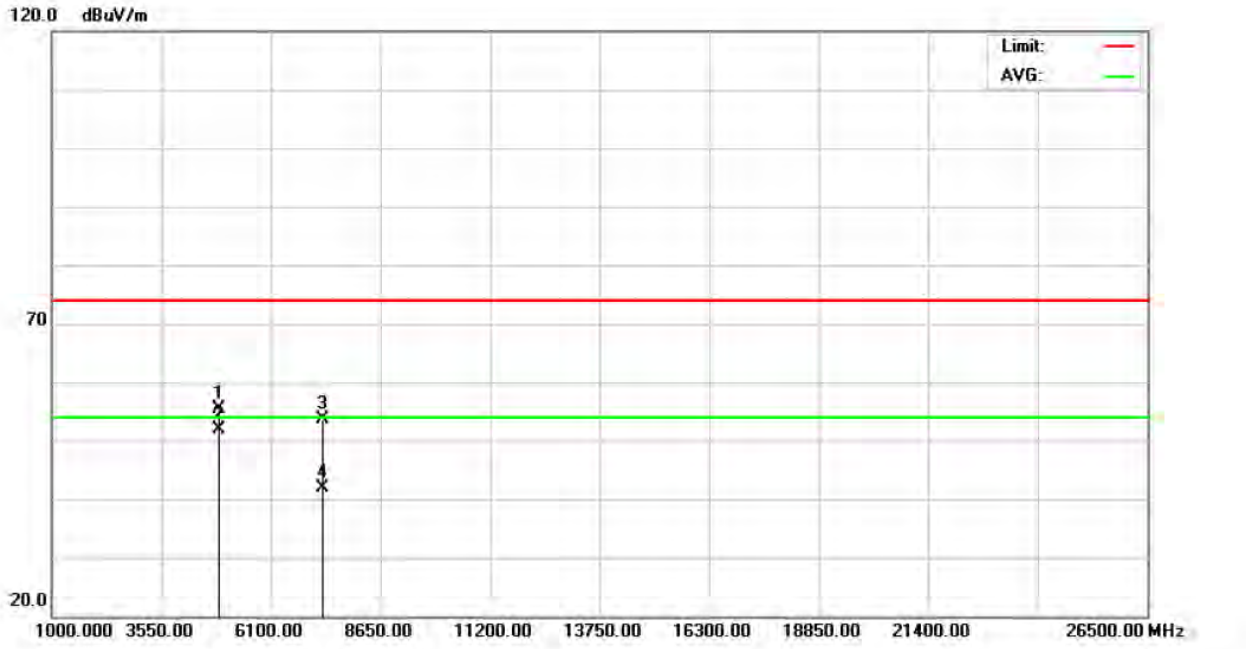
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2436.250	70.29	31.87	102.16	74.00	28.16	peak	
2	*	2436.250	68.22	31.87	100.09	54.00	46.09	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

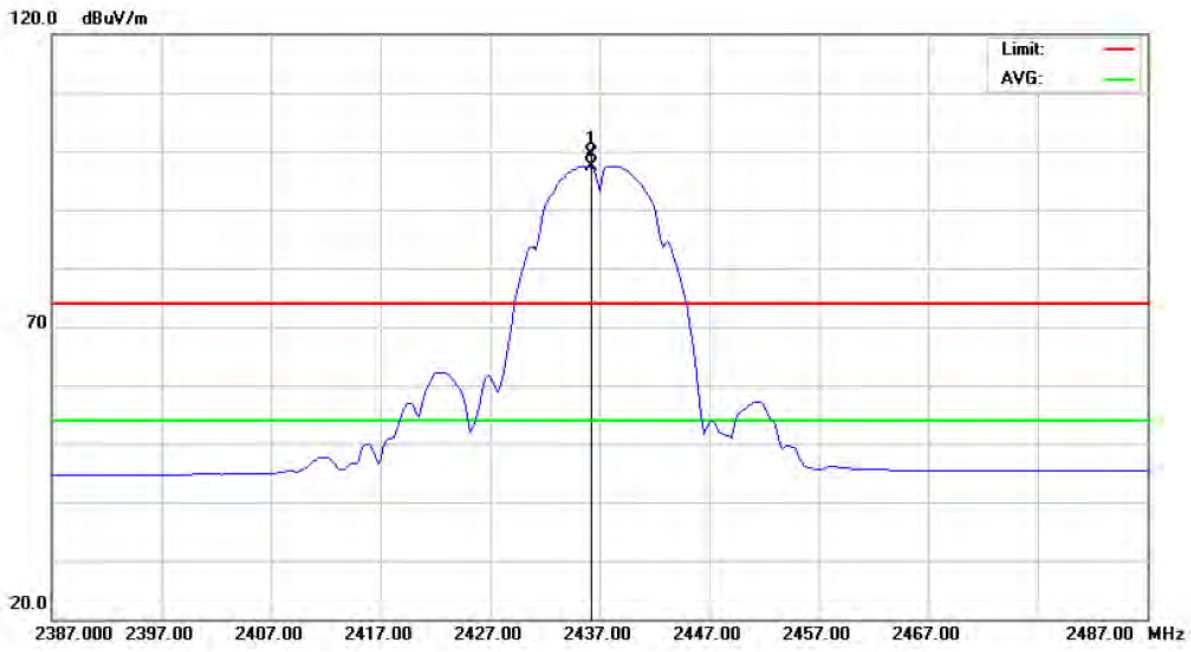
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4873.950	49.72	5.78	55.50	74.00	-18.50	peak	
2	*	4873.950	46.03	5.78	51.81	54.00	-2.19	AVG	
3		7310.465	41.12	12.57	53.69	74.00	-20.31	peak	
4		7310.465	29.28	12.57	41.85	54.00	-12.15	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

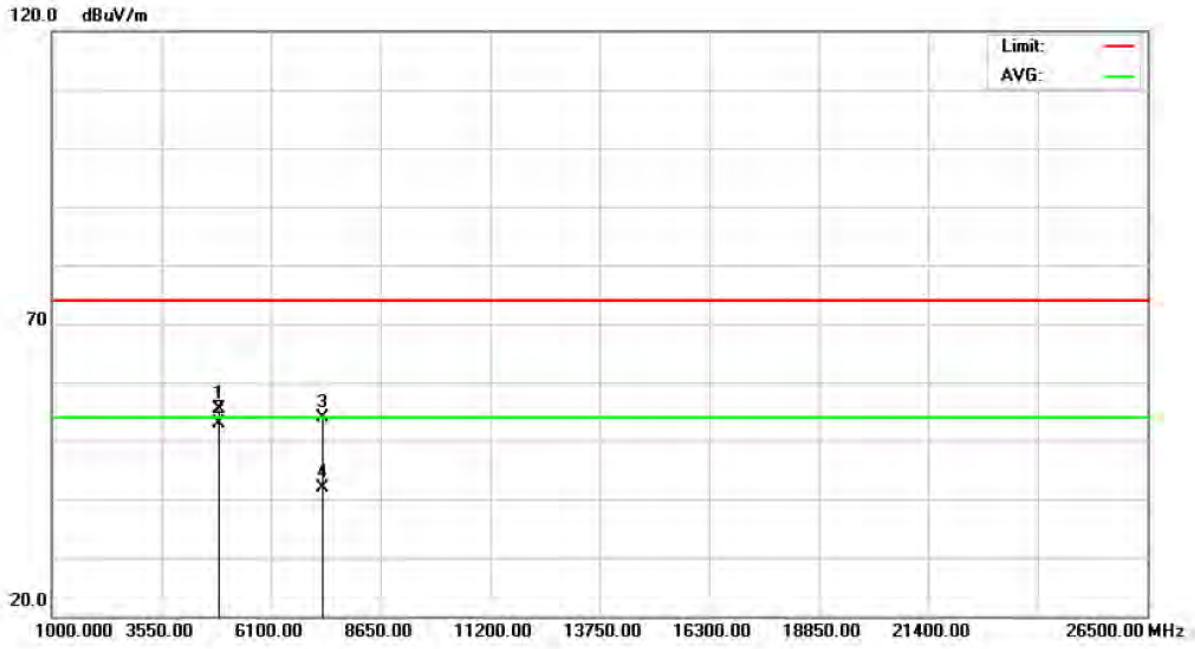
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2436.250	67.62	31.87	99.49	74.00	25.49	peak	
2	*	2436.250	65.59	31.87	97.46	54.00	43.46	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

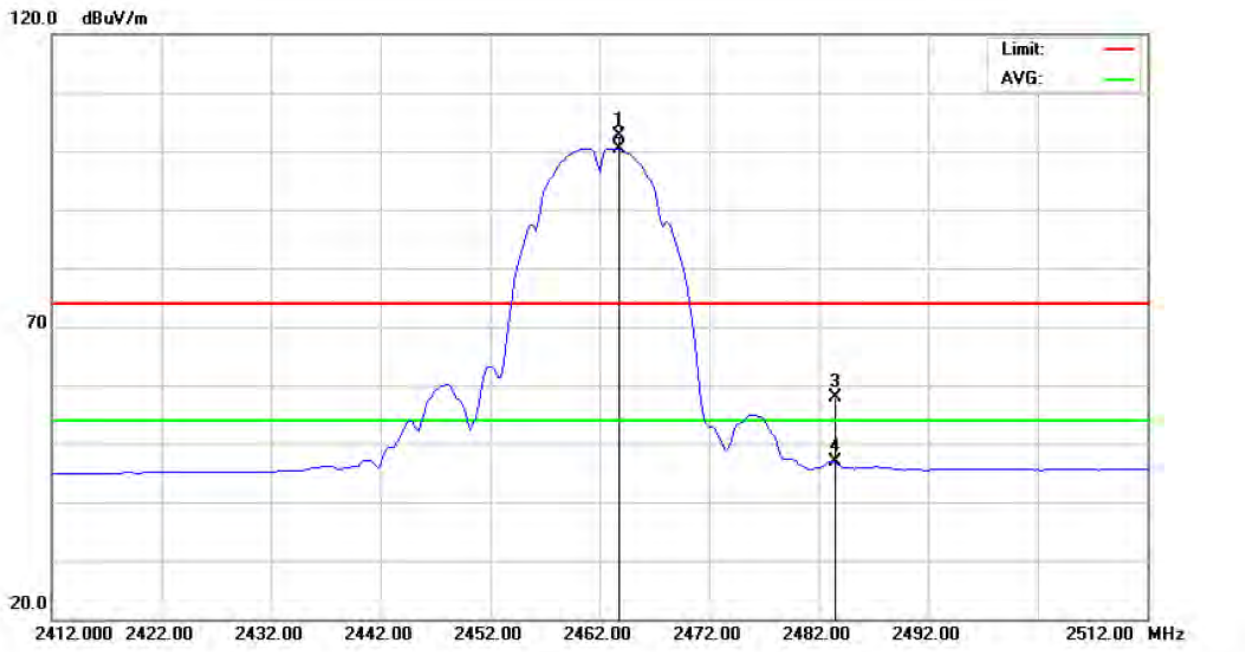
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4873.940	49.63	5.78	55.41	74.00	-18.59	peak	
2	*	4873.940	47.21	5.78	52.99	54.00	-1.01	AVG	
3		7310.755	41.42	12.57	53.99	74.00	-20.01	peak	
4		7310.755	29.32	12.57	41.89	54.00	-12.11	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

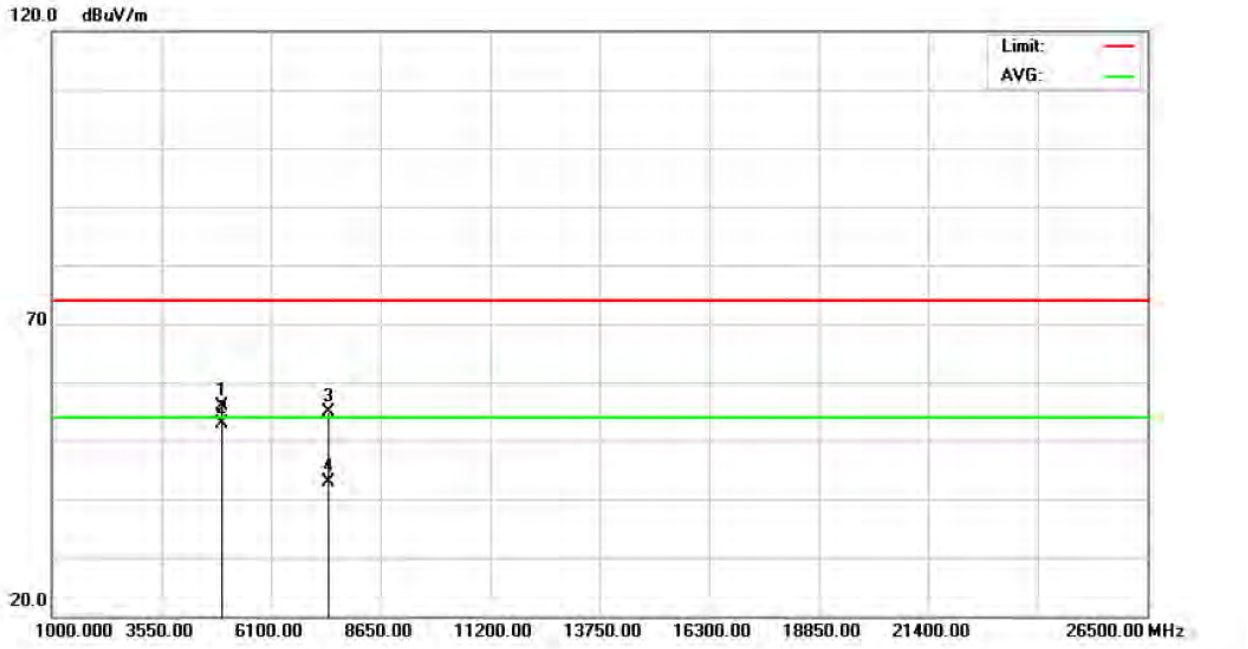
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2463.750	70.68	32.00	102.68	74.00	28.68	peak	
2	*	2463.750	68.45	32.00	100.45	54.00	46.45	AVG	
3		2483.500	25.70	32.09	57.79	74.00	-16.21	peak	
4		2483.500	14.70	32.09	46.79	54.00	-7.21	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

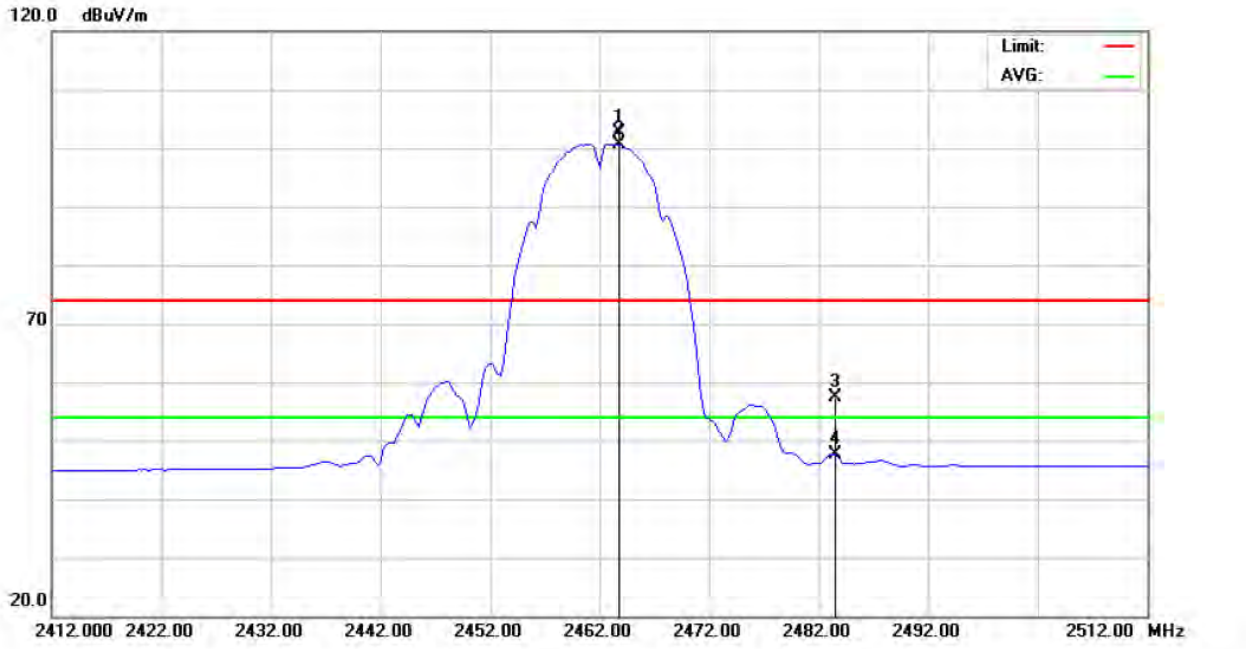
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4923.955	50.12	5.84	55.96	74.00	-18.04	peak	
2	*	4923.955	47.16	5.84	53.00	54.00	-1.00	AVG	
3		7385.930	41.94	12.85	54.79	74.00	-19.21	peak	
4		7385.930	30.14	12.85	42.99	54.00	-11.01	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

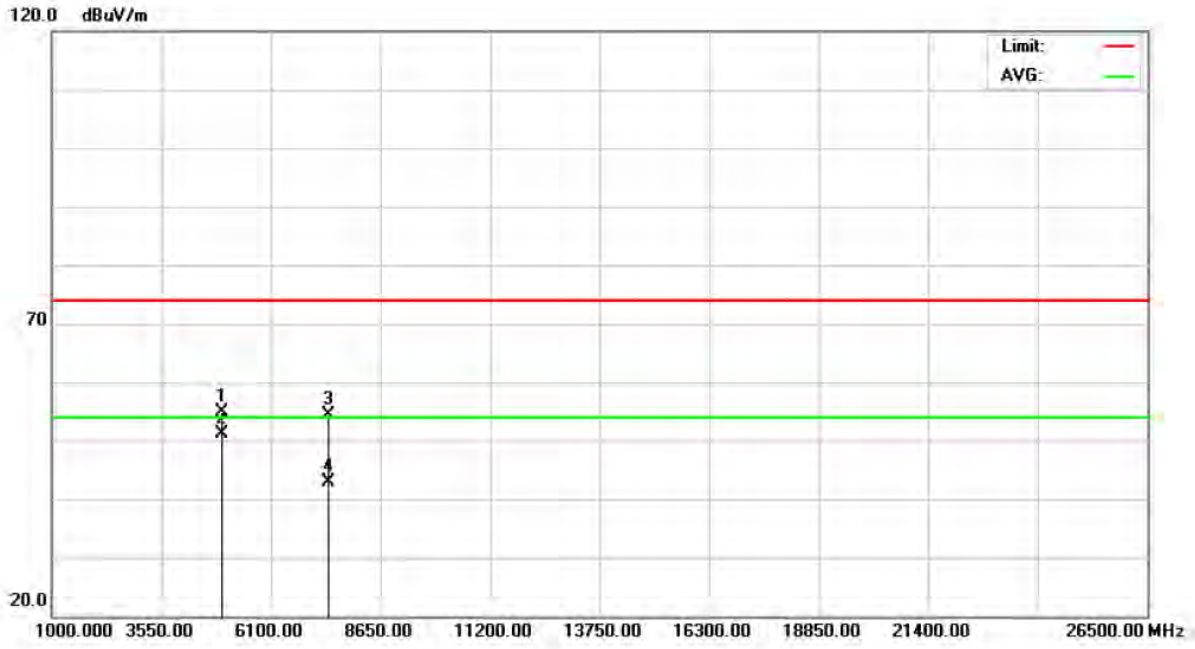
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2463.750	70.70	32.00	102.70	74.00	28.70	peak	
2	*	2463.750	68.68	32.00	100.68	54.00	46.68	AVG	
3		2483.500	25.28	32.09	57.37	74.00	-16.63	peak	
4		2483.500	15.50	32.09	47.59	54.00	-6.41	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

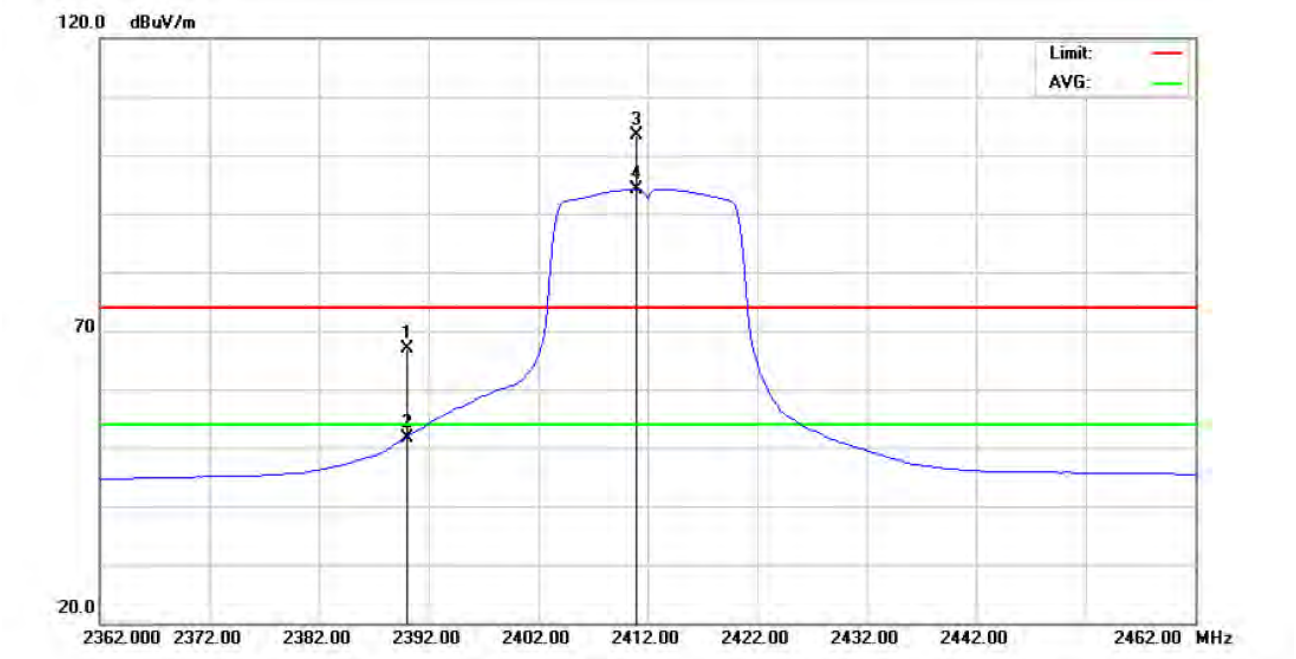
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4923.965	48.94	5.84	54.78	74.00	-19.22	peak	
2	*	4923.965	45.33	5.84	51.17	54.00	-2.83	AVG	
3		7385.505	41.42	12.84	54.26	74.00	-19.74	peak	
4		7385.505	30.04	12.84	42.88	54.00	-11.12	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

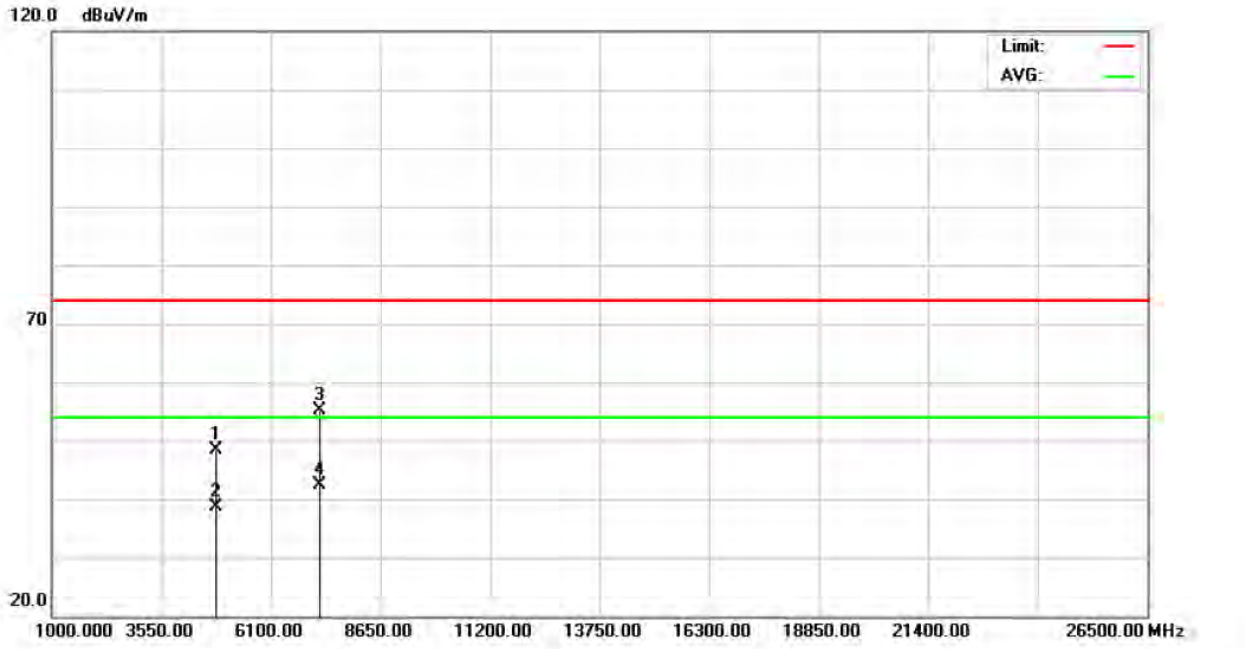
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	35.27	31.67	66.94	74.00	-7.06	peak	
2		2390.000	20.08	31.67	51.75	54.00	-2.25	AVG	
3	X	2411.000	71.56	31.76	103.32	74.00	29.32	peak	
4	*	2411.000	62.44	31.76	94.20	54.00	40.20	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

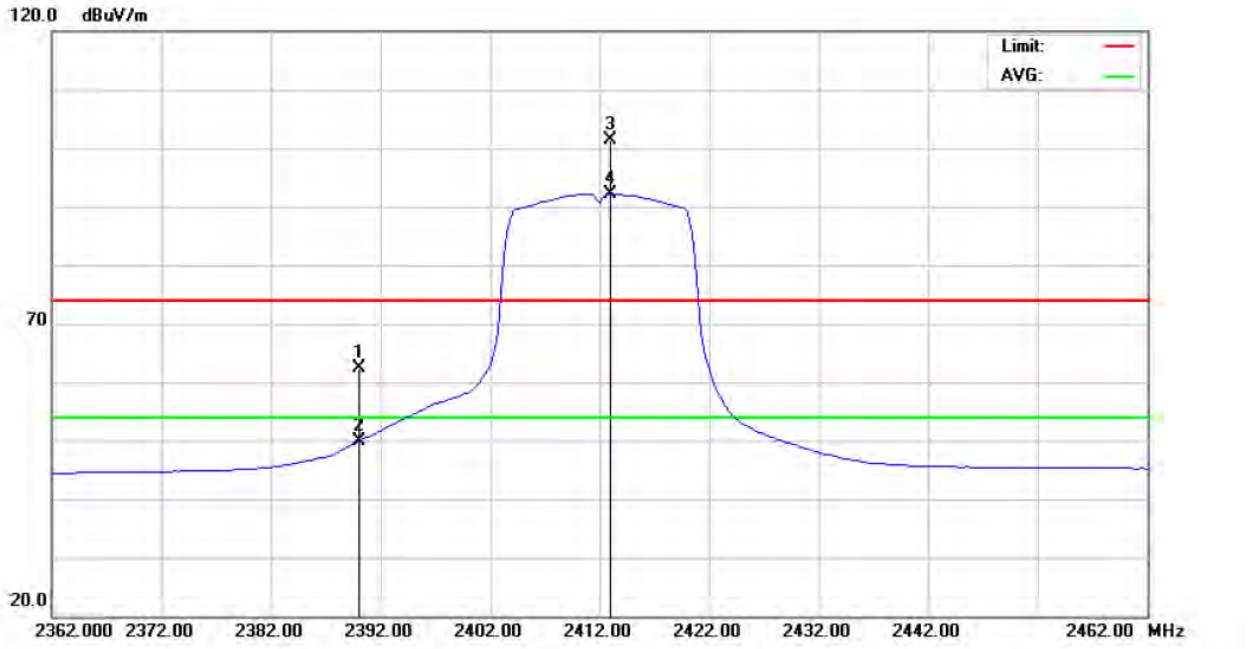
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.050	42.60	5.71	48.31	74.00	-25.69	peak	
2		4824.050	32.95	5.71	38.66	54.00	-15.34	AVG	
3		7235.950	42.89	12.29	55.18	74.00	-18.82	peak	
4	*	7235.950	30.14	12.29	42.43	54.00	-11.57	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

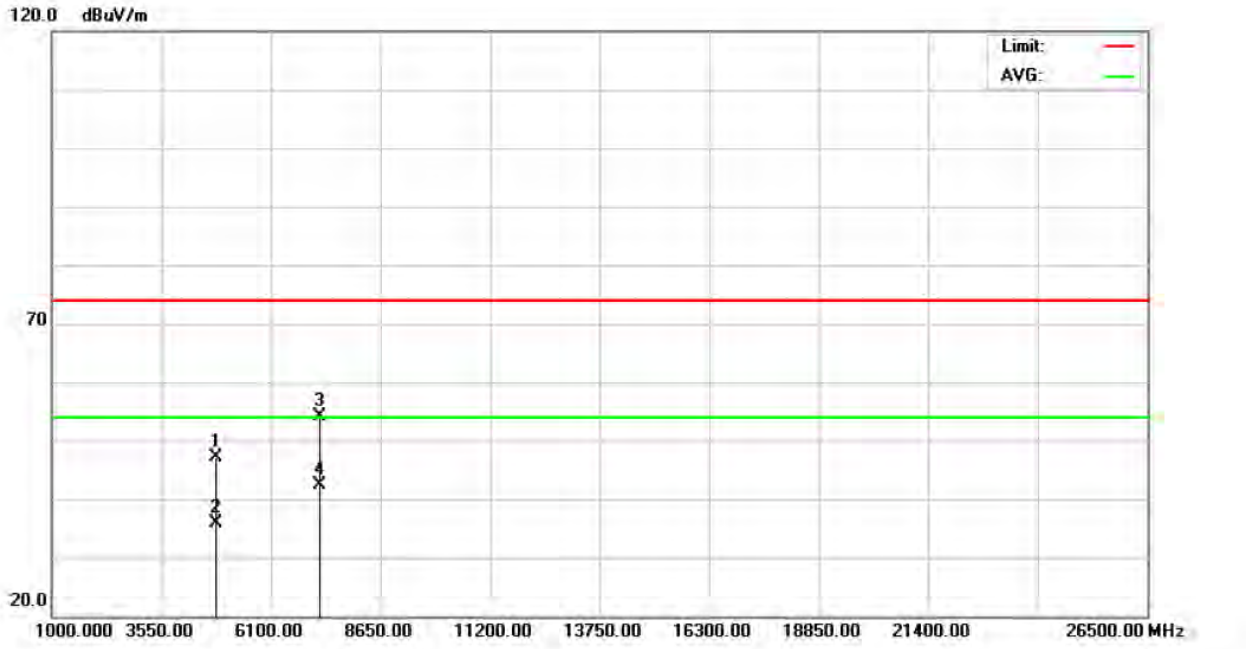
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	30.74	31.67	62.41	74.00	-11.59	peak	
2		2390.000	18.09	31.67	49.76	54.00	-4.24	AVG	
3	X	2413.000	69.53	31.77	101.30	74.00	27.30	peak	
4	*	2413.000	60.37	31.77	92.14	54.00	38.14	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

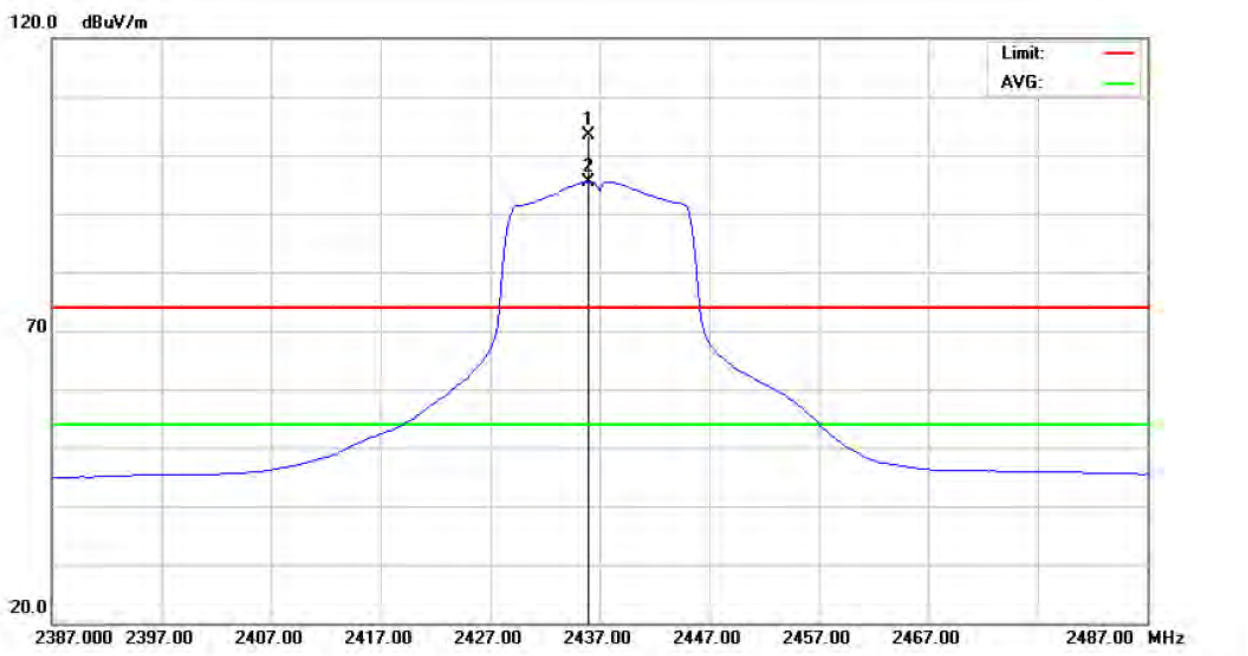
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4823.440	41.53	5.71	47.24	74.00	-26.76	peak	
2		4823.440	30.23	5.71	35.94	54.00	-18.06	AVG	
3		7236.010	41.90	12.29	54.19	74.00	-19.81	peak	
4	*	7236.010	30.17	12.29	42.46	54.00	-11.54	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

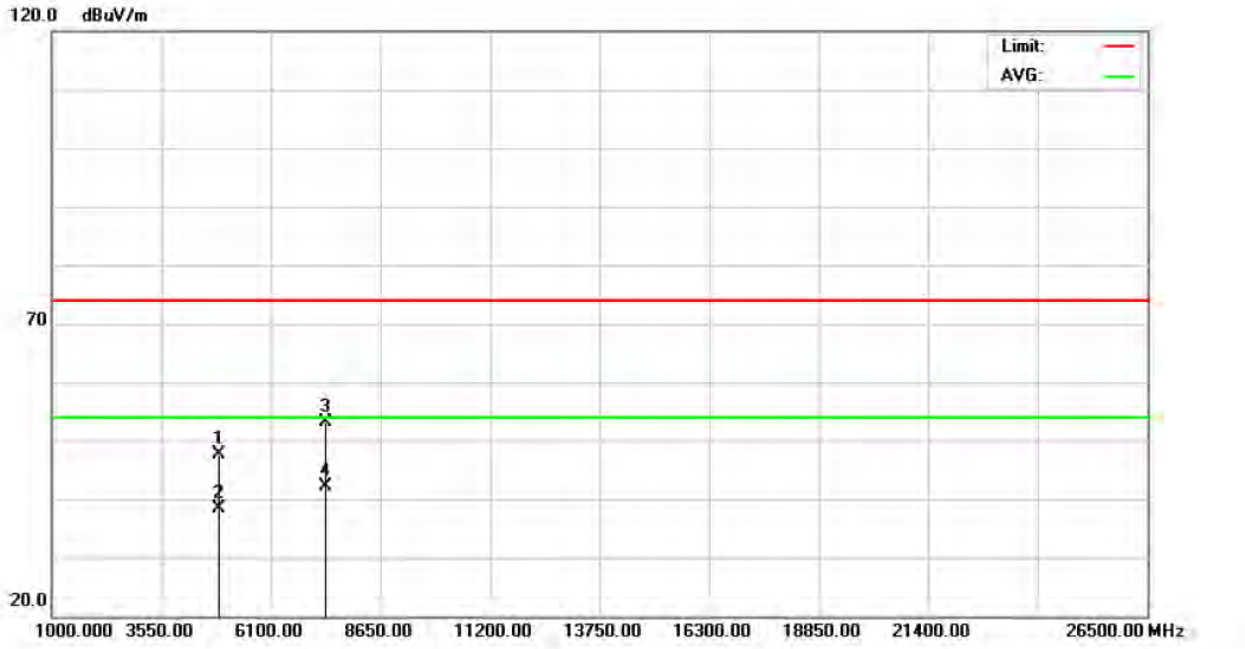
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2436.000	71.39	31.87	103.26	74.00	29.26	peak	
2	*	2436.000	63.59	31.87	95.46	54.00	41.46	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

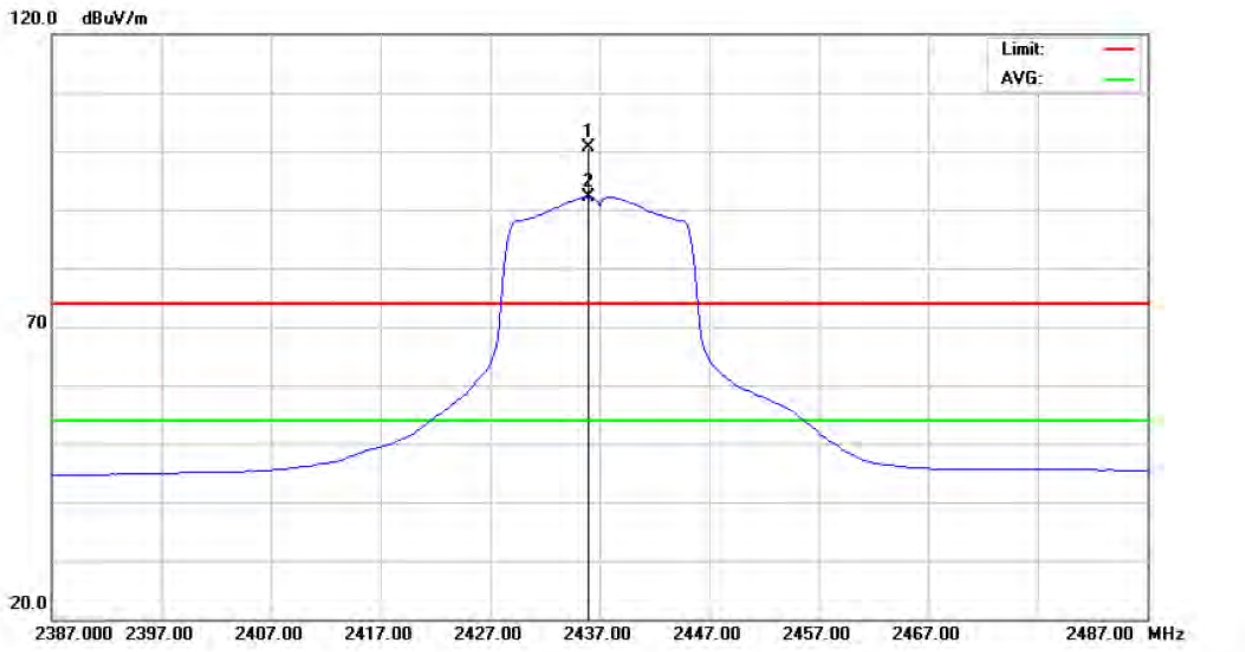
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.005	41.80	5.78	47.58	74.00	-26.42	peak	
2		4874.005	32.48	5.78	38.26	54.00	-15.74	AVG	
3		7311.320	40.58	12.57	53.15	74.00	-20.85	peak	
4	*	7311.320	29.63	12.57	42.20	54.00	-11.80	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

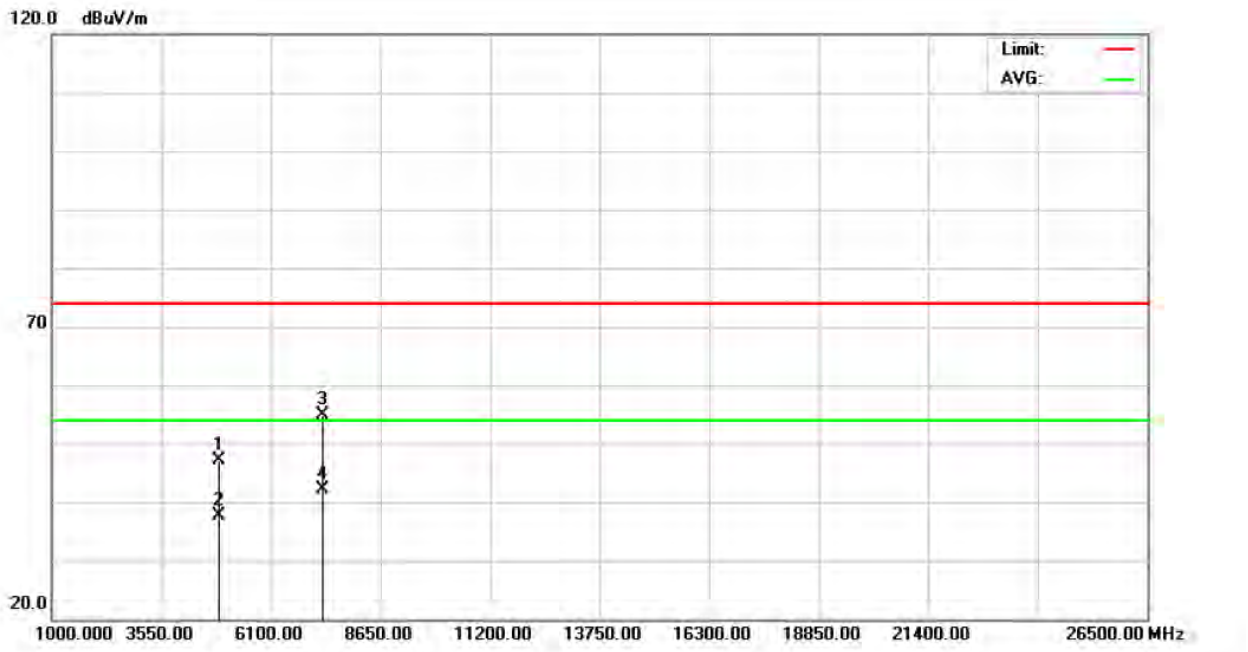
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2436.000	68.66	31.87	100.53	74.00	26.53	peak	
2	*	2436.000	60.32	31.87	92.19	54.00	38.19	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

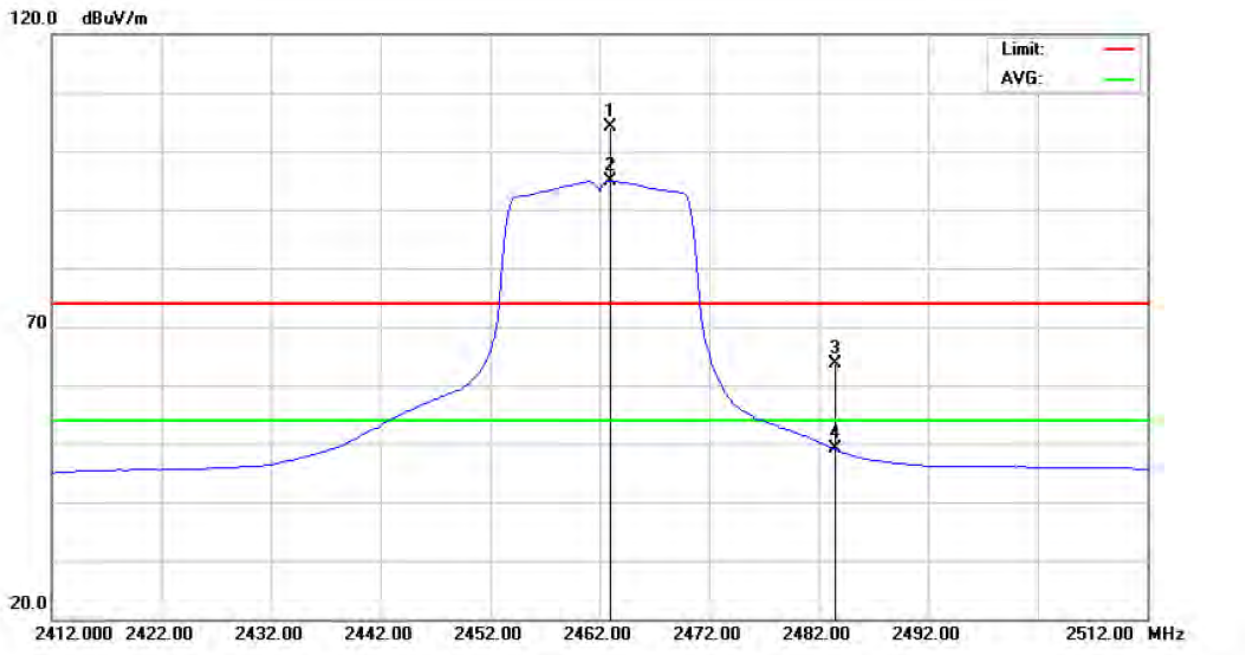
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.125	41.36	5.78	47.14	74.00	-26.86	peak	
2		4874.125	31.94	5.78	37.72	54.00	-16.28	AVG	
3		7310.955	42.34	12.57	54.91	74.00	-19.09	peak	
4	*	7310.955	29.66	12.57	42.23	54.00	-11.77	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2462 MHz		

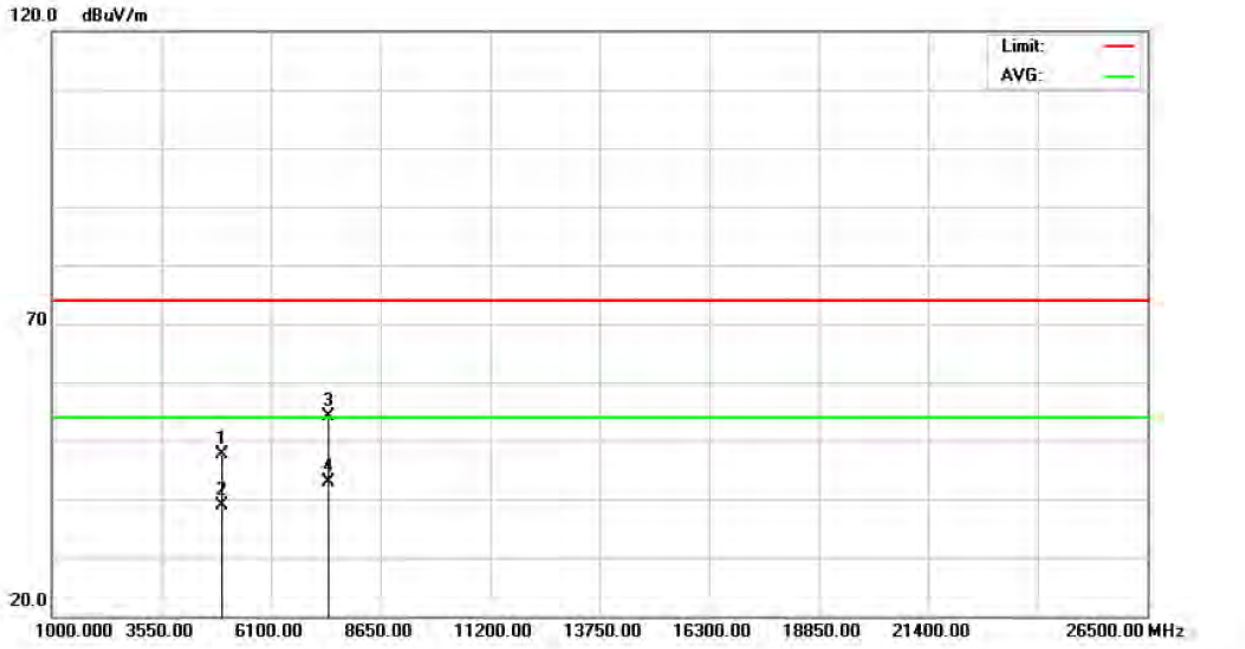
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2463.000	72.15	31.99	104.14	74.00	30.14	peak	
2	*	2463.000	62.86	31.99	94.85	54.00	40.85	AVG	
3		2483.500	31.42	32.09	63.51	74.00	-10.49	peak	
4		2483.500	17.01	32.09	49.10	54.00	-4.90	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2462 MHz		

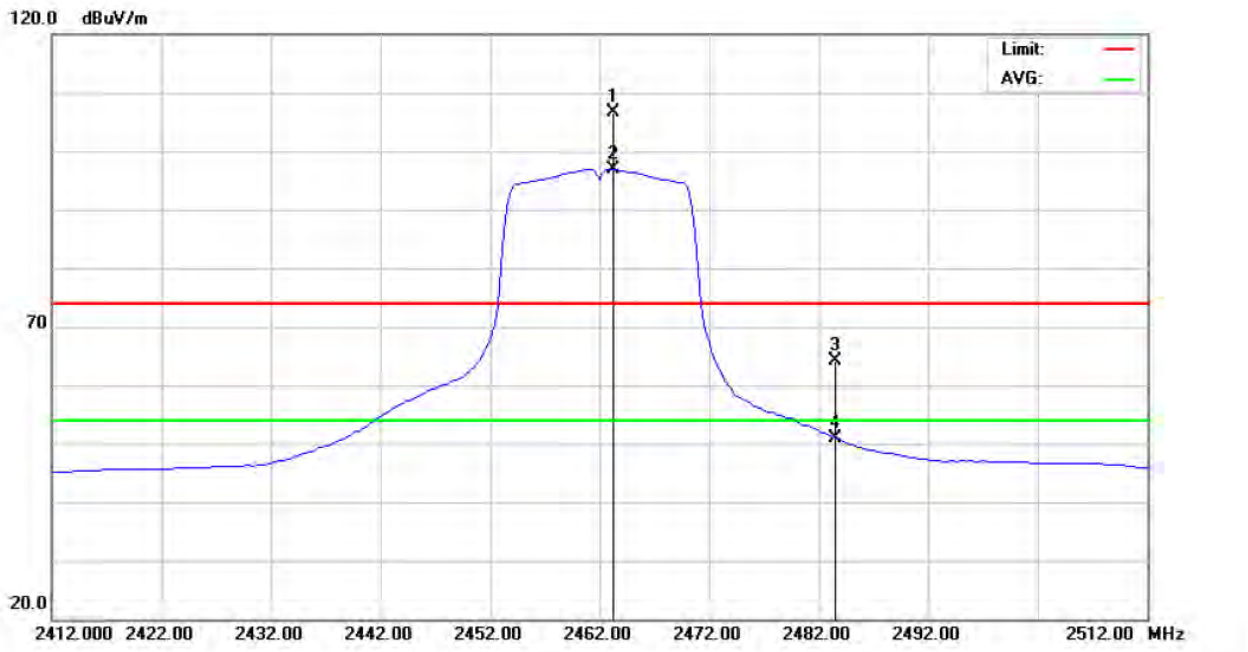
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4923.740	41.71	5.84	47.55	74.00	-26.45	peak	
2		4923.740	33.12	5.84	38.96	54.00	-15.04	AVG	
3		7386.555	41.19	12.85	54.04	74.00	-19.96	peak	
4	*	7386.555	30.08	12.85	42.93	54.00	-11.07	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2462 MHz		

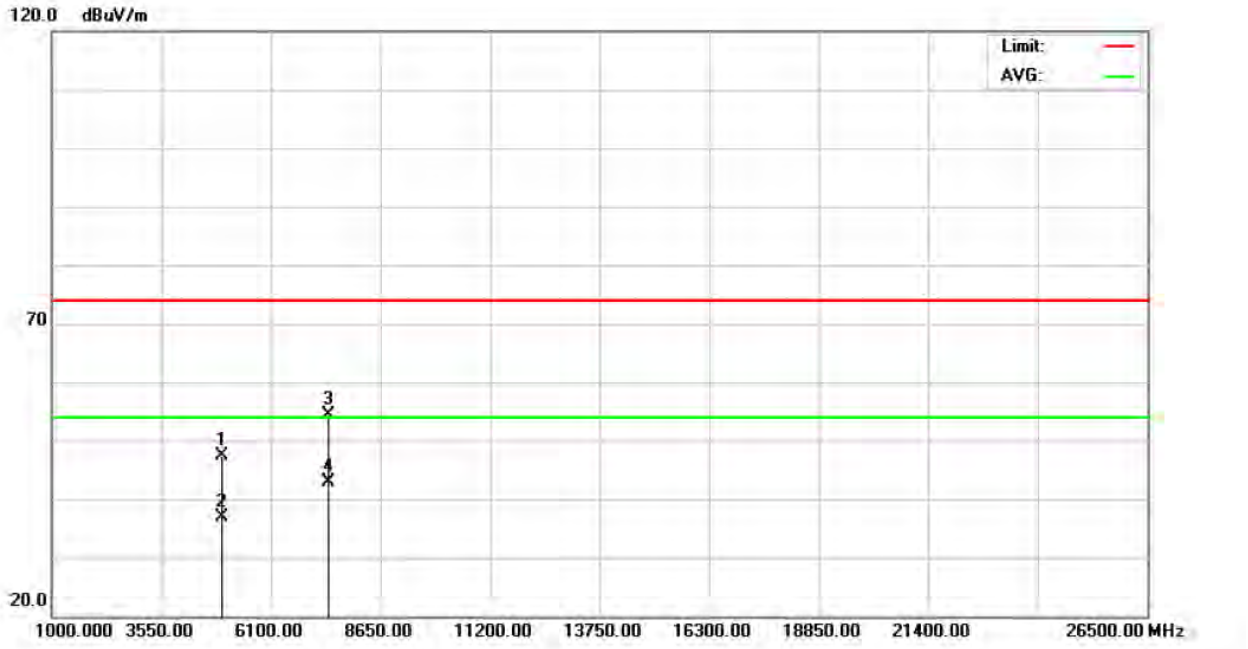
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2463.250	74.59	32.00	106.59	74.00	32.59	peak	
2	*	2463.250	64.90	32.00	96.90	54.00	42.90	AVG	
3		2483.500	32.05	32.09	64.14	74.00	-9.86	peak	
4		2483.500	18.90	32.09	50.99	54.00	-3.01	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2462 MHz		

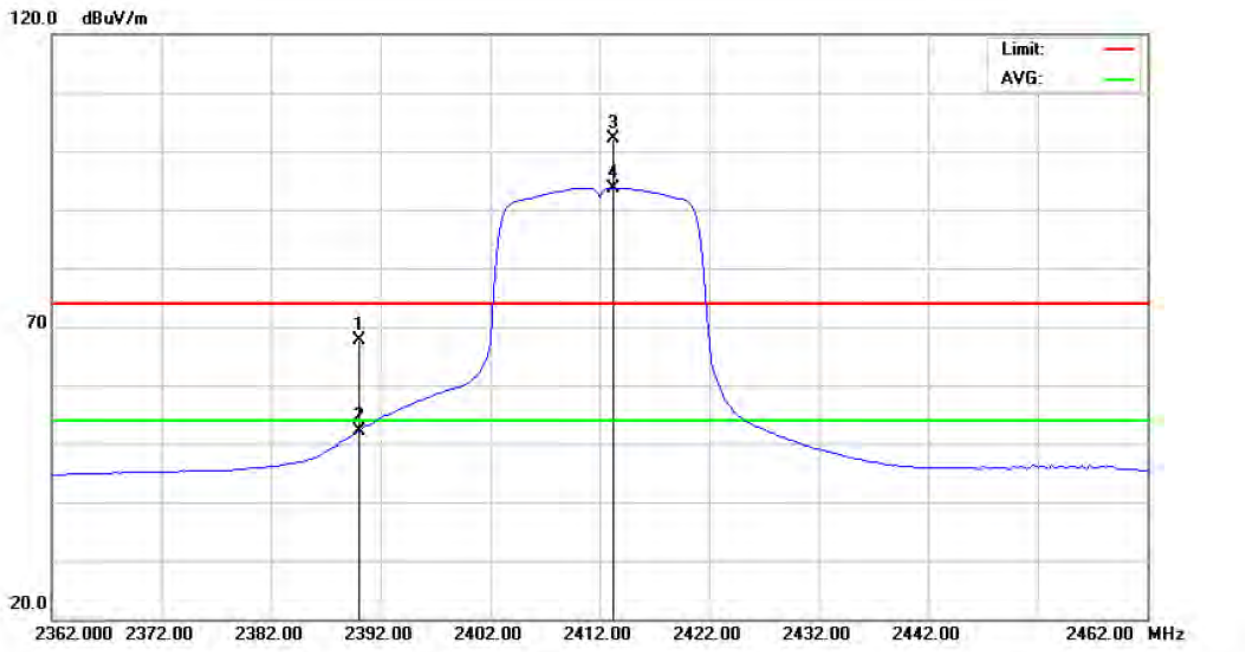
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.110	41.48	5.84	47.32	74.00	-26.68	peak	
2		4924.110	31.03	5.84	36.87	54.00	-17.13	AVG	
3		7386.055	41.49	12.85	54.34	74.00	-19.66	peak	
4	*	7386.055	30.14	12.85	42.99	54.00	-11.01	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

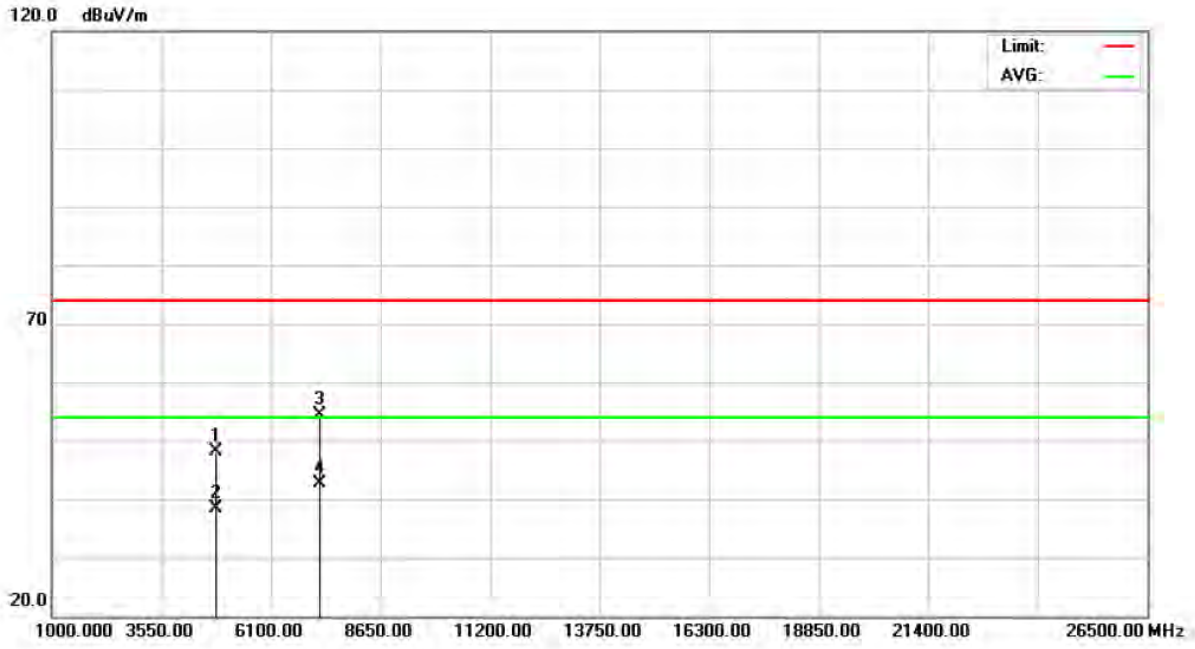
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	35.97	31.67	67.64	74.00	-6.36	peak	
2		2390.000	20.39	31.67	52.06	54.00	-1.94	AVG	
3	X	2413.250	70.40	31.77	102.17	74.00	28.17	peak	
4	*	2413.250	61.94	31.77	93.71	54.00	39.71	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

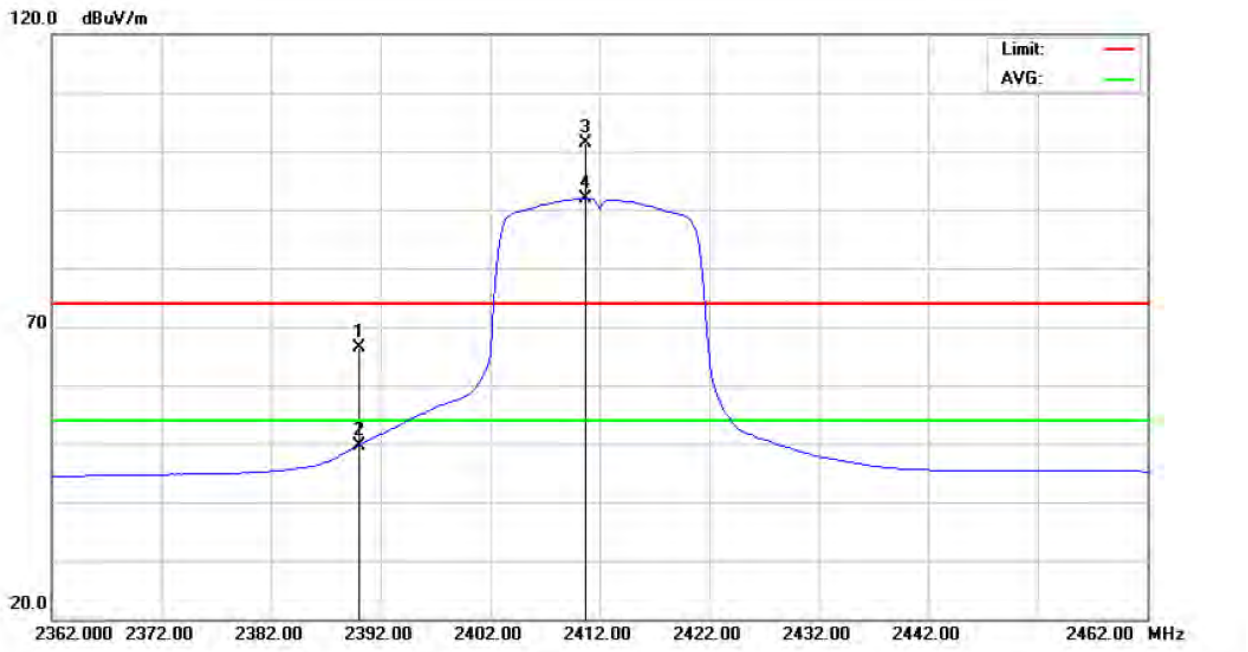
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4823.940	42.32	5.71	48.03	74.00	-25.97	peak	
2		4823.940	32.77	5.71	38.48	54.00	-15.52	AVG	
3		7235.985	42.13	12.29	54.42	74.00	-19.58	peak	
4	*	7235.985	30.23	12.29	42.52	54.00	-11.48	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

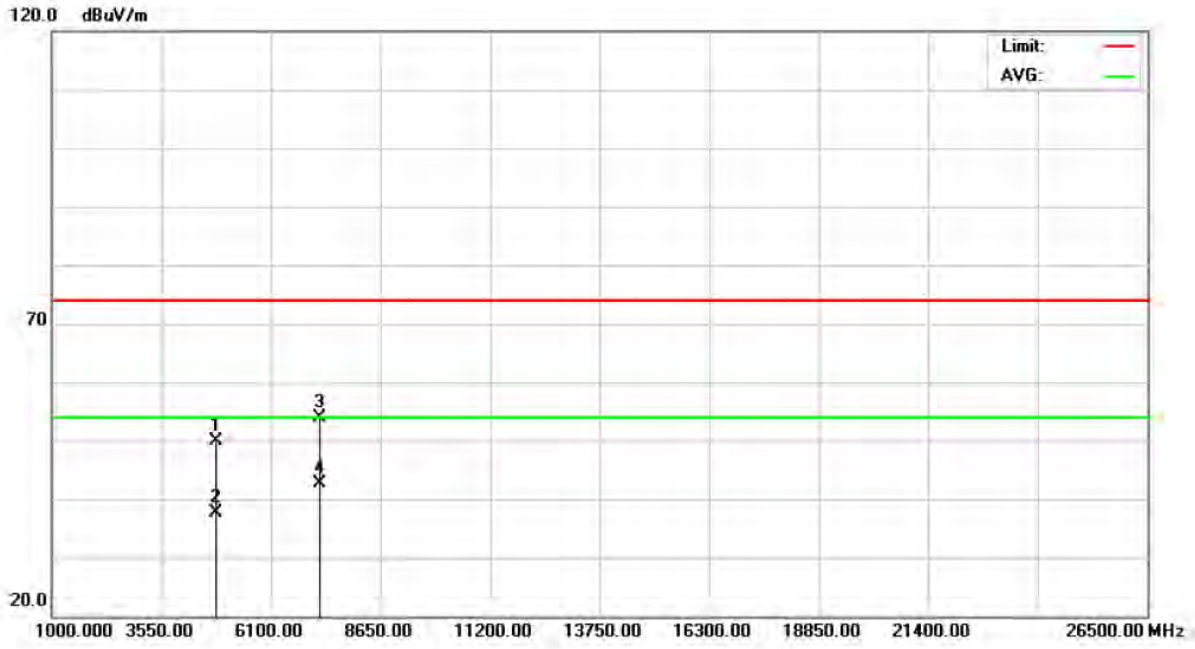
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	34.62	31.67	66.29	74.00	-7.71	peak	
2		2390.000	17.94	31.67	49.61	54.00	-4.39	AVG	
3	X	2410.750	69.57	31.76	101.33	74.00	27.33	peak	
4	*	2410.750	60.12	31.76	91.88	54.00	37.88	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

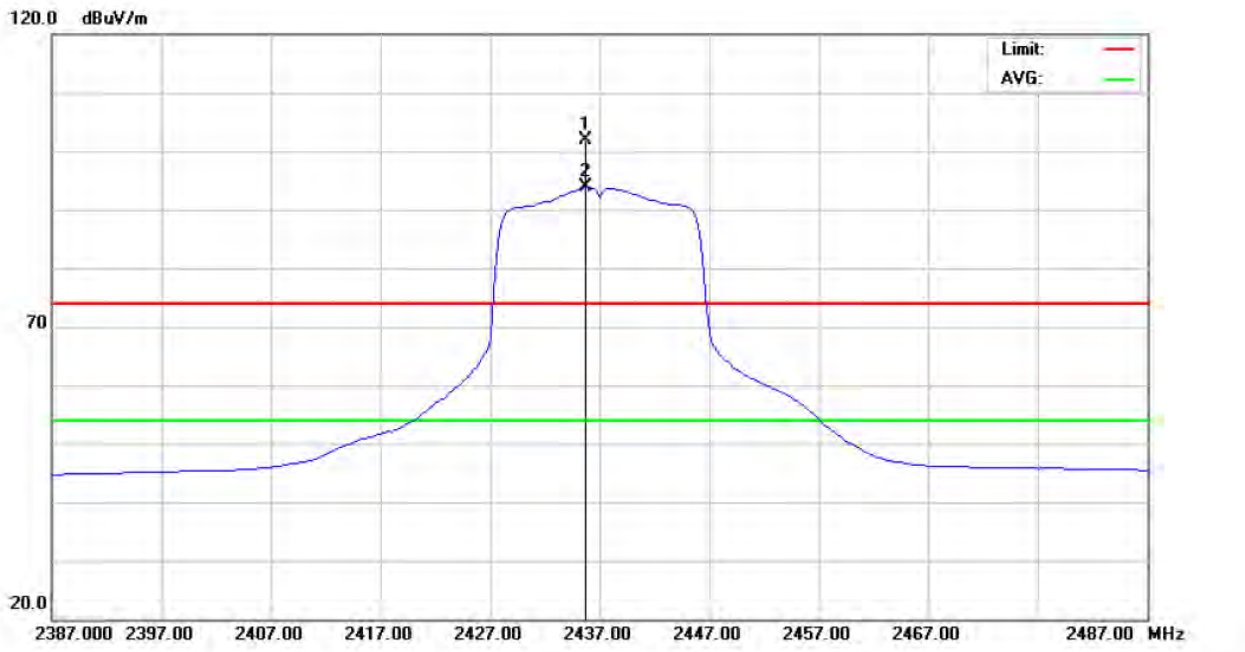
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.040	44.09	5.71	49.80	74.00	-24.20	peak	
2		4824.040	31.82	5.71	37.53	54.00	-16.47	AVG	
3		7236.045	41.56	12.29	53.85	74.00	-20.15	peak	
4	*	7236.045	30.24	12.29	42.53	54.00	-11.47	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

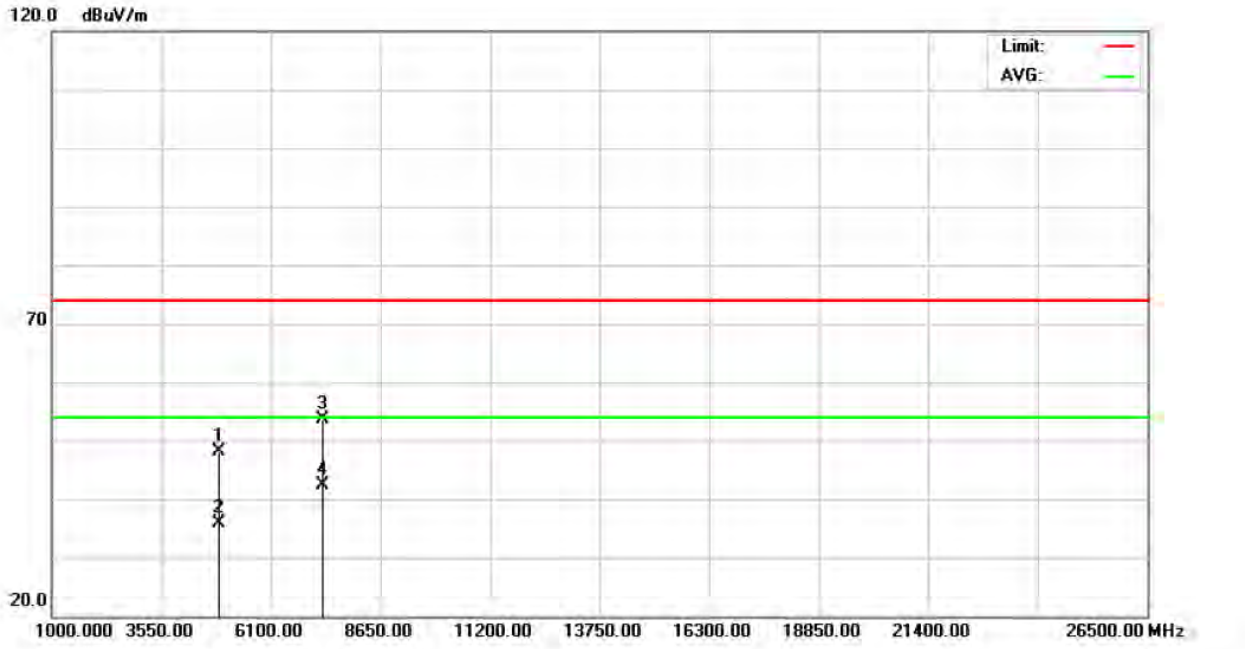
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2435.750	70.04	31.87	101.91	74.00	27.91	peak	
2	*	2435.750	61.94	31.87	93.81	54.00	39.81	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

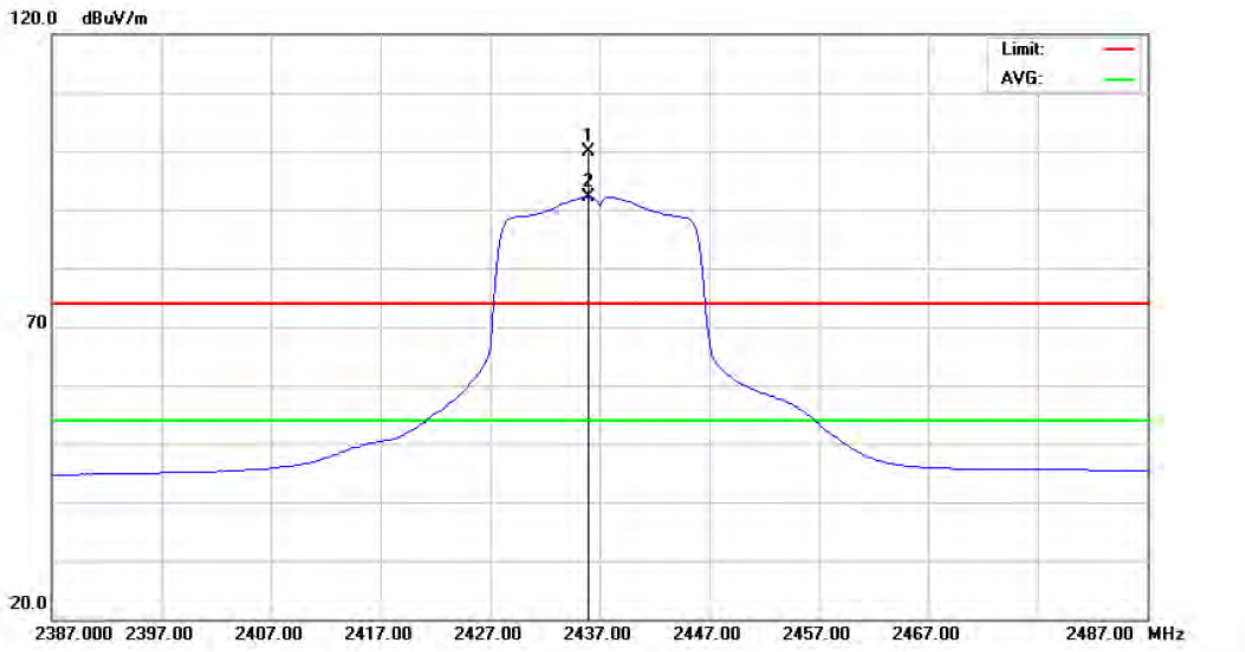
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4873.925	42.35	5.78	48.13	74.00	-25.87	peak	
2		4873.925	29.98	5.78	35.76	54.00	-18.24	AVG	
3		7311.245	41.15	12.57	53.72	74.00	-20.28	peak	
4	*	7311.245	29.74	12.57	42.31	54.00	-11.69	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

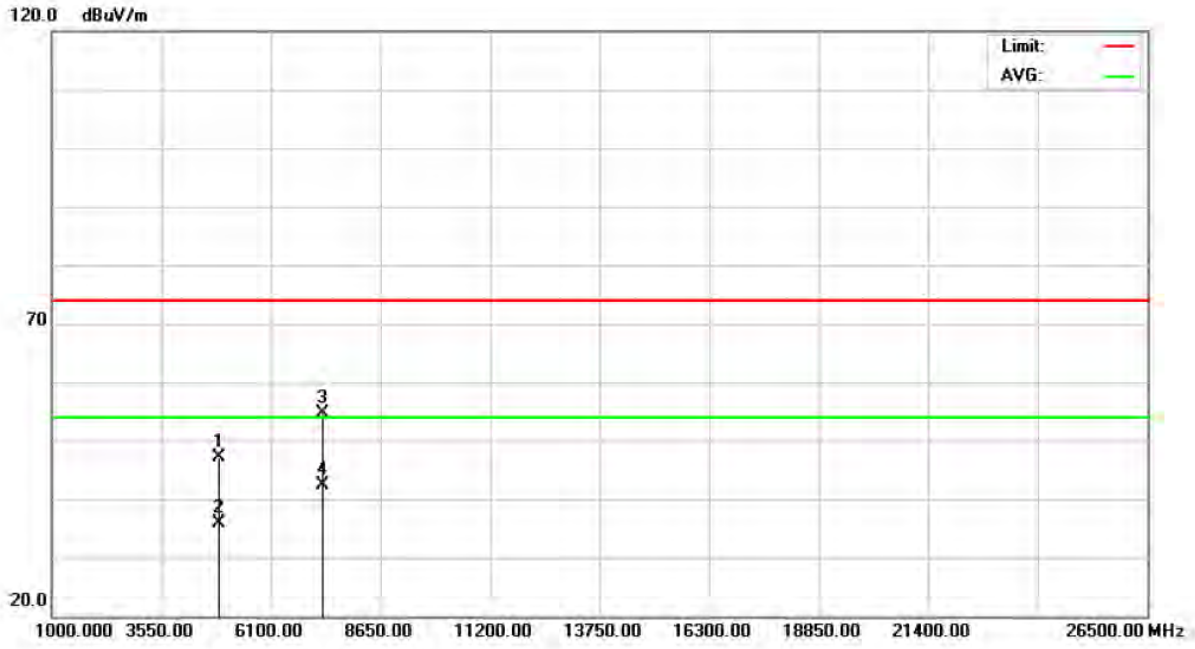
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2436.000	68.12	31.87	99.99	74.00	25.99	peak	
2	*	2436.000	60.29	31.87	92.16	54.00	38.16	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

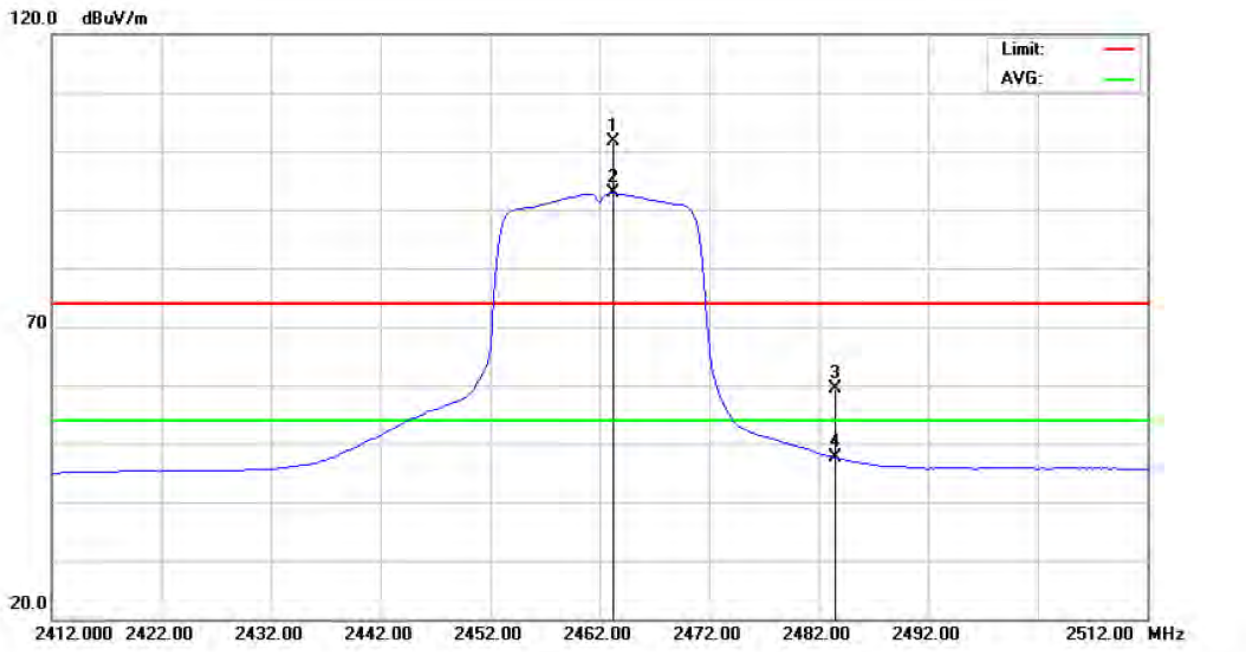
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.470	41.35	5.78	47.13	74.00	-26.87	peak	
2		4874.470	29.98	5.78	35.76	54.00	-18.24	AVG	
3		7311.150	41.95	12.57	54.52	74.00	-19.48	peak	
4	*	7311.150	29.70	12.57	42.27	54.00	-11.73	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

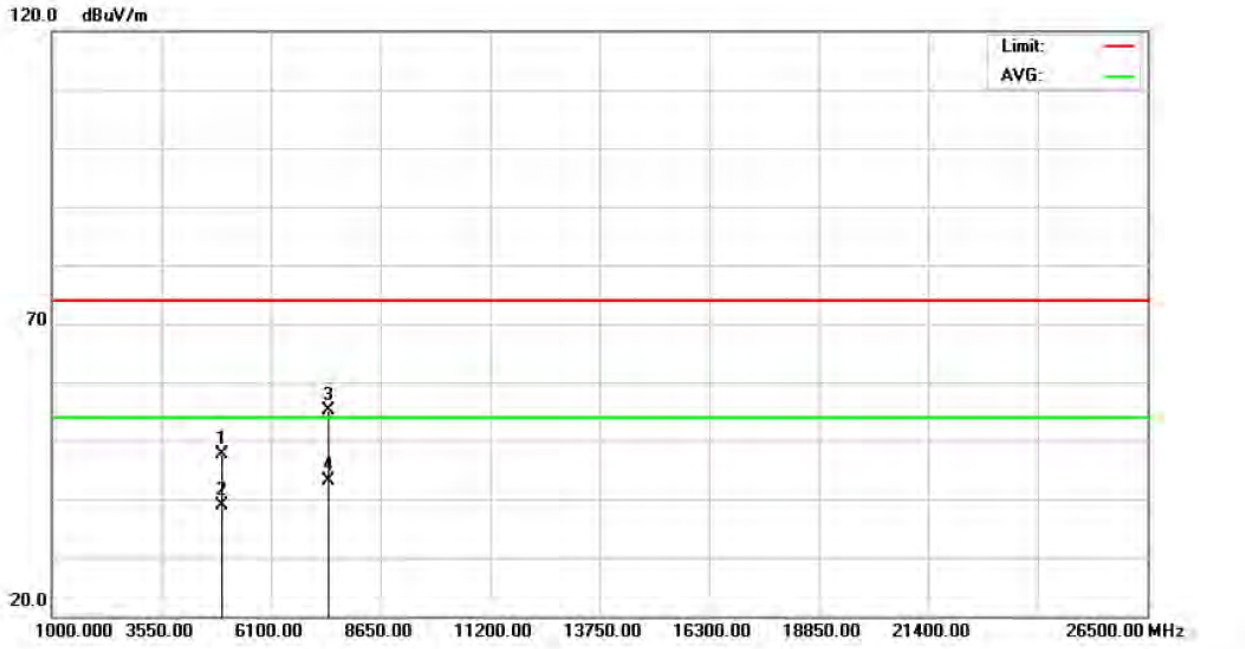
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2463.250	69.53	32.00	101.53	74.00	27.53	peak	
2	*	2463.250	60.78	32.00	92.78	54.00	38.78	AVG	
3		2483.500	27.31	32.09	59.40	74.00	-14.60	peak	
4		2483.500	15.50	32.09	47.59	54.00	-6.41	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

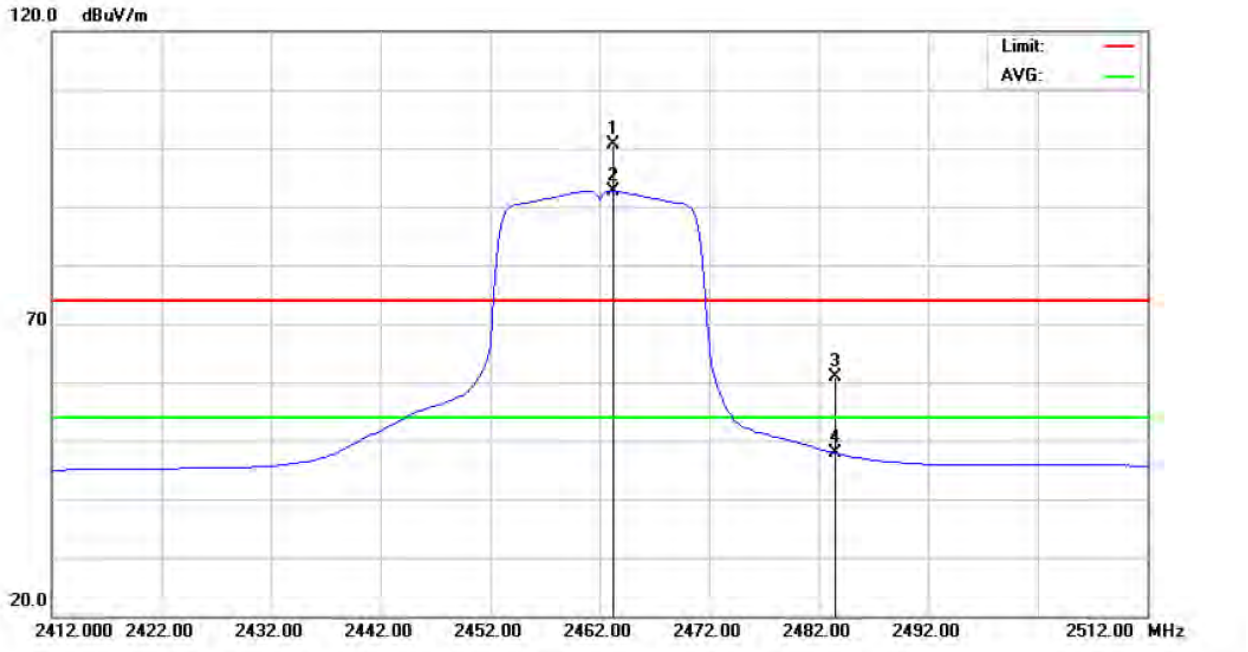
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4923.895	41.88	5.84	47.72	74.00	-26.28	peak	
2		4923.895	32.97	5.84	38.81	54.00	-15.19	AVG	
3		7386.575	42.34	12.85	55.19	74.00	-18.81	peak	
4	*	7386.575	30.21	12.85	43.06	54.00	-10.94	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

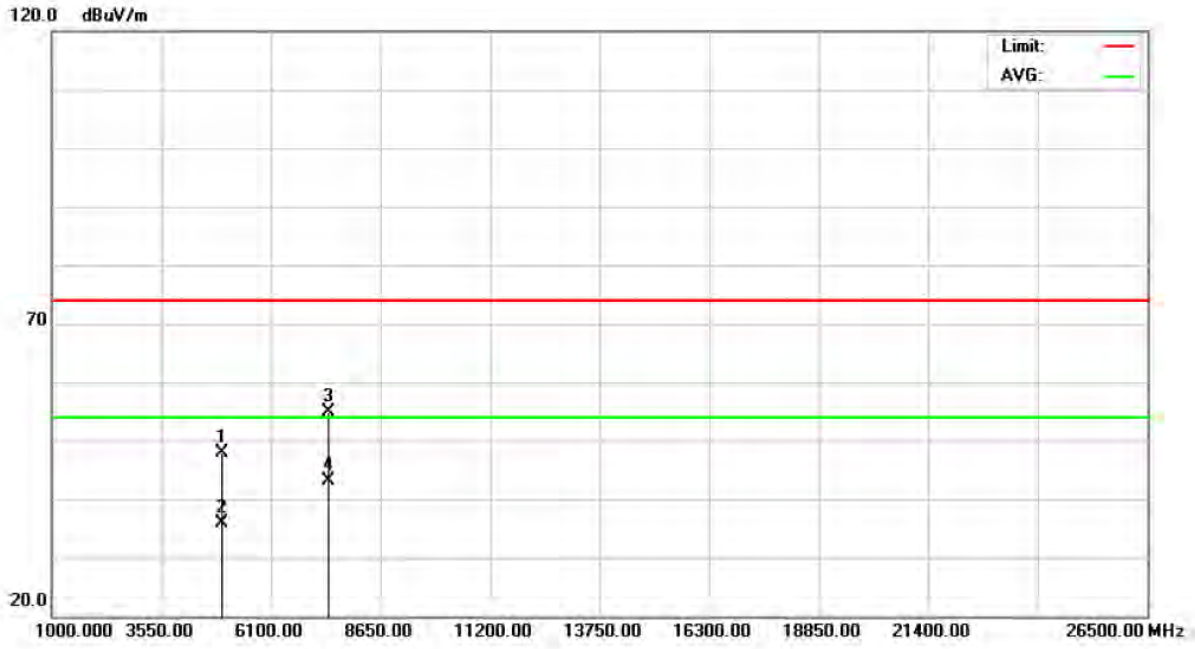
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2463.250	68.63	32.00	100.63	74.00	26.63	peak	
2	*	2463.250	60.69	32.00	92.69	54.00	38.69	AVG	
3		2483.500	28.75	32.09	60.84	74.00	-13.16	peak	
4		2483.500	15.77	32.09	47.86	54.00	-6.14	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

Polarization: Horizontal

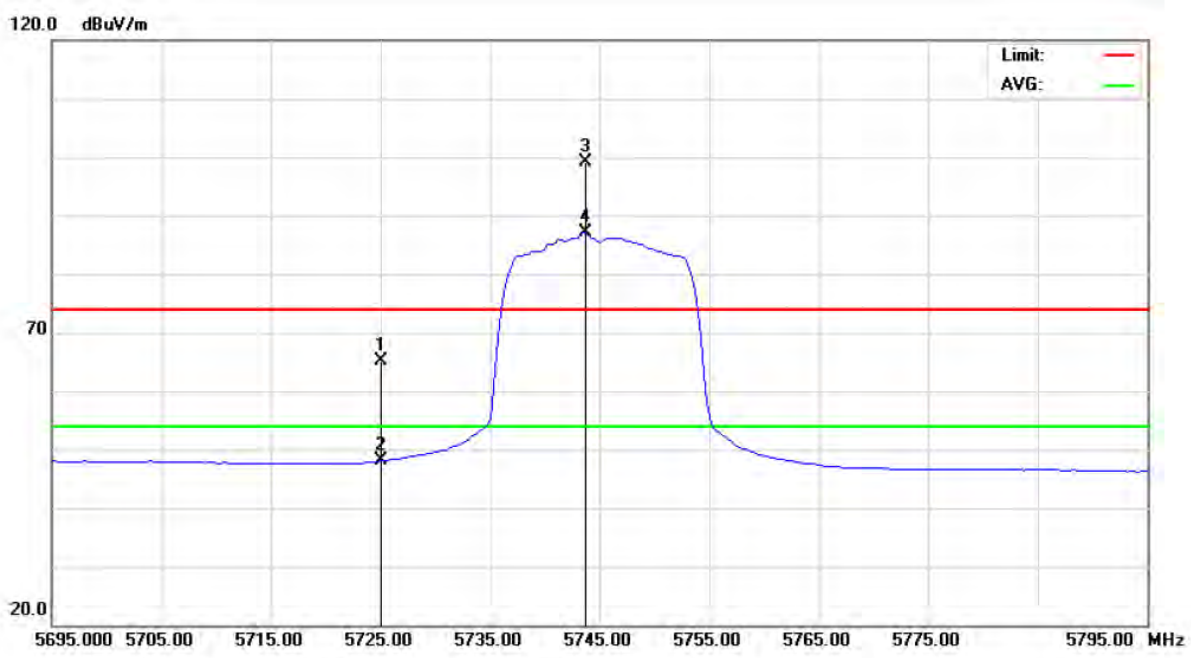


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4923.345	42.04	5.84	47.88	74.00	-26.12	peak	
2		4923.345	30.11	5.84	35.95	54.00	-18.05	AVG	
3		7385.300	41.93	12.84	54.77	74.00	-19.23	peak	
4	*	7385.300	30.25	12.84	43.09	54.00	-10.91	AVG	

9.9 TEST RESULTS - 5745-5825 MHZ

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5745 MHz		

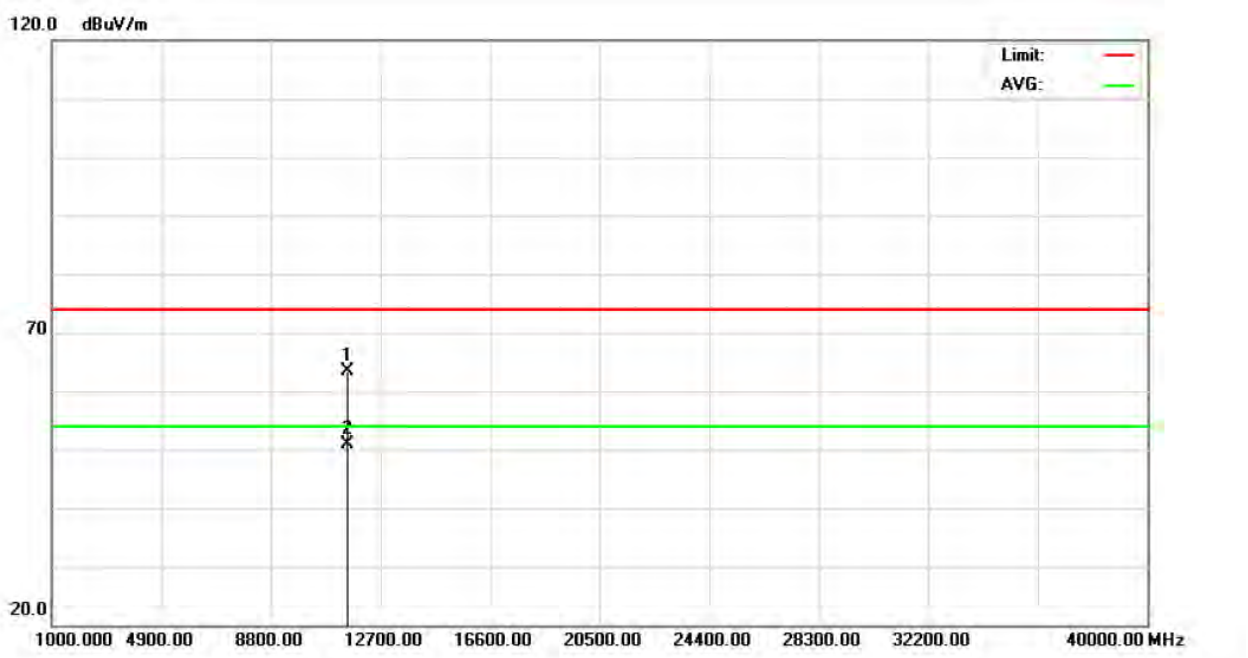
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	32.76	32.26	65.02	74.00	-8.98	peak	
2		5725.000	15.75	32.26	48.01	54.00	-5.99	AVG	
3	X	5743.750	66.79	32.29	99.08	74.00	25.08	peak	
4	*	5743.750	54.88	32.29	87.17	54.00	33.17	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5745 MHz		

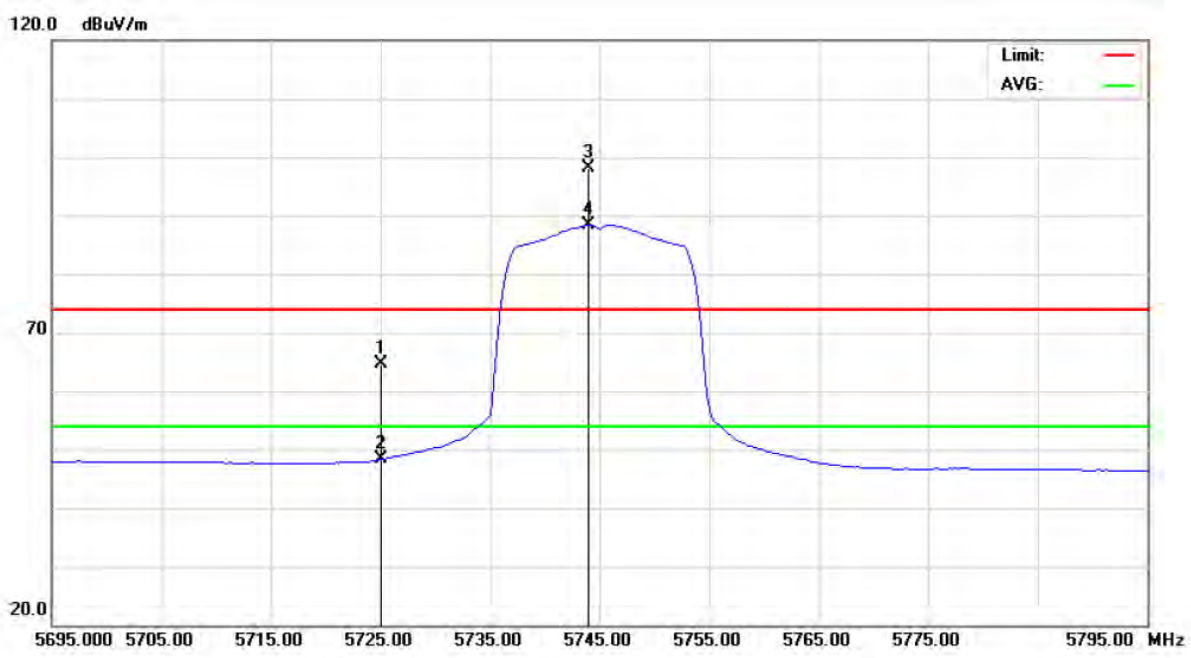
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.13	44.61	18.80	63.41	74.00	-10.59	peak	
2	*	11490.13	31.98	18.80	50.78	54.00	-3.22	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5745 MHz		

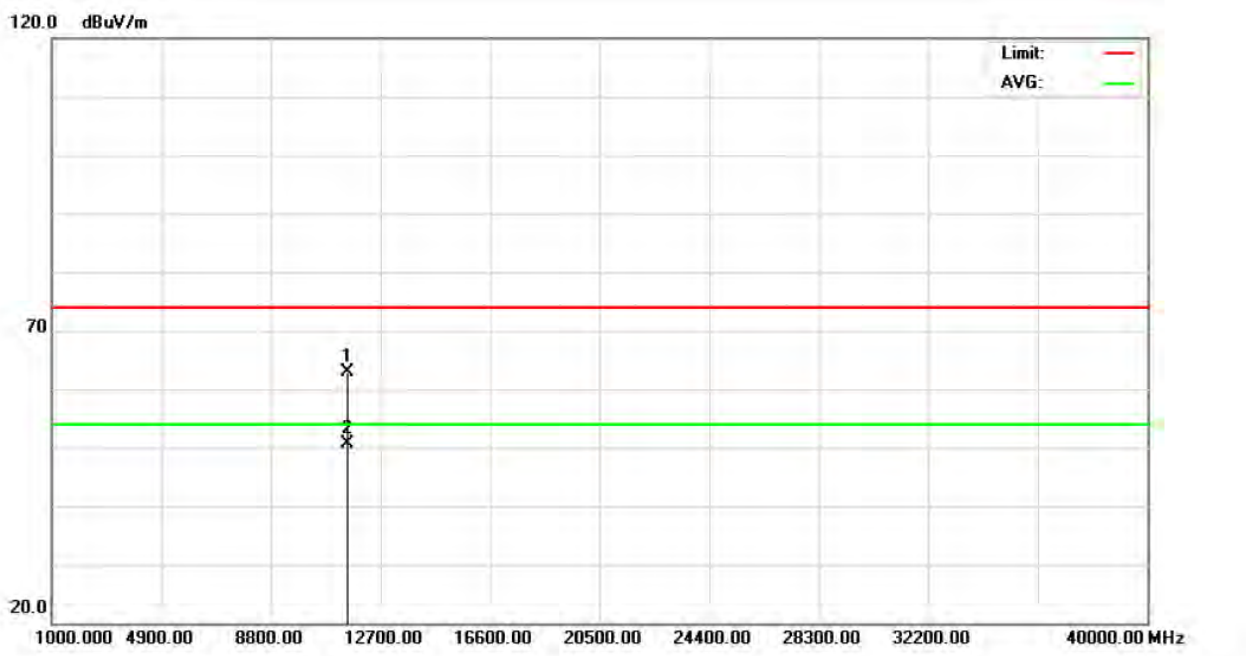
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	25.93	38.77	64.70	74.00	-9.30	peak	
2		5725.000	9.52	38.77	48.29	54.00	-5.71	AVG	
3	X	5744.000	59.33	38.81	98.14	74.00	24.14	peak	
4	*	5744.000	49.53	38.81	88.34	54.00	34.34	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5745 MHz		

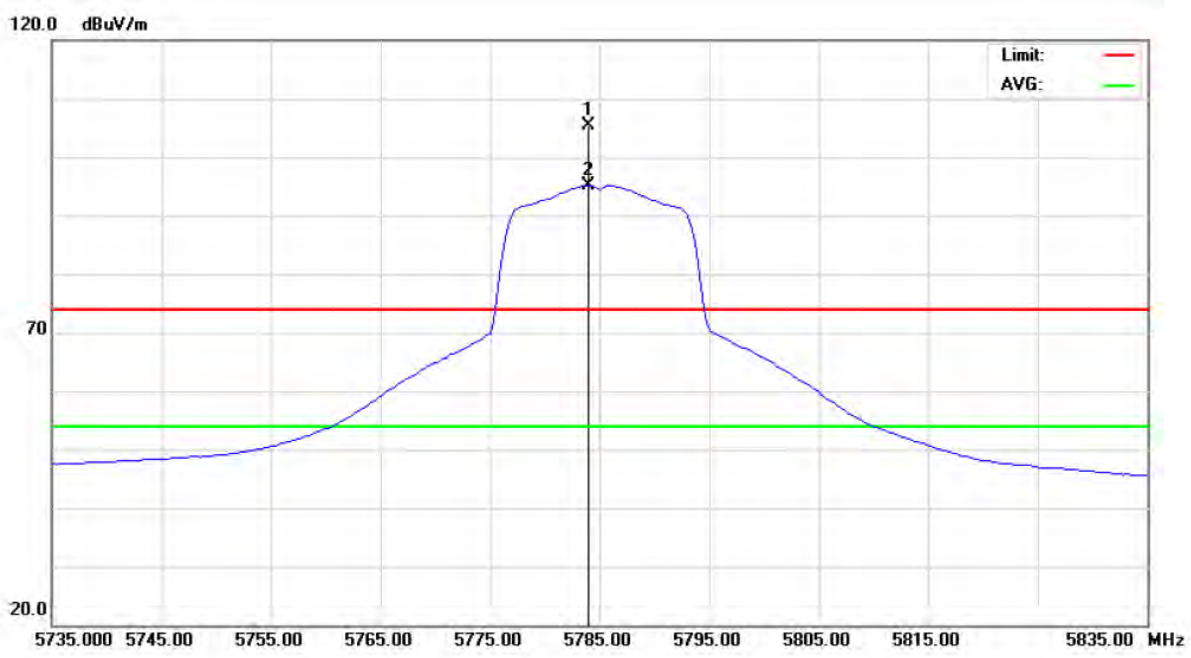
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11489.97	44.17	18.80	62.97	74.00	-11.03	peak	
2	*	11489.97	31.71	18.80	50.51	54.00	-3.49	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5785 MHz		

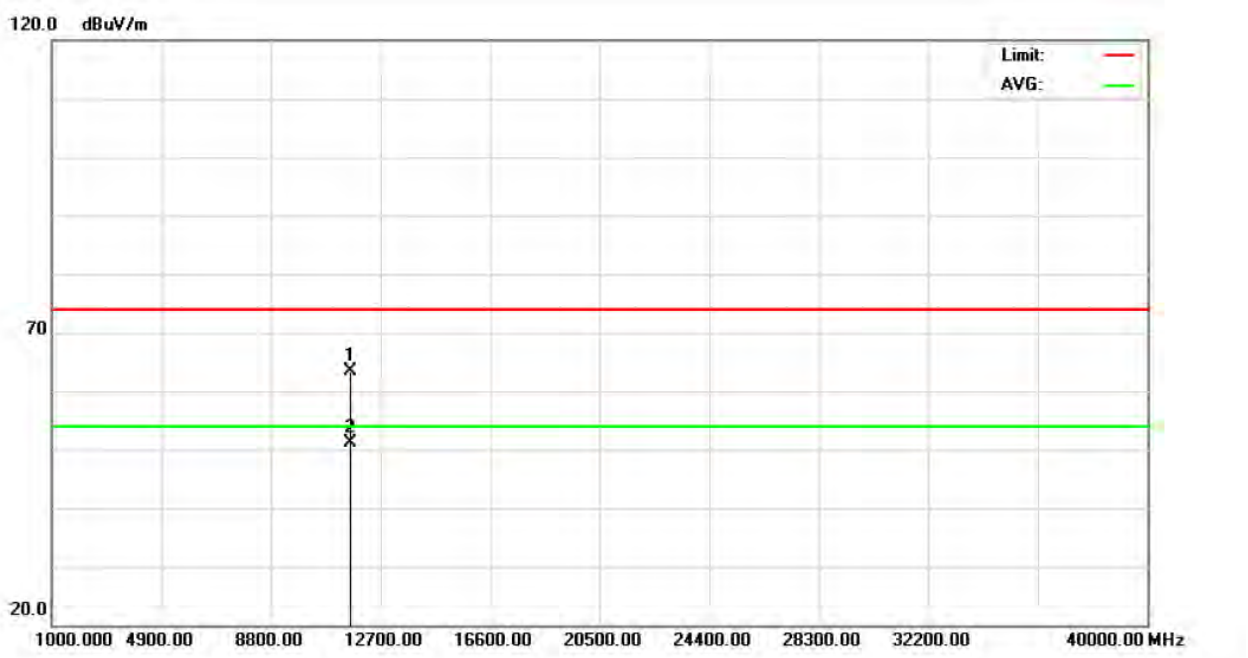
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5784.000	66.43	38.87	105.30	74.00	31.30	peak	
2	*	5784.000	56.24	38.87	95.11	54.00	41.11	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5785 MHz		

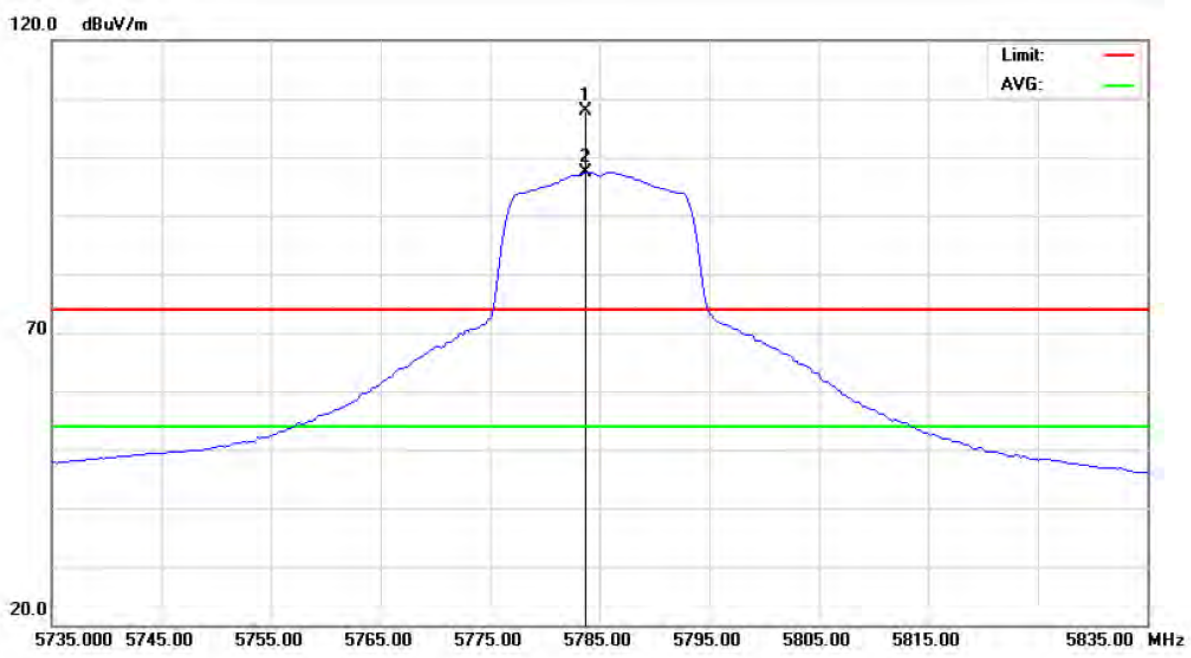
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.46	44.67	18.76	63.43	74.00	-10.57	peak	
2	*	11570.46	32.40	18.76	51.16	54.00	-2.84	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5785 MHz		

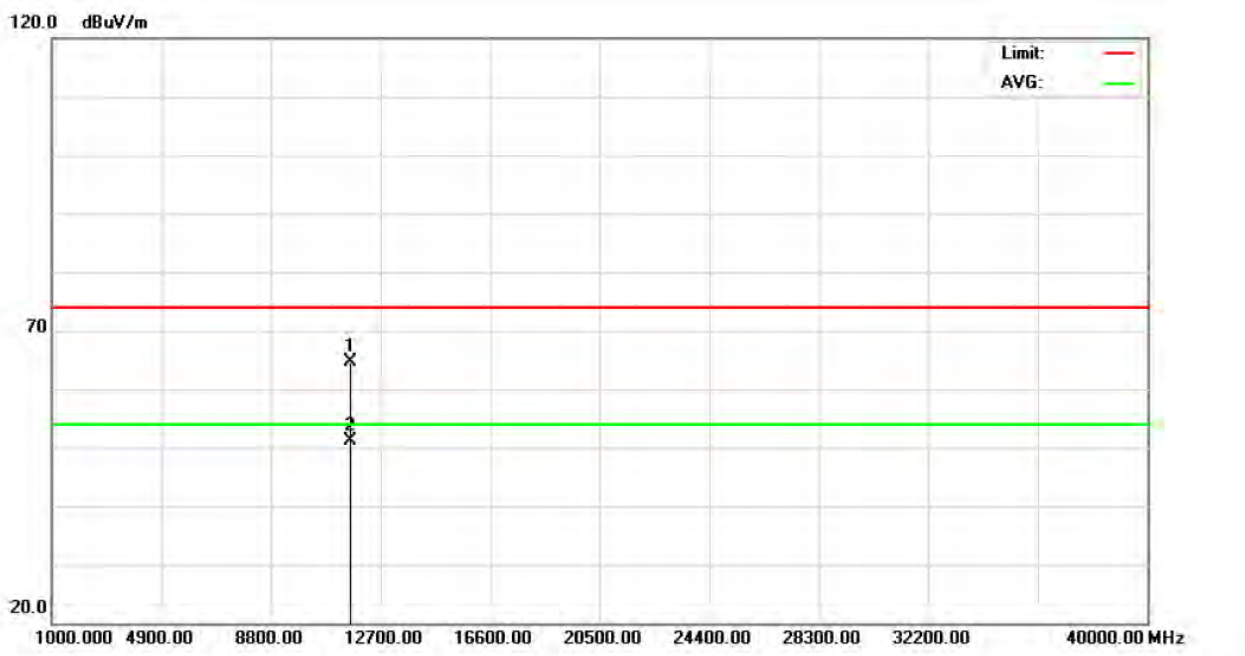
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5783.750	69.06	38.87	107.93	74.00	33.93	peak	
2	*	5783.750	58.46	38.87	97.33	54.00	43.33	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5785 MHz		

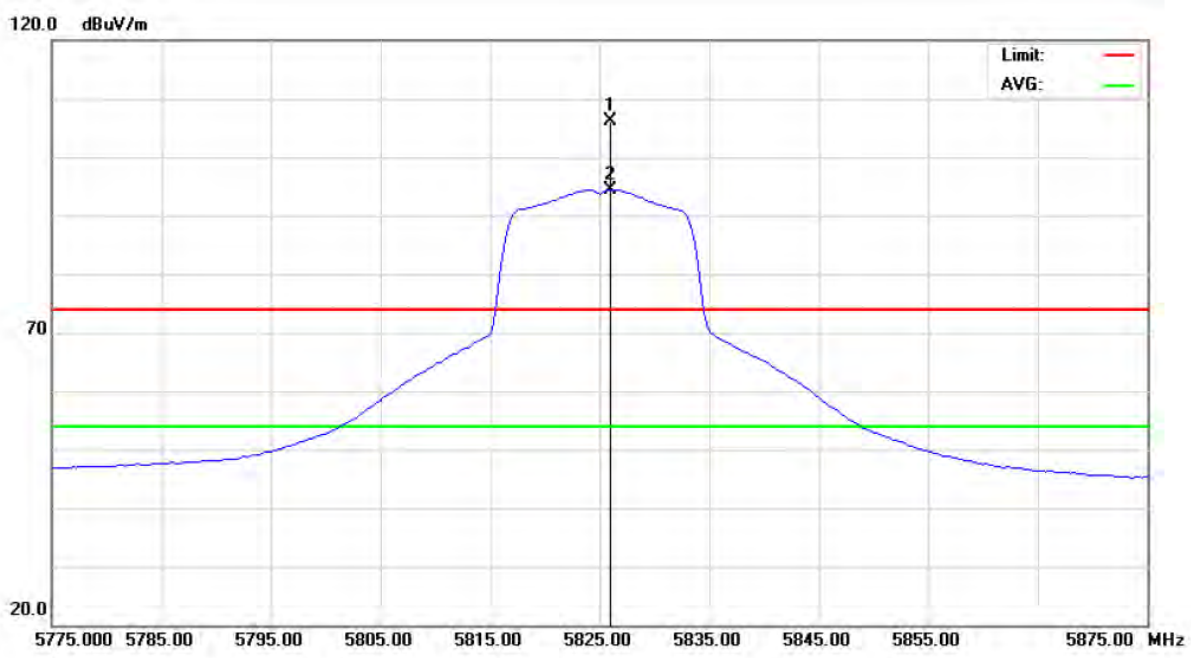
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.18	45.89	18.76	64.65	74.00	-9.35	peak	
2	*	11570.18	32.32	18.76	51.08	54.00	-2.92	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5825 MHz		

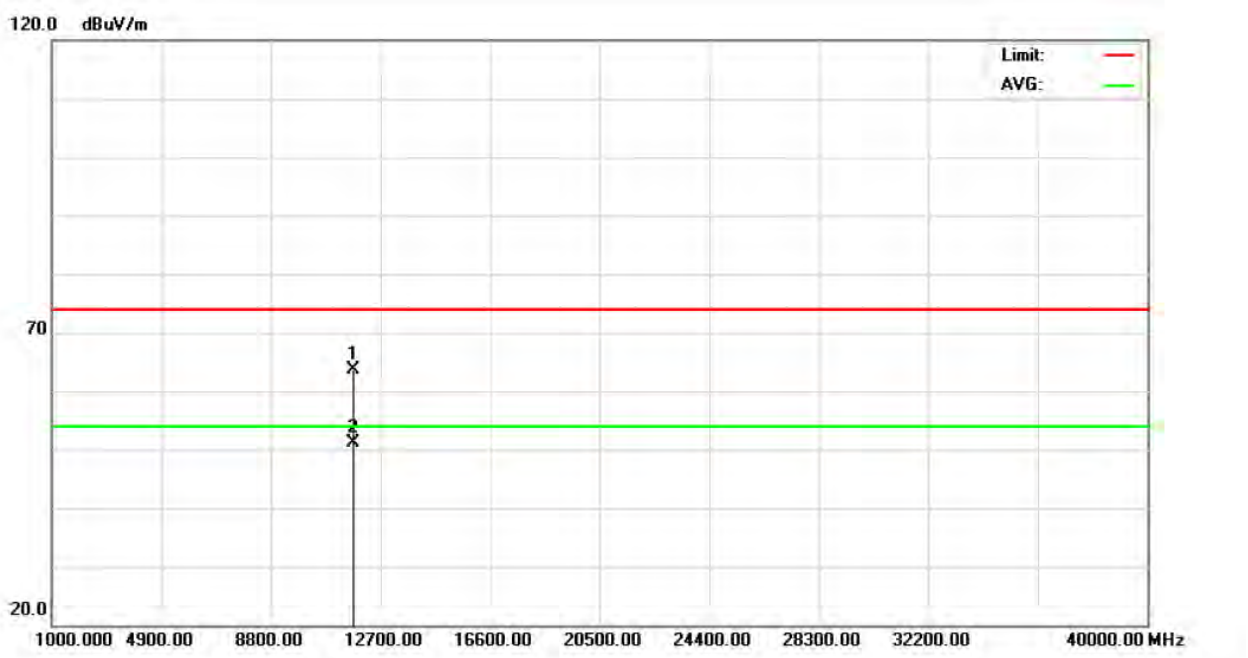
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5826.000	67.08	38.94	106.02	74.00	32.02	peak	
2	*	5826.000	55.47	38.94	94.41	54.00	40.41	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5825 MHz		

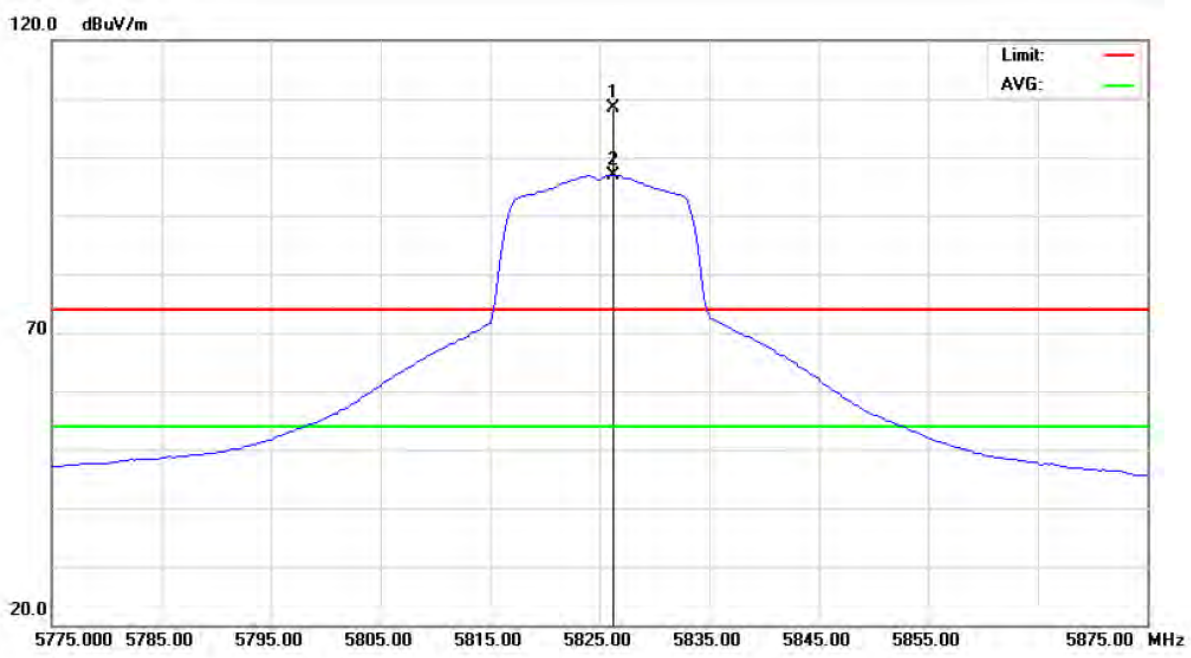
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11649.29	44.97	18.74	63.71	74.00	-10.29	peak	
2	*	11649.29	32.30	18.74	51.04	54.00	-2.96	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5825 MHz		

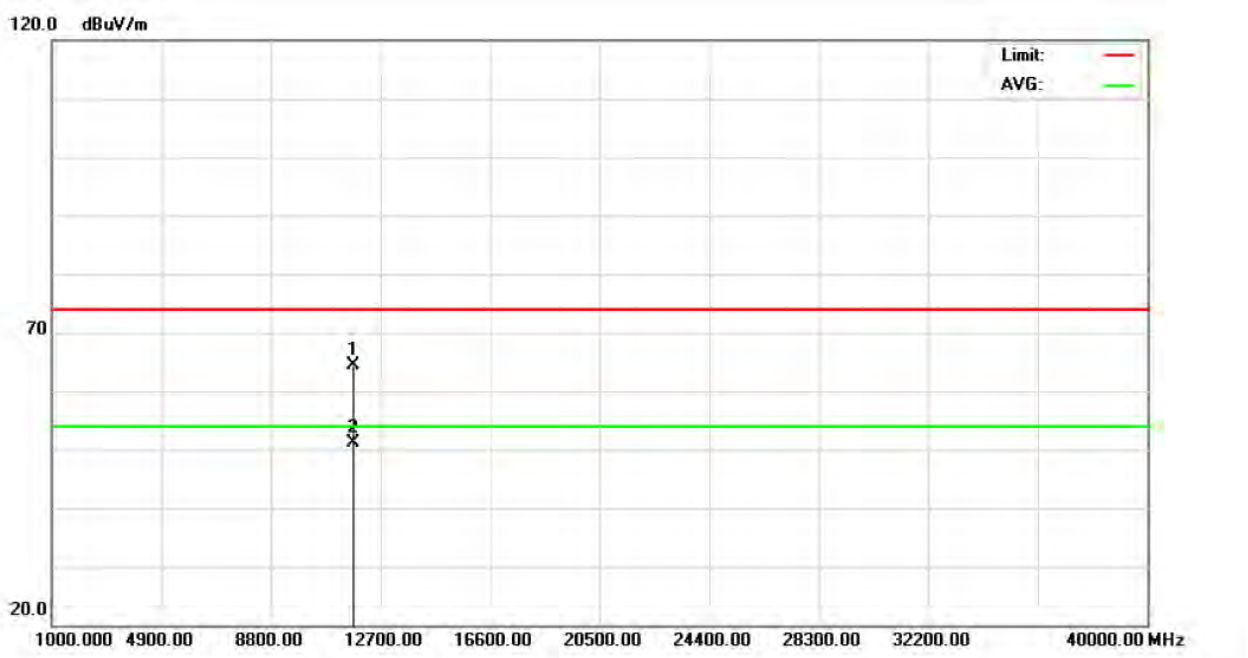
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5826.250	69.42	38.94	108.36	74.00	34.36	peak	
2	*	5826.250	57.95	38.94	96.89	54.00	42.89	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5825 MHz		

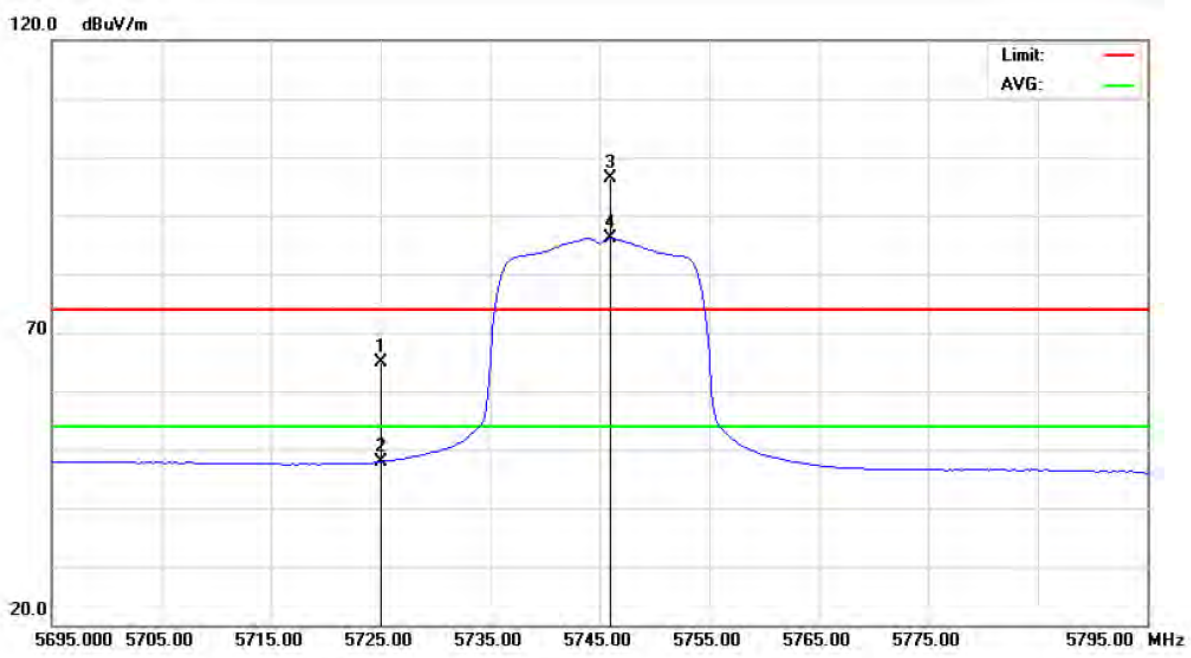
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11649.87	45.58	18.74	64.32	74.00	-9.68	peak	
2	*	11649.87	32.31	18.74	51.05	54.00	-2.95	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5745 MHz		

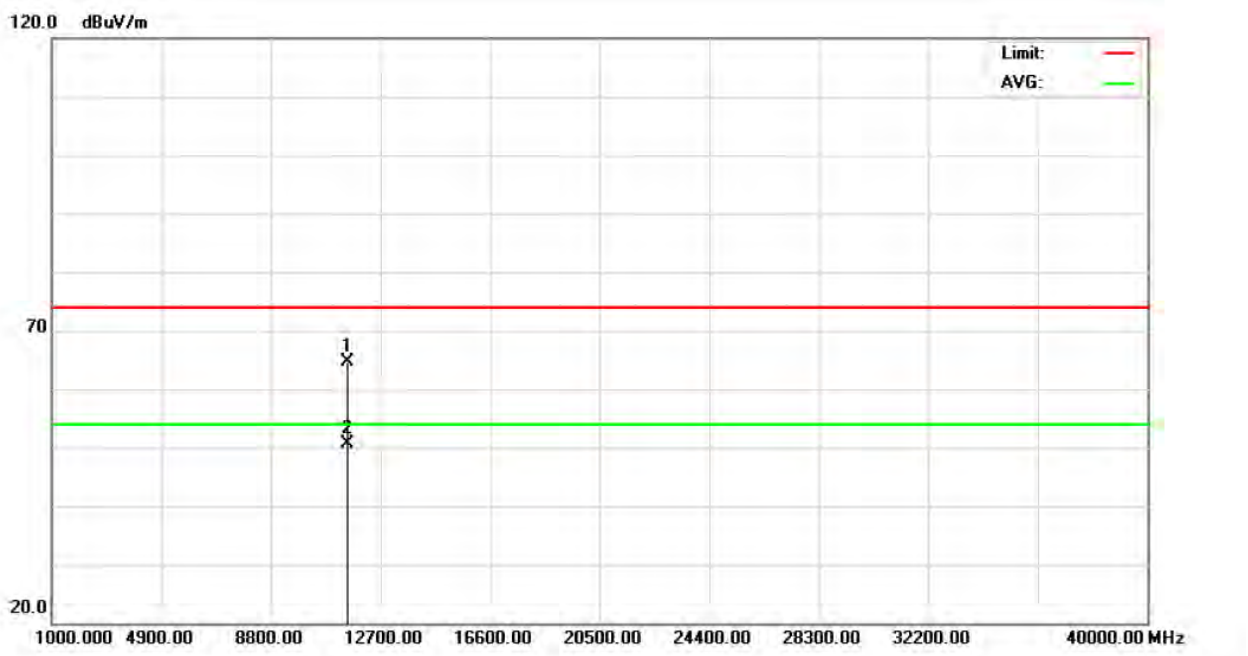
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	26.17	38.77	64.94	74.00	-9.06	peak	
2		5725.000	9.17	38.77	47.94	54.00	-6.06	AVG	
3	X	5746.000	57.47	38.81	96.28	74.00	22.28	peak	
4	*	5746.000	47.23	38.81	86.04	54.00	32.04	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5745 MHz		

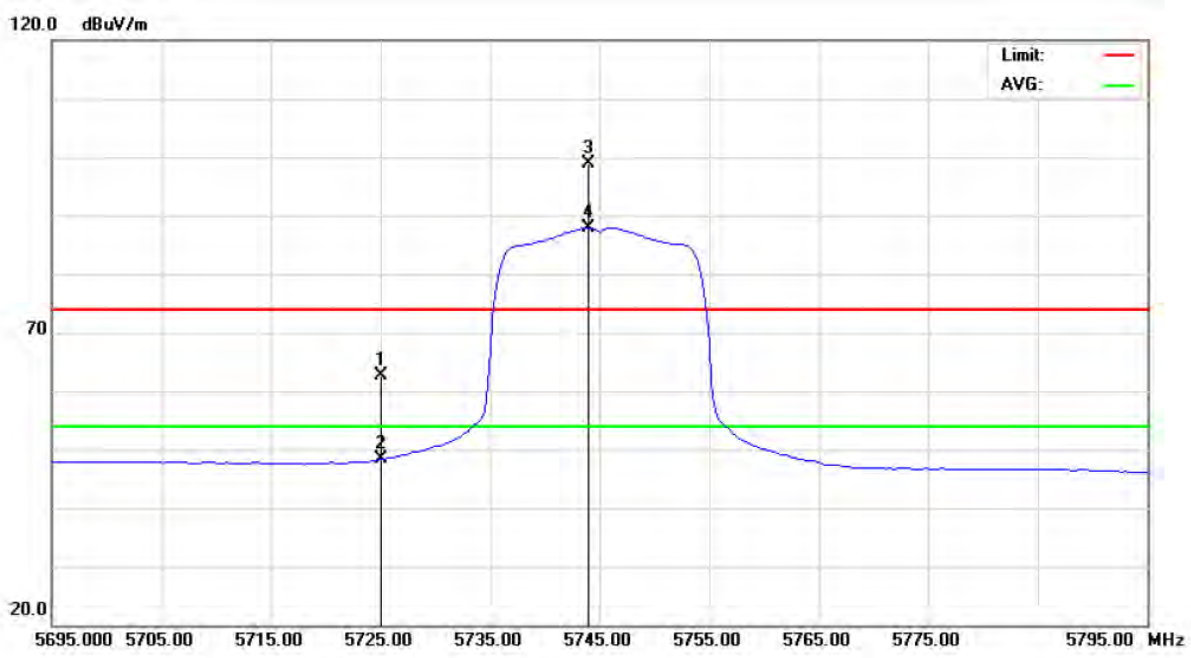
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.06	45.78	18.80	64.58	74.00	-9.42	peak	
2	*	11490.06	31.84	18.80	50.64	54.00	-3.36	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5745 MHz		

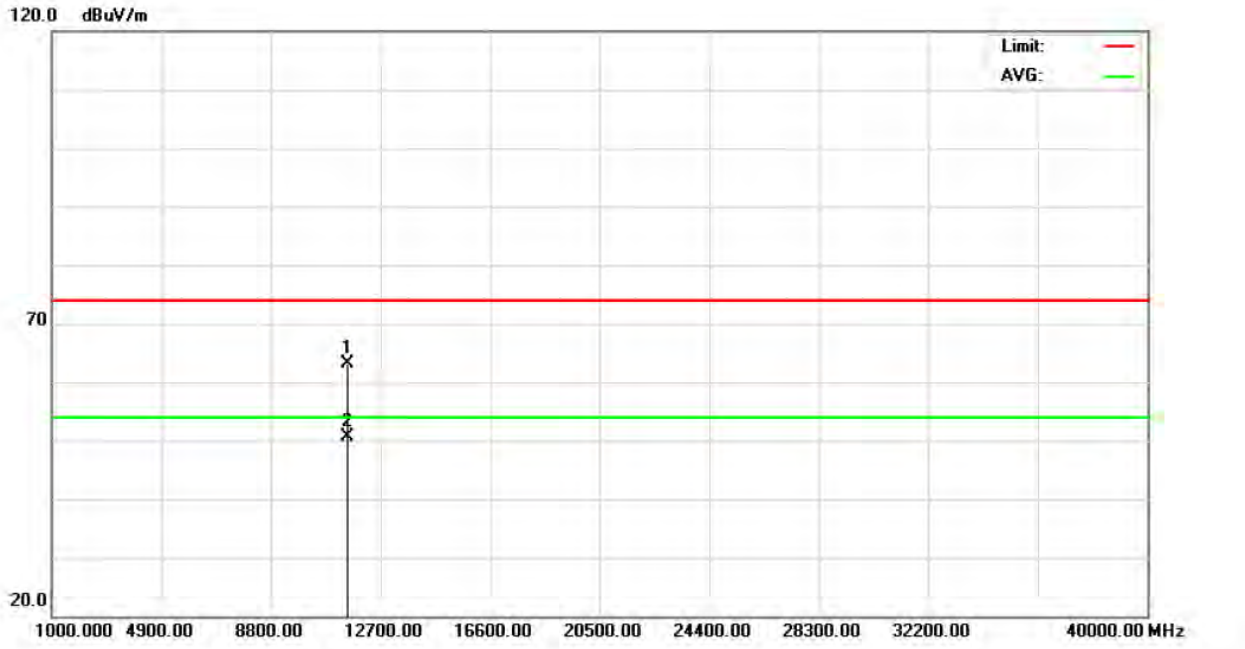
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	23.74	38.77	62.51	74.00	-11.49	peak	
2		5725.000	9.56	38.77	48.33	54.00	-5.67	AVG	
3	X	5744.000	59.98	38.81	98.79	74.00	24.79	peak	
4	*	5744.000	49.12	38.81	87.93	54.00	33.93	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5745 MHz		

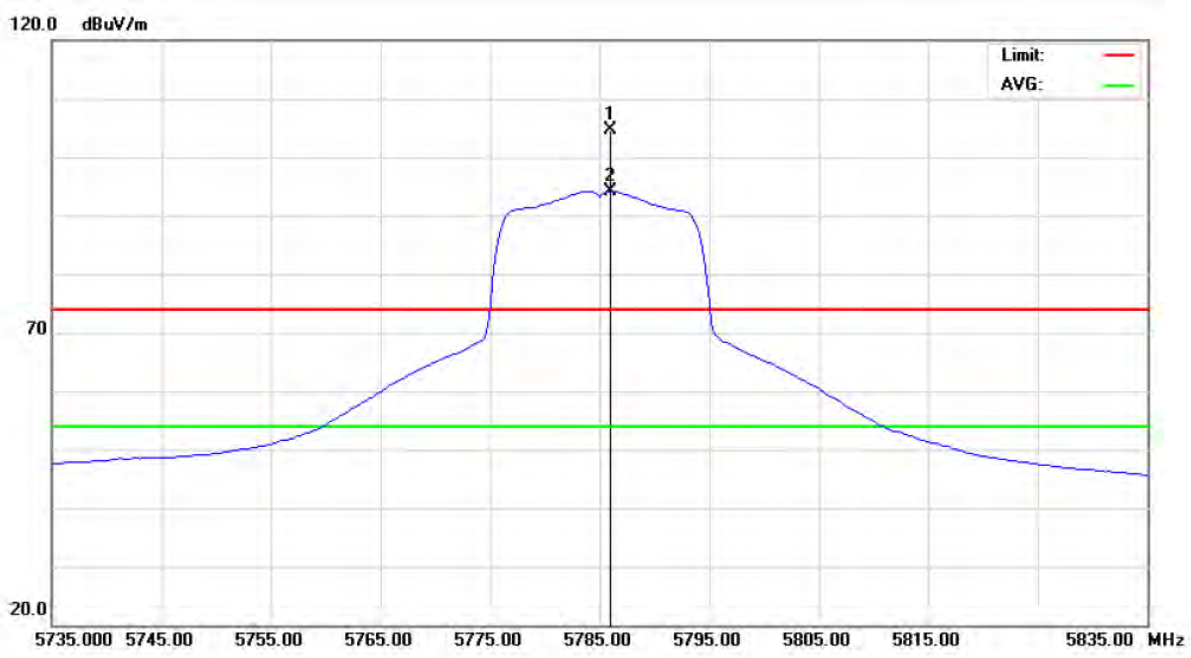
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11479.81	44.27	18.81	63.08	74.00	-10.92	peak	
2	*	11479.81	31.89	18.81	50.70	54.00	-3.30	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5785 MHz		

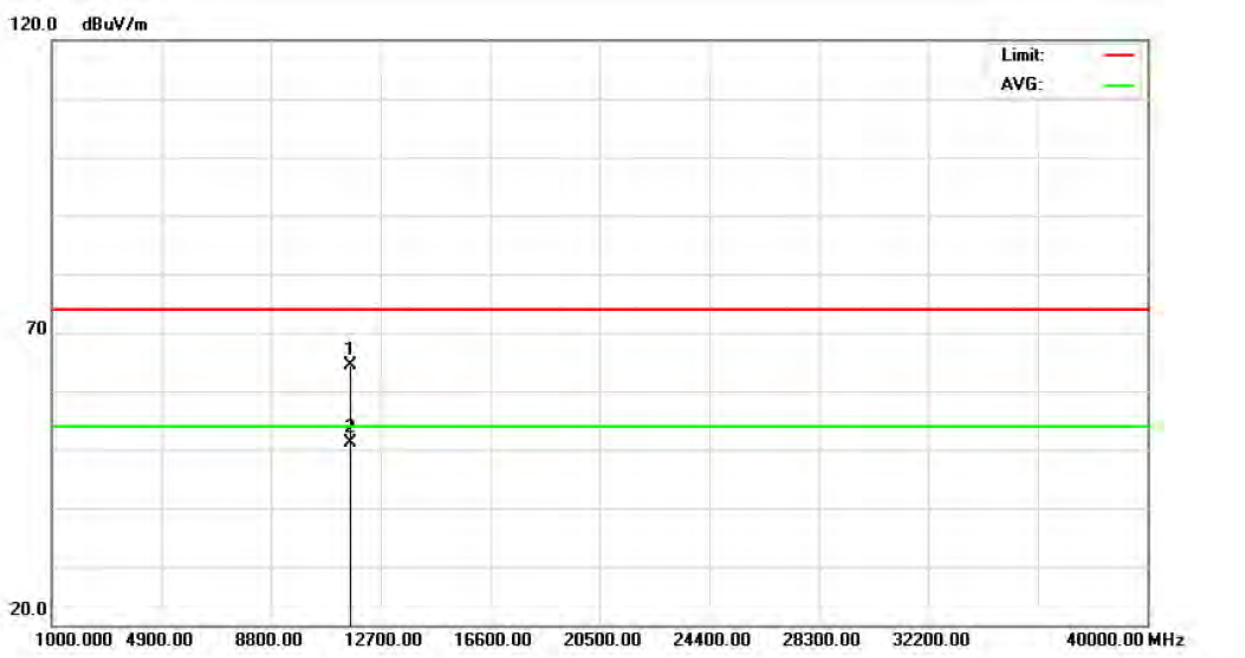
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5786.000	65.71	38.87	104.58	74.00	30.58	peak	
2	*	5786.000	55.25	38.87	94.12	54.00	40.12	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5785 MHz		

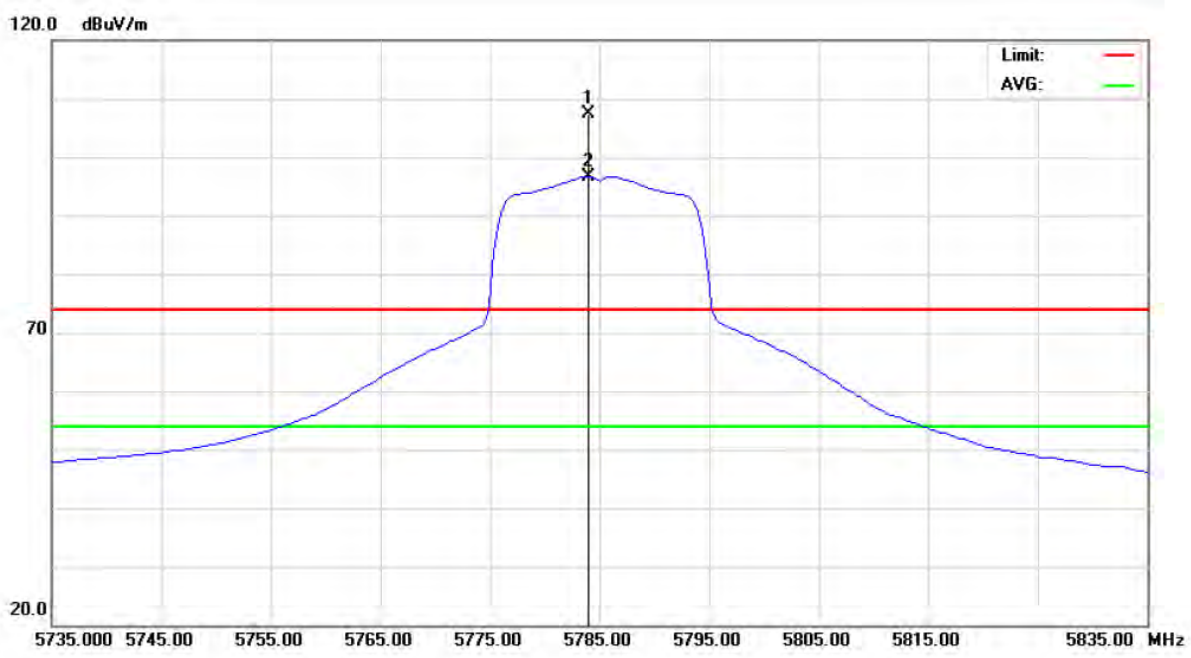
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11569.49	45.51	18.76	64.27	74.00	-9.73	peak	
2	*	11569.49	32.34	18.76	51.10	54.00	-2.90	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5785 MHz		

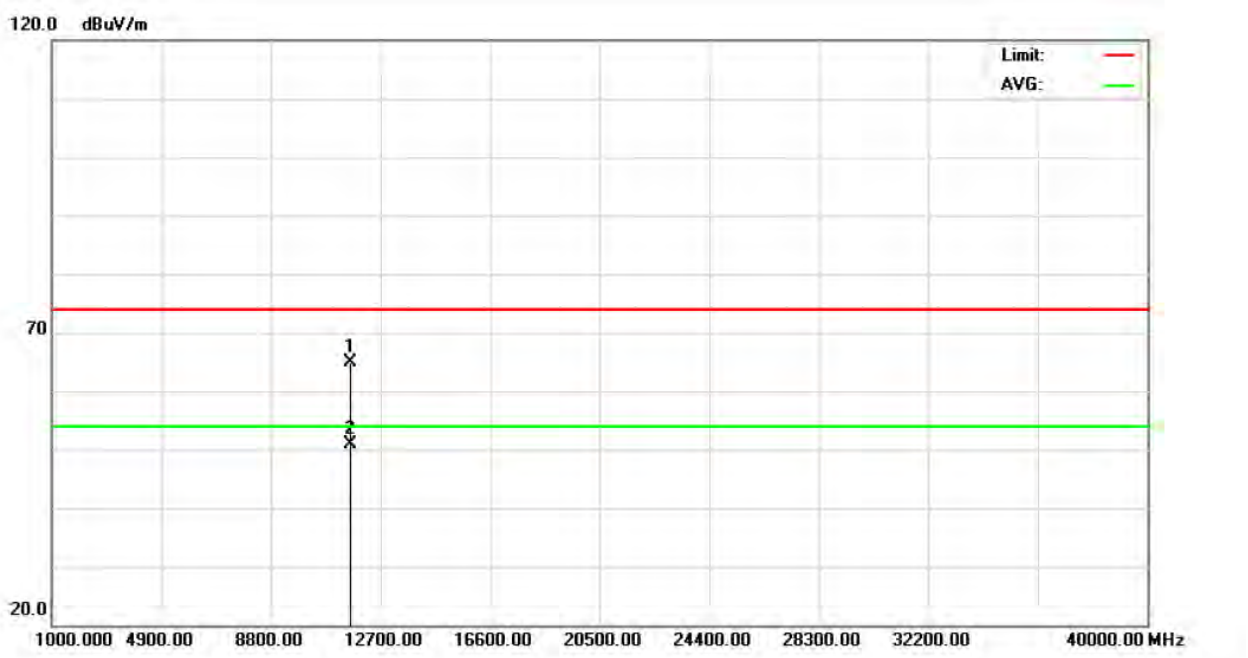
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5784.000	68.46	38.87	107.33	74.00	33.33	peak	
2	*	5784.000	57.80	38.87	96.67	54.00	42.67	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5785 MHz		

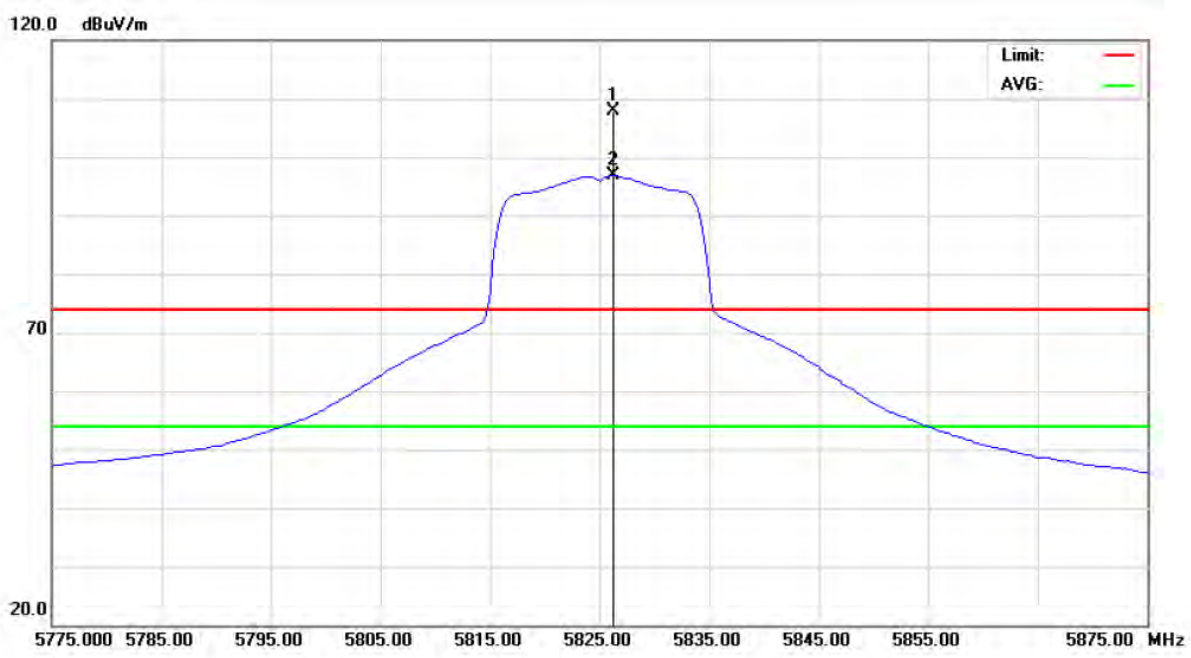
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11569.30	46.17	18.76	64.93	74.00	-9.07	peak	
2	*	11569.30	32.24	18.76	51.00	54.00	-3.00	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5825 MHz		

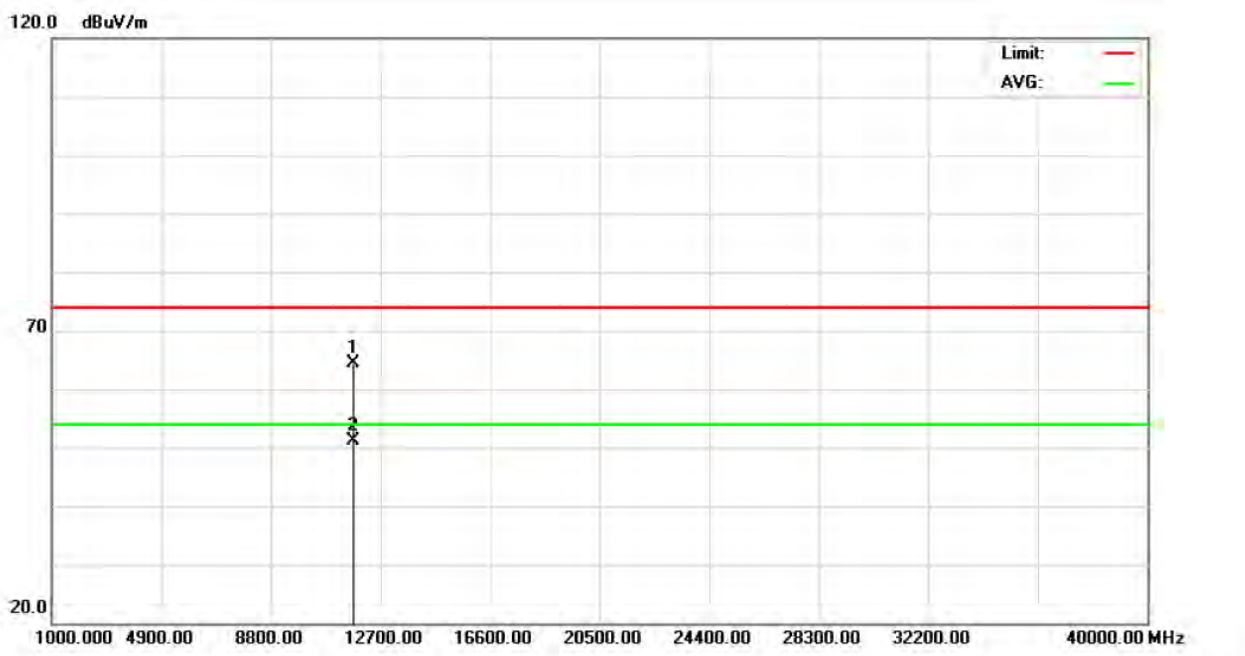
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5826.250	69.00	38.94	107.94	74.00	33.94	peak	
2	*	5826.250	57.86	38.94	96.80	54.00	42.80	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5825 MHz		

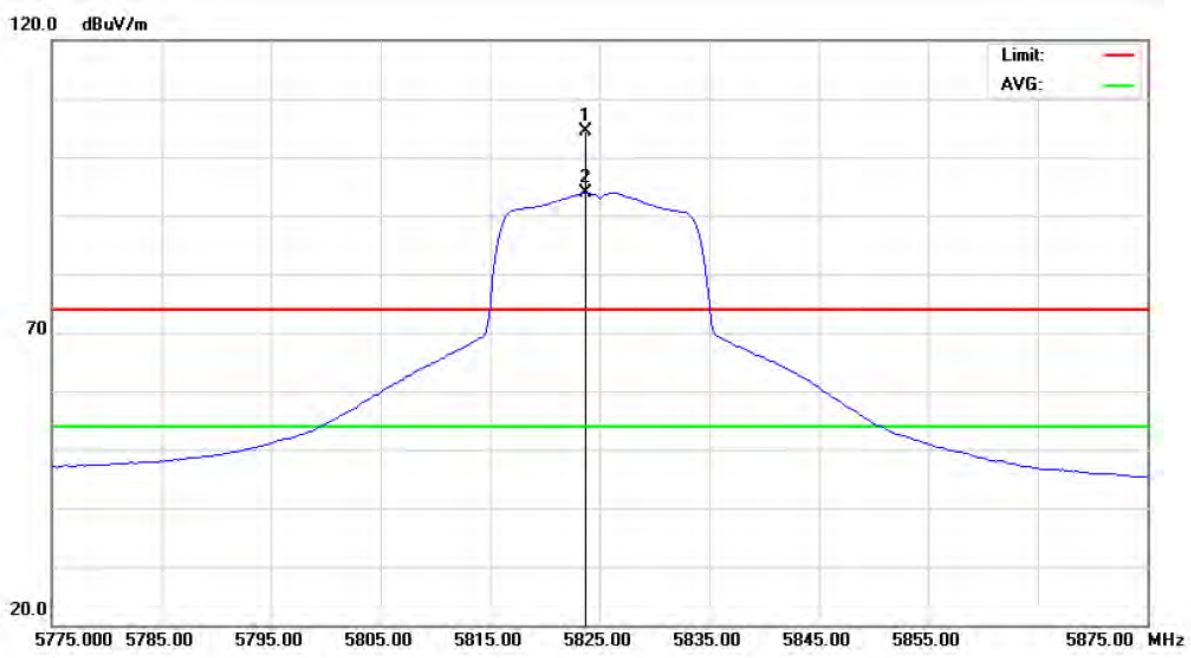
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.49	45.62	18.73	64.35	74.00	-9.65	peak	
2	*	11650.49	32.34	18.73	51.07	54.00	-2.93	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5825 MHz		

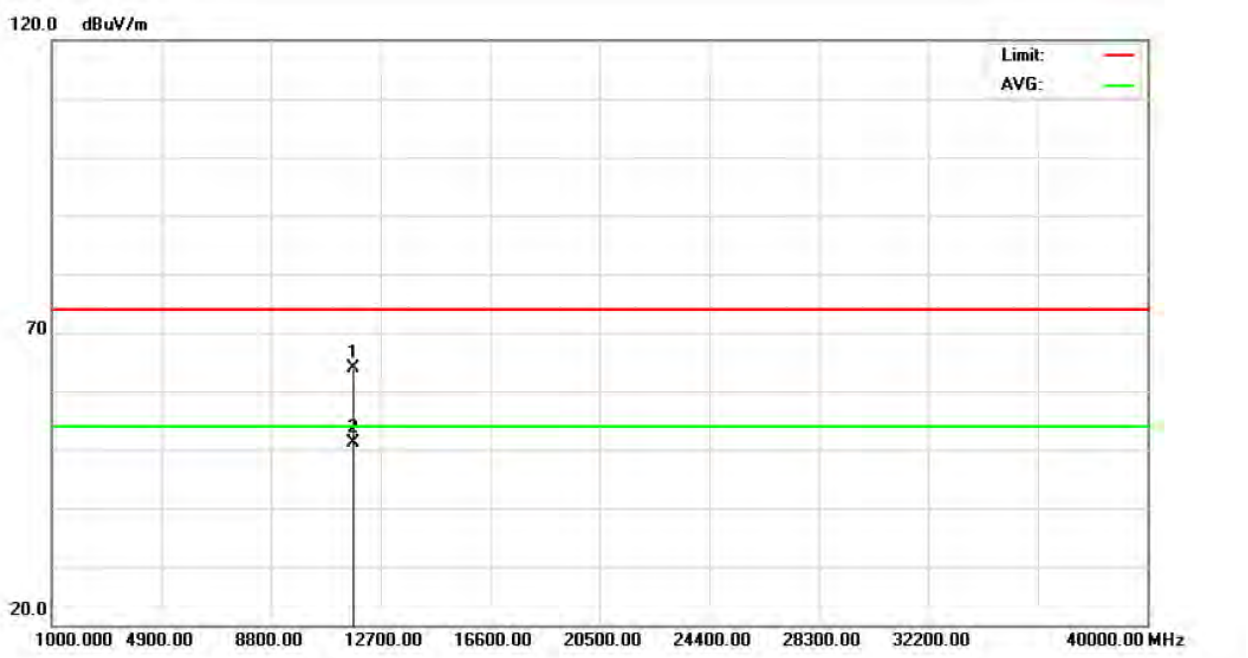
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5823.750	65.50	38.93	104.43	74.00	30.43	peak	
2	*	5823.750	54.89	38.93	93.82	54.00	39.82	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5825 MHz		

Polarization: Horizontal

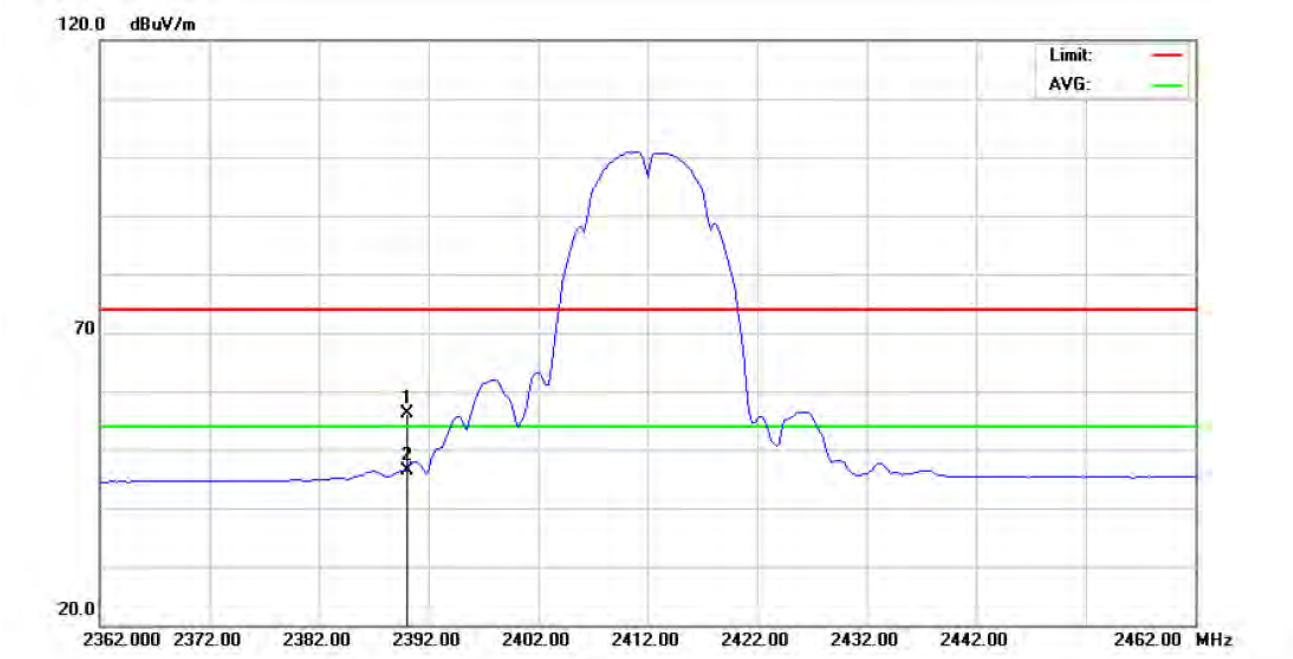


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.16	45.11	18.73	63.84	74.00	-10.16	peak	
2	*	11650.16	32.37	18.73	51.10	54.00	-2.90	AVG	

9.10TEST RESULTS (RESTRICTED BANDS)

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

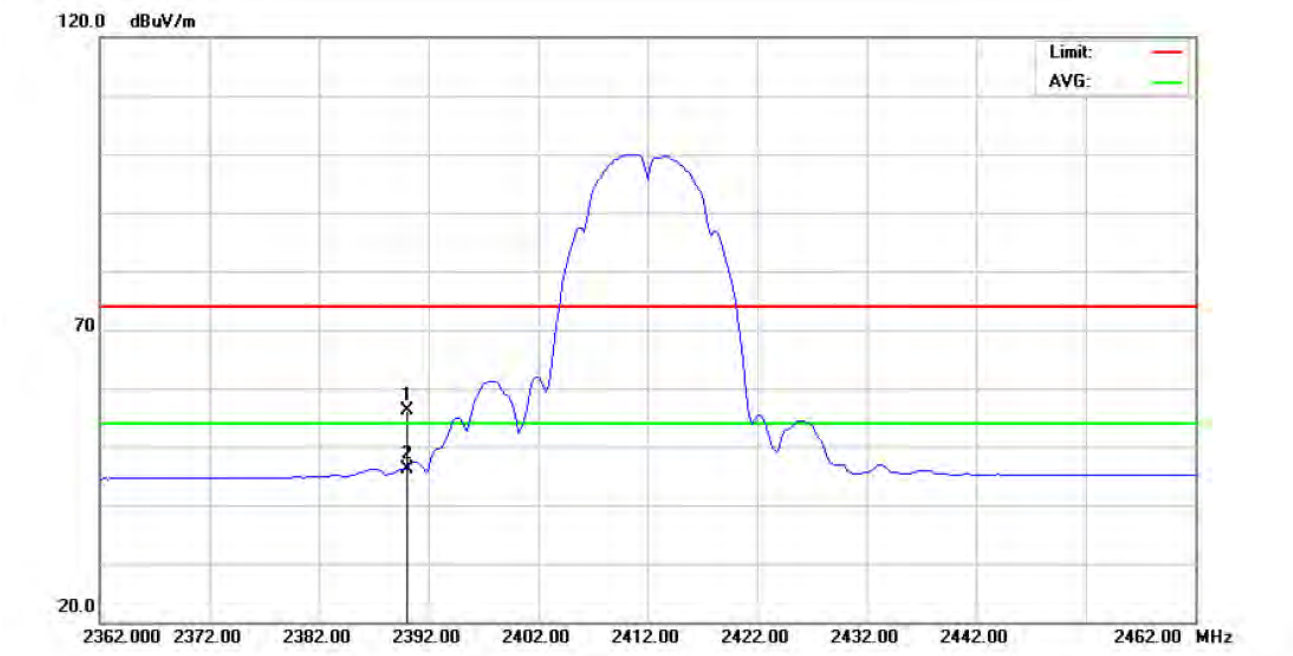
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	24.56	31.67	56.23	74.00	-17.77	peak	
2	*	2390.000	14.80	31.67	46.47	54.00	-7.53	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

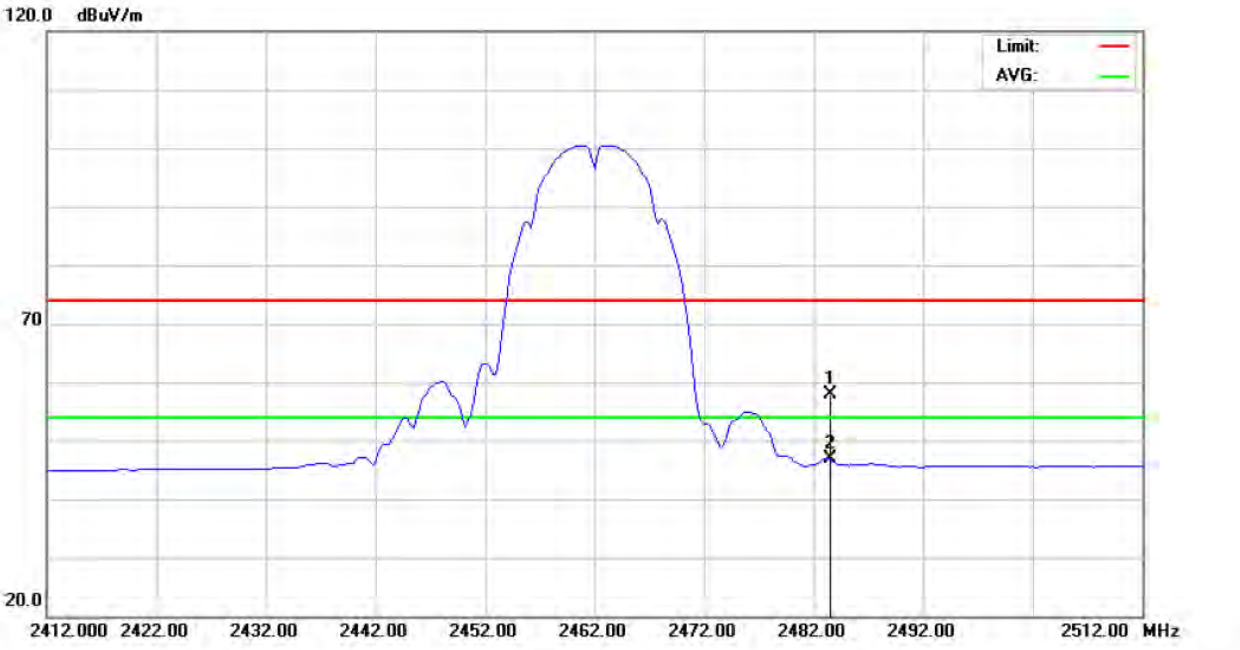
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	24.54	31.67	56.21	74.00	-17.79	peak	
2	*	2390.000	14.50	31.67	46.17	54.00	-7.83	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

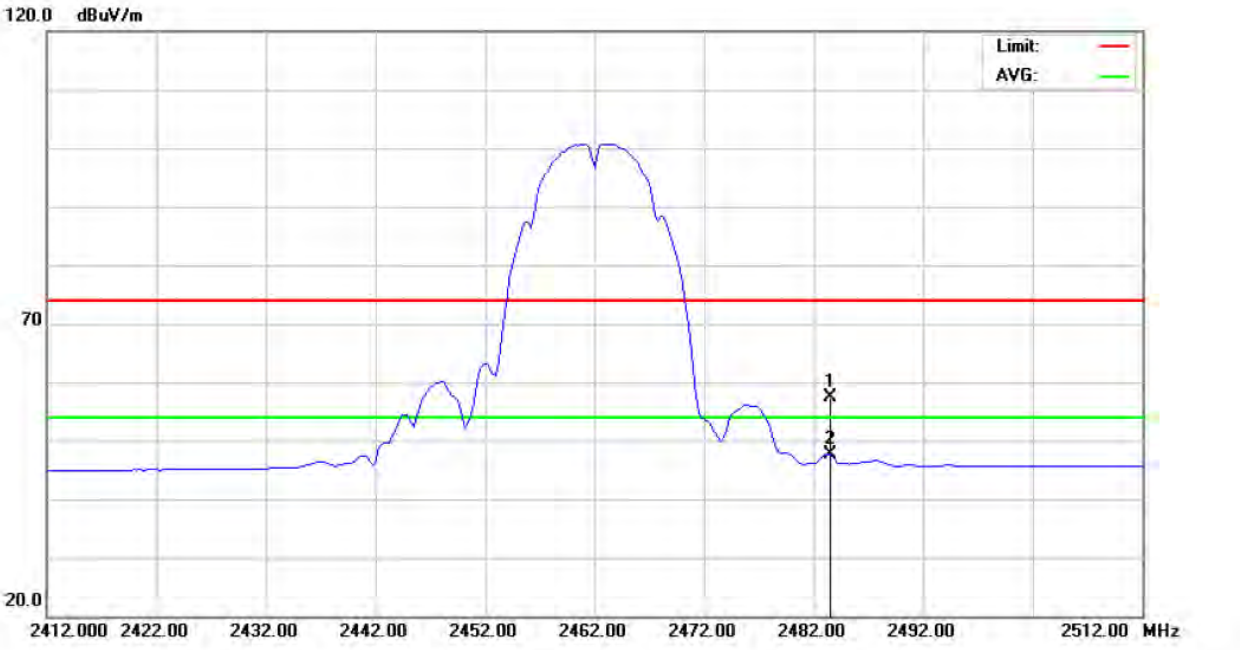
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	25.70	32.09	57.79	74.00	-16.21	peak	
2	*	2483.500	14.70	32.09	46.79	54.00	-7.21	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

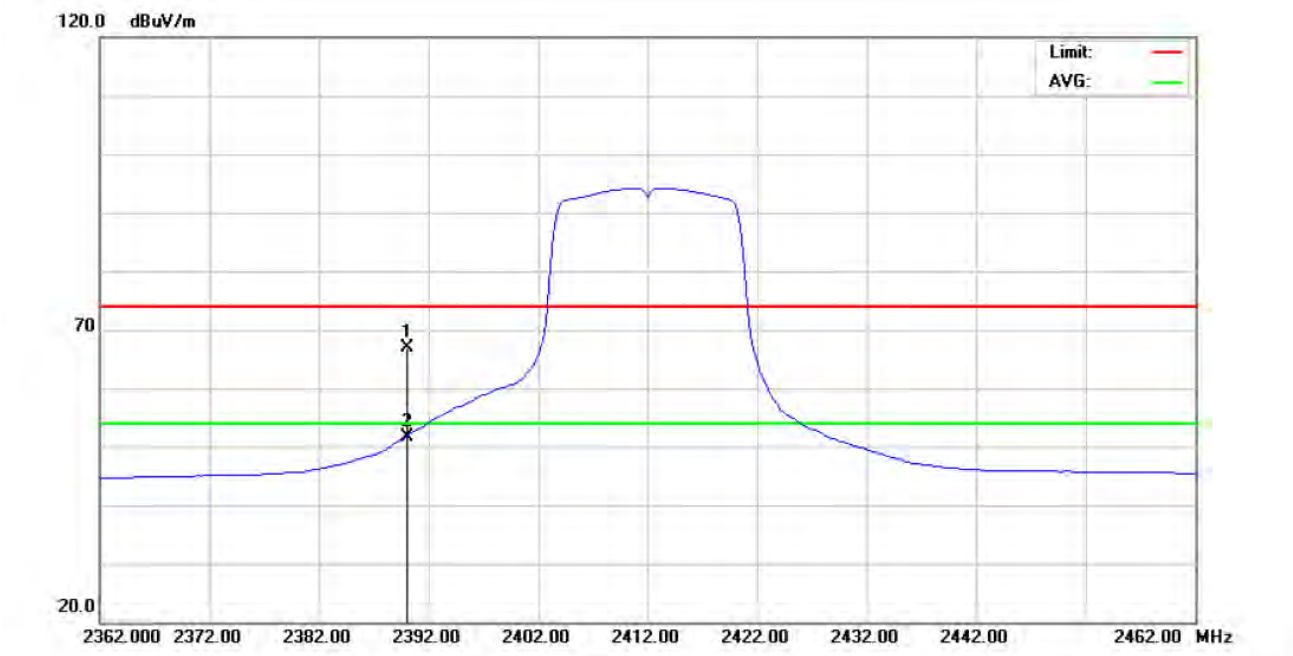
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	25.28	32.09	57.37	74.00	-16.63	peak	
2	*	2483.500	15.50	32.09	47.59	54.00	-6.41	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

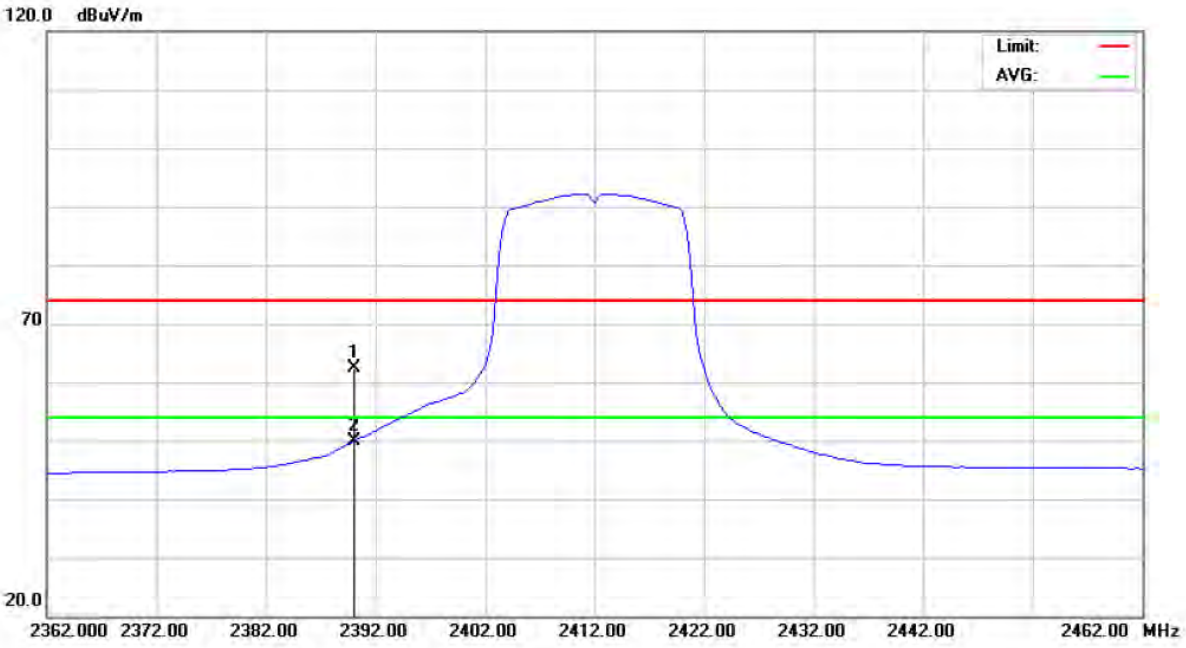
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	35.27	31.67	66.94	74.00	-7.06	peak	
2	*	2390.000	20.08	31.67	51.75	54.00	-2.25	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

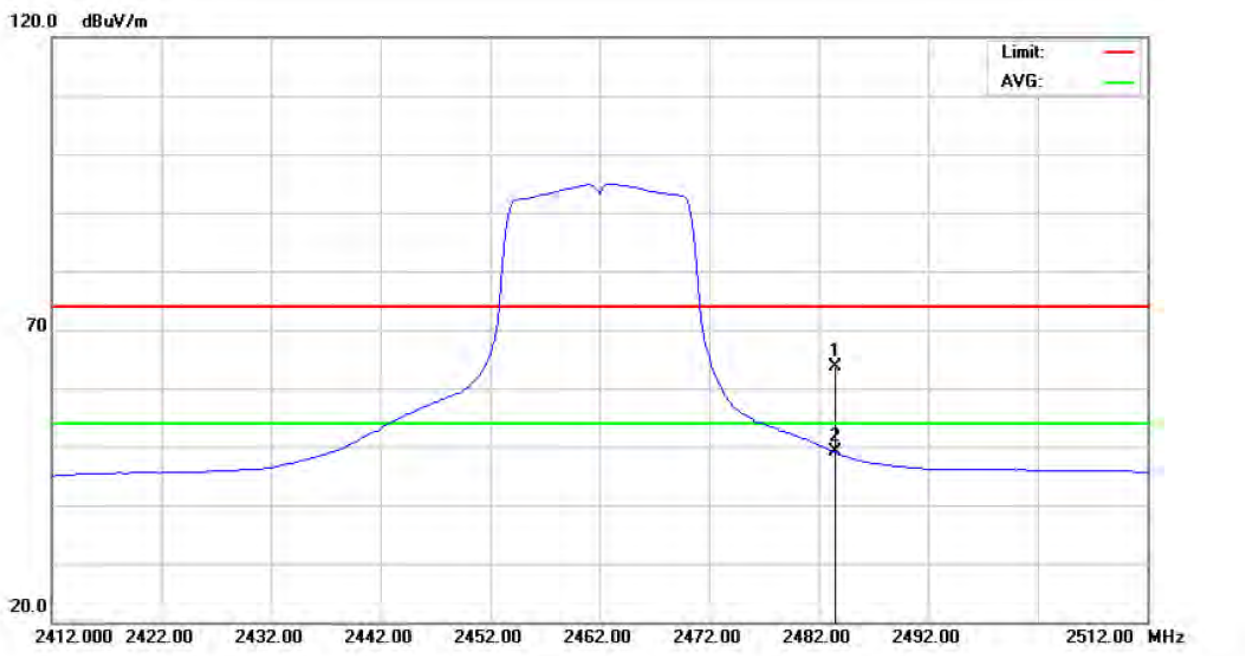
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	30.74	31.67	62.41	74.00	-11.59	peak	
2	*	2390.000	18.09	31.67	49.76	54.00	-4.24	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

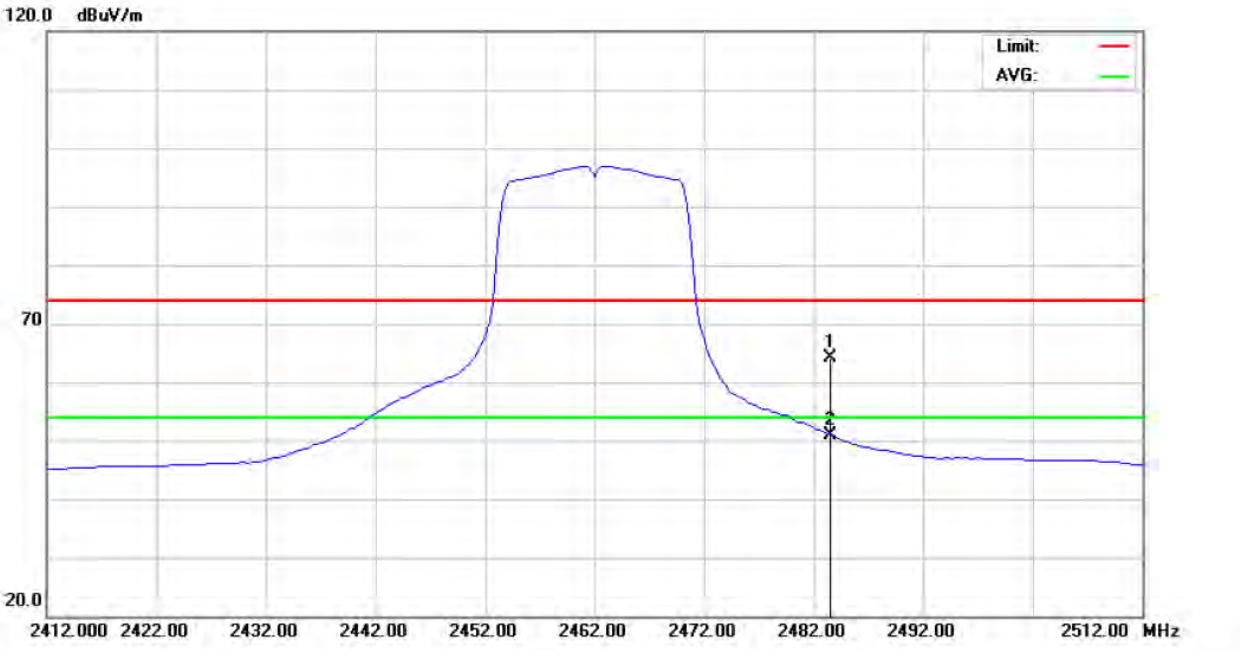
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	31.42	32.09	63.51	74.00	-10.49	peak	
2	*	2483.500	17.01	32.09	49.10	54.00	-4.90	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

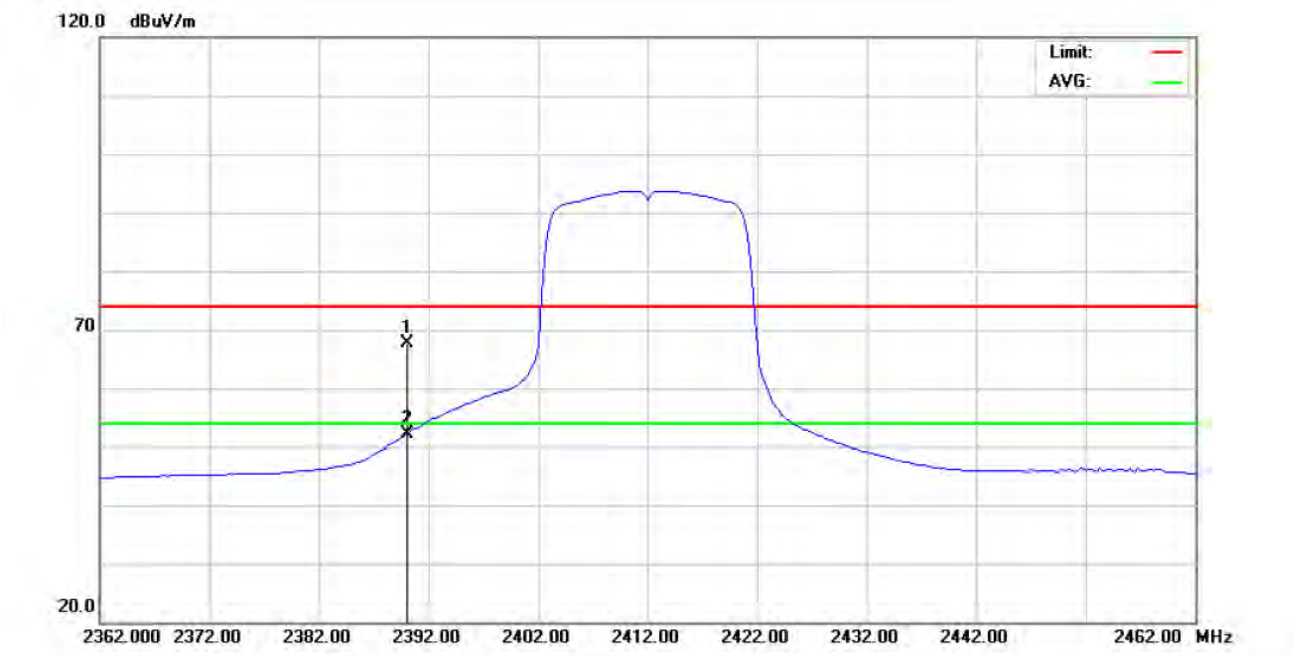
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	32.05	32.09	64.14	74.00	-9.86	peak	
2	*	2483.500	18.90	32.09	50.99	54.00	-3.01	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

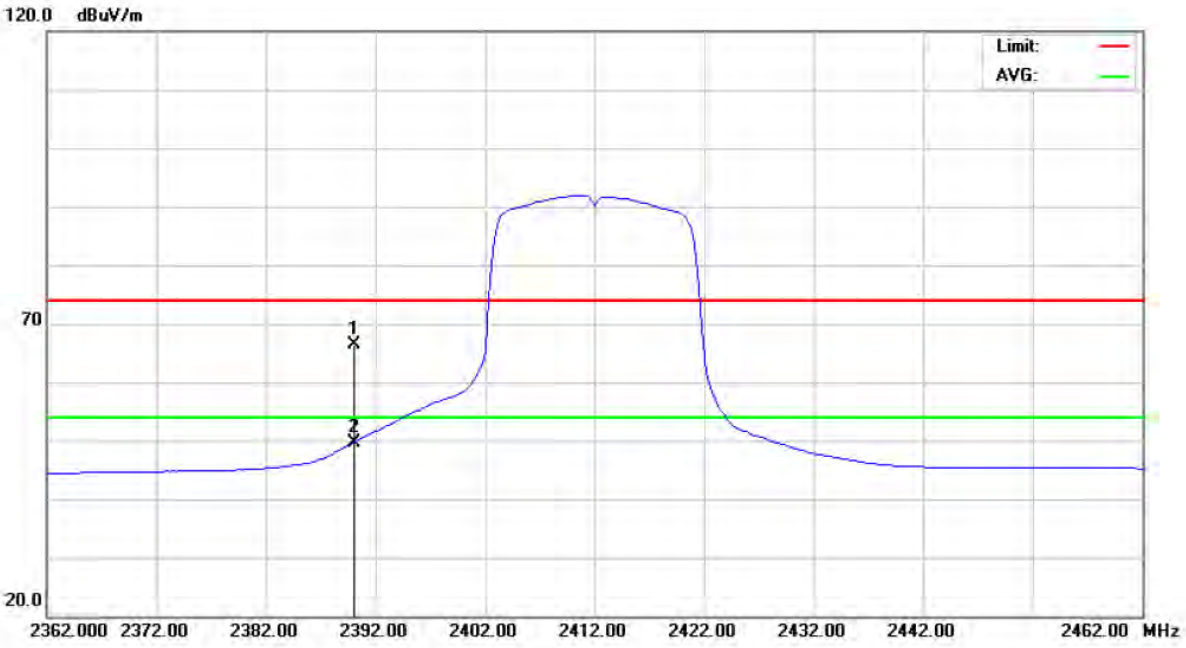
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	35.97	31.67	67.64	74.00	-6.36	peak	
2	*	2390.000	20.39	31.67	52.06	54.00	-1.94	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

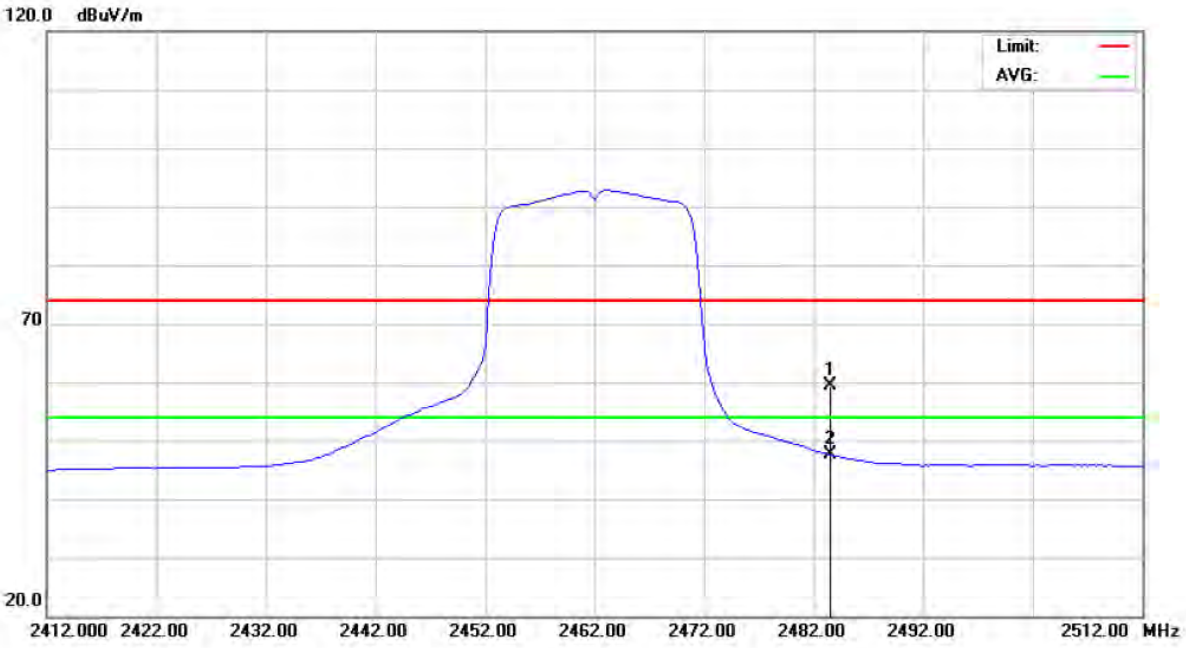
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	34.62	31.67	66.29	74.00	-7.71	peak	
2	*	2390.000	17.94	31.67	49.61	54.00	-4.39	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

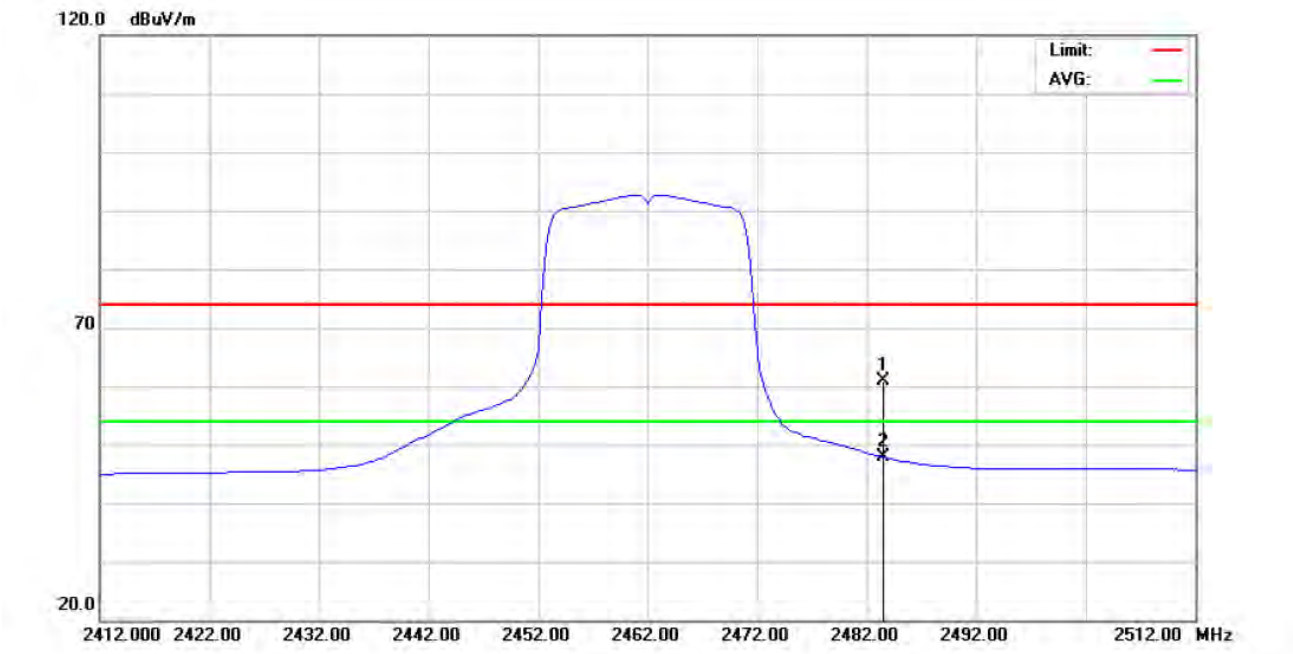
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	27.31	32.09	59.40	74.00	-14.60	peak	
2	*	2483.500	15.50	32.09	47.59	54.00	-6.41	AVG	

EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	28.75	32.09	60.84	74.00	-13.16	peak	
2	*	2483.500	15.77	32.09	47.86	54.00	-6.14	AVG	

10 POWER SPECTRAL DENSITY

10.1 LIMIT

Test Item	Frequency Range (MHz)	Limit
Power Spectral Density	2400-2483.5	8 dBm (in any 3 kHz)

10.2 MEASUREMENT INSTRUMENTS LIST

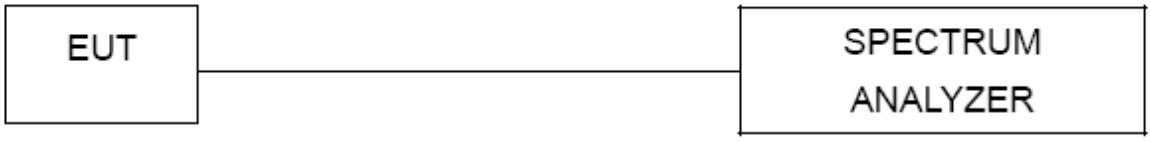
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Sep. 08, 2014

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

10.3 TEST PROCEDURES

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW=3 kHz, VBW=10 kHz, Sweep time = AUTO.

10.4 TEST SETUP LAYOUT



10.5 DEVIATION FROM TEST STANDARD

No deviation

10.6 EUT OPERATING CONDITIONS

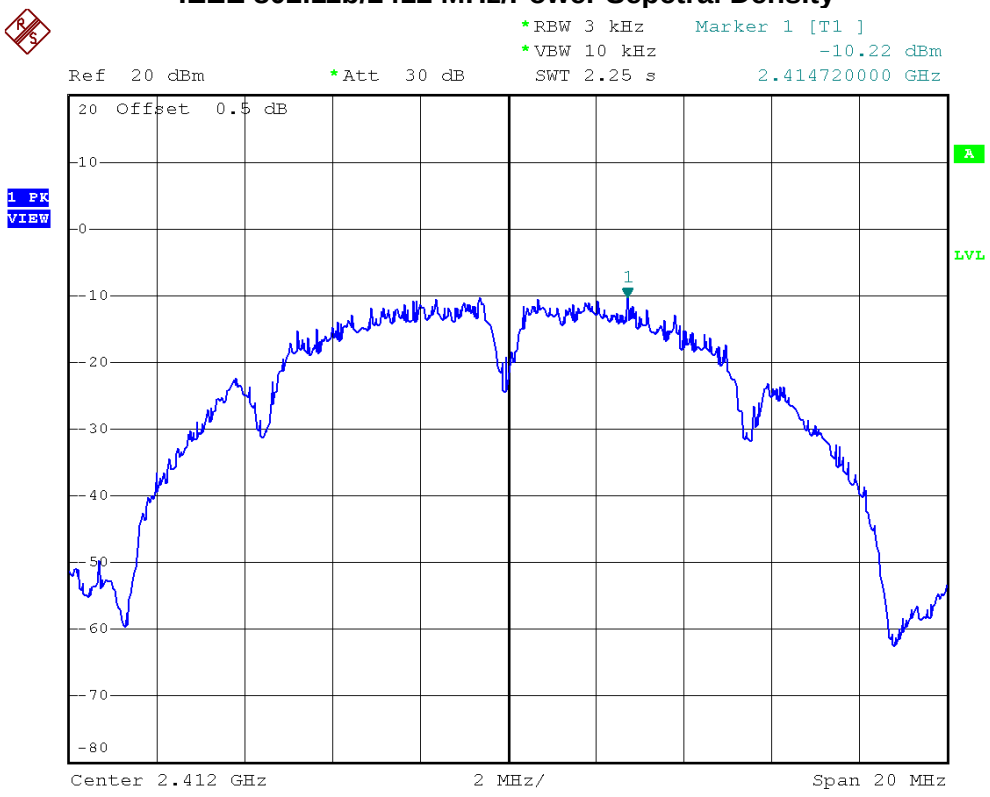
The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.

10.7TEST RESULTS - 2412-2462 MHZ

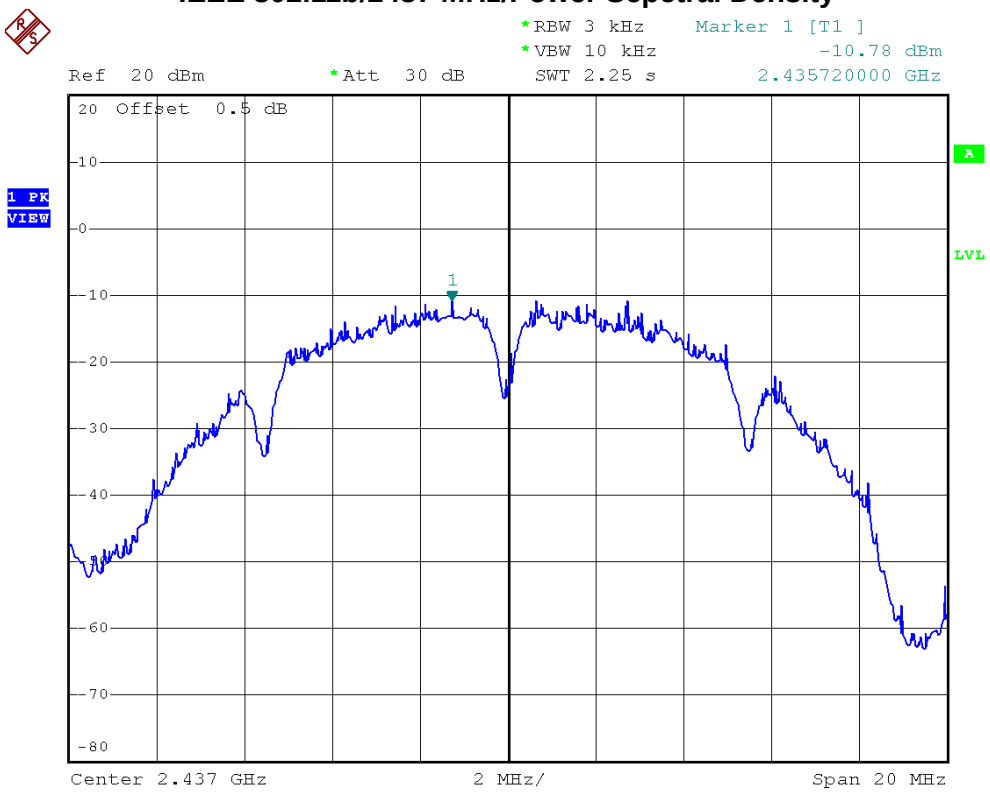
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-10.22	8	PASS
2437 MHz	-10.78	8	PASS
2462 MHz	-11.98	8	PASS

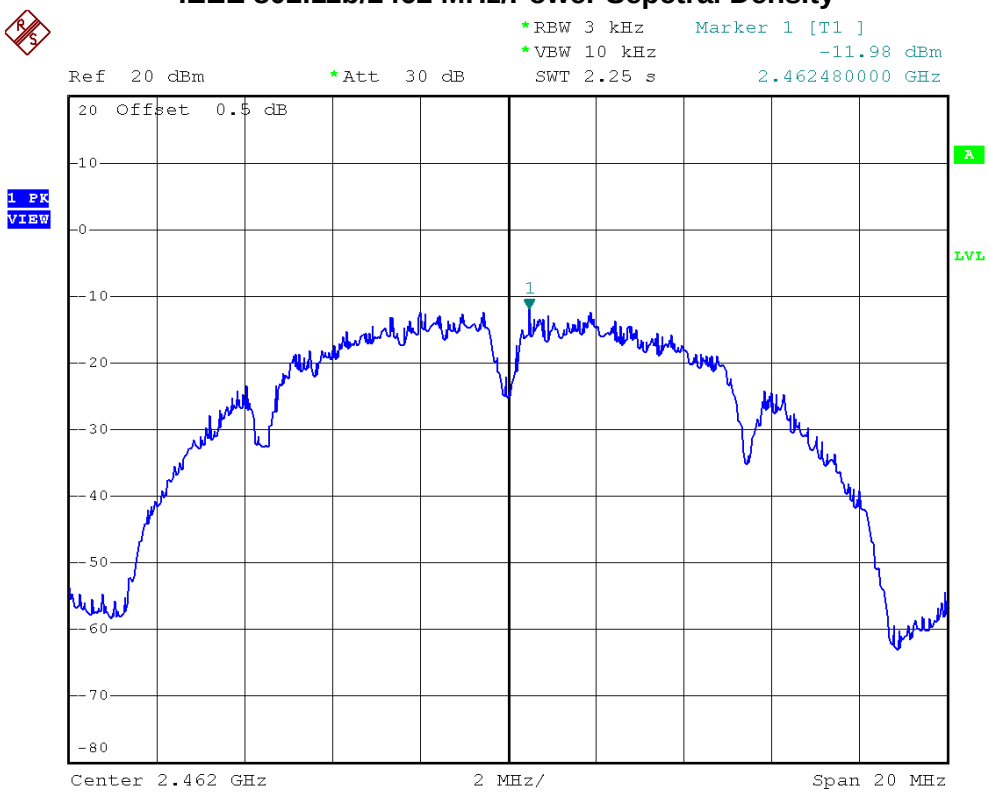
IEEE 802.11b/2412 MHz/Power Sepctral Density



IEEE 802.11b/2437 MHz/Power Sepctral Density



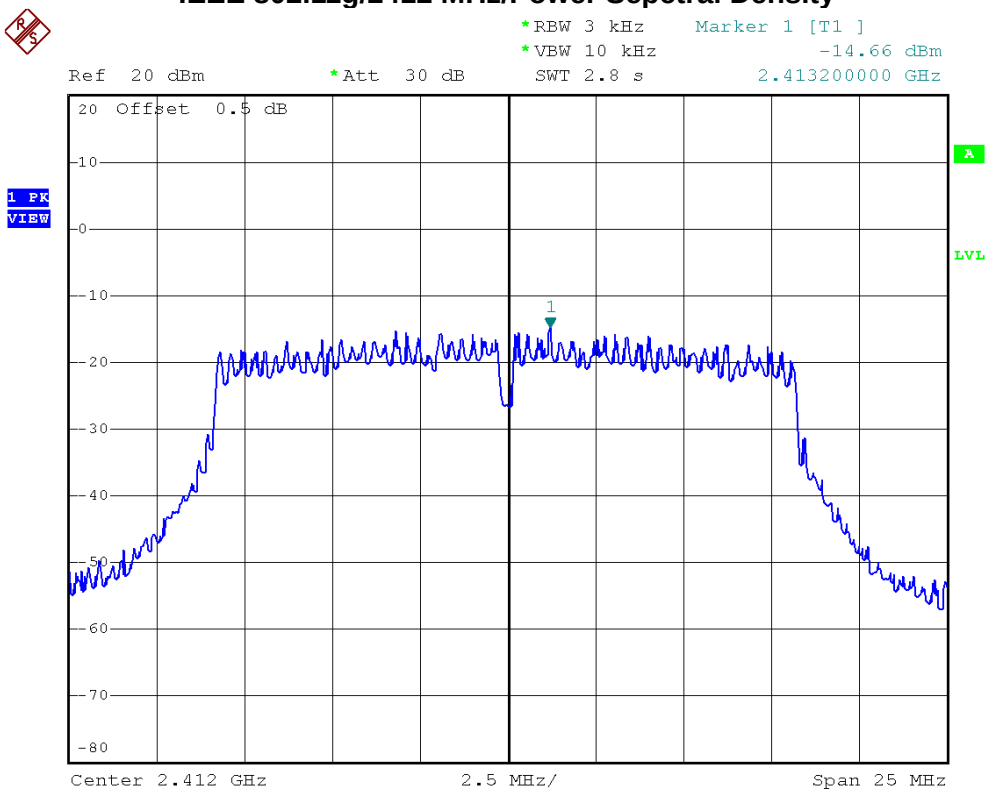
IEEE 802.11b/2462 MHz/Power Sepctral Density



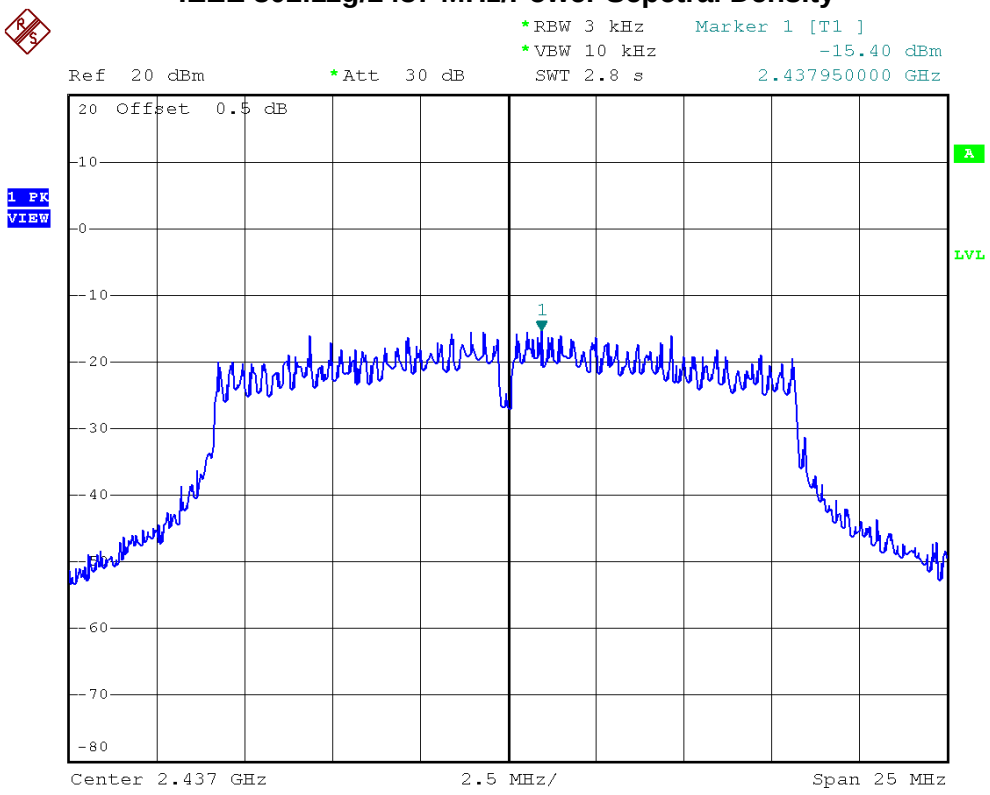
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-14.66	8	PASS
2437 MHz	-15.40	8	PASS
2462 MHz	-15.63	8	PASS

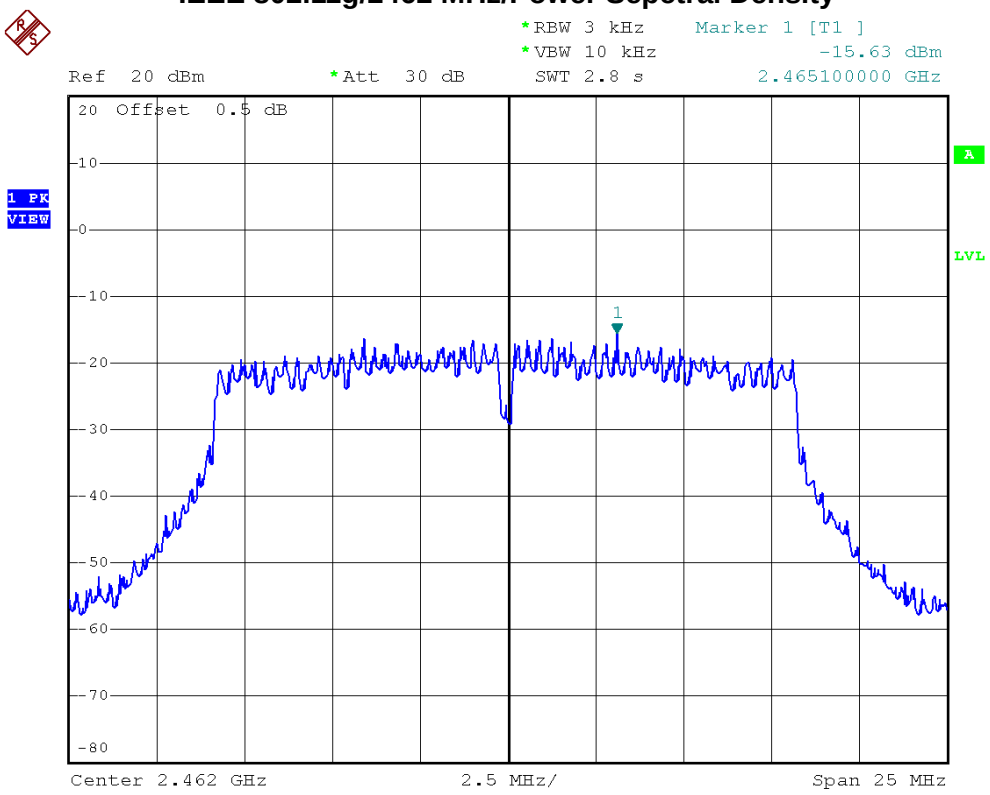
IEEE 802.11g/2412 MHz/Power Sepctral Density



IEEE 802.11g/2437 MHz/Power Sepctral Density



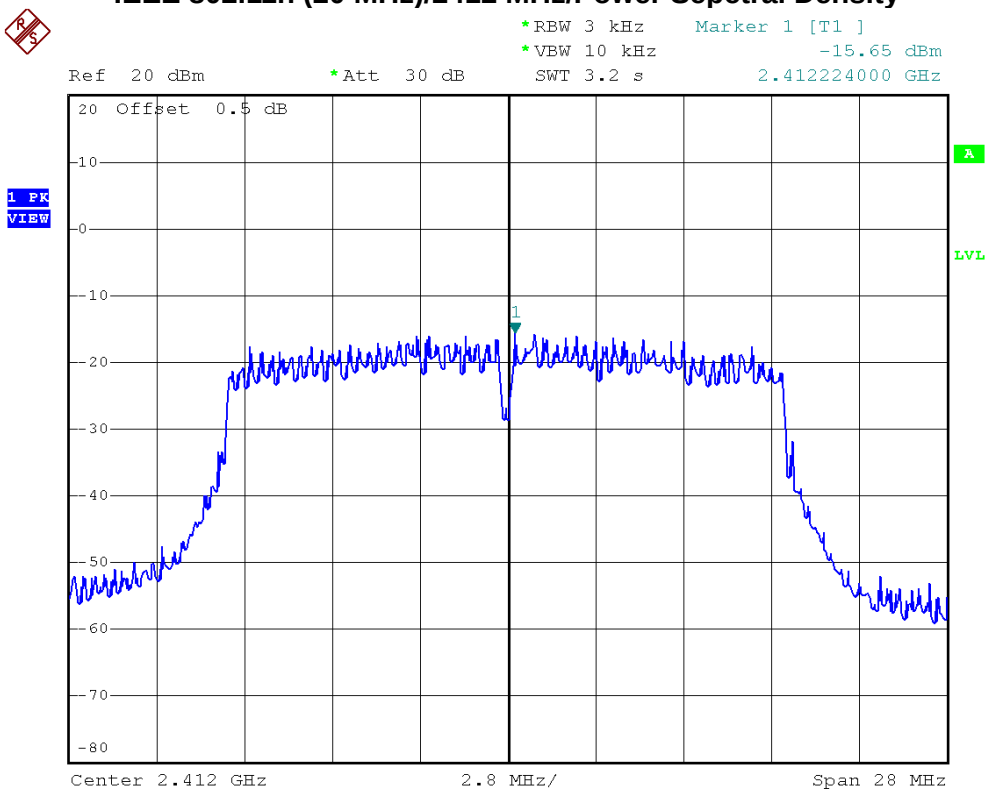
IEEE 802.11g/2462 MHz/Power Sepctral Density



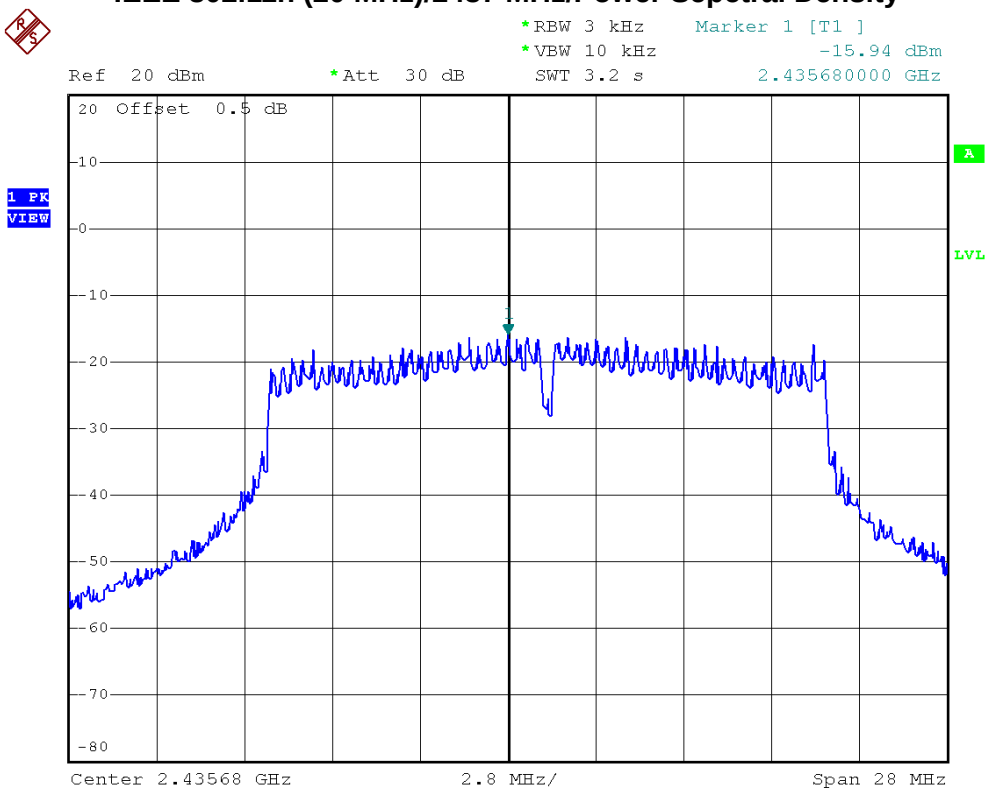
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-15.65	8	PASS
2437 MHz	-15.94	8	PASS
2462 MHz	-16.43	8	PASS

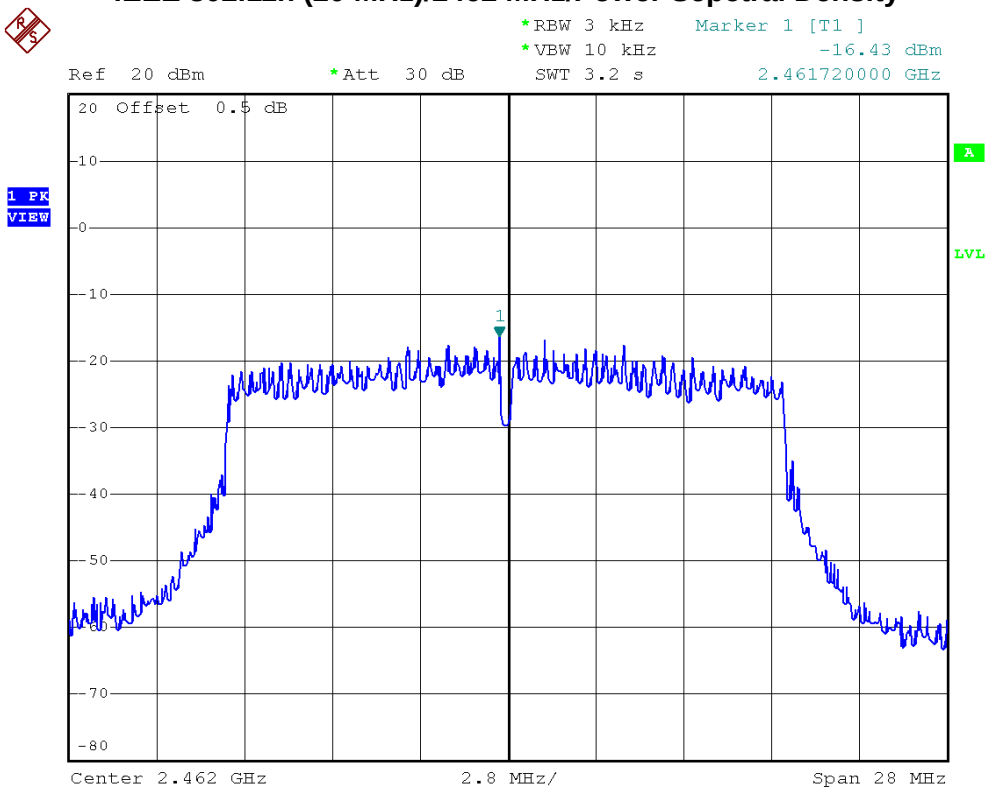
IEEE 802.11n (20 MHz)/2412 MHz/Power Sepctral Density



IEEE 802.11n (20 MHz)/2437 MHz/Power Sepctral Density



IEEE 802.11n (20 MHz)/2462 MHz/Power Sepctral Density

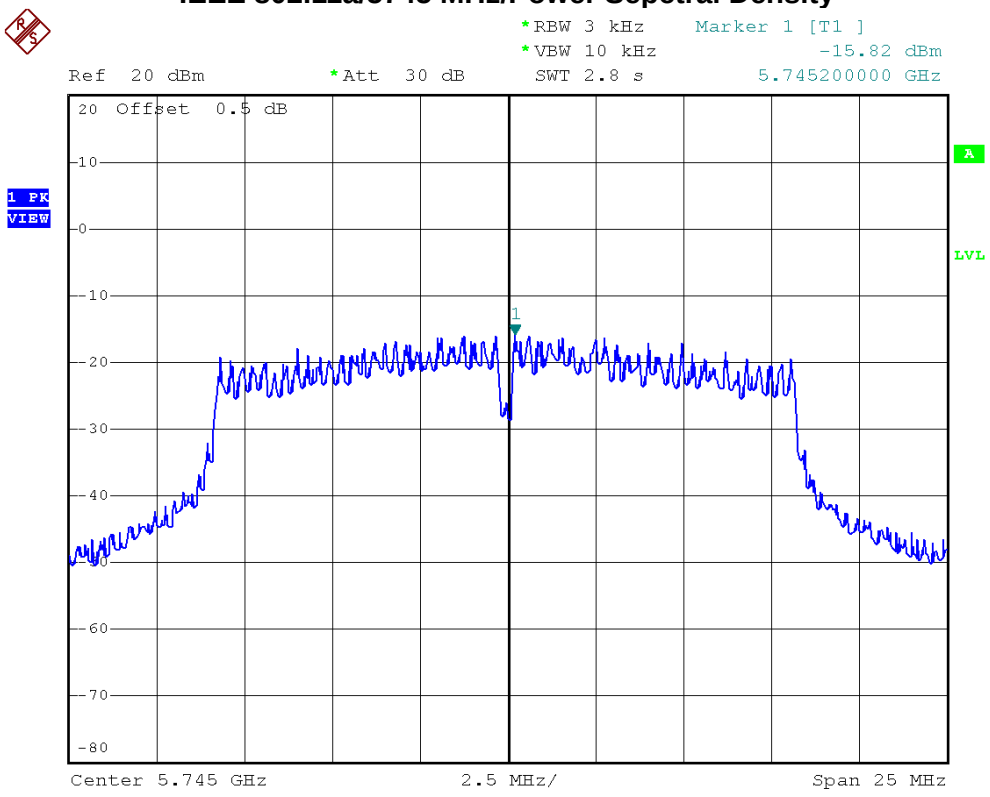


10.8TEST RESULTS - 5745-5825 MHZ

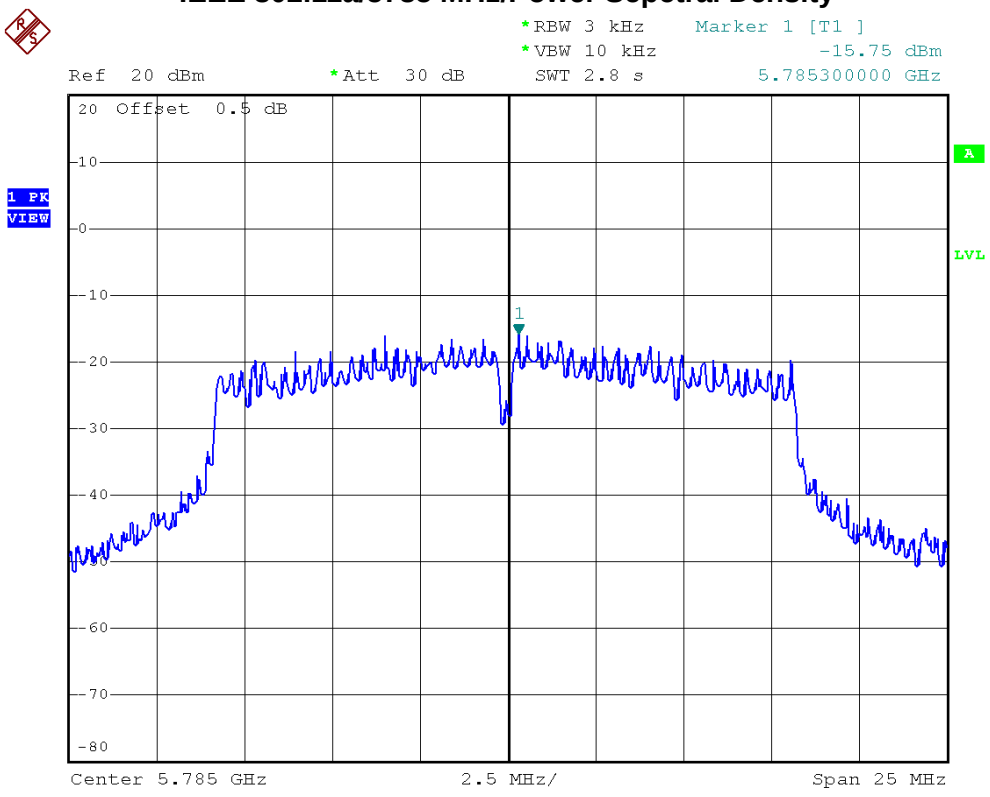
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11a/5745 MHz, 5785 MHz, 5825 MHz		

Frequency	Power Density (dBm)	Limit (dBm)	Result
5745 MHz	-15.82	8	PASS
5785 MHz	-15.75	8	PASS
5825 MHz	-16.78	8	PASS

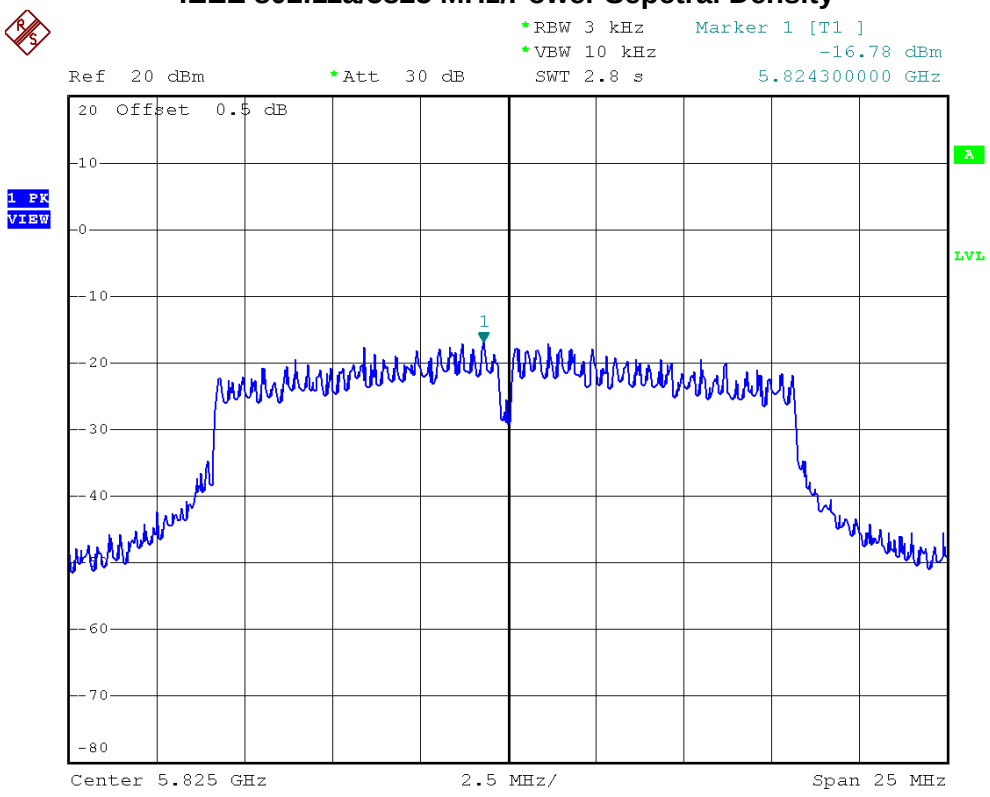
IEEE 802.11a/5745 MHz/Power Sepctral Density



IEEE 802.11a/5785 MHz/Power Sepctral Density



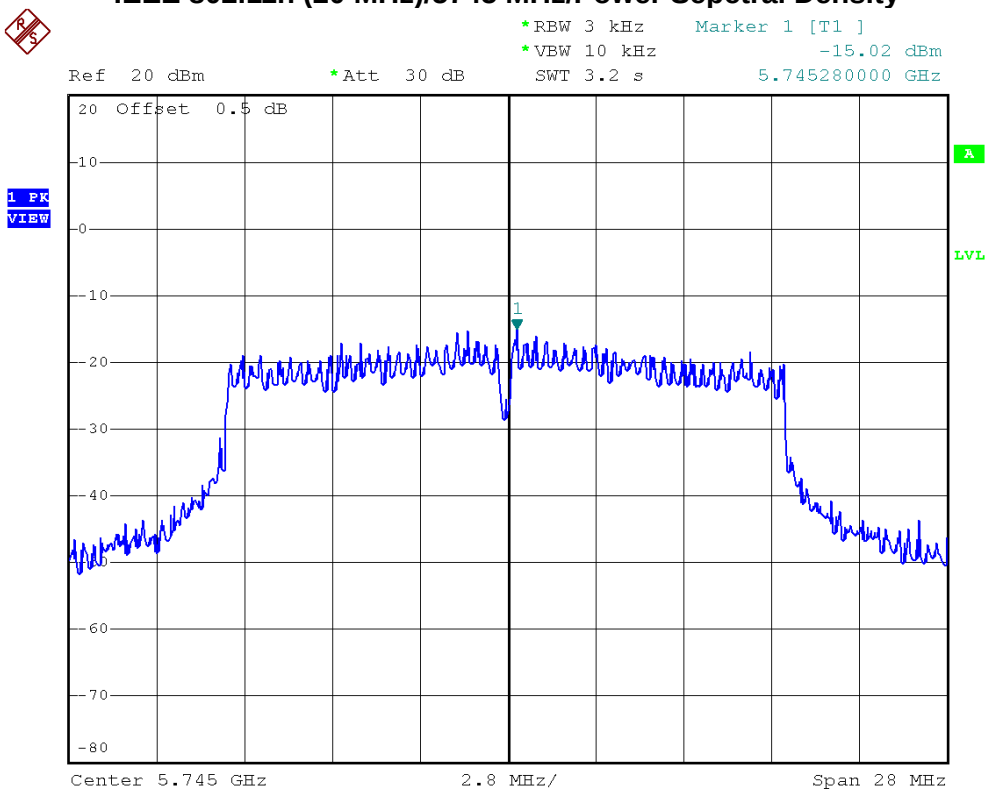
IEEE 802.11a/5825 MHz/Power Sepctral Density



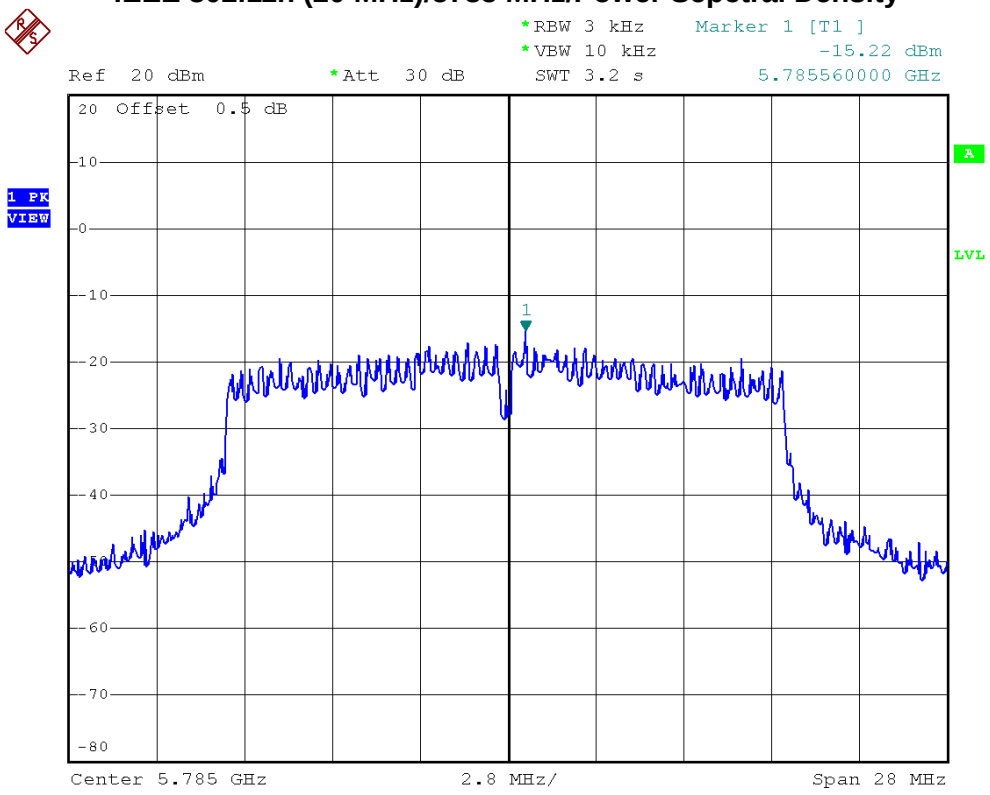
EUT	Rugged Mobile Computer	Model Name	PA520
Temperature	25°C	Relative Humidity	62%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/5745 MHz, 5785 MHz, 5825 MHz		

Frequency	Power Density (dBm)	Limit (dBm)	Result
5745 MHz	-15.02	8	PASS
5785 MHz	-15.22	8	PASS
5825 MHz	-17.37	8	PASS

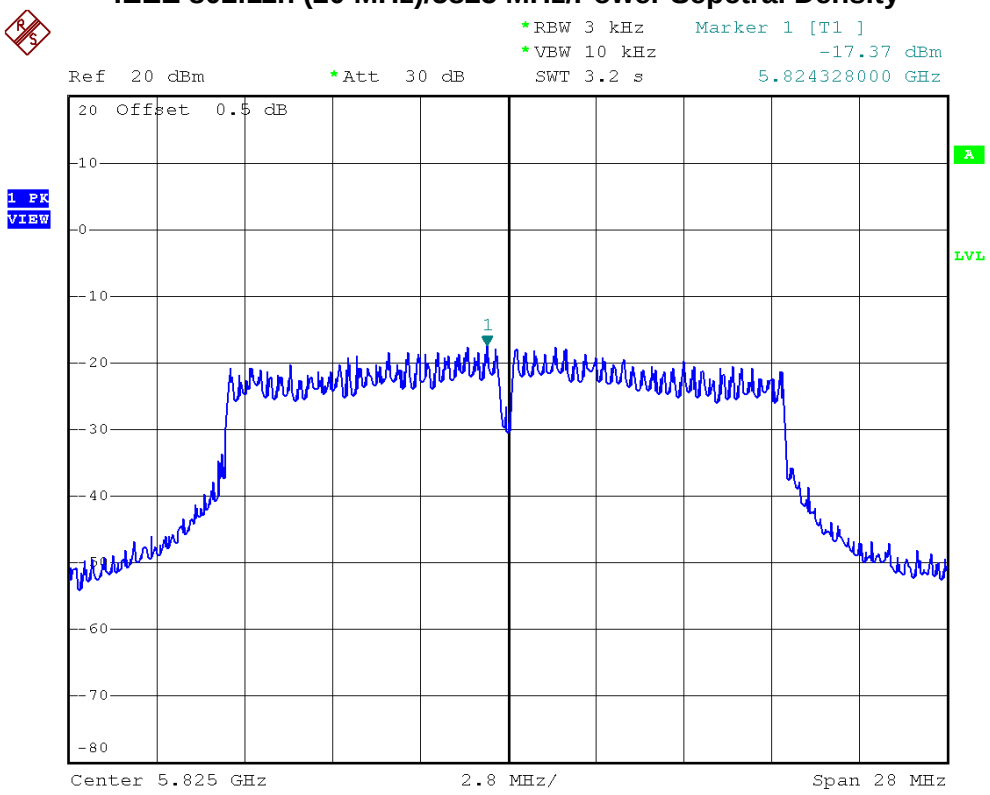
IEEE 802.11n (20 MHz)/5745 MHz/Power Sepctral Density



IEEE 802.11n (20 MHz)/5785 MHz/Power Sepctral Density



IEEE 802.11n (20 MHz)/5825 MHz/Power Sepctral Density



11 EUT TEST PHOTO

Conducted emission test photos

Radiated spurious emission test photos