Radio Test Report

FCC ID: WZ7AR150WS

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

Issued Date : Mar. 27, 2013
Project No. : 1212216
Equipment : AIS Receiver
Model Name : CYPHO-150WS; AR-150WS

Applicant : Alltek Marine Electronics Corporation
Address : 7F, No.605, Ruei-Guang Rd., Neihu, Taipei, Taiwan, R.O.C. 114

Tested by: Neutron Engineering Inc. EMC Laboratory
Date of Receipt: Dec. 28, 2012
Date of Test: Dec. 28, 2012 ~ Feb. 27, 2013

Testing Engineer : (Josh Lin)

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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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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.	Mar. 08, 2013
RV-1303021	A. Revised model name(s). B. Revised test description.	Mar. 27, 2013

1 CERTIFICATION

Equipment : AIS Receiver
Brand Name : AMEC
Model Name : CYPHO-150WS; AR-150WS
Applicant : Alltek Marine Electronics Corporation
Date of Test : Dec. 28, 2012 ~ Feb. 27, 2013
Standards : FCC Part 15, Subpart C: 2011
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-1-1212216) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

FCC Part 15, Subpart C: 2011		
Standard Clause	**Test Item**	**Result**
FCC Part 15, Subpart C		
15.207	Conducted Emission	**PASS**
15.247 (c)	Antenna conducted Spurious Emission	**PASS**
15.247 (a)(2)	6 dB 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**
1.1307 1.1310 2.1091 2.1093	RF Exposure Compliance	**PASS**

NOTE:

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

2.1 TEST FACILITY

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

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/Industry Canada 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. 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>AIS Receiver</td></tr>
<tr><td>Brand Name</td><td>AMEC</td></tr>
<tr><td>Model Name</td><td>CYPHO-150WS; AR-150WS</td></tr>
<tr><td>OEM Brand/Model Name</td><td>N/A</td></tr>
<tr><td>Model Difference</td><td>Models' differences between each other only the changes of model name which do not affect the EMI performance.
Model CYPHO-150WS was used for final testing and collecting test data included in this report.</td></tr>
<tr><td>Product Description</td><td>The EUT is an AIS Receiver.
<table>
<tr><td>Operation Frequency</td><td>2412~2462 MHz,</td></tr>
<tr><td>Modulation Type</td><td>IEEE 802.11b: CCK, DQPSK, DBPSK
IEEE 802.11g: OFDM /64-QAM,16-QAM, QPSK, BPSK
IEEE 802.11n: OFDM /64-QAM,16-QAM, QPSK, BPSK</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>IEEE 802.11b: 1, 2, 5.5, 11Mbps
IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps
IEEE 802.11n: Lite-N: 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65,72.2Mbps</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 Peak Conducted Output Power:</td><td>IEEE 802.11b: 19.76 dBm
IEEE 802.11g: 19.76 dBm
IEEE 802.11n (20 MHz): -9.77 dBm</td></tr>
</table>
Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</td></tr>
<tr><td>Power Source</td><td>DC Voltage supplied from DC Source.</td></tr>
<tr><td>Power Rating</td><td>I/P: DC 12V / 24V (Please refer to Note 4.)</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>N/A</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. The DC 12V/24V Voltage were tested, and the DC 12V was found to be the worst case during the pre-scanning test. This DC 12V Voltage of the worst case was used for final testing and collecting test data included in this report.

3. 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		

4. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	AMEC	SAA04-05005G-01	Dipole	RP SMA plug	2.00

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**
Antenna conducted Spurious Emission	802.11b	DSSS	1 Mbps	01/06/11	
	802.11g	OFDM	6 Mbps	01/06/11	
	802.11n (20 MHz)	OFDM	MCS0	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)	OFDM	MCS0	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)	OFDM	MCS0	01/06/11	
Radiated Spurious Emission (30 MHz to 1 GHz)	802.11n (20 MHz)	OFDM	MCS0	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)	OFDM	MCS0	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)	OFDM	MCS0	01/06/11	
Antenna Requirement	---		---	---	
RF Exposure Compliance	---		---	---	

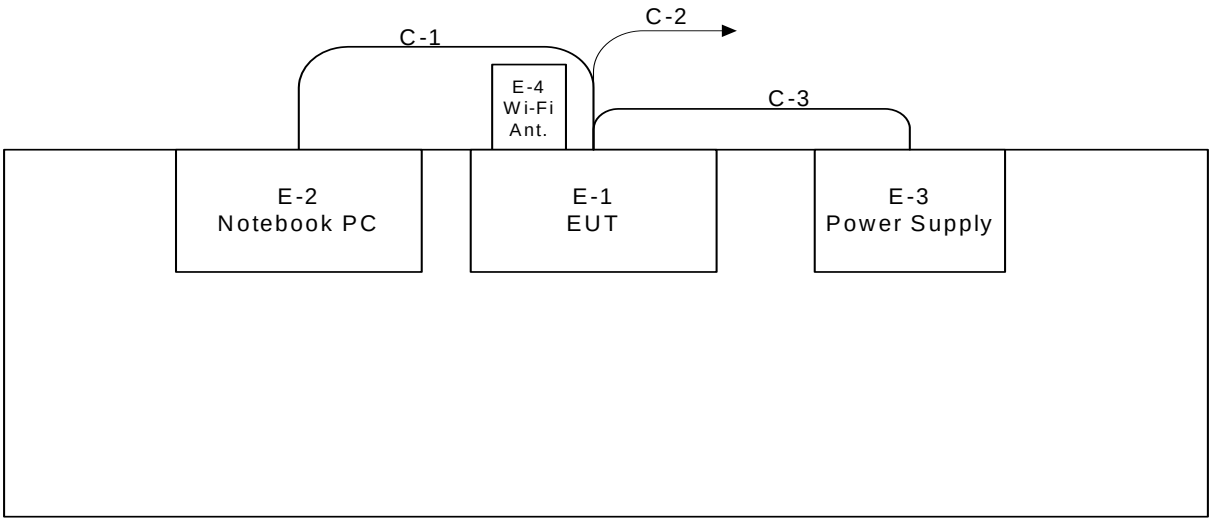
3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

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	CE & WL			CE & WL		
Frequency	2412 MHz	2437 MHz	2462 MHz	2412 MHz	2437 MHz	2462 MHz
Parameter	default	default	default	default	default	default

2412-2462 MHz Band			
IEEE	802.11n (20 MHz)		
Test software Version	CE & WL		
Frequency	2412 MHz	2437 MHz	2462 MHz
Parameter	default	default	default

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



C-1 USB Cable
C-2:DATA Cable
C-3:DC Power Cable

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	AIS Receiver	AMEC	CYPHO-150WS	WZ7AR150WS	N/A	EUT
E-2	Notebook PC	DELL	D600	DOC	7T390 A03	
E-3	DC Power Supply	Lokc	DPS-3050	N/A	400003829	
E-4	Wi-Fi Ant	AMEC	SAA04-05005G-01	N/A	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	YES	NO	0.9M	USB Cable
C-2	YES	NO	0.9M	DATA Cable
C-3	NO	YES	0.9M	DC Power Cable

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

4 ANTENNA CONDUCTED SPURIOUS EMISSION

4.1 LIMIT

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

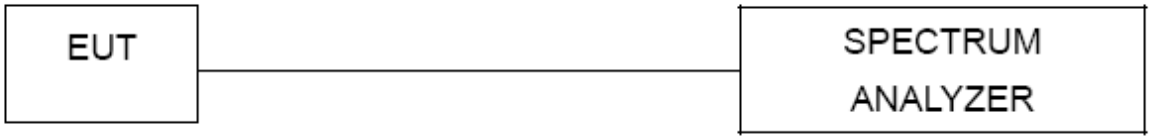
4.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

4.3 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=100KHz, Sweep time = Auto.

4.4 TEST SETUP LAYOUT



4.5 DEVIATION FROM TEST STANDARD

No deviation

4.6 EUT OPERATING CONDITIONS

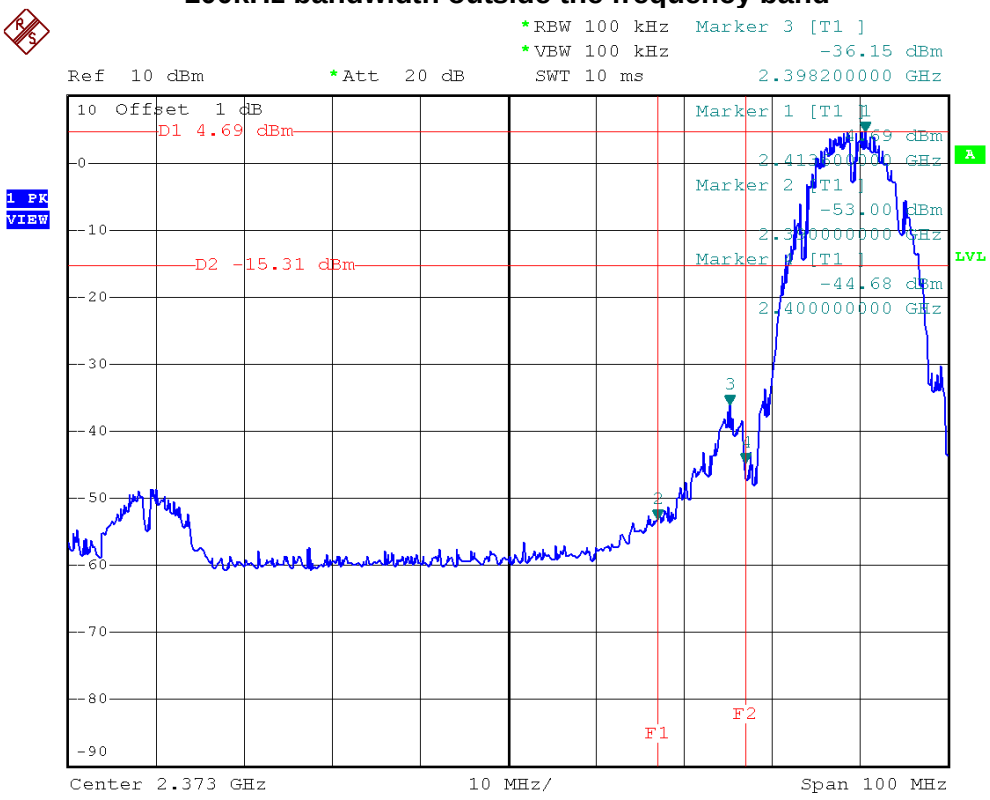
The EUT was programmed in continuously transmitting mode.

4.7 TEST RESULTS - 2400-2483.5 MHZ

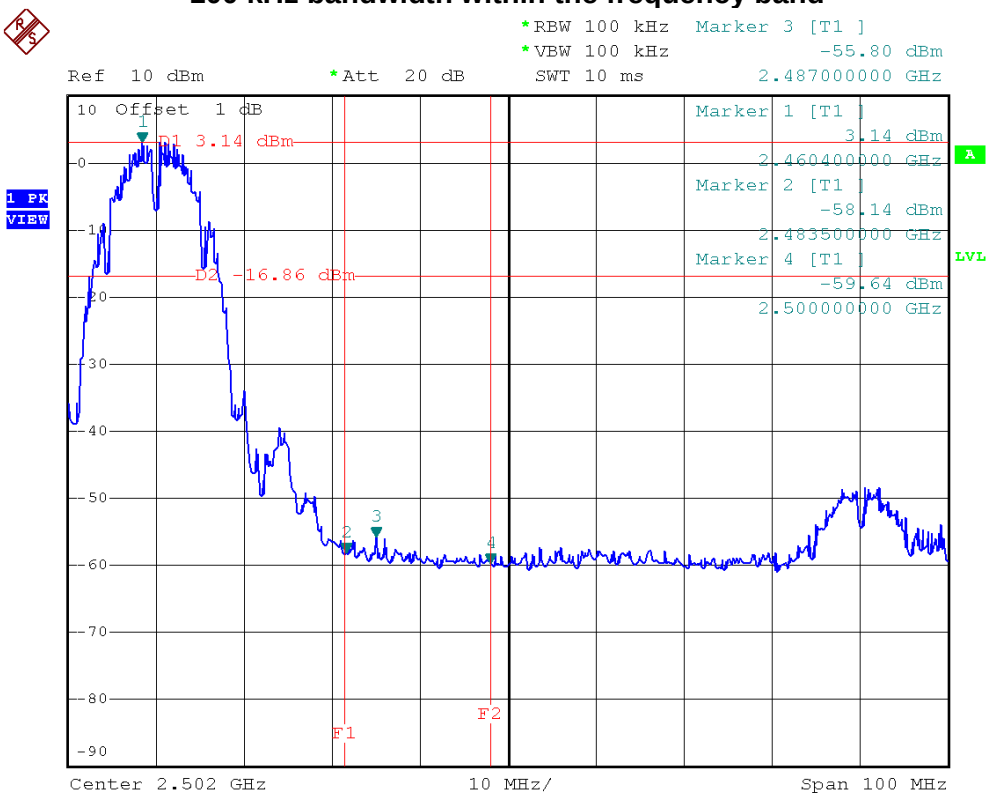
E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	46%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b		

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)
2398.2	-36.15	2487.0	-55.8
Result			
PASS	PASS	PASS	PASS

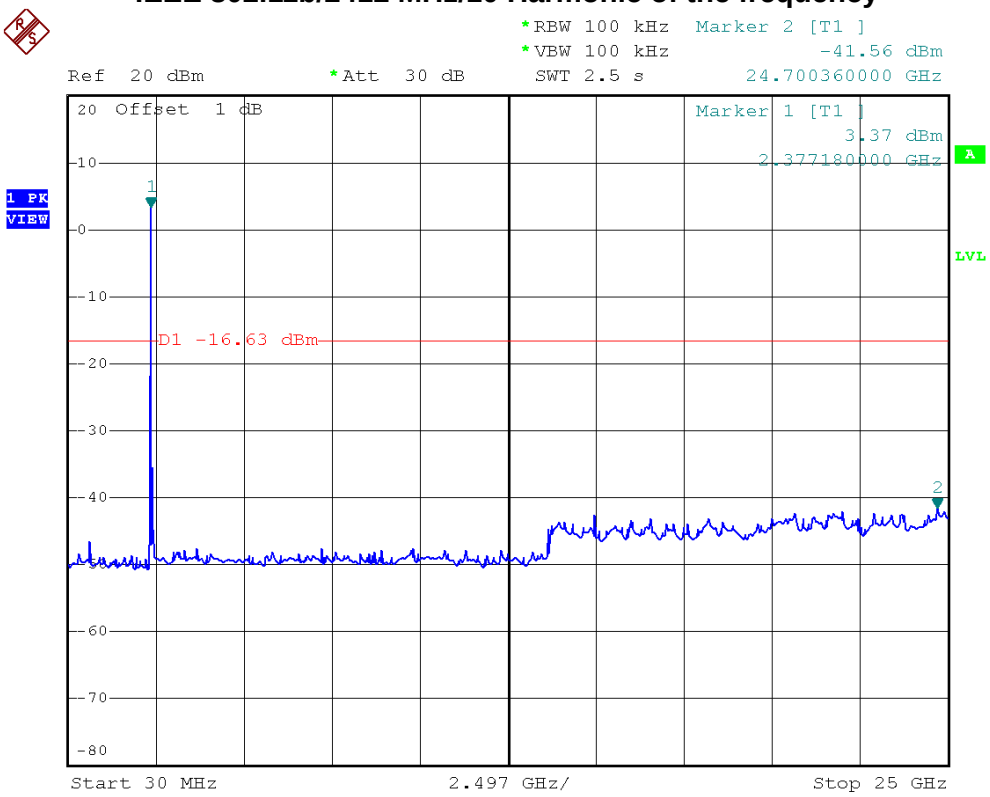
IEEE 802.11b/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



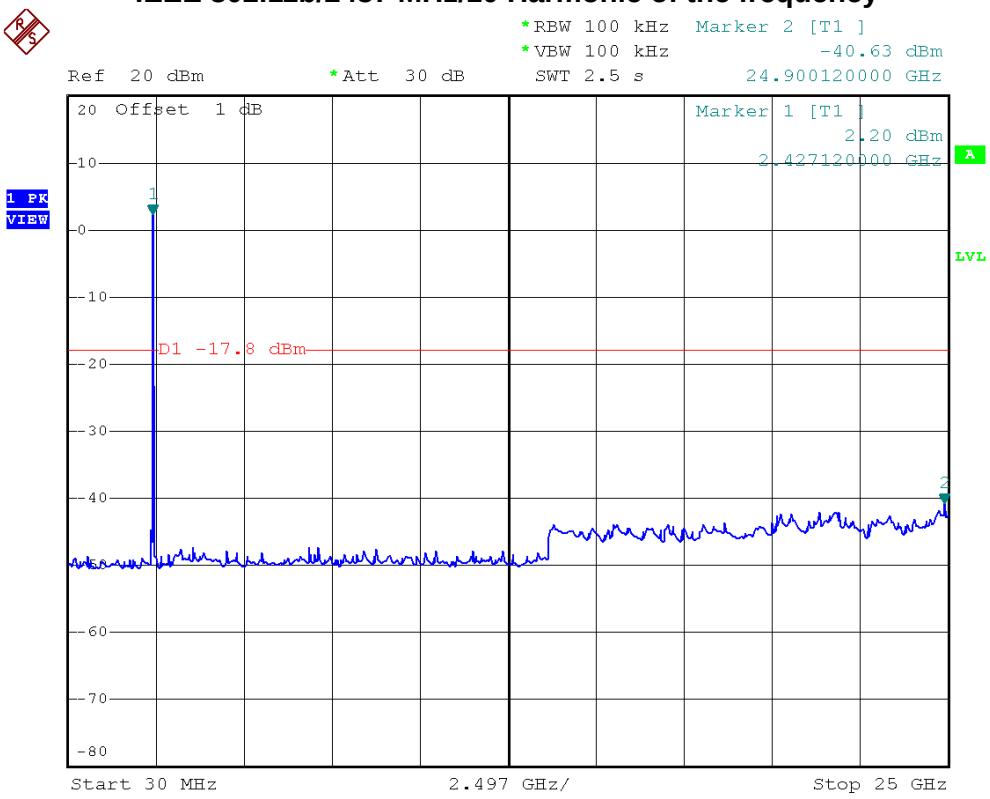
IEEE 802.11b/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



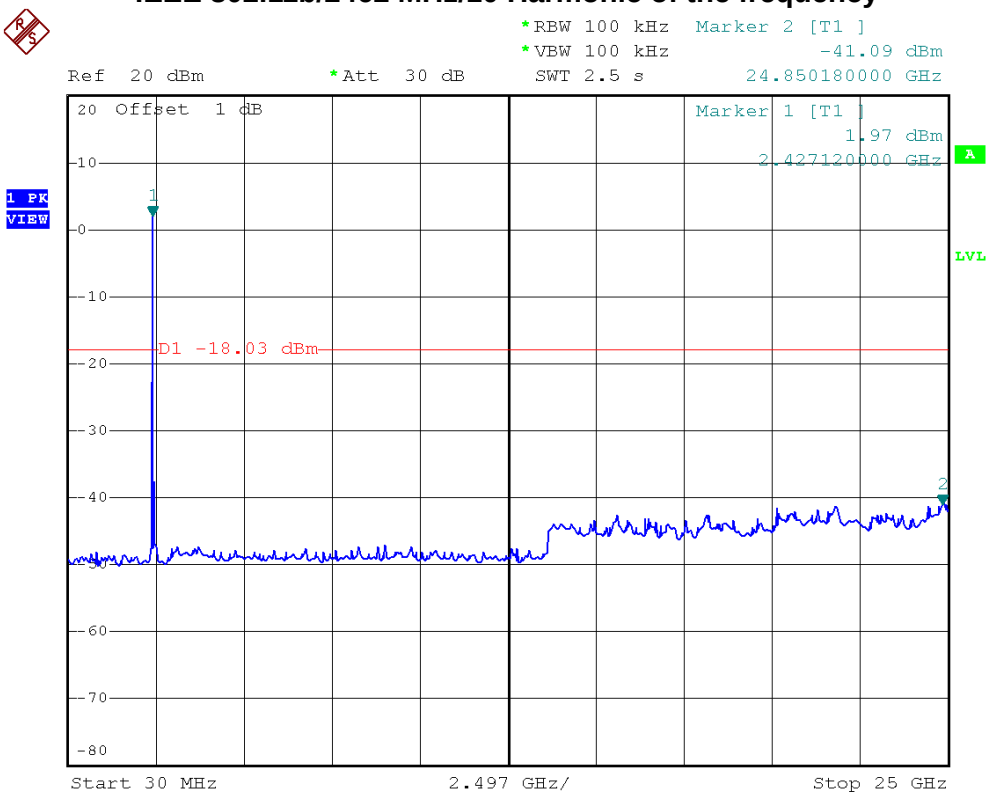
IEEE 802.11b/2412 MHz/10 Harmonic of the frequency



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



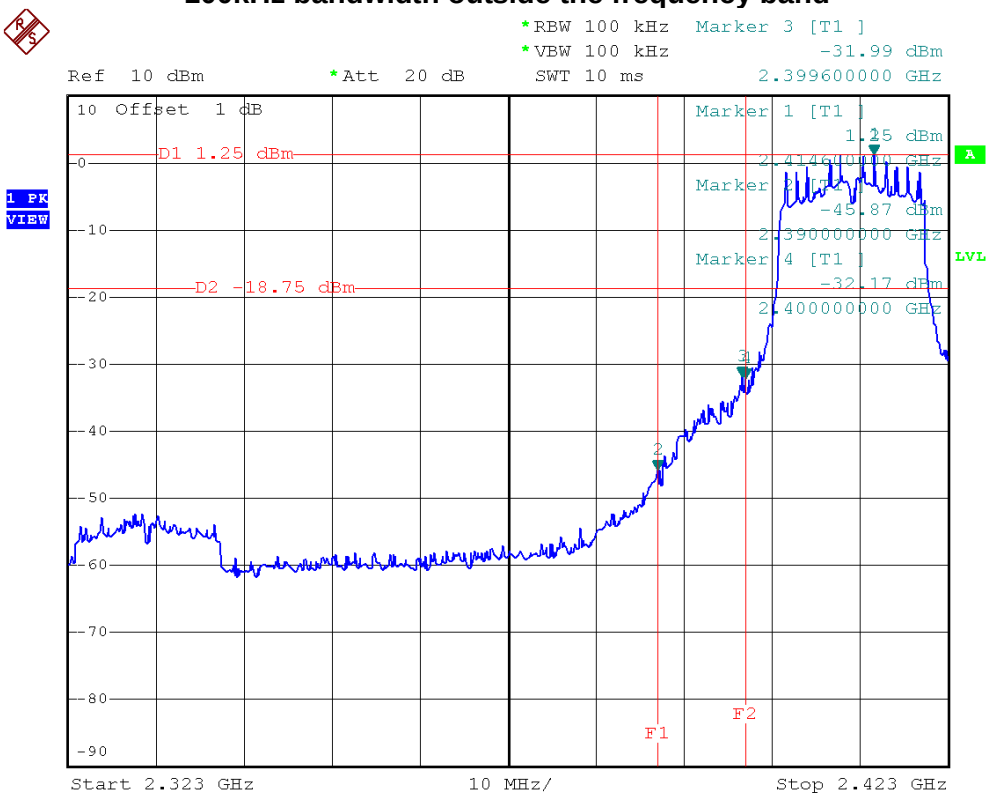
IEEE 802.11b/2462 MHz/10 Harmonic of the frequency



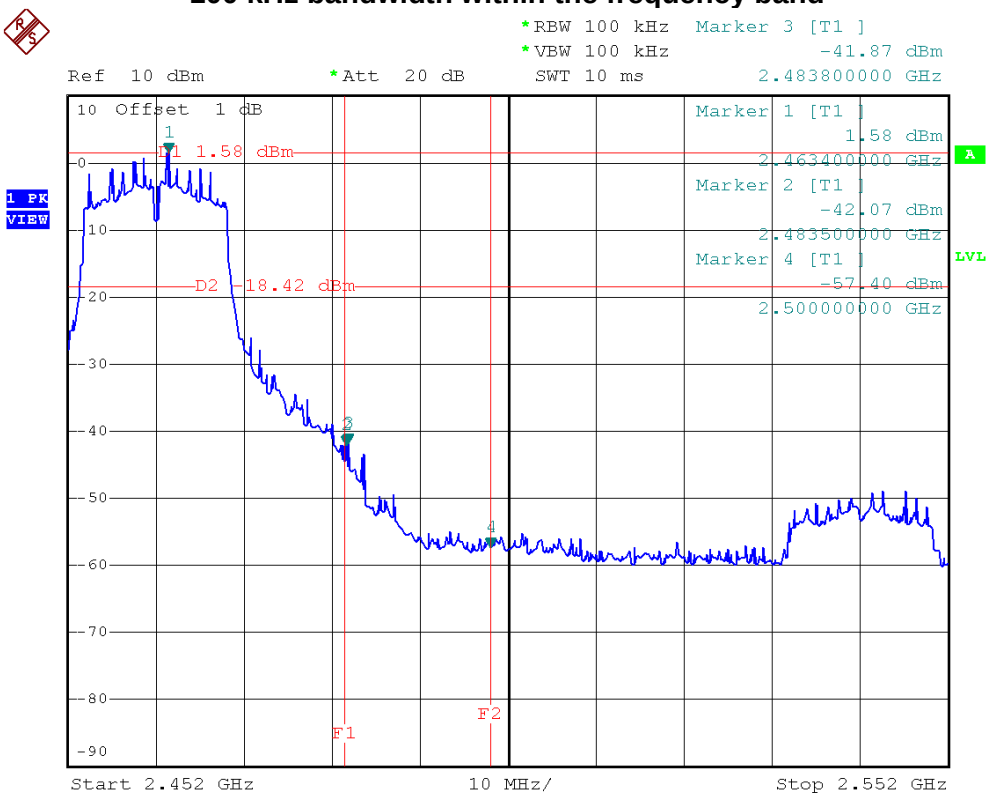
E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	46%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g		

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)
2399.6	-31-99	2483.8	-41.87
Result			
PASS	PASS	PASS	PASS

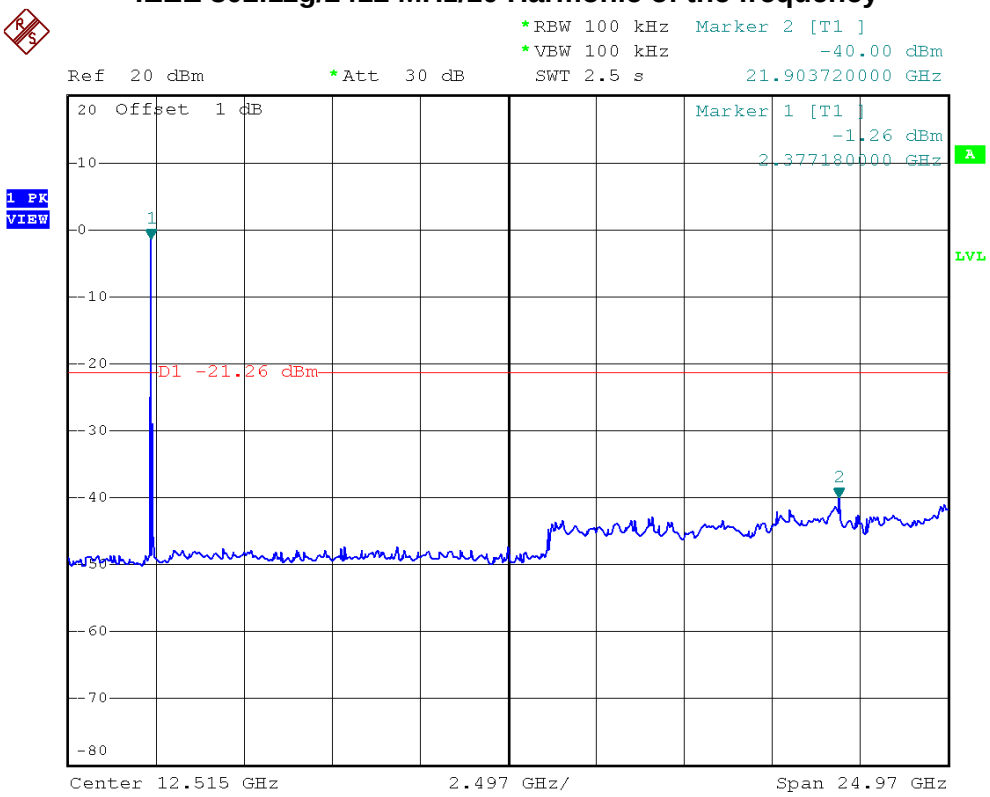
IEEE 802.11g/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



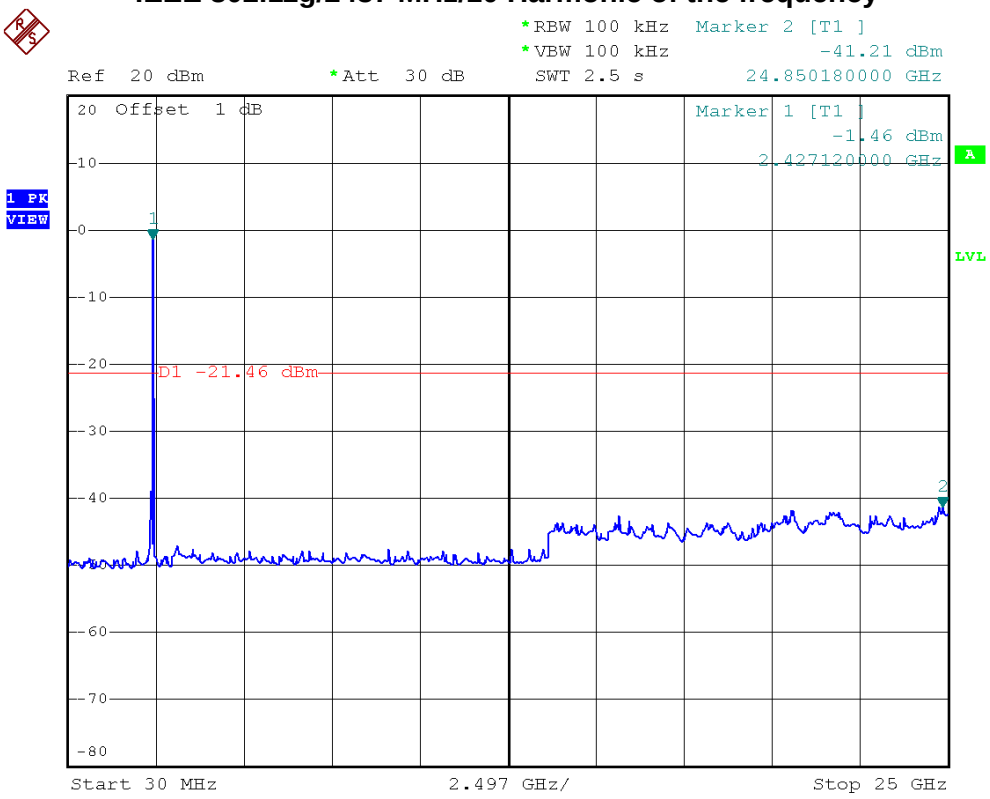
IEEE 802.11g/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



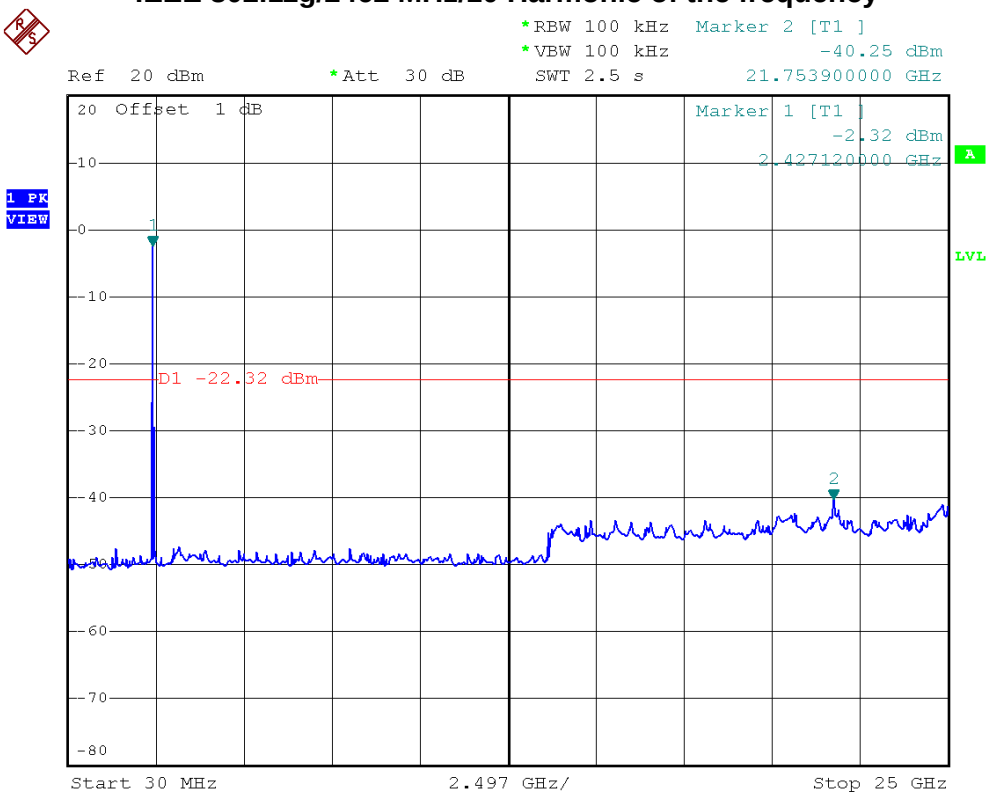
IEEE 802.11g/2412 MHz/10 Harmonic of the frequency



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



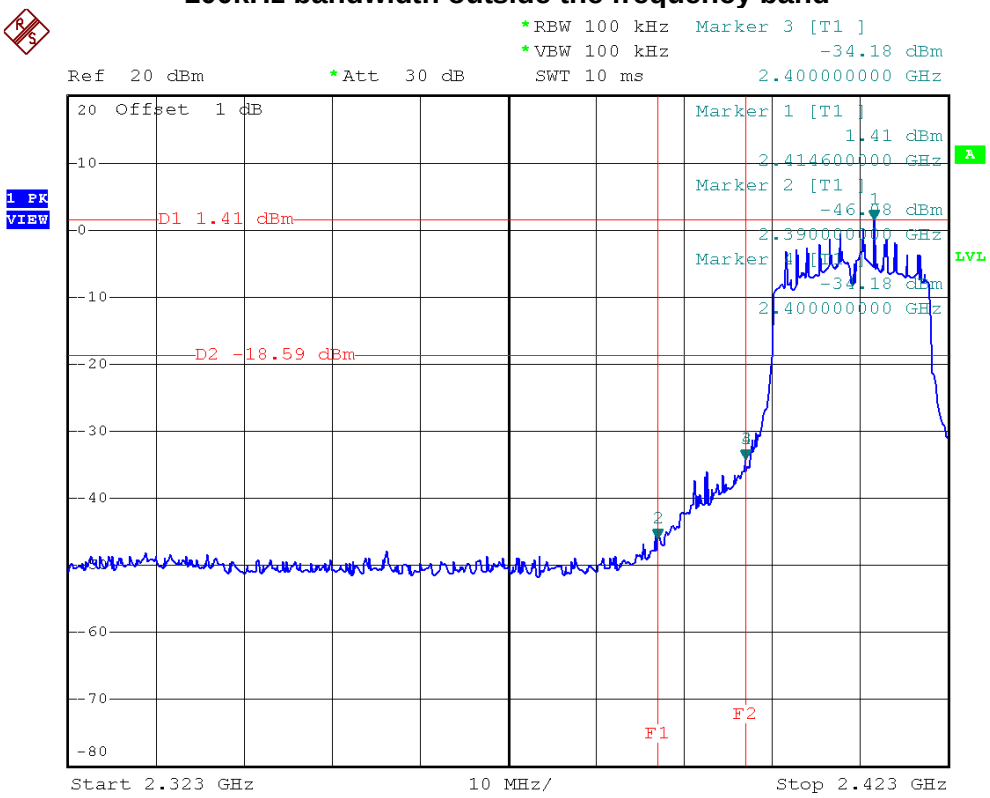
IEEE 802.11g/2462 MHz/10 Harmonic of the frequency



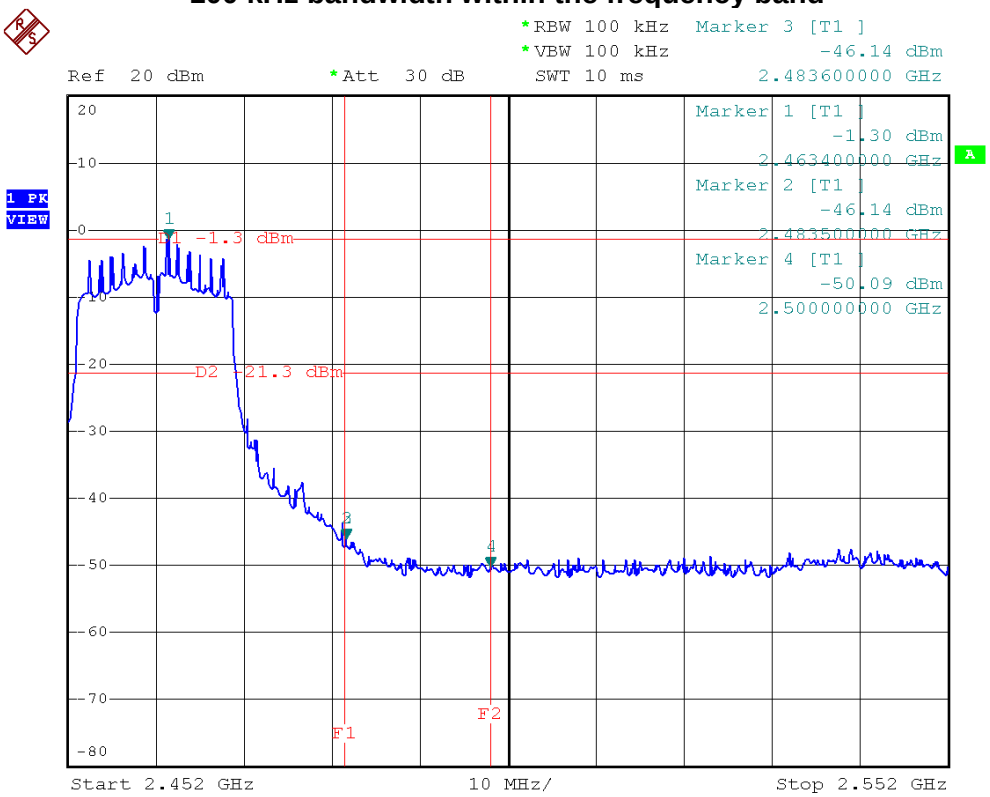
E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	46%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)		

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)
2400.0	-34.18	2483.6	-46.14
Result			
PASS	PASS	PASS	PASS

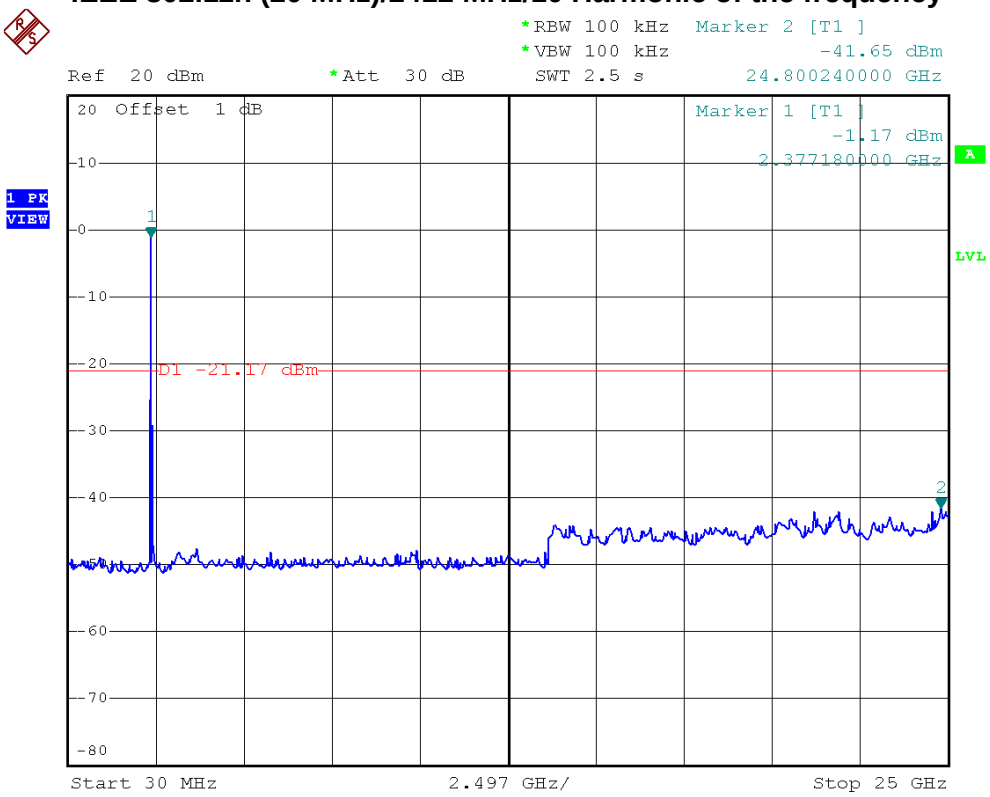
IEEE 802.11n (20 MHz)/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



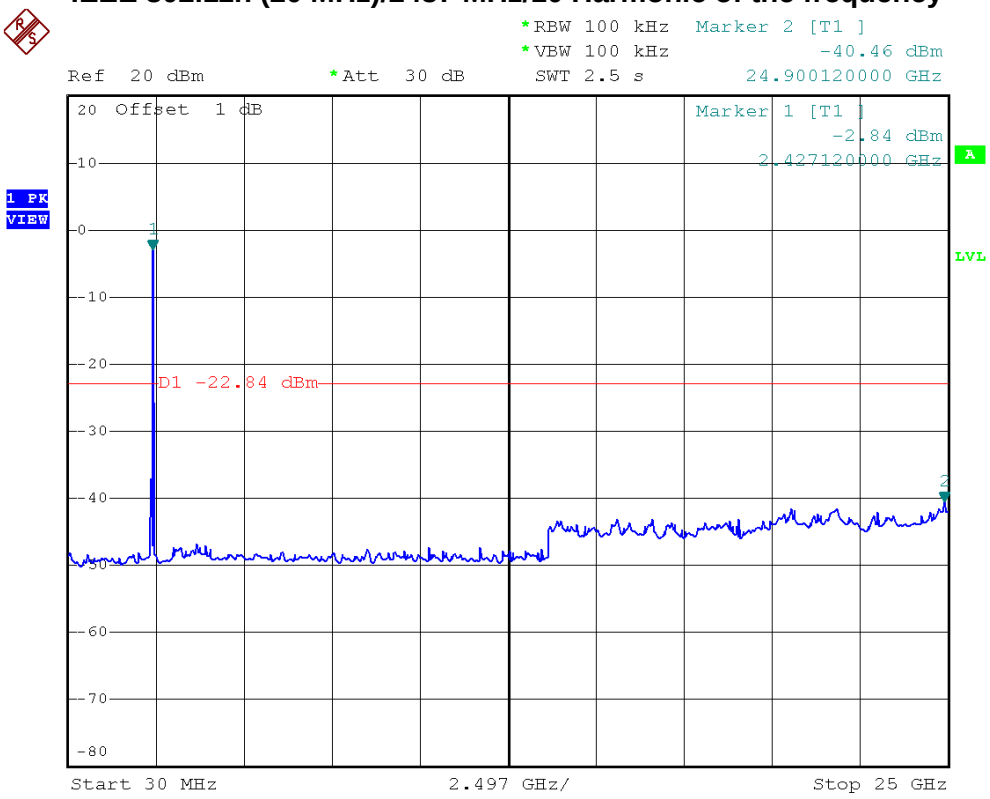
IEEE 802.11n (20 MHz)/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



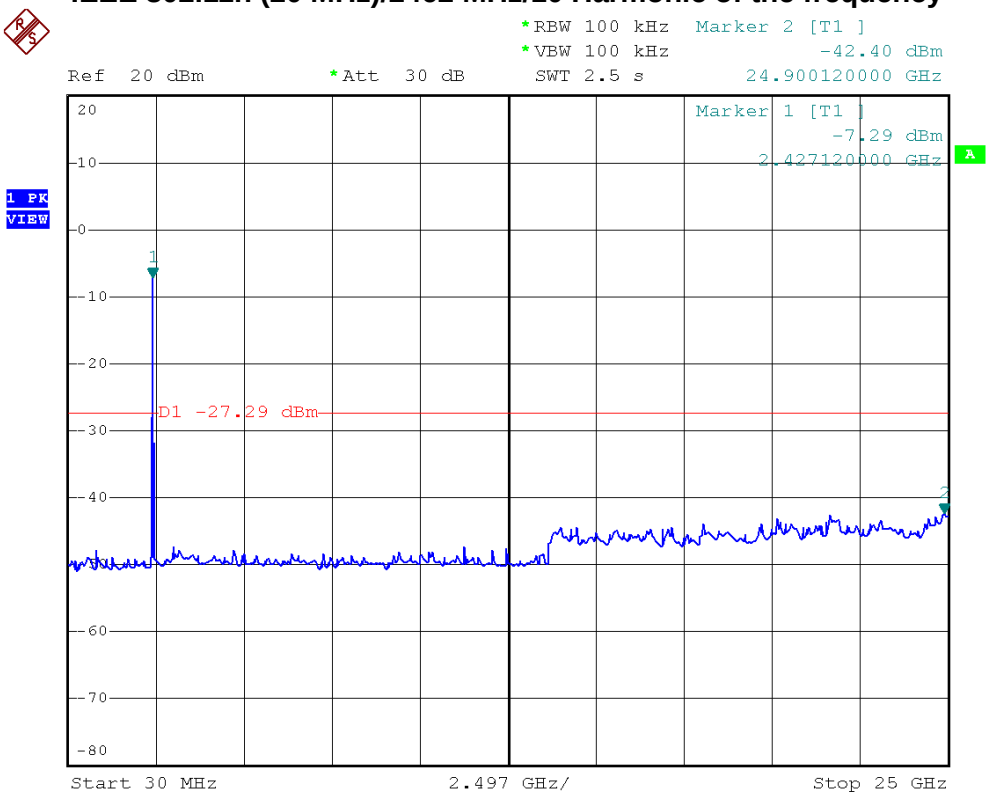
IEEE 802.11n (20 MHz)/2412 MHz/10 Harmonic of the frequency



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 6 DB BANDWIDTH

5.1 LIMIT

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

5.2 MEASUREMENT INSTRUMENTS LIST

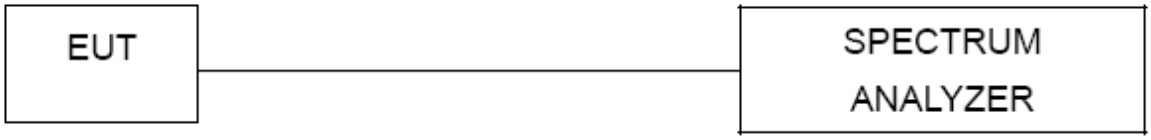
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

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=100KHz, Sweep time = Auto.

5.4 TEST SETUP LAYOUT



5.5 DEVIATION FROM TEST STANDARD

No deviation

5.6 EUT OPERATING CONDITIONS

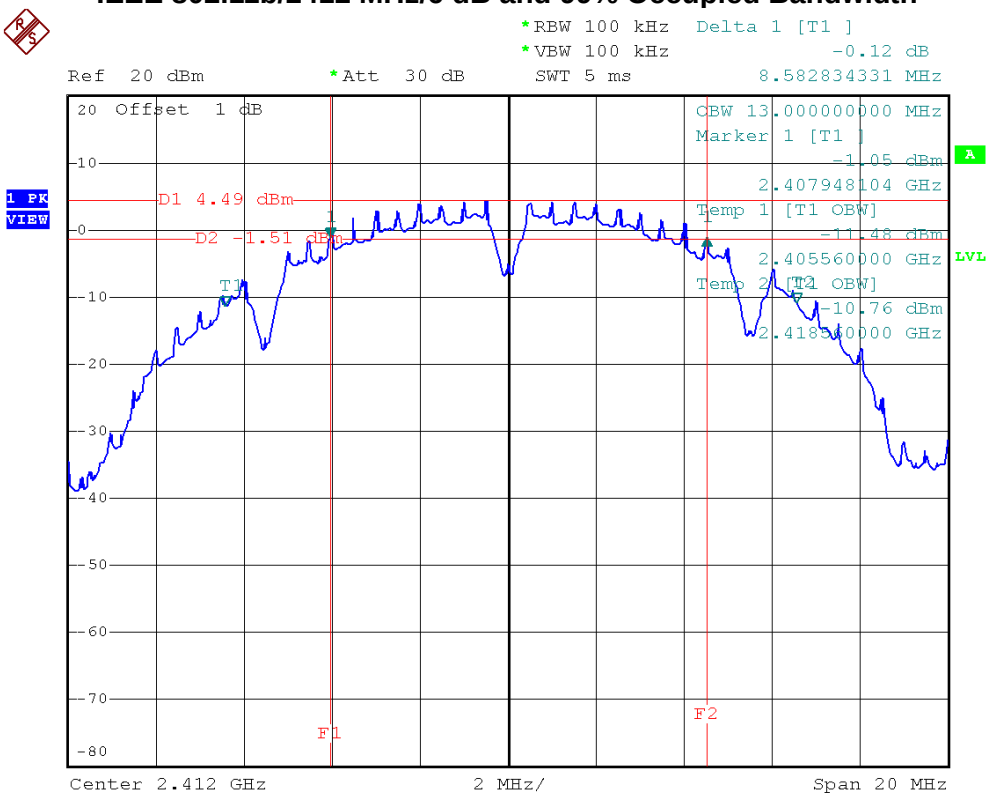
The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

5.7 TEST RESULTS - 2400-2483.5 MHZ

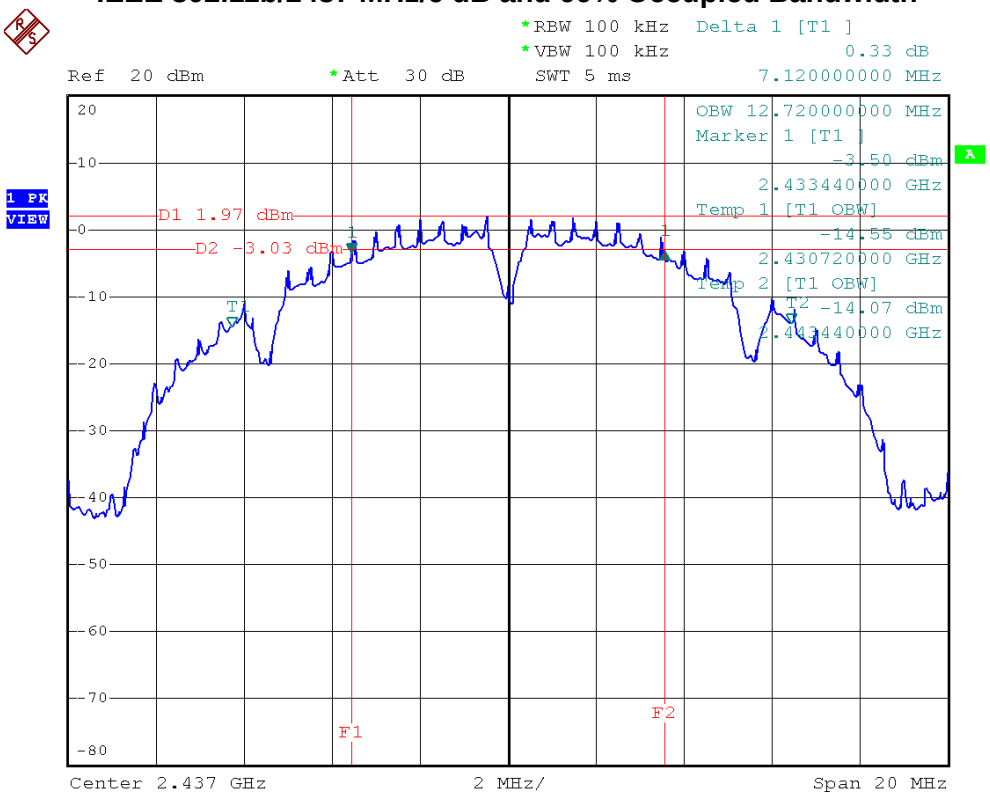
E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	46%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	8.58	13.00	>=500 kHz	PASS
2437 MHz	7.12	12.72	>=500 kHz	PASS
2462 MHz	8.08	12.76	>=500 kHz	PASS

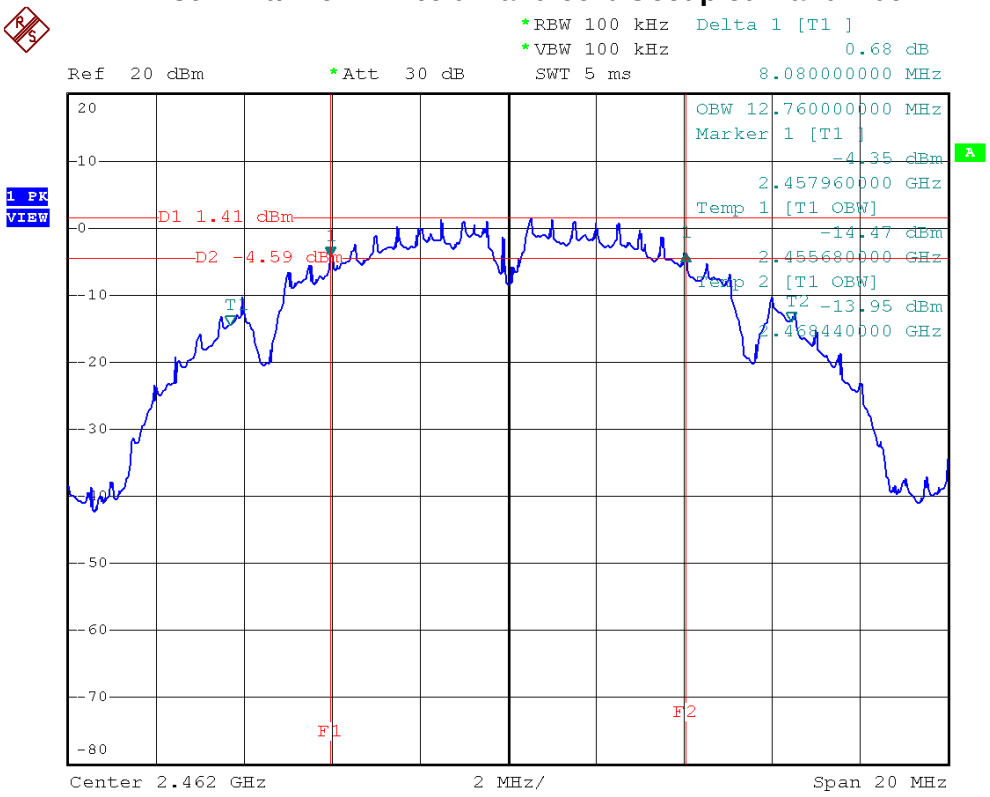
IEEE 802.11b/2412 MHz/6 dB and 99% Occupied Bandwidth



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



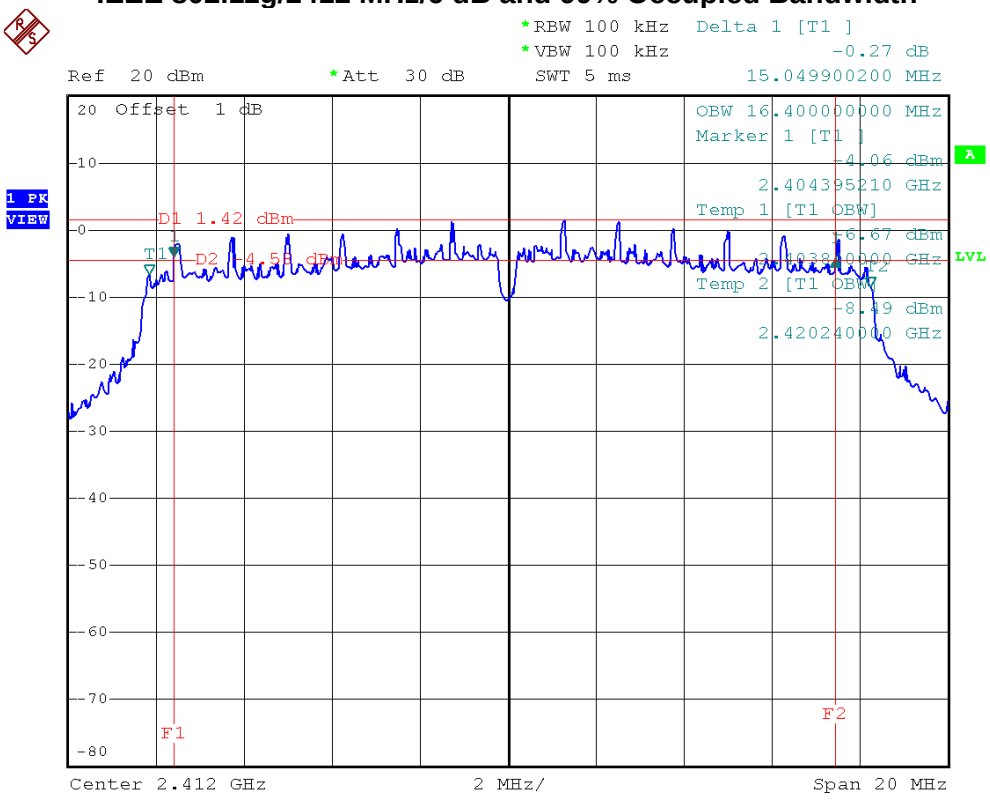
IEEE 802.11b/2462 MHz/6 dB and 99% Occupied Bandwidth



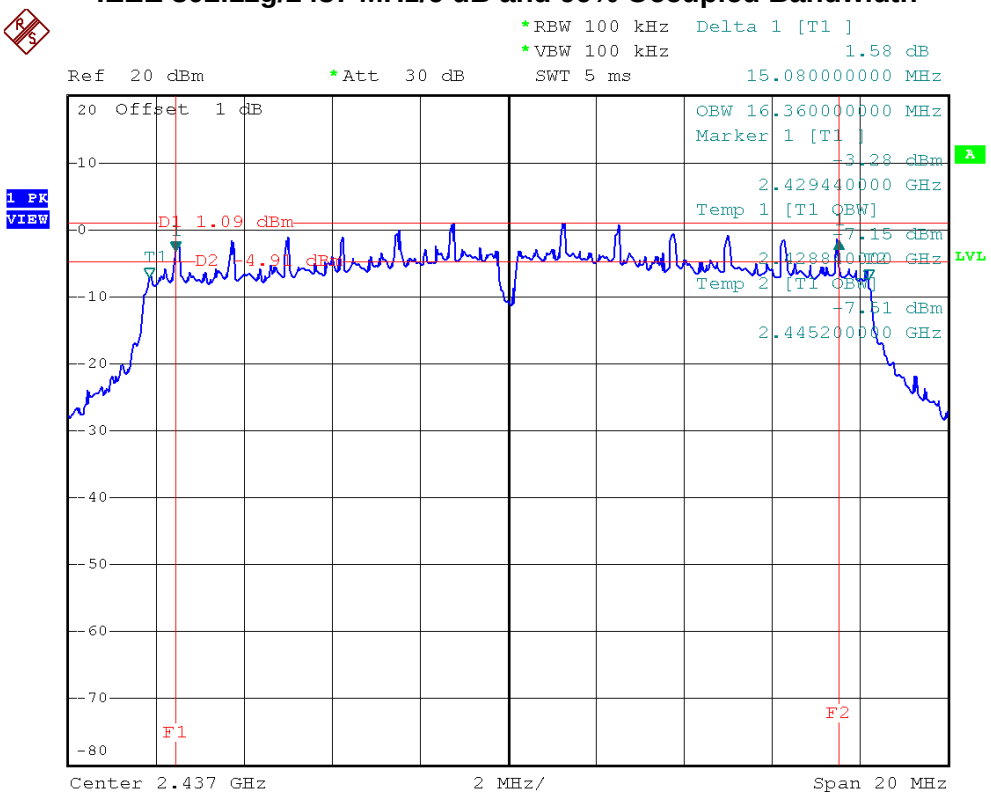
E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	46%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	15.05	16.40	>=500 kHz	PASS
2437 MHz	15.08	16.36	>=500 kHz	PASS
2462 MHz	15.12	16.40	>=500 kHz	PASS

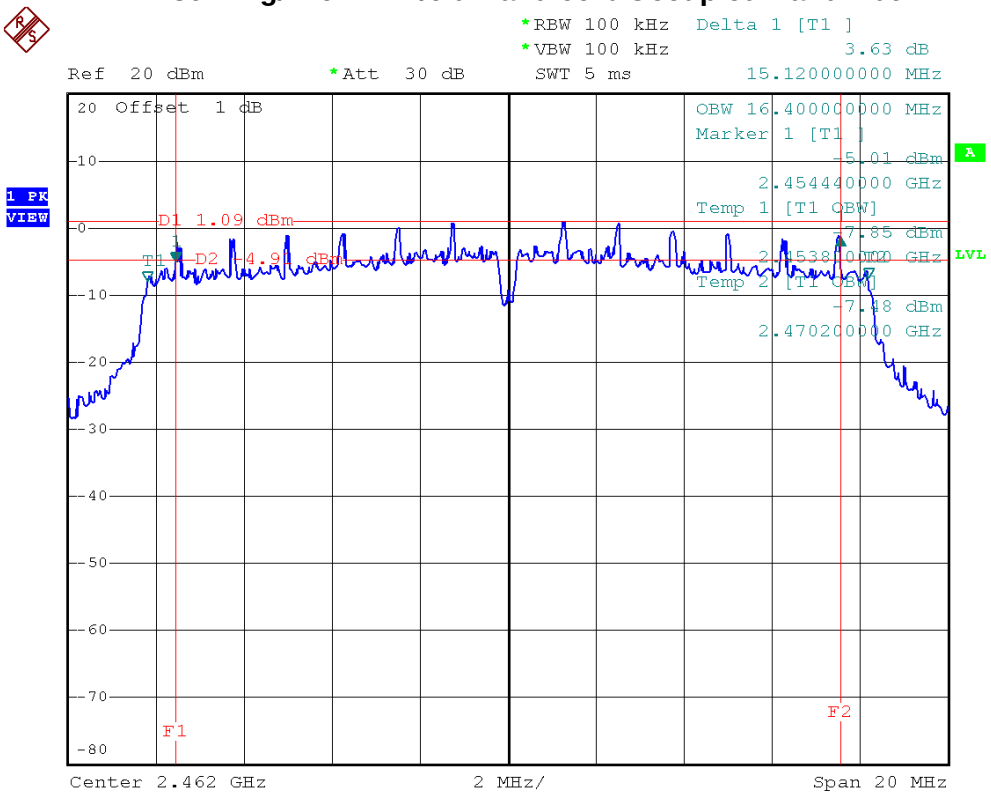
IEEE 802.11g/2412 MHz/6 dB and 99% Occupied Bandwidth



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



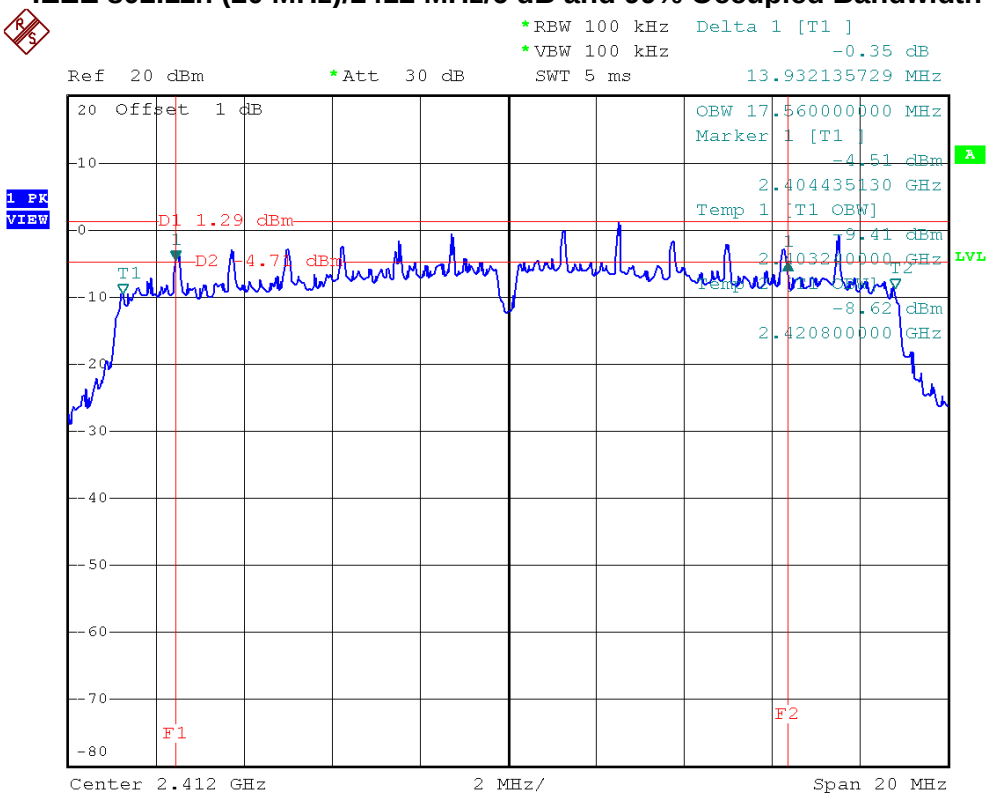
IEEE 802.11g/2462 MHz/6 dB and 99% Occupied Bandwidth



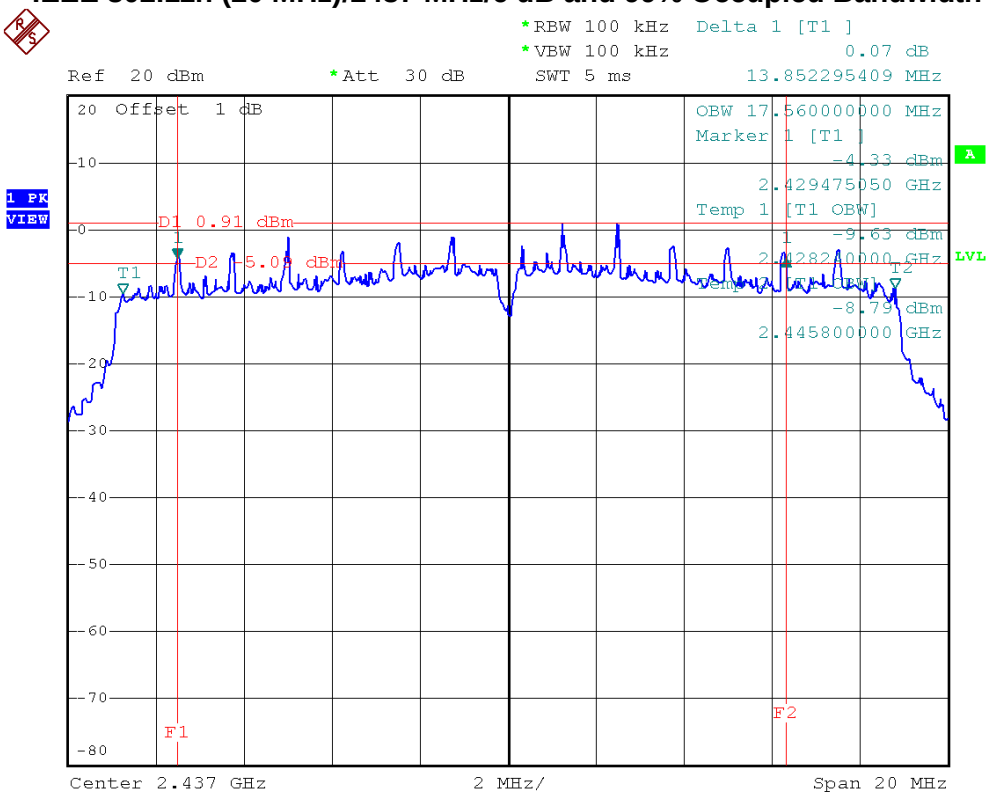
E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	46%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	13.93	17.56	>=500 kHz	PASS
2437 MHz	13.85	17.56	>=500 kHz	PASS
2462 MHz	13.89	17.52	>=500 kHz	PASS

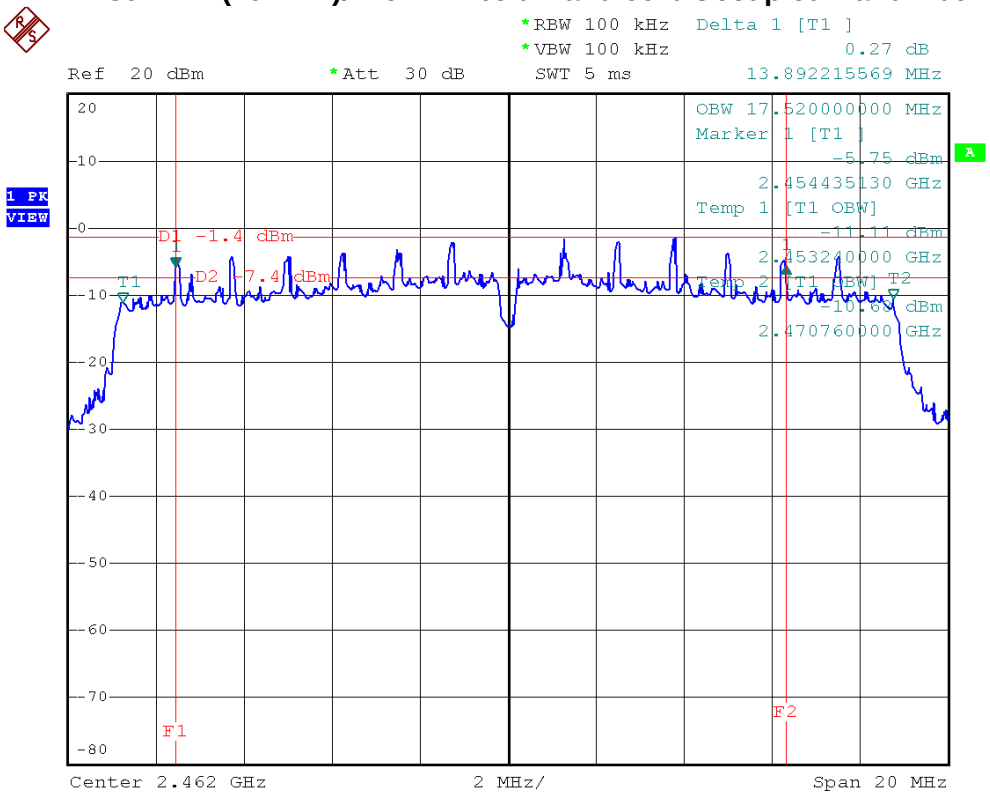
IEEE 802.11n (20 MHz)/2412 MHz/6 dB and 99% Occupied Bandwidth



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 MAXIMUM PEAK CONDUCTED OUTPUT POWER

6.1 LIMIT

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

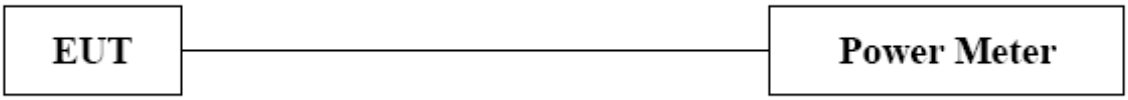
6.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2495A	1128008	Jul. 22, 2013
2	Power Meter Sensor	Anritsu	MA2411B	1126001	Jul. 22, 2013

6.3 TEST PROCEDURES

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

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 - 2400-2483.5 MHZ

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	46%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
2412 MHz	15.24	30	PASS
2437 MHz	15.03	30	PASS
2462 MHz	15.25	30	PASS

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	46%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
2412 MHz	19.75	30	PASS
2437 MHz	19.76	30	PASS
2462 MHz	19.12	30	PASS

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	46%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
2412 MHz	18.09	30	PASS
2437 MHz	18.52	30	PASS
2462 MHz	18.21	30	PASS

7 RADIATED SPURIOUS EMISSION (9 KHZ TO 1 GHZ)

7.1 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

7.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Apr. 16, 2013
3	Microwave Pre_amplifier	Agilent	8449B	3008A01714	Apr. 17, 2013
4	Microflex Cable	N/A	N/A	1m	Apr. 14, 2013
5	Microflex Cable	AISI	S104-SMAP-1	10m	Apr. 14, 2013
6	Microflex Cable	N/A	N/A	3m	Apr. 14, 2013
7	Test Cable	N/A	LMR-400	966_12m	May. 15, 2013
8	Test Cable	N/A	LMR-400	966_3m	May. 15, 2013
9	Pre-Amplifier	EMC	EMC-330	980001	May. 31, 2013
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jun. 12, 2013

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

7.3 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

7.4 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.

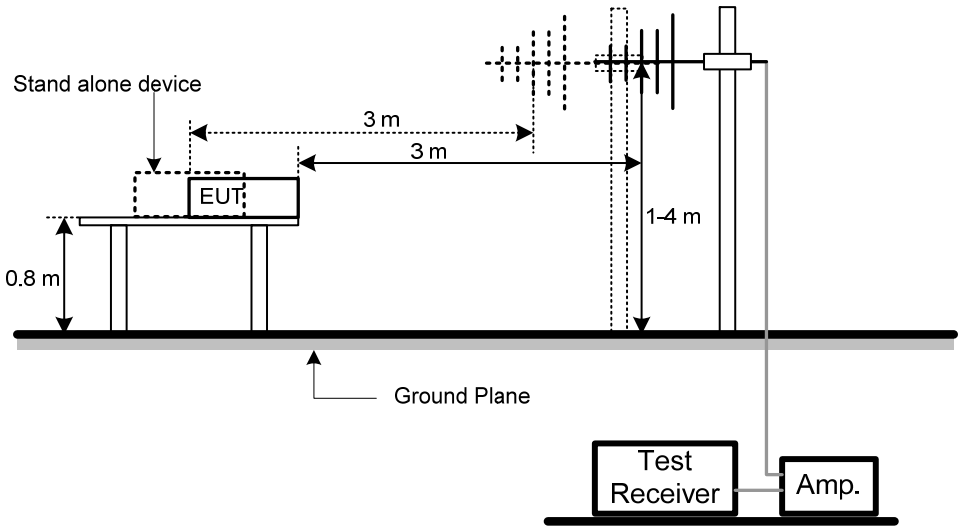
NOTE:

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.

7.5 DEVIATION FROM TEST STANDARD

No deviation

7.6 TEST SETUP LAYOUT



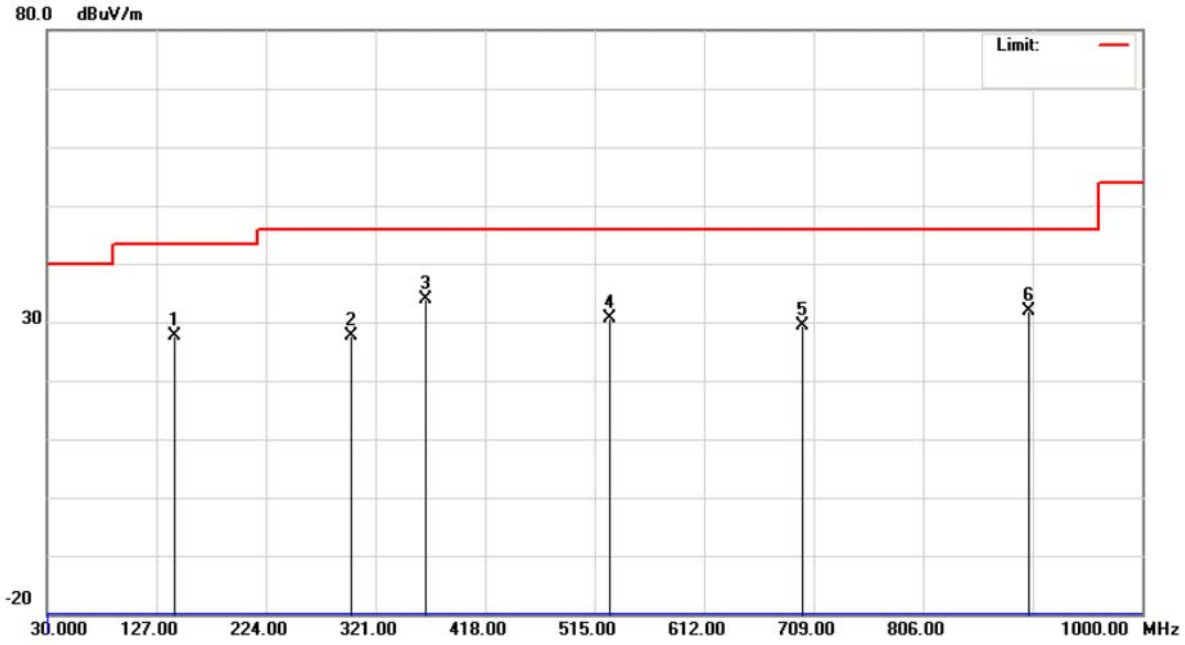
7.7 EUT OPERATING CONDITIONS

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.

7.8 TEST RESULTS - 2400-2483.5 MHZ

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2437 MHz		

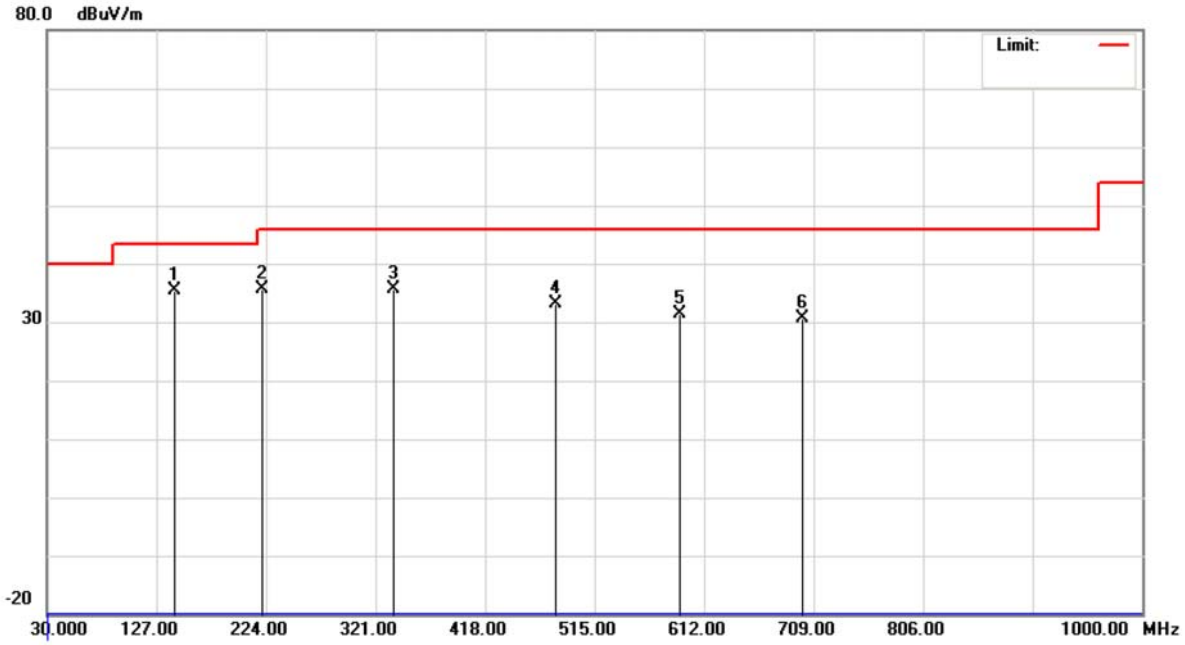
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		142.5200	46.55	-18.83	27.72	43.50	-15.78	peak	
2		299.6600	45.81	-18.07	27.74	46.00	-18.26	peak	
3	*	365.6199	50.61	-16.68	33.93	46.00	-12.07	peak	
4		528.5800	43.73	-13.06	30.67	46.00	-15.33	peak	
5		699.2999	39.24	-9.93	29.31	46.00	-16.69	peak	
6		899.1199	38.66	-6.78	31.88	46.00	-14.12	peak	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
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	*	142.5200	54.23	-18.83	35.40	43.50	-8.10	peak	
2		220.1199	57.16	-21.42	35.74	46.00	-10.26	peak	
3		336.5199	52.90	-17.38	35.52	46.00	-10.48	peak	
4		480.0799	47.10	-13.95	33.15	46.00	-12.85	peak	
5		590.6599	42.72	-11.29	31.43	46.00	-14.57	peak	
6		699.2999	40.53	-9.93	30.60	46.00	-15.40	peak	

8 RADIATED SPURIOUS EMISSION (ABOVE 1 GHZ)

8.1 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

8.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Apr. 16, 2013
3	Microwave Pre_amplifier	Agilent	8449B	3008A01714	Apr. 17, 2013
4	Microflex Cable	N/A	N/A	1m	Apr. 14, 2013
5	Microflex Cable	AISI	S104-SMAP-1	10m	Apr. 14, 2013
6	Microflex Cable	N/A	N/A	3m	Apr. 14, 2013
7	Test Cable	N/A	LMR-400	966_12m	May. 15, 2013
8	Test Cable	N/A	LMR-400	966_3m	May. 15, 2013
9	Pre-Amplifier	EMC	EMC-330	980001	May. 31, 2013
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jun. 12, 2013

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

8.3 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

8.4 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.

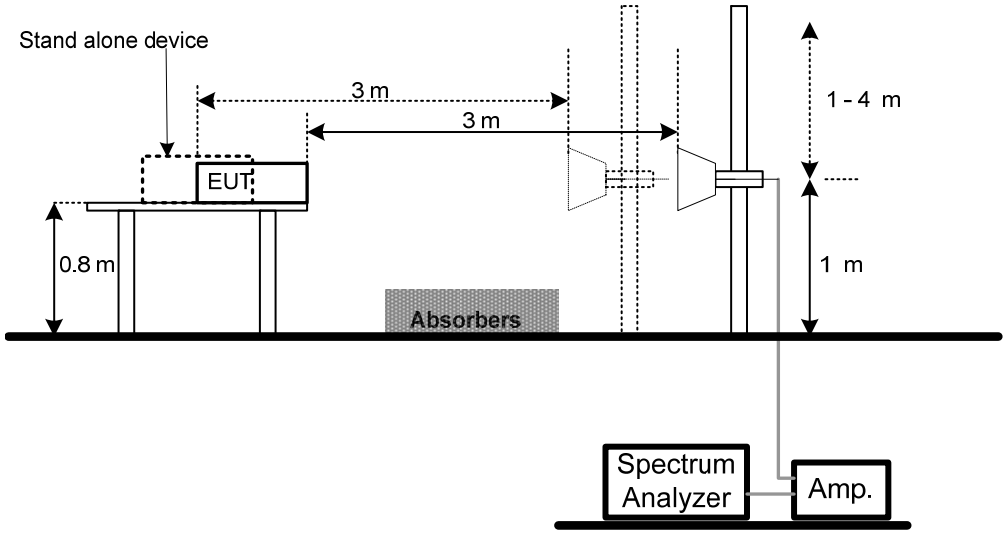
NOTE:

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.

8.5 DEVIATION FROM TEST STANDARD

No deviation

8.6 TEST SETUP LAYOUT



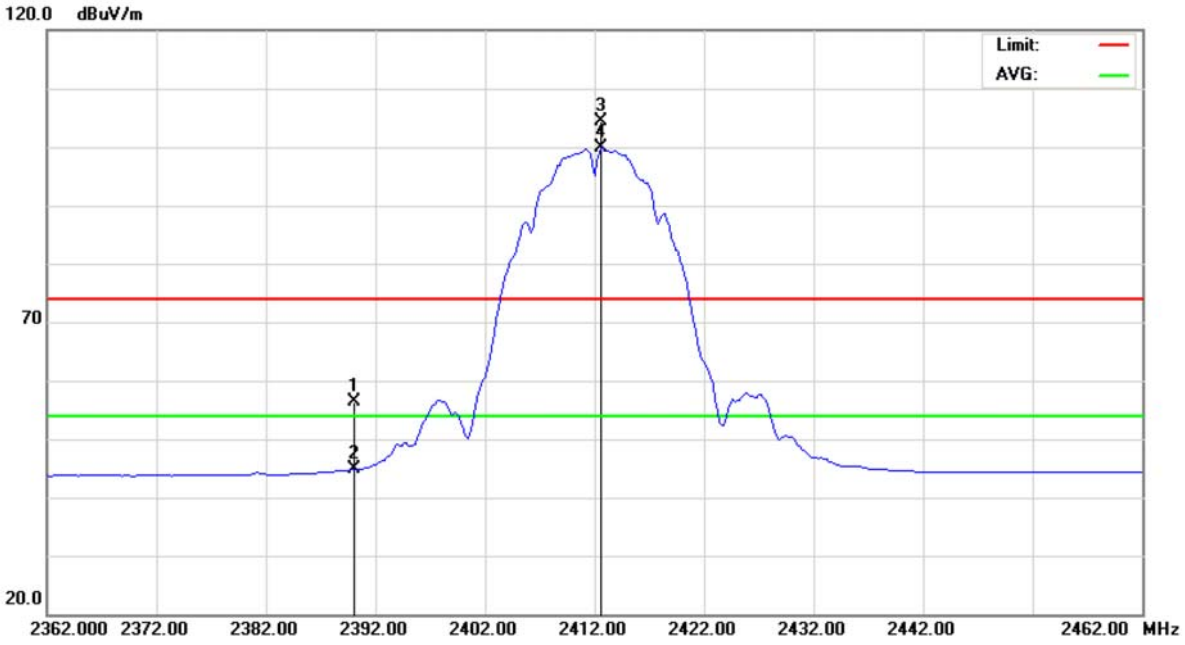
8.7 EUT OPERATING CONDITIONS

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

8.8 TEST RESULTS - 2400-2483.5 MHZ

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2412 MHz		

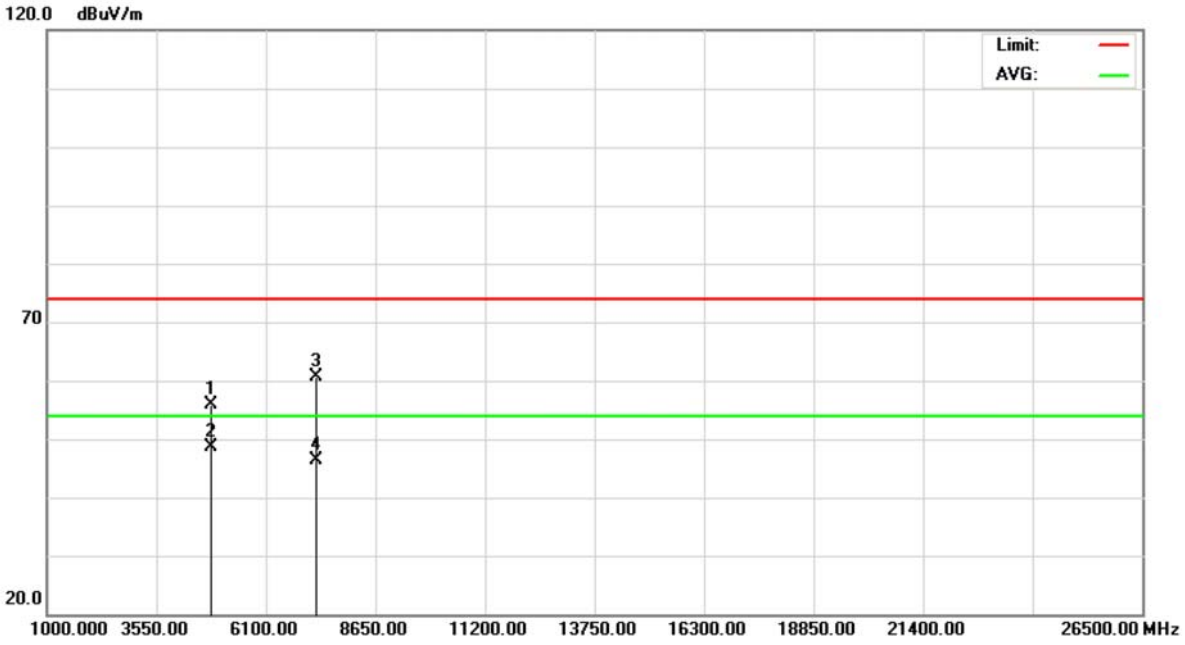
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	23.45	32.99	56.44	74.00	-17.56	peak	
2		2390.000	11.85	32.99	44.84	54.00	-9.16	AVG	
3	X	2412.600	71.35	33.11	104.46	74.00	30.46	peak	
4	*	2412.600	66.81	33.11	99.92	54.00	45.92	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2412 MHz		

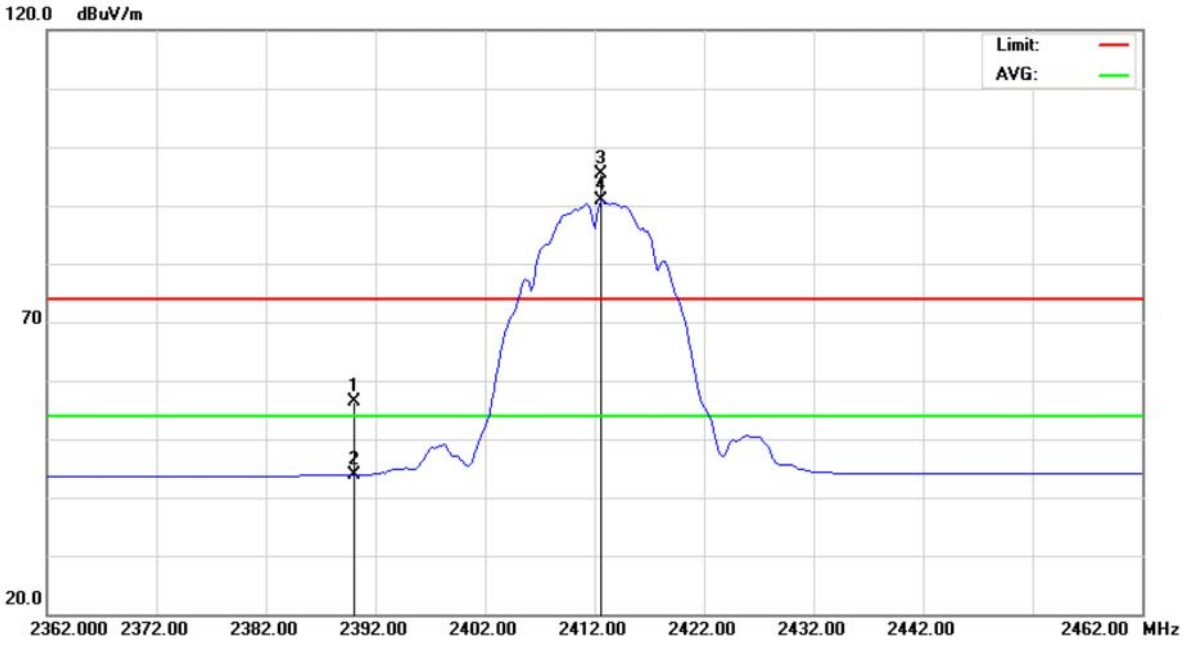
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4823.880	48.28	7.49	55.77	74.00	-18.23	peak	
2	*	4823.880	41.17	7.49	48.66	54.00	-5.34	AVG	
3		7238.120	45.70	14.87	60.57	74.00	-13.43	peak	
4		7238.120	31.44	14.87	46.31	54.00	-7.69	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2412 MHz		

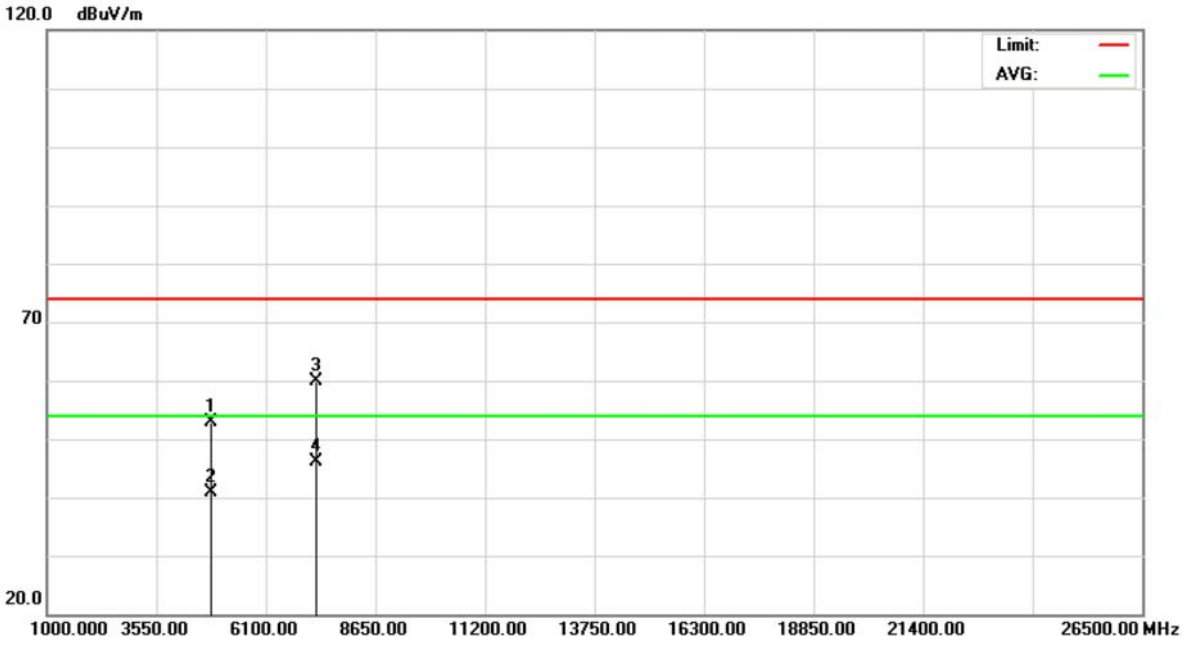
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	23.28	32.99	56.27	74.00	-17.73	peak	
2		2390.000	10.88	32.99	43.87	54.00	-10.13	AVG	
3	X	2412.600	62.33	33.11	95.44	74.00	21.44	peak	
4	*	2412.600	57.70	33.11	90.81	54.00	36.81	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2412 MHz		

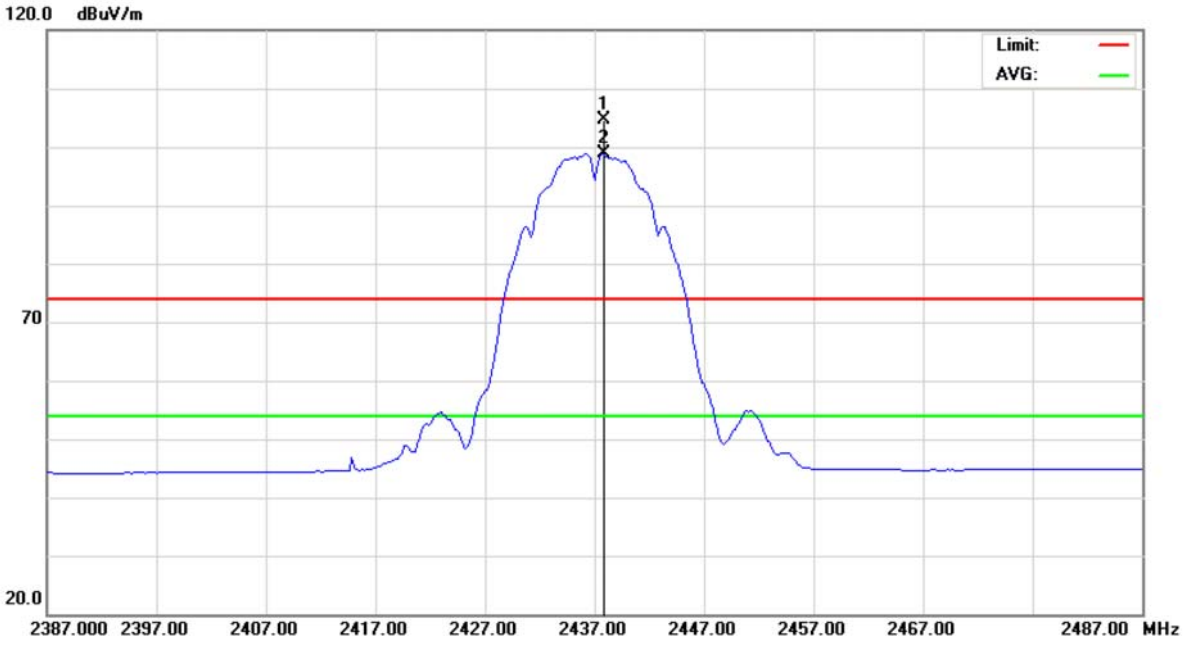
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.060	45.42	7.49	52.91	74.00	-21.09	peak	
2		4824.060	33.42	7.49	40.91	54.00	-13.09	AVG	
3		7235.260	45.02	14.87	59.89	74.00	-14.11	peak	
4	*	7235.260	31.35	14.87	46.22	54.00	-7.78	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2437 MHz		

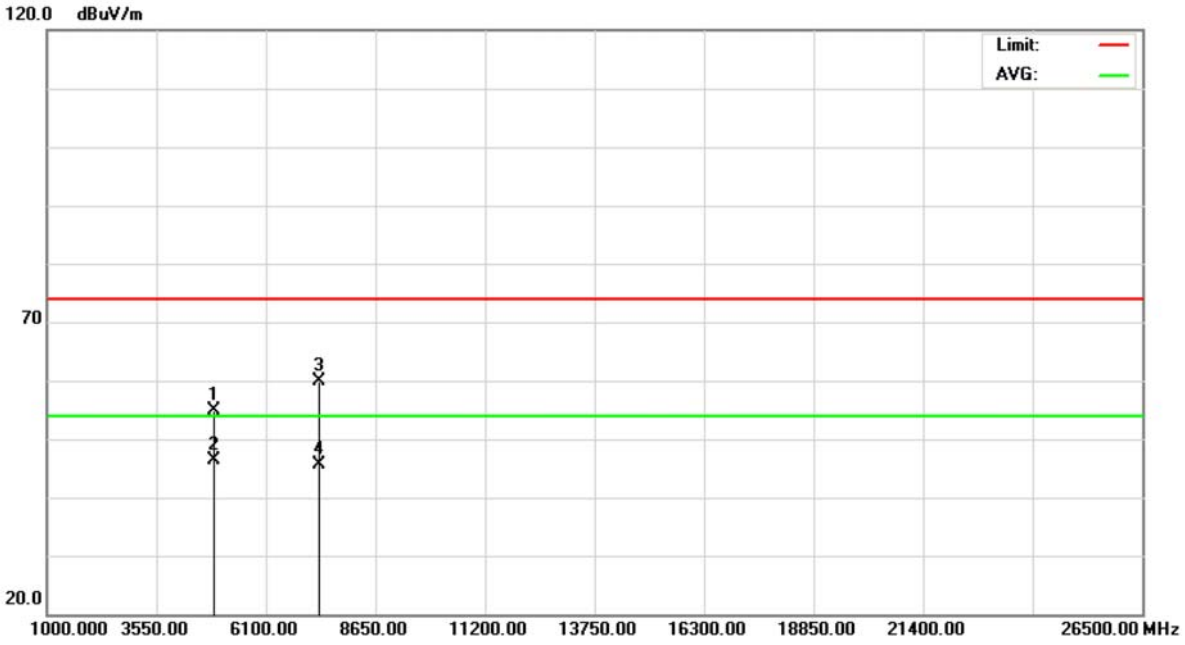
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2437.800	71.05	33.68	104.73	74.00	30.73	peak	
2	*	2437.800	65.15	33.68	98.83	54.00	44.83	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2437 MHz		

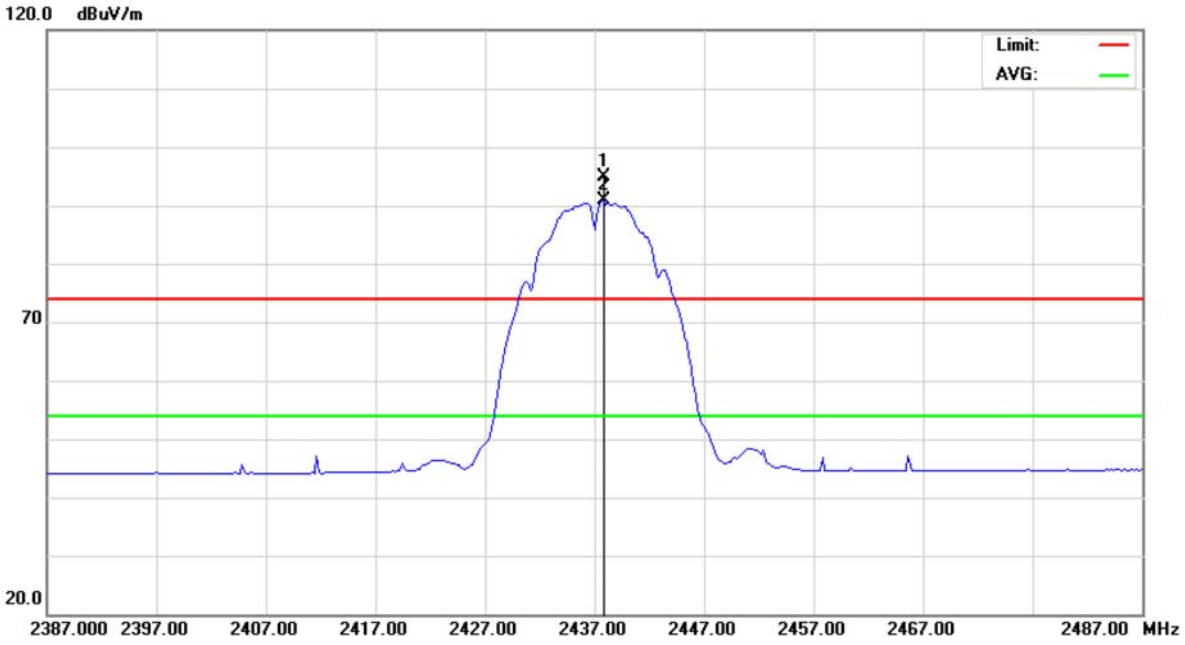
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	47.22	7.67	54.89	74.00	-19.11	peak	
2	*	4874.000	38.83	7.67	46.50	54.00	-7.50	AVG	
3		7310.780	44.83	15.06	59.89	74.00	-14.11	peak	
4		7310.780	30.48	15.06	45.54	54.00	-8.46	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2437 MHz		

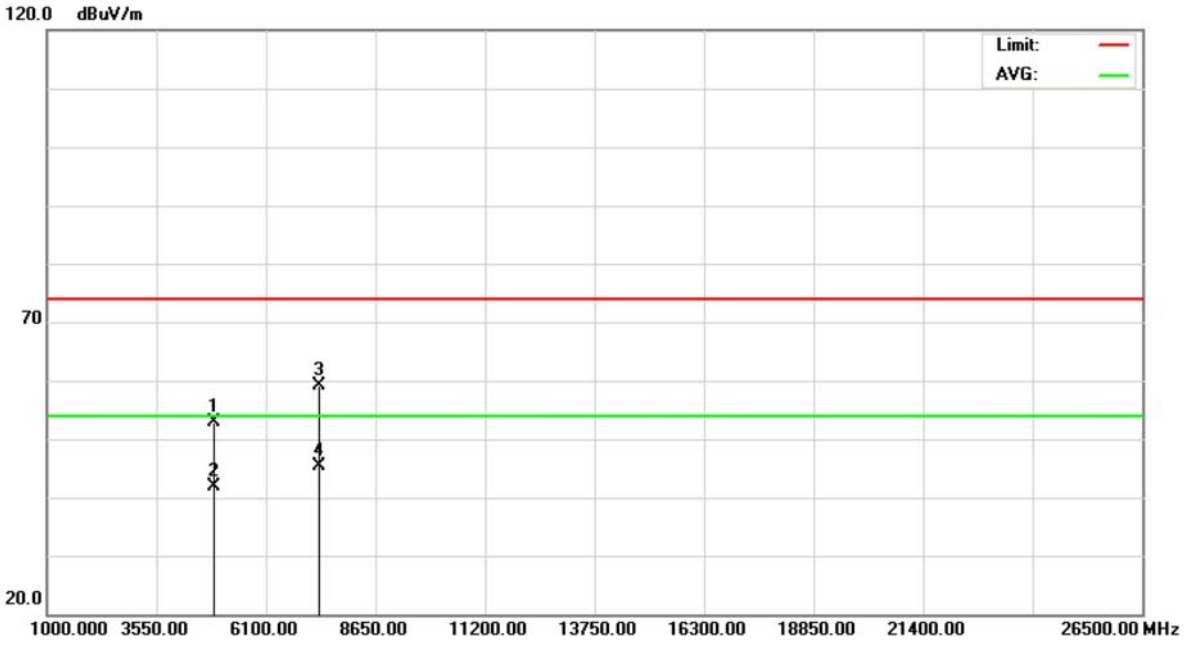
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2437.800	61.26	33.68	94.94	74.00	20.94	peak	
2	*	2437.800	57.09	33.68	90.77	54.00	36.77	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2437 MHz		

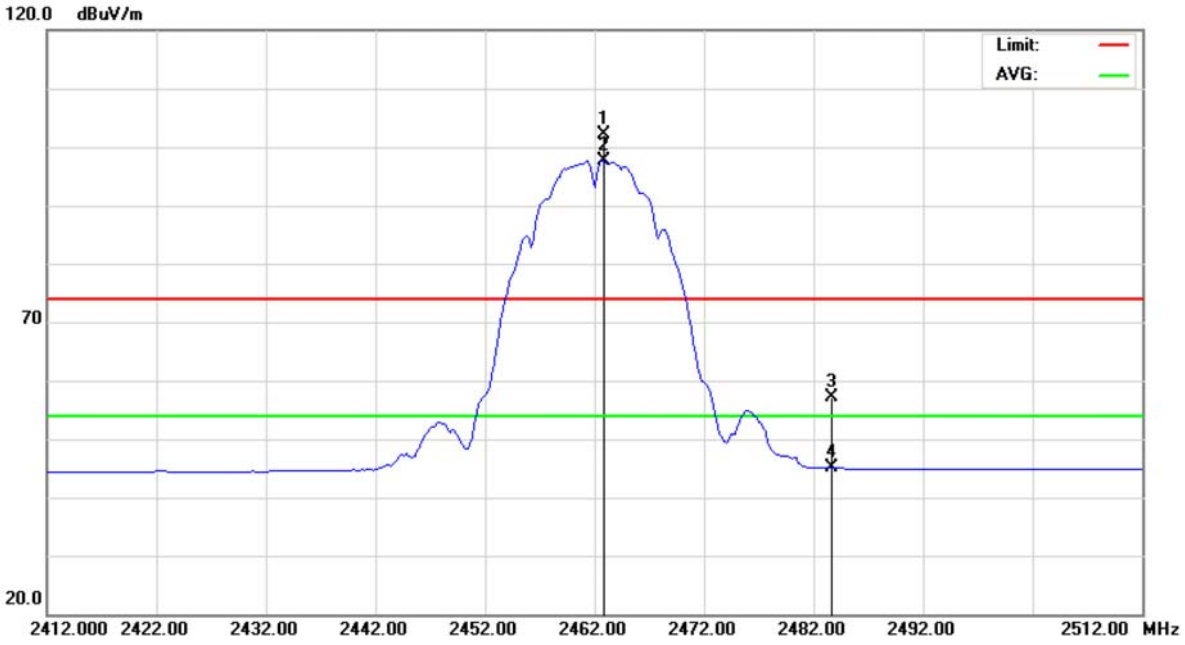
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.040	45.24	7.67	52.91	74.00	-21.09	peak	
2		4874.040	34.12	7.67	41.79	54.00	-12.21	AVG	
3		7311.120	44.17	15.07	59.24	74.00	-14.76	peak	
4	*	7311.120	30.41	15.07	45.48	54.00	-8.52	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2462 MHz		

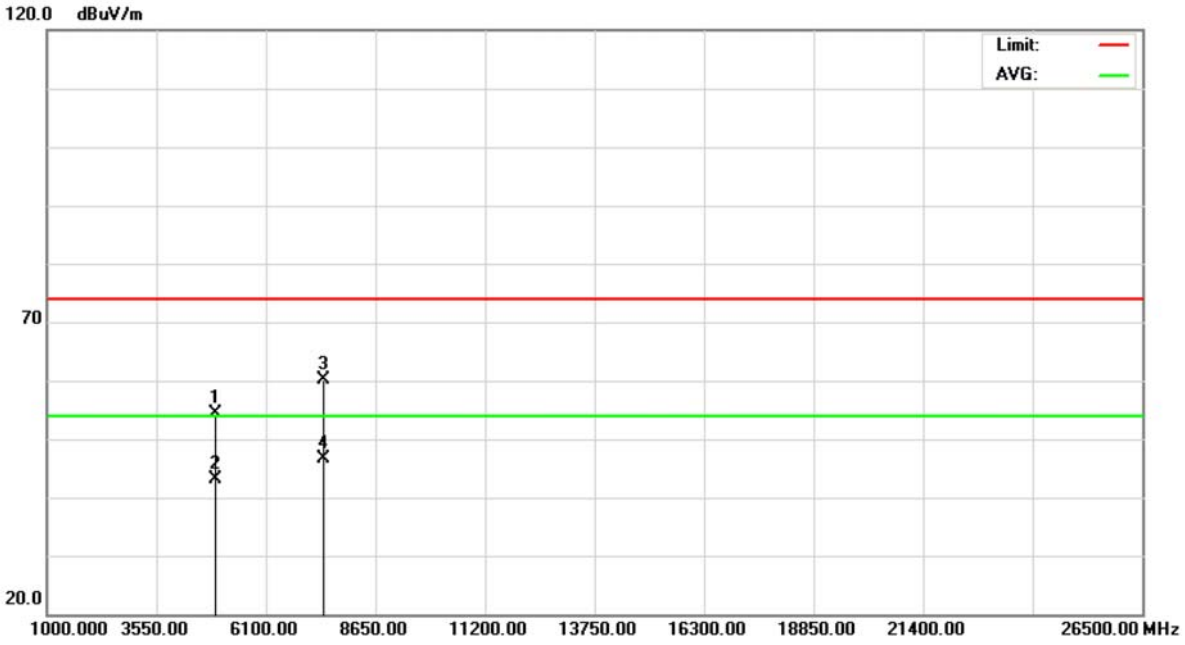
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2462.800	68.28	33.81	102.09	74.00	28.09	peak	
2	*	2462.800	63.93	33.81	97.74	54.00	43.74	AVG	
3		2483.500	23.28	33.92	57.20	74.00	-16.80	peak	
4		2483.500	11.11	33.92	45.03	54.00	-8.97	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2462 MHz		

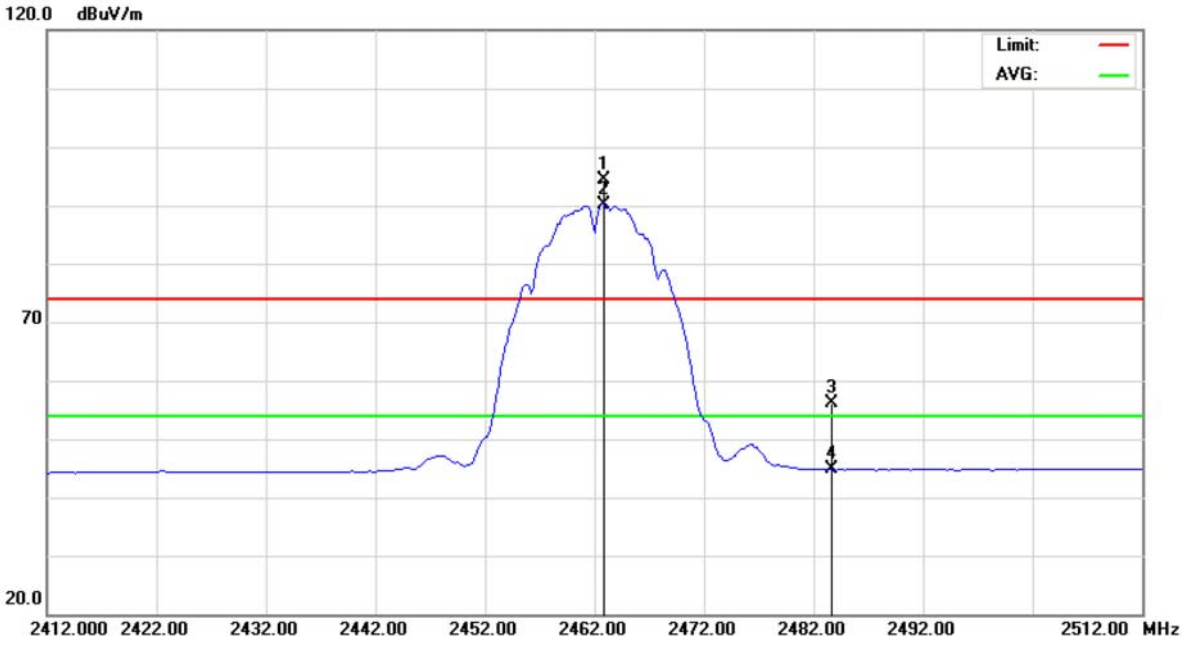
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.020	46.50	7.85	54.35	74.00	-19.65	peak	
2		4924.020	35.32	7.85	43.17	54.00	-10.83	AVG	
3		7388.080	44.86	15.27	60.13	74.00	-13.87	peak	
4	*	7388.080	31.34	15.27	46.61	54.00	-7.39	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2462 MHz		

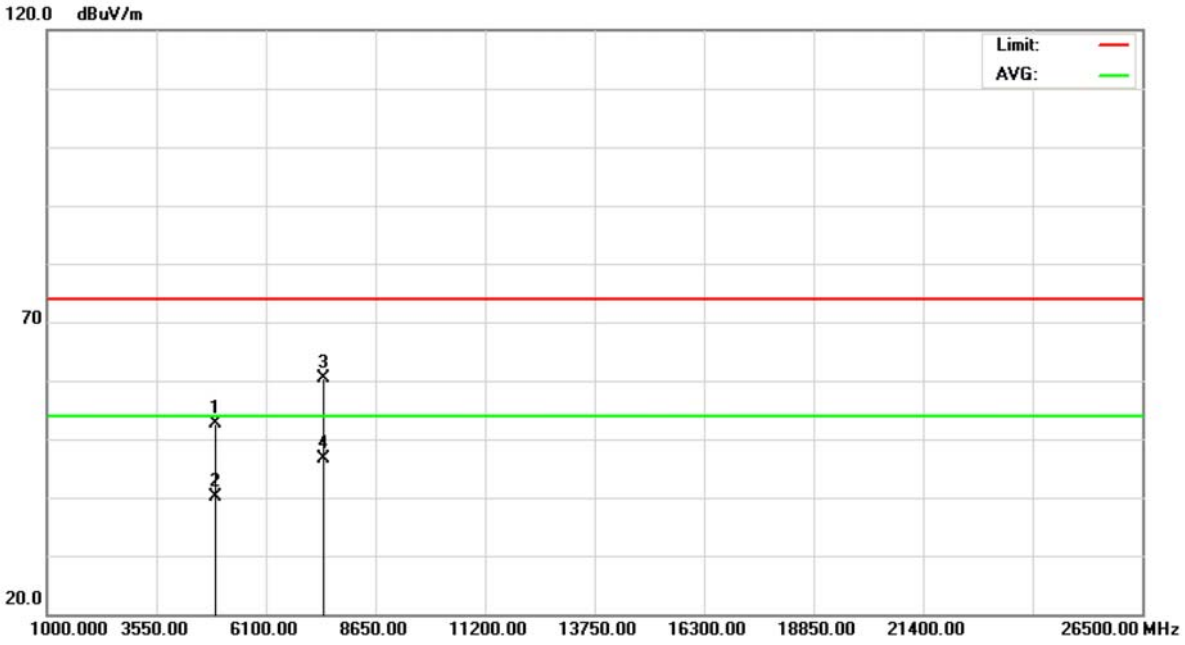
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2462.800	60.68	33.81	94.49	74.00	20.49	peak	
2	*	2462.800	56.44	33.81	90.25	54.00	36.25	AVG	
3		2483.500	22.20	33.92	56.12	74.00	-17.88	peak	
4		2483.500	10.85	33.92	44.77	54.00	-9.23	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2462 MHz		

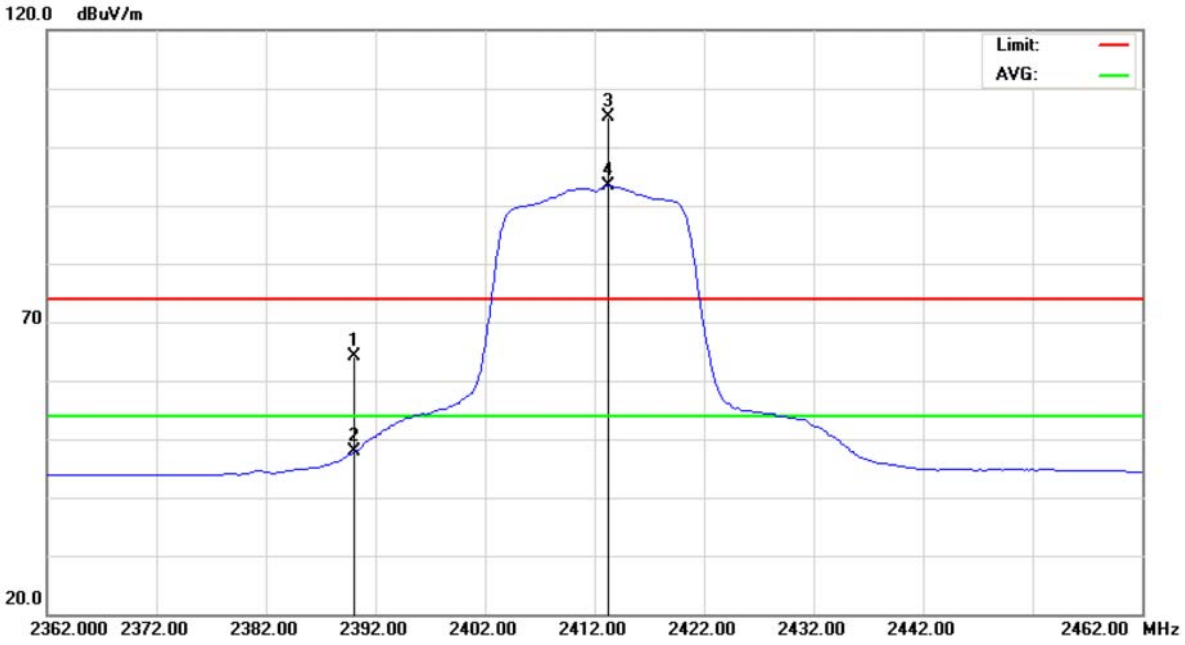
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4923.980	44.85	7.85	52.70	74.00	-21.30	peak	
2		4923.980	32.30	7.85	40.15	54.00	-13.85	AVG	
3		7388.080	45.20	15.27	60.47	74.00	-13.53	peak	
4	*	7388.080	31.32	15.27	46.59	54.00	-7.41	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2412 MHz		

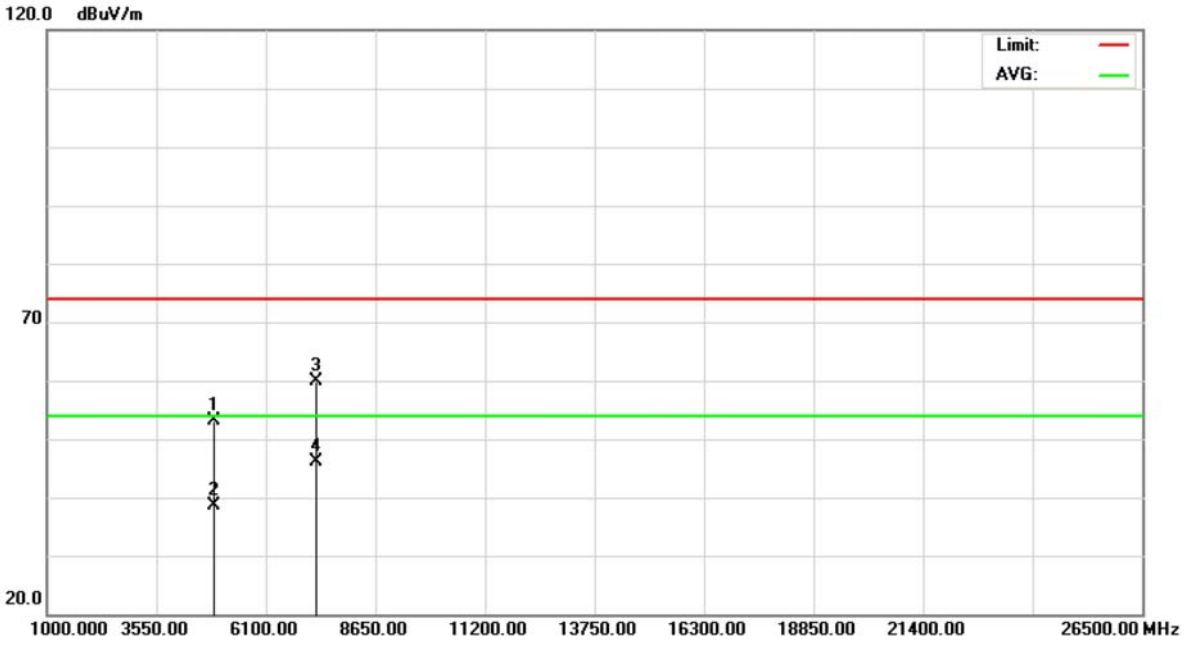
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	31.11	32.99	64.10	74.00	-9.90	peak	
2		2390.000	14.78	32.99	47.77	54.00	-6.23	AVG	
3	X	2413.200	72.06	33.12	105.18	74.00	31.18	peak	
4	*	2413.200	60.28	33.12	93.40	54.00	39.40	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2412 MHz		

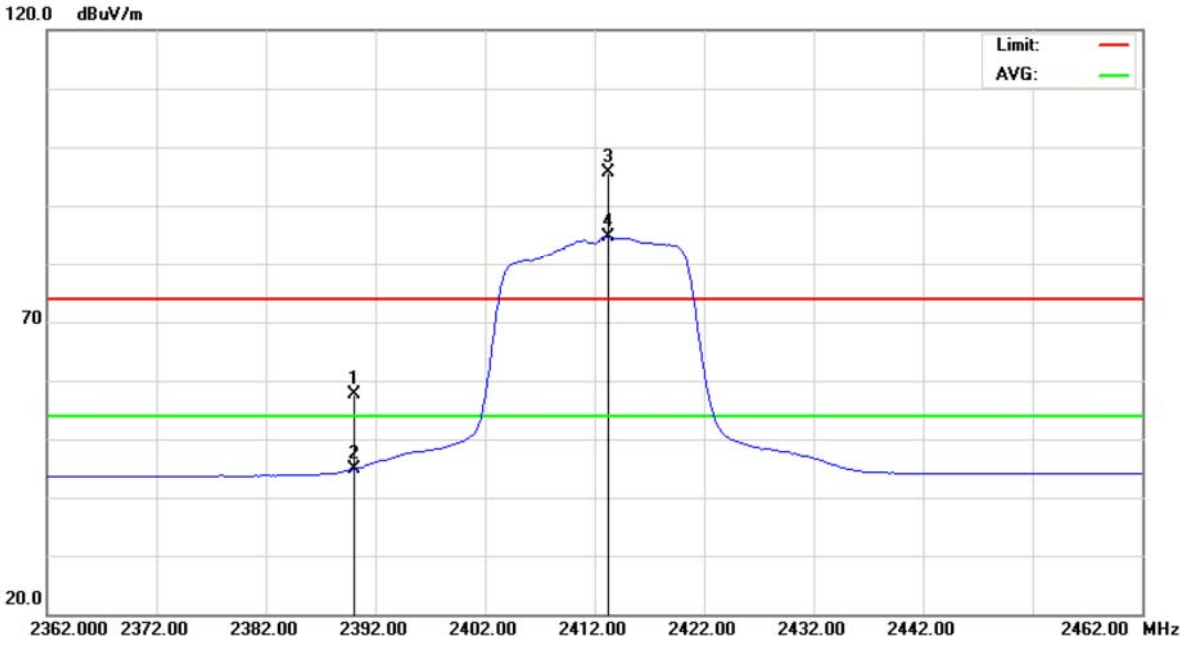
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4825.010	45.60	7.49	53.09	74.00	-20.91	peak	
2		4825.010	31.20	7.49	38.69	54.00	-15.31	AVG	
3		7237.110	45.06	14.87	59.93	74.00	-14.07	peak	
4	*	7237.110	31.19	14.87	46.06	54.00	-7.94	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2412 MHz		

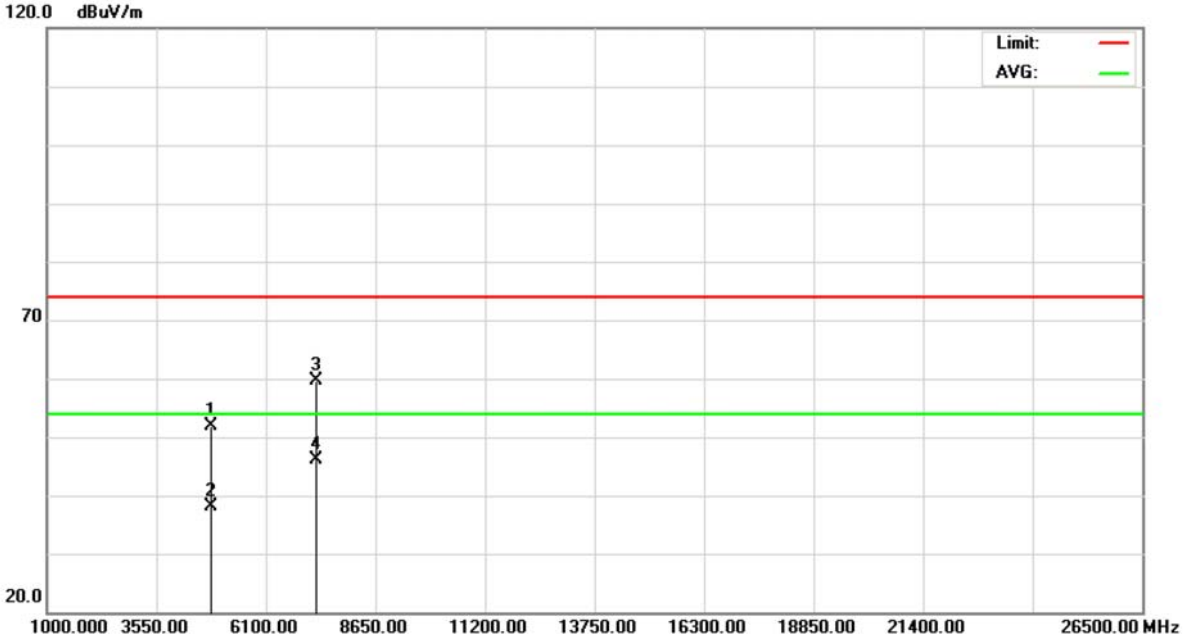
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	24.60	32.99	57.59	74.00	-16.41	peak	
2		2390.000	11.87	32.99	44.86	54.00	-9.14	AVG	
3	X	2413.200	62.59	33.12	95.71	74.00	21.71	peak	
4	*	2413.200	51.57	33.12	84.69	54.00	30.69	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2412 MHz		

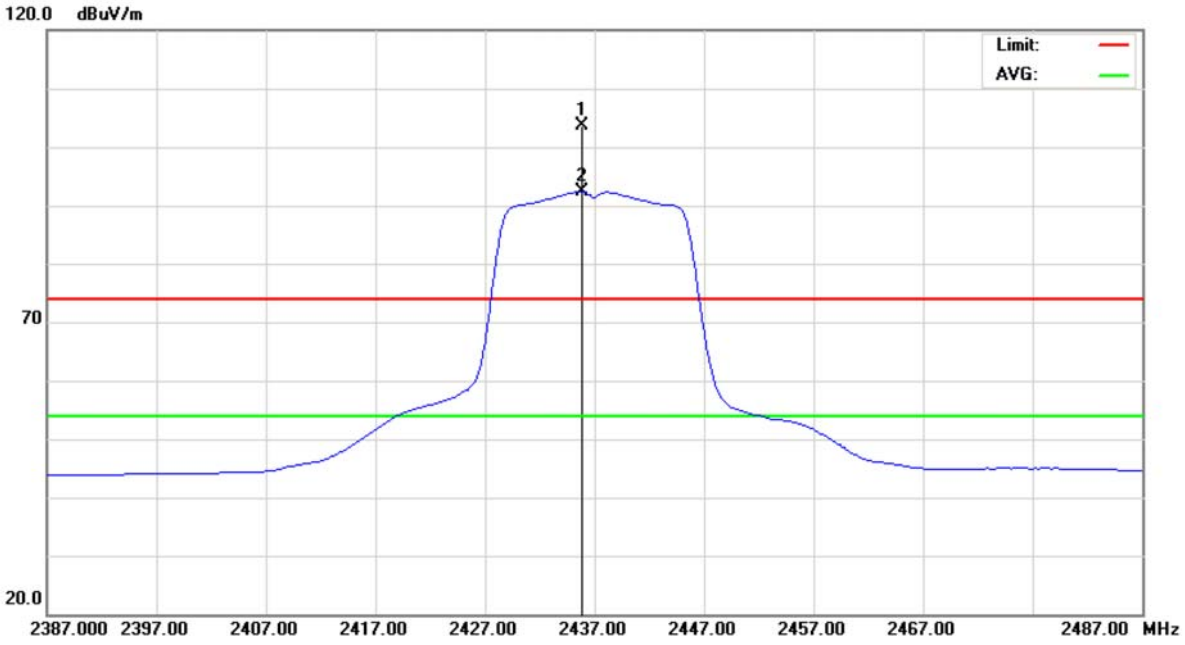
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.460	44.41	7.49	51.90	74.00	-22.10	peak	
2		4824.460	30.76	7.49	38.25	54.00	-15.75	AVG	
3		7235.970	44.75	14.87	59.62	74.00	-14.38	peak	
4	*	7236.250	31.18	14.87	46.05	54.00	-7.95	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2437 MHz		

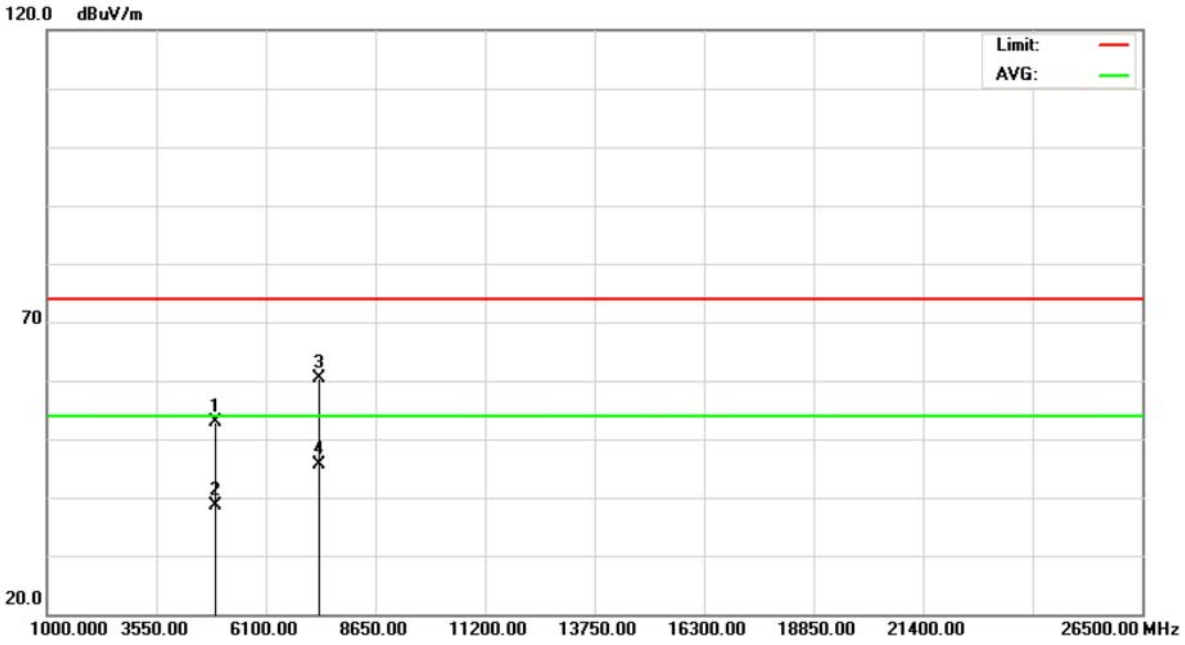
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2435.800	70.41	33.24	103.65	74.00	29.65	peak	
2	*	2435.800	59.15	33.24	92.39	54.00	38.39	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2437 MHz		

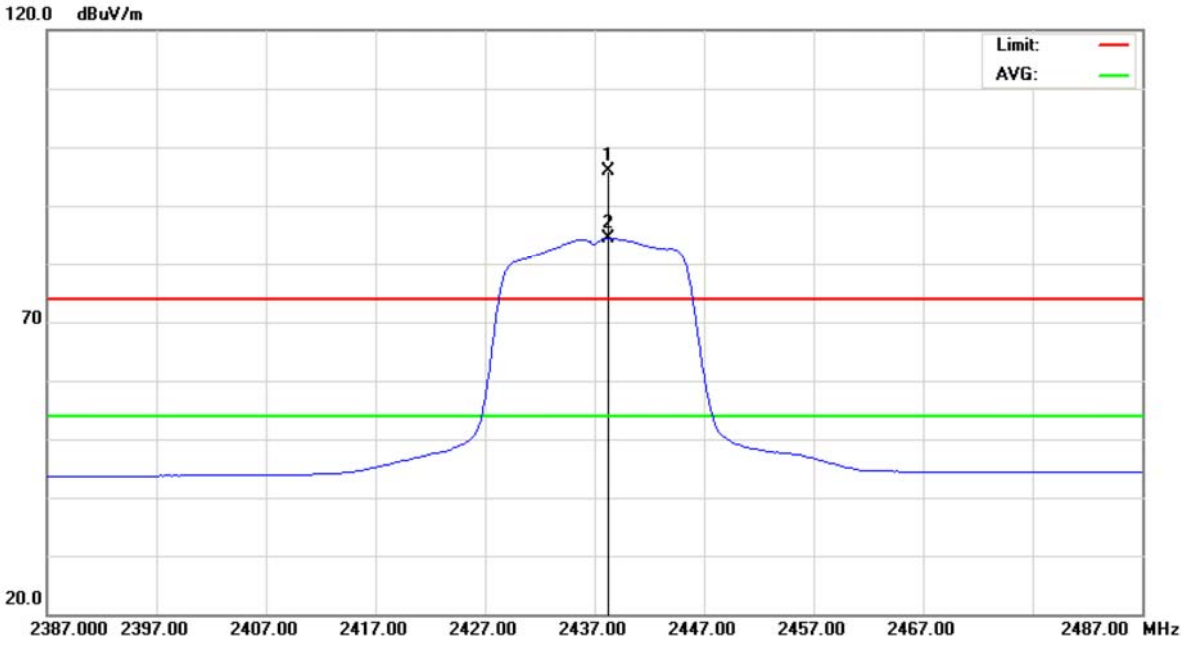
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4876.020	45.10	7.67	52.77	74.00	-21.23	peak	
2		4876.020	30.92	7.67	38.59	54.00	-15.41	AVG	
3		7311.550	45.24	15.07	60.31	74.00	-13.69	peak	
4	*	7311.550	30.63	15.07	45.70	54.00	-8.30	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2437 MHz		

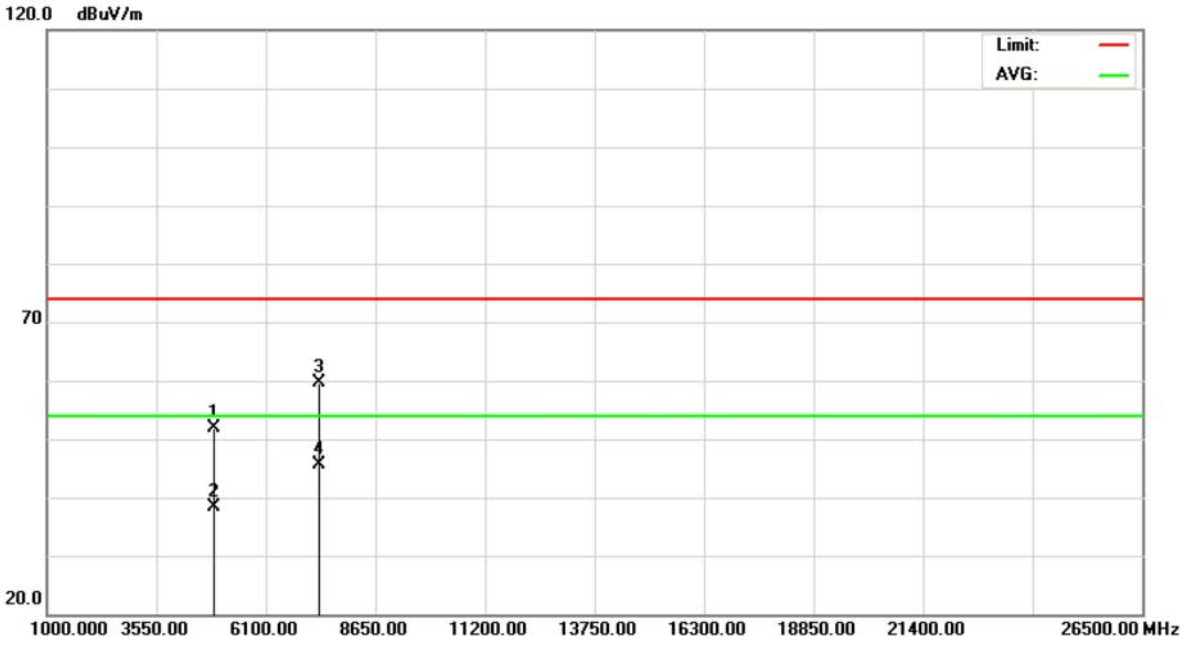
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2438.200	62.69	33.25	95.94	74.00	21.94	peak	
2	*	2438.200	51.22	33.25	84.47	54.00	30.47	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2437 MHz		

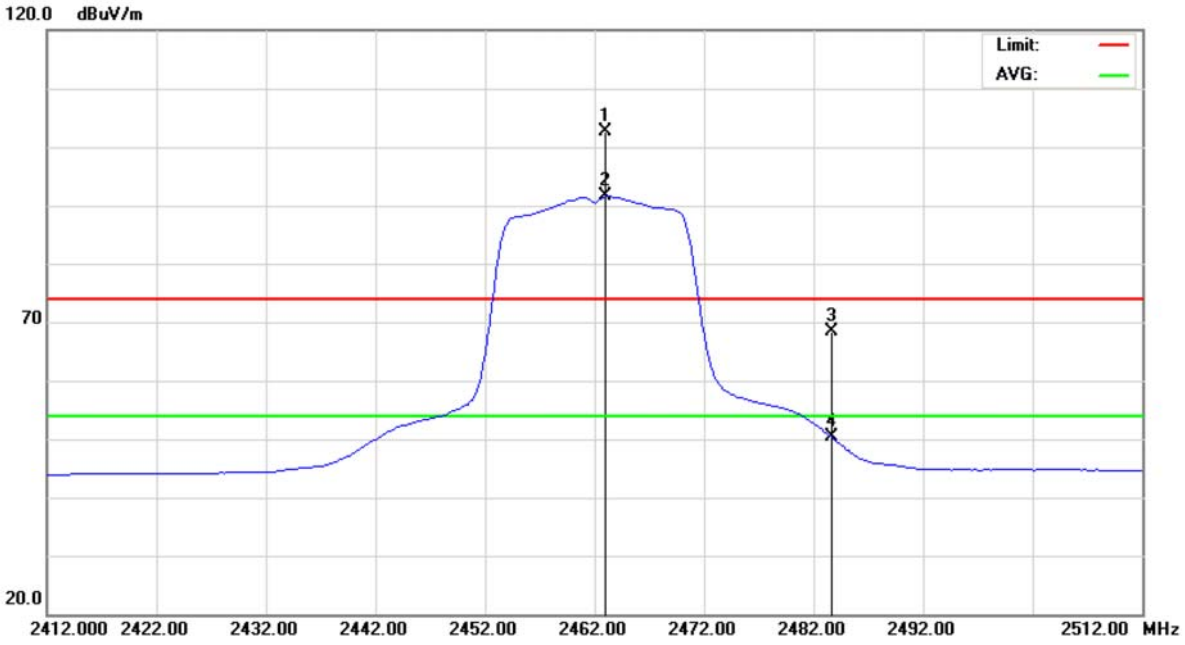
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4875.980	44.23	7.67	51.90	74.00	-22.10	peak	
2		4875.980	30.83	7.67	38.50	54.00	-15.50	AVG	
3		7310.820	44.58	15.06	59.64	74.00	-14.36	peak	
4	*	7310.820	30.57	15.06	45.63	54.00	-8.37	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2462 MHz		

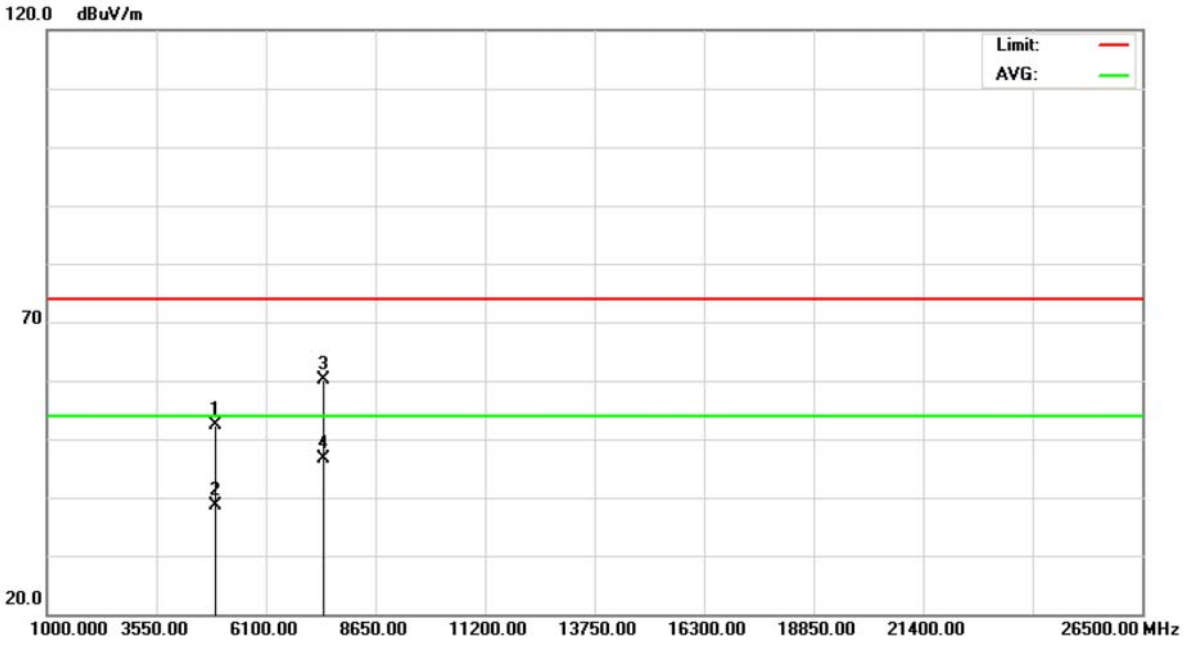
Polarization: Vertical



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	69.26	33.39	102.65	74.00	28.65	peak	
2	*	2463.000	58.15	33.39	91.54	54.00	37.54	AVG	
3		2483.500	34.98	33.50	68.48	74.00	-5.52	peak	
4		2483.500	16.92	33.50	50.42	54.00	-3.58	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2462 MHz		

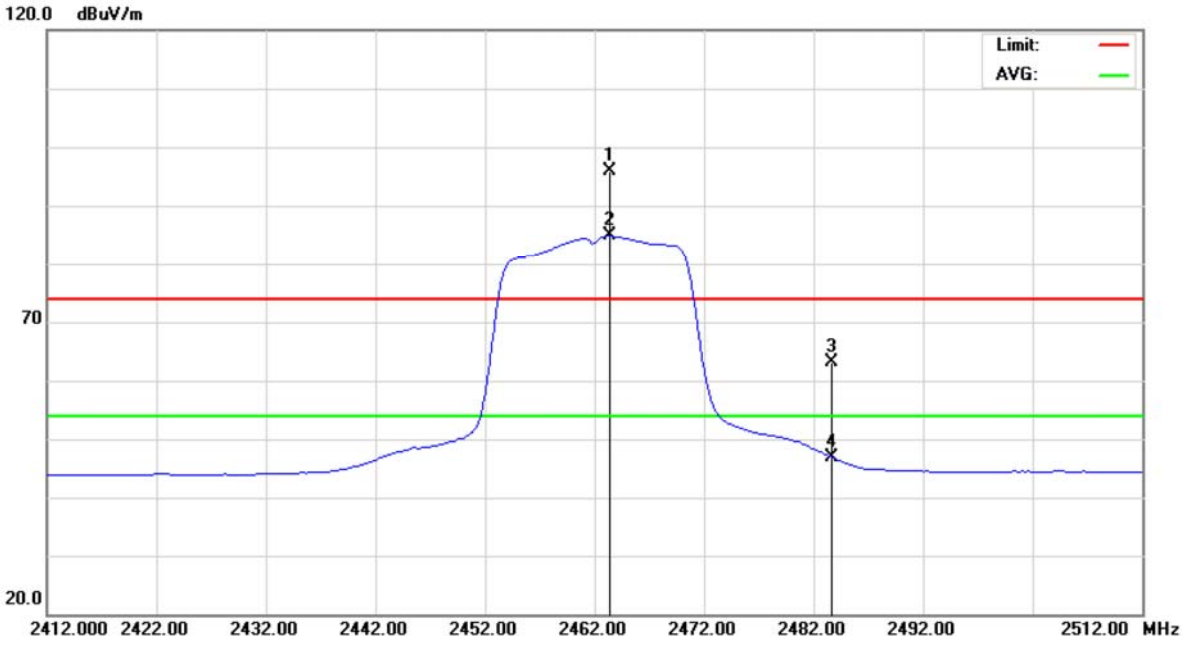
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4925.290	44.65	7.85	52.50	74.00	-21.50	peak	
2		4925.290	30.89	7.85	38.74	54.00	-15.26	AVG	
3		7388.220	44.90	15.27	60.17	74.00	-13.83	peak	
4	*	7388.220	31.32	15.27	46.59	54.00	-7.41	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2462 MHz		

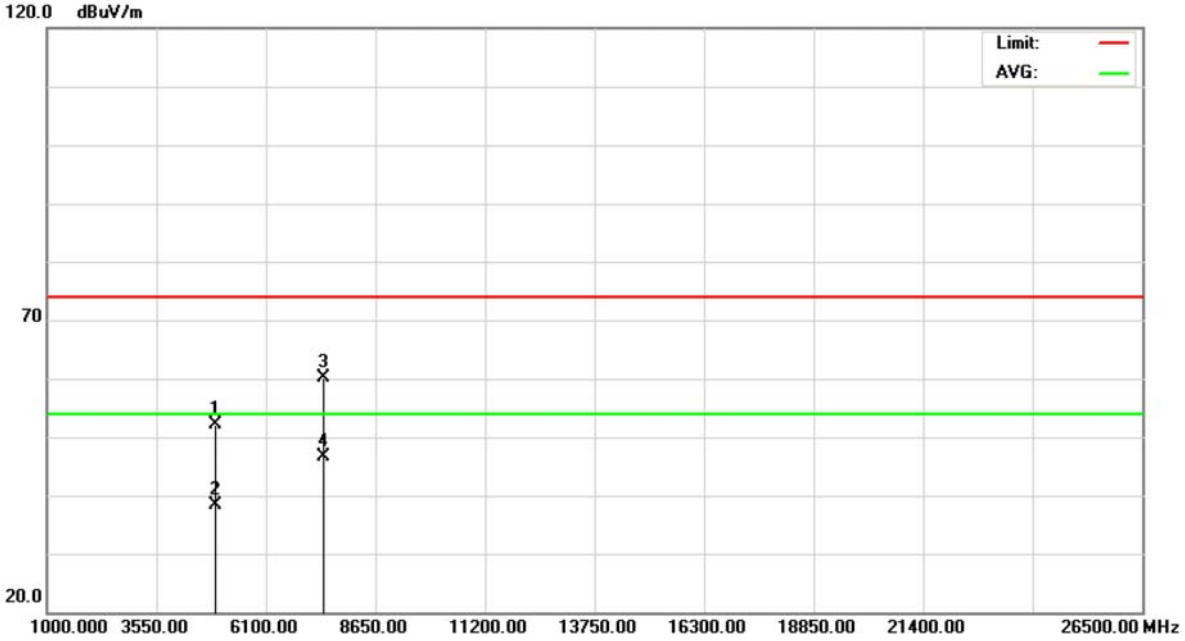
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2463.400	62.38	33.39	95.77	74.00	21.77	peak	
2	*	2463.400	51.40	33.39	84.79	54.00	30.79	AVG	
3		2483.500	29.65	33.50	63.15	74.00	-10.85	peak	
4		2483.500	13.45	33.50	46.95	54.00	-7.05	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2462 MHz		

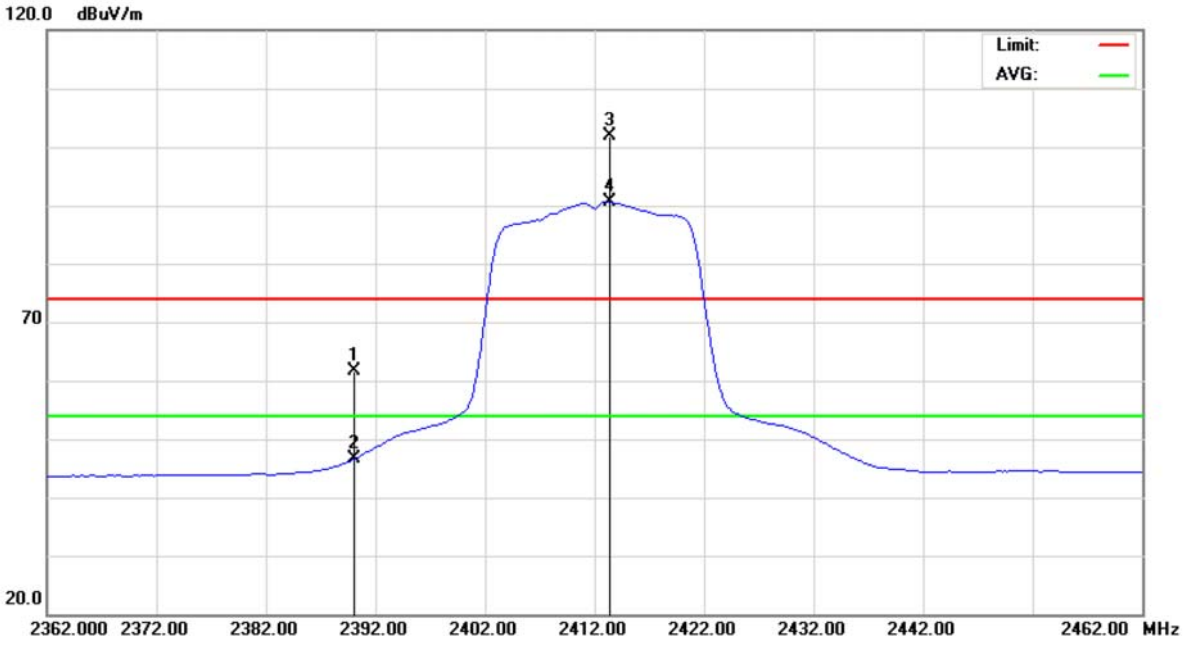
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4923.840	44.38	7.85	52.23	74.00	-21.77	peak	
2		4923.840	30.55	7.85	38.40	54.00	-15.60	AVG	
3		7387.820	44.79	15.27	60.06	74.00	-13.94	peak	
4	*	7387.820	31.28	15.27	46.55	54.00	-7.45	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

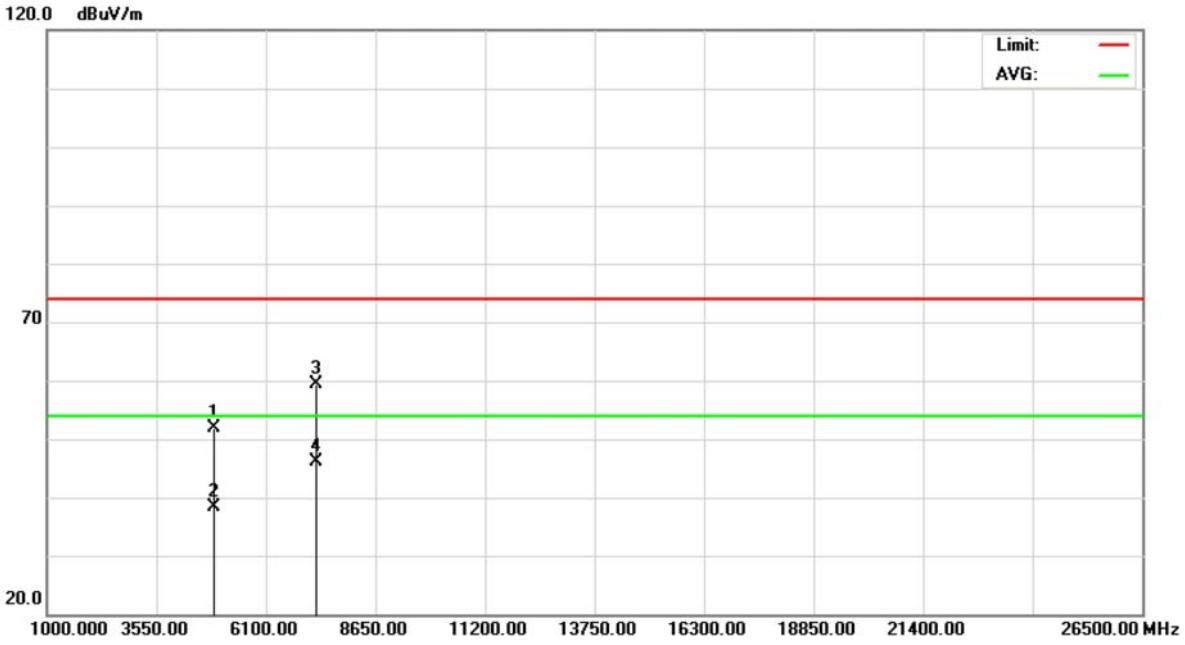
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	28.57	32.99	61.56	74.00	-12.44	peak	
2		2390.000	13.57	32.99	46.56	54.00	-7.44	AVG	
3	X	2413.400	68.72	33.12	101.84	74.00	27.84	peak	
4	*	2413.400	57.46	33.12	90.58	54.00	36.58	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

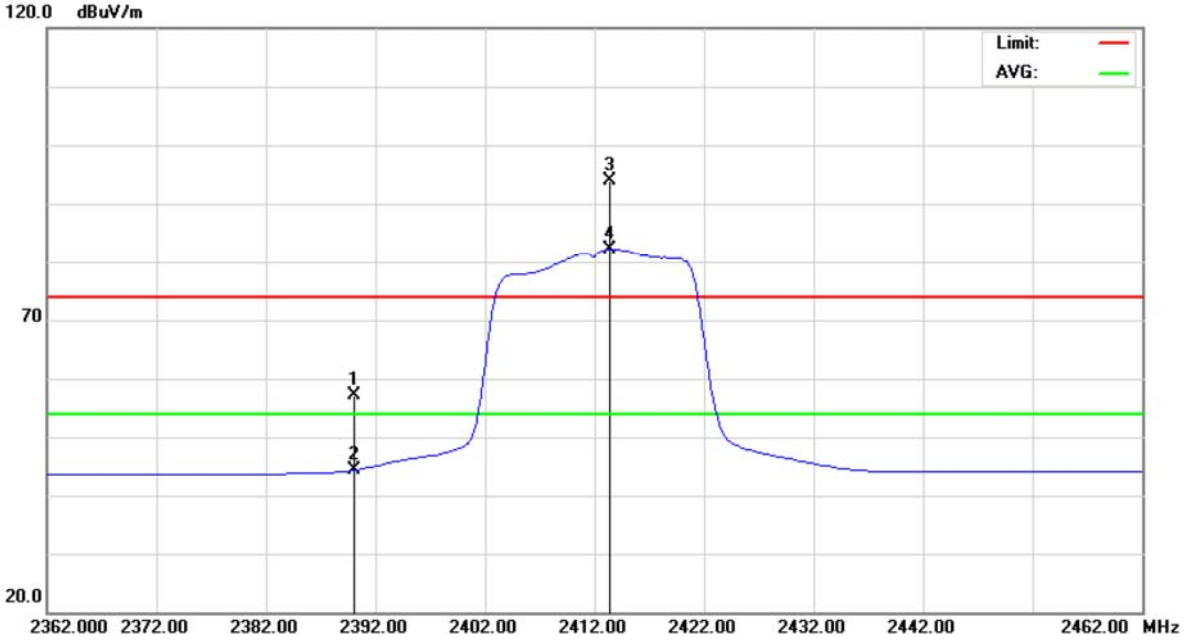
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4825.560	44.36	7.49	51.85	74.00	-22.15	peak	
2		4825.560	30.80	7.49	38.29	54.00	-15.71	AVG	
3		7234.420	44.44	14.86	59.30	74.00	-14.70	peak	
4	*	7234.420	31.15	14.86	46.01	54.00	-7.99	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

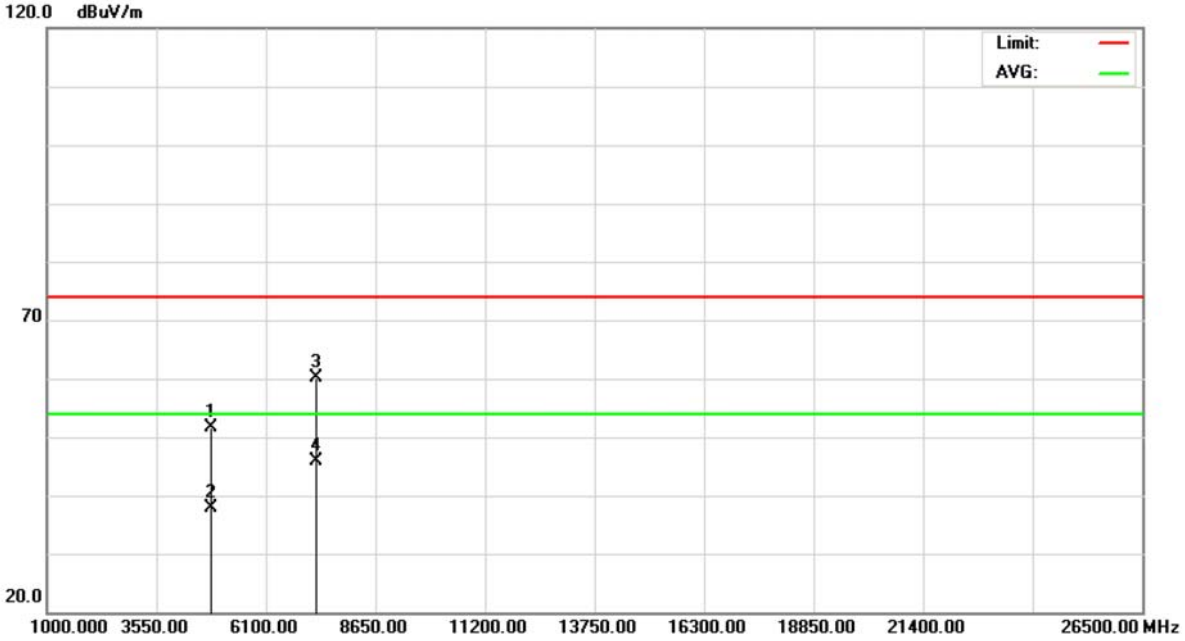
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	24.11	32.99	57.10	74.00	-16.90	peak	
2		2390.000	11.35	32.99	44.34	54.00	-9.66	AVG	
3	X	2413.400	60.80	33.12	93.92	74.00	19.92	peak	
4	*	2413.400	49.03	33.12	82.15	54.00	28.15	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

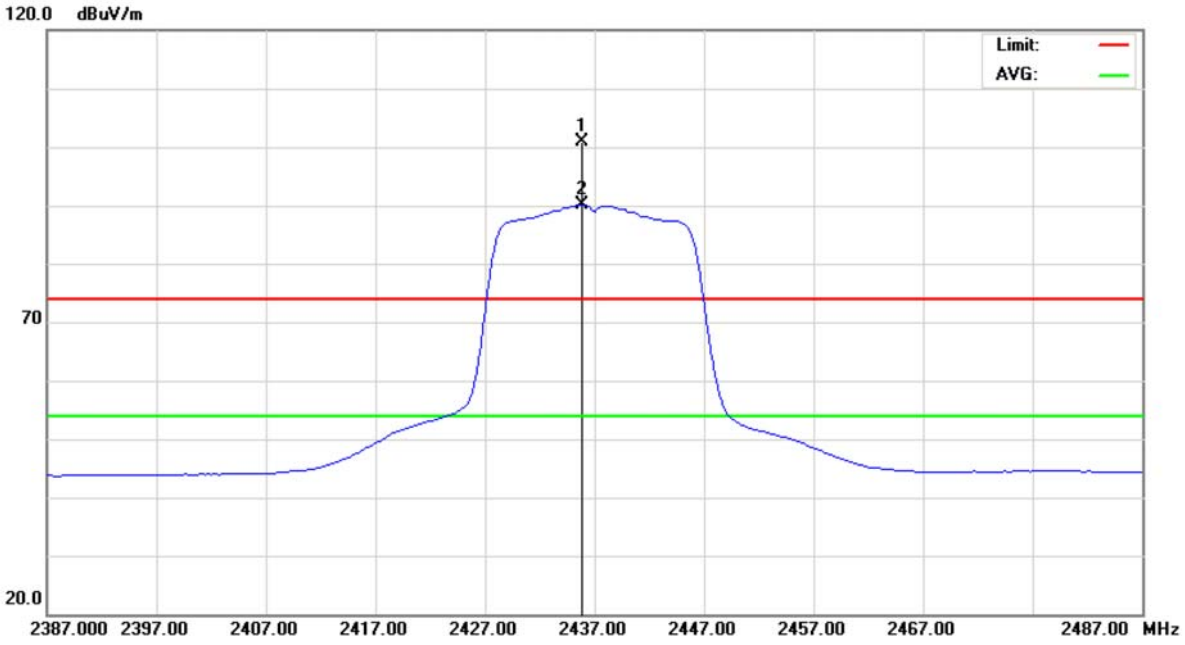
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.080	44.15	7.49	51.64	74.00	-22.36	peak	
2		4824.080	30.46	7.49	37.95	54.00	-16.05	AVG	
3		7236.440	45.21	14.87	60.08	74.00	-13.92	peak	
4	*	7236.440	31.04	14.87	45.91	54.00	-8.09	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

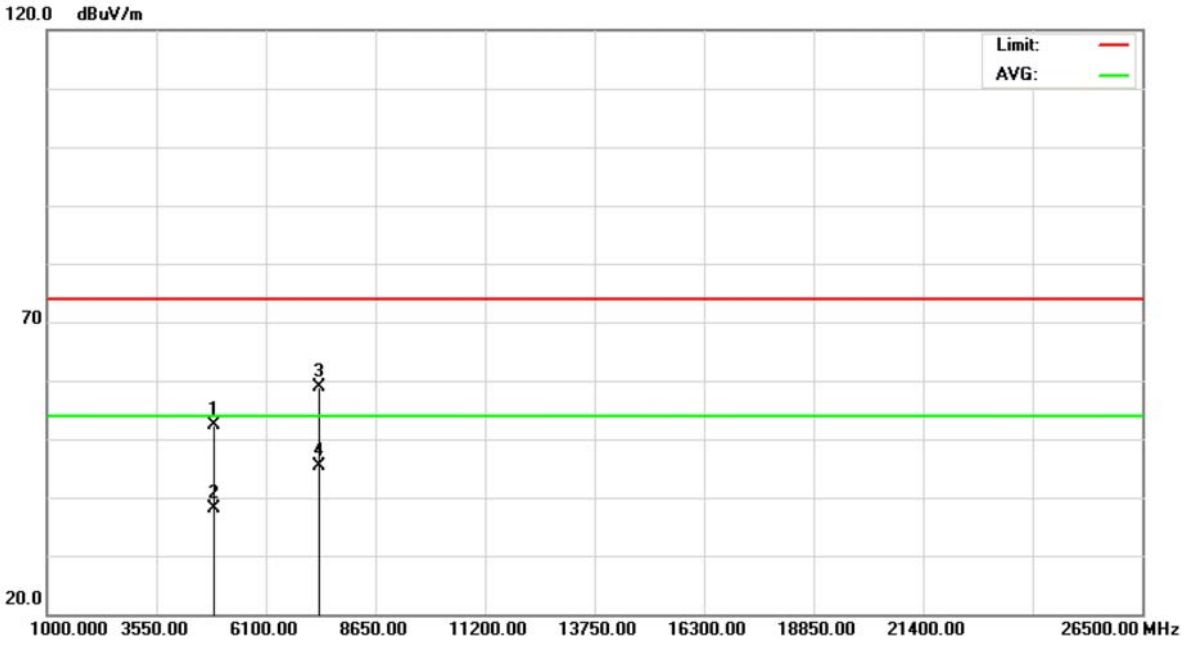
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2435.800	67.71	33.24	100.95	74.00	26.95	peak	
2	*	2435.800	56.89	33.24	90.13	54.00	36.13	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

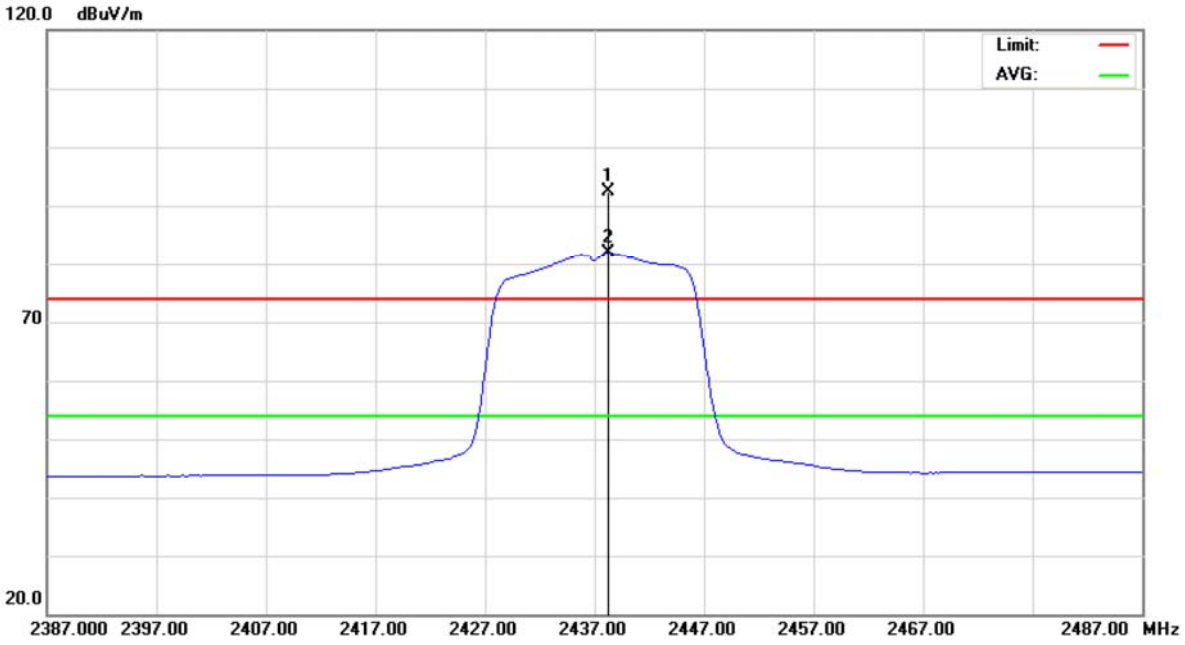
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.070	44.77	7.67	52.44	74.00	-21.56	peak	
2		4874.070	30.48	7.67	38.15	54.00	-15.85	AVG	
3		7311.490	43.70	15.07	58.77	74.00	-15.23	peak	
4	*	7311.490	30.35	15.07	45.42	54.00	-8.58	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

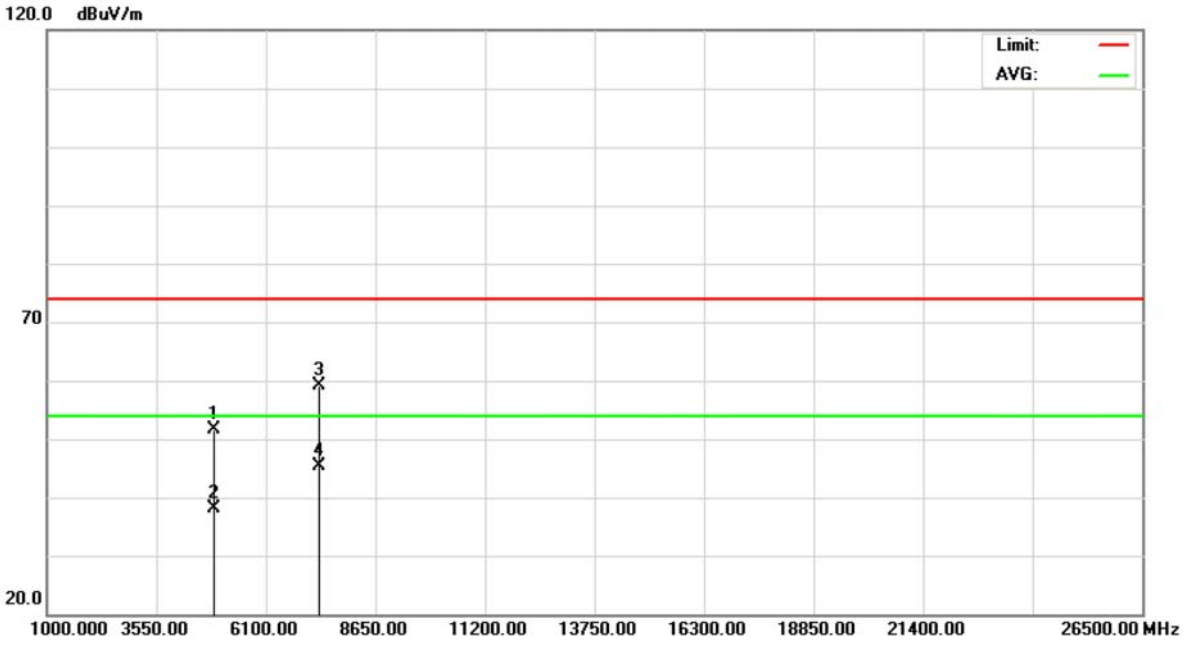
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2438.200	59.17	33.25	92.42	74.00	18.42	peak	
2	*	2438.200	48.54	33.25	81.79	54.00	27.79	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

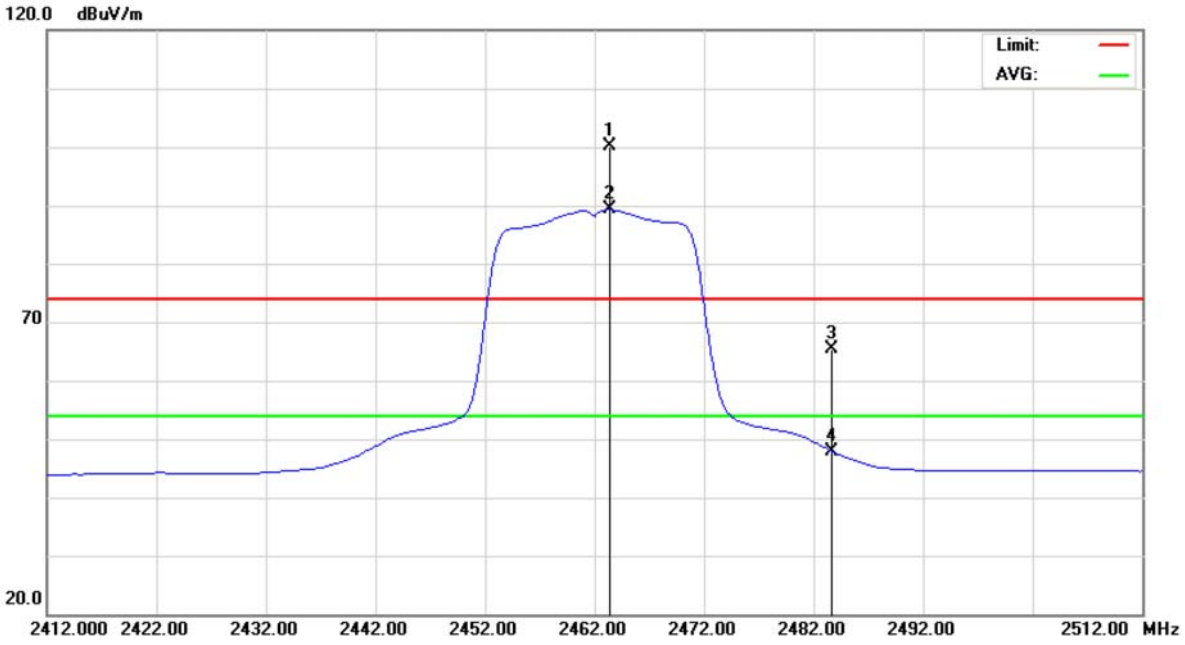
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.350	43.88	7.67	51.55	74.00	-22.45	peak	
2		4874.350	30.44	7.67	38.11	54.00	-15.89	AVG	
3		7310.830	44.09	15.06	59.15	74.00	-14.85	peak	
4	*	7310.830	30.28	15.06	45.34	54.00	-8.66	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

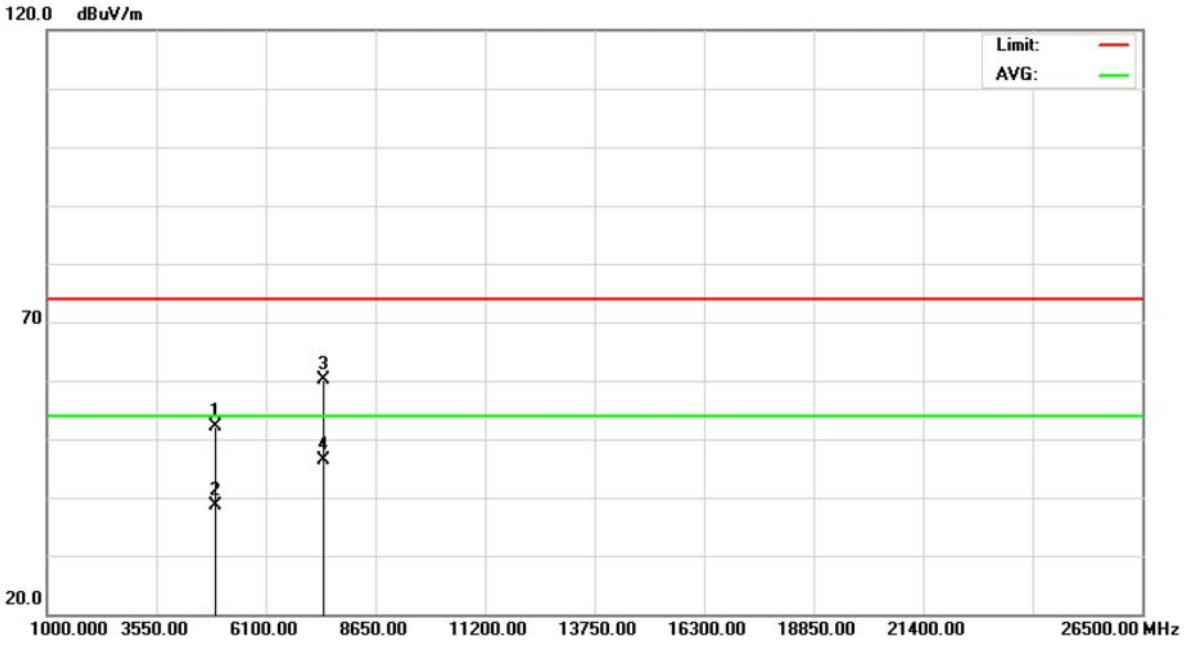
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2463.400	66.71	33.39	100.10	74.00	26.10	peak	
2	*	2463.400	55.92	33.39	89.31	54.00	35.31	AVG	
3		2483.500	31.79	33.50	65.29	74.00	-8.71	peak	
4		2483.500	14.49	33.50	47.99	54.00	-6.01	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

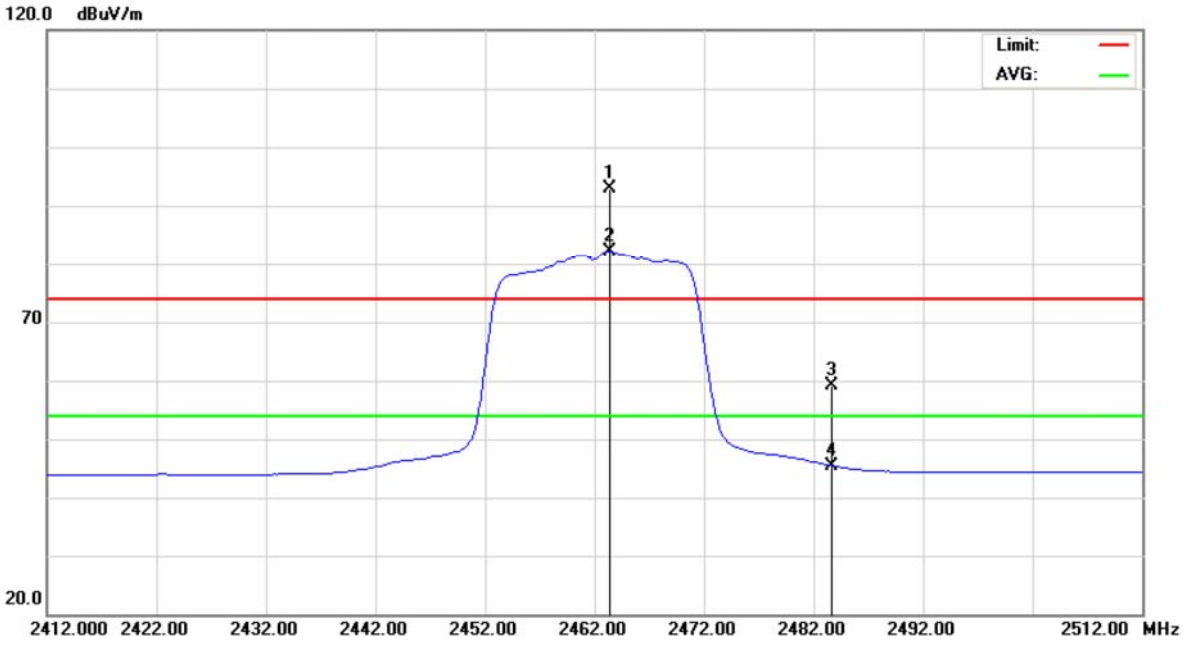
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.420	44.29	7.85	52.14	74.00	-21.86	peak	
2		4924.420	30.68	7.85	38.53	54.00	-15.47	AVG	
3		7385.050	44.87	15.26	60.13	74.00	-13.87	peak	
4	*	7385.050	31.23	15.26	46.49	54.00	-7.51	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

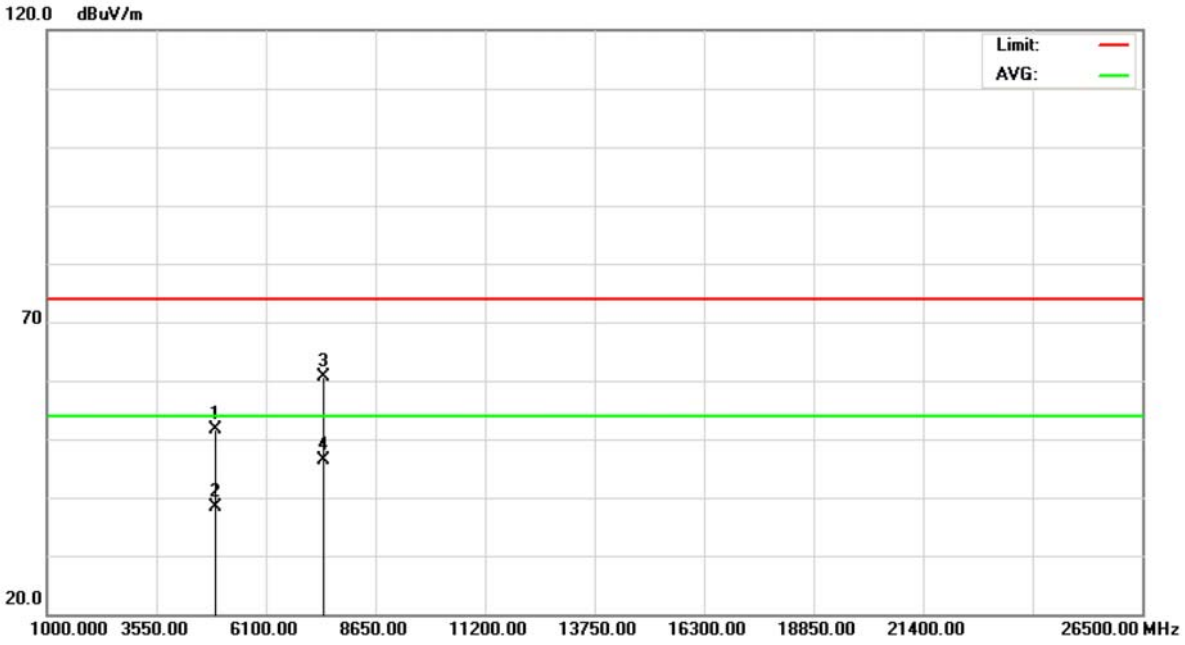
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2463.400	59.60	33.39	92.99	74.00	18.99	peak	
2	*	2463.400	48.72	33.39	82.11	54.00	28.11	AVG	
3		2483.500	25.58	33.50	59.08	74.00	-14.92	peak	
4		2483.500	11.98	33.50	45.48	54.00	-8.52	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

Polarization: Horizontal

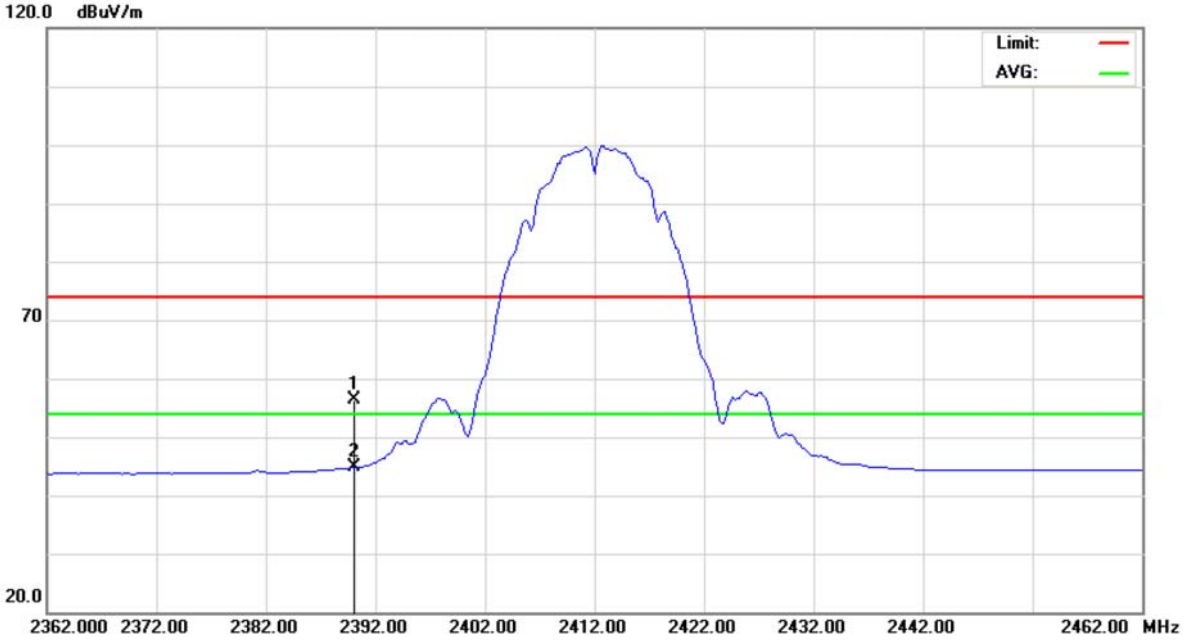


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.070	43.81	7.85	51.66	74.00	-22.34	peak	
2		4924.070	30.42	7.85	38.27	54.00	-15.73	AVG	
3		7386.050	45.48	15.26	60.74	74.00	-13.26	peak	
4	*	7386.050	31.06	15.26	46.32	54.00	-7.68	AVG	

8.9 TEST RESULTS (RESTRICTED BANDS)

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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.		

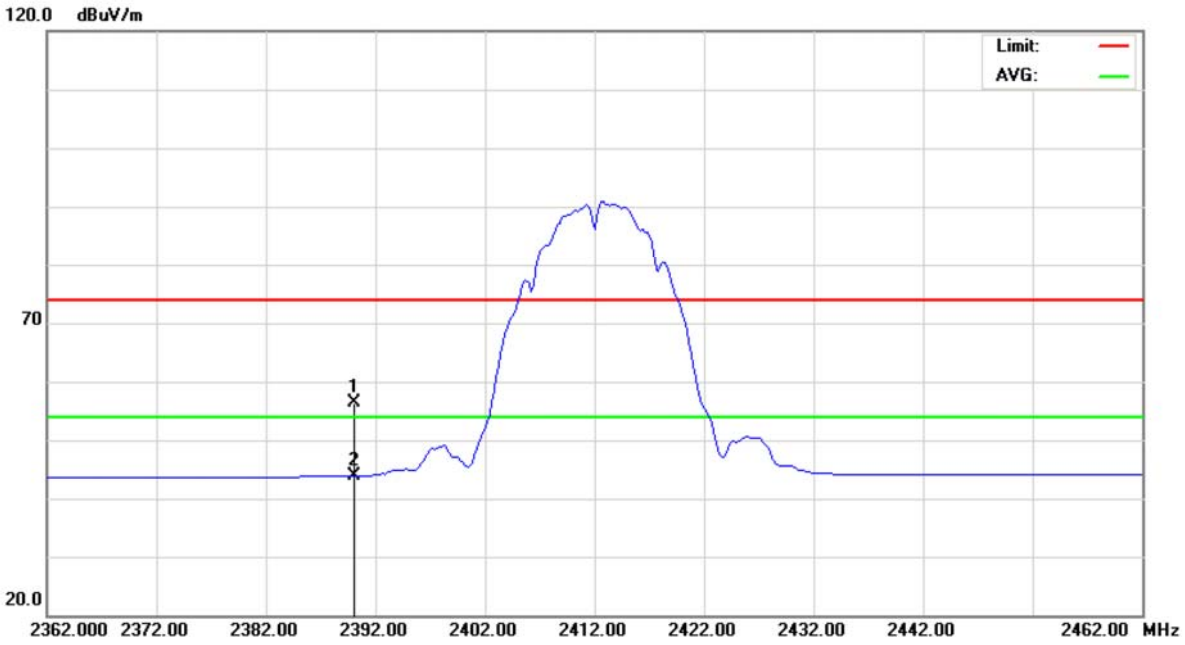
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	23.45	32.99	56.44	74.00	-17.56	peak	
2	*	2390.000	11.85	32.99	44.84	54.00	-9.16	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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.		

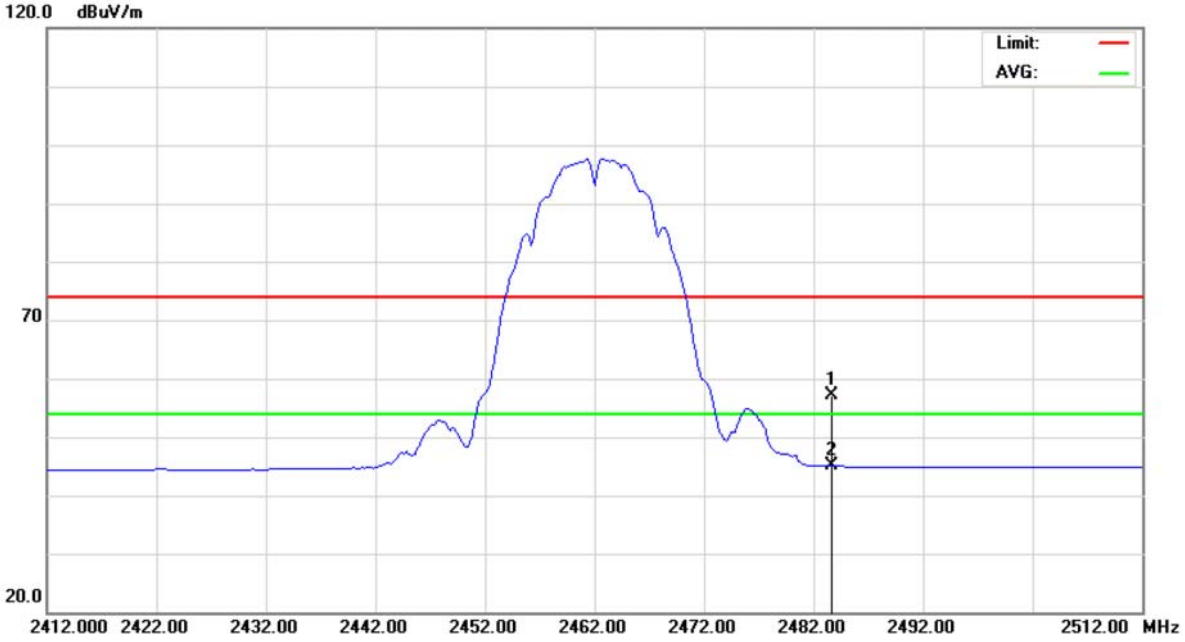
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	23.28	32.99	56.27	74.00	-17.73	peak	
2	*	2390.000	10.88	32.99	43.87	54.00	-10.13	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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.		

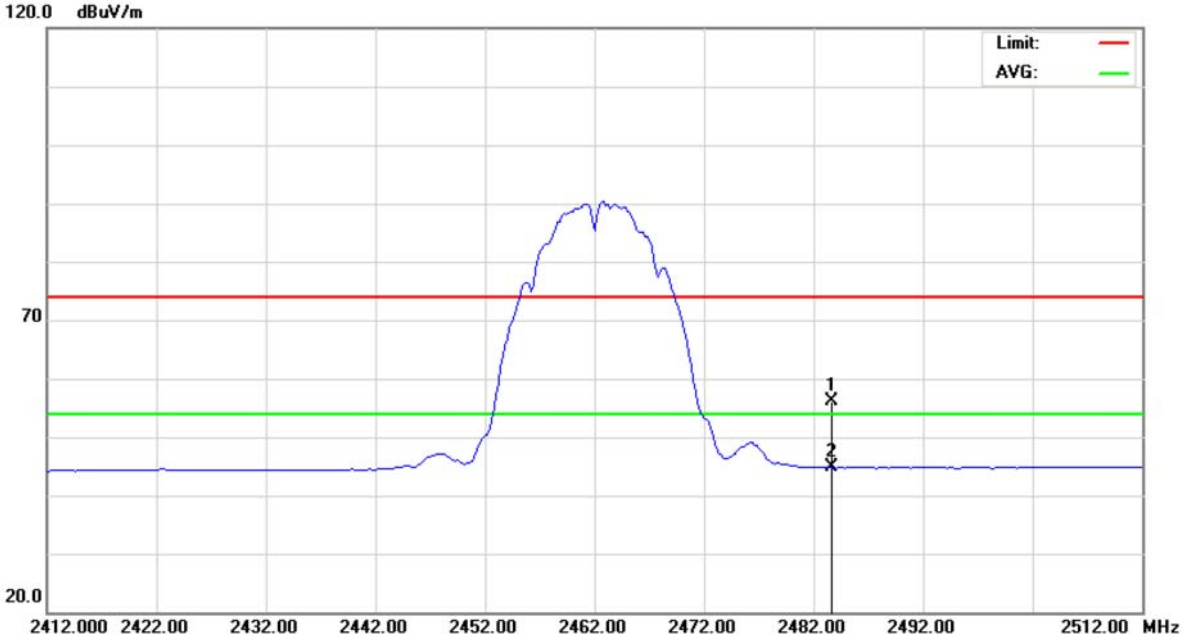
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	23.28	33.92	57.20	74.00	-16.80	peak	
2	*	2483.500	11.11	33.92	45.03	54.00	-8.97	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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.		

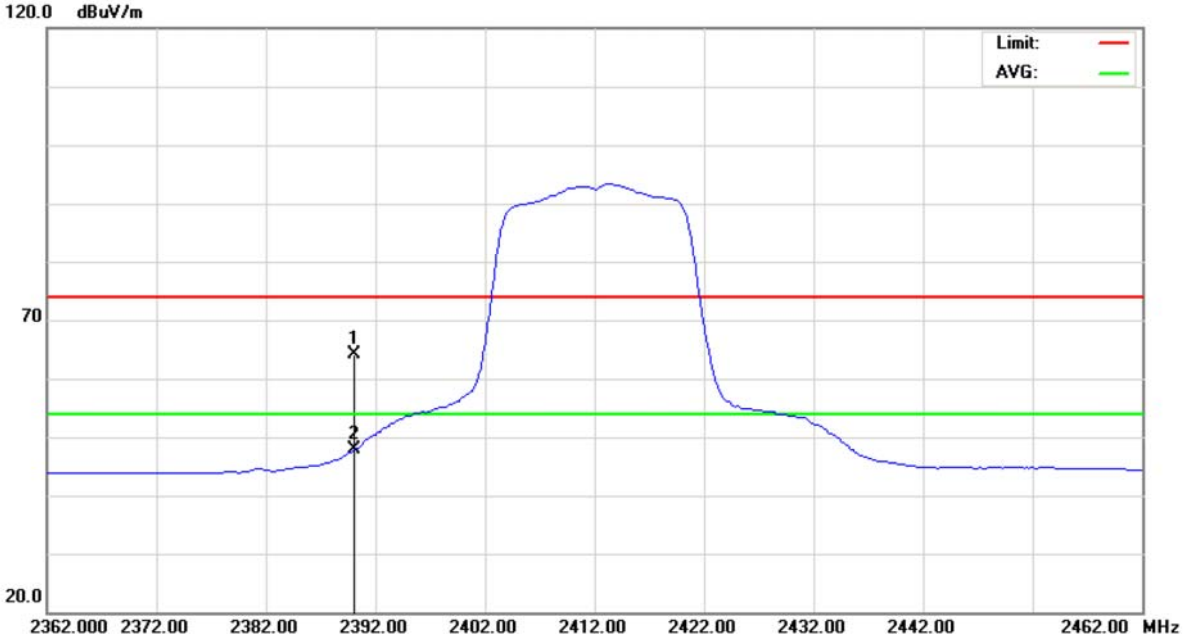
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	22.20	33.92	56.12	74.00	-17.88	peak	
2	*	2483.500	10.85	33.92	44.77	54.00	-9.23	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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.		

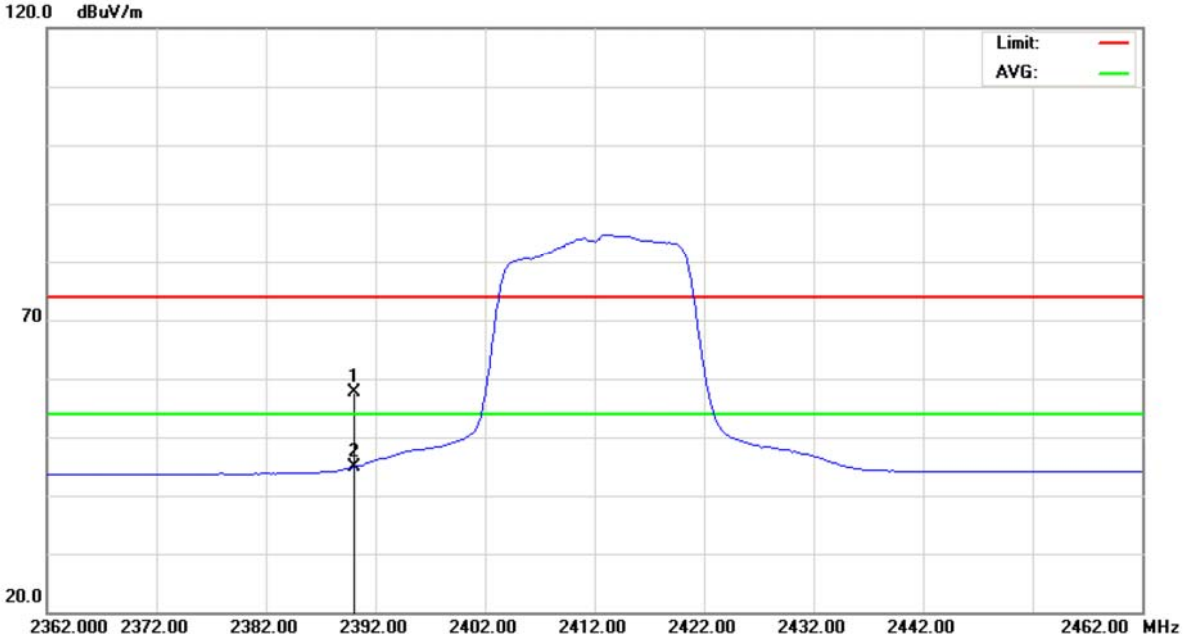
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	31.11	32.99	64.10	74.00	-9.90	peak	
2	*	2390.000	14.78	32.99	47.77	54.00	-6.23	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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.		

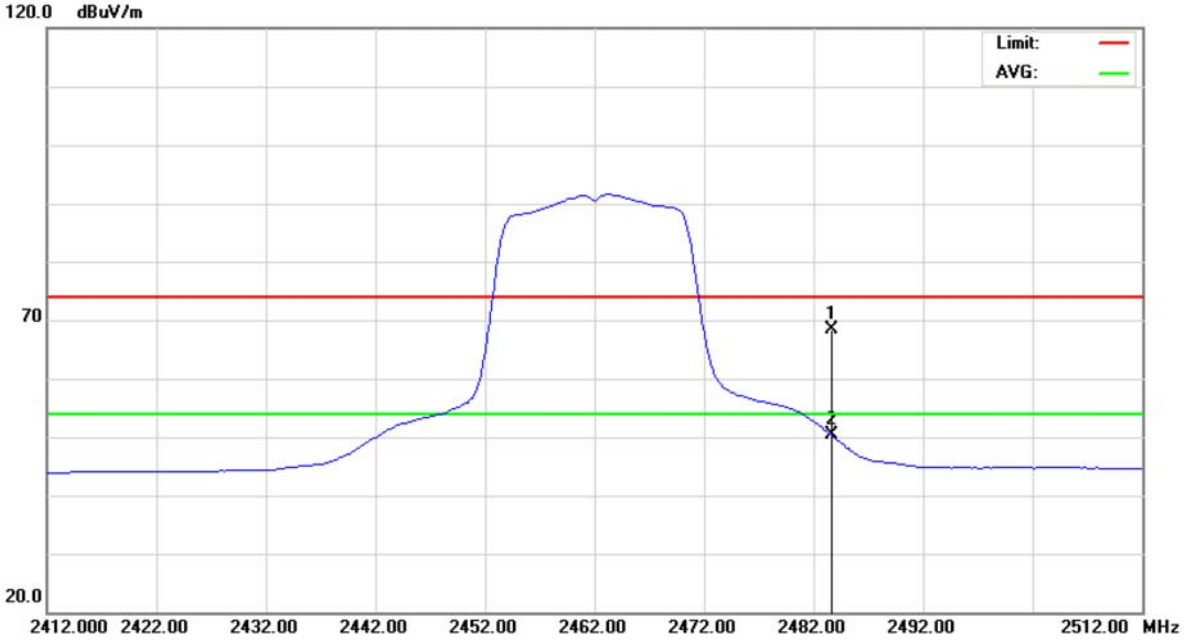
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	24.60	32.99	57.59	74.00	-16.41	peak	
2	*	2390.000	11.87	32.99	44.86	54.00	-9.14	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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.		

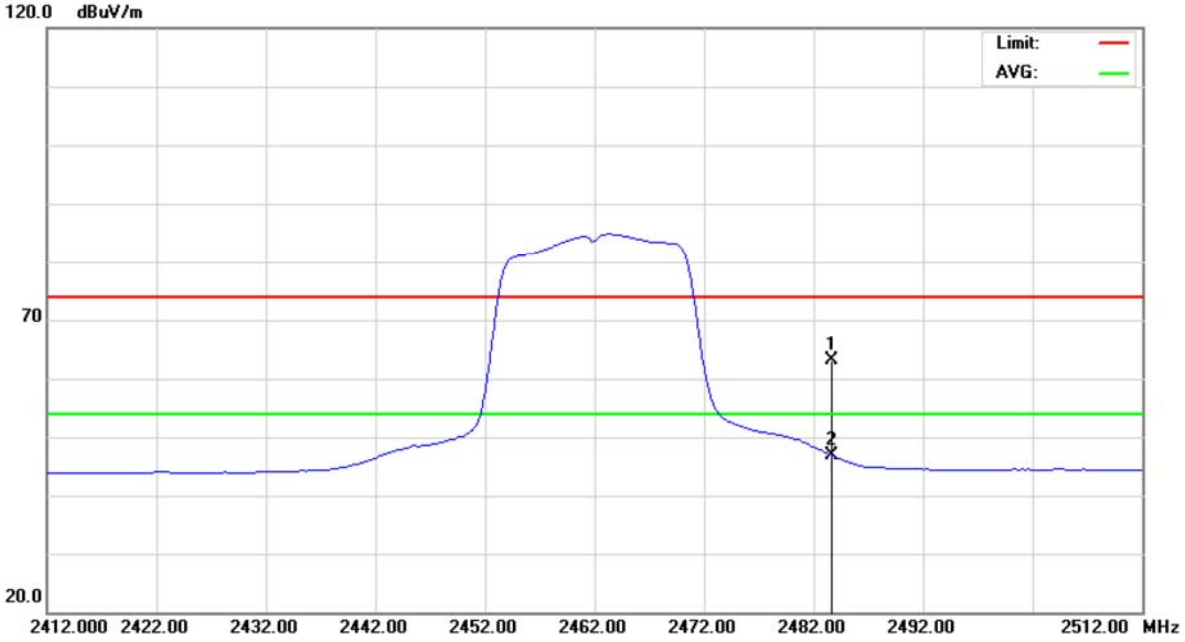
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	34.98	33.50	68.48	74.00	-5.52	peak	
2	*	2483.500	16.92	33.50	50.42	54.00	-3.58	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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.		

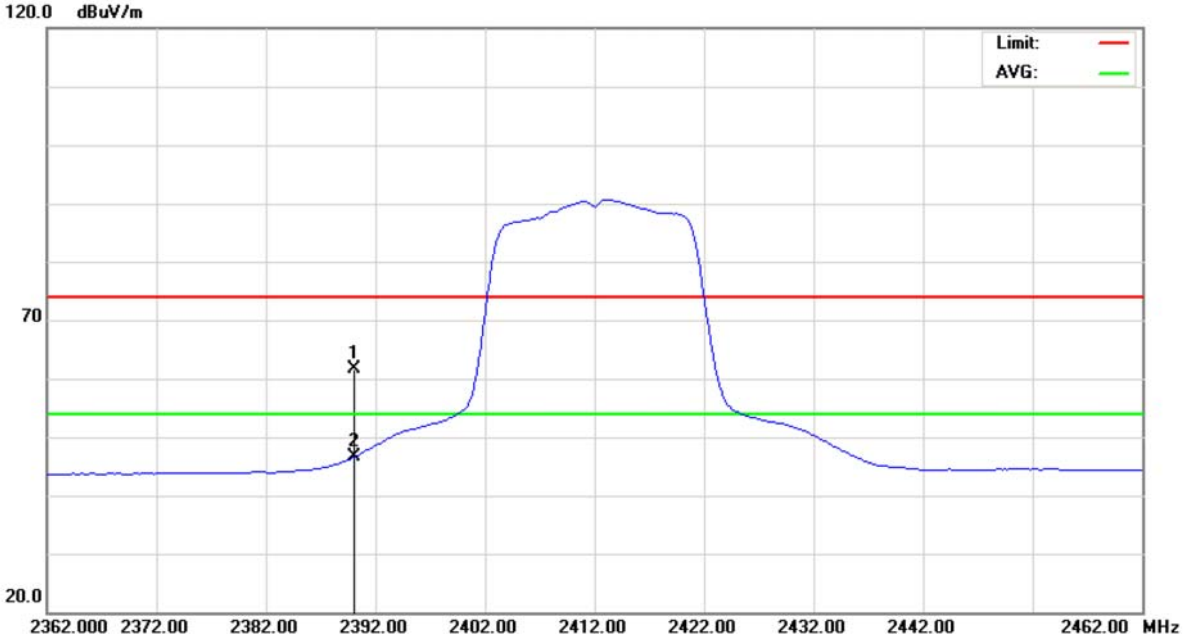
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	29.65	33.50	63.15	74.00	-10.85	peak	
2	*	2483.500	13.45	33.50	46.95	54.00	-7.05	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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.		

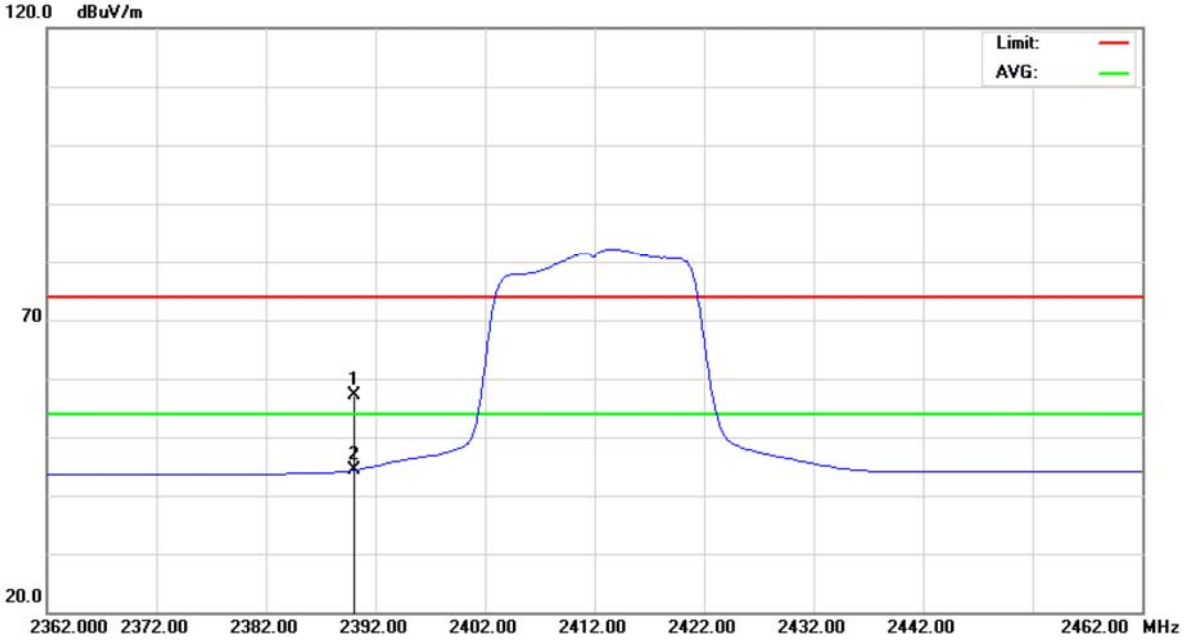
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	28.57	32.99	61.56	74.00	-12.44	peak	
2	*	2390.000	13.57	32.99	46.56	54.00	-7.44	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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.		

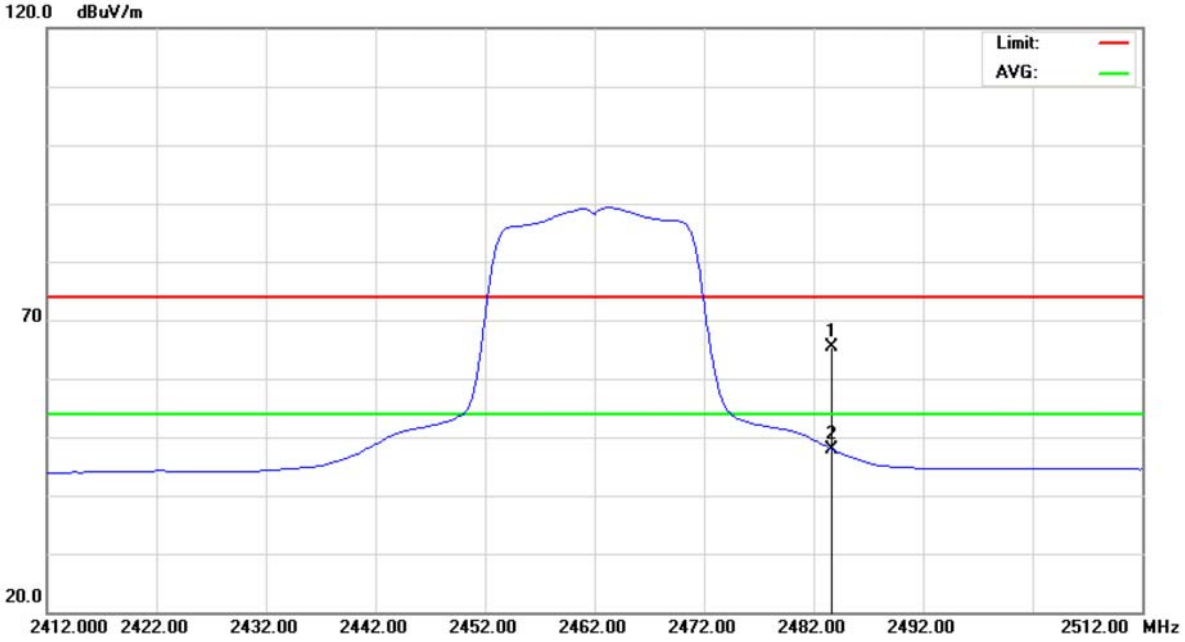
Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	24.11	32.99	57.10	74.00	-16.90	peak	
2	*	2390.000	11.35	32.99	44.34	54.00	-9.66	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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.		

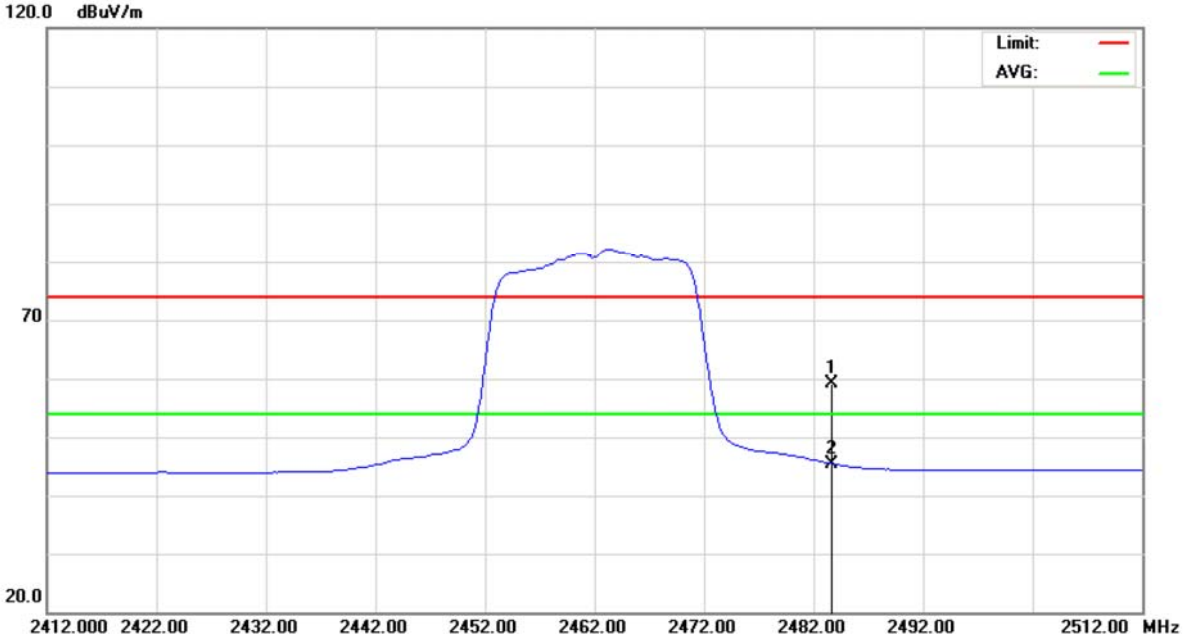
Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	31.79	33.50	65.29	74.00	-8.71	peak	
2	*	2483.500	14.49	33.50	47.99	54.00	-6.01	AVG	

E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	24°C	Relative Humidity	46%
Test Voltage	DC 12V		
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	25.58	33.50	59.08	74.00	-14.92	peak	
2	*	2483.500	11.98	33.50	45.48	54.00	-8.52	AVG	

9 POWER SPECTRAL DENSITY

9.1 LIMIT

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

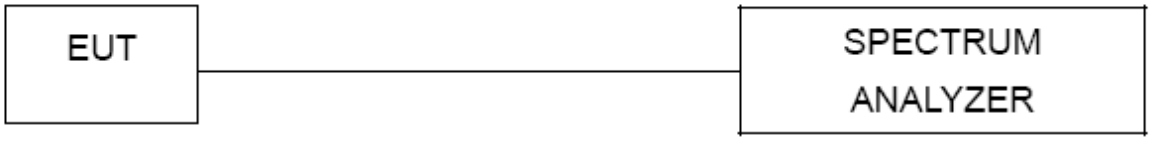
9.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

9.3 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=30 kHz, Sweep time = 500s.

9.4 TEST SETUP LAYOUT



9.5 DEVIATION FROM TEST STANDARD

No deviation

9.6 EUT OPERATING CONDITIONS

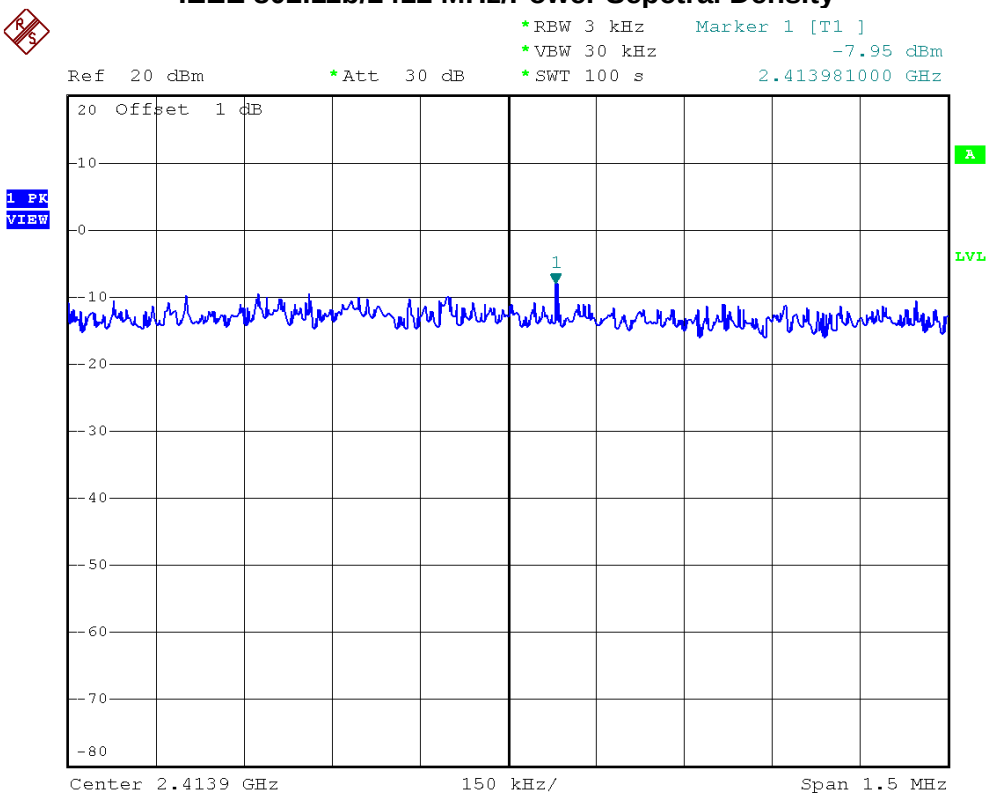
The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

9.7 TEST RESULTS - 2400-2483.5 MHZ

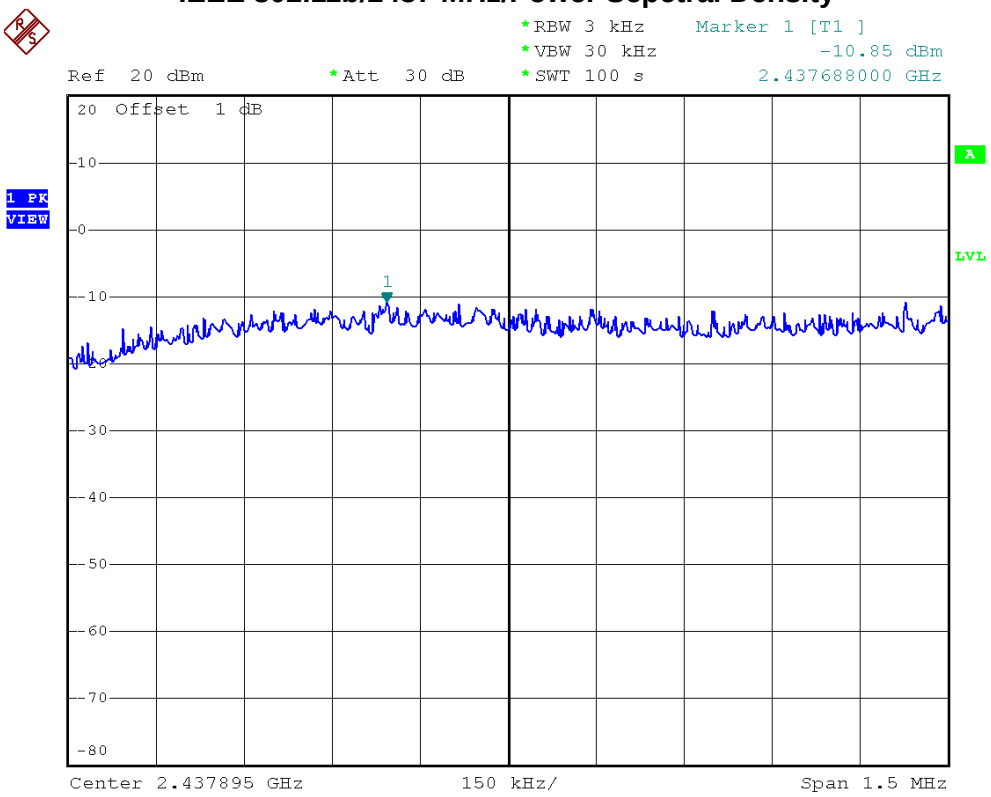
E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-7.95	8	PASS
2437 MHz	-13.56	8	PASS
2462 MHz	-14.58	8	PASS

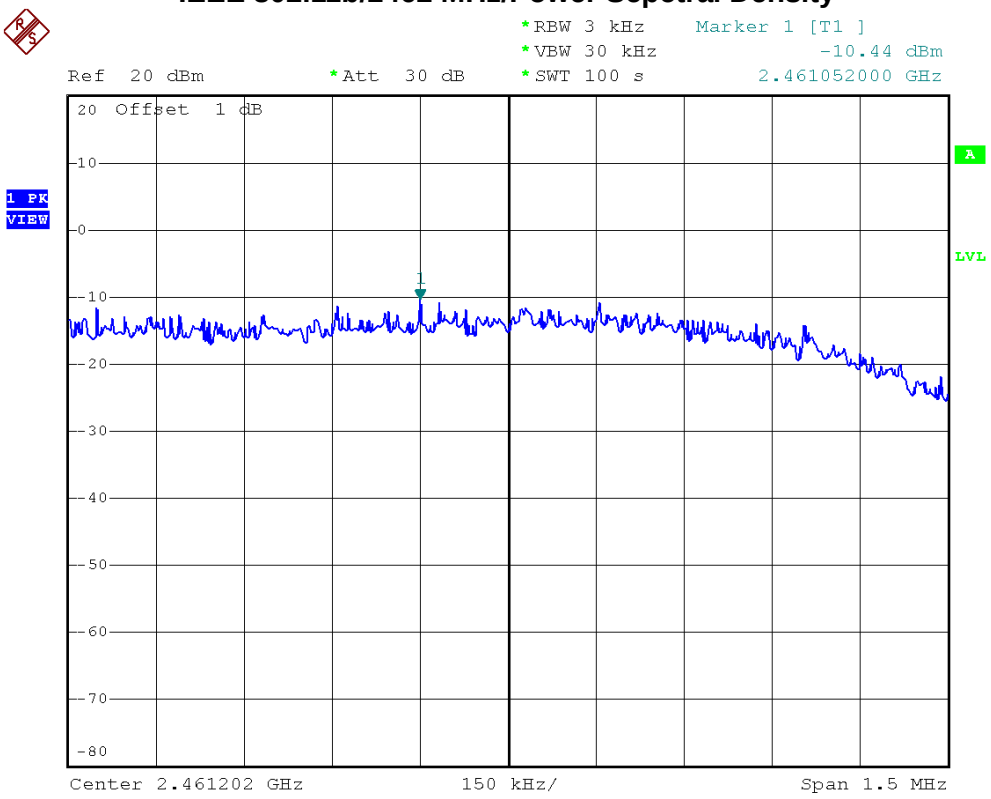
IEEE 802.11b/2412 MHz/Power Sepctral Density



IEEE 802.11b/2437 MHz/Power Sepctral Density



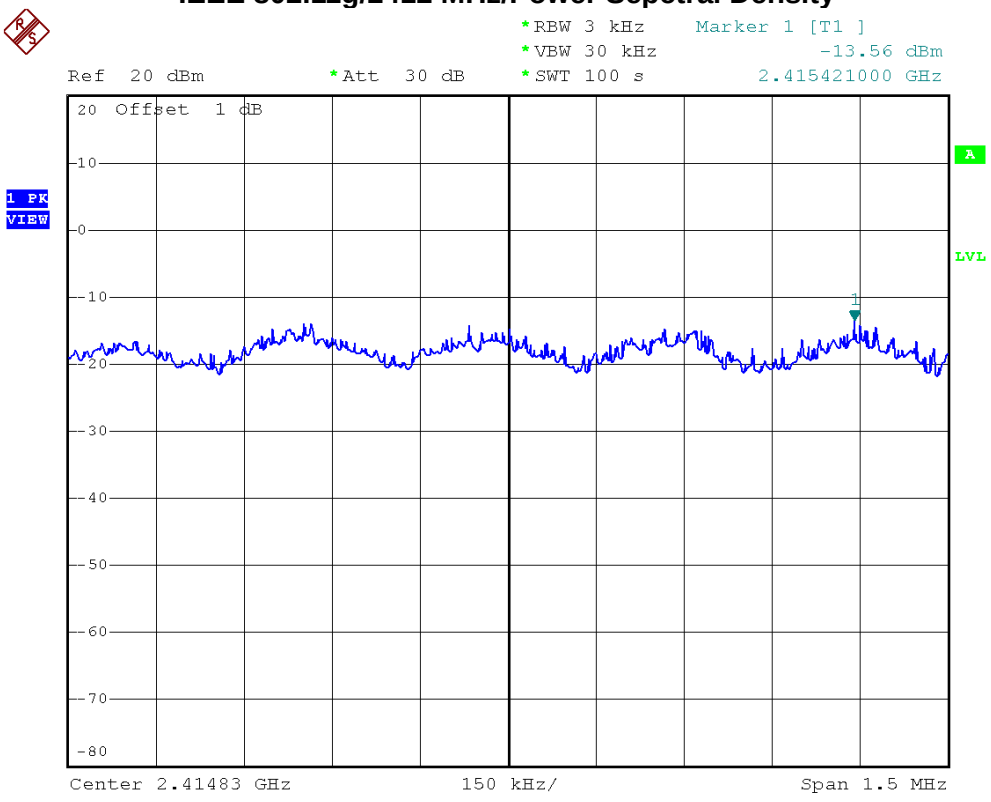
IEEE 802.11b/2462 MHz/Power Sepctral Density



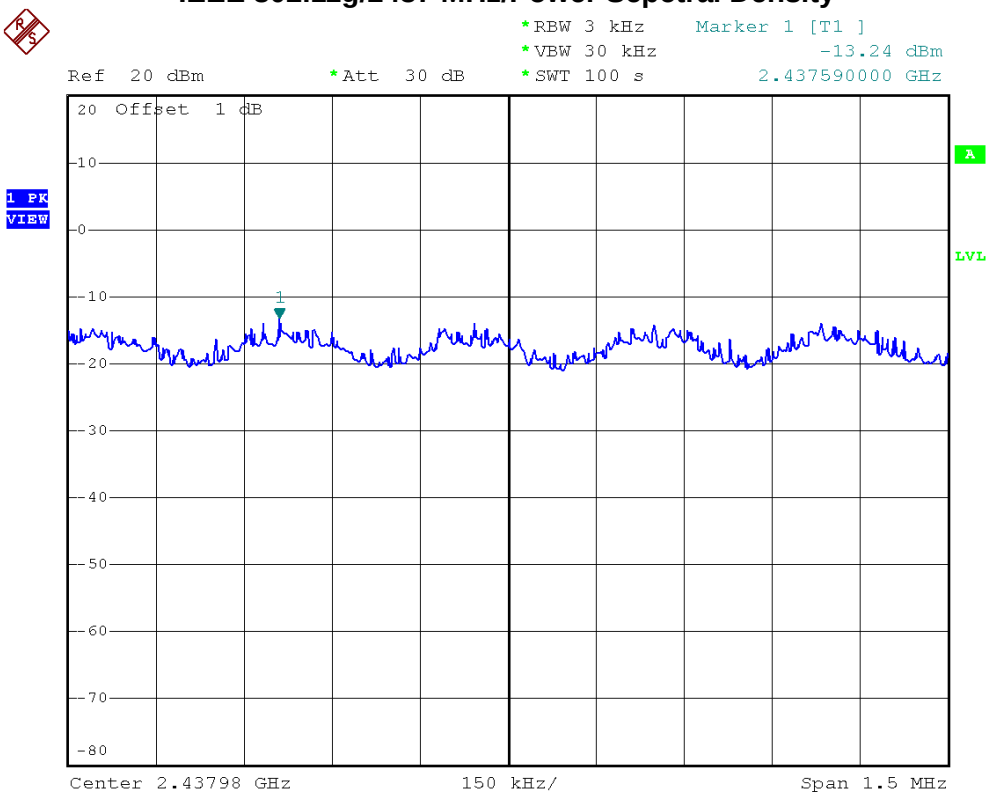
E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-10.85	8	PASS
2437 MHz	-13.24	8	PASS
2462 MHz	-14.28	8	PASS

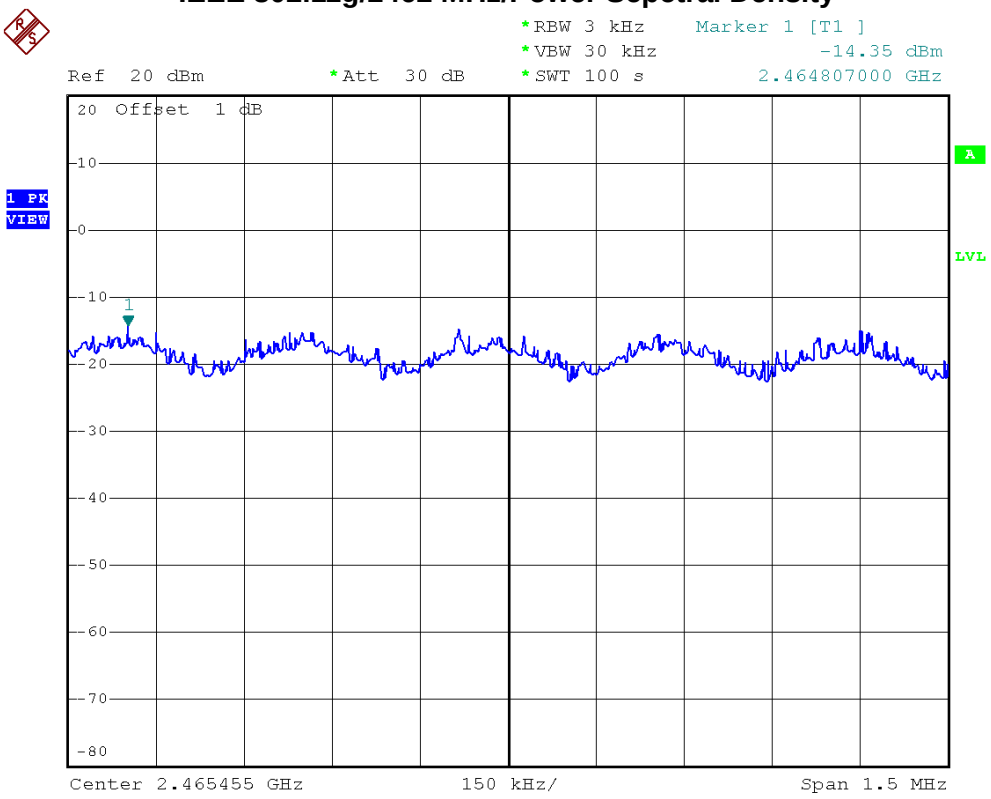
IEEE 802.11g/2412 MHz/Power Sepctral Density



IEEE 802.11g/2437 MHz/Power Sepctral Density



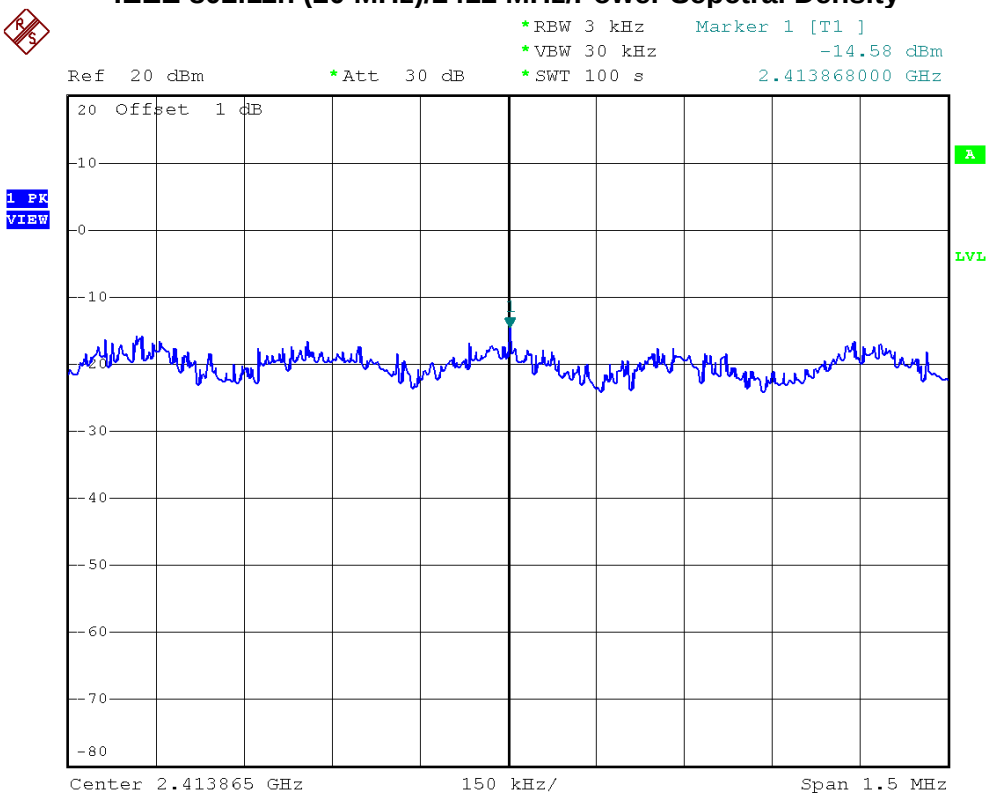
IEEE 802.11g/2462 MHz/Power Sepctral Density



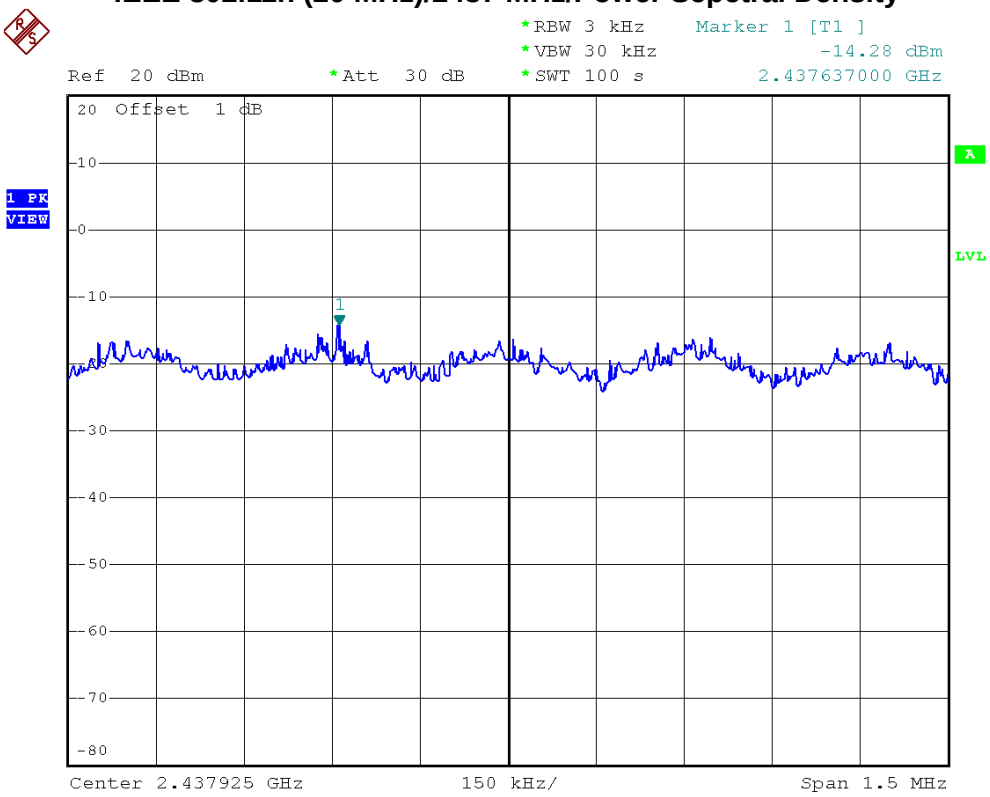
E.U.T	AIS Receiver	Model Name	CYPHO-150WS
Temperature	26°C	Relative Humidity	60%
Test Voltage	DC 12V		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-10.44	8	PASS
2437 MHz	-14.35	8	PASS
2462 MHz	-17.56	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