

FCC ID: LYHMPCIE1V1

EMI - TEST REPORT

- FCC Part 15.247 and RSS 210 -



Test Report No. :	T35222-06-00HS	11. May 2012 Date of issue
--------------------------	-----------------------	-------------------------------

Type / Model Name : WLAN n-module MPCIE-R1-ABGN-U3

Product Description : Module for industrial WLAN applications 2.4 / 5 GHz

Applicant : Siemens AG, Industrial Automation Division

Address : Gleiwitzer Strasse 555

90475 NUERNBERG, GERMANY

Manufacturer : Siemens AG, Sensors & Communication

Address : Oestliche Rheinbrueckenstrasse 50

76187 KARLSRUHE, GERMANY

Licence holder : Siemens AG, Industrial Automation Division

Address : Gleiwitzer Strasse 555

90475 NUERNBERG, GERMANY

Test Result according to the standards listed in clause 1 test standards:	POSITIVE
--	-----------------



The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test results
without the written permission of the test laboratory.

FCC ID: LYHMPCIE1V1

Contents

1	<u>TEST STANDARDS</u>	3
2	<u>SUMMARY</u>	4
2.1	Test result summary	4
3	<u>EQUIPMENT UNDER TEST</u>	10
3.1	Photo documentation of the EUT	10
3.2	Power supply system utilised	12
3.3	Short description of the equipment under test (EUT)	12
4	<u>TEST ENVIRONMENT</u>	13
4.1	Address of the test laboratory	13
4.2	Environmental conditions	13
4.3	Statement of the measurement uncertainty	13
4.4	Measurement protocol for FCC and IC	13
4.5	Determination of worst case measurement conditions	14
5	<u>TEST CONDITIONS AND RESULTS</u>	15
5.1	Conducted emissions	15
5.2	EBW and OBW	15
5.3	Maximum peak conducted output power	36
5.4	Spurious emissions conducted	41
5.5	Spurious emissions conducted, in restricted bands	86
5.6	Spurious emissions radiated (cabinet radiation)	126
5.7	Power spectral density	142
5.8	Maximum permissible exposure (MPE)	154
5.9	Co-location and co-transmission	156
5.10	Antenna application - Detailed photos see attachment A	156
6	<u>USED TEST EQUIPMENT AND ACCESSORIES</u>	158

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules and Regulations Part 15, Subpart A - General (September, 2011)

Part 15, Subpart A, Section 15.31	Measurement standards
Part 15, Subpart A, Section 15.33	Frequency range of radiated measurements
Part 15, Subpart A, Section 15.35	Measurement detector functions and bandwidths

FCC Rules and Regulations Part 15, Subpart C - Intentional Radiators (September, 2011)

Part 15, Subpart C, Section 15.203	Antenna requirement
Part 15, Subpart C, Section 15.204	External radio frequency power amplifiers and Antenna modifications
Part 15, Subpart C, Section 15.205	Restricted bands of operation
Part 15, Subpart C, Section 15.207	Conducted limits
Part 15, Subpart C, Section 15.209	Radiated emission limits, general requirements
Part 15, Subpart C, Section 15.212	Modular transmitters
Part 15, Subpart C, Section 15.247	Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz

FCC Rules and Regulations Part 1, Subpart I - Procedures Implementing the National Environmental Policy Act of 1969

Part 1, Subpart I, Section 1.1310	Radiofrequency radiation exposure limits
Part 1, Subpart 2, Section 2.1093	Radiofrequency radiation exposure evaluation: portable device

OET Bulletin 65, 65A, 65B, 65C Edition 97-01, August 1997 – Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.

ANSI C63.4: 2009	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
ANSI C63.10: 2009	Testing Unlicensed Wireless Devices
ANSI C95.1: 2005	IEEE Standard for Safety Levels with respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
CISPR 16-4-2: 2003	Uncertainty in EMC measurement
CISPR 22: 2005 EN 55022: 2006	Information technology equipment
KDB 558074 D01	Guidance for performing compliance measurements on DTS operating under Section 15.247, 2012-1-18.
KDB 662911 D01	Emission testing of transmitter with multiple outputs in the same band, 2011-4-4.

2 SUMMARY

2.1 Test result summary

WLAN device using digital modulation:

Operating in the 2400 MHz – 2483.5 MHz and 5725 MHz – 5850 MHz band:

FCC Rule Part	RSS Rule Part	Description	Result
15.207(a)	RSS Gen, 7.2.4.	Conducted limits	not applicable
15.247(a)(2)	RSS210, A8.2(a)	-6 dB EBW	passed
15.247(b)(3)	RSS-210, A8.4(4)	Peak power	passed
15.247(d)	RSS-210, A8.5	Out-of-band emissions	passed
15.247(d)	RSS-Gen, 7.2.2	Emissions in restricted bands	passed
15.247(e)	RSS-210, A8.2(b)	PSD	passed
15.35(c)	RSS-Gen, 4.5	Pulsed operation	not applicable
15.247(i)	RSS 102, 2.5.2	MPE	passed
15.247(b)(4)	RSS-Gen, 7.1.2	Antenna requirement	passed
	RSS-Gen, 7.2.6	Transmitter frequency stability	not required
	RSS-Gen, 4.6.1	OBW 99%	passed
OET Bulletin 65	RSS102, 3.2	Co-location, Co-transmission	passed

The mentioned RSS Rule Parts in the above table are related to:

RSS Gen, Issue 3, December 2010

RSS 210, Issue 8, December 2010

RSS 102, Issue 4, March 2010

FCC ID: LYHMPCIE1V1
2.2 GENERAL REMARKS:

The EUT is a WLAN module. This Test Report intends a modular approval according to FCC 15.212(a). The EUT may be access point or client. The WLAN module is compatible with 802.11a, g and 802.11n standard. It supports the 2.4 GHz and 5 GHz frequency band. It supports MIMO at 3 Antenna ports which is 3T3R. The firmware does not support the ad-hoc modes. The EUT use the MIMO function without beam forming.

Test jig

The used test jig provides the necessary power supply and control signals to operate the WLAN module for testing. The test jig is DC power supplied with a view to the planned industrial application. The test ports are connected via UFL-RSMA-Pigtail which is used also in the end application.

Operation frequency and channel plan

The operating frequency is 2400 MHz to 2483.5 MHz and 5725 MHz to 5850 MHz.

Channel plan WLAN Standard 802.11g/n, HT20:

Channel	Frequency
1	2412 MHz
2	2417 MHz
3	2422 MHz
4	2427 MHz
5	2432 MHz
6	2437 MHz
7	2442 MHz
8	2447 MHz
9	2452 MHz
10	2457 MHz
11	2462 MHz

Channel plan WLAN Standard 802.11n, HT40 up and HT40 down mode:

Channel, HT40 up	Frequency	Channel, HT40 down	Frequency
1 up	2422 MHz	5 down	2422 MHz
2 up	2427 MHz	6 down	2427 MHz
3 up	2432 MHz	7 down	2432 MHz
4 up	2437 MHz	8 down	2437 MHz
5 up	2442 MHz	9 down	2442 MHz
6 up	2447 MHz	10 down	2447 MHz
7 up	2452 MHz	11 down	2452 MHz

Channel plan WLAN Standard 802.11a/n, HT20:

Channel	Frequency
149	5745 MHz
153	5765 MHz
157	5785 MHz
161	5805 MHz
165	5825 MHz

HT40 mode:

Channel, HT40 up	Frequency	Channel, HT40 down	Frequency
149 up	5755 MHz	153 down	5755 MHz
157 up	5795 MHz	161 down	5795 MHz

FCC ID: LYHMPCIE1V1

Antennas

Antennas intended for use are classified into 3 gain groups:

2.4 GHz:

- Ant. group 1: Antennas 0 to 6 dBi
- Ant. group 2: Antennas 7 to 9 dBi
- Ant. group 3: Antennas 10 to 14 dBi

5 GHz:

- Ant. group 1: Antennas 0 to 6 dBi
- Ant. group 2: Antennas 7 to 9 dBi
- Ant. group 3: Antennas 10 to 14 dBi

The following listed antennas shall be used with the EUT:

Number	Characteristic	Certification name	Plug	Frequency	Gain (dBi)
1	Directed	ANT793-8DK	N	5	23
2	Directed	ANT793-8DJ	N	5	18
3	Wide angle	ANT793-6DG	N	5	9
4	Wide angle	ANT793-6DT	3*QMA	5	9
5	Omni	ANT793-4MN	N	5	6
6	Omni	ANT793-6MN	N	5	5
7	Directed	ANT792-8DN	N	2.4	14
8	Omni	ANT792-6MN	N	2.4	6
9	Helix	ANT792-4DN	N	2.4	4
10	Wide angle	ANT795-6DC	N	2.4, 5	9, 9
11	Omni	ANT795-6MN	N	2.4, 5	6, 8
12	Omni	ANT795-6MT	3*QMA	2.4, 5	5, 7
13	Omni	ANT795-4MC	N	2.4, 5	3, 5
14	Omni	ANT795-4MD	N	2.4, 5	3, 5
15	Omni	ANT795-4MA	R-SMA	2.4, 5	3, 5
16	Omni	A5E002280427-06	integrated	2.4, 5	3, 5
17	Rcoax	Rcoax 2G	N	2.4	0
18	Rcoax	Rcoax 5G	N	5	0

Ant. group 3 antennas with max 10 to 14 dBi gain:

Number	Characteristic	Certification name	Plug	Frequency range (GHz)	Gain (dBi)	Cable loss	Effective Gain
1	Directed	ANT793-8DJ	N	5	18	4.4	14.2
2	Directed	ANT793-8DK	N	5	23	8.8	13.6

Note: The directed antenna number 1 may be used only with minimum 5 m antenna cable,

Type 6XV 1875-5CH50 with cable loss 4.4 dB at 5.7 GHz.

The directed antenna number 2 may be used only with minimum 10 m antenna cable,

Type 6XV 1875-5CN10 with cable loss 8.8 dB at 5.7 GHz.

Transmit operating modes

Both modules use DSSS or OFDM modulation and may provide following data rates:

- 802.11b mode 11, 5.5, 2, 1 Mbps (Mbps = megabits per second)
- 802.11g mode 54, 48, 36, 24, 18, 12, 9, 6 Mbps
- 802.11a mode 54, 48, 36, 24, 18, 12, 9, 6 Mbps
- 802.11n HT20, MCS 0 - 23
- 802.11n HT40, MCS 0 - 23

FCC ID: LYHMPCIE1V1
HT20
MCS parameters for mandatory 20 MHz, NSS = 1, NES = 1

MCS Index	Modulation	R	$N_{BPSCS(i_{SS})}$	N_{SD}	N_{SP}	N_{CBPS}	N_{DBPS}	Data rate (Mb/s)	
								800 ns GI	400 ns GI (see NOTE)
0	BPSK	1/2	1	52	4	52	26	6.5	7.2
1	QPSK	1/2	2	52	4	104	52	13.0	14.4
2	QPSK	3/4	2	52	4	104	78	19.5	21.7
3	16-QAM	1/2	4	52	4	208	104	26.0	28.9
4	16-QAM	3/4	4	52	4	208	156	39.0	43.3
5	64-QAM	2/3	6	52	4	312	208	52.0	57.8
6	64-QAM	3/4	6	52	4	312	234	58.5	65.0
7	64-QAM	5/6	6	52	4	312	260	65.0	72.2

NOTE—Support of 400 ns GI is optional on transmit and receive.

MCS parameters for optional 20 MHz, NSS = 2, NES = 1, EQM

MCS Index	Modulation	R	$N_{BPSCS(i_{SS})}$	N_{SD}	N_{SP}	N_{CBPS}	N_{DBPS}	Data rate (Mb/s)	
								800 ns GI	400 ns GI (see NOTE)
8	BPSK	1/2	1	52	4	104	52	13.0	14.4
9	QPSK	1/2	2	52	4	208	104	26.0	28.9
10	QPSK	3/4	2	52	4	208	156	39.0	43.3
11	16-QAM	1/2	4	52	4	416	208	52.0	57.8
12	16-QAM	3/4	4	52	4	416	312	78.0	86.7
13	64-QAM	2/3	6	52	4	624	416	104.0	115.6
14	64-QAM	3/4	6	52	4	624	468	117.0	130.0
15	64-QAM	5/6	6	52	4	624	520	130.0	144.4

NOTE—The 400 ns GI rate values are rounded to 1 decimal place.

MCS parameters for optional 20 MHz, NSS = 3, NES = 1, EQM

MCS Index	Modulation	R	$N_{BPSCS(i_{SS})}$	N_{SD}	N_{SP}	N_{CBPS}	N_{DBPS}	Data rate (Mb/s)	
								800 ns GI	400 ns GI
16	BPSK	1/2	1	52	4	156	78	19.5	21.7
17	QPSK	1/2	2	52	4	312	156	39.0	43.3
18	QPSK	3/4	2	52	4	312	234	58.5	65.0
19	16-QAM	1/2	4	52	4	624	312	78.0	86.7
20	16-QAM	3/4	4	52	4	624	468	117.0	130.0
21	64-QAM	2/3	6	52	4	936	624	156.0	173.3
22	64-QAM	3/4	6	52	4	936	702	175.5	195.0
23	64-QAM	5/6	6	52	4	936	780	195.0	216.7

HT40
MCS parameters for optional 40 MHz, NSS = 1, NES = 1

FCC ID: LYHMPCIE1V1

MCS Index	Modulation	R	$N_{BPSCS}(i_{SS})$	N_{SD}	N_{SP}	N_{CBPS}	N_{DBPS}	Data rate (Mb/s)	
								800 ns GI	400 ns GI
0	BPSK	1/2	1	108	6	108	54	13.5	15.0
1	QPSK	1/2	2	108	6	216	108	27.0	30.0
2	QPSK	3/4	2	108	6	216	162	40.5	45.0
3	16-QAM	1/2	4	108	6	432	216	54.0	60.0
4	16-QAM	3/4	4	108	6	432	324	81.0	90.0
5	64-QAM	2/3	6	108	6	648	432	108.0	120.0
6	64-QAM	3/4	6	108	6	648	486	121.5	135.0
7	64-QAM	5/6	6	108	6	648	540	135.0	150.0

MCS parameters for optional 40 MHz, NSS = 2, NES = 1, EQM

MCS Index	Modulation	R	$N_{BPSCS}(i_{SS})$	N_{SD}	N_{SP}	N_{CBPS}	N_{DBPS}	Data rate (Mb/s)	
								800 ns GI	400 ns GI
8	BPSK	1/2	1	108	6	216	108	27.0	30.0
9	QPSK	1/2	2	108	6	432	216	54.0	60.0
10	QPSK	3/4	2	108	6	432	324	81.0	90.0
11	16-QAM	1/2	4	108	6	864	432	108.0	120.0
12	16-QAM	3/4	4	108	6	864	648	162.0	180.0
13	64-QAM	2/3	6	108	6	1296	864	216.0	240.0
14	64-QAM	3/4	6	108	6	1296	972	243.0	270.0
15	64-QAM	5/6	6	108	6	1296	1080	270.0	300.0

MCS parameters for optional 40 MHz, NSS = 3, EQM

MCS Index	Modulation	R	$N_{BPSCS}(i_{SS})$	N_{SD}	N_{SP}	N_{CBPS}	N_{DBPS}	N_{ES}	Data rate (Mb/s)	
									800 ns GI	400 ns GI
16	BPSK	1/2	1	108	6	324	162	1	40.5	45.0
17	QPSK	1/2	2	108	6	648	324	1	81.0	90.0
18	QPSK	3/4	2	108	6	648	486	1	121.5	135.0
19	16-QAM	1/2	4	108	6	1296	648	1	162.0	180.0
20	16-QAM	3/4	4	108	6	1296	972	1	243.0	270.0
21	64-QAM	2/3	6	108	6	1944	1296	2	324.0	360.0
22	64-QAM	3/4	6	108	6	1944	1458	2	364.5	405.0
23	64-QAM	5/6	6	108	6	1944	1620	2	405.0	450.0

FCC ID: LYHMPCIE1V1

Symbol	Explanation
N_{SS}	Number of spatial streams
R	Coding rate
N_{BPS}	Number of coded bits per single carrier (total across spatial streams)
$N_{BPCS}(i_{SS})$	Number of coded bits per single carrier for each spatial stream, $i_{SS} = 1, \dots, N_{SS}$
N_{SD}	Number of complex data numbers per spatial stream per OFDM symbol
N_{SP}	Number of pilot values per OFDM symbol
N_{CBPS}	Number of coded bits per OFDM symbol
N_{DBPS}	Number of data bits per OFDM symbol
N_{ES}	Number of BCC encoders for the DATA field
N_{TBPS}	Total bits per subcarrier

FINAL ASSESSMENT:

The equipment under test **fulfills** the EMI requirements cited in clause 1 test standards.

Date of receipt of test sample : acc. to storage records

Testing commenced on : 13 February 2012

Testing concluded on 15 March 2012

Checked by:

Tested by:

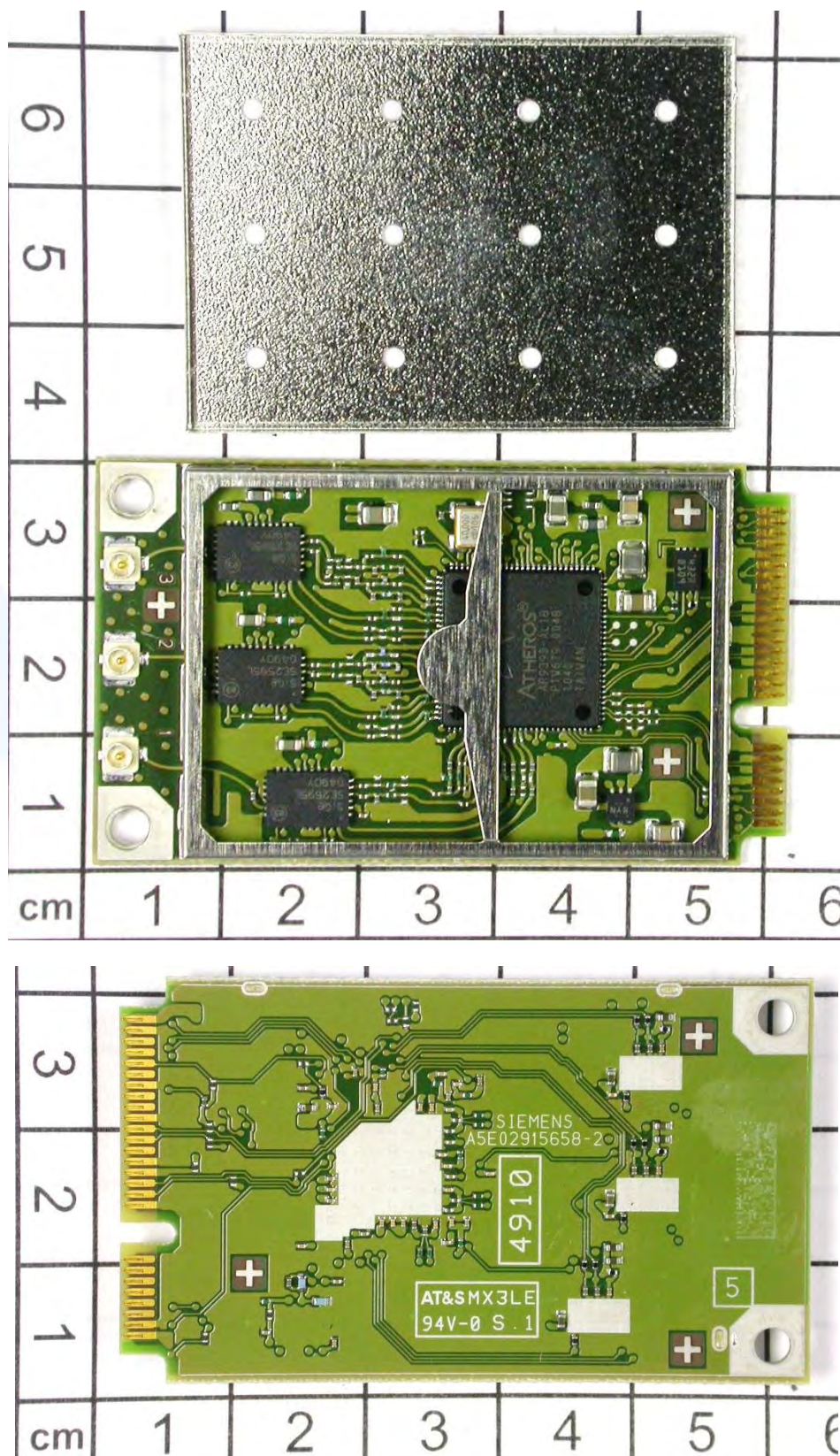
Klaus Gegenfurtner
Dipl.-Ing.(FH)
Manager: Radio Group

Hermann Smetana
Dipl.-Ing.(FH)
Radio Expert

FCC ID: LYHMPCIE1V1

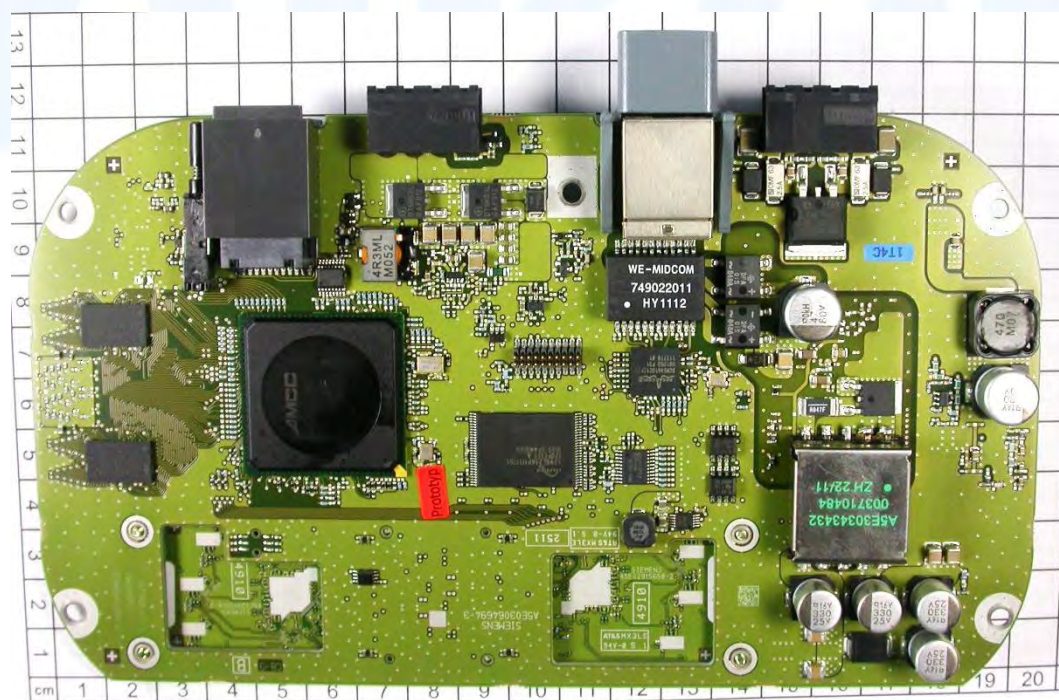
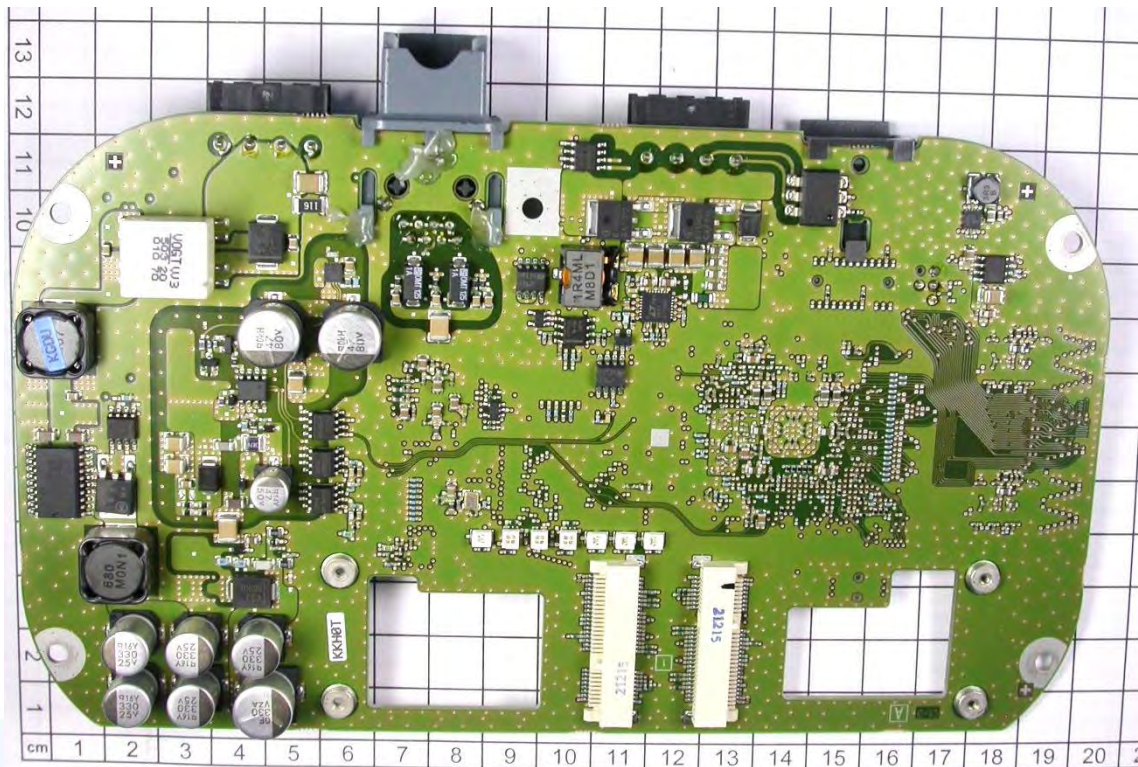
3 EQUIPMENT UNDER TEST

3.1 Photo documentation of the EUT



FCC ID: LYHMPDIE1V1

Test jig, reference integration:



FCC ID: LYHMPCIE1V1

3.2 Power supply system utilised

Power supply voltage, V_{nom} : 24 VDC (industrial DC power supply)

The extreme voltages for the EUT are: $V_{min} = 19.2$ VDC
 $V_{max} = 28.8$ VDC

3.3 Short description of the equipment under test (EUT)

The EUT is a WLAN module for industrial applications in the 2.4 GHz and 5 GHz frequency range.

Number of tested samples: 1
Serial number: #45

EUT operation mode:

The equipment under test was operated during the measurement under the following conditions:

- TX continuous mode in 802.11g

- TX continuous mode in 802.11a

- TX continuous mode in 802.11n, HT20

- TX continuous mode in 802.11n, HT40

EUT configuration:

(The CDF filled by the applicant can be viewed at the test laboratory.)

The following peripheral devices and interface cables were connected during the measurements:

- LAN cable, 3m	Model : CAT5
- Power supply cable, 1m	Model : Self-made
- C-Plug-Adaptor for test mode control	Model : Self-made

FCC ID: LYHMPCIE1V1

4 TEST ENVIRONMENT

4.1 Address of the test laboratory

mikes-testingpartners gmbh
Ohmstrasse 2-4
94342 STRASSKIRCHEN
GERMANY

4.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 86-106 kPa

4.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader may notice that tolerances within the calibration of the equipment and facilities may cause additional uncertainty. The measurement uncertainty is calculated for all measurements listed in this test report acc. to CISPR 16-4-2 „Uncertainties, statistics and limit modelling – Uncertainty in EMC measurement“ and documented in the mikes-testingpartners gmbh quality system acc. to DIN EN ISO/IEC 17025. For all measurements shown in this report, the measurement uncertainty of the test laboratory, mikes-testingpartners gmbh, is below the measurement uncertainty as defined by CISPR. Therefore, no special measures must be taken into consideration with regard to the limits according to CISPR. Furthermore, component diversity and modifications in production process of devices may result in additional deviation. If necessary, refer to the test lab for the actual measurement uncertainty for the specific test. The manufacturer has the sole responsibility of continued compliance of the EUT.

4.4 Measurement protocol for FCC and IC

4.4.1 GENERAL INFORMATION

4.4.1.1 Test methodology

Conducted and radiated disturbance testing is performed according to the procedures set out by the International Special Committee on Radio Interference (CISPR) Publication 22, European Standard EN 55022 as shown under section 1 of this report.

The open area test site is a listed under the Canadian Test-Sites File-No:

IC 3009A-1

In compliance with RSS 210 testing for RSS compliance may be achieved by following the procedures set out in ANSI C63.4, ANSI C63.10 and applying the CISPR 22 limits.

FCC ID: LYHMPCIE1V1

4.4.1.2 Justification

The equipment under test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral using the appropriate impedance characteristic or left without termination. Where appropriate, cables are manually manipulated with respect to each other thus obtaining maximum disturbances from the unit.

4.4.1.3 Details of test procedures

The test methods used comply with CISPR Publication 22, EN 55022 - "Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement" and with ANSI C63.4 - "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz". In compliance with 47 CFR Part 15 Subpart A, Section 15.38 testing for FCC compliance may be achieved by following the procedures set out in ANSI C63.4, ANSI C63.10 and applying the CISPR 22 limits.

4.5 Determination of worst case measurement conditions

Measurements have been made in all three orthogonal axes and the settings of the EUT were changed to locate at which position and at what setting of the EUT produce the maximum of the emissions. For the further measurement the EUT is set in X position.

The tests are carried out in the following frequency band:

2400 MHz – 2483.5 MHz and 5725 - 5.850 MHz

Preliminary tests were performed to find the worst case mode from all possible combinations between available modulations and data rates. The maximum output power depends on used data rate. The output power can be set by application software from 1 dBm to 20 dBm (P1 to P20) in 1 dB steps.

The test software for the EUT provides free power setting, the special test mode RX and the TX continuous mode, modulated. The EUT was set with test modulation to transmit data during the tests with a duty cycle (x) of nearly x = 1 from an internal packet generator.

Following channels and test modes has been selected for the final test as listed below:

WLAN	Available channel	Tested channels	Power setting	Modulation	Modulation type	Data rate
802.11g	1 to 11	1, 6, 11	P20	OFDM	BPSK	6 Mbps
802.11a	149 to 165	149, 157, 165	P20	OFDM	BPSK	6 Mbps
802.11n; HT20	1 to 11, 149 to 165	1, 6, 11 149, 157, 165	P20	OFDM	BPSK	MCS8 (BW=20 MHz)
802.11n; HT40	1up to 7up 149up, 157up	1up, 4up, 7up 149up, 157up	P20	OFDM	BPSK	MCS16 (BW=40 MHz)

Conducted measurements are performed on every port of the module. A test jig is used to provide the EUT with the appropriate control and data signals for testing. Between the module port and the end product port a UFL to R-SMA pigtail (20 cm) is used. All measurements are related to the R-SMA-Port.

Measurements in the HT40 mode are only done for the HT40 up mode because of the same frequency arrangement for both modes and for only two non-overlapping channels in the 2.4 GHz and 5 GHz range.

FCC ID: LYHMPCIE1V1

5 TEST CONDITIONS AND RESULTS

5.1 Conducted emissions

For test instruments and accessories used see section 6 Part A 4.

5.1.1 Description of the test location

Test location: NONE

Remarks: Not applicable, the EUT has no AC mains connection.

5.2 EBW and OBW

For test instruments and accessories used see section 6 Part MB.

5.2.1 Description of the test location

Test location: AREA4

5.2.2 Photo documentation of the test set-up



5.2.3 Applicable standard

According to FCC Part 15, Section 15.247(a)(2):

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 – 2483.5 MHz and 5725 – 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

FCC ID: LYHMPCIE1V1

5.2.4 Description of Measurement

The 6 dB EBW (OBW 99%) is measured using a spectrum analyser and the measurement procedure set out in the ANSI C64.10, Item 6.9. The power setting is P20, the duty cycle is nearly x=1 due to a special testing software.

Spectrum analyser settings:

6 dB BW (20 MHz BW):	RBW: 300 kHz	VBW: 1 MHz,	Detector: Peak;	Span: 30 MHz
6 dB BW (40 MHz BW):	RBW: 1 MHz	VBW: 3 MHz,	Detector: Peak,	Span: 60 MHz
OBW 99% (20 MHz BW):	RBW: 300 kHz	VBW: 1 MHz,	Detector: Peak,	Span: 30 MHz
OBW 99% (40 MHz BW):	RBW: 1 MHz	VBW: 3 MHz,	Detector: Peak,	Span: 60 MHz

5.2.5 Test result

802.11g:

Chain1

Channel	Centre frequency (MHz)	6 dB bandwidth (MHz)	99% OBW (MHz)	Minimum limit (MHz)
1	2412	16.56	17.34	0.5
6	2432	16.56	17.28	0.5
11	2462	16.64	17.34	0.5

HT20:

Chain1

Channel	Centre frequency (MHz)	6 dB bandwidth (MHz)	99% OBW (MHz)	Minimum limit (MHz)
1	2412	17.52	18.24	0.5
6	2432	17.68	18.18	0.5
11	2462	17.68	18.24	0.5

Channel	Centre frequency (MHz)	6 dB bandwidth (MHz)	99% OBW (MHz)	Minimum limit (MHz)
149	5745	17.76	18.42	0.5
157	5785	17.84	18.48	0.5
165	5825	17.76	18.42	0.5

Chain2

Channel	Centre frequency (MHz)	6 dB bandwidth (MHz)	99% OBW (MHz)	Minimum limit (MHz)
1	2412	17.76	18.36	0.5
6	2432	17.76	18.36	0.5
11	2462	17.76	18.36	0.5

FCC ID: LYHMPCIE1V1

Channel	Centre frequency	6 dB bandwidth	99% OBW	Minimum limit
	(MHz)	(MHz)	(MHz)	(MHz)
149	5745	17.92	18.48	0.5
157	5785	17.76	18.48	0.5
165	5825	17.84	18.54	0.5

HT40:

Chain1

Channel	Centre frequency	6 dB bandwidth	99% OBW	Minimum limit
	(MHz)	(MHz)	(MHz)	(MHz)
1up	2422	36.96	38.88	0.5
4up	2437	36.96	38.76	0.5
7up	2452	36.96	38.76	0.5

Channel	Centre frequency	6 dB bandwidth	99% OBW	Minimum limit
	(MHz)	(MHz)	(MHz)	(MHz)
149up	5755	37.44	38.76	0.5
157up	5795	36.64	38.76	0.5

Chain2

Channel	Centre frequency	6 dB bandwidth	99% OBW	Minimum limit
	(MHz)	(MHz)	(MHz)	(MHz)
1up	2422	37.44	38.76	0.5
4up	2437	37.12	38.88	0.5
7up	2452	37.60	38.88	0.5

Channel	Centre frequency	6 dB bandwidth	99% OBW	Minimum limit
	(MHz)	(MHz)	(MHz)	(MHz)
149up	5755	37.44	38.88	0.5
157up	5795	37.12	38.76	0.5

Chain3

Channel	Centre frequency	6 dB bandwidth	99% OBW	Minimum limit
	(MHz)	(MHz)	(MHz)	(MHz)
1up	2422	36.64	38.40	0.5
4up	2437	36.64	38.52	0.5
7up	2452	17.92	38.40	0.5

Channel	Centre frequency	6 dB bandwidth	99% OBW	Minimum limit
	(MHz)	(MHz)	(MHz)	(MHz)
149up	5755	18.24	38.40	0.5
157up	5795	18.40	38.40	0.5

FCC ID: LYHMPDIE1V1

802.11a:
Chain1

Channel	Centre frequency	6 dB bandwidth	99% OBW	Minimum limit
	(MHz)	(MHz)	(MHz)	(MHz)
149	5745	16.64	17.52	0.5
157	5785	16.64	17.46	0.5
165	5825	16.64	17.52	0.5

Note: There is no limit for the OBW 99%.

The requirements are **FULFILLED**.

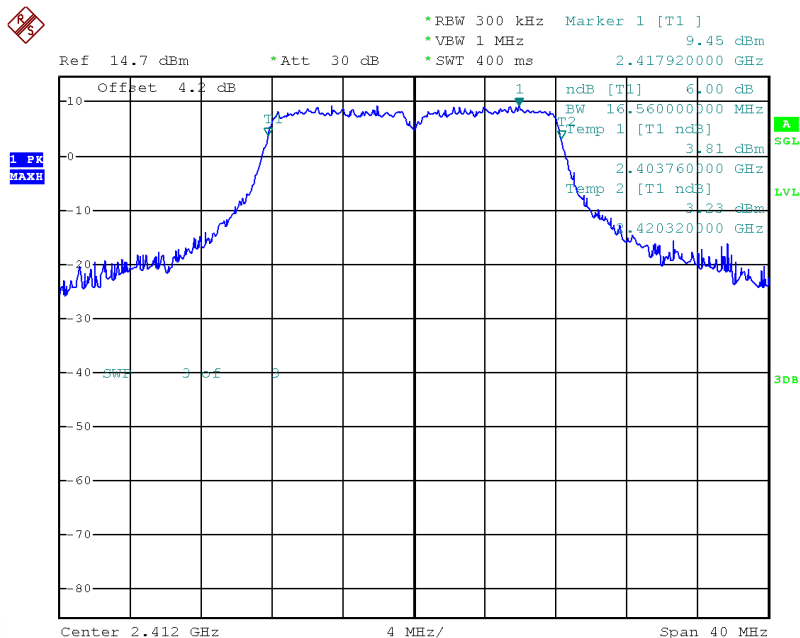
Remarks: For detailed test results please refer to following test protocols. Only the worst case of the plots
for every test mode is listed.

FCC ID: LYHMPCIE1V1

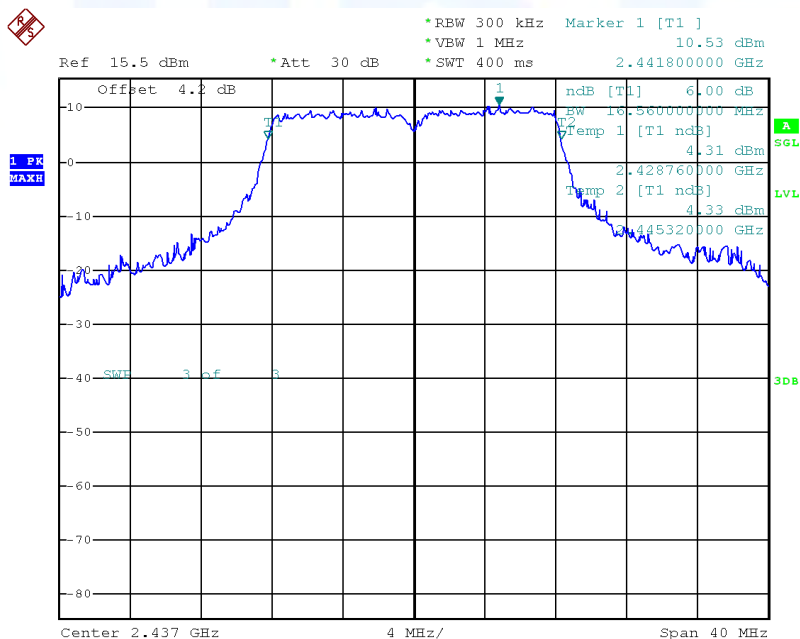
5.2.6 Test protocols of 6 dB EBW

802.11g:

Channel 1 (2412 MHz)

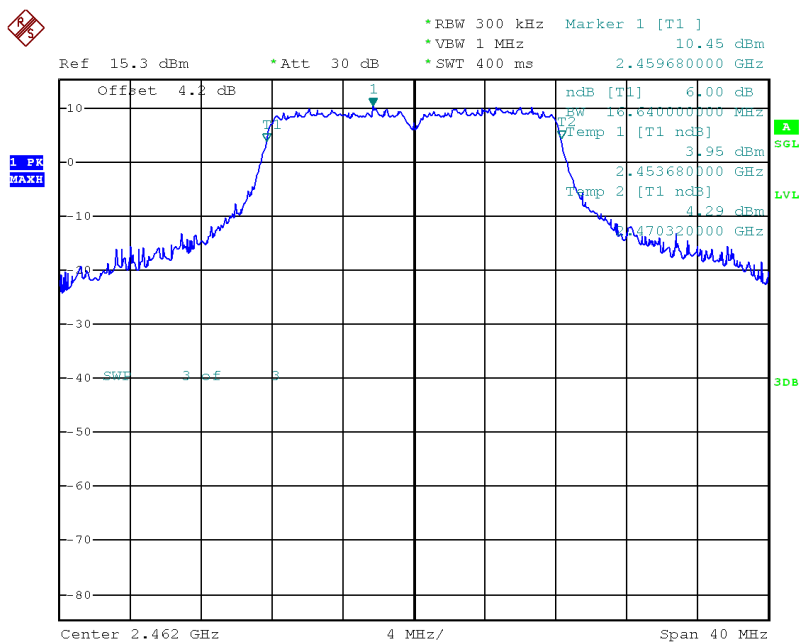


Channel 6 (2437 MHz)



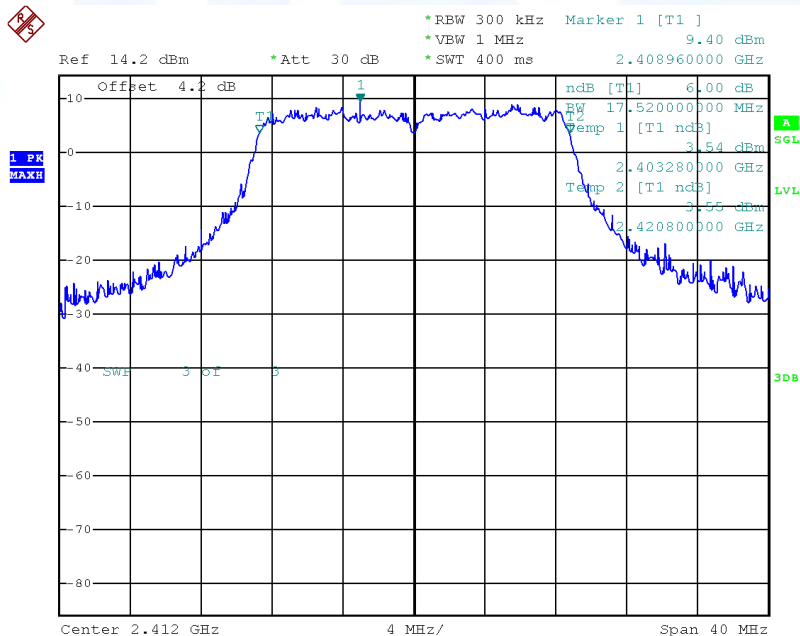
FCC ID: LYHMPCIE1V1

Channel 11 (2462 MHz)



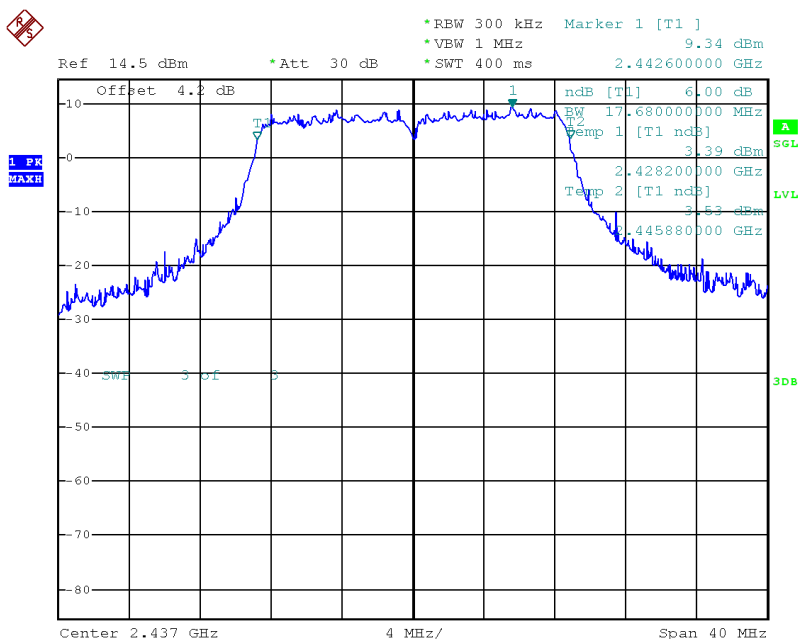
HT20:

Channel 1 (2412 MHz)

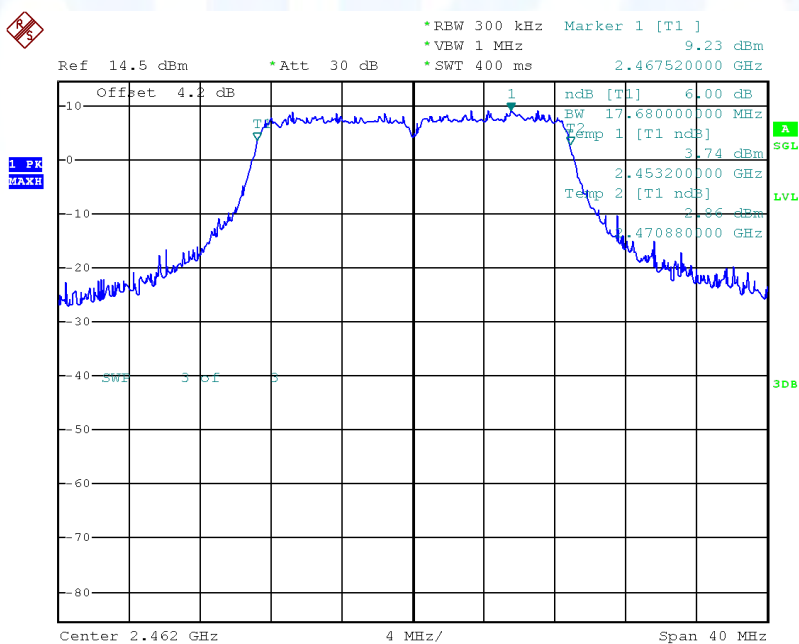


FCC ID: LYHMPCIE1V1

Channel 6 (2437 MHz)

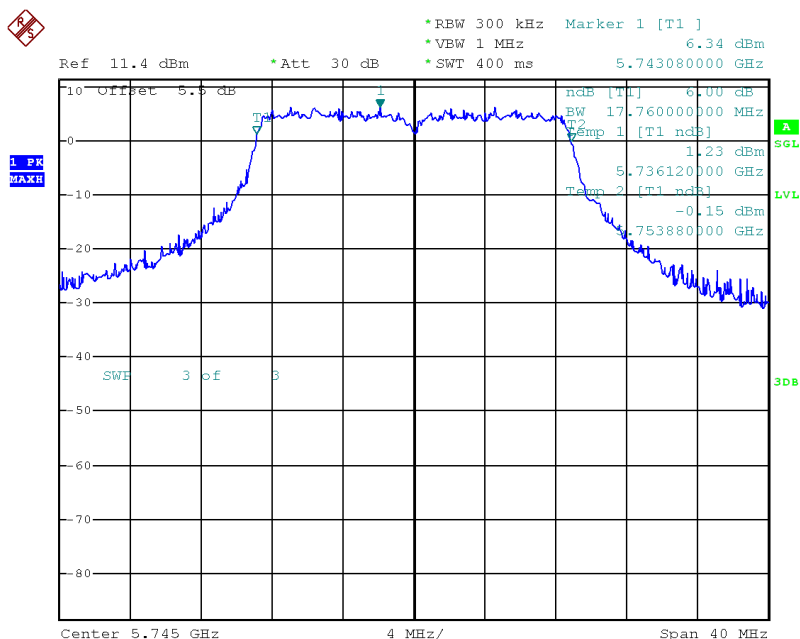


Channel 11 (2462 MHz)

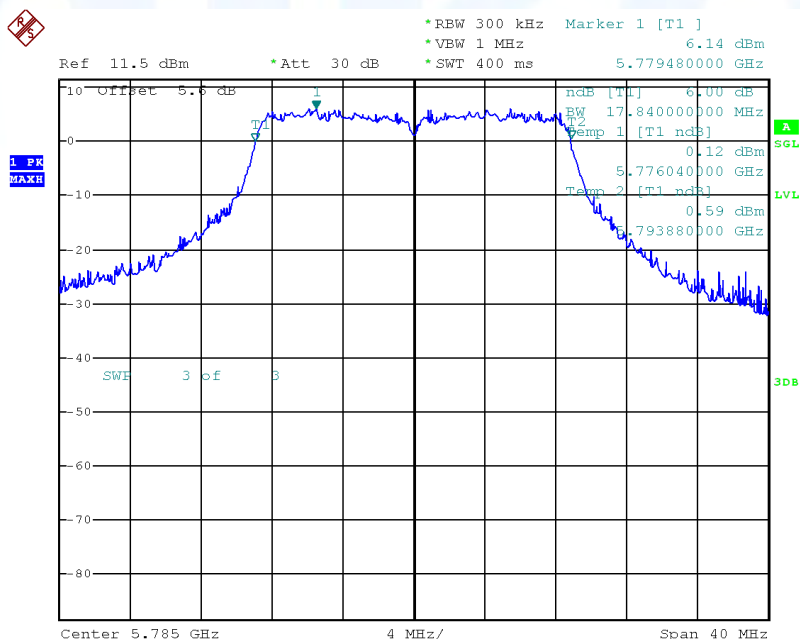


FCC ID: LYHMPCIE1V1

Channel 149 (5745 MHz)

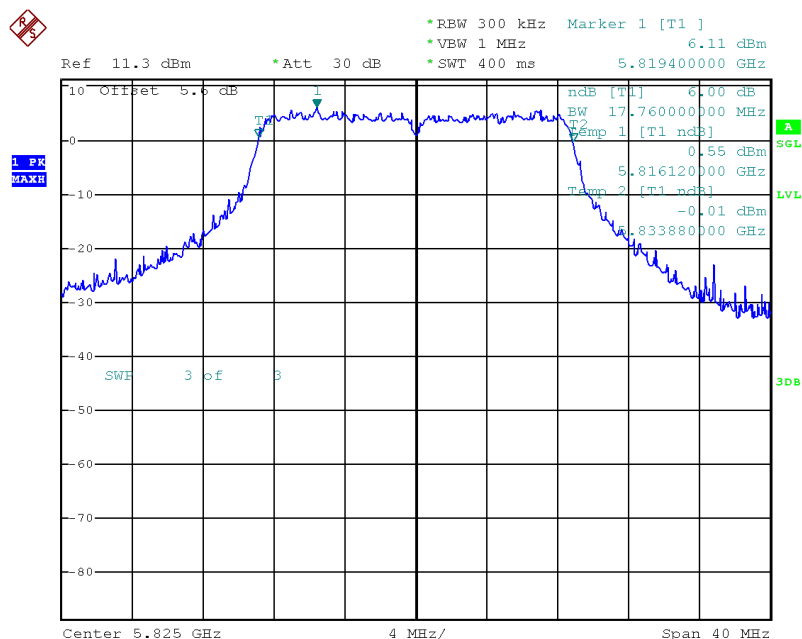


Channel 157 (5785 MHz)



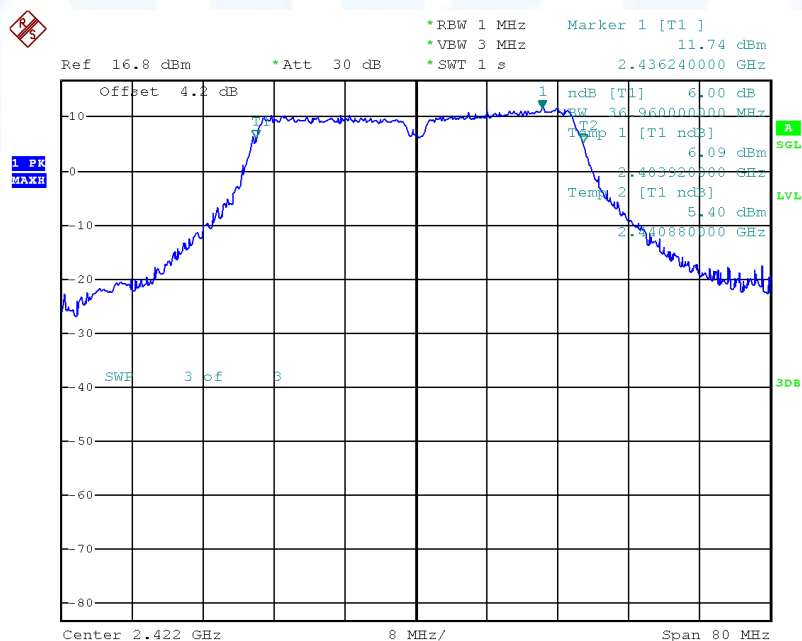
FCC ID: LYHMPCIE1V1

Channel 165 (5825 MHz)



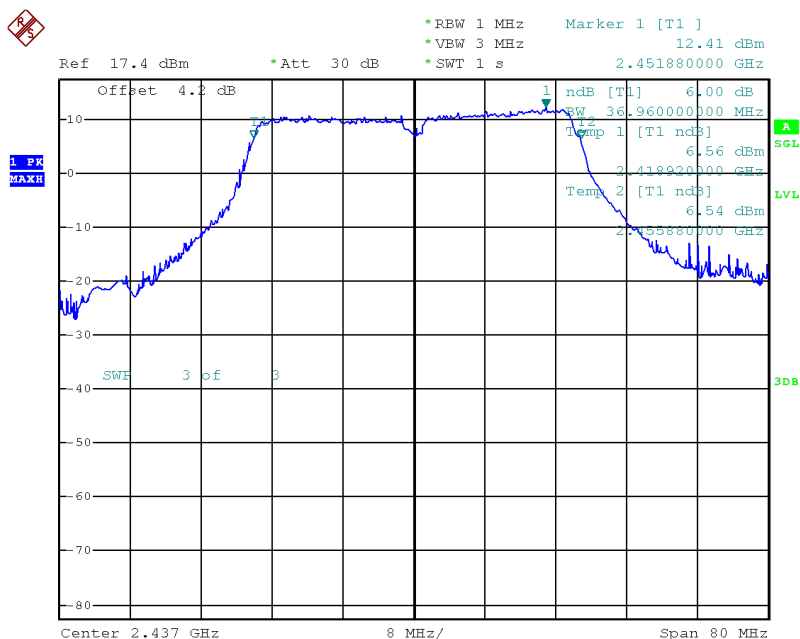
HT40:

Channel 1up (2422 MHz)

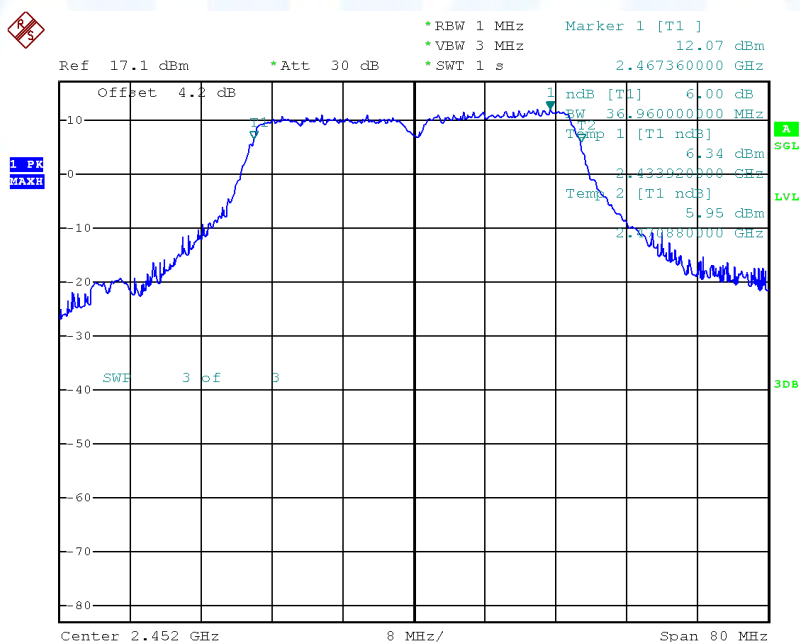


FCC ID: LYHMPCIE1V1

Channel 4up (2437 MHz)

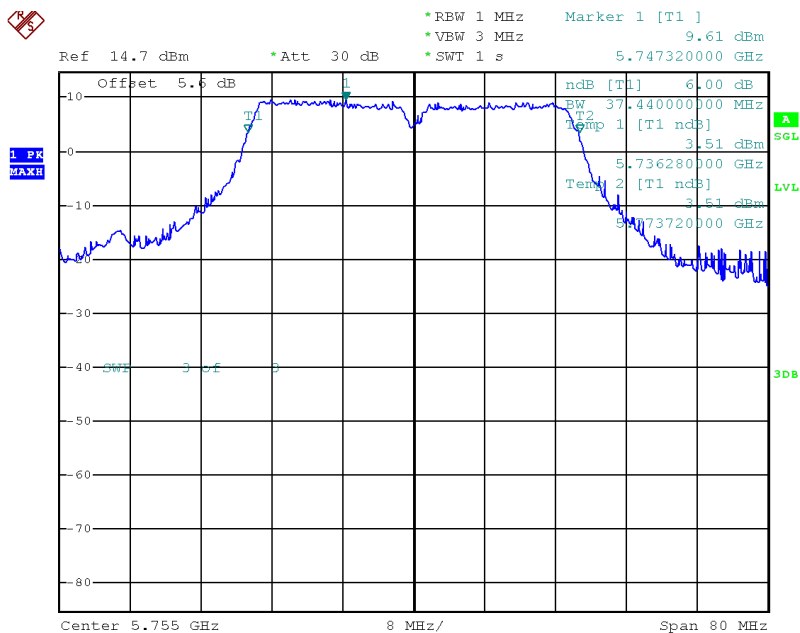


Channel 7up (2452 MHz)

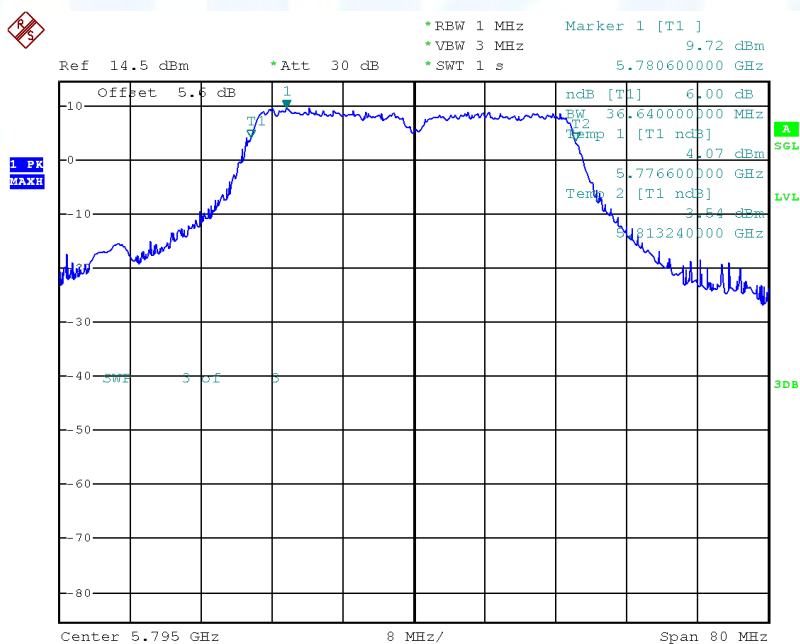


FCC ID: LYHMPCIE1V1

Channel 149up (5755 MHz)



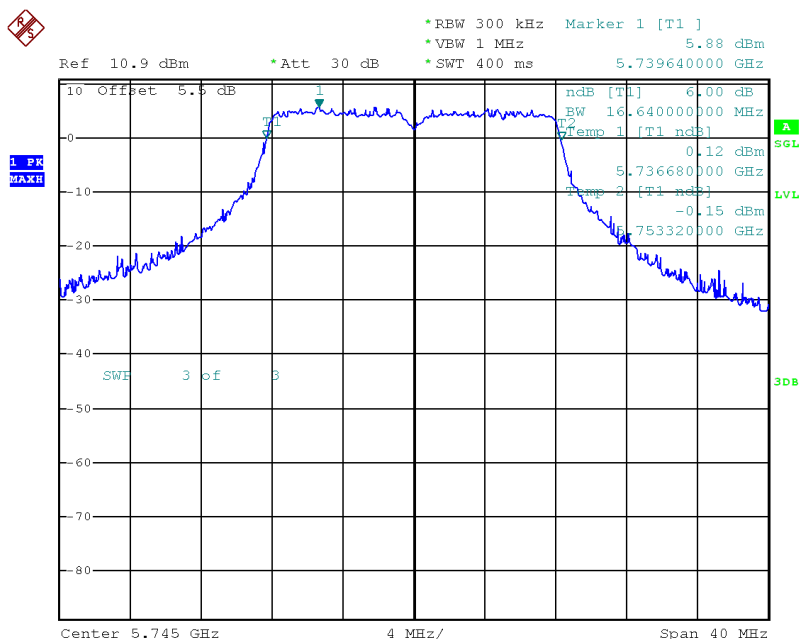
Channel 157up (5795 MHz)



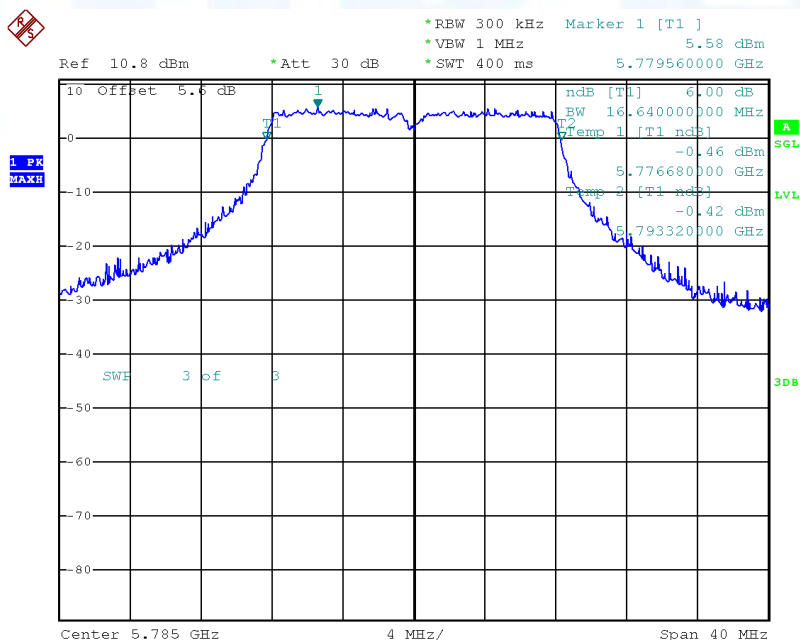
802.11a

FCC ID: LYHMPCIE1V1

Channel 149 (5745 MHz)

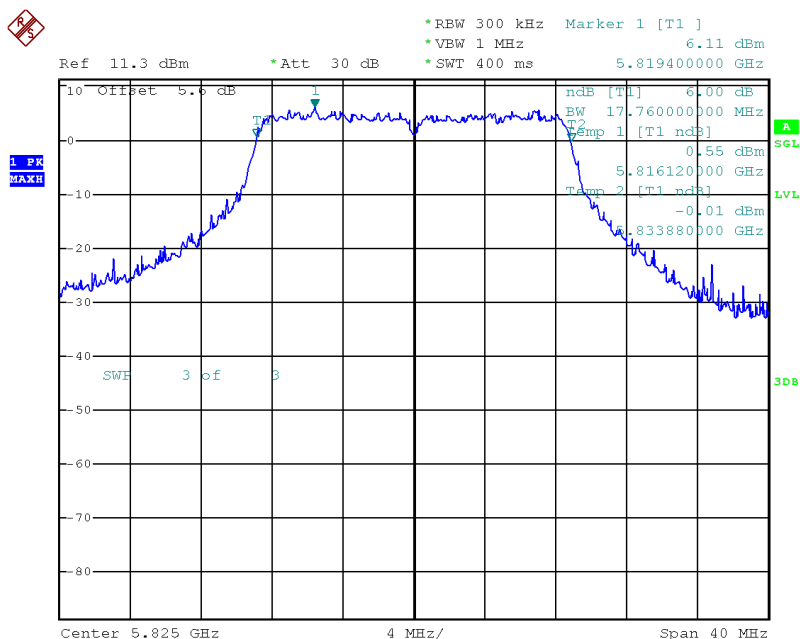


Channel 157 (5785 MHz)



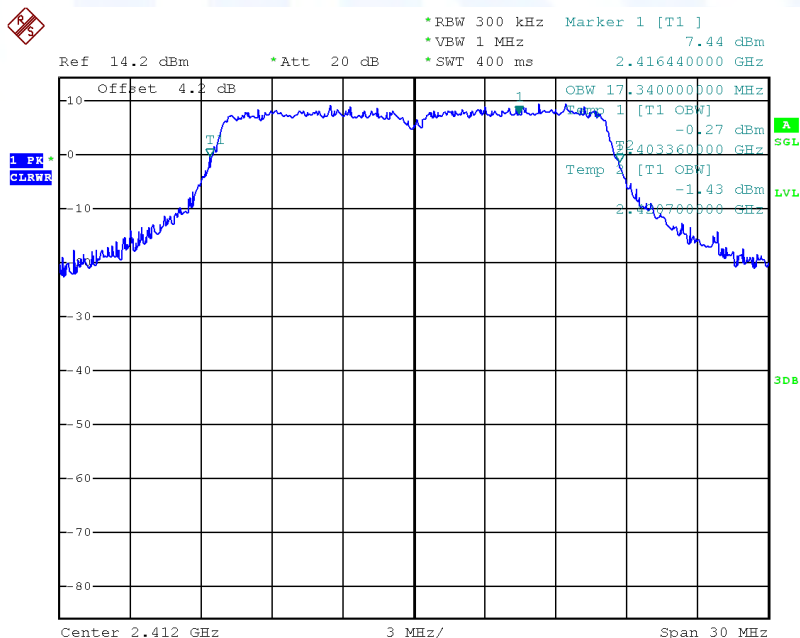
FCC ID: LYHMPCIE1V1

Channel 165 (5825 MHz)



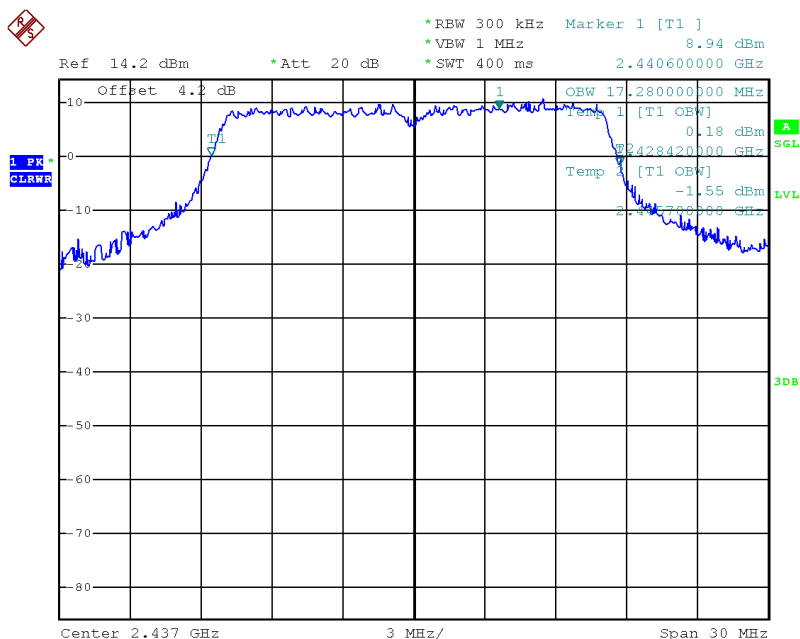
5.2.7 Test protocols OBW 99% 802.11g:

Channel 1 (2412 MHz)

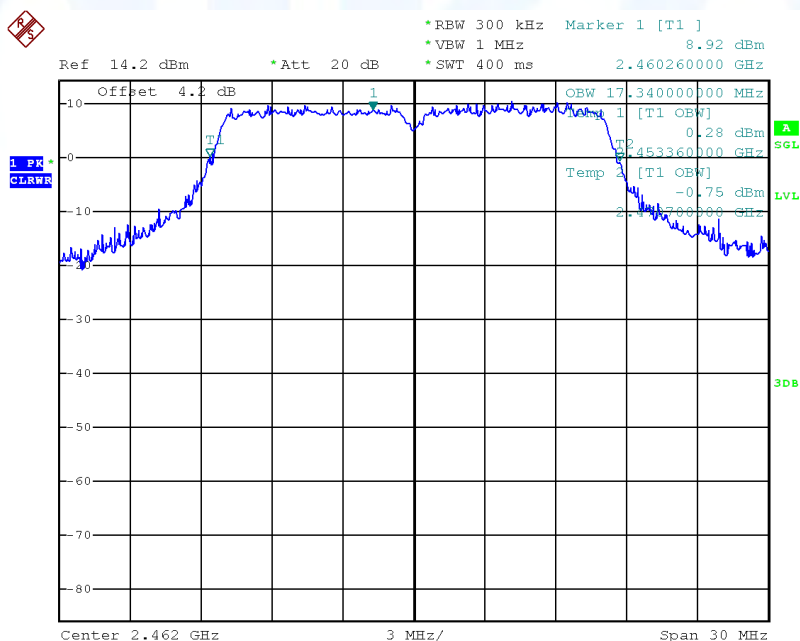


FCC ID: LYHMPCIE1V1

Channel 6 (2437 MHz)



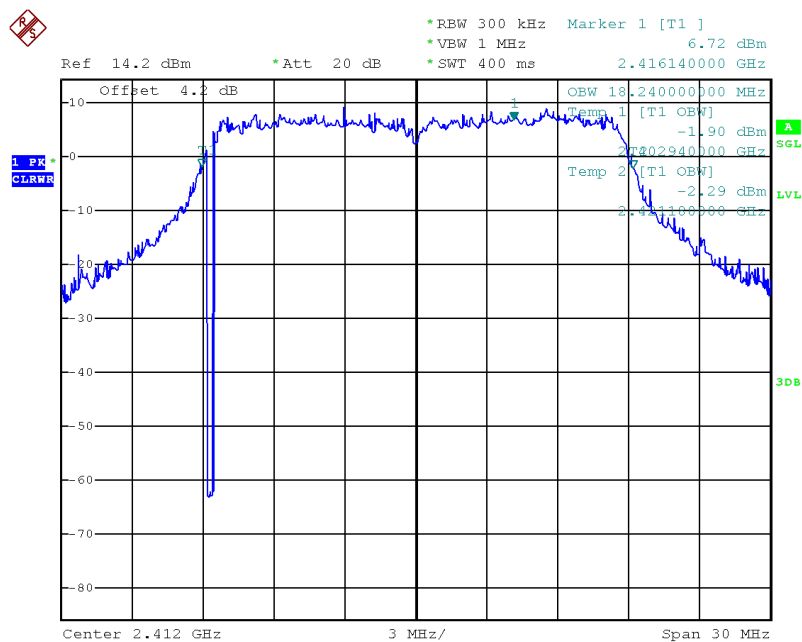
Channel 11 (2462 MHz)



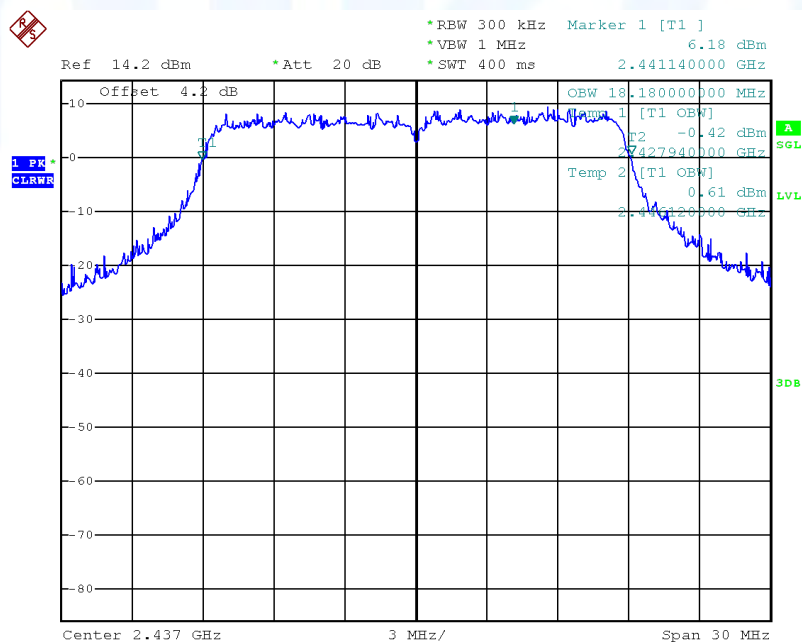
FCC ID: LYHMPCIE1V1

HT20:

Channel 1 (2412 MHz)

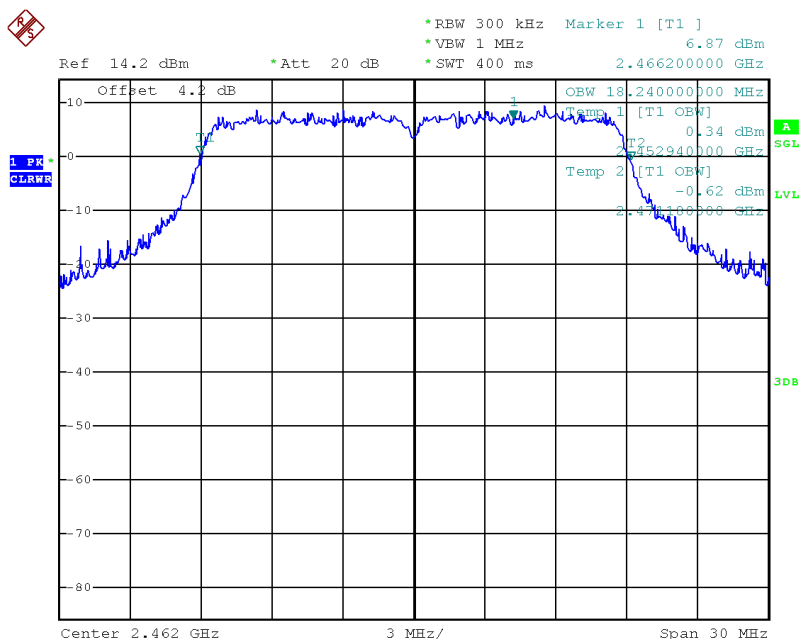


Channel 6 (2437 MHz)

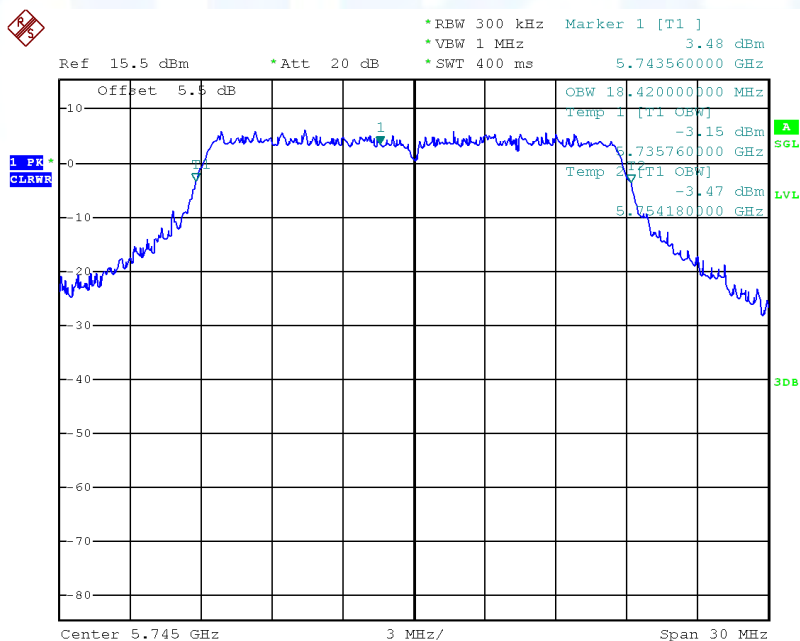


FCC ID: LYHMPCIE1V1

Channel 11 (2462 MHz)

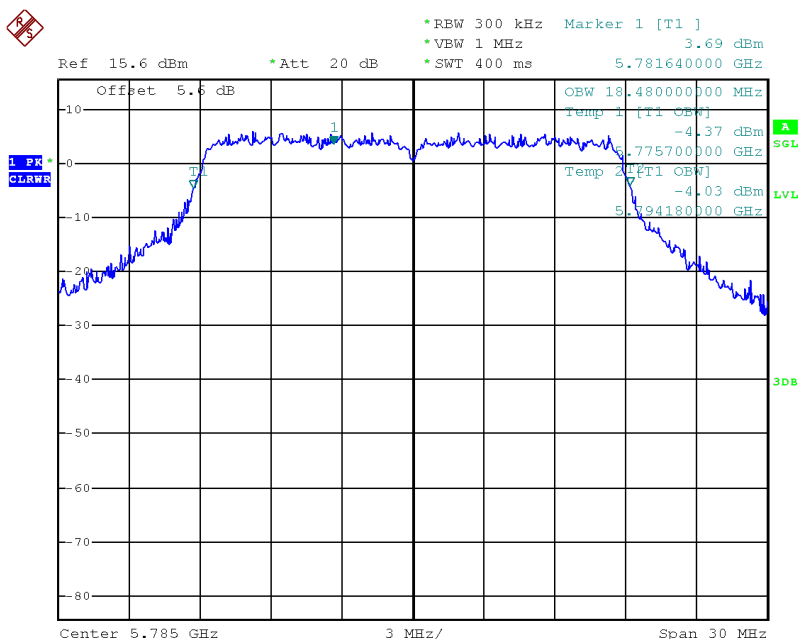


Channel 149 (5745 MHz)

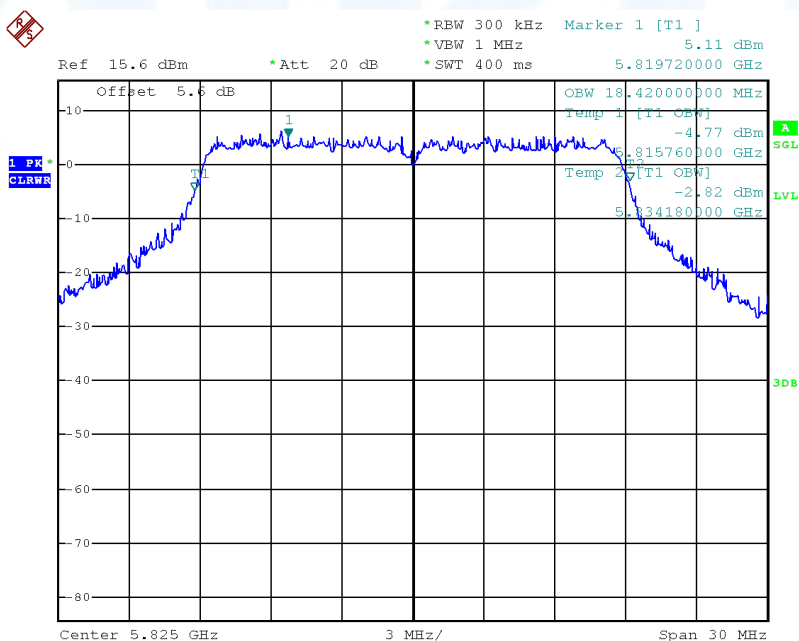


FCC ID: LYHMPCIE1V1

Channel 157 (5785 MHz)



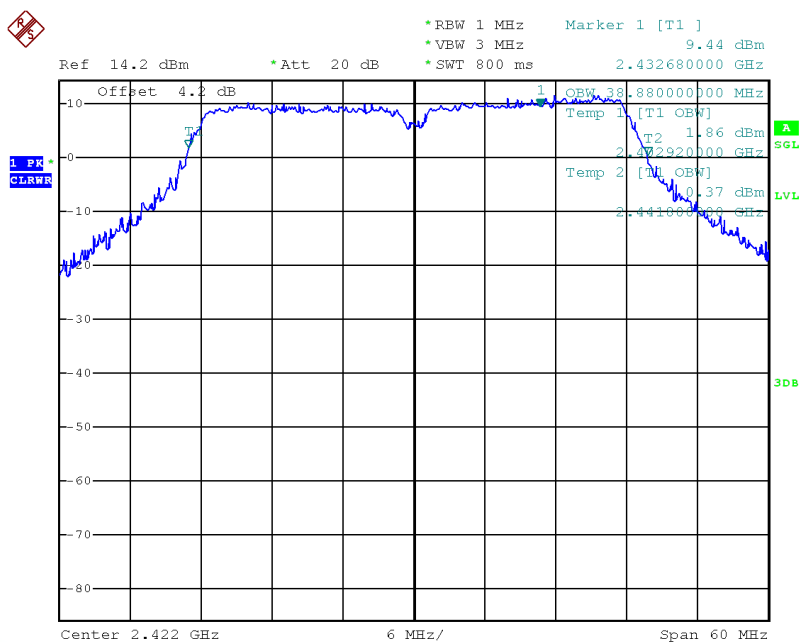
Channel 165 (5825 MHz)



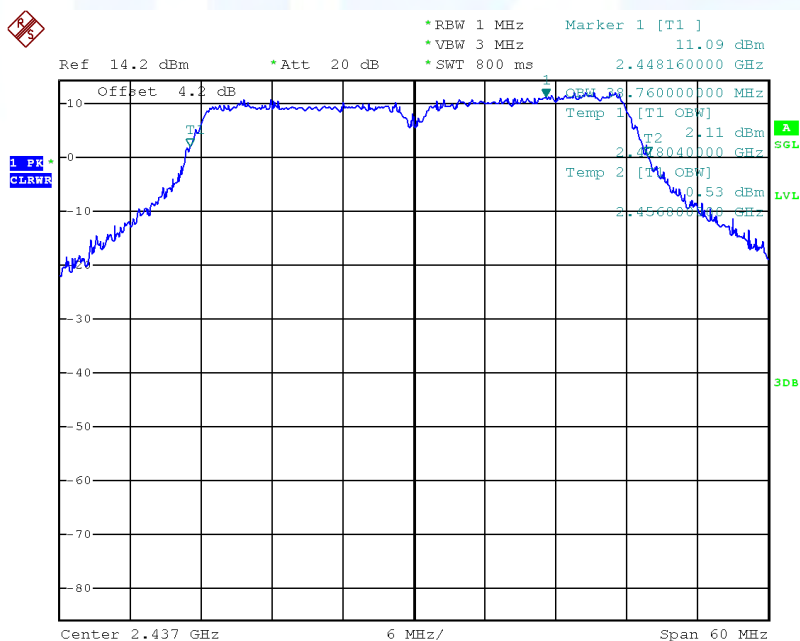
FCC ID: LYHMPCIE1V1

HT40:

Channel 1up (2422 MHz)

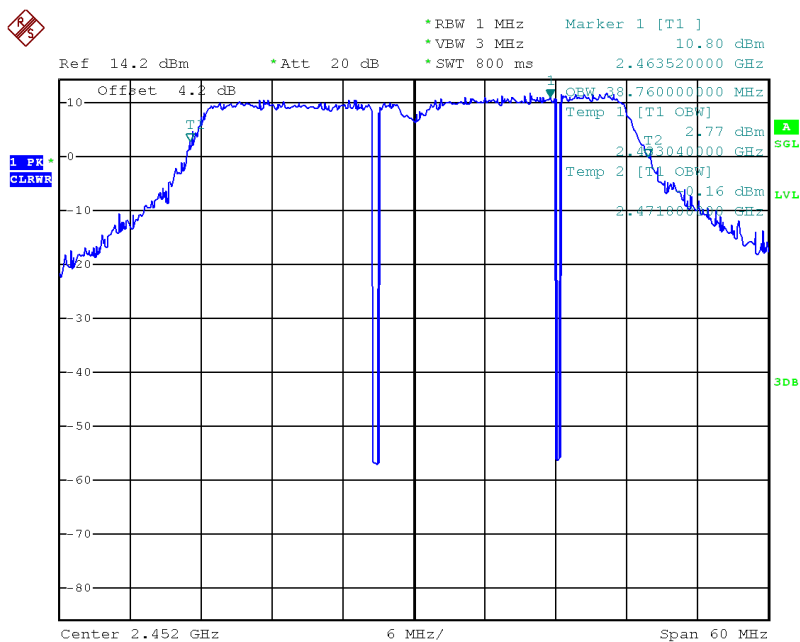


Channel 4up (2437 MHz)

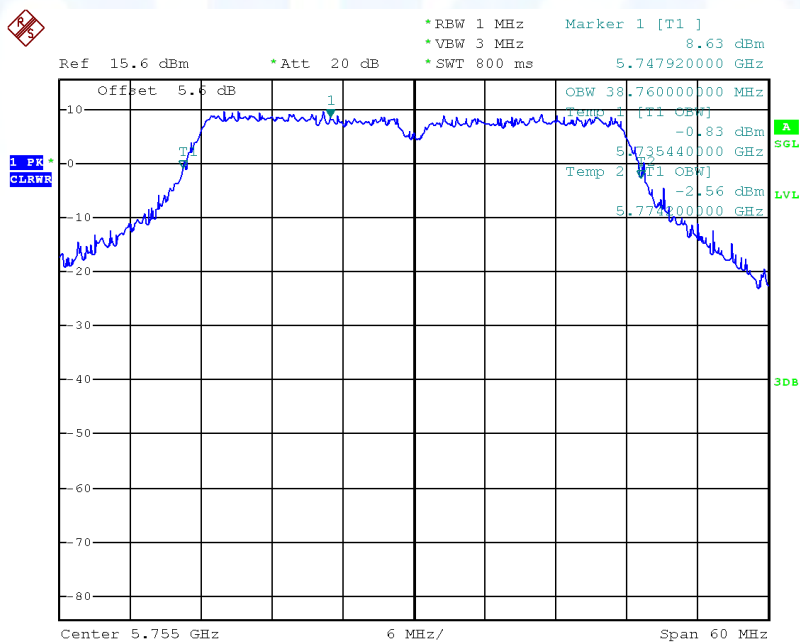


FCC ID: LYHMPCIE1V1

Channel 7up (2452 MHz)

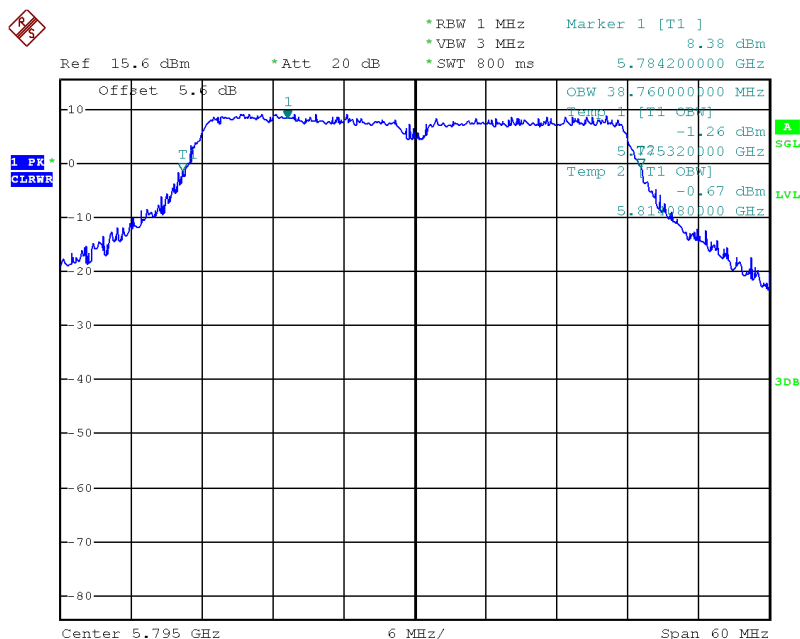


Channel 149up (5755 MHz)



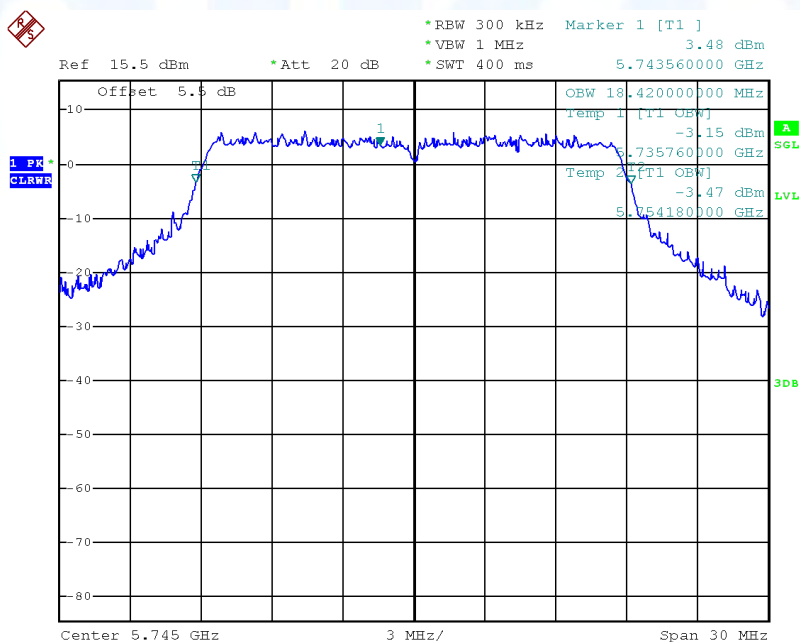
FCC ID: LYHMPCIE1V1

Channel 157up (5795 MHz)



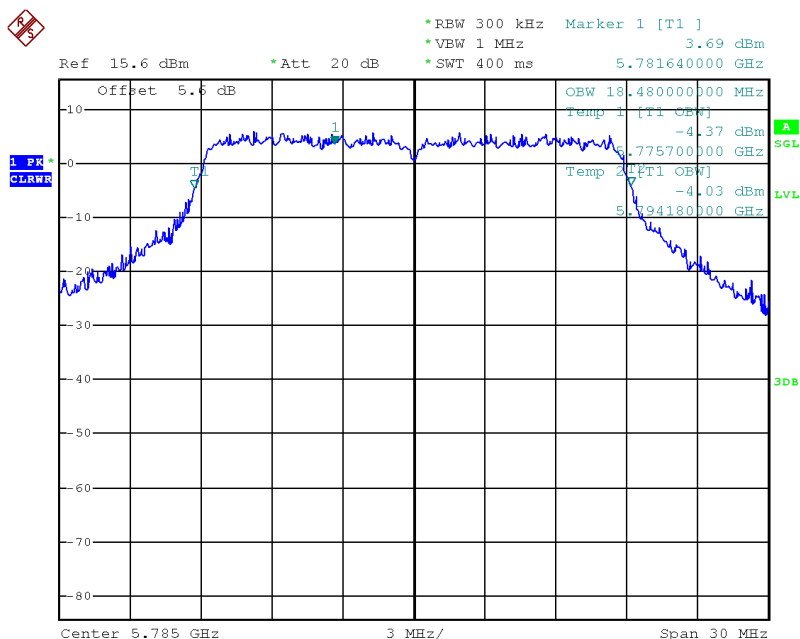
802.11a

Channel 149 (5745 MHz)

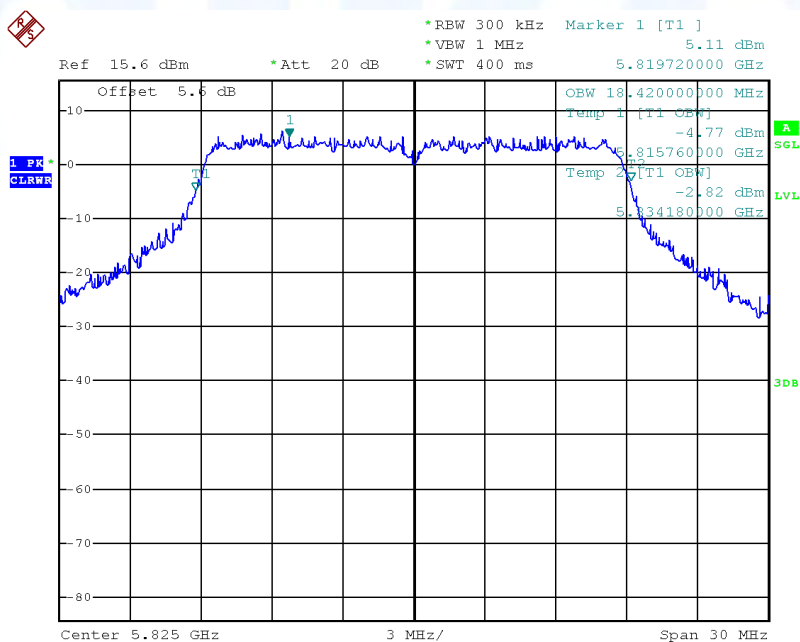


FCC ID: LYHMPCIE1V1

Channel 157 (5785 MHz)



Channel 165 (5825 MHz)



FCC ID: LYHMPCIE1V1**5.3 Maximum peak conducted output power**

For test instruments and accessories used see section 6 Part CPC 3.

5.3.1 Description of the test location

Test location: AREA4

5.3.2 Photo documentation of the test set-up**5.3.3 Applicable standard**

According to FCC Part 15, Section 15.247(b)(3):

For systems using digital modulation in the 2400-2483.5 MHz and 5725 – 5850 MHz bands, the maximum peak output power of the transmitter shall not exceed 1 Watt. The limit is based on transmitting Antennas of directional gain that do not exceed 6 dBi.

5.3.4 Description of Measurement

The output power is measured using the power meter method according ANSI C63.10, clause 6.10.2.1(a). The EUT is set while measuring in TX continuous mode with a duty cycle, $x = 1$. The total output power is summed over all antenna terminals of the multiple antenna system.

FCC ID: LYHMPCIE1V1

5.3.5 Test result

802.11g, 6 Mbps, 1 TX		Test results conducted				
Duty cycle: 100%						
Chain 1		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)	Limit (dBm)	Margin (dB)
Lowest frequency: CH1						
T_{nom}	V_{nom}	10.9	16.0	17.7	30.0	-12.3
Middle frequency: CH6						
T_{nom}	V_{nom}	11.6	16.6	18.5	30.0	-11.5
Highest frequency: CH11						
T_{nom}	V_{nom}	11.7	16.6	18.5	30.0	-11.5

HT20, MCS8, 2 TX		Test results conducted				
Duty cycle: 100%						
Chain 1		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)		
Lowest frequency: CH1						
T_{nom}	V_{nom}	8.2	13.0	16.2		
Middle frequency: CH6						
T_{nom}	V_{nom}	8.8	13.7	16.7		
Highest frequency: CH11						
T_{nom}	V_{nom}	8.2	13.6	16.7		

HT20, MCS8, 2		Test results conducted				
Duty cycle:						
Chain 2		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)		
Lowest frequency: CH1						
T_{nom}	V_{nom}	7.6	13.2	16.1		
Middle frequency: CH6						
T_{nom}	V_{nom}	7.2	13.4	16.7		
Highest frequency: CH11						
T_{nom}	V_{nom}	7.7	13.1	16.3		

HT20, MCS8, 2		Test results conducted				
Duty cycle:						
Chain 1+2		A1+A2 [P12] (dBm)	A1+A2 [P17] (dBm)	A1+A2 [P20] (dBm)	Limit (dBm)	Margin (dB)
Lowest frequency: CH1						
T_{nom}	V_{nom}	10.9	16.1	19.2	30.0	-10.8
Middle frequency: CH6						
T_{nom}	V_{nom}	11.1	16.5	19.7	30.0	-10.3
Highest frequency: CH11						
T_{nom}	V_{nom}	11.0	16.3	19.6	30.0	-10.4

HT20, MCS8, 2 TX		Test results conducted				
Duty cycle: 100%						
Chain 1		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)		
Lowest frequency: CH149						
T_{nom}	V_{nom}	7.8	13.0	14.1		
Middle frequency: CH157						
T_{nom}	V_{nom}	7.6	12.9	14.0		
Highest frequency: CH165						
T_{nom}	V_{nom}	7.6	12.9	13.6		

FCC ID: LYHMPCIE1V1

HT20, MCS8, 2		Test results conducted				
Duty cycle:						
Chain 2		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)		
Lowest frequency: CH149						
T_{nom}	V_{nom}	9.2	13.3	14.4		
Middle frequency: CH157						
T_{nom}	V_{nom}	9.8	14.1	14.9		
Highest frequency: CH165						
T_{nom}	V_{nom}	9.4	13.2	14.3		

HT20, MCS8, 2		Test results conducted				
Duty cycle:						
Chain 1+2		A1+A2 [P12] (dBm)	A1+A2 [P17] (dBm)	A1+A2 [P20] (dBm)	Limit (dBm)	Margin (dB)
Lowest frequency: CH149						
T_{nom}	V_{nom}	11.6	16.2	17.2	30.0	-12.8
Middle frequency: CH157						
T_{nom}	V_{nom}	11.9	16.5	17.4	30.0	-12.6
Highest frequency: CH165						
T_{nom}	V_{nom}	11.6	16.1	17.0	30.0	-13.0

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 1		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)	Limit (dBm)	Margin (dB)
Lowest frequency: CH1up						
T_{nom}	V_{nom}	6.1	11.3	14.7		
Middle frequency: CH4up						
T_{nom}	V_{nom}	7.0	12.2	15.3		
Highest frequency: CH7up						
T_{nom}	V_{nom}	6.0	11.6	15.1		

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 2		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)	Limit (dBm)	Margin (dB)
Lowest frequency: CH1up						
T_{nom}	V_{nom}	5.6	11.1	14.1		
Middle frequency: CH4up						
T_{nom}	V_{nom}	5.9	11.3	14.1		
Highest frequency: CH7up						
T_{nom}	V_{nom}	5.7	11.0	14.2		

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 3		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)	Limit (dBm)	Margin (dB)
Lowest frequency: CH1up						
T_{nom}	V_{nom}	5.8	11.0	13.9		
Middle frequency: CH4up						
T_{nom}	V_{nom}	5.8	11.2	14.0		
Highest frequency: CH7up						
T_{nom}	V_{nom}	6.7	11.5	14.2		

FCC ID: LYHMPCIE1V1

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 1+2+3		A1+2+3 [P12] (dBm)	A1+2+3 [P17] (dBm)	A1+2+3 [P20] (dBm)	Limit (dBm)	Margin (dB)
Lowest frequency: CH1up						
T_{nom}	V_{nom}	10.6	15.9	19.0	30.0	-11.0
Middle frequency: CH4up						
T_{nom}	V_{nom}	11.0	16.3	19.3	30.0	-10.7
Highest frequency: CH7up						
T_{nom}	V_{nom}	10.9	16.2	19.3	30.0	-10.7

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 1		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)		
Lowest frequency: CH149up						
T_{nom}	V_{nom}	5.5	10.7	13.3		
Highest frequency: CH157up						
T_{nom}	V_{nom}	5.4	10.6	13.1		

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 2		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)		
Lowest frequency: CH149up						
T_{nom}	V_{nom}	7.0	11.1	13.6		
Highest frequency: CH157up						
T_{nom}	V_{nom}	7.6	11.5	13.9		

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 3		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)		
Lowest frequency: CH149up						
T_{nom}	V_{nom}	6.1	11.2	13.6		
Highest frequency: CH157up						
T_{nom}	V_{nom}	5.9	10.8	13.2		

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 1+2+3		A1+2+3 [P12] (dBm)	A1+2+3 [P17] (dBm)	A1+2+3 [P20] (dBm)	Limit (dBm)	Margin (dB)
Lowest frequency: CH149up						
T_{nom}	V_{nom}	11.0	15.8	18.3	30.0	-11.7
Highest frequency: CH157up						
T_{nom}	V_{nom}	11.1	15.8	18.2	30.0	-11.8

FCC ID: LYHMPCIE1V1

802.11a, 6 Mbps, 1 TX		Test results conducted				
Duty cycle: 100%						
Chain 1		A [P12] (dBm)	A [P17] (dBm)	A [P20] (dBm)	Limit (dBm)	Margin (dB)
Lowest frequency: CH149						
T_{nom}	V_{nom}	11.1	14.3	14.3	30.0	-15.7
Middle frequency: CH157						
T_{nom}	V_{nom}	10.9	14.2	14.1	30.0	-15.9
Highest frequency: CH165						
T_{nom}	V_{nom}	10.8	13.9	13.9	30.0	-16.1

Peak power limit according to FCC Part 15, Section 15.247(b)(3):

Frequency (MHz)	Peak power limit	
	(dBm)	(Watt)
902 - 928	30	1.0
2400 - 2483.5	30	1.0
5725 - 5850	30	1.0

The requirements are **FULFILLED**.

Remarks:

FCC ID: LYHMPCIE1V1

5.4 Spurious emissions conducted

For test instruments and accessories used see section 6 Part SEC 2, SEC 3.

5.4.1 Description of the test location

Test location: AREA4

5.4.2 Photo documentation of the test set-up



5.4.3 Applicable standard

According to FCC Part 15, Section 15.247(d):

In any 100 kHz bandwidth outside the frequency bands 2400 – 2483.50 MHz and 5725 – 5850 MHz, the digitally modulated radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or an radiated measurement.

5.4.4 Description of Measurement

The spurious emissions are measured conducted using a spectrum analyser in a test setup following the procedures set out in KDB 558074 D01 for DTS. The frequency spectrum outside from the operating frequency range (2400 - 2483.5 MHz and 5725 – 5850 MHz) is scanned for emissions that exceed the given limit. The measurement is performed at normal test conditions in modulated TX continuous mode. The total output power is adjusted according the formula $10 \log(N)$ dB of KDB 662911 D01, Multiple transmitter output V01, for the amount of antenna terminals of the multiple antenna system.

Spectrum analyser settings:

RBW: 100 kHz, VBW: 300 kHz, Detector: Max peak, Trace Mode: Max hold, Sweep time: 1 s;

FCC ID: LYHMPCIE1V1
5.4.5 Test result

5.4.5.1 802.11g:

Lowest frequency: CH1						
Test conditions: 1 TX, P20, 6 Mbps						
Reference power level:					7.7 dBm	
Chain1			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	176	-63.6	-12.3	-51.3
1000	2400	100	2400	-21.1	-12.3	-8.8
2484	5000	100	2640	-40.3	-12.3	-28.0
5000	15000	100	14001	-55.6	-12.3	-43.3
15000	25000	100	24939	-50.9	-12.3	-38.6
Measurement uncertainty				±3 dB		

Middle frequency: CH6						
Test conditions: 1 TX , P20, 6 Mbps						
Reference power level:					7.7 dBm	
Chain1			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	176	-67.0	-12.3	-54.7
1000	2400	100	2400	-44.5	-12.3	-32.2
2483.5	5000	100	2640	-40.3	-12.3	-28.0
5000	15000	100	14000	-55.4	-12.3	-43.1
15000	25000	100	24912	-50.0	-12.3	-37.7
Measurement uncertainty				±3 dB		

Highest frequency: CH11						
Test conditions: 1 TX , P20, 6 Mbps						
Reference power level:					7.7 dBm	
Chain1			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	176	-68.7	-12.3	-56.4
1000	2400	100	2400	-51.9	-12.3	-39.6
2483.5	5000	100	2484	-33.0	-12.3	-20.7
5000	15000	100	14065	-55.2	-12.3	-42.9
15000	25000	100	24946	-50.8	-12.3	-38.5
Measurement uncertainty				±3 dB		

FCC ID: LYHMPCIE1V1

5.4.5.2 802.11a:

Lowest frequency: CH149						
Test conditions: 1 TX , P20, 6 Mbps						
Reference power level:					1.8 dBm	
Chain1			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	320	-63.6	-18.2	-45.4
1000	5725	100	5725	-38.4	-18.2	-20.2
5850	12000	100	6086	-60.6	-18.2	-42.4
12000	20000	100	19787	-54.5	-18.2	-36.3
20000	40000	100	39998	-39.7	-18.2	-21.5
Measurement uncertainty				±3 dB		

Middle frequency: CH157						
Test conditions: 1 TX , P20, 6 Mbps						
Reference power level:					1.8 dBm	
Chain1			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	320	-64.8	-18.2	-46.6
1000	5725	100	4999	-52.2	-18.2	-34.0
5850	12000	100	5867	-60.5	-18.2	-42.3
12000	20000	100	19756	-54.3	-18.2	-36.1
20000	40000	100	39971	-39.8	-18.2	-21.6
Measurement uncertainty				±3 dB		

Highest frequency: CH165						
Test conditions: 1 TX , P20, 6 Mbps						
Reference power level:					1.8 dBm	
Chain1			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	323	-64.8	-18.2	-46.6
1000	5725	100	4999	-53.1	-18.2	-34.9
5850	12000	100	5851	-48.4	-18.2	-30.2
12000	20000	100	18647	-54.1	-18.2	-35.9
20000	40000	100	39960	-39.0	-18.2	-20.8
Measurement uncertainty				±3 dB		

FCC ID: LYHMPCIE1V1

5.4.5.3 HT20:

Lowest frequency: CH1						
Test conditions: 2 TX , P20, MCS8						
Reference power level:					6.2 dBm	
Chain1+2			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	250	-62.3	-13.8	-48.5
1000	2400	100	2400	-21.2	-13.8	-7.4
2483.5	5000	100	2640	-41.9	-13.8	-28.1
5000	15000	100	13869	-52.9	-13.8	-39.1
15000	25000	100	24790	-47.1	-13.8	-33.3
Measurement uncertainty				±3 dB		

Middle frequency: CH6						
Test conditions: 2 TX , P20, MCS8						
Reference power level:					6.2 dBm	
Chain1+2			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	176	-65.2	-13.8	-51.4
1000	2400	100	2400	-43.0	-13.8	-29.2
2483.5	5000	100	2625	-43.5	-13.8	-29.7
5000	15000	100	14083	-52.3	-13.8	-38.5
15000	25000	100	24896	-47.0	-13.8	-33.2
Measurement uncertainty				±3 dB		

Highest frequency: CH11						
Test conditions: 2 TX , P20, MCS8						
Reference power level:					6.2 dBm	
Chain1+2			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	175.9082	-67.8162	-13.8	-54.0
1000	2400	100	2372.455	-49.7468	-13.8	-35.9
2483.5	5000	100	2483.899	-31.4507	-13.8	-17.7
5000	15000	100	13647.5	-52.5145	-13.8	-38.7
15000	25000	100	24910.78	-47.4818	-13.8	-33.7
Measurement uncertainty				±3 dB		

FCC ID: LYHMPCIE1V1

Lowest frequency: CH149						
Test conditions: 2 TX , P20, MCS8						
Reference power level:					3.6 dBm	
Chain1+2			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	348	-67.1	-16.4	-50.7
1000	5725	100	5724	-34.8	-16.4	-18.4
5850	12000	100	11493	-53.9	-16.4	-37.5
12000	20000	100	18746	-50.5	-16.4	-34.1
20000	40000	100	39960	-36.6	-16.4	-20.2
Measurement uncertainty				±3 dB		

Middle frequency: CH157						
Test conditions: 2 TX , P20, MCS8						
Reference power level:					3.6 dBm	
Chain1+2			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	335	-66.8	-16.4	-50.4
1000	5725	100	4920	-43.7	-16.4	-27.3
5850	12000	100	11569	-49.7	-16.4	-33.3
12000	20000	100	14071	-51.1	-16.4	-34.7
20000	40000	100	39970	-36.6	-16.4	-20.2
Measurement uncertainty				±3 dB		

Highest frequency: CH165						
Test conditions: 2 TX , P20, MCS8						
Reference power level:					3.6 dBm	
Chain1+2			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	350	-66.9	-16.4	-50.5
1000	5725	100	4920	-44.3	-16.4	-27.9
5850	12000	100	5850	-42.5	-16.4	-26.1
12000	20000	100	16620	-51.0	-16.4	-34.6
20000	40000	100	39975	-36.4	-16.4	-20.0
Measurement uncertainty				±3 dB		

FCC ID: LYHMPCIE1V1
5.4.5.4 HT40:

Lowest frequency: CH1up						
Test conditions: 3 TX , P20, MCS16						
Reference power level:					3.4 dBm	
Chain1+2+3			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	176	-60.2	-16.6	-43.6
1000	2400	100	2400	-20.2	-16.6	-3.6
2483.5	5000	100	2640	-40.3	-16.6	-23.7
5000	15000	100	14040	-50.9	-16.6	-34.3
15000	25000	100	24877	-45.4	-16.6	-28.8
Measurement uncertainty				±3 dB		

Middle frequency: CH4up						
Test conditions: 3 TX , P20, MCS16						
Reference power level:					3.4 dBm	
Chain1+2+3			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	31	-60.9	-16.6	-44.3
1000	2400	100	2400	-34.0	-16.6	-17.4
2483.5	5000	100	2485	-34.9	-16.6	-18.3
5000	15000	100	13939	-50.1	-16.6	-33.5
15000	25000	100	24876	-45.3	-16.6	-28.7
Measurement uncertainty				±3 dB		

Highest frequency: CH7up						
Test conditions: 3 TX , P20, MCS16						
Reference power level:					3.4 dBm	
Chain1+2+3			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	176	-63.9	-16.6	-47.3
1000	2400	100	2397	-38.9	-16.6	-22.3
2483.5	5000	100	2488	-27.1	-16.6	-10.5
5000	15000	100	14035	-51.0	-16.6	-34.4
15000	25000	100	24905	-45.1	-16.6	-28.5
Measurement uncertainty				±3 dB		

FCC ID: LYHMPCIE1V1

Lowest frequency: CH149up						
Test conditions: 3 TX , P20, MCS16						
Reference power level:					0.7 dBm	
Chain1+2+3			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	341	-65.7	-19.3	-46.4
1000	5725	100	5725	-32.2	-19.3	-12.9
5850	12000	100	11510	-50.2	-19.3	-30.9
12000	20000	100	19699	-49.3	-19.3	-30.0
20000	40000	100	39999	-33.8	-19.3	-14.5
Measurement uncertainty				±3 dB		

Highest frequency: CH157up						
Test conditions: 3 TX , P20, MCS16						
Reference power level:					0.7 dBm	
Chain1+2+3			Test results			
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBm)	(dB)
30	1000	100	831	-64.7	-19.3	-45.4
1000	5725	100	4960	-42.3	-19.3	-23.0
5850	12000	100	5851	-45.1	-19.3	-25.8
12000	20000	100	19714	-49.3	-19.3	-30.0
20000	40000	100	39970	-34.9	-19.3	-15.6
Measurement uncertainty				±3 dB		

Limit according to FCC Part 15, Section 15.247(d) for emissions falling not in restricted bands:
In any 100 kHz bandwidth outside the frequency bands 2400 – 2483.50 MHz and 5725 – 5850 MHz, the digitally modulated radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or an radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

Frequency (MHz)	Spurious emission limit
Below 960	20 dB below the highest level of the desired power
Above 960	20 dB below the highest level of the desired power

The requirements are **FULFILLED**.

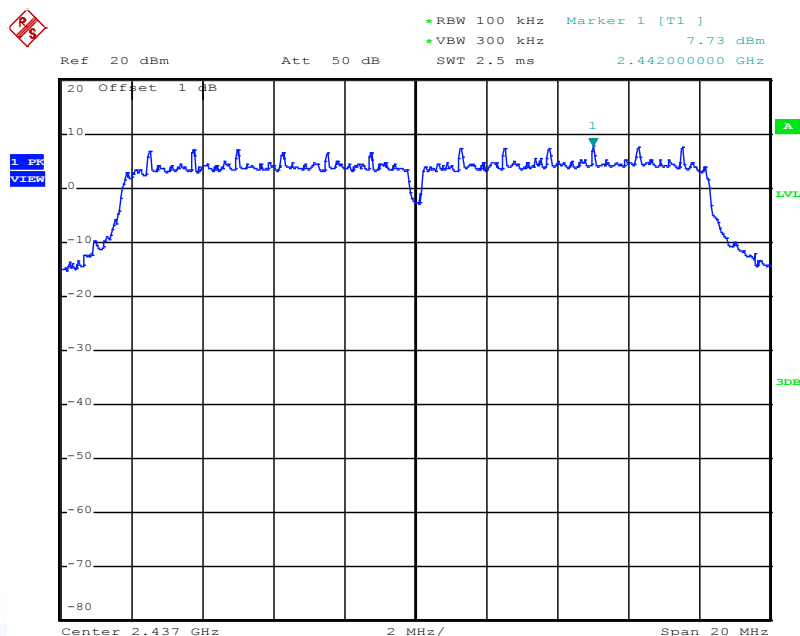
Remarks: For detailed test results please see the following test protocols. Only the worst cases of the plots are listed.

FCC ID: LYHMPCIE1V1

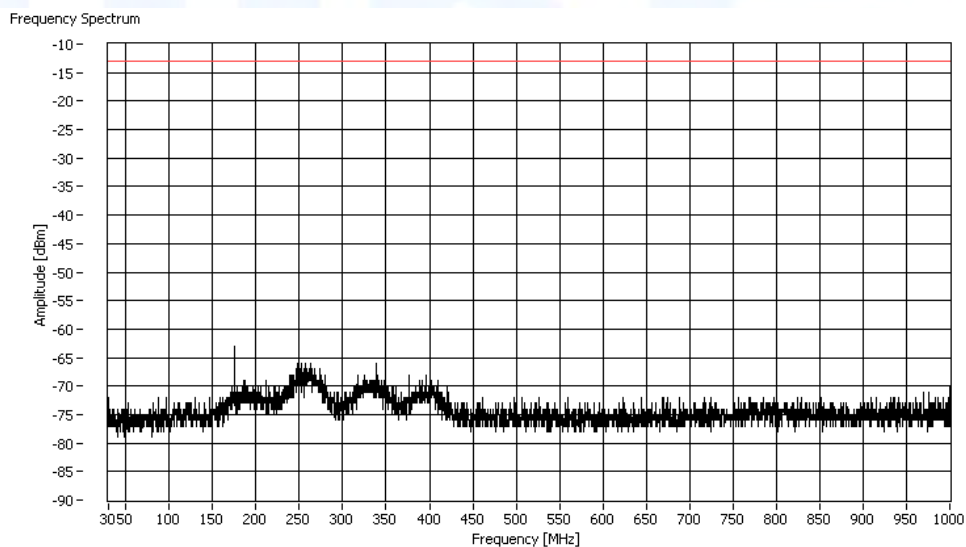
5.4.6 Test protocols of SEC out of operating frequency bands (-20 dBc):

5.4.6.1 802.11g:

Determination of the reference level and limit

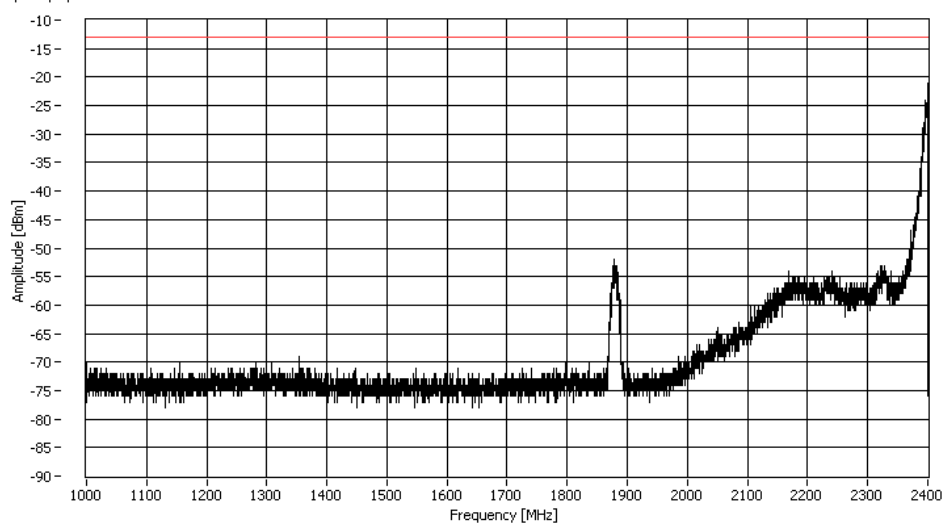


CH1:

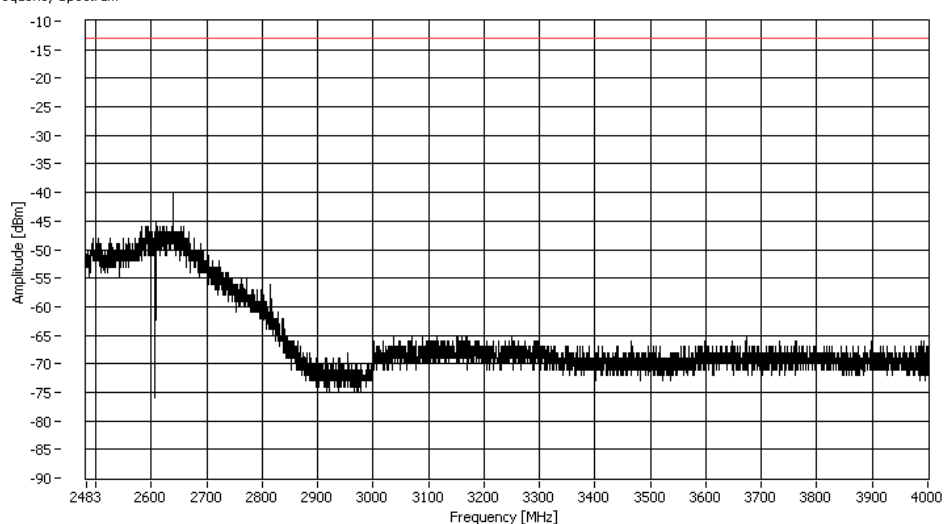


FCC ID: LYHMPCIE1V1

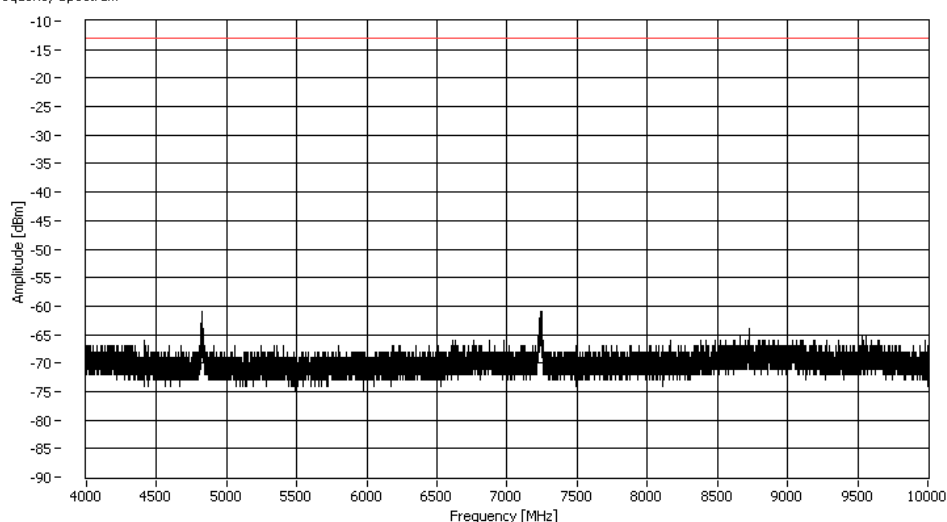
Frequency Spectrum



Frequency Spectrum

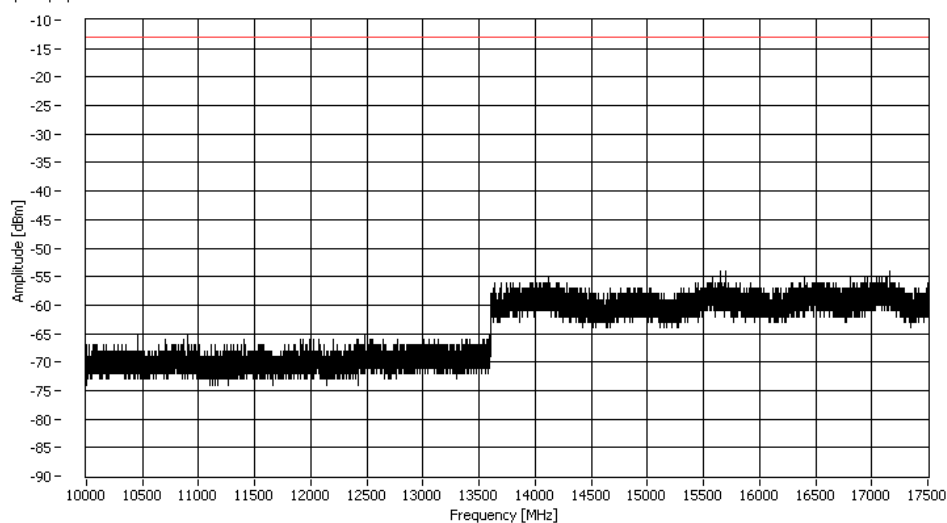


Frequency Spectrum

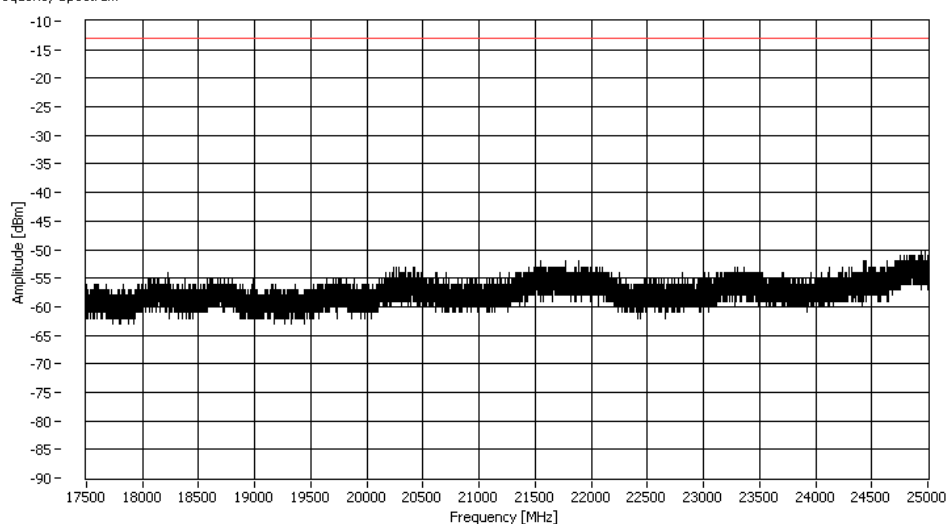


FCC ID: LYHMPCIE1V1

Frequency Spectrum

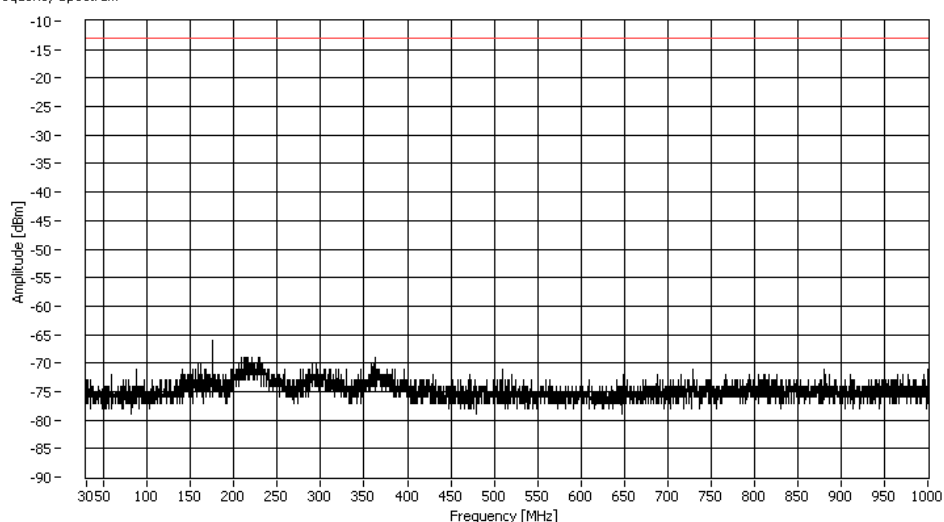


Frequency Spectrum



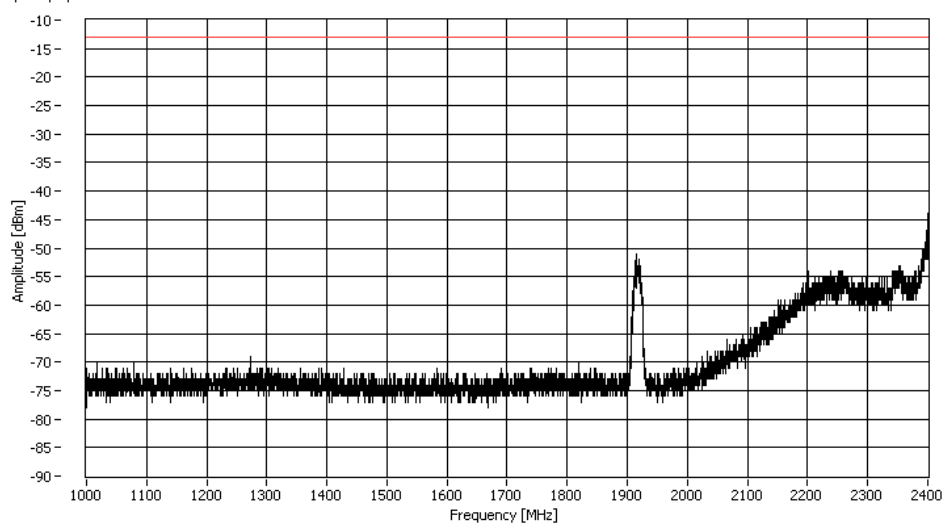
CH6:

Frequency Spectrum

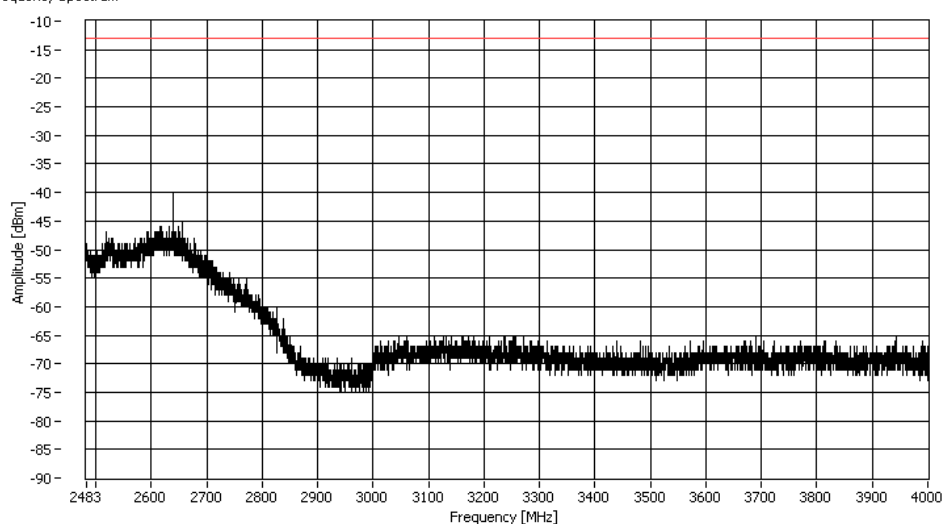


FCC ID: LYHMPCIE1V1

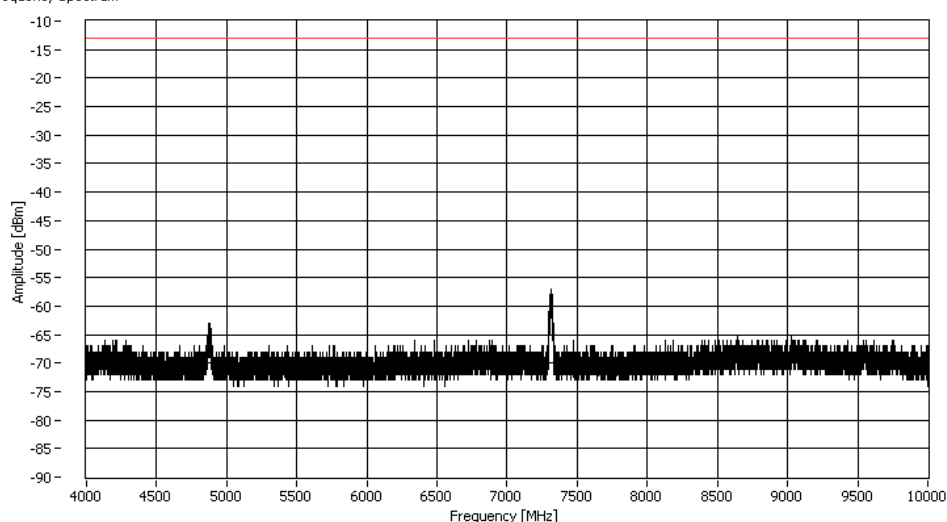
Frequency Spectrum



Frequency Spectrum

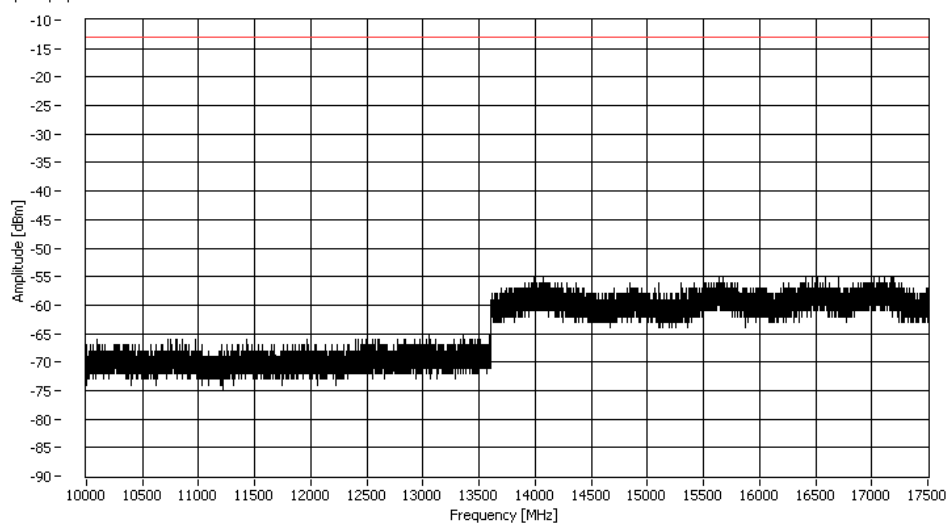


Frequency Spectrum

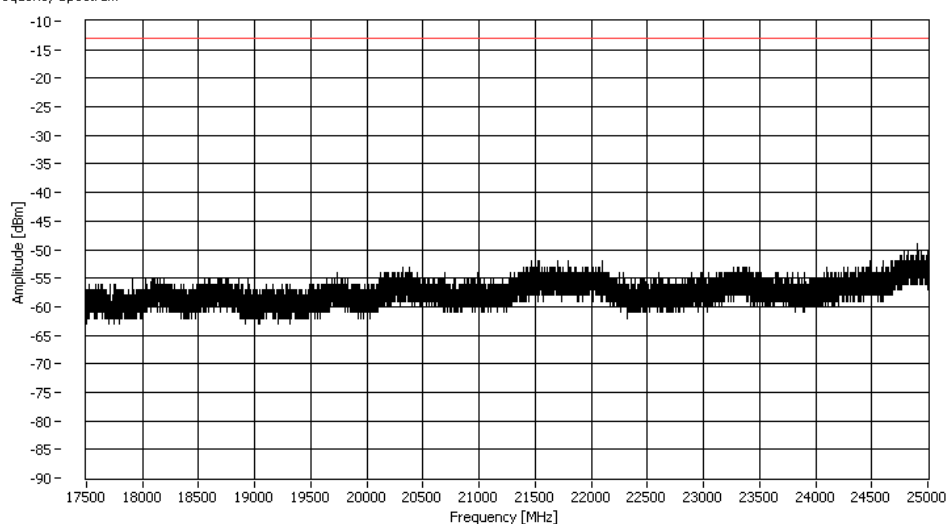


FCC ID: LYHMPCIE1V1

Frequency Spectrum

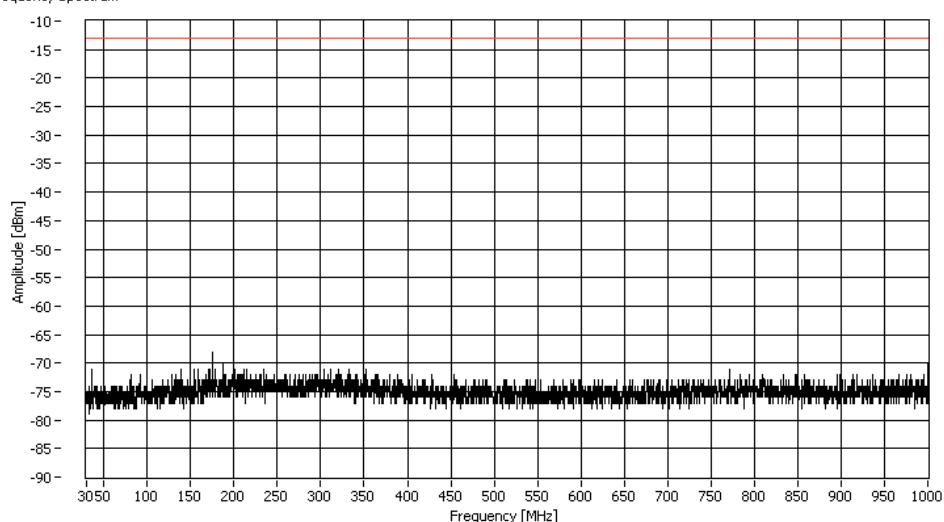


Frequency Spectrum



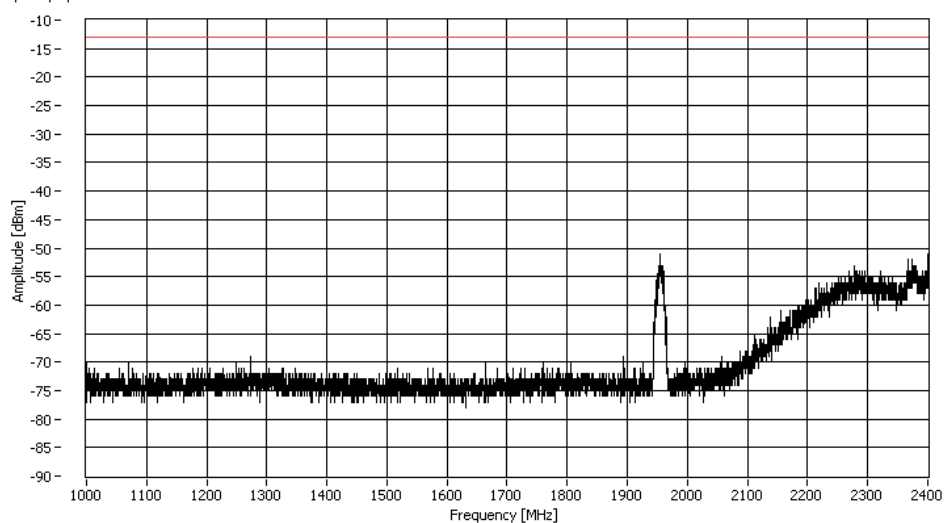
CH11:

Frequency Spectrum

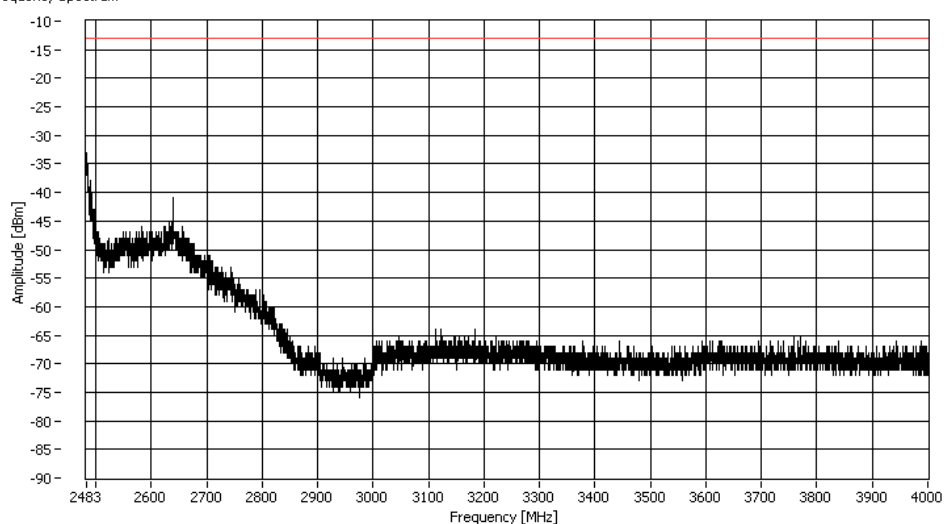


FCC ID: LYHMPCIE1V1

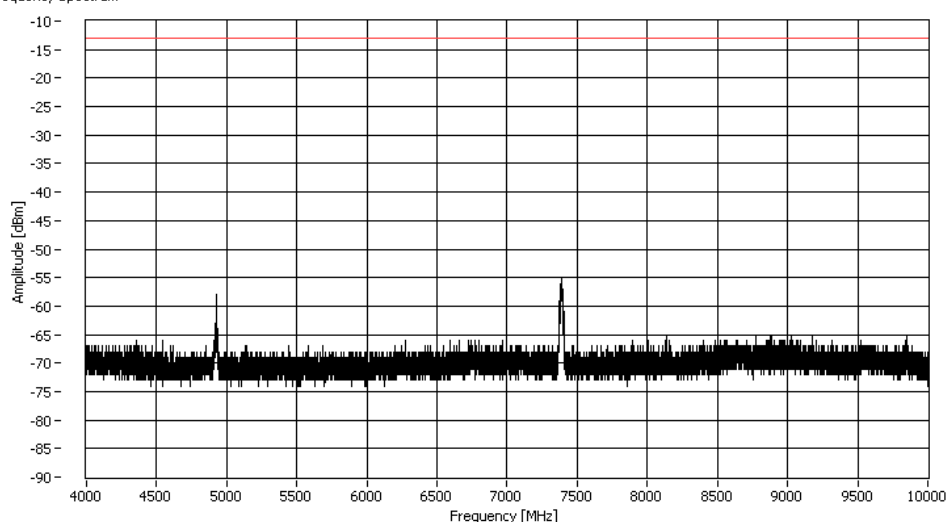
Frequency Spectrum



Frequency Spectrum

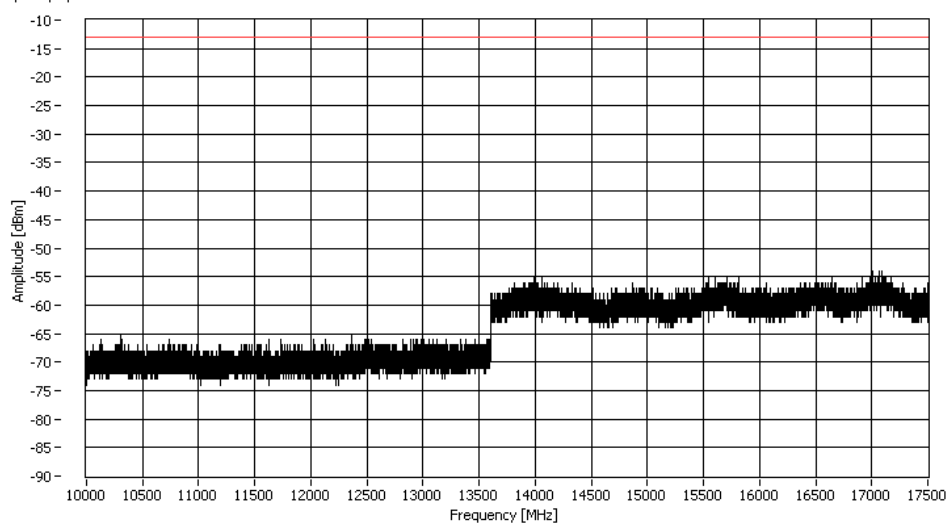


Frequency Spectrum

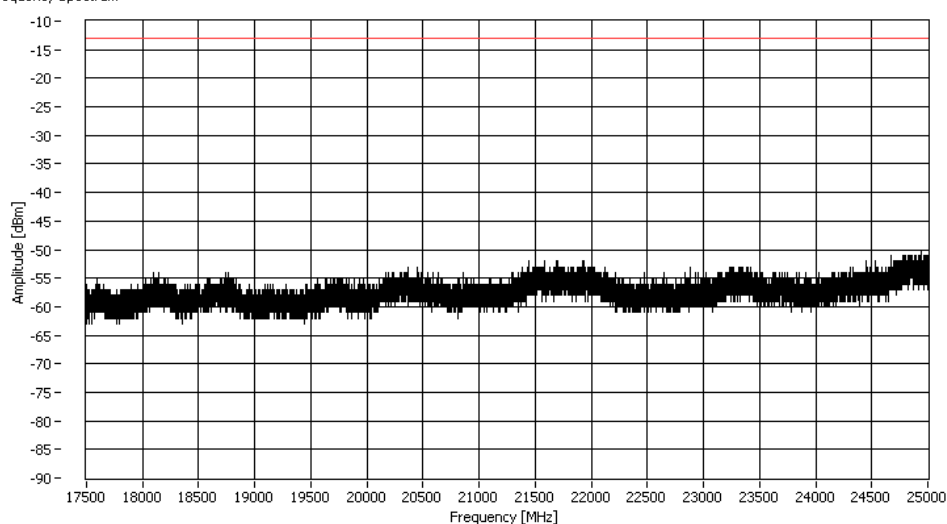


FCC ID: LYHMPCIE1V1

Frequency Spectrum



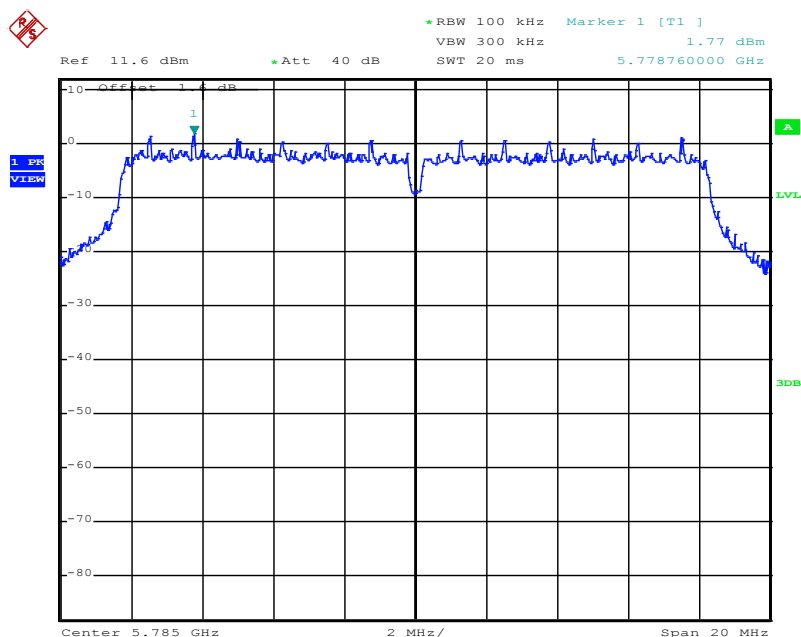
Frequency Spectrum



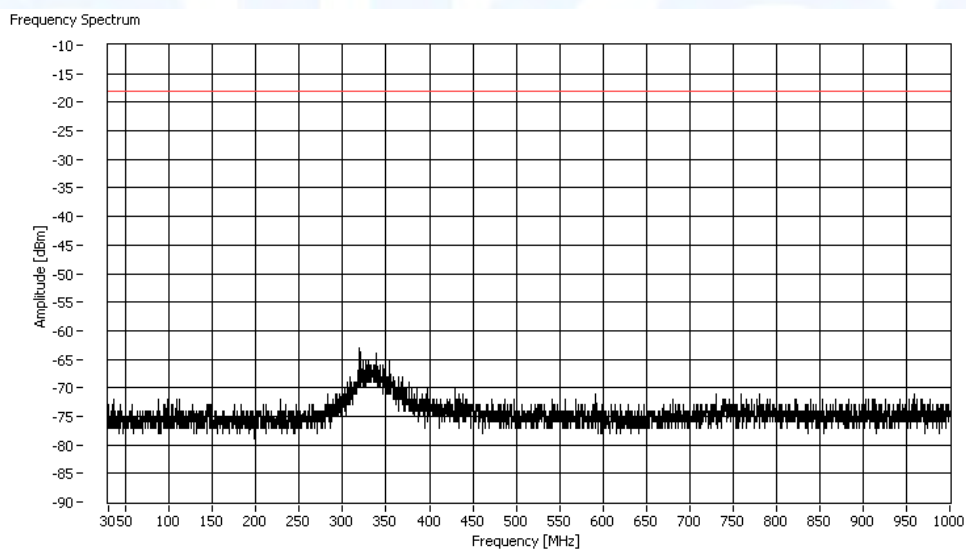
FCC ID: LYHMPCIE1V1

5.4.6.1 802.11a:

Determination of the reference level and limit

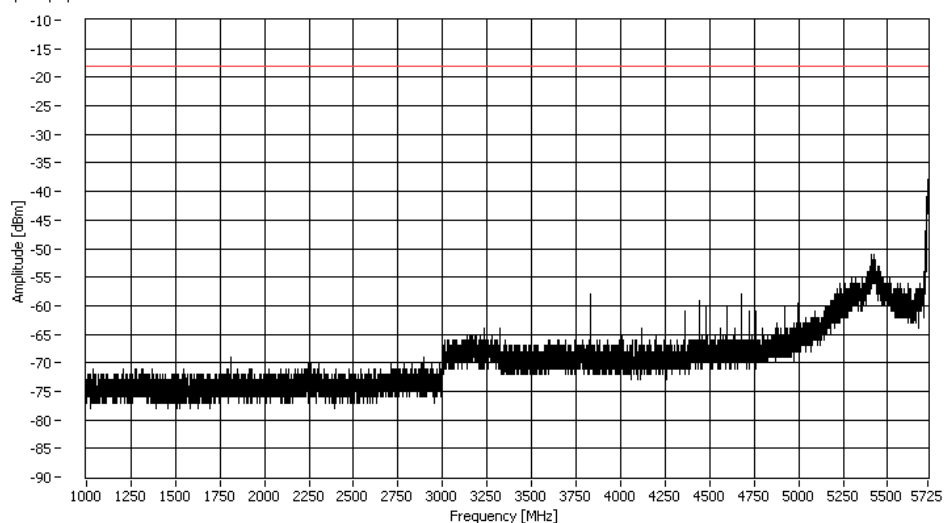


CH149:

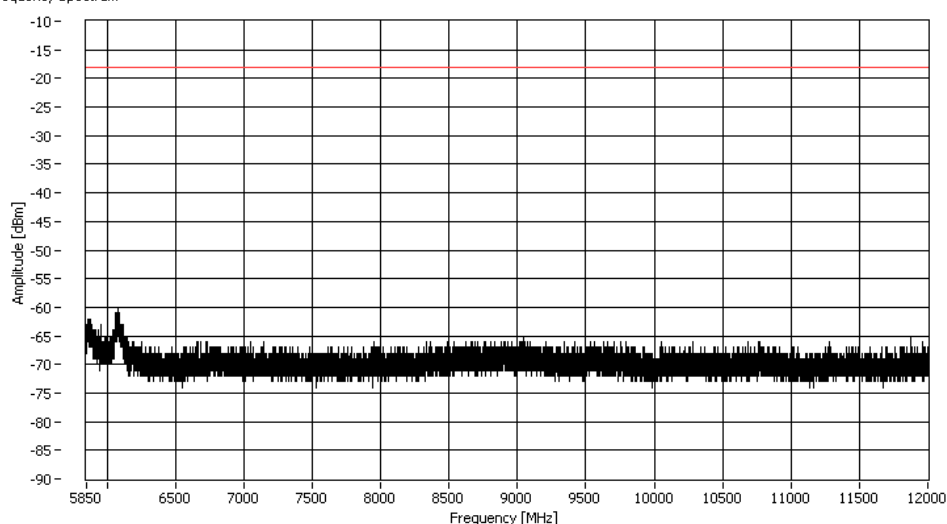


FCC ID: LYHMPCIE1V1

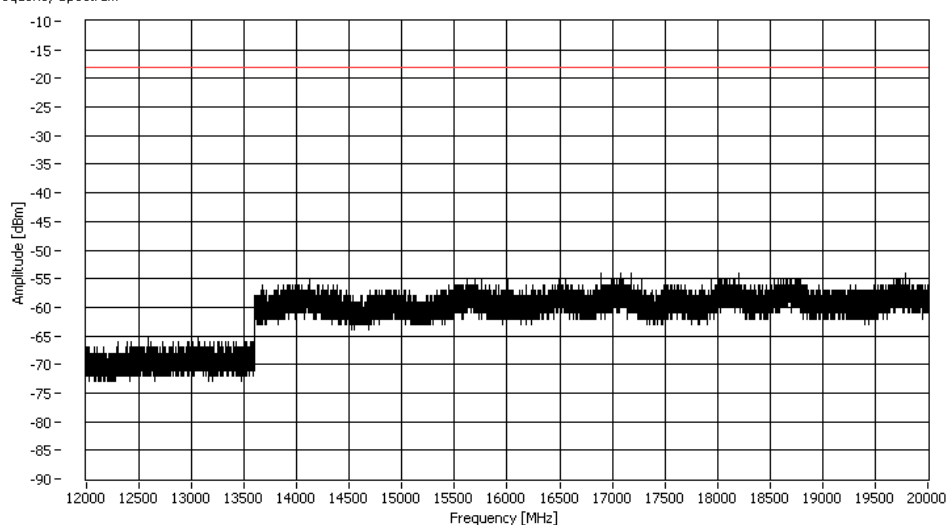
Frequency Spectrum



Frequency Spectrum

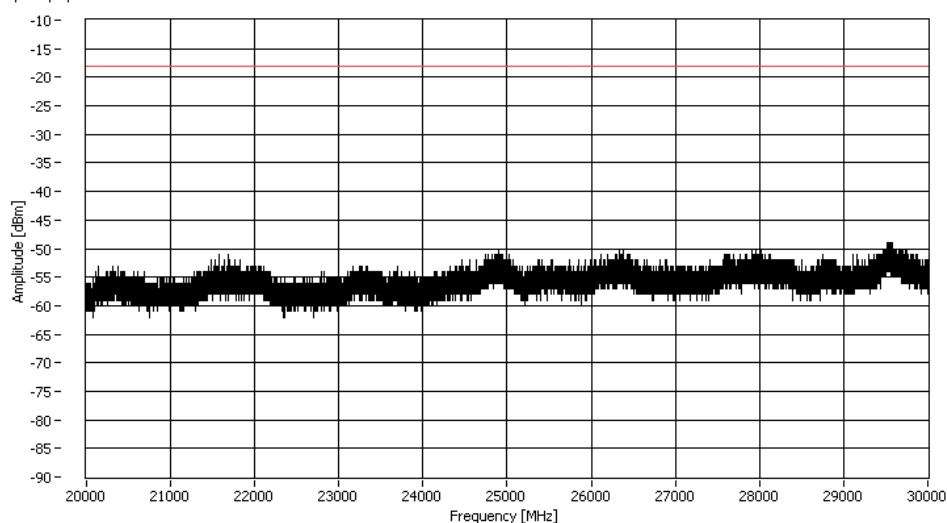


Frequency Spectrum

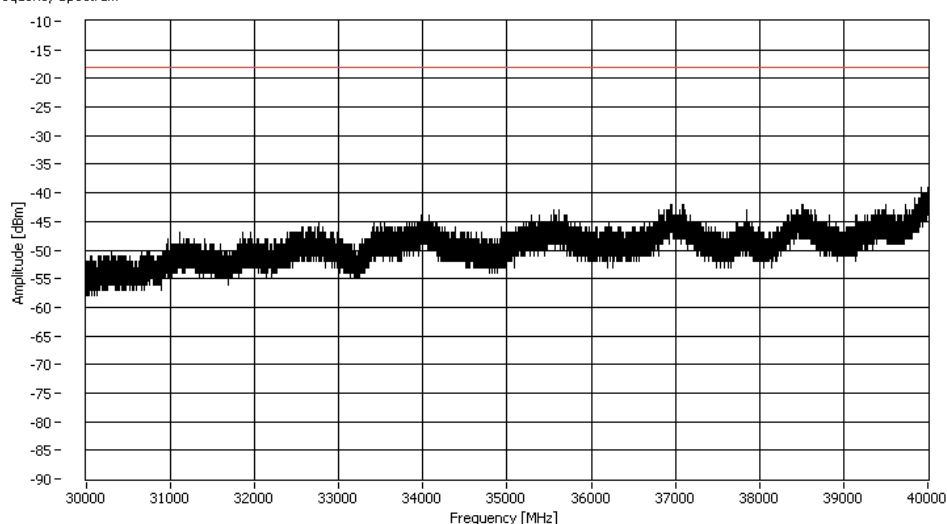


FCC ID: LYHMPCIE1V1

Frequency Spectrum

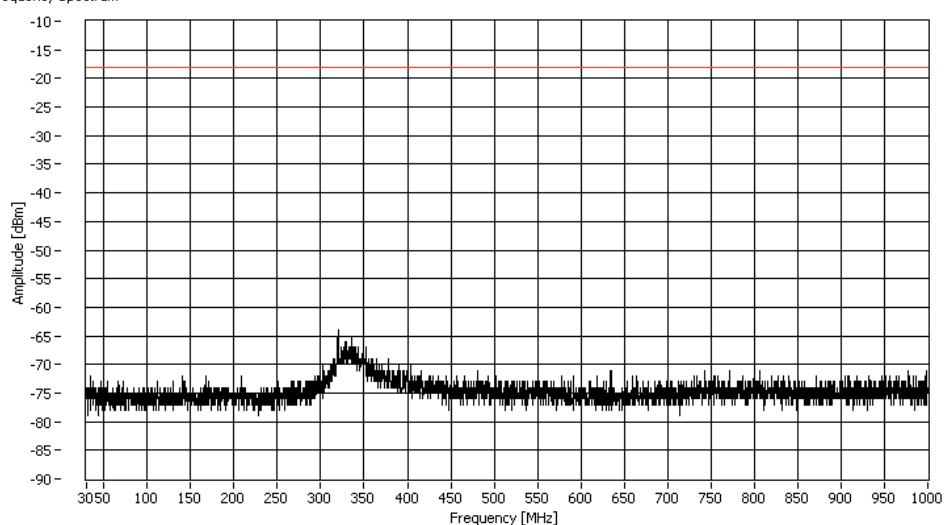


Frequency Spectrum



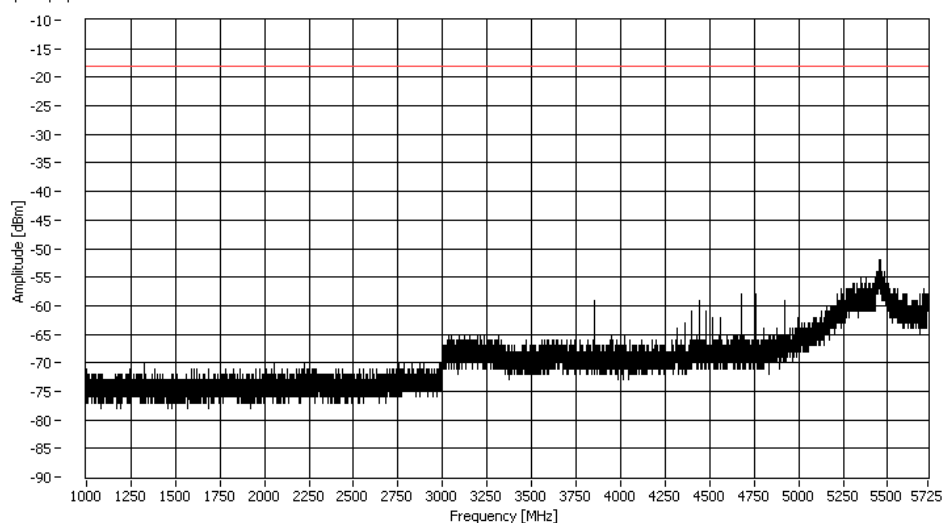
CH157:

Frequency Spectrum

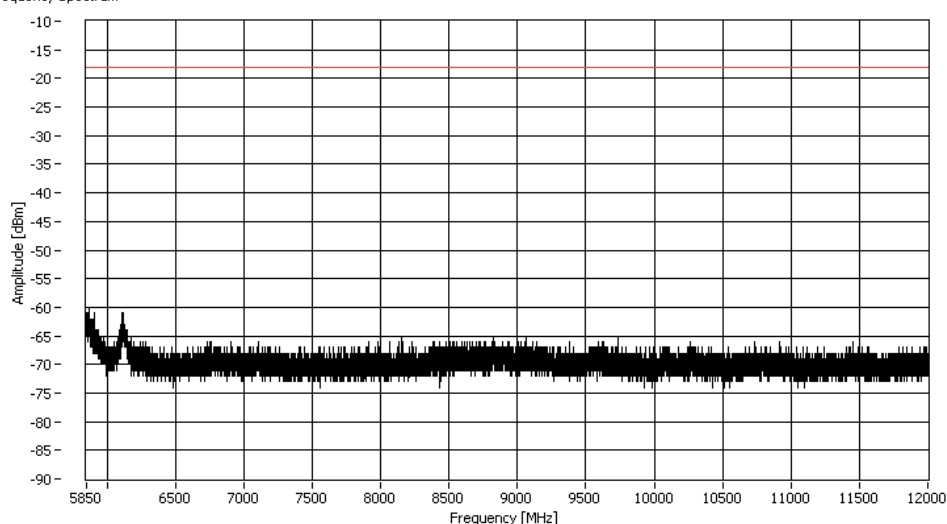


FCC ID: LYHMPCIE1V1

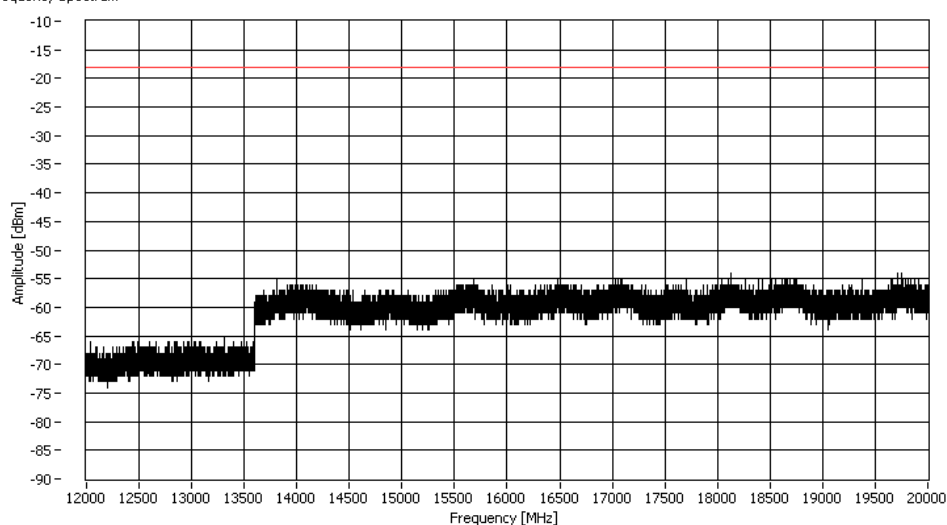
Frequency Spectrum



Frequency Spectrum

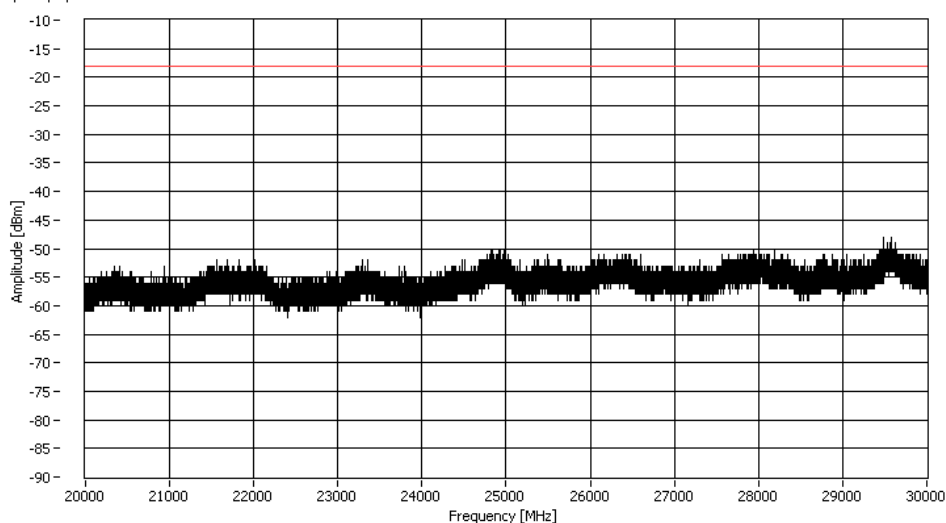


Frequency Spectrum

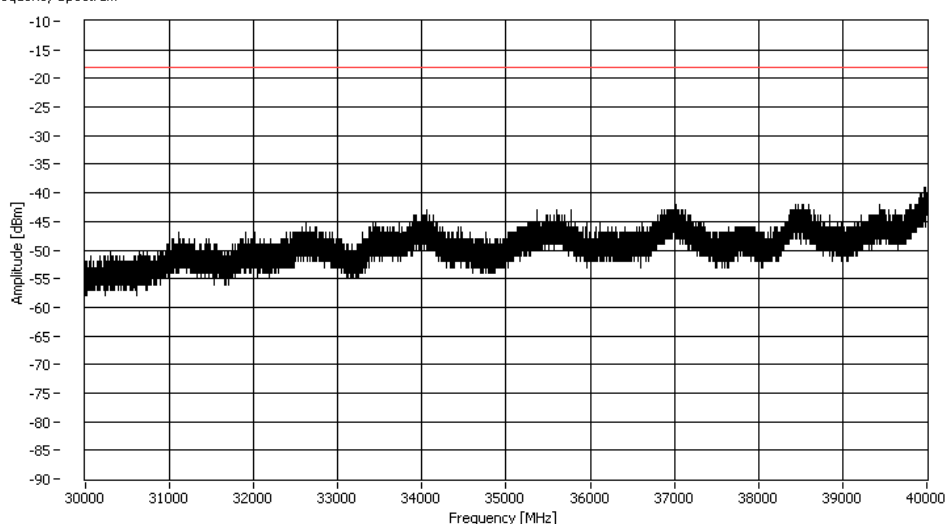


FCC ID: LYHMPCIE1V1

Frequency Spectrum

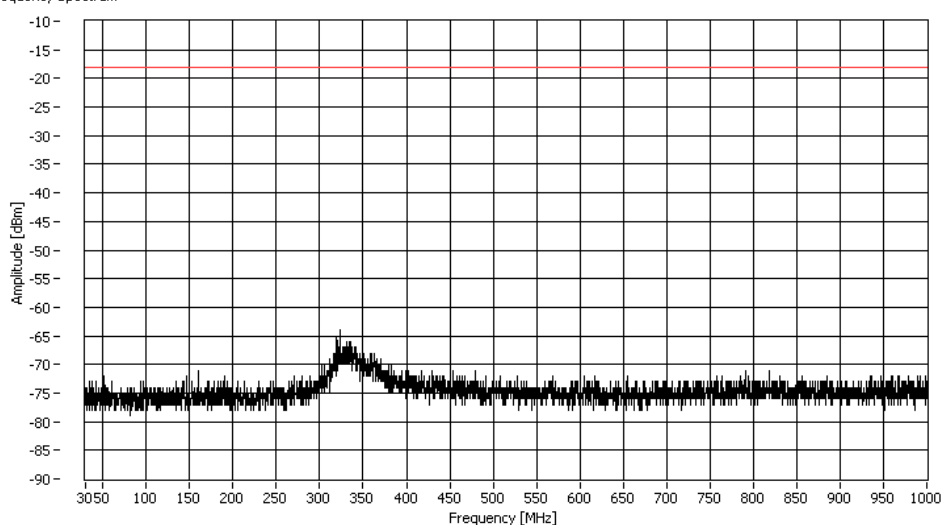


Frequency Spectrum



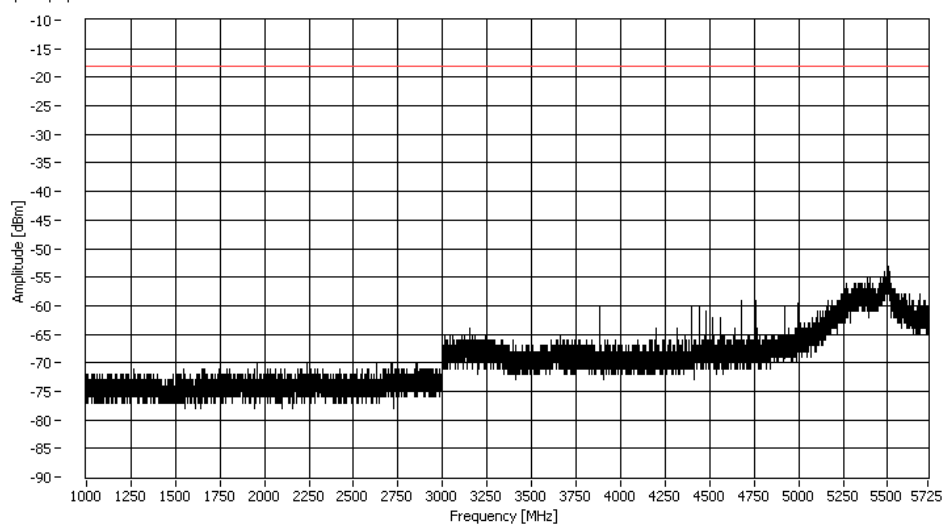
CH165:

Frequency Spectrum

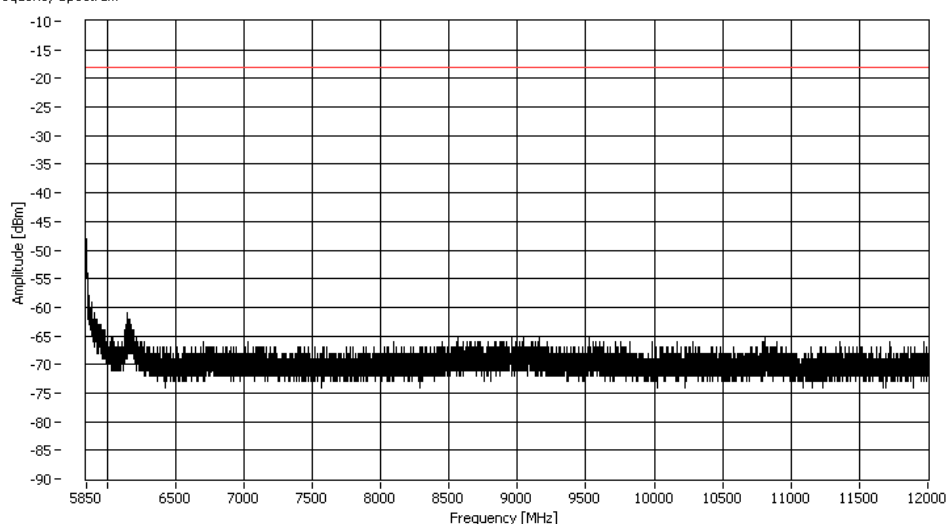


FCC ID: LYHMPCIE1V1

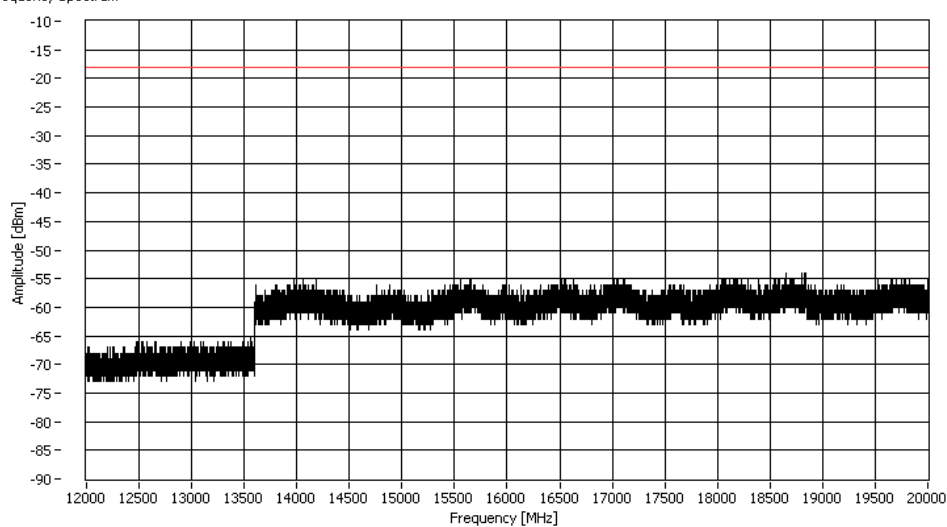
Frequency Spectrum



Frequency Spectrum

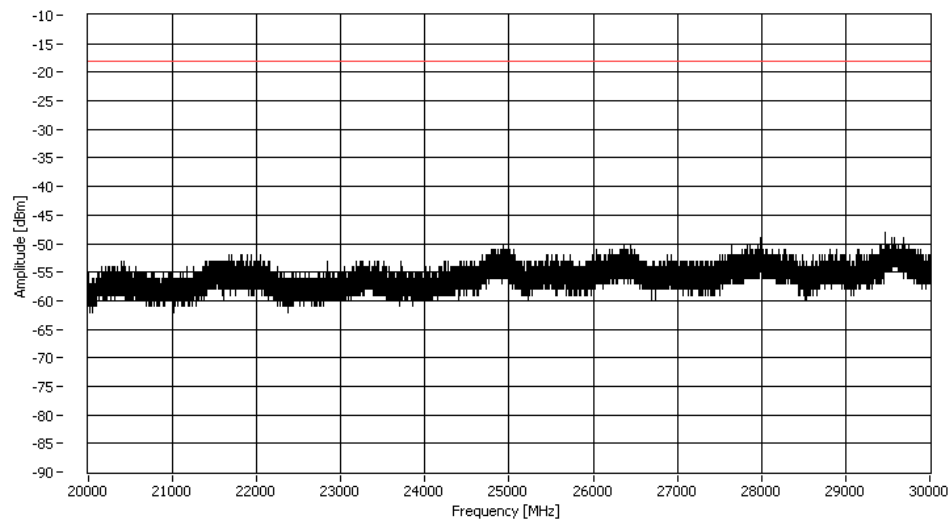


Frequency Spectrum

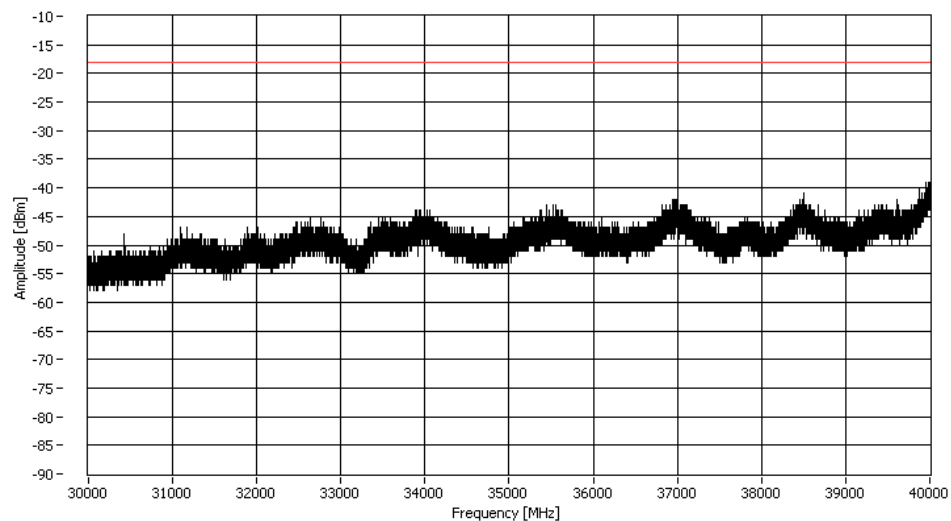


FCC ID: LYHMPCIE1V1

Frequency Spectrum



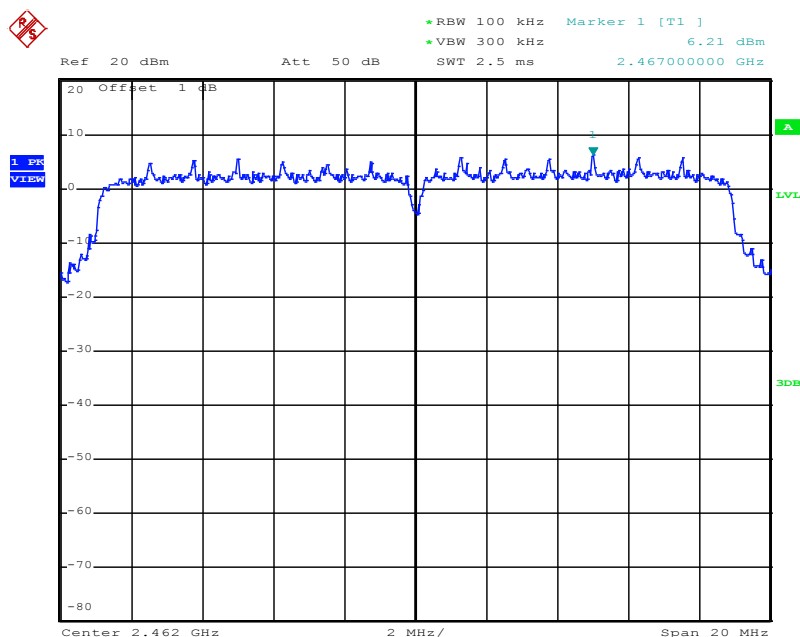
Frequency Spectrum



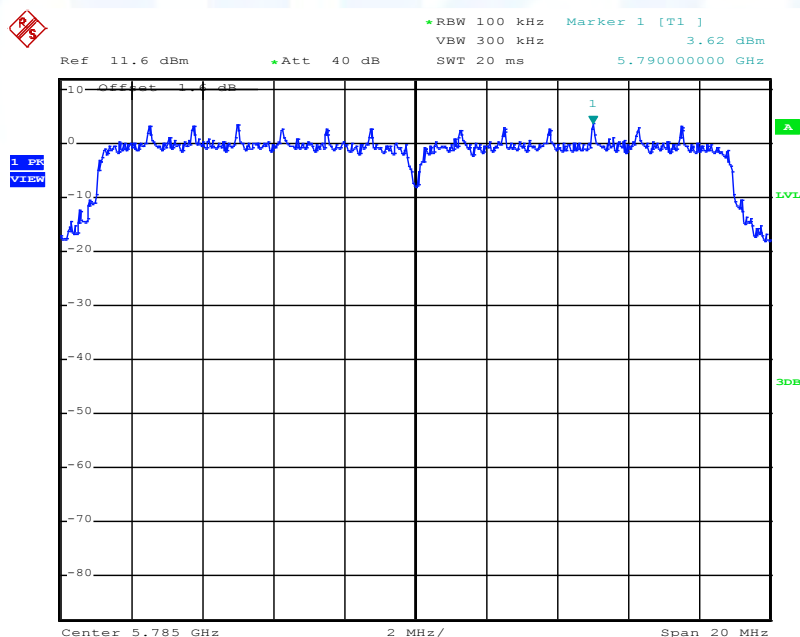
FCC ID: LYHMPDIE1V1

5.4.6.2 HT20:

Determination of the reference level and limit

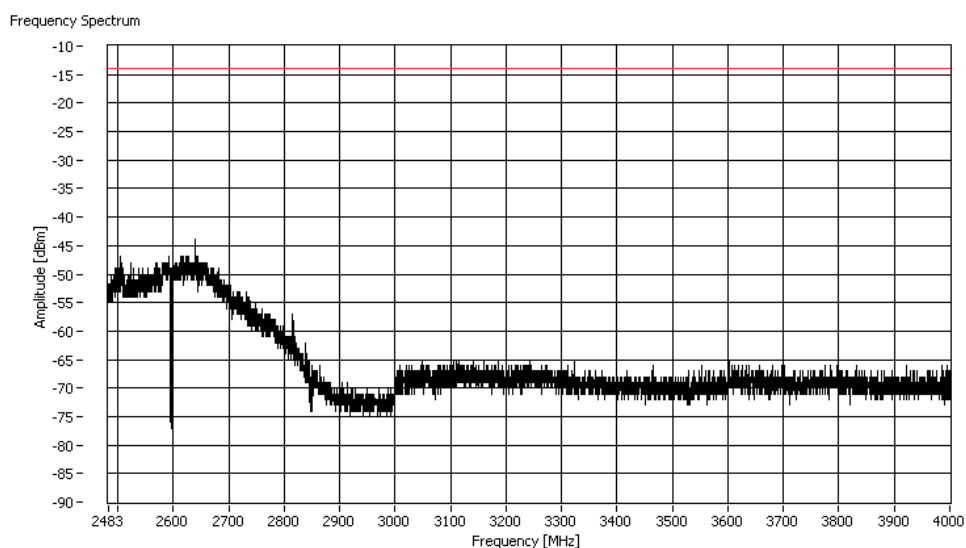
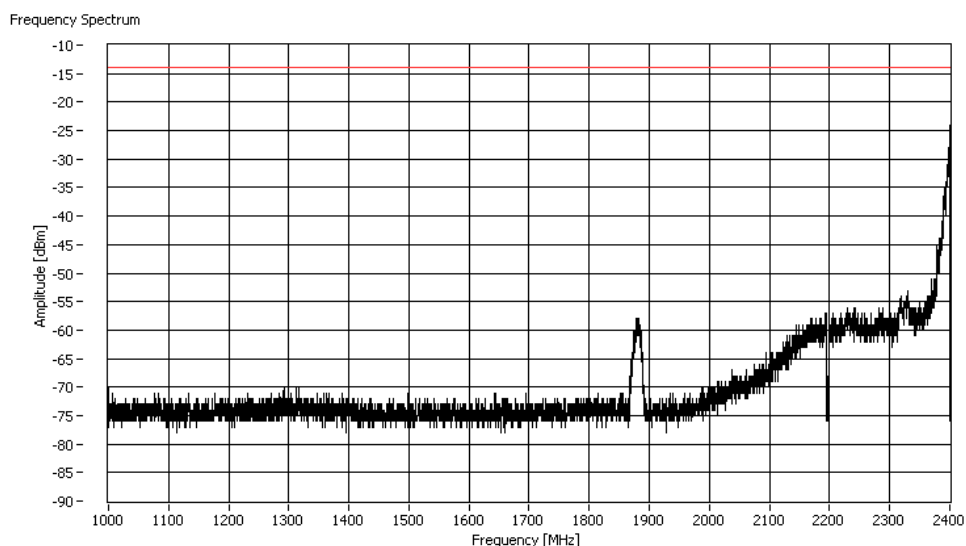
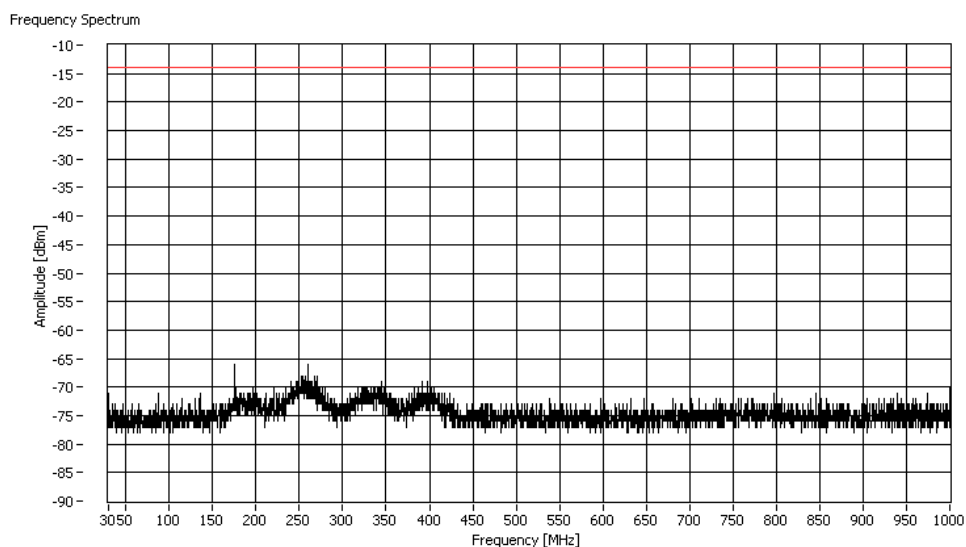


Determination of the reference level and limit



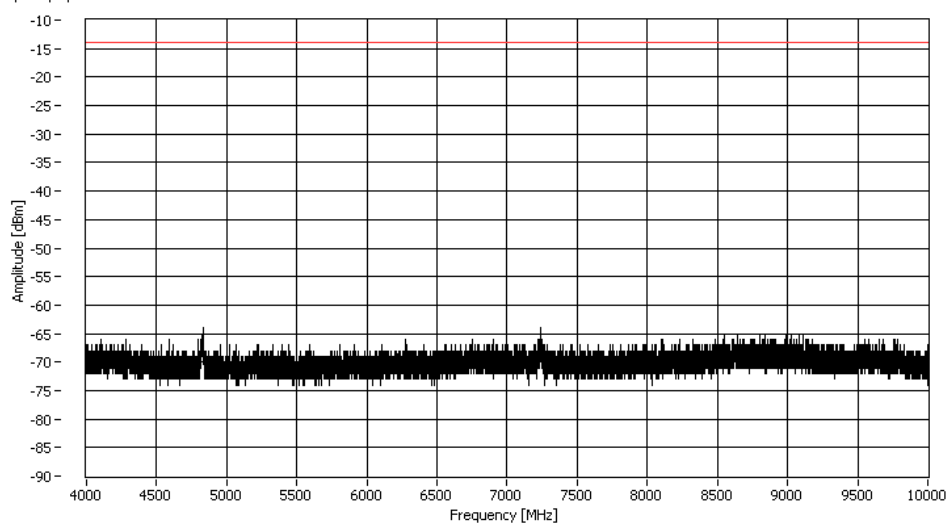
FCC ID: LYHMPCIE1V1

CH1:

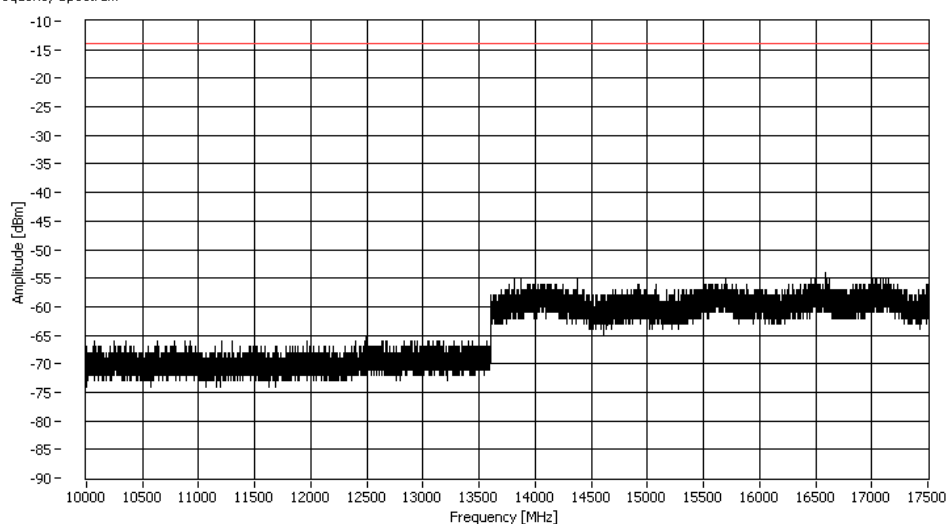


FCC ID: LYHMPCIE1V1

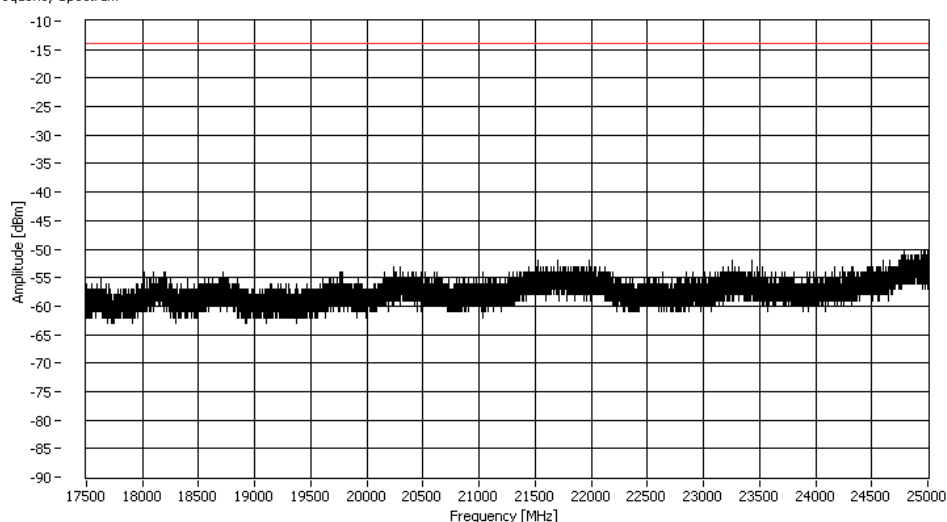
Frequency Spectrum



Frequency Spectrum

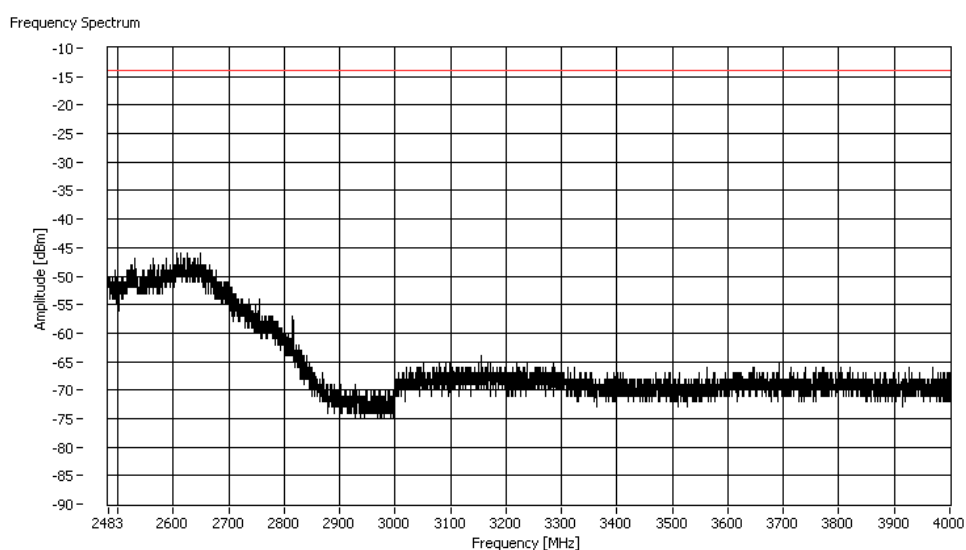
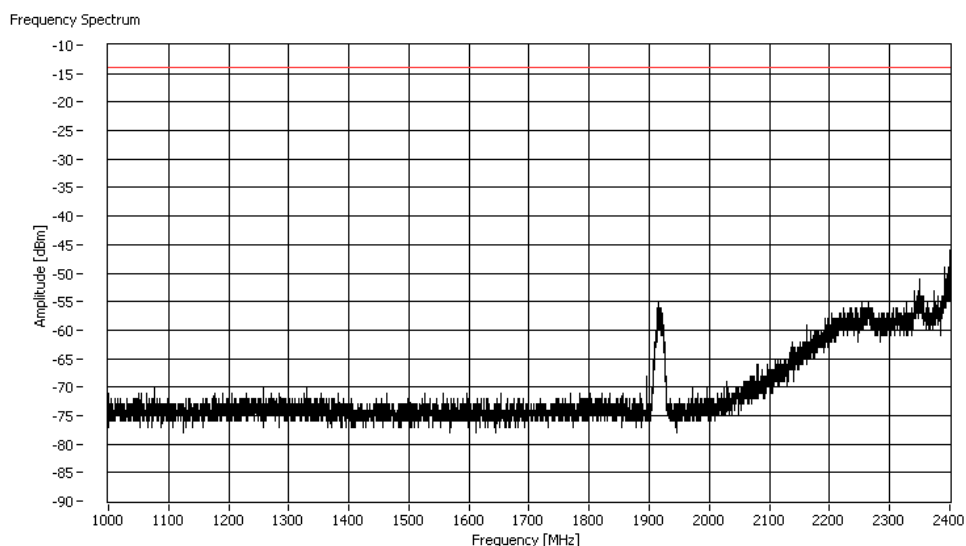
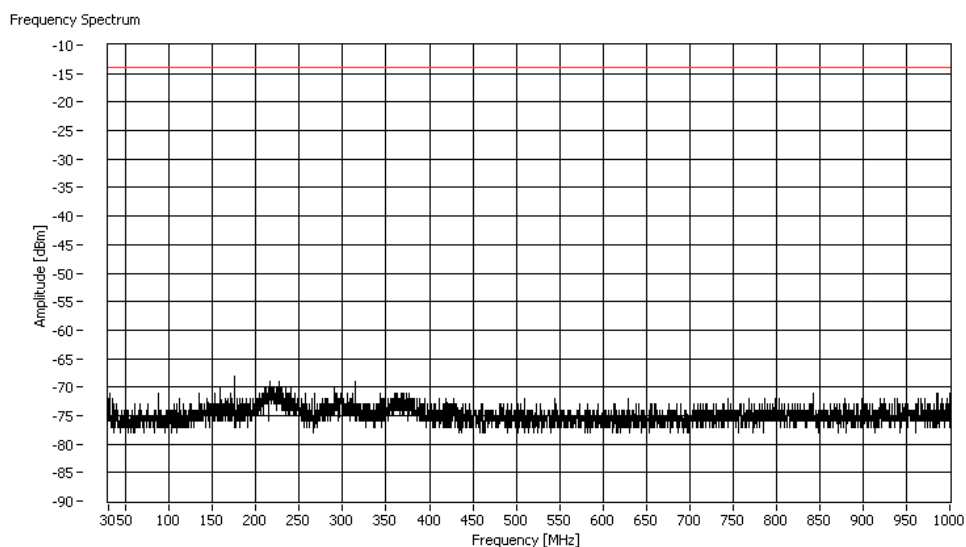


Frequency Spectrum



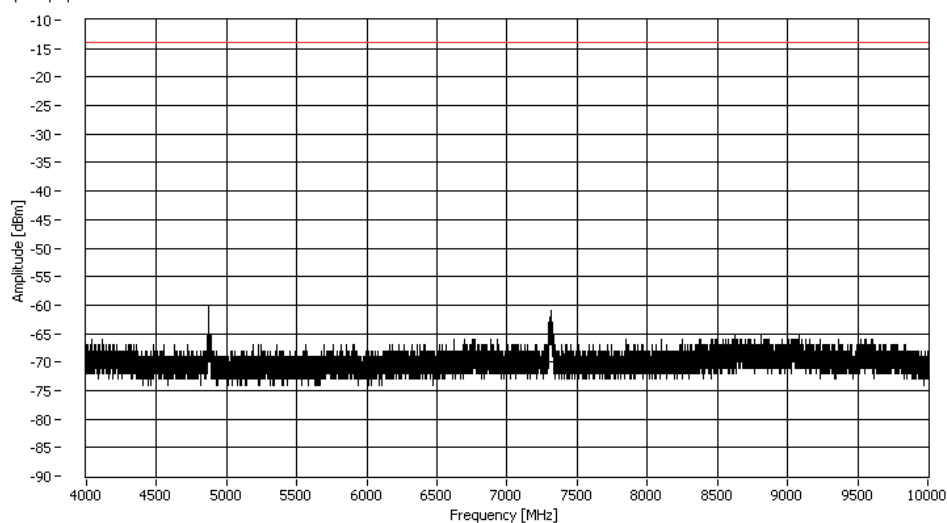
FCC ID: LYHMPCIE1V1

CH6:

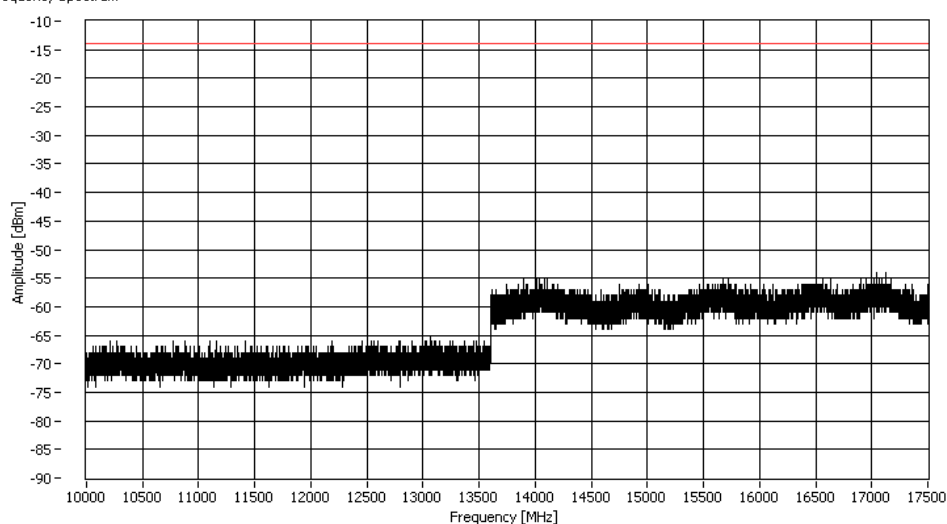


FCC ID: LYHMPCIE1V1

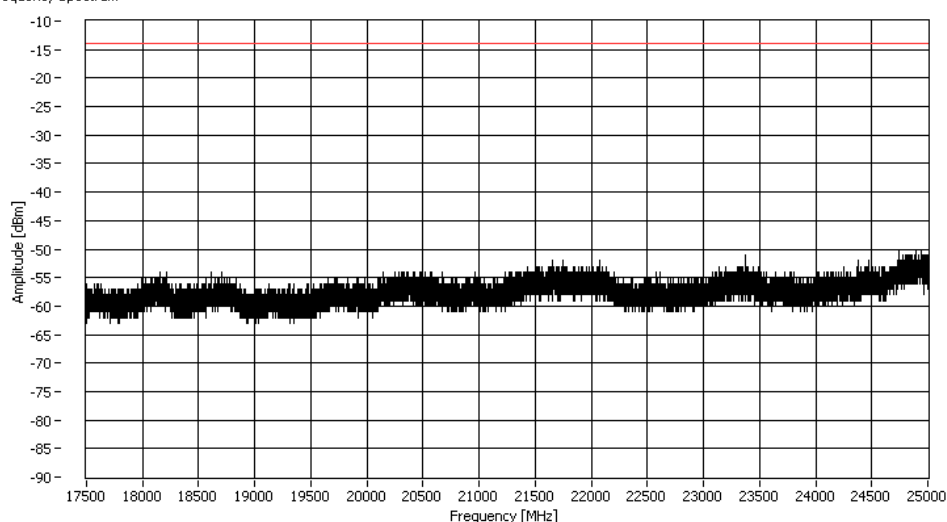
Frequency Spectrum



Frequency Spectrum

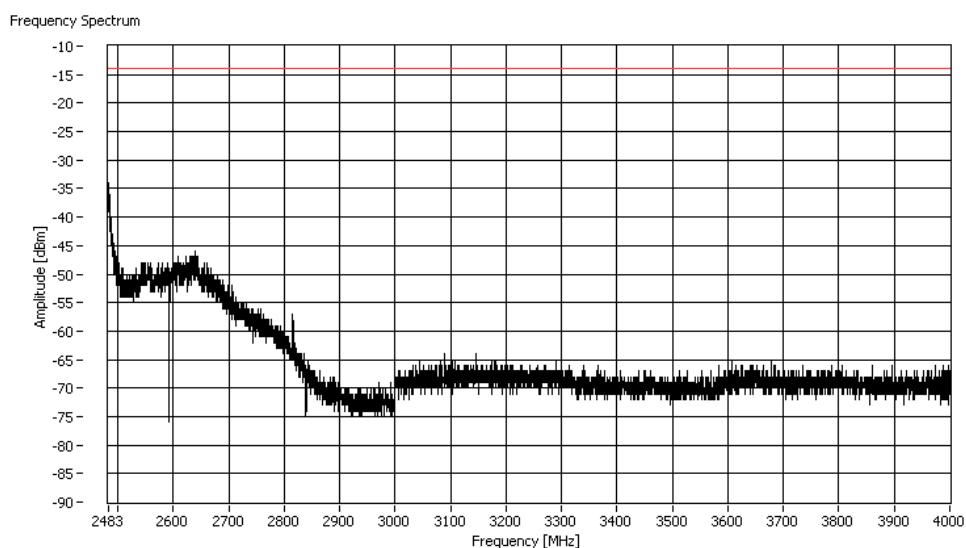
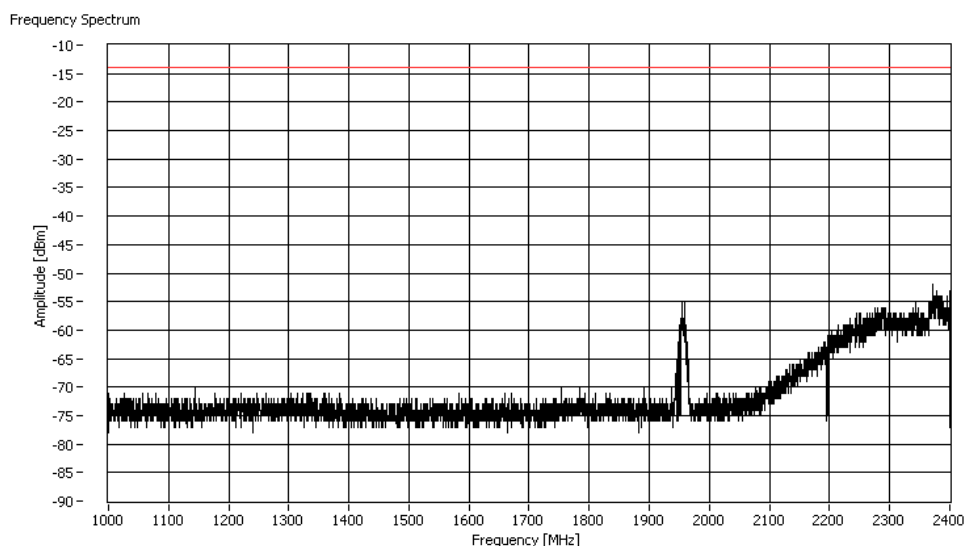
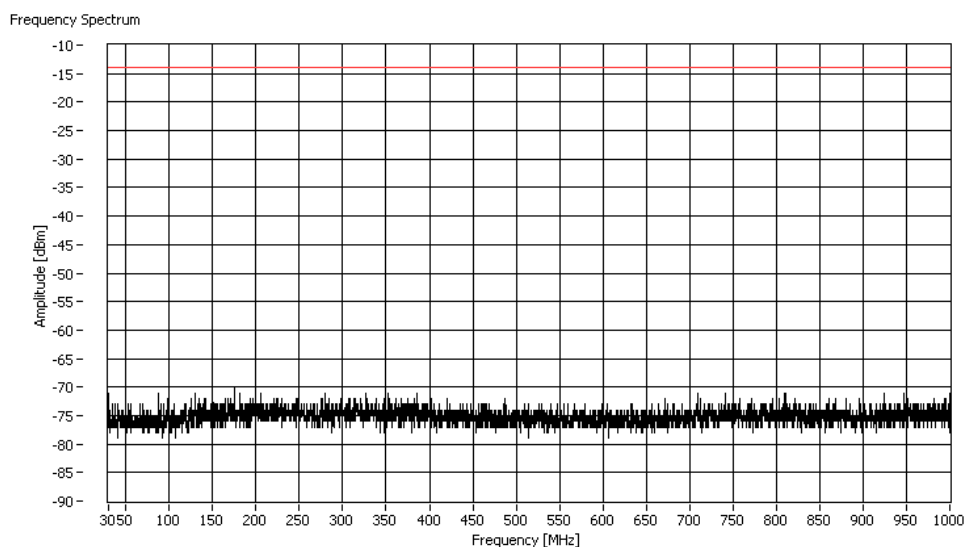


Frequency Spectrum



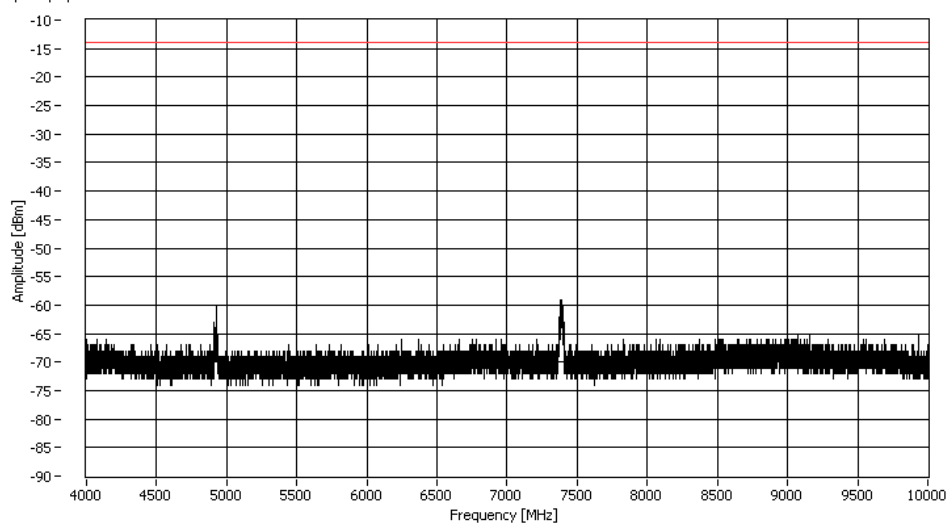
FCC ID: LYHMPCIE1V1

CH11:

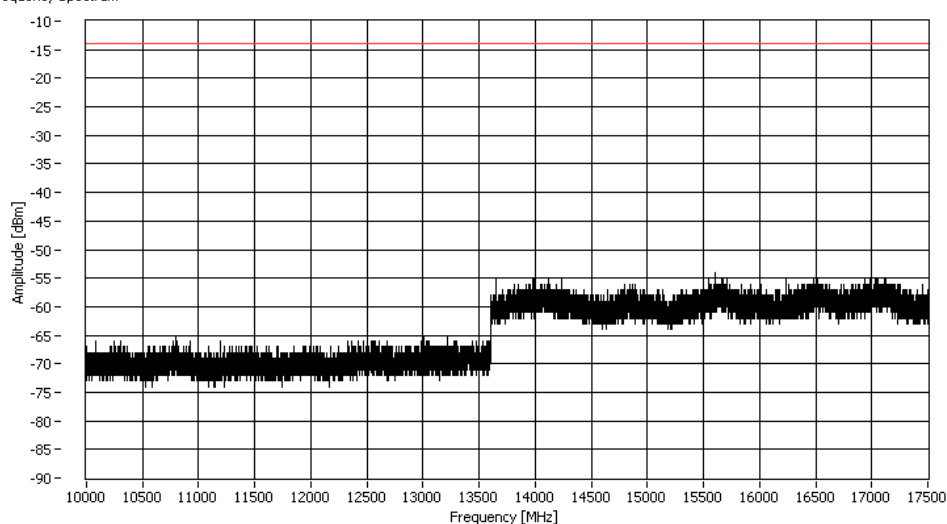


FCC ID: LYHMPCIE1V1

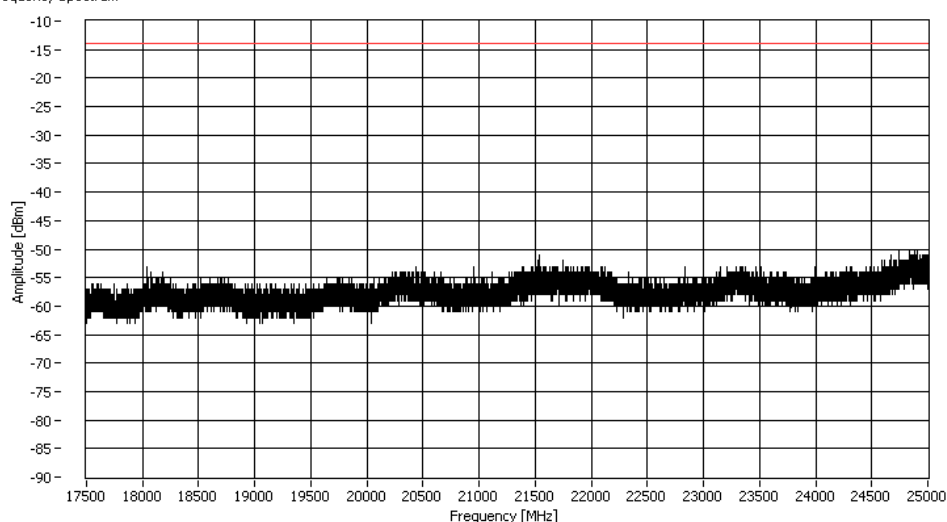
Frequency Spectrum



Frequency Spectrum

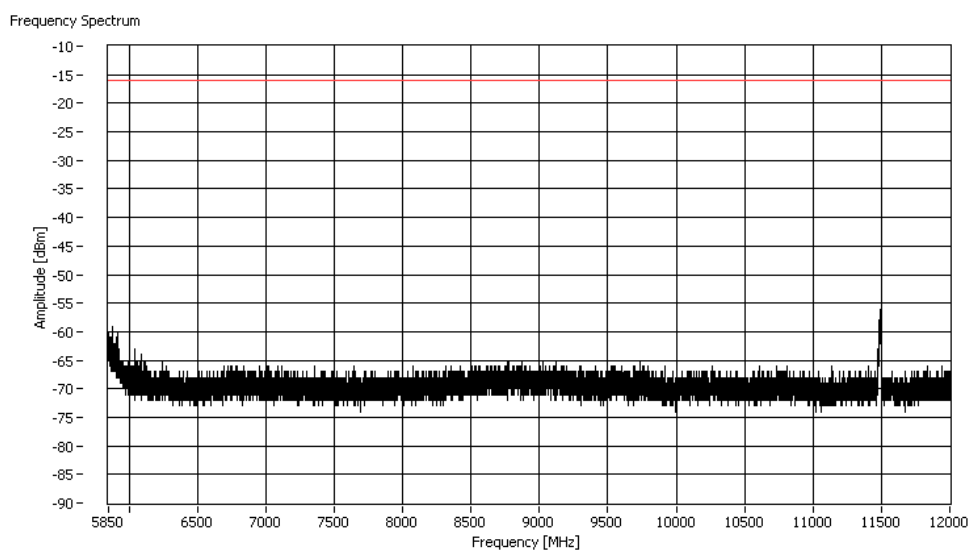
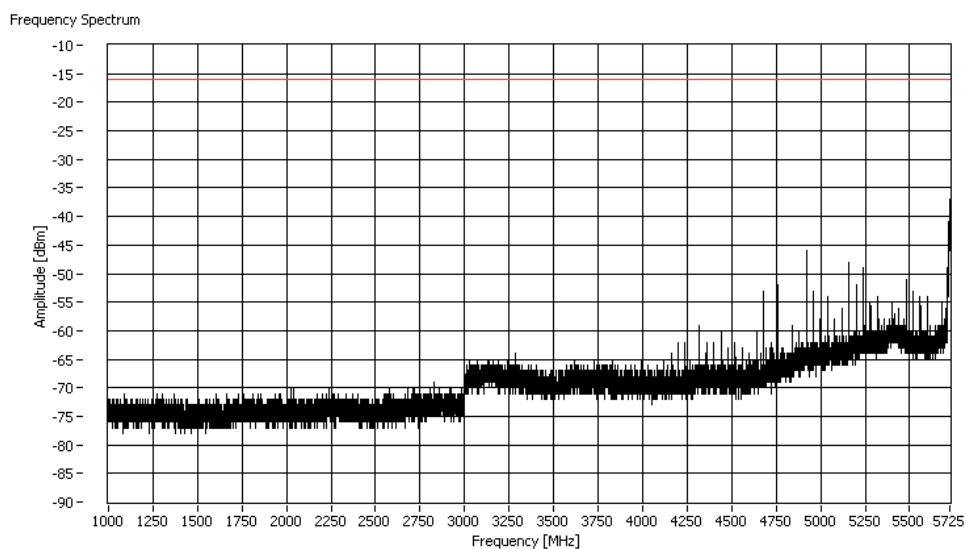
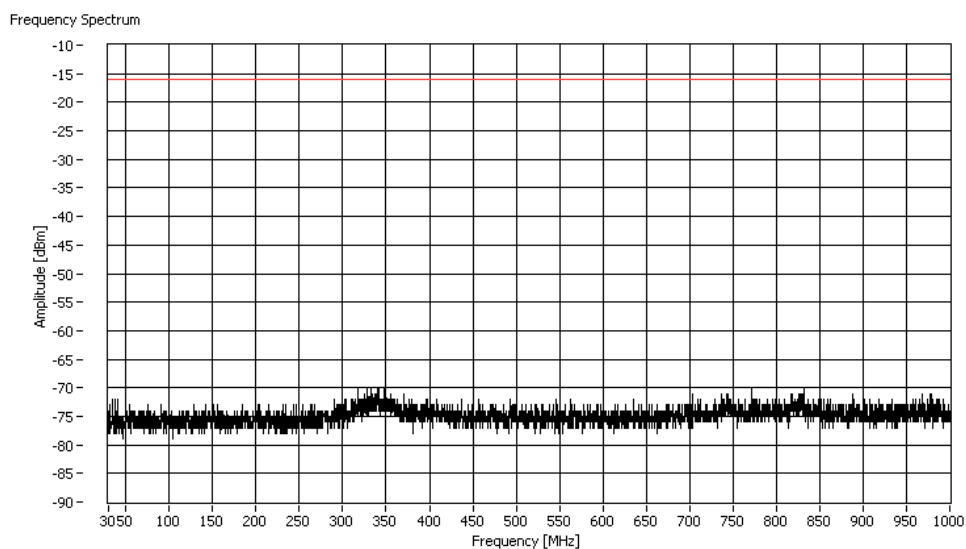


Frequency Spectrum



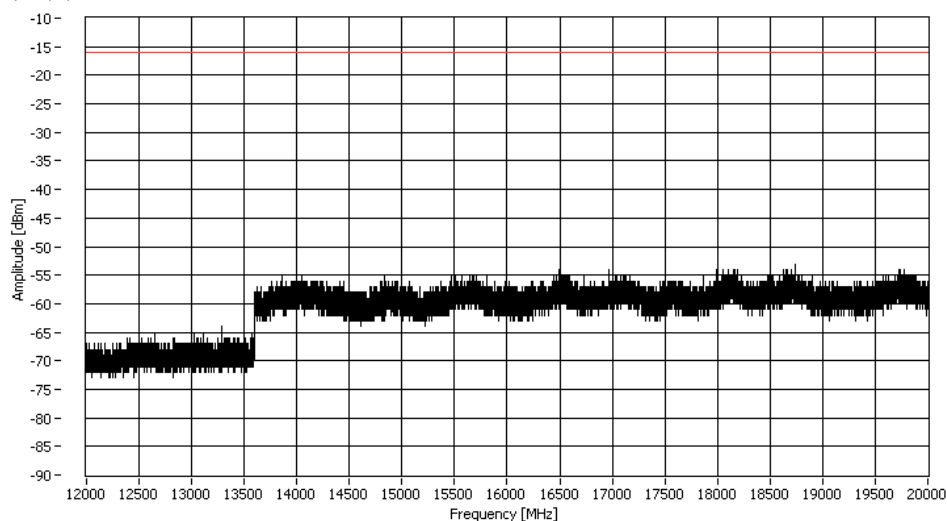
FCC ID: LYHMPCIE1V1

CH149:

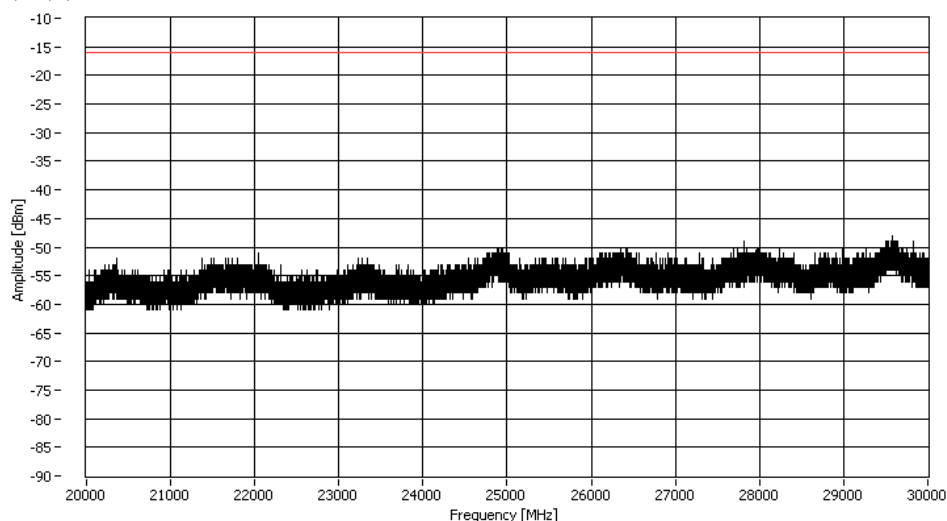


FCC ID: LYHMPCIE1V1

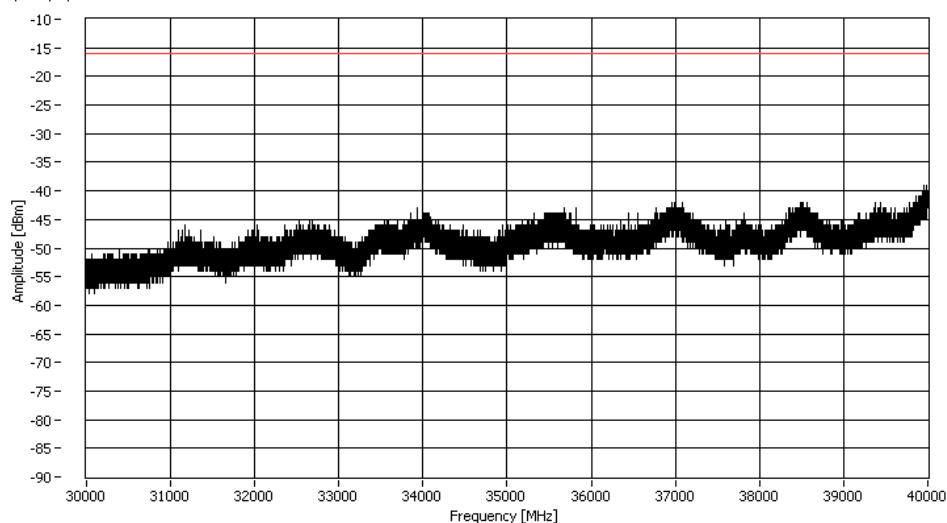
Frequency Spectrum



Frequency Spectrum

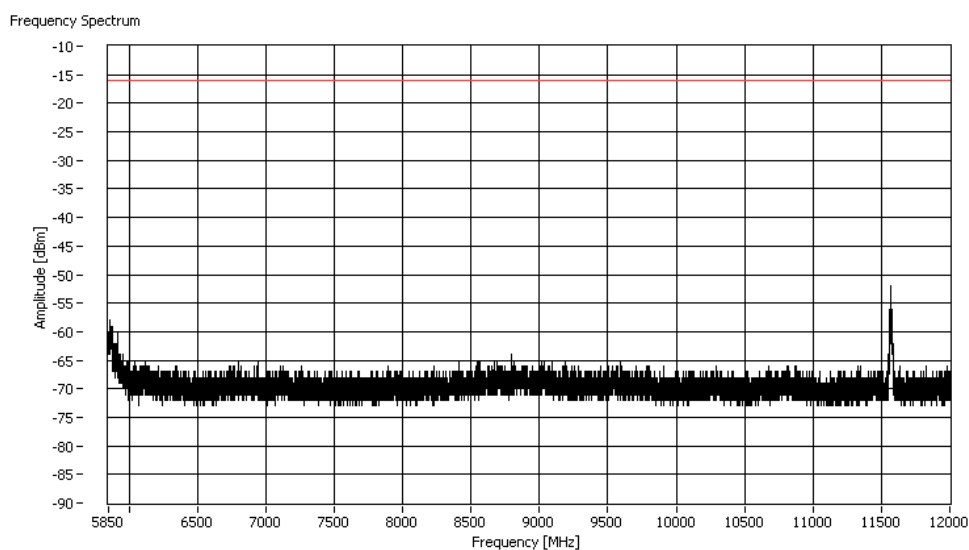
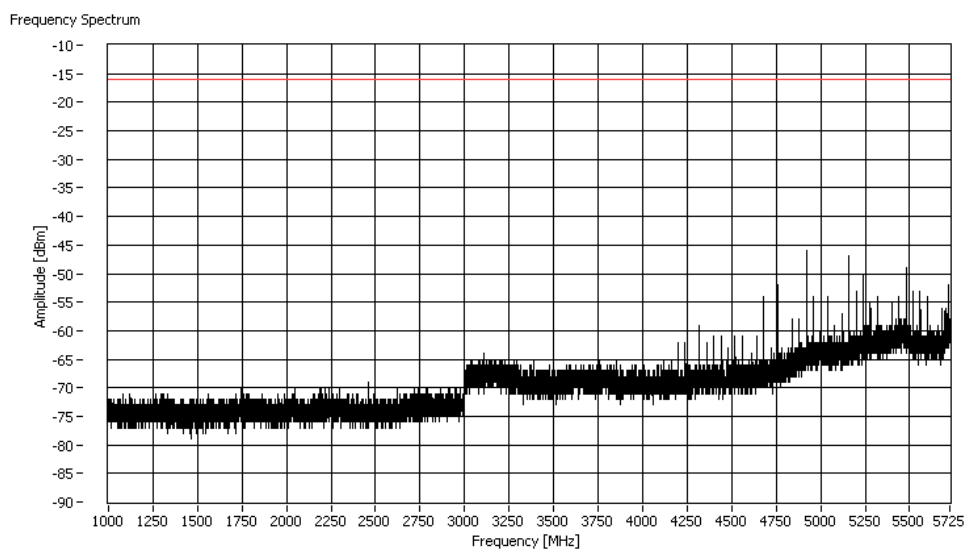
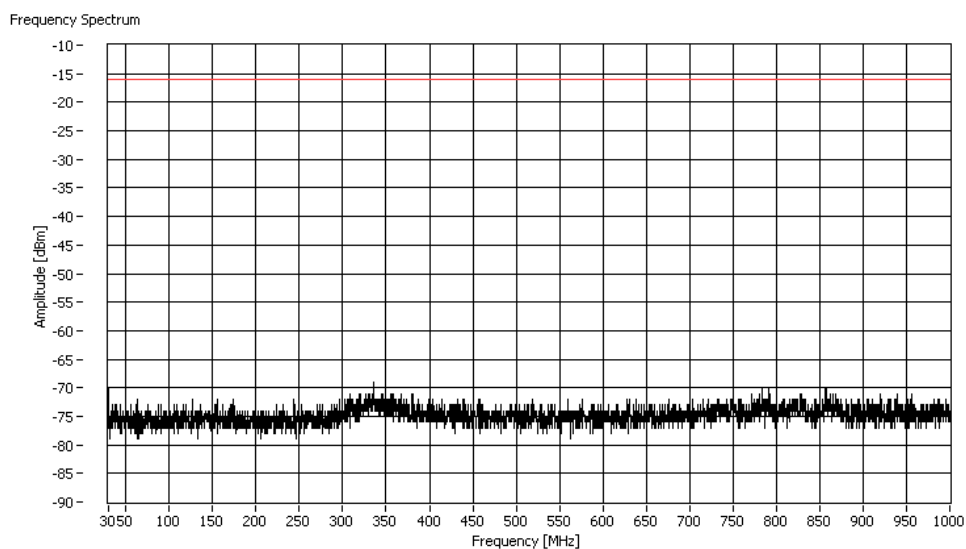


Frequency Spectrum



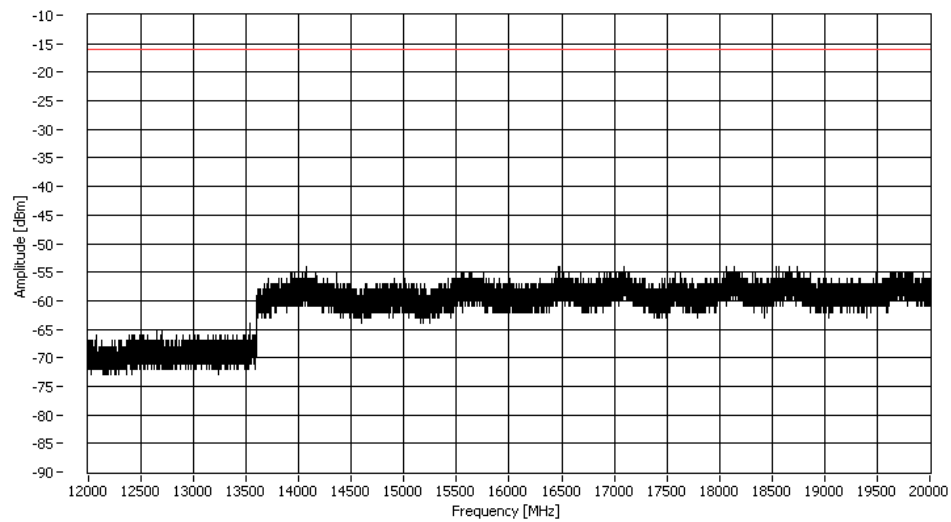
FCC ID: LYHMPCIE1V1

CH157:

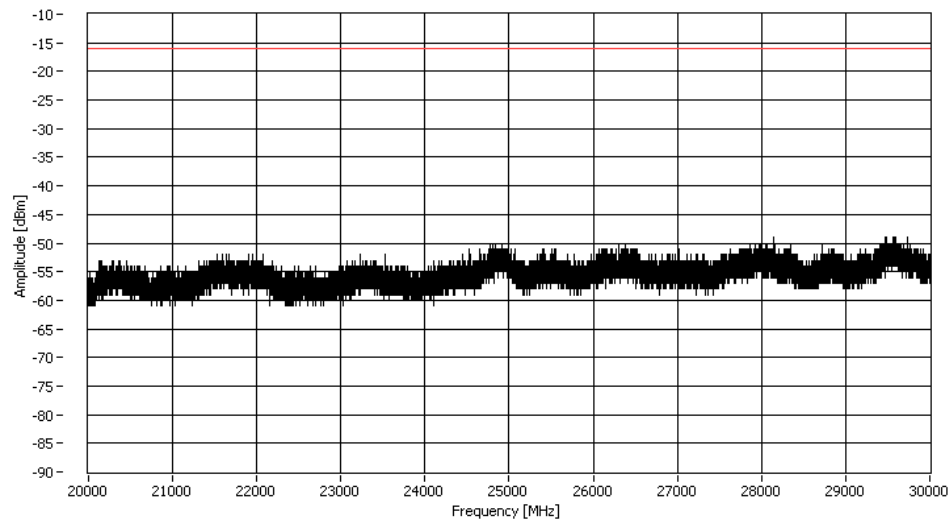


FCC ID: LYHMPCIE1V1

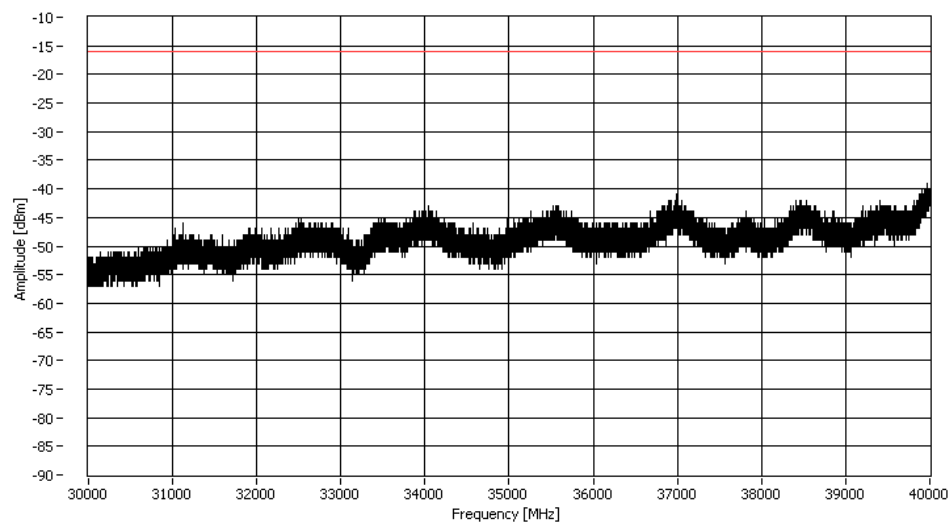
Frequency Spectrum



Frequency Spectrum

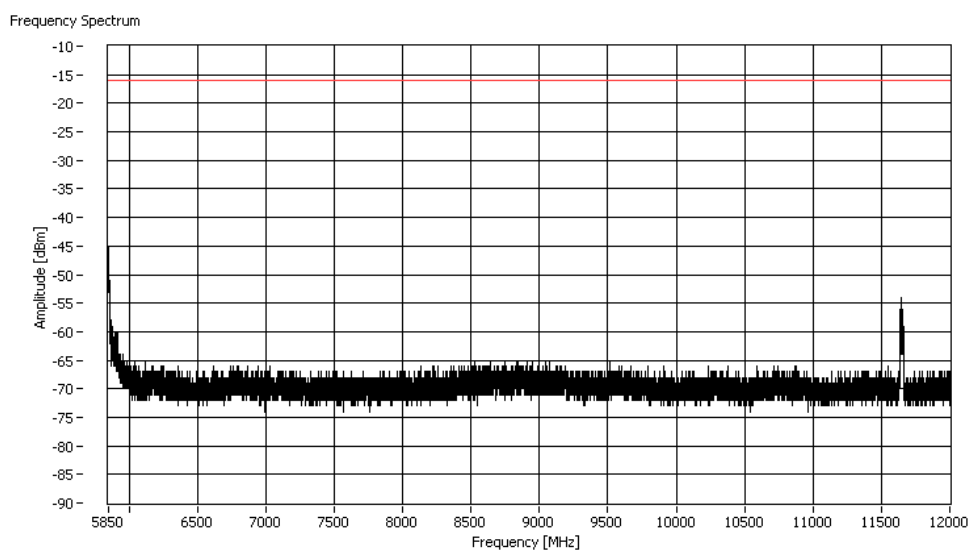
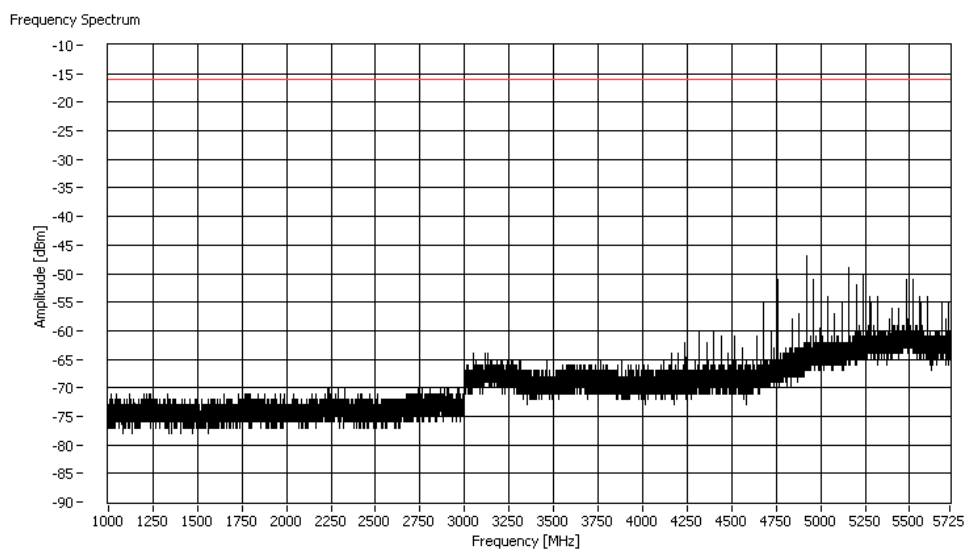
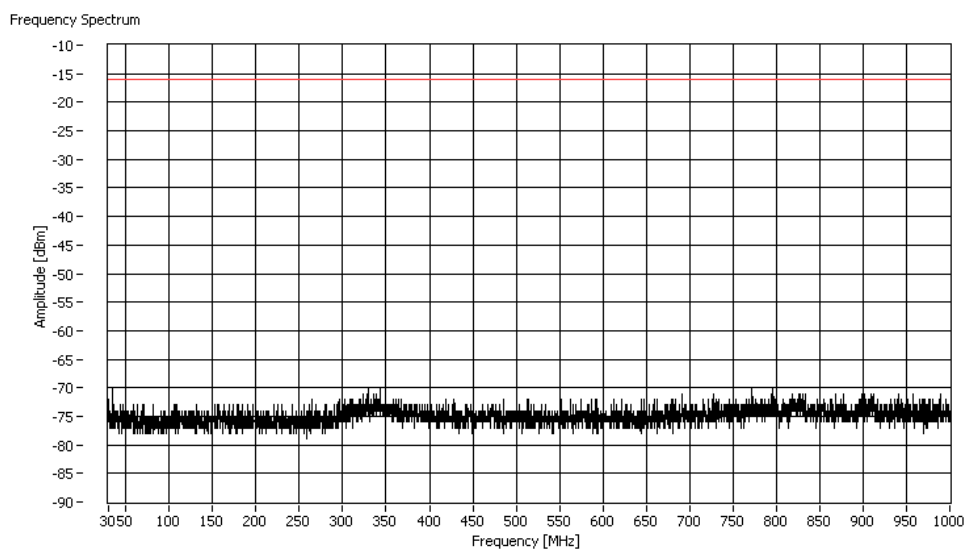


Frequency Spectrum



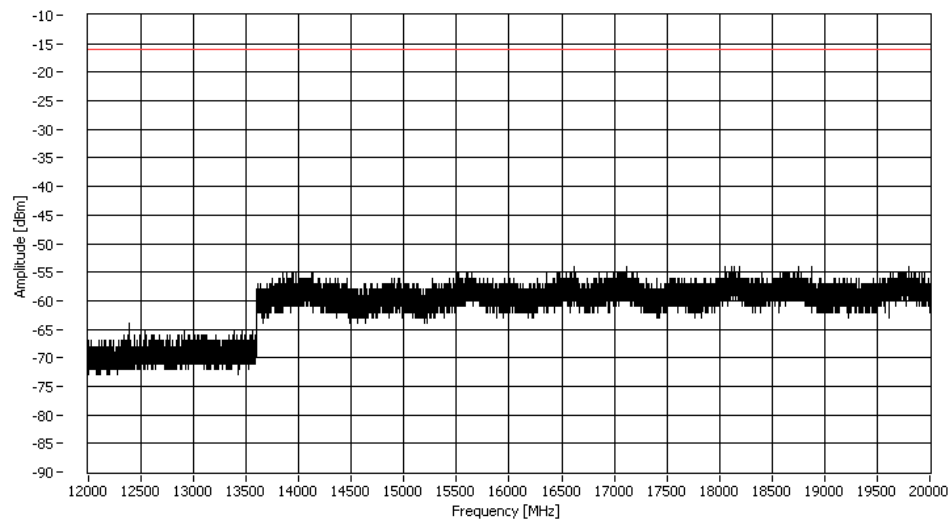
FCC ID: LYHMPCIE1V1

CH165:

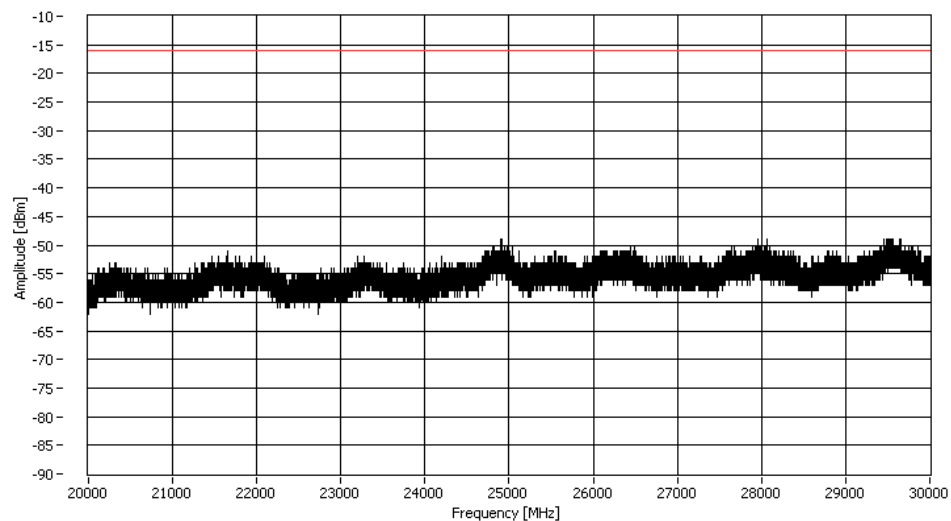


FCC ID: LYHMPCIE1V1

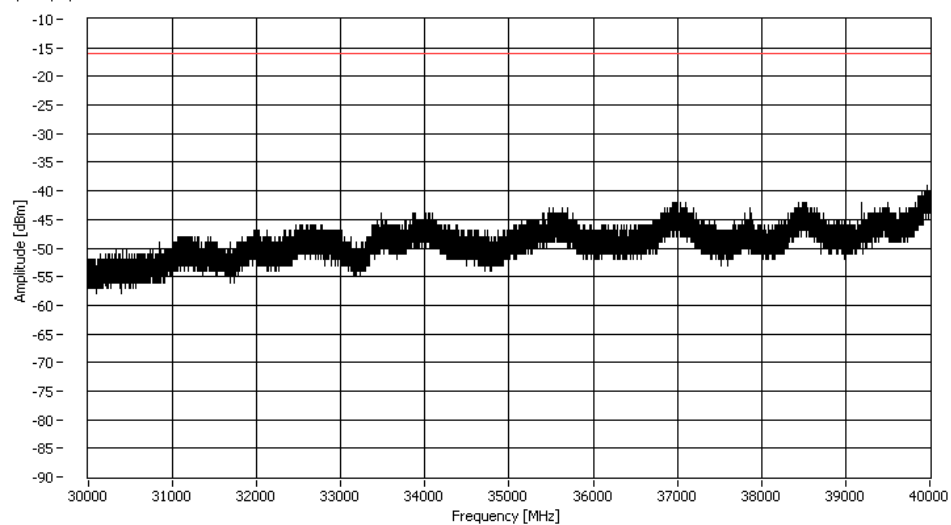
Frequency Spectrum



Frequency Spectrum



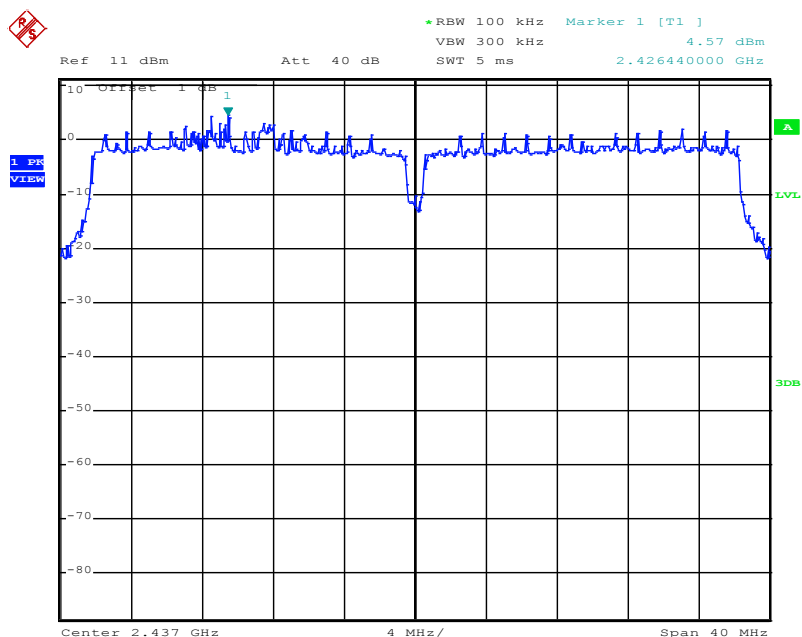
Frequency Spectrum



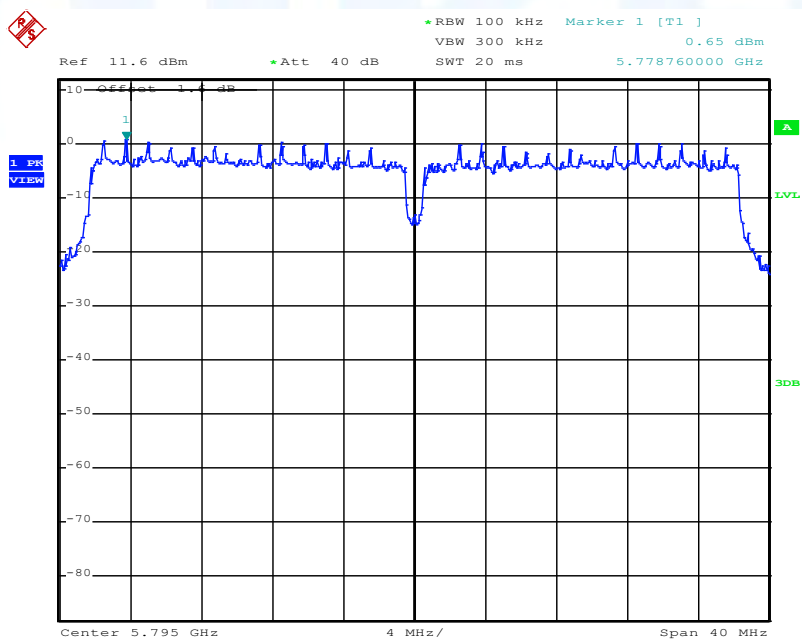
FCC ID: LYHMPCIE1V1

5.4.6.3 HT40:

Determination of the reference level and limit



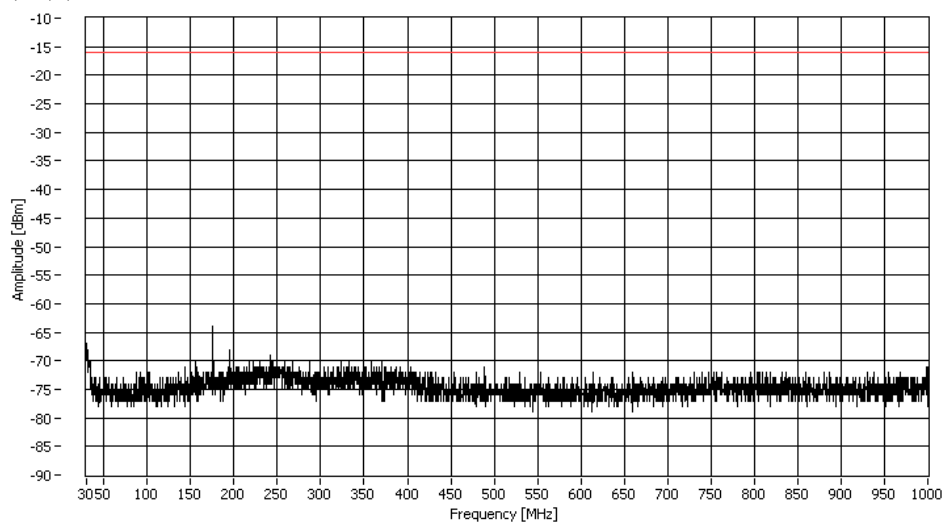
Determination of the reference level and limit



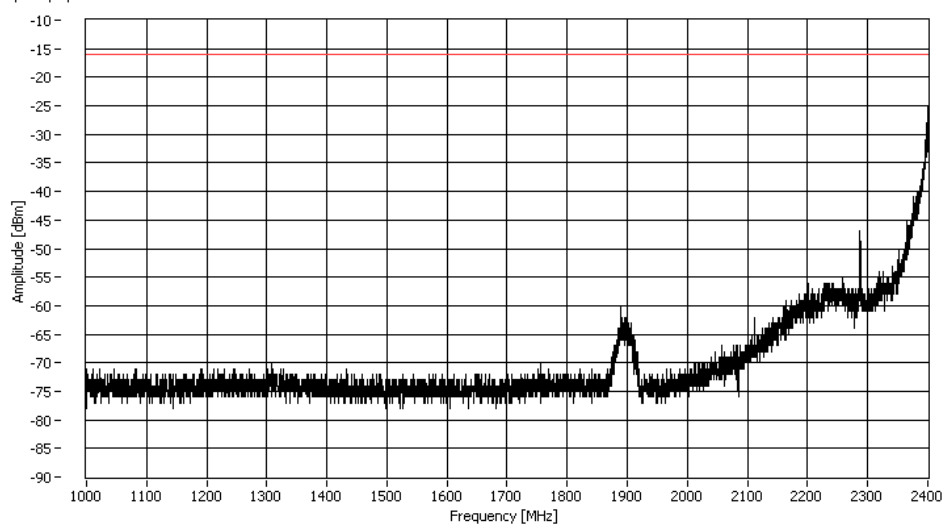
FCC ID: LYHMPDIE1V1

CH1up:

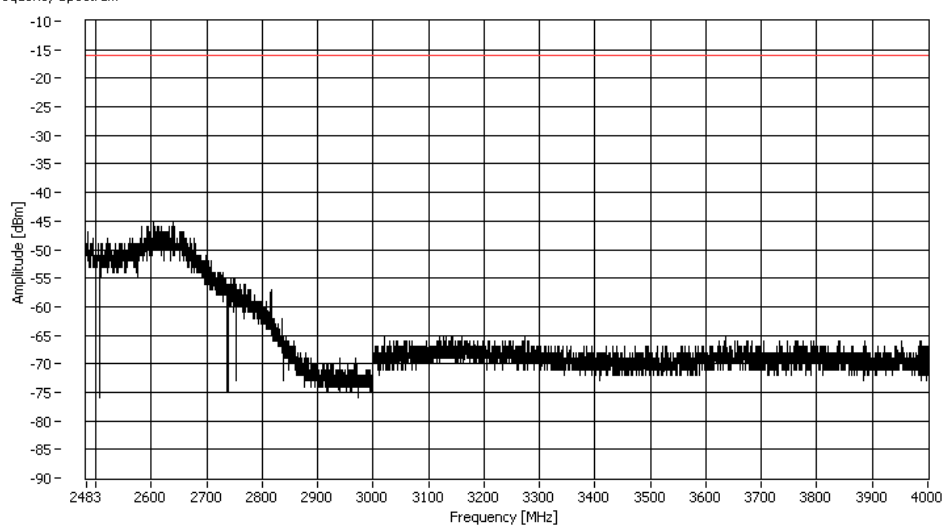
Frequency Spectrum



Frequency Spectrum

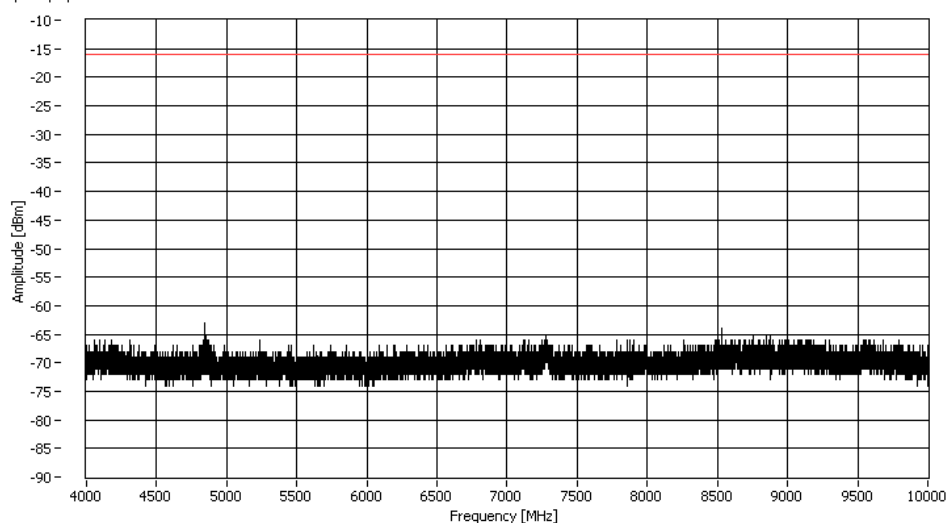


Frequency Spectrum

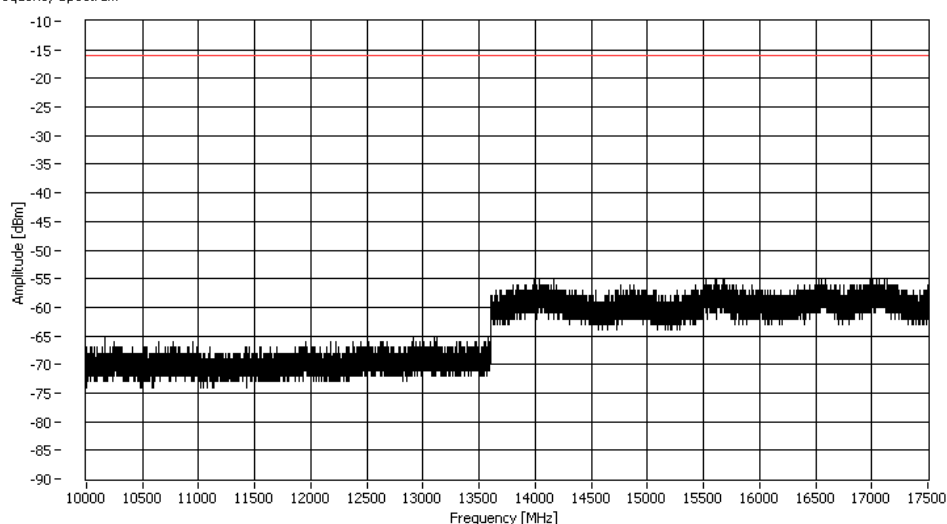


FCC ID: LYHMPCIE1V1

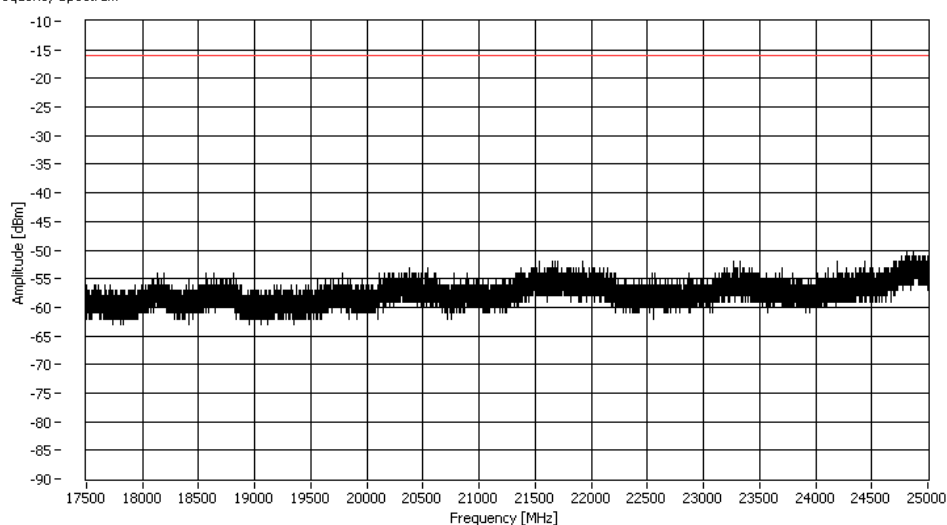
Frequency Spectrum



Frequency Spectrum



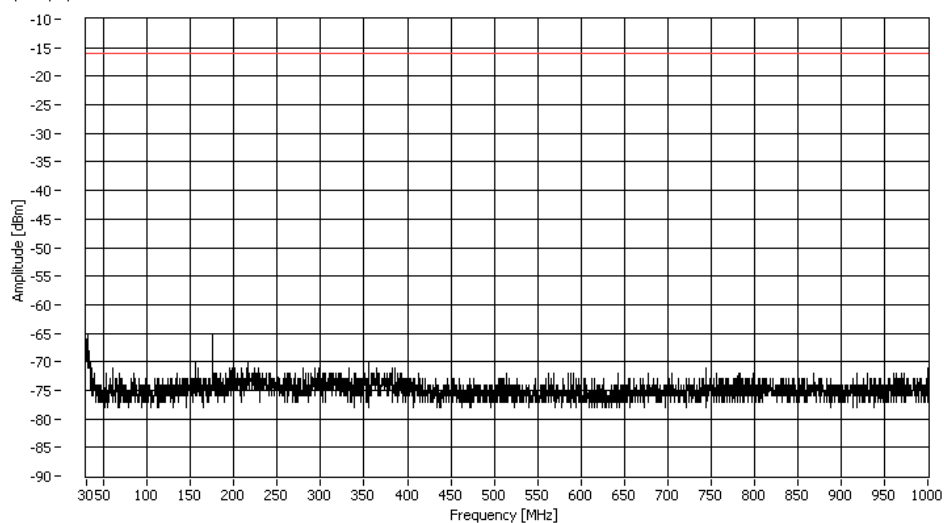
Frequency Spectrum



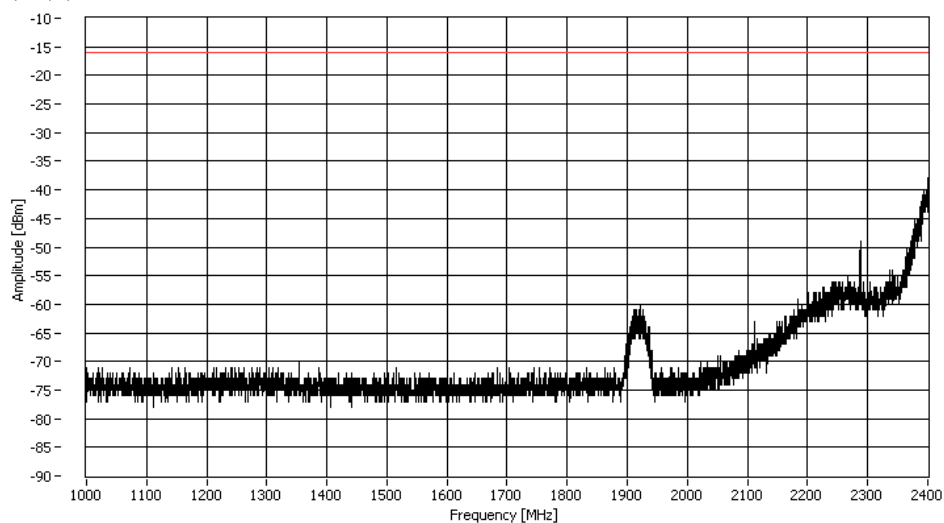
FCC ID: LYHMPCIE1V1

CH4up

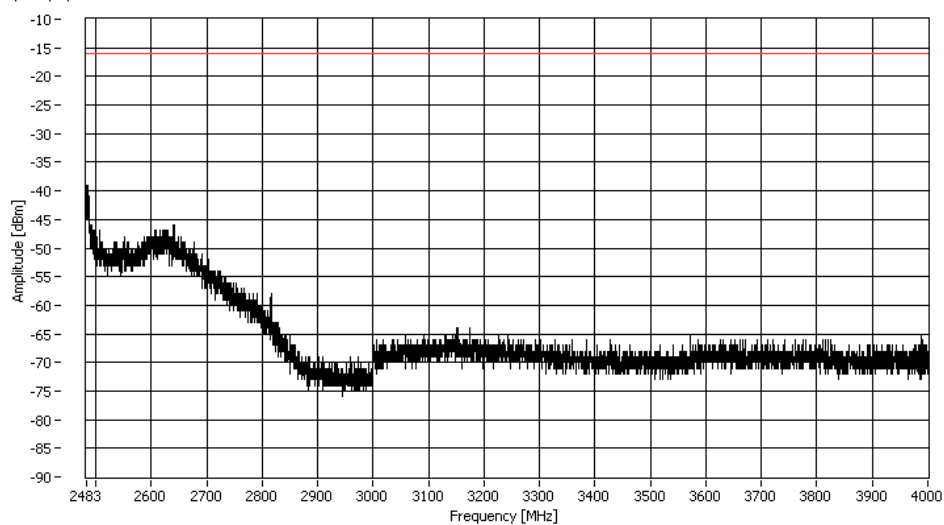
Frequency Spectrum



Frequency Spectrum

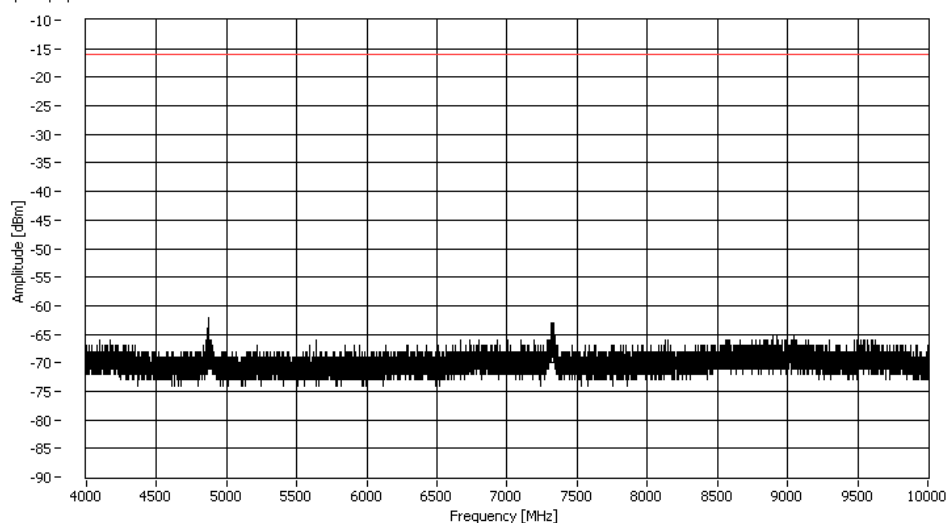


Frequency Spectrum

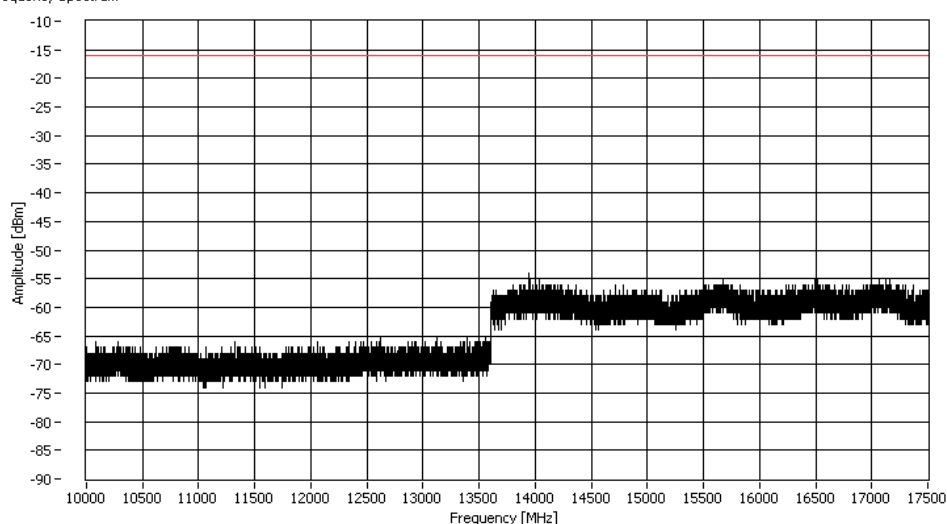


FCC ID: LYHMPCIE1V1

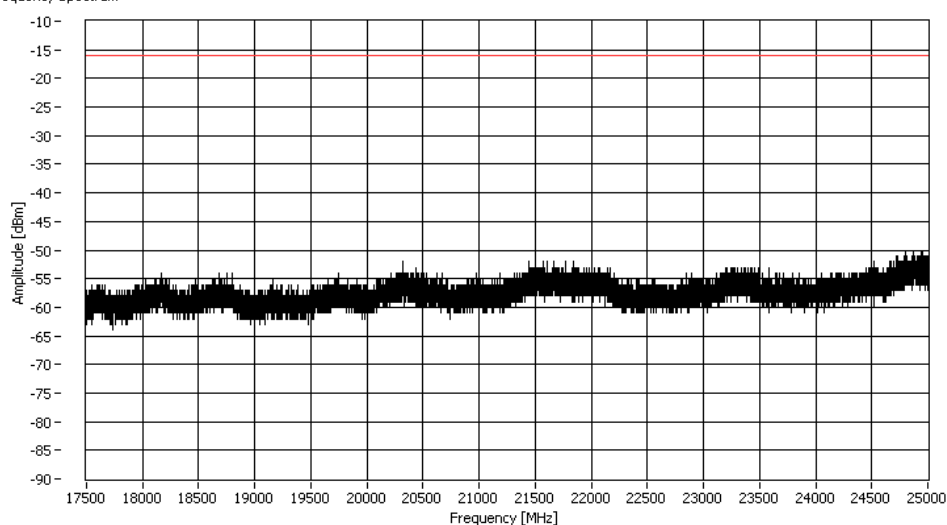
Frequency Spectrum



Frequency Spectrum



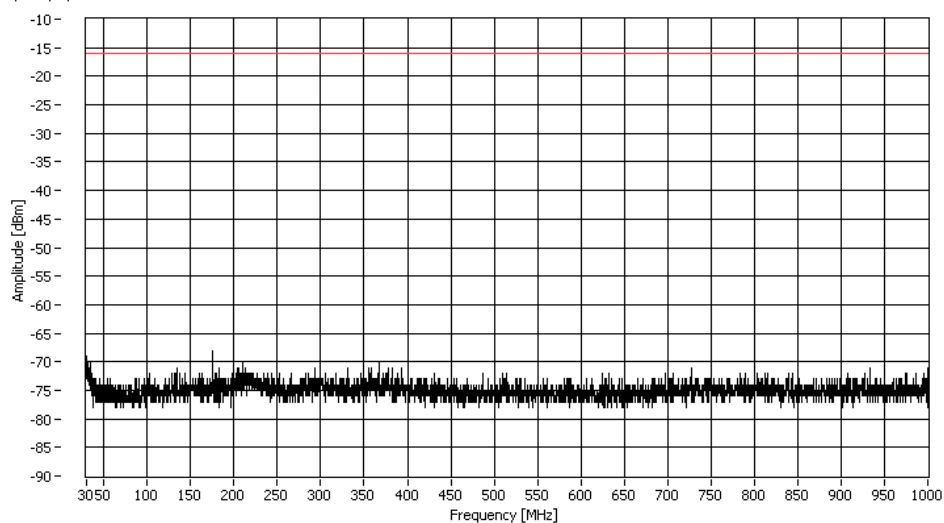
Frequency Spectrum



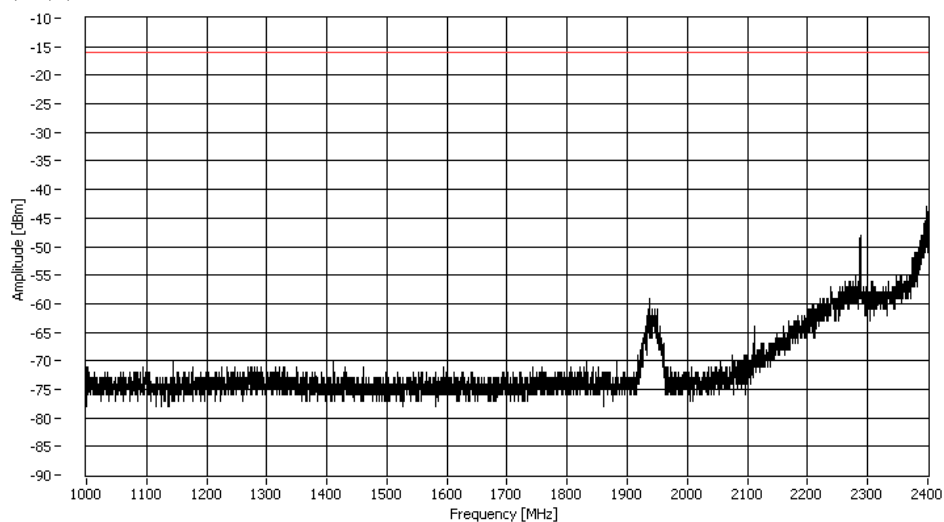
FCC ID: LYHMPCIE1V1

CH7up

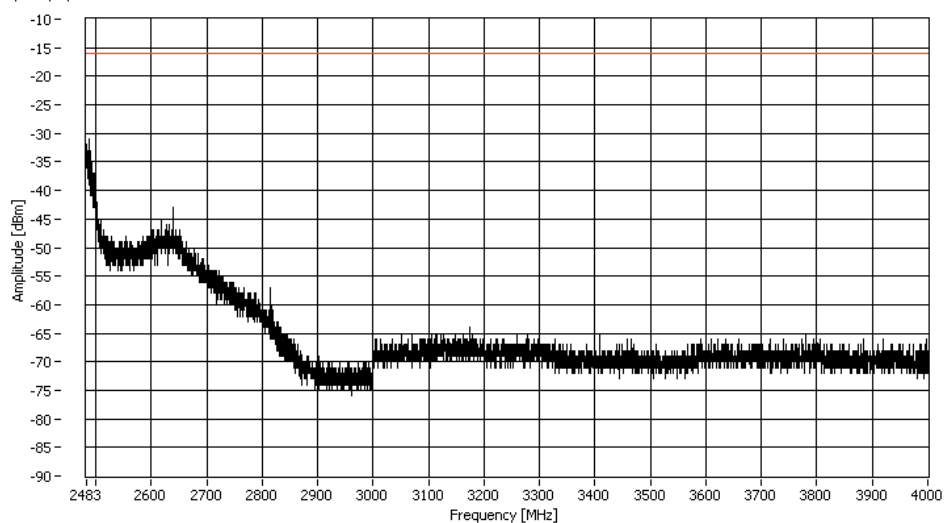
Frequency Spectrum



Frequency Spectrum

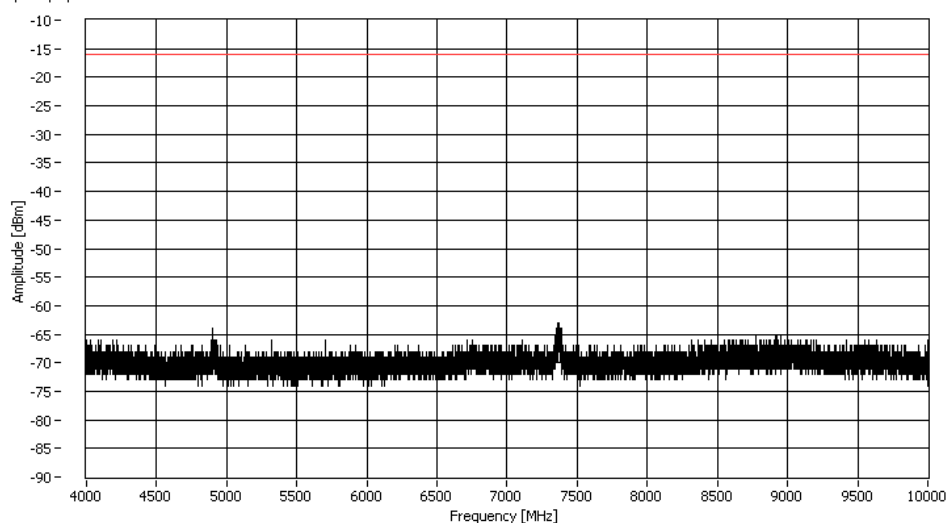


Frequency Spectrum

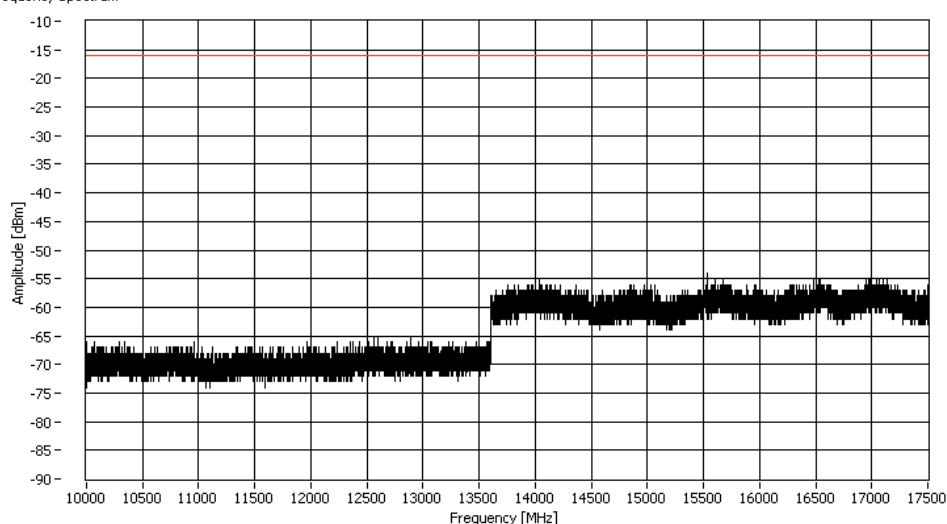


FCC ID: LYHMPCIE1V1

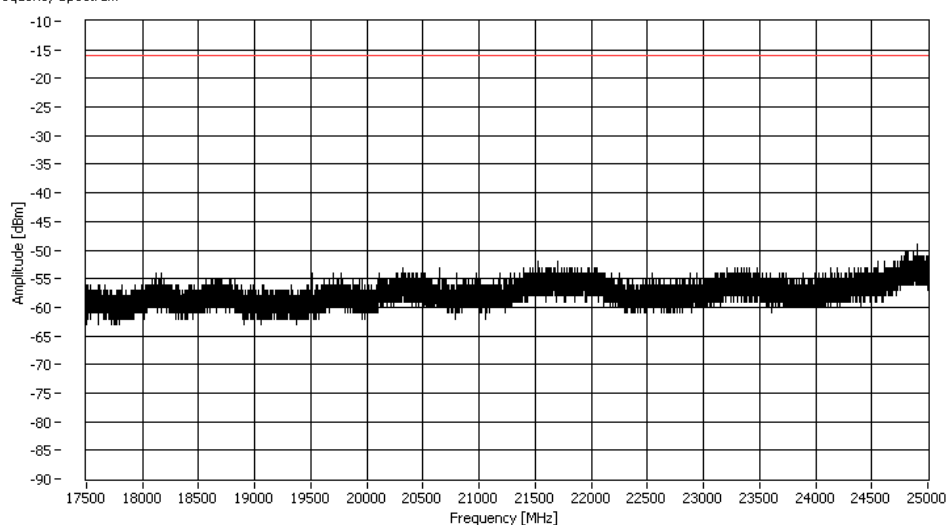
Frequency Spectrum



Frequency Spectrum



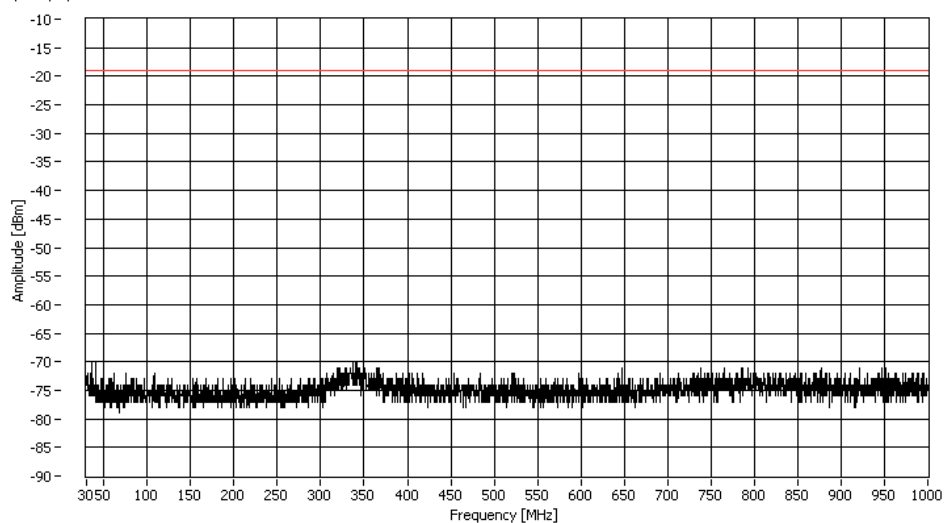
Frequency Spectrum



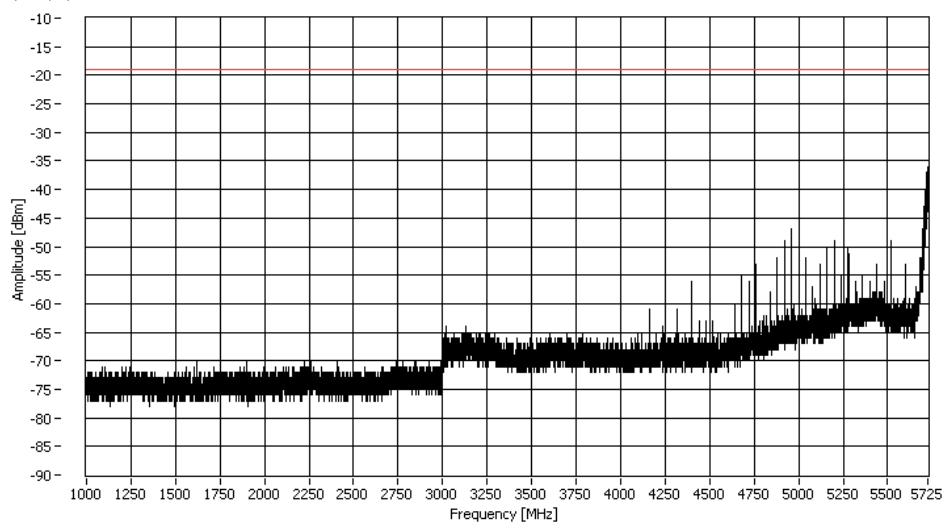
FCC ID: LYHMPCIE1V1

CH149up

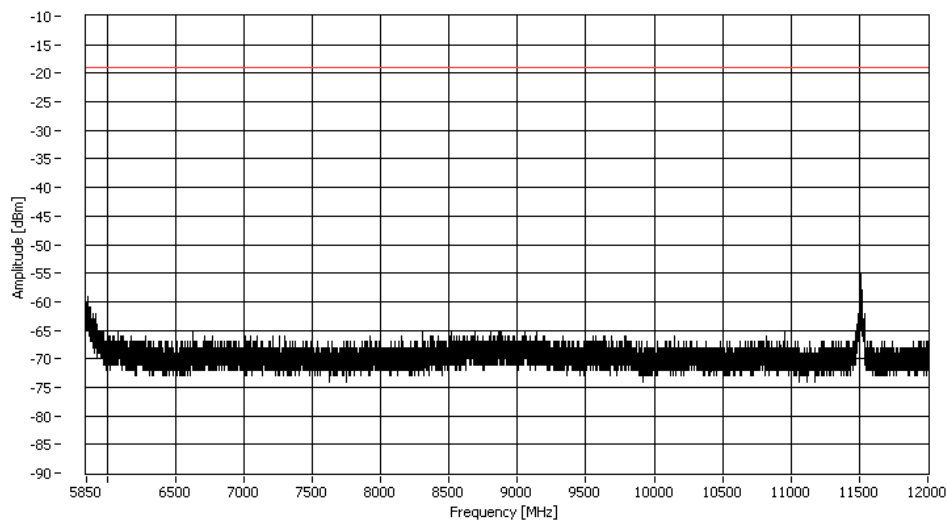
Frequency Spectrum



Frequency Spectrum

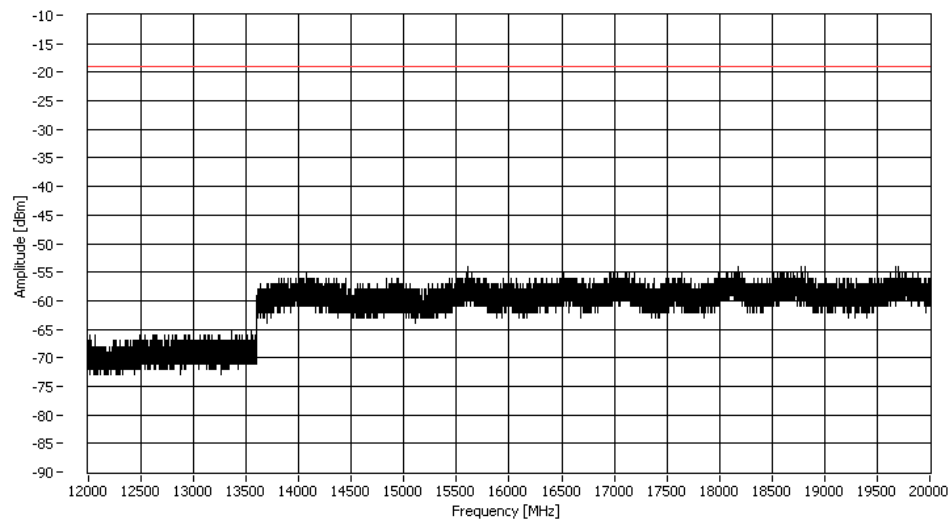


Frequency Spectrum

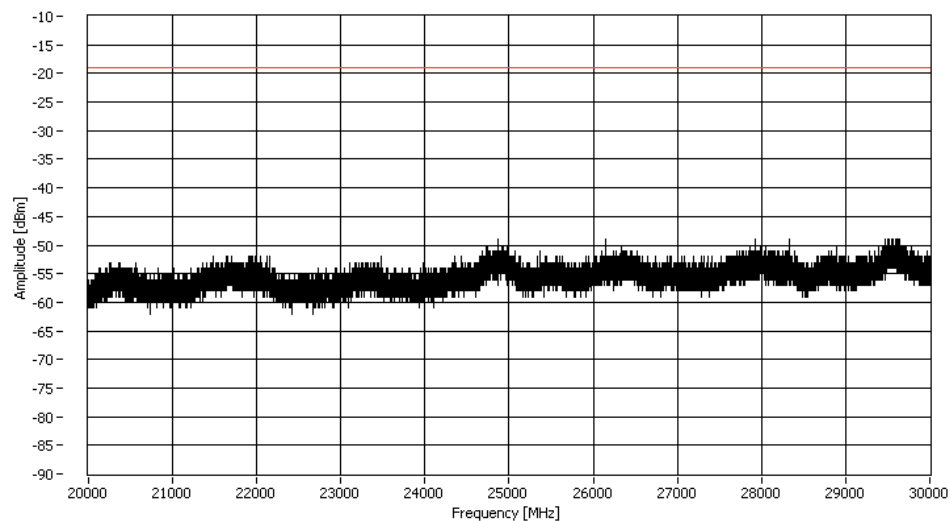


FCC ID: LYHMPCIE1V1

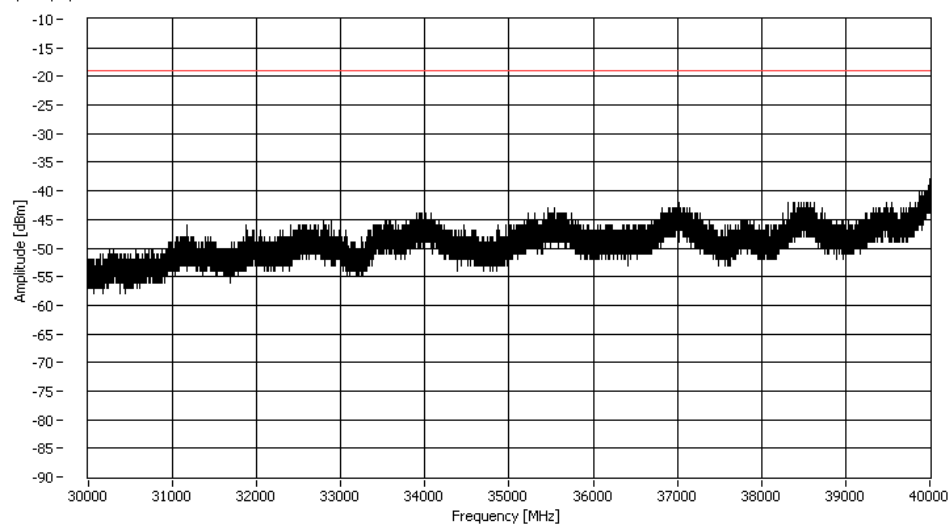
Frequency Spectrum



Frequency Spectrum

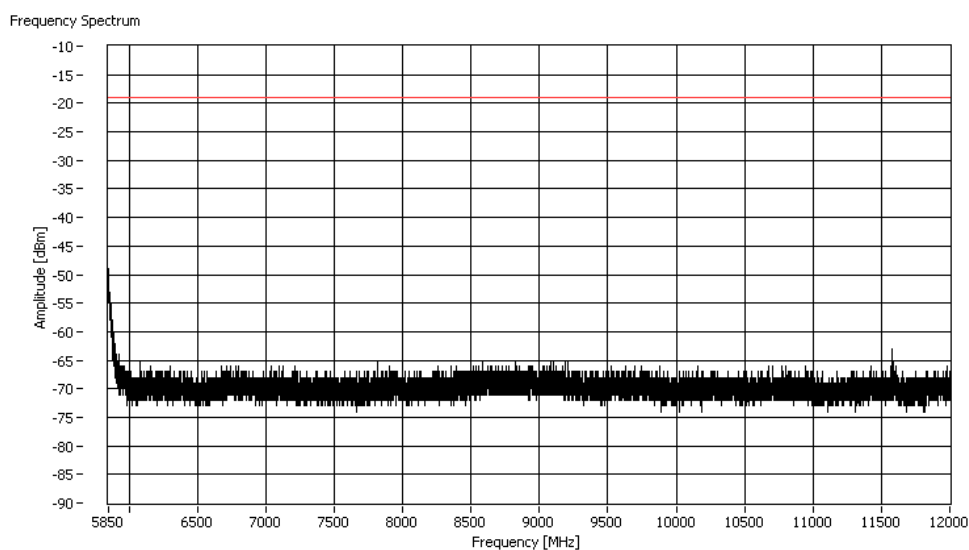
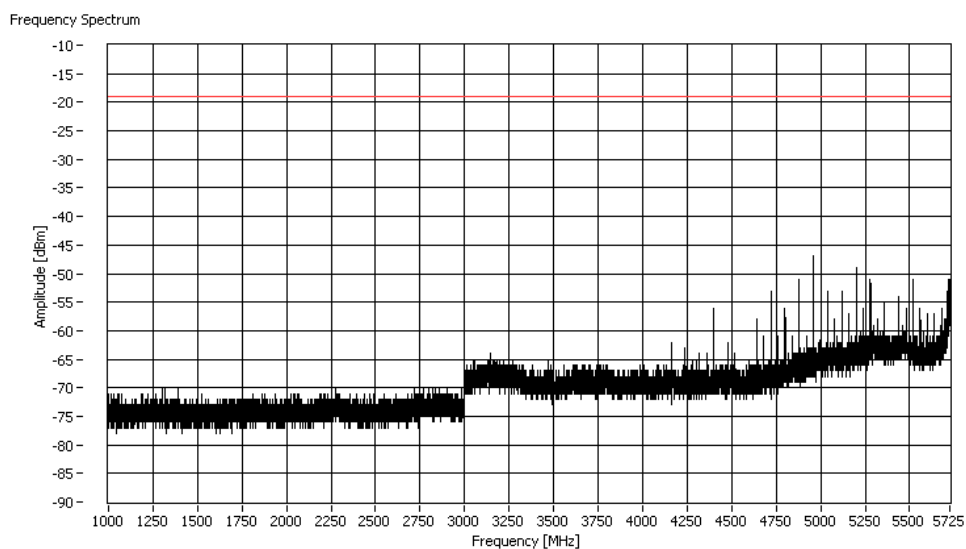
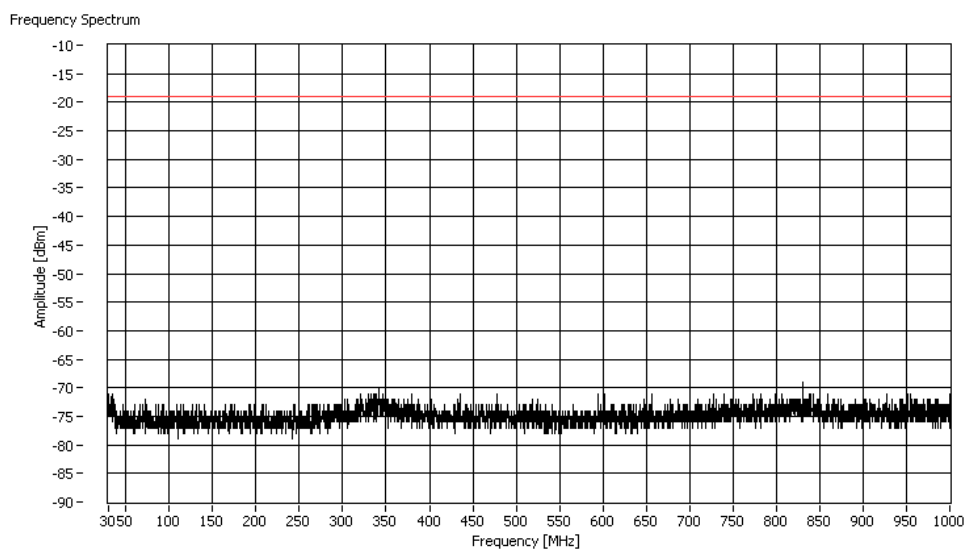


Frequency Spectrum



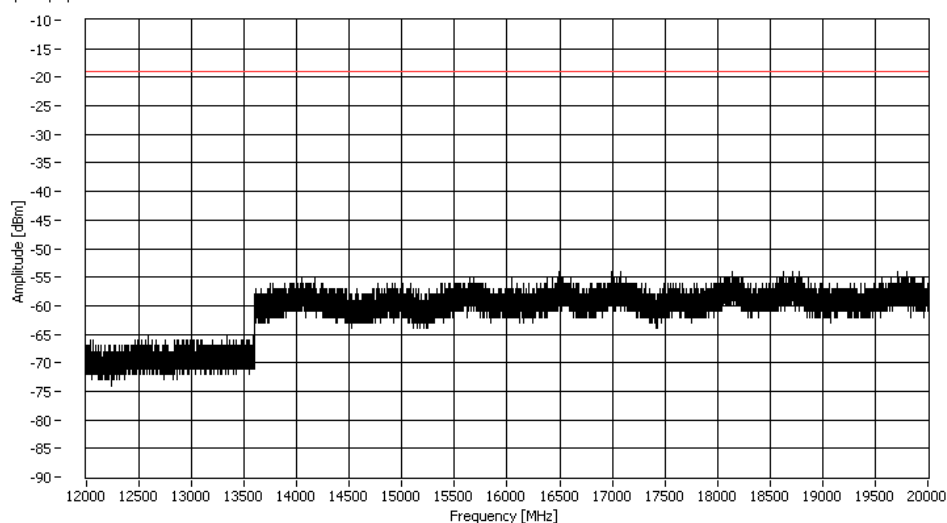
FCC ID: LYHMPCIE1V1

CH157up

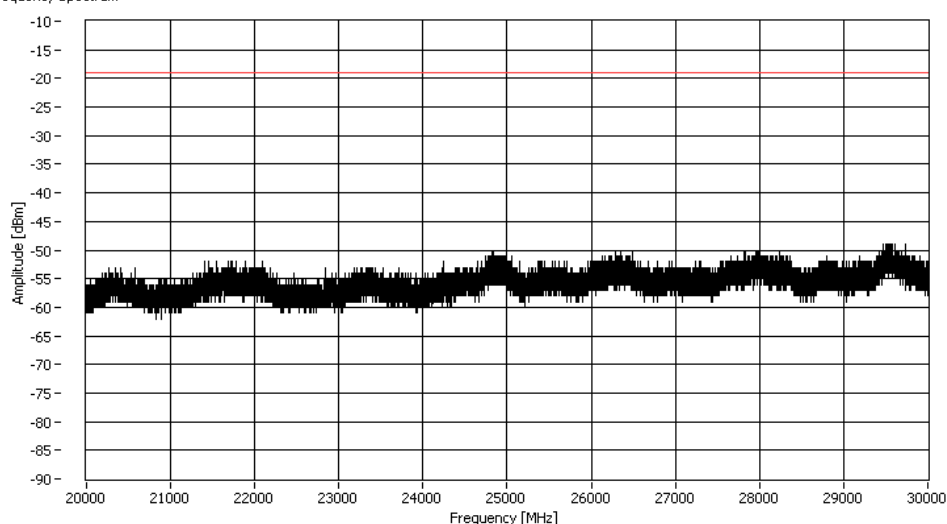


FCC ID: LYHMPCIE1V1

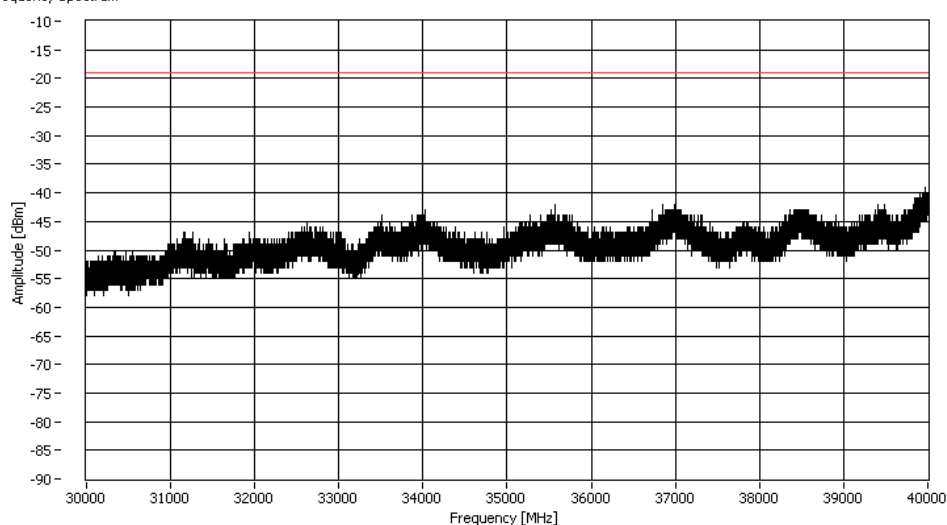
Frequency Spectrum



Frequency Spectrum



Frequency Spectrum



FCC ID: LYHMPCIE1V1

5.5 Spurious emissions conducted, in restricted bands

For test instruments and accessories used see section 6 Part SEC 1, SEC 2 and SEC 3.

5.5.1 Description of the test location

Test location: AREA4

5.5.2 Photo documentation of the test set-up



5.5.3 Applicable standard

According to FCC Part 15, Section 15.247(d):

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limit specified in Section 15.209(a) (see Section 15.205(c)).

5.5.4 Description of Measurement

The spurious emissions falling in the restricted bands are measured conducted using a spectrum analyser in a test setup following the procedures set out in KDB 558074 D01 for DTS. The frequency spectrum outside from the operating frequency range (2400 - 2483.5 MHz and 5725 - 5850 MHz) is scanned for emissions that exceed the limit. The conducted limit in EIRP is calculated according KDB 558074 D01, Item 5.4.2.1 from the absolute radiated limit. The cable loss is taken into account with an amplitude offset. For this MIMO transmitter the Antenna output chain 1 is measured and the chain 2 and chain 3 is taken into account with the formula according OET 662911, $10 \log(N)$, where N is the number of outputs. The measurement is performed at normal test conditions in modulated TX continuous mode. The observed spurious emissions falling into restricted bands are measured again under the provisions of Section 15.209(a).

Spectrum analyser settings:

9 kHz < f < 150 kHz:	RBW: 300 Hz,	VBW: 1 kHz,	Detector: Max peak,	Trace Mode: Max hold
150 kHz < f < 30 MHz:	RBW: 10 kHz,	VBW: 30 kHz,	Detector: Max peak,	Trace Mode: Max hold
30 MHz < f < 1000 MHz:	RBW: 100 kHz,	VBW: 300 kHz,	Detector: Max peak,	Trace Mode: Max hold
f > 1000 MHz:	RBW: 1 MHz,	VBW: 3 MHz,	Detector: Max peak,	Trace Mode: Max hold

FCC ID: LYHMPCIE1V1

5.5.5 Test result

G_{out} is the assumed antenna gain out of operating band

G_{in} is the in-band antenna gain of operating band

CDD-Modes: In case of HT20 and HT40 is falling back into CDD-Modes, the data stream out of the ports will be time jittered this is the reason why the harmonics and spurious emissions in the band edges are considered completely uncorrelated.

5.5.5.1 2.4 GHz range:

5.5.5.1.1 802.11g

Ant. group 1

PK-measurement							
Lowest frequency: CH1							
Test conditions: TX ,P14, 6Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2388.4	-30.8	6.0	-21.2	-3.6
2483.5	2500	1000	2488.0	-41.7	6.0	-21.2	-14.5
4500	5150	1000	4825.0	-55.7	6.0	-21.2	-28.5
7250	7750	1000	7588.5	-55.9	6.0	-21.2	-28.7
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH1							
Test conditions: TX,P14, 6Mbps				Test results			
f	A	RBW	G_{in}	G_{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2389.8	-49.1	1000	6.0	6.0	-43.1	-41.2	-1.9
2486.0	-51.7	1000	6.0	6.0	-45.7	-41.2	-4.5
4824.2	-71.2	1000	6.0	6.0	-65.2	-41.2	-24.0
7250.2	-76.5	1000	6.0	6.0	-70.5	-41.2	-29.3
Measurement uncertainty				±3 dB			

PK-measurement							
Lowest frequency: CH6							
Test conditions: TX ,P20, 6Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2388.9	-51.6	6.0	-21.2	-24.4
2483.5	2500	1000	2483.6	-48.1	6.0	-21.2	-20.9
4500	5150	1000	4874.5	-63.9	6.0	-21.2	-36.7
7250	7750	1000	7312.9	-57.2	6.0	-21.2	-30.0
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

AV-measurement							
Lowest frequency: CH6							
Test conditions: TX ,P20, 6Mbps				Test results			
f	A	RBW	G_{in}	G_{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2389.5	-51.5	1000	6.0	6.0	-45.5	-41.2	-4.3
2484.0	-48.1	1000	6.0	6.0	-42.1	-41.2	-0.9
4874.9	-63.9	1000	6.0	6.0	-57.9	-41.2	-16.7
7314.1	-57.4	1000	6.0	6.0	-51.4	-41.2	-10.2
Measurement uncertainty				±3 dB			

PK-measurement							
Lowest frequency: CH11							
Test conditions: TX ,P14, 6Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2378.3	-45.9	6.0	-21.2	-18.7
2483.5	2500	1000	2483.7	-29.1	6.0	-21.2	-1.9
4500	5150	1000	4925.3	-55.7	6.0	-21.2	-28.5
7250	7750	1000	7376.5	-50.6	6.0	-21.2	-23.4
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH11							
Test conditions: TX ,P14, 6Mbps				Test results			
f	A	RBW	G_{in}	G_{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2374.8	-56.3	1000	6.0	6.0	-50.3	-41.2	-9.1
2483.5	-48.7	1000	6.0	6.0	-42.7	-41.2	-1.5
4923.0	-71.2	1000	6.0	6.0	-65.2	-41.2	-24.0
7391.1	-70.5	1000	6.0	6.0	-64.5	-41.2	-23.3
Measurement uncertainty				±3 dB			

Ant. group 2

PK-measurement							
Lowest frequency: CH1							
Test conditions: TX ,P12, 6Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2389.8	-38.9	9.0	-21.2	-8.7
2483.5	2500	1000	2484.5	-43.2	9.0	-21.2	-13.0
4500	5150	1000	4822.6	-56.0	9.0	-21.2	-25.8
7250	7750	1000	7467.4	-55.9	9.0	-21.2	-25.7
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

AV-measurement							
Lowest frequency: CH1							
Test conditions: TX ,P12, 6Mbps				Test results			
f	A	RBW	G_{in}	G_{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2389.8	-52.0	1000	9.0	9.0	-43.0	-41.2	-1.8
2489.5	-55.1	1000	9.0	9.0	-46.1	-41.2	-4.9
4824.4	-73.8	1000	9.0	9.0	-64.8	-41.2	-23.6
7251.0	-77.6	1000	9.0	9.0	-68.6	-41.2	-27.4
Measurement uncertainty				± 3 dB			

mikes

FCC ID: LYHMPCIE1V1

PK-measurement							
Lowest frequency: CH6							
Test conditions: TX, P14, 6Mbps							
Chain1			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2352.6	-45.5	9.0	-21.2	-15.3
2483.5	2500	1000	2488.6	-42.7	9.0	-21.2	-12.5
4500	5150	1000	4876.4	-54.5	9.0	-21.2	-24.3
7250	7750	1000	7315.9	-52.1	9.0	-21.2	-21.9
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH6							
Test conditions: TX, P14, 6Mbps							
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2355.8	-56.4	1000	9.0	9.0	-47.4	-41.2	-6.2
2483.7	-54.7	1000	9.0	9.0	-45.7	-41.2	-4.5
4874.3	-68.7	1000	9.0	9.0	-59.7	-41.2	-18.5
7313.5	-69.6	1000	9.0	9.0	-60.6	-41.2	-19.4
Measurement uncertainty				±3 dB			

PK-measurement							
Lowest frequency: CH11							
Test conditions: TX, P10, 6Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2381.4	-48.7	9.0	-21.2	-18.5
2483.5	2500	1000	2483.9	-39.0	9.0	-21.2	-8.8
4500	5150	1000	5120.3	-56.5	9.0	-21.2	-26.3
7250	7750	1000	7277.7	-55.8	9.0	-21.2	-25.6
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH11							
Test conditions: TX, P10, 6Mbps							
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2380.4	-59.9	1000	9.0	9.0	-50.9	-41.2	-9.7
2483.6	-52.6	1000	9.0	9.0	-43.6	-41.2	-2.4
4924.8	-75.9	1000	9.0	9.0	-66.9	-41.2	-25.7
7388.9	-76.5	1000	9.0	9.0	-67.5	-41.2	-26.3
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

Ant. group 3

PK-measurement							
Lowest frequency: CH1							
Test conditions: TX ,P9, 6Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2388.1	-43.4	14.0	-21.2	-8.2
2483.5	2500	1000	2489.9	-42.7	14.0	-21.2	-7.5
4500	5150	1000	4805.6	-56.0	14.0	-21.2	-20.8
7250	7750	1000	7615.5	-56.0	14.0	-21.2	-20.8
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH1							
Test conditions: TX ,P9, 6Mbps							
<i>f</i>	A	RBW	G _{in}	G _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2389.7	-55.3	1000	14.0	14.0	-41.3	-41.2	-0.1
2487.8	-55.3	1000	14.0	14.0	-41.3	-41.2	-0.1
4823.2	-76.8	1000	14.0	14.0	-62.8	-41.2	-21.6
7302.7	-78.0	1000	14.0	14.0	-64.0	-41.2	-22.8
Measurement uncertainty				±3 dB			

PK-measurement							
Lowest frequency: CH6							
Test conditions: TX, P8, 6Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2346.7	-49.5	14.0	-21.2	-14.3
2483.5	2500	1000	2484.9	-45.1	14.0	-21.2	-9.9
4500	5150	1000	4503.8	-56.1	14.0	-21.2	-20.9
7250	7750	1000	7260.6	-55.9	14.0	-21.2	-20.7
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH6							
Test conditions: TX, P8, 6Mbps							
<i>f</i>	A	RBW	G _{in}	G _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2374.7	-60.5	1000	14.0	14.0	-46.5	-41.2	-5.3
2486.9	-57.2	1000	14.0	14.0	-43.2	-41.2	-2.0
4875.8	-76.5	1000	14.0	14.0	-62.5	-41.2	-21.3
7314.3	-77.7	1000	14.0	14.0	-63.7	-41.2	-22.5
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Lowest frequency: CH11							
Test conditions: TX ,P5, 6Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2374.5	-50.5	14.0	-21.2	-15.3
2483.5	2500	1000	2483.6	-43.9	14.0	-21.2	-8.7
4500	5150	1000	4510.2	-55.9	14.0	-21.2	-20.7
7250	7750	1000	7285.7	-55.7	14.0	-21.2	-20.5
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH11							
Test conditions: TX ,P5, 6Mbps							
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2375.0	-60.9	1000	14.0	14.0	-46.9	-41.2	-5.7
2483.6	-55.8	1000	14.0	14.0	-41.8	-41.2	-0.6
4851.3	-78.3	1000	14.0	14.0	-64.3	-41.2	-23.1
7431.8	-77.9	1000	14.0	14.0	-63.9	-41.2	-22.7
Measurement uncertainty				±3 dB			

5.5.5.1.2 HT20:

Ant. group 1

PK-measurement							
Lowest frequency: CH1							
Test conditions: 2 TX, P15, MCS8							
Chain1+2			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2388.4	-34.6	6.0	-21.2	-7.4
2483.5	2500	1000	2490.0	-40.2	6.0	-21.2	-13.0
4500	5150	1000	4827.7	-52.8	6.0	-21.2	-25.6
7250	7750	1000	7614.1	-53.0	6.0	-21.2	-25.8
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH1							
Test conditions: 2 TX, P15, MCS8							
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2389.8	-48.1	1000	6.0	6.0	-42.1	-41.2	-0.9
2488.9	-52.0	1000	6.0	6.0	-46.0	-41.2	-4.8
4824.4	-70.7	1000	6.0	6.0	-64.7	-41.2	-23.5
7250.4	-74.4	1000	6.0	6.0	-68.4	-41.2	-27.2
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Lowest frequency: CH6							
Test conditions: 2 TX, P18, MCS8							
Chain1+2			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2339.1	-57.2	6.0	-21.2	-30.0
2483.5	2500	1000	2487.9	-57.1	6.0	-21.2	-29.9
4500	5150	1000	5052.1	-53.0	6.0	-21.2	-25.8
7250	7750	1000	7713.9	-52.9	6.0	-21.2	-25.7
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH6							
Test conditions: 2 TX, P18, MCS8				Test results			
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2310.2	-69.1	1000	6.0	6.0	-63.1	-41.2	-21.9
2485.0	-69.6	1000	6.0	6.0	-63.6	-41.2	-22.4
4856.7	-75.3	1000	6.0	6.0	-69.3	-41.2	-28.1
7287.5	-74.8	1000	6.0	6.0	-68.8	-41.2	-27.6
Measurement uncertainty				±3 dB			

PK-measurement							
Highest frequency: CH11							
Test conditions: 2 TX, P14, MCS8							
Chain1+2			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2377.5	-43.7	6.0	-21.2	-16.5
2483.5	2500	1000	2483.8	-32.2	6.0	-21.2	-5.0
4500	5150	1000	4788.8	-53.0	6.0	-21.2	-25.8
7250	7750	1000	7387.7	-52.0	6.0	-21.2	-24.8
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH11							
Test conditions: 2 TX, P14, MCS8				Test results			
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2374.7	-54.2	1000	6.0	6.0	-48.2	-41.2	-7.0
2483.8	-47.6	1000	6.0	6.0	-41.6	-41.2	-0.4
4924.0	-71.1	1000	6.0	6.0	-65.1	-41.2	-23.9
7386.5	-71.2	1000	6.0	6.0	-65.2	-41.2	-24.0
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

Ant. group 2

PK-measurement							
Lowest frequency: CH1							
Test conditions: 2 TX, P12, MCS8							
Chain1+2			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2389.2	-39.0	9.0	-21.2	-8.8
2483.5	2500	1000	2485.3	-40.4	9.0	-21.2	-10.2
4500	5150	1000	4823.2	-53.7	9.0	-21.2	-23.5
7250	7750	1000	7307.1	-53.2	9.0	-21.2	-23.0
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH1							
Test conditions: 2 TX, P12, MCS8				Test results			
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2389.5	-51.5	1000	9.0	9.0	-42.5	-41.2	-1.3
2485.8	-52.4	1000	9.0	9.0	-43.4	-41.2	-2.2
4823.0	-73.6	1000	9.0	9.0	-64.6	-41.2	-23.4
7291.9	-74.9	1000	9.0	9.0	-65.9	-41.2	-24.7
Measurement uncertainty				±3 dB			

PK-measurement							
Lowest frequency: CH6							
Test conditions: 2 TX, P15, MCS8							
Chain1+2			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2353.1	-43.4	9.0	-21.2	-13.2
2483.5	2500	1000	2483.9	-39.8	9.0	-21.2	-9.6
4500	5150	1000	4833.3	-53.1	9.0	-21.2	-22.9
7250	7750	1000	7318.7	-51.0	9.0	-21.2	-20.8
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH6							
Test conditions: 2 TX, P15, MCS8				Test results			
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2355.2	-54.3	1000	9.0	9.0	-45.3	-41.2	-4.1
2484.9	-51.1	1000	9.0	9.0	-42.1	-41.2	-0.9
4875.6	-68.8	1000	9.0	9.0	-59.8	-41.2	-18.6
7313.9	-70.9	1000	9.0	9.0	-61.9	-41.2	-20.7
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Highest frequency: CH11							
Test conditions: 2 TX, P9, MCS8							
Chain1+2			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2377.5	-47.5	9.0	-21.2	-17.3
2483.5	2500	1000	2484.7	-39.3	9.0	-21.2	-9.1
4500	5150	1000	5136.1	-53.2	9.0	-21.2	-23.0
7250	7750	1000	7307.7	-52.7	9.0	-21.2	-22.5
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH11							
Test conditions: 2 TX, P9, MCS8							
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2375	-58	1000	9.0	9.0	-48.8	-41.2	-7.6
2484	-52	1000	9.0	9.0	-43.4	-41.2	-2.2
4922	-75	1000	9.0	9.0	-66.0	-41.2	-24.8
7430	-75	1000	9.0	9.0	-65.9	-41.2	-24.7
Measurement uncertainty				±3 dB			

Ant. group 3

PK-measurement							
Lowest frequency: CH1							
Test conditions: 2 TX, P7, MCS8							
Chain1+2			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2389.4	-45.5	14.0	-21.2	-10.3
2484	2500	1000	2486.9	-44.1	14.0	-21.2	-8.9
4500	5150	1000	4747.3	-53.5	14.0	-21.2	-18.3
7250	7750	1000	7273.2	-52.8	14.0	-21.2	-17.6
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH1							
Test conditions: 2 TX, P7, MCS8							
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2389.7	-56.6	1000	14.0	14.0	-42.6	-41.2	-1.4
2488.1	-56.1	1000	14.0	14.0	-42.1	-41.2	-0.9
4823.6	-75.2	1000	14.0	14.0	-61.2	-41.2	-20.0
7300.3	-74.9	1000	14.0	14.0	-60.9	-41.2	-19.7
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Lowest frequency: CH6							
Test conditions: 2 TX, P10, MCS8							
Chain1+2			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2356.6	-46.1	14.0	-21.2	-10.9
2484	2500	1000	2485.7	-42.3	14.0	-21.2	-7.1
4500	5150	1000	4863.9	-53.0	14.0	-21.2	-17.8
7250	7750	1000	7407.3	-53.1	14.0	-21.2	-17.9
Measurement uncertainty				±3 dB			

AV-measurement							
Middle frequency: CH6							
Test conditions: 2 TX, P10, MCS8				Test results			
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2353.3	-59.2	1000	14.0	14.0	-45.2	-41.2	-4.0
2487.1	-55.2	1000	14.0	14.0	-41.2	-41.2	0.0
4873.3	-74.6	1000	14.0	14.0	-60.6	-41.2	-19.4
7310.5	-75.0	1000	14.0	14.0	-61.0	-41.2	-19.8
Measurement uncertainty				±3 dB			

PK-measurement							
Highest frequency: CH11							
Test conditions: 2 TX, P6, MCS8							
Chain1+2			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2374.4	-49.0	14.0	-21.2	-13.8
2483.5	2500	1000	2484.7	-41.5	14.0	-21.2	-6.3
4500	5150	1000	4530.5	-53.2	14.0	-21.2	-18.0
7250	7750	1000	7418.7	-53.1	14.0	-21.2	-17.9
Measurement uncertainty				±3 dB			

AV-measurement							
Highest frequency: CH11							
Test conditions: 2 TX, P6, MCS8				Test results			
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2375.0	-62.3	1000	14.0	14.0	-48.3	-41.2	-7.1
2484.4	-56.0	1000	14.0	14.0	-42.0	-41.2	-0.8
4844.3	-75.4	1000	14.0	14.0	-61.4	-41.2	-20.2
7299.9	-75.1	1000	14.0	14.0	-61.1	-41.2	-19.9
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1
5.5.5.2 HT40:

Ant. group 1

PK-measurement							
Lowest frequency: CH1up							
Test conditions: 3 TX, P10, MCS16							
Chain1+2+3			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2389.8	-32.0	6.0	-21.2	-4.8
2484	2500	1000	2488.8	-40.9	6.0	-21.2	-13.7
4500	5150	1000	4618.0	-51.8	6.0	-21.2	-24.6
7250	7750	1000	7710.3	-51.4	6.0	-21.2	-24.2
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH1up							
Test conditions: 3 TX, P10, MCS16							
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2389.8	-48.9	1000	6.0	6.0	-42.9	-41.2	-1.7
2488.0	-53.8	1000	6.0	6.0	-47.8	-41.2	-6.6
4845.3	-73.2	1000	6.0	6.0	-67.2	-41.2	-26.0
7432.2	-73.1	1000	6.0	6.0	-67.1	-41.2	-25.9
Measurement uncertainty				±3 dB			

PK-measurement							
Middle frequency: CH4up							
Test conditions: 3 TX, P16, MCS16							
Chain1+2+3			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2389.2	-34.6	6.0	-21.2	-7.4
2484	2500	1000	2483.8	-31.4	6.0	-21.2	-4.2
4500	5150	1000	4883.2	-53.3	6.0	-21.2	-26.1
7250	7750	1000	7314.3	-53.2	6.0	-21.2	-26.0
Measurement uncertainty				±3 dB			

AV-measurement							
Middle frequency: CH4up							
Test conditions: 3 TX, P16, MCS16							
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2389.2	-50.6	1000	6.0	6.0	-44.6	-41.2	-3.4
2483.7	-50.2	1000	6.0	6.0	-44.2	-41.2	-3.0
4875.0	-71.4	1000	6.0	6.0	-65.4	-41.2	-24.2
7323.9	-72.5	1000	6.0	6.0	-66.5	-41.2	-25.3
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Highest frequency: CH7up							
Test conditions: 3 TX, P6, MCS16							
Chain1+2+3			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2375.9	-50.1	6.0	-21.2	-22.9
2483.5	2500	1000	2483.6	-31.0	6.0	-21.2	-3.8
4500	5150	1000	5051.1	-53.0	6.0	-21.2	-25.8
7250	7750	1000	7494.9	-52.6	6.0	-21.2	-25.4
Measurement uncertainty				±3 dB			

AV-measurement							
Highest frequency: CH7up							
Test conditions: 3 TX, P6, MCS16							
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2376	-60.9	1000	6.0	6.0	-54.9	-41.2	-13.7
2484	-50.4	1000	6.0	6.0	-44.4	-41.2	-3.2
4854	-75.3	1000	6.0	6.0	-69.3	-41.2	-28.1
7291	-75.0	1000	6.0	6.0	-69.0	-41.2	-27.8
Measurement uncertainty				±3 dB			

Ant. group 2

PK-measurement							
Lowest frequency: CH1up							
Test conditions: 3 TX, P7, MCS16							
Chain1+2+3			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2389.7	-32.3	9.0	-21.2	-2.1
2484	2500	1000	2483.8	-43.9	9.0	-21.2	-13.7
4500	5150	1000	4857.5	-51.5	9.0	-21.2	-21.3
7250	7750	1000	7613.7	-51.2	9.0	-21.2	-21.0
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH1up							
Test conditions: 3 TX, P7, MCS16							
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2389.8	-51.4	1000	9.0	9.0	-42.4	-41.2	-1.2
2488.2	-54.3	1000	9.0	9.0	-45.3	-41.2	-4.1
4851.9	-73.4	1000	9.0	9.0	-64.4	-41.2	-23.2
7424.5	-73.1	1000	9.0	9.0	-64.1	-41.2	-22.9
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Middle frequency: CH4up							
Test conditions: 3 TX, P13, MCS16							
Chain1+2+3			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2389.8	-38.6	9.0	-21.2	-8.4
2484	2500	1000	2486.4	-39.9	9.0	-21.2	-9.7
4500	5150	1000	4872.9	-53.5	9.0	-21.2	-23.3
7250	7750	1000	7297.1	-53.3	9.0	-21.2	-23.1
Measurement uncertainty				±3 dB			

AV-measurement							
Middle frequency: CH4up							
Test conditions: 3 TX, P13, MCS16							
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2376.1	-55.8	1000	9.0	9.0	-46.8	-41.2	-5.6
2484.4	-52.4	1000	9.0	9.0	-43.4	-41.2	-2.2
4873.7	-74.1	1000	9.0	9.0	-65.1	-41.2	-23.9
7295.1	-74.7	1000	9.0	9.0	-65.7	-41.2	-24.5
Measurement uncertainty				±3 dB			

Ant. group 3

PK-measurement							
Middle frequency: CH4up							
Test conditions: 3 TX, P10, MCS16							
Chain1+2+3			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
2310	2390	1000	2376.1	-49.6	14.0	-21.2	-14.4
2484	2500	1000	2485.9	-45.9	14.0	-21.2	-10.7
4500	5150	1000	4899.2	-53.2	14.0	-21.2	-18.0
7250	7750	1000	7474.8	-52.9	14.0	-21.2	-17.7
Measurement uncertainty				±3 dB			

AV-measurement							
Middle frequency: CH4up							
Test conditions: 3 TX, P10, MCS16							
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
2375.9	-59.6	1000	14.0	14.0	-45.6	-41.2	-4.4
2485.1	-58.3	1000	14.0	14.0	-44.3	-41.2	-3.1
4856.7	-75.3	1000	14.0	14.0	-61.3	-41.2	-20.1
7256.2	-75.0	1000	14.0	14.0	-61.0	-41.2	-19.8
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1
5.5.5.3 5 GHz range:
5.5.5.3.1 HT20

Ant. group 1

PK-measurement							
Lowest frequency: CH149							
Test conditions: 2 TX, P20, MCS8							
Chain1+2			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5421.9	-35.6	6.0	-21.2	-8.4
7250	7750	1000	7251.0	-52.8	6.0	-21.2	-25.6
10600	12700	1000	12520.2	-52.1	6.0	-21.2	-24.9
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH149							
Test conditions: 2 TX, P20				Test results			
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5416.9	-47.7	1000	6.0	6.0	-41.7	-41.2	-0.5
7603.9	-74.7	1000	6.0	6.0	-68.7	-41.2	-27.5
11489.0	-72.8	1000	6.0	6.0	-66.8	-41.2	-25.6
Measurement uncertainty				±3 dB			

PK-measurement							
Middle frequency: CH157							
Test conditions: 2 TX, P20, MCS8							
Chain1+2			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5459.7	-34.8	6.0	-21.2	-7.6
7250	7750	1000	7455.0	-52.6	6.0	-21.2	-25.4
10600	12700	1000	12498.4	-51.8	6.0	-21.2	-24.6
Measurement uncertainty				±3 dB			

AV-measurement							
Middle frequency: CH157							
Test conditions: 2 TX, P20				Test results			
<i>f</i>	A	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5457.1	-47.7	1000	6.0	6.0	-41.7	-41.2	-0.5
7298.3	-74.7	1000	6.0	6.0	-68.7	-41.2	-27.5
11569.7	-72.8	1000	6.0	6.0	-66.8	-41.2	-25.6
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Highest frequency: CH165							
Test conditions: 2 TX, P20, MCS8							
Chain1+2			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5459.9	-37.9	6.0	-21.2	-10.7
7250	7750	1000	7382.3	-52.2	6.0	-21.2	-25.0
10600	12700	1000	10746.1	-52.3	6.0	-21.2	-25.1
Measurement uncertainty				±3 dB			

AV-measurement							
Highest frequency: CH165							
Test conditions: 2 TX, P20				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5430.6	-49.3	1000	6.0	6.0	-43.3	-41.2	-2.1
7275.0	-74.7	1000	6.0	6.0	-68.7	-41.2	-27.5
11650.9	-73.1	1000	6.0	6.0	-67.1	-41.2	-25.9
Measurement uncertainty				±3 dB			

Ant. group 2

PK-measurement							
Lowest frequency: CH149							
Test conditions: 2 TX, P17, MCS8							
Chain1+2			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5419.9	-35.7	9.0	-21.2	-5.5
7250	7750	1000	7460.4	-52.5	9.0	-21.2	-22.3
10600	12700	1000	10791.2	-51.6	9.0	-21.2	-21.4
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH149							
Test conditions: 2 TX, P17				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5422.7	-55.2	1000	9.0	9.0	-46.2	-41.2	-5.0
7283.3	-74.7	1000	9.0	9.0	-65.7	-41.2	-24.5
11488.6	-72.8	1000	9.0	9.0	-63.8	-41.2	-22.6
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Middle frequency: CH157							
Test conditions: 2 TX, P17, MCS8							
Chain1+2			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5457.9	-34.8	9.0	-21.2	-4.6
7250	7750	1000	7618.5	-52.9	9.0	-21.2	-22.7
10600	12700	1000	11913.2	-52.1	9.0	-21.2	-21.9
Measurement uncertainty				±3 dB			

AV-measurement							
Middle frequency: CH157							
Test conditions: 2 TX, P17				Test results			
f	A	RBW	G_{in}	G_{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5459.0	-55.1	1000	9.0	9.0	-46.1	-41.2	-4.9
7291.7	-74.6	1000	9.0	9.0	-65.6	-41.2	-24.4
11570.7	-72.8	1000	9.0	9.0	-63.8	-41.2	-22.6
Measurement uncertainty				± 3 dB			

PK-measurement							
Highest frequency: CH165							
Test conditions: 2 TX, P17, MCS8							
Chain1+2			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5456.2	-53.7	9.0	-21.2	-23.5
7250	7750	1000	7570.0	-52.9	9.0	-21.2	-22.7
10600	12700	1000	12544.7	-52.0	9.0	-21.2	-21.8
Measurement uncertainty				±3 dB			

AV-measurement							
Highest frequency: CH165							
Test conditions: 2 TX, P17				Test results			
f	A	RBW	G_{in}	G_{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5373.8	-75.3	1000	9.0	9.0	-66.3	-41.2	-25.1
7281.5	-74.7	1000	9.0	9.0	-65.7	-40.2	-25.5
12642.1	-73.9	1000	9.0	9.0	-64.9	-39.2	-25.7
Measurement uncertainty				± 3 dB			

FCC ID: LYHMPCIE1V1

Ant. group 3

PK-measurement							
Lowest frequency: CH149							
Test conditions: 2 TX, P10, MCS8							
Chain1+2			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5419.1	-37.9	14.2	-21.2	-2.5
7250	7750	1000	7258.6	-52.6	14.2	-21.2	-17.2
10600	12700	1000	12276.6	-52.2	14.2	-21.2	-16.8
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH149							
Test conditions: 2 TX, P10							
<i>f</i>	A	RBW	G _{in}	G _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5429.1	-59.8	1000	14.2	14.2	-45.6	-41.2	-4.4
7303.1	-74.7	1000	14.2	14.2	-60.5	-41.2	-19.3
12616.4	-73.9	1000	14.2	14.2	-59.7	-41.2	-18.5
Measurement uncertainty				±3 dB			

PK-measurement							
Middle frequency: CH157							
Test conditions: 2 TX, P10, MCS8							
Chain1+2			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5459.5	-37.6	14.2	-21.2	-2.2
7250	7750	1000	7455.4	-52.3	14.2	-21.2	-16.9
10600	12700	1000	12666.1	-51.3	14.2	-21.2	-15.9
Measurement uncertainty				±3 dB			

AV-measurement							
Middle frequency: CH157							
Test conditions: 2 TX, P10							
<i>f</i>	A	RBW	G _{in}	G _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5463.7	-58.5	1000	14.2	14.2	-44.3	-41.2	-3.1
7297.7	-74.7	1000	14.2	14.2	-60.5	-41.2	-19.3
12514.6	-73.9	1000	14.2	14.2	-59.7	-41.2	-18.5
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Highest frequency: CH165							
Test conditions: 2 TX, P10, MCS8							
Chain1+2			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5419.3	-39.7	14.2	-21.2	-4.3
7250	7750	1000	7576.7	-52.5	14.2	-21.2	-17.1
10600	12700	1000	12663.5	-51.6	14.2	-21.2	-16.2
Measurement uncertainty				±3 dB			

AV-measurement							
Highest frequency: CH165							
Test conditions: 2 TX, P10				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5375.0	-58.2	1000	14.2	14.2	-44.0	-41.2	-2.8
7268.6	-74.7	1000	14.2	14.2	-60.5	-40.2	-20.3
12610.2	-73.9	1000	14.2	14.2	-59.7	-39.2	-20.5
Measurement uncertainty				±3 dB			

5.5.5.3.2 HT40

Ant. group 1

PK-measurement							
Lowest frequency: CH149up							
Test conditions: 3 TX, P20, MCS16							
Chain1+2+3			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5420.7	-35.0	6.0	-21.2	-7.8
7250	7750	1000	7300.5	-50.2	6.0	-21.2	-23.0
10600	12700	1000	12536.3	-50.0	6.0	-21.2	-22.8
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH149up							
Test conditions: 3 TX, P20				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5419.8	-56.9	1000	6.0	6.0	-50.9	-41.2	-9.7
7278.7	-72.9	1000	6.0	6.0	-66.9	-41.2	-25.7
11489.2	-70.1	1000	6.0	6.0	-64.1	-41.2	-22.9
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Highest frequency: CH157up							
Test conditions: 3 TX, P20, MCS16							
Chain1+2+3			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5453.0	-34.5	6.0	-21.2	-7.3
7250	7750	1000	7267.8	-51.0	6.0	-21.2	-23.8
10600	12700	1000	12339.1	-50.4	6.0	-21.2	-23.2
Measurement uncertainty				±3 dB			

AV-measurement							
Highest frequency: CH157up							
Test conditions: 3 TX, P20				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5463.6	-56.7	1000	6.0	6.0	-50.7	-41.2	-9.5
7274.6	-72.9	1000	6.0	6.0	-66.9	-41.2	-25.7
11589.0	-71.8	1000	6.0	6.0	-65.8	-41.2	-24.6
Measurement uncertainty				±3 dB			

Ant. group 2

PK-measurement							
Lowest frequency: CH149up							
Test conditions: 3 TX, P17, MCS16							
Chain1+2+3			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5424.1	-35.3	9.0	-21.2	-5.1
7250	7750	1000	7331.8	-51.3	9.0	-21.2	-21.1
10600	12700	1000	10805.8	-50.6	9.0	-21.2	-20.4
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH149up							
Test conditions: 3 TX, P17				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5431.3	-57.3	1000	9.0	9.0	-48.3	-41.2	-7.1
7291.3	-72.9	1000	9.0	9.0	-63.9	-41.2	-22.7
10766.5	-72.4	1000	9.0	9.0	-63.4	-41.2	-22.2
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Highest frequency: CH157up							
Test conditions: 3 TX, P17, MCS16							
Chain1+2+3			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5458.7	-34.3	9.0	-21.2	-4.1
7250	7750	1000	7434.6	-51.1	9.0	-21.2	-20.9
10600	12700	1000	12540.1	-50.4	9.0	-21.2	-20.2
Measurement uncertainty				±3 dB			

AV-measurement							
Highest frequency: CH157up							
Test conditions: 3 TX, P17							
<i>f</i>	A	RBW	G _{in}	G _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5463.6	-57.3	1000	9.0	9.0	-48.3	-41.2	-7.1
7284.7	-72.9	1000	9.0	9.0	-63.9	-41.2	-22.7
11583.8	-72.0	1000	9.0	9.0	-63.0	-41.2	-21.8
Measurement uncertainty				±3 dB			

Ant. group 3

PK-measurement							
Lowest frequency: CH149up							
Test conditions: 3 TX, P12, MCS16							
Chain1+2+3			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5450.7	-37.5	14.2	-21.2	-2.1
7250	7750	1000	7711.1	-50.9	14.2	-21.2	-15.5
10600	12700	1000	10788.4	-50.0	14.2	-21.2	-14.6
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH149up							
Test conditions: 3 TX, P12							
<i>f</i>	A	RBW	G _{in}	G _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5437.7	-59.2	1000	14.2	14.2	-45.0	-41.2	-3.8
7293.1	-73.0	1000	14.2	14.2	-58.8	-41.2	-17.6
12610.2	-72.1	1000	14.2	14.2	-57.9	-41.2	-16.7
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Highest frequency: CH157up							
Test conditions: 3 TX, P12, MCS16							
Chain1+2+3			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5460.0	-37.1	14.2	-21.2	-1.7
7250	7750	1000	7443.6	-51.2	14.2	-21.2	-15.8
10600	12700	1000	12398.4	-50.3	14.2	-21.2	-14.9
Measurement uncertainty				±3 dB			

AV-measurement							
Highest frequency: CH157up							
Test conditions: 3 TX, P12				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5459.4	-59.5	1000	14.2	14.2	-45.3	-41.2	-4.1
7271.2	-72.9	1000	14.2	14.2	-58.7	-41.2	-17.5
12623.8	-72.2	1000	14.2	14.2	-58.0	-41.2	-16.8
Measurement uncertainty				±3 dB			

5.5.5.3.3 802.11a:

Ant. group 1

PK-measurement							
Lowest frequency: CH149							
Test conditions: 1 TX, P20, 6 Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5417.5	-40.8	6.0	-21.2	-13.6
7250	7750	1000	7727.2	-56.4	6.0	-21.2	-29.2
10600	12700	1000	12405.6	-54.9	6.0	-21.2	-27.7
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH149							
Test conditions: TX, P20				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5419.3	-52.6	1000	6.0	6.0	-46.6	-41.2	-5.4
7286.9	-78.0	1000	6.0	6.0	-72.0	-41.2	-30.8
11491.2	-77.1	1000	6.0	6.0	-71.1	-41.2	-29.9
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Middle frequency: CH157							
Test conditions: 1 TX, P20, 6 Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5452.9	-36.2	6.0	-21.2	-9.0
7250	7750	1000	7294.3	-55.6	6.0	-21.2	-28.4
10600	12700	1000	12664.7	-54.4	6.0	-21.2	-27.2
Measurement uncertainty				±3 dB			

AV-measurement							
Middle frequency: CH157							
Test conditions: TX, P20				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5452.5	-48.6	1000	6.0	6.0	-42.6	-41.2	-1.4
7295.7	-77.7	1000	6.0	6.0	-71.7	-41.2	-30.5
11569.5	-75.6	1000	6.0	6.0	-69.6	-41.2	-28.4
Measurement uncertainty				±3 dB			

PK-measurement							
Highest frequency: CH165							
Test conditions: 1 TX, P20, 6 Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5458.4	-40.3	6.0	-21.2	-13.1
7250	7750	1000	7704.3	-55.1	6.0	-21.2	-27.9
10600	12700	1000	12612.8	-54.0	6.0	-21.2	-26.8
Measurement uncertainty				±3 dB			

AV-measurement							
Highest frequency: CH165							
Test conditions: TX, P20				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5428.4	-51.9	1000	6.0	6.0	-45.9	-41.2	-4.7
7290.1	-77.7	1000	6.0	6.0	-71.7	-41.2	-30.5
11651.1	-76.0	1000	6.0	6.0	-70.0	-41.2	-28.8
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

Ant. group 2

PK-measurement							
Lowest frequency: CH149							
Test conditions: 1 TX, P17, 6 Mbps							
Chain1			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5417.5	-40.8	9.0	-21.2	-10.6
7250	7750	1000	7573.2	-56.4	9.0	-21.2	-26.2
10600	12700	1000	11364.5	-55.0	9.0	-21.2	-24.8
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH149							
Test conditions: 1 TX, P17							
<i>f</i>	A	RBW	G _{in}	G _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5420.3	-52.6	1000	9.0	9.0	-43.6	-41.2	-2.4
7293.3	-78.1	1000	9.0	9.0	-69.1	-41.2	-27.9
11491.0	-77.0	1000	9.0	9.0	-68.0	-41.2	-26.8
Measurement uncertainty				±3 dB			

PK-measurement							
Middle frequency: CH157							
Test conditions: 1 TX, P17, 6 Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5451.9	-36.1	9.0	-21.2	-5.9
7250	7750	1000	7737.6	-55.8	9.0	-21.2	-25.6
10600	12700	1000	11971.3	-54.7	9.0	-21.2	-24.5
Measurement uncertainty				±3 dB			

AV-measurement							
Middle frequency: CH157							
Test conditions: TX, P17							
<i>f</i>	A	RBW	G _{in}	G _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5457.5	-55.0	1000	9.0	9.0	-46.0	-41.2	-4.8
7263.8	-77.7	1000	9.0	9.0	-68.7	-41.2	-27.5
11570.1	-75.6	1000	9.0	9.0	-66.6	-41.2	-25.4
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Highest frequency: CH165							
Test conditions: 1 TX, P17, 6 Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5459.5	-39.7	9.0	-21.2	-9.5
7250	7750	1000	7613.7	-56.0	9.0	-21.2	-25.8
10600	12700	1000	12524.6	-54.5	9.0	-21.2	-24.3
Measurement uncertainty				±3 dB			

AV-measurement							
Highest frequency: CH165							
Test conditions: TX, P17				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5430.4	-51.8	1000	9.0	9.0	-42.8	-41.2	-1.6
7274.6	-77.7	1000	9.0	9.0	-68.7	-40.2	-28.5
11650.5	-76.0	1000	9.0	9.0	-67.0	-39.2	-27.8
Measurement uncertainty				±3 dB			

Ant. group 3

PK-measurement							
Lowest frequency: CH149							
Test conditions: 1 TX, P10, 6 Mbps							
Chain1			Test results				
Start <i>f</i>	Stop <i>f</i>	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5425.0	-42.4	14.2	-21.2	-7.0
7250	7750	1000	7502.1	-56.4	14.2	-21.2	-21.0
10600	12700	1000	12654.7	-55.0	14.2	-21.2	-19.6
Measurement uncertainty				±3 dB			

AV-measurement							
Lowest frequency: CH149							
Test conditions: TX, P10				Test results			
<i>f</i>	<i>A</i>	RBW	<i>G</i> _{in}	<i>G</i> _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5428.2	-57.9	1000	14.2	14.2	-43.7	-41.2	-2.5
7272.6	-78.0	1000	14.2	14.2	-63.8	-41.2	-22.6
12639.1	-77.2	1000	14.2	14.2	-63.0	-41.2	-21.8
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

PK-measurement							
Middle frequency: CH157							
Test conditions: 1 TX, P10, 6 Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5457.5	-37.3	14.2	-21.2	-1.9
7250	7750	1000	7446.2	-56.0	14.2	-21.2	-20.6
10600	12700	1000	12586.2	-54.3	14.2	-21.2	-18.9
Measurement uncertainty				±3 dB			

AV-measurement							
Middle frequency: CH157							
Test conditions: TX, P10				Test results			
<i>f</i>	A	RBW	G _{in}	G _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5463.4	-58.0	1000	14.2	14.2	-43.8	-41.2	-2.6
7295.7	-77.7	1000	14.2	14.2	-63.5	-41.2	-22.3
11568.9	-76.1	1000	14.2	14.2	-61.9	-41.2	-20.7
Measurement uncertainty				±3 dB			

PK-measurement							
Highest frequency: CH165							
Test conditions: 1 TX, P10, 6 Mbps							
Chain1			Test results				
Start f	Stop f	RBW	Maximum emission		G _{out}	Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dB)
5350	5460	1000	5456.5	-41.6	14.2	-21.2	-6.2
7250	7750	1000	7437.0	-55.2	14.2	-21.2	-19.8
10600	12700	1000	12582.8	-54.9	14.2	-21.2	-19.5
Measurement uncertainty				±3 dB			

AV-measurement							
Highest frequency: CH165							
Test conditions: TX, P10				Test results			
<i>f</i>	A	RBW	G _{in}	G _{out}	EIRP	AV Limit	Margin
(MHz)	(dBm)	(kHz)	(dBi)	(dBi)	(dBm)	(dBm)	(dB)
5452.0	-60.1	1000	14.2	14.2	-45.9	-41.2	-4.7
7424.1	-77.7	1000	14.2	14.2	-63.5	-40.2	-23.3
11649.9	-76.5	1000	14.2	14.2	-62.3	-39.2	-23.1
Measurement uncertainty				±3 dB			

FCC ID: LYHMPCIE1V1

Limit according to FCC Part 15, Section 15.247(d):

Attenuation below the general limits specified in Section 15.209(a) is not required.

Calculation formula:

$$\text{EIRP} = E + 20 \log(d) - 104.8;$$

E: Field strength (dB(mV/m));

Factor 4.7 dB is taken into account for adjusting the ground reflection for emissions > 30 MHz and ≥ 1000 MHz.

Frequency (MHz)	General limit radiated (mV/m)	Calculated PK limit EIRP (dBm)	Calculated AV limit EIRP (dBm)
216 - 960	200	-33.9	-53.9
Above 960	500	-21.2	-41.2

The requirements are **FULFILLED**.

Remarks: For detailed test results please see the following test protocols. Only the worst cases of the plots are listed.

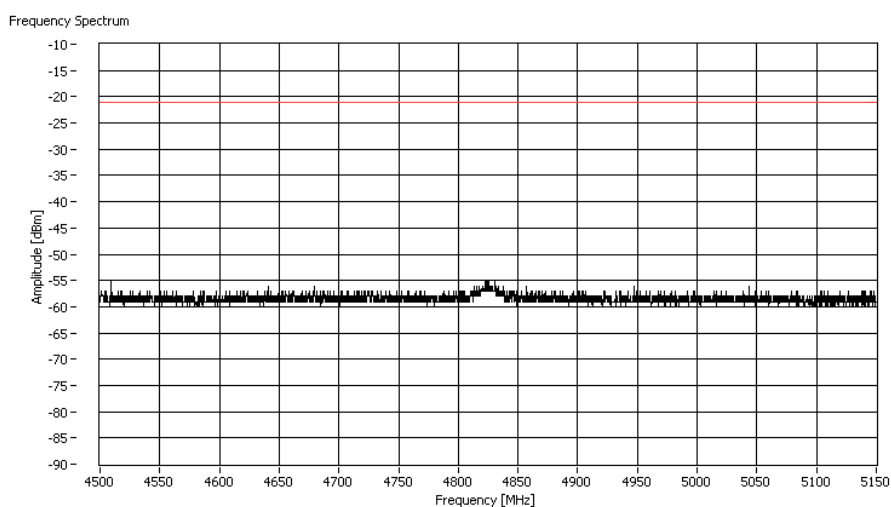
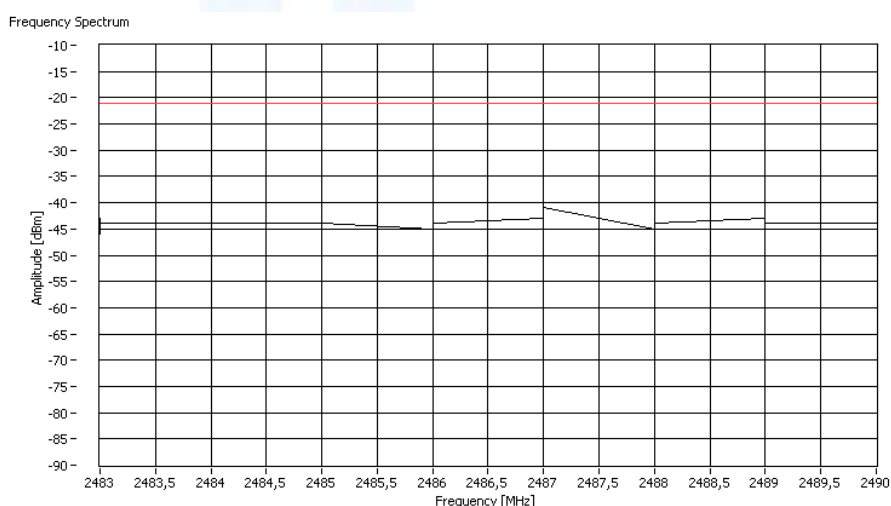
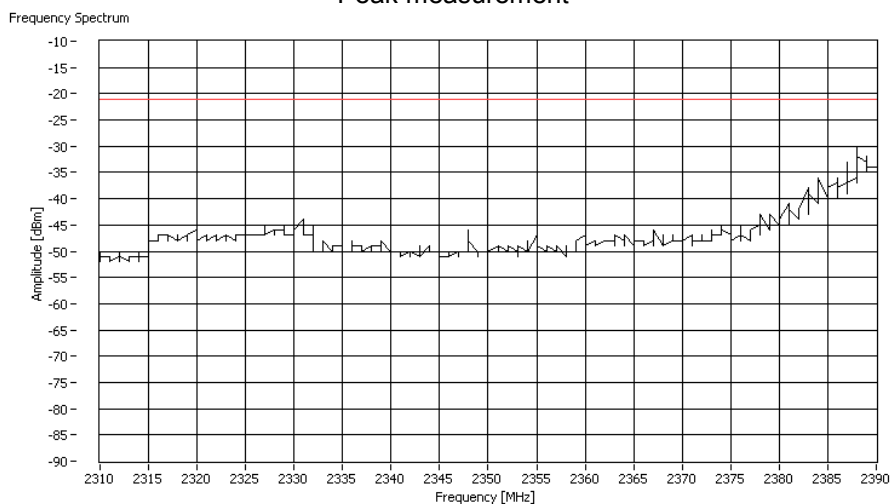
FCC ID: LYHMPCIE1V1

5.5.6 Test protocols of SEC in restricted bands:

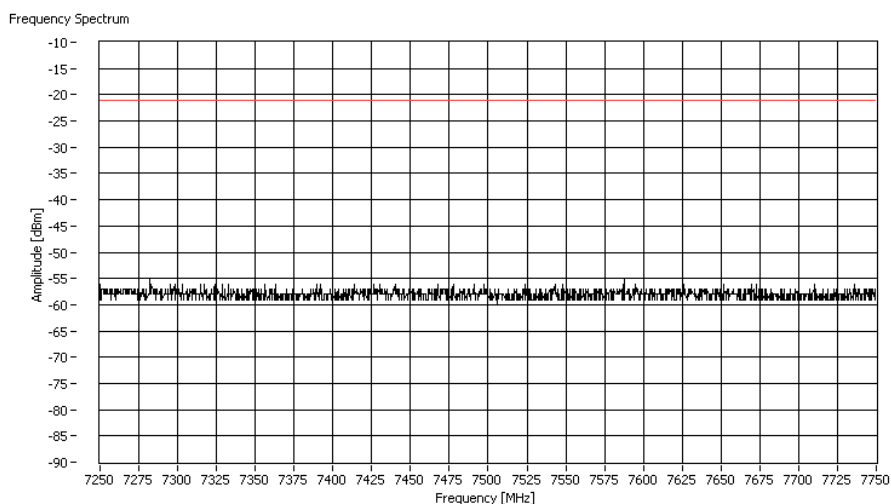
5.5.6.1 802.11g:

CH1, max power

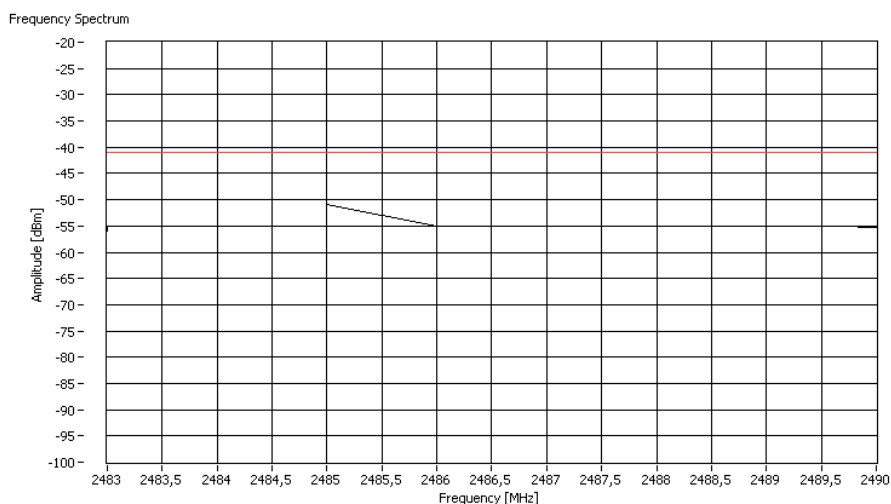
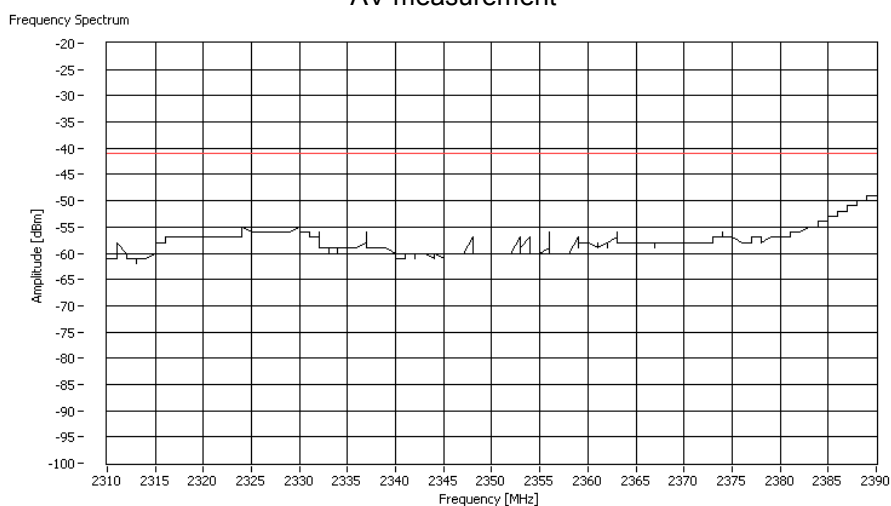
Peak measurement



FCC ID: LYHMPCIE1V1



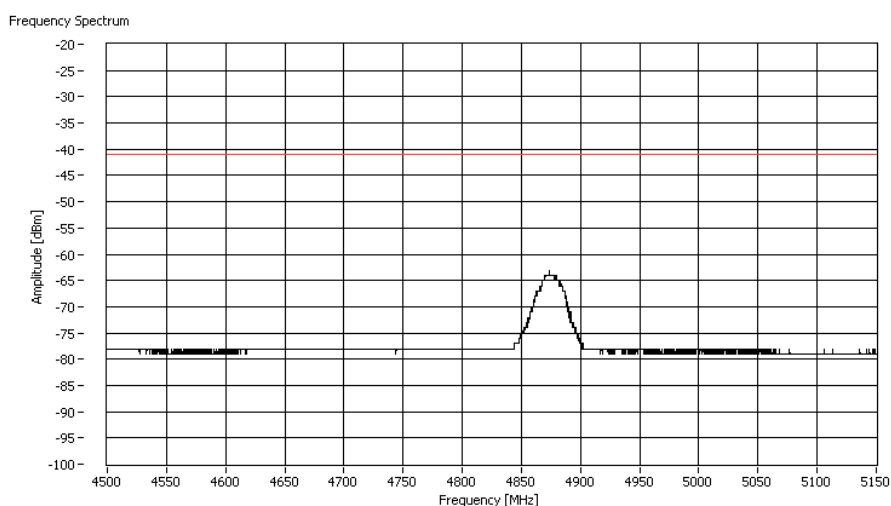
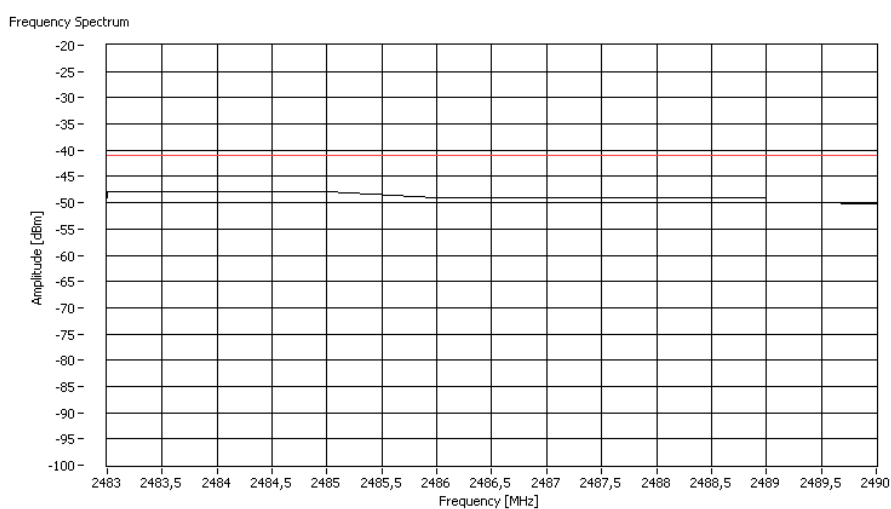
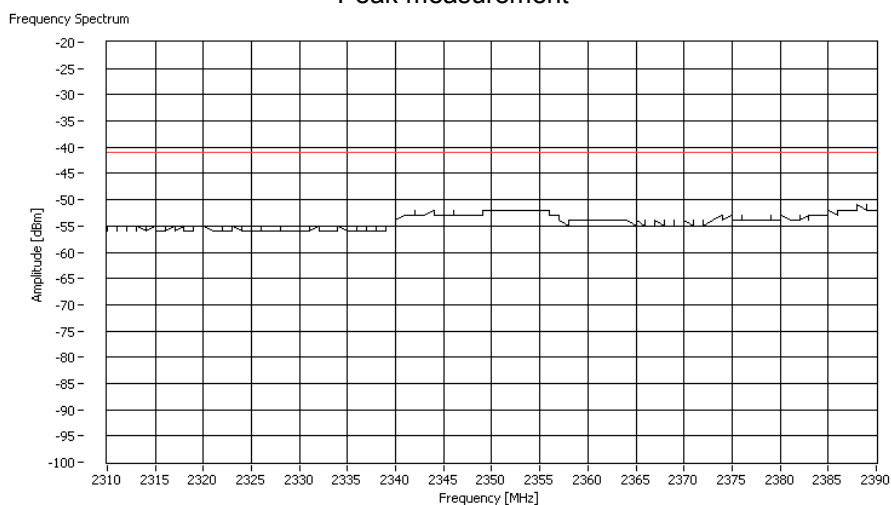
AV measurement



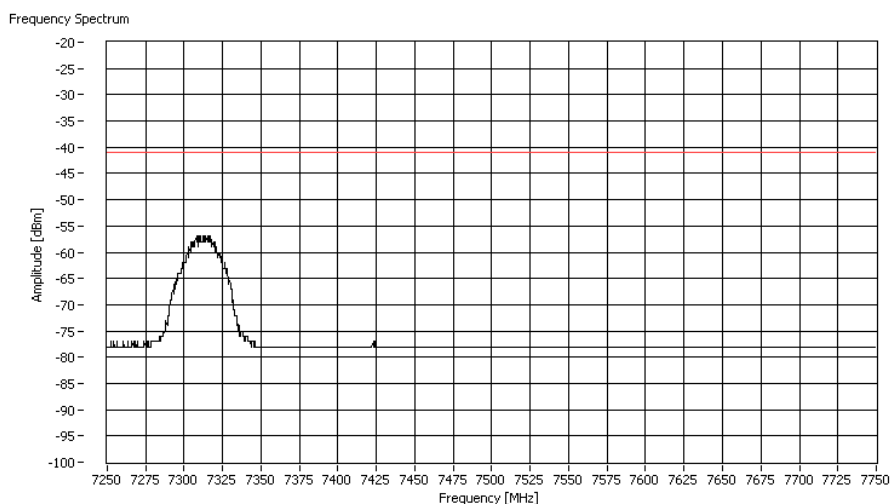
FCC ID: LYHMPCIE1V1

CH6, max power

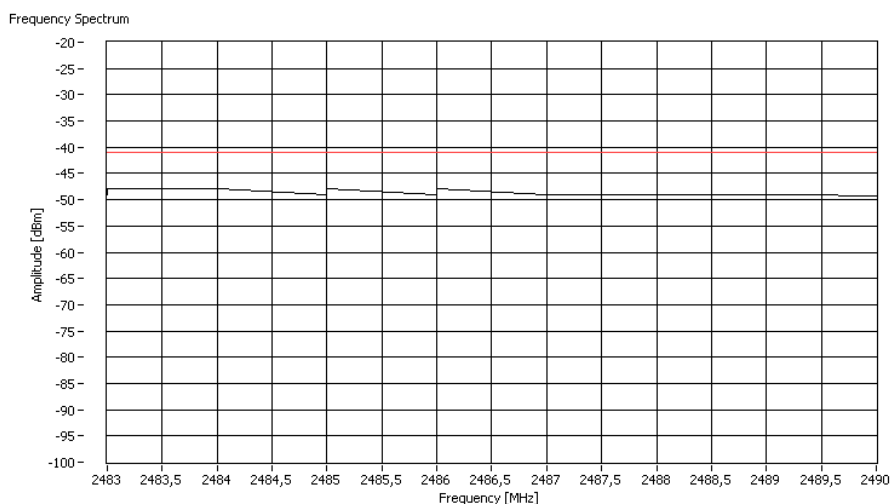
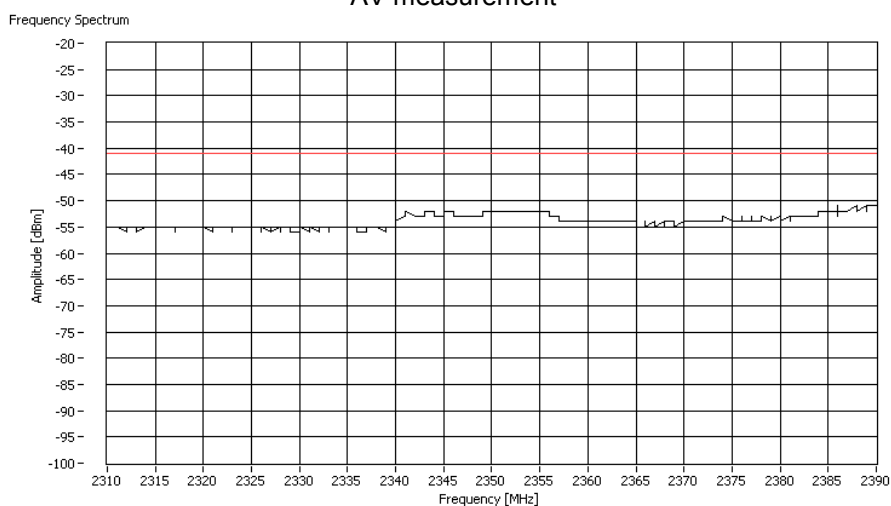
Peak measurement



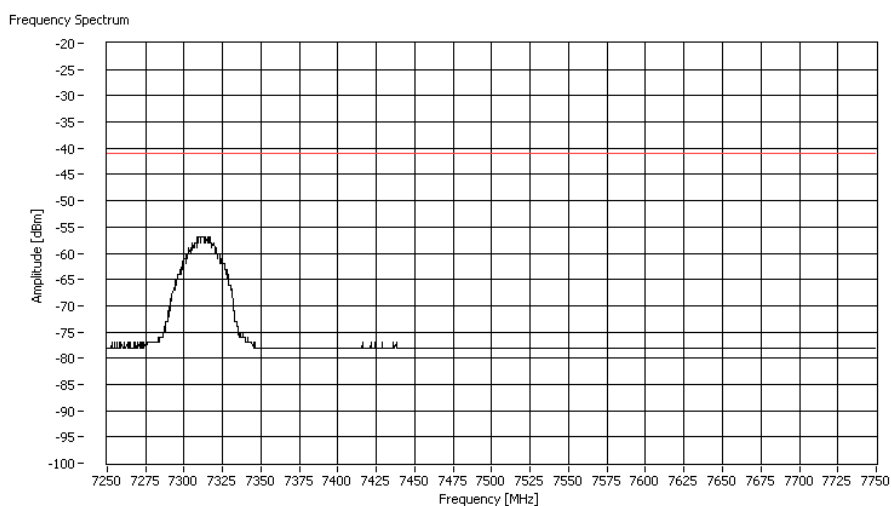
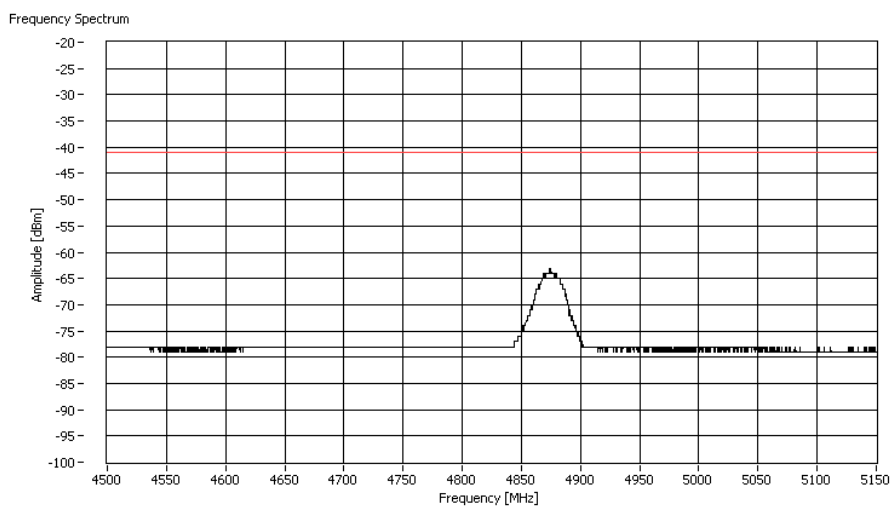
FCC ID: LYHMPCIE1V1



AV measurement

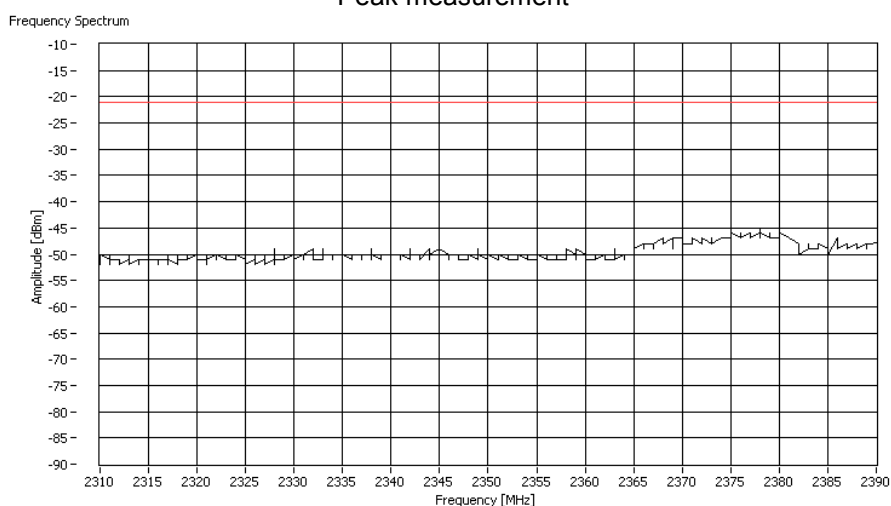


FCC ID: LYHMPCIE1V1

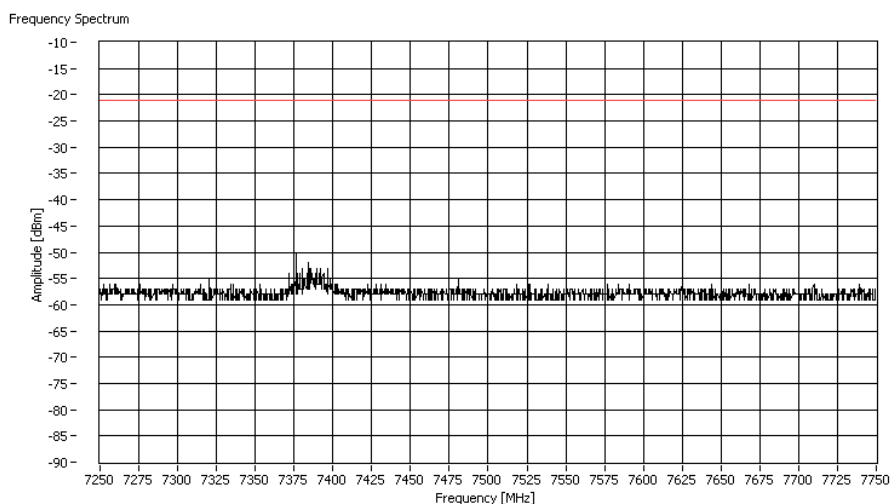
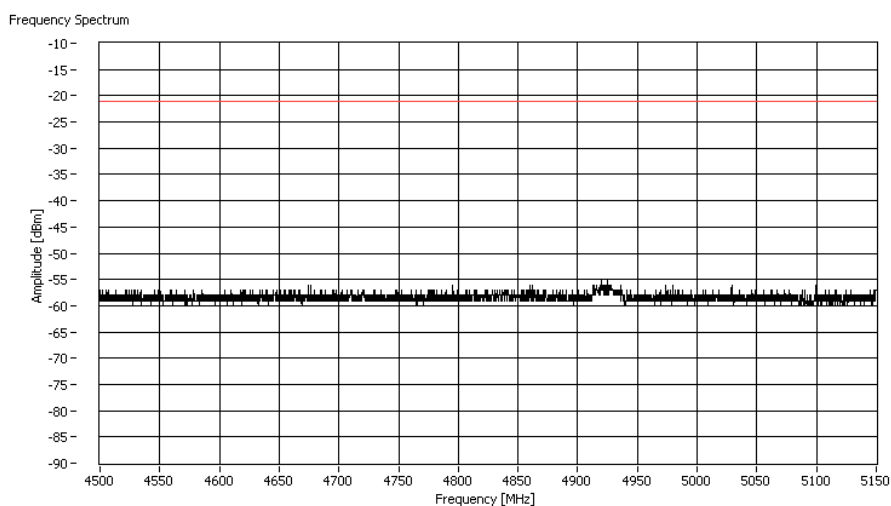
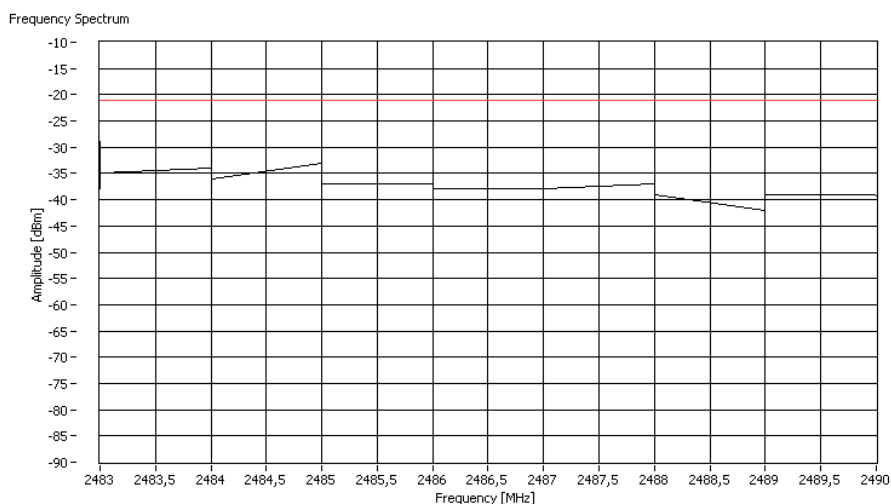


CH11, max power

Peak measurement

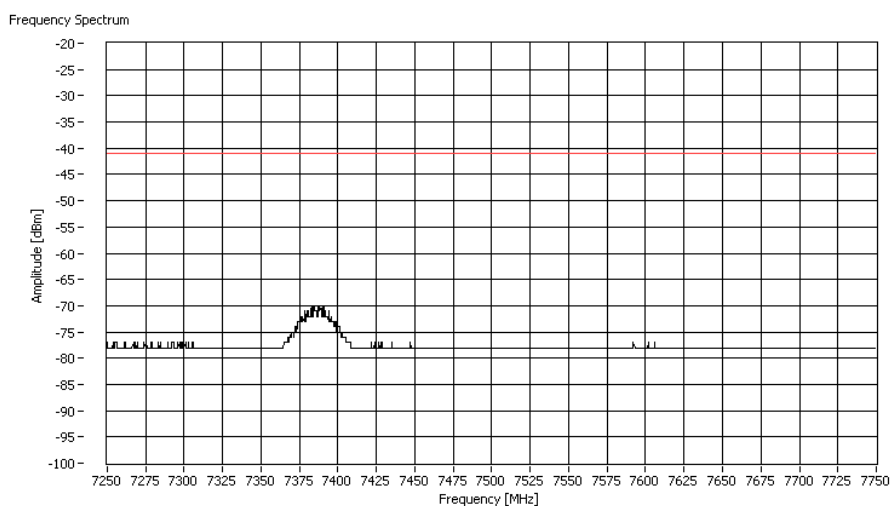
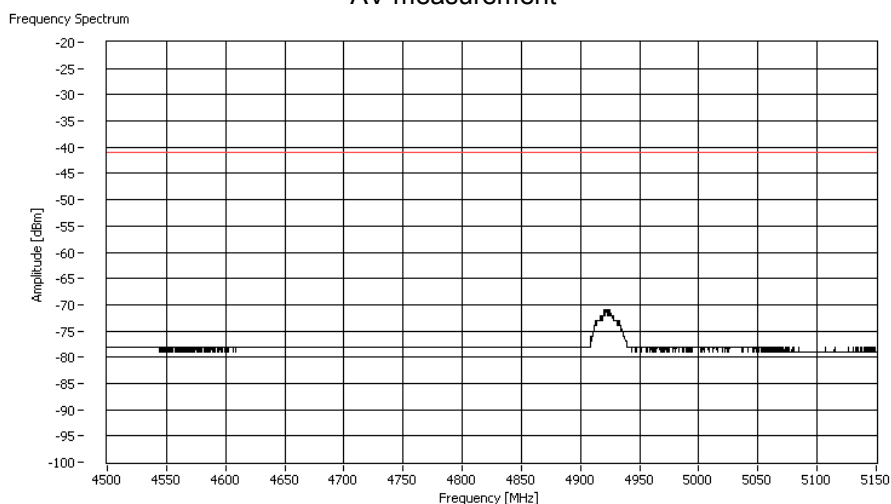


FCC ID: LYHMPDIE1V1



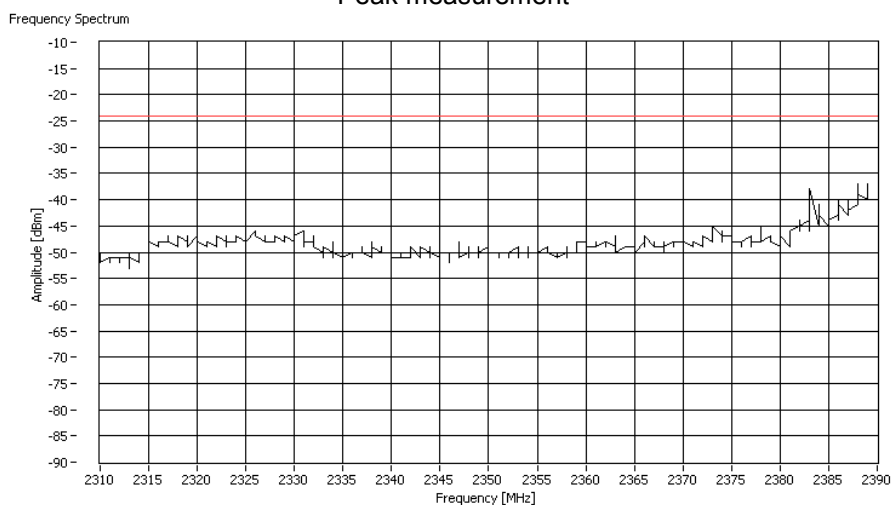
FCC ID: LYHMPCIE1V1

AV measurement



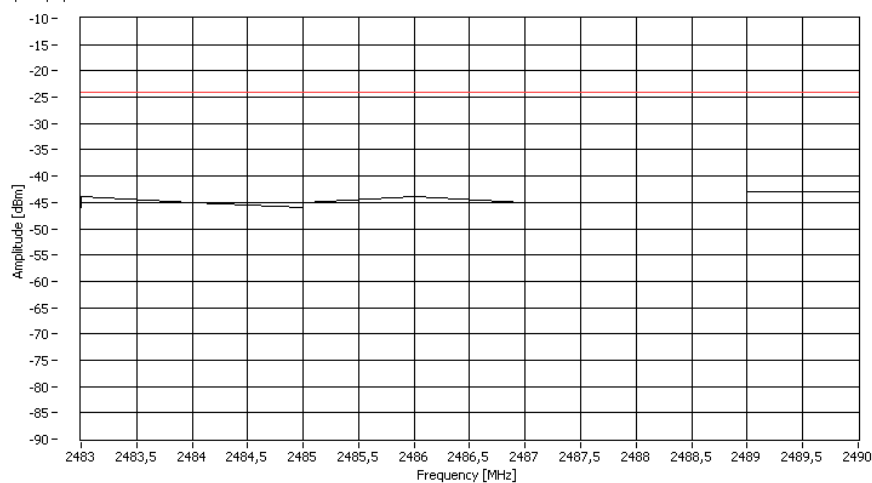
5.5.6.2 HT20: CH1

Peak measurement

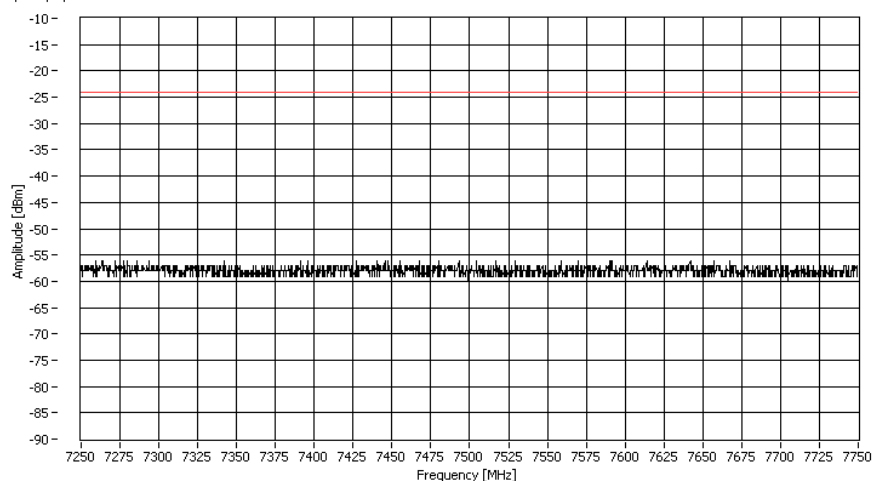


FCC ID: LYHMPCIE1V1

Frequency Spectrum

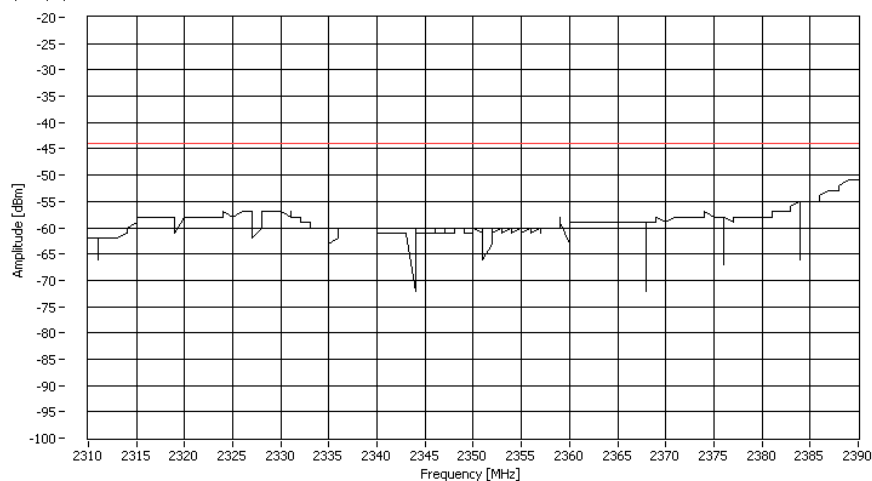


Frequency Spectrum

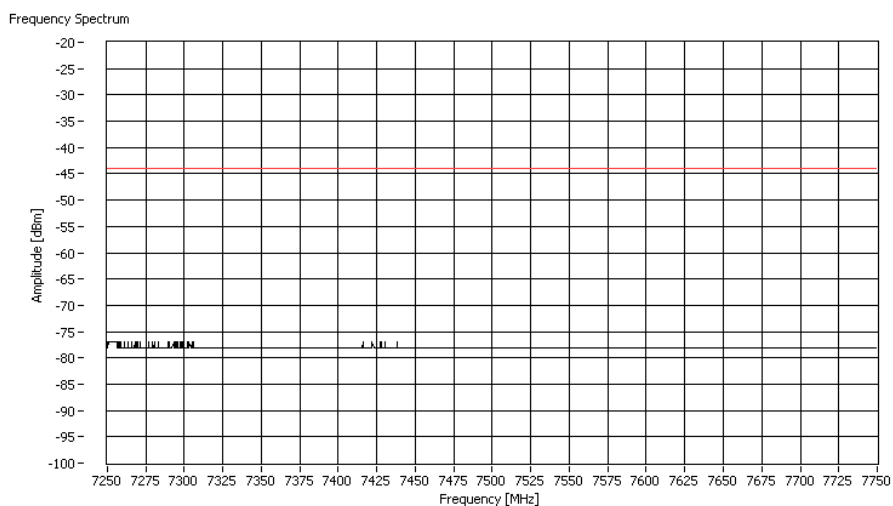
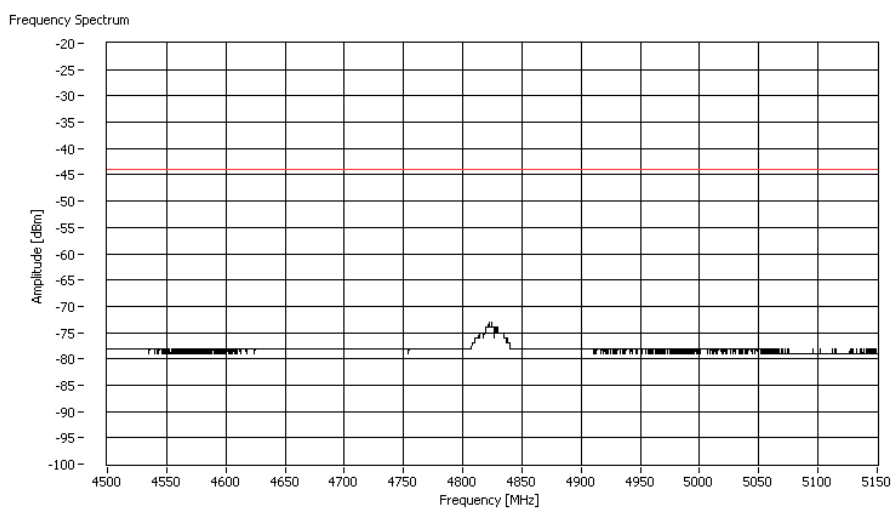
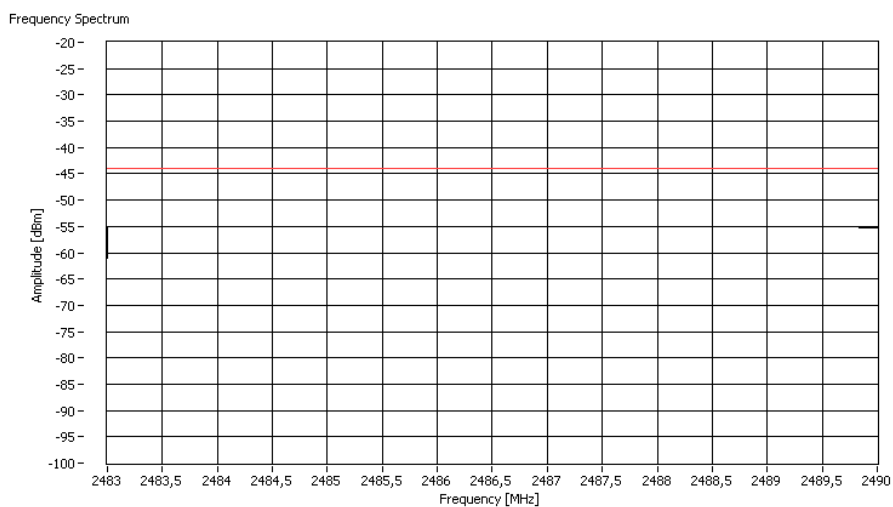


AV measurement

Frequency Spectrum



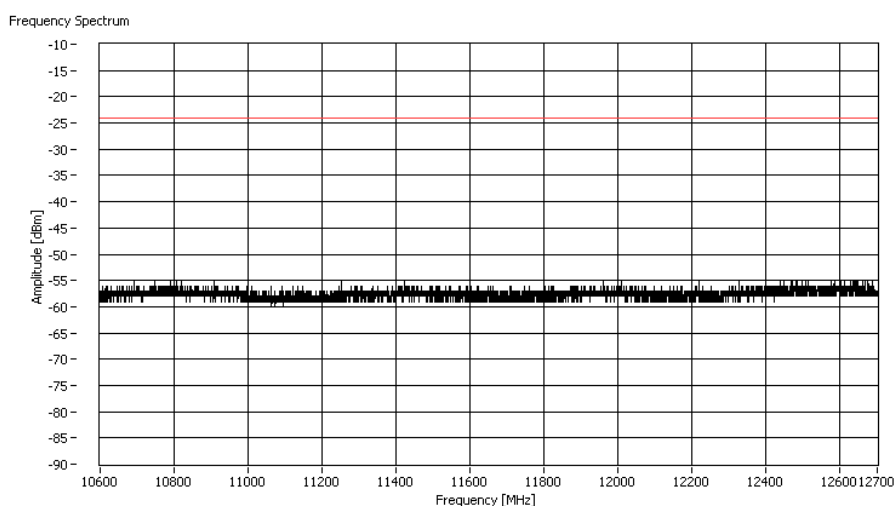
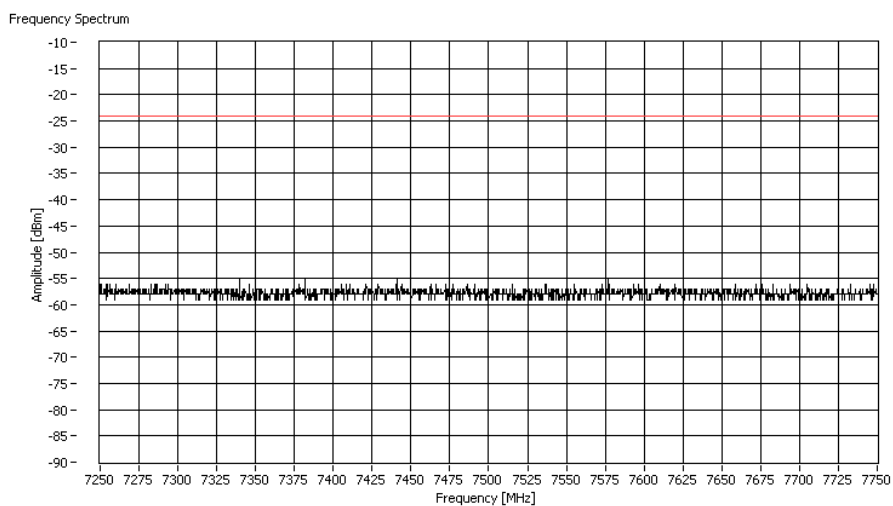
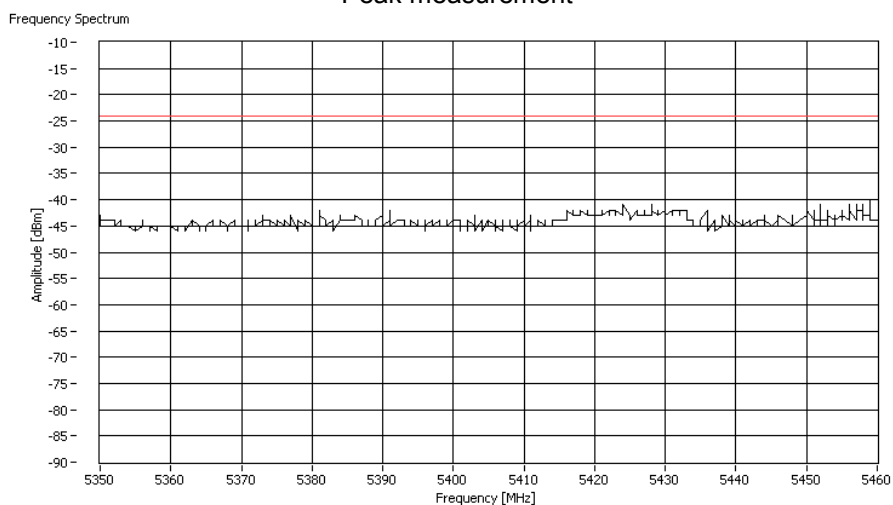
FCC ID: LYHMPCIE1V1



FCC ID: LYHMPCIE1V1

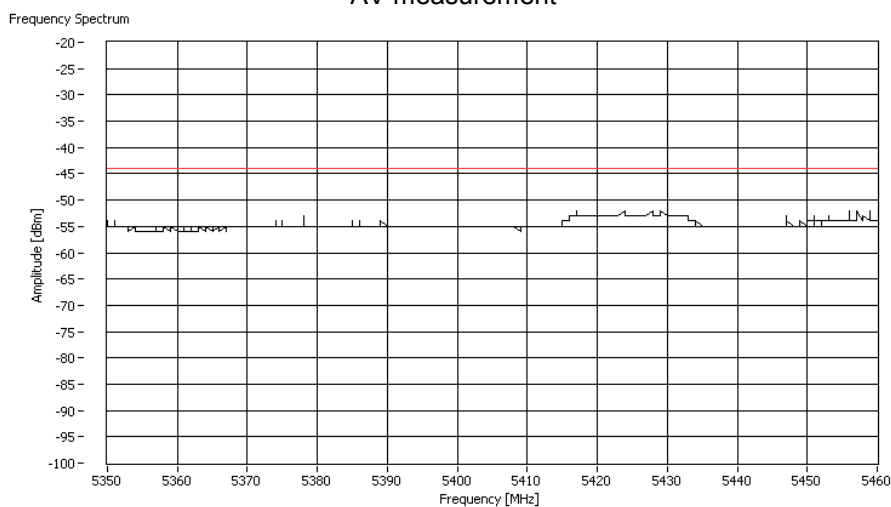
Channel 165, P20

Peak measurement



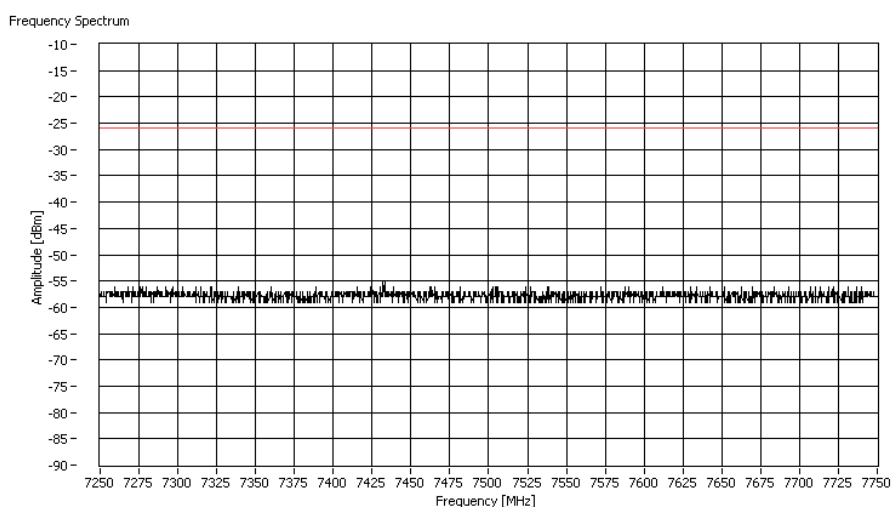
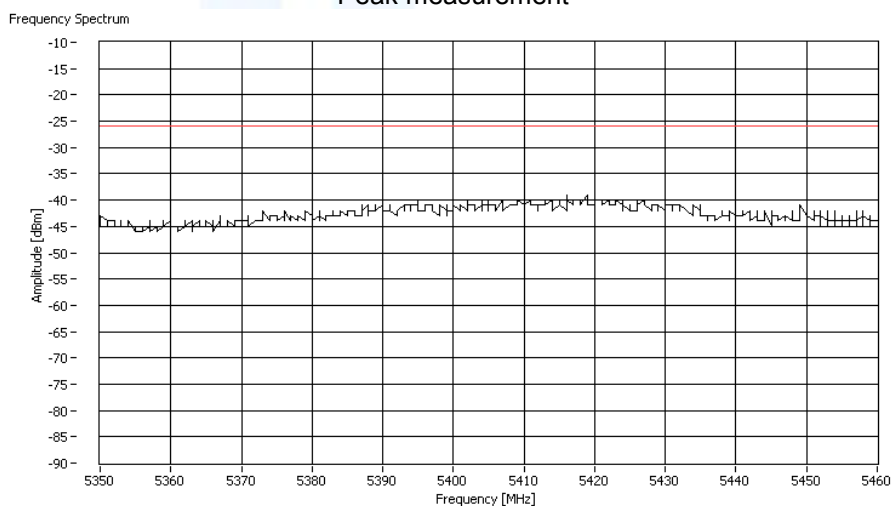
FCC ID: LYHMPCIE1V1

AV measurement

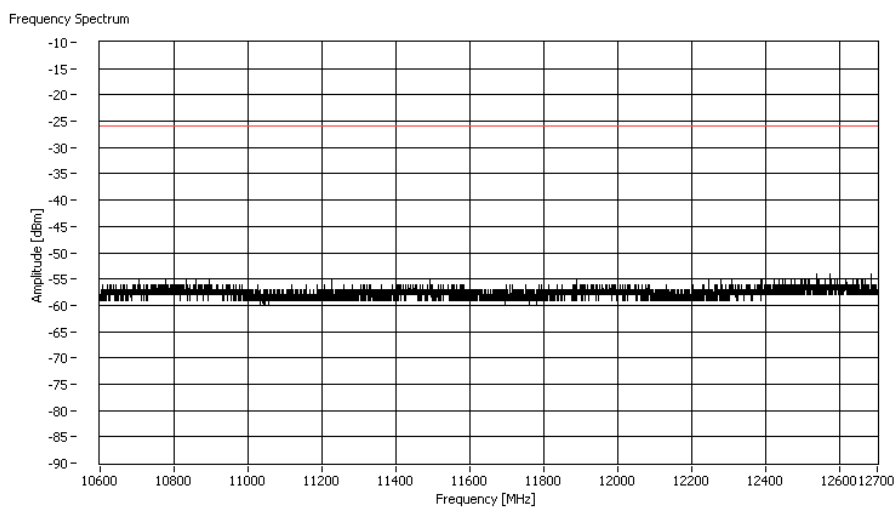


5.5.6.3 HT40: Channel 149up,P20

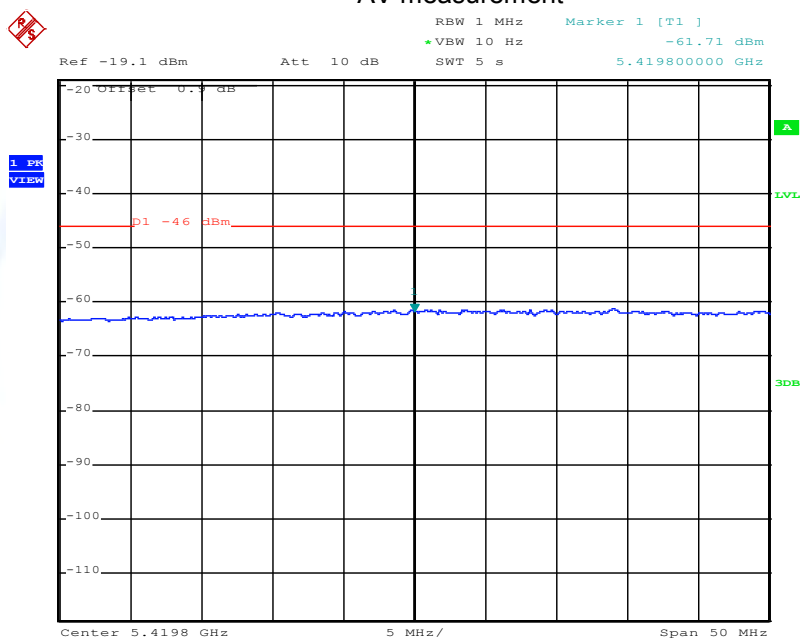
Peak measurement



FCC ID: LYHMPCIE1V1



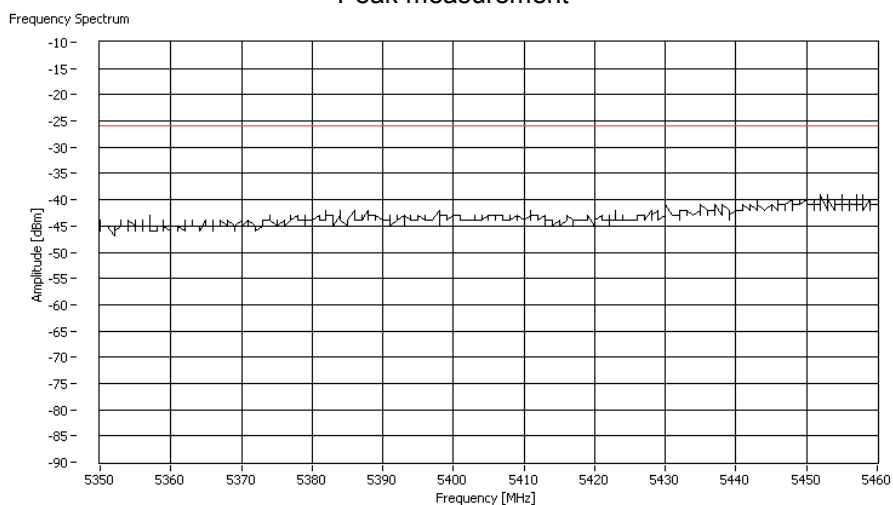
AV measurement



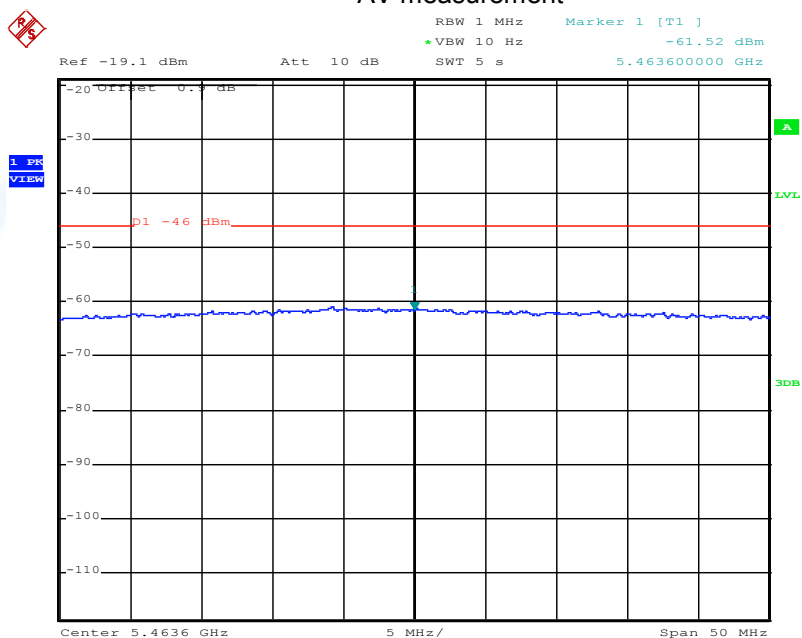
FCC ID: LYHMPCIE1V1

Channel 157up; P20

Peak measurement



AV measurement



FCC ID: LYHMPCIE1V1

5.6 Spurious emissions radiated (cabinet radiation)

For test instruments and accessories used see section 6 Part SER 1, SER 2, SER 3.

5.6.1 Description of the test location

Test location: OATS 1
Test location: Anechoic chamber 2
Test distance: 3 m

5.6.2 Photo documentation of the test set-up

Open area test site (Test setup for 9 kHz – 30 MHz)



Open area test site (Test setup for 30 MHz – 300 MHz)

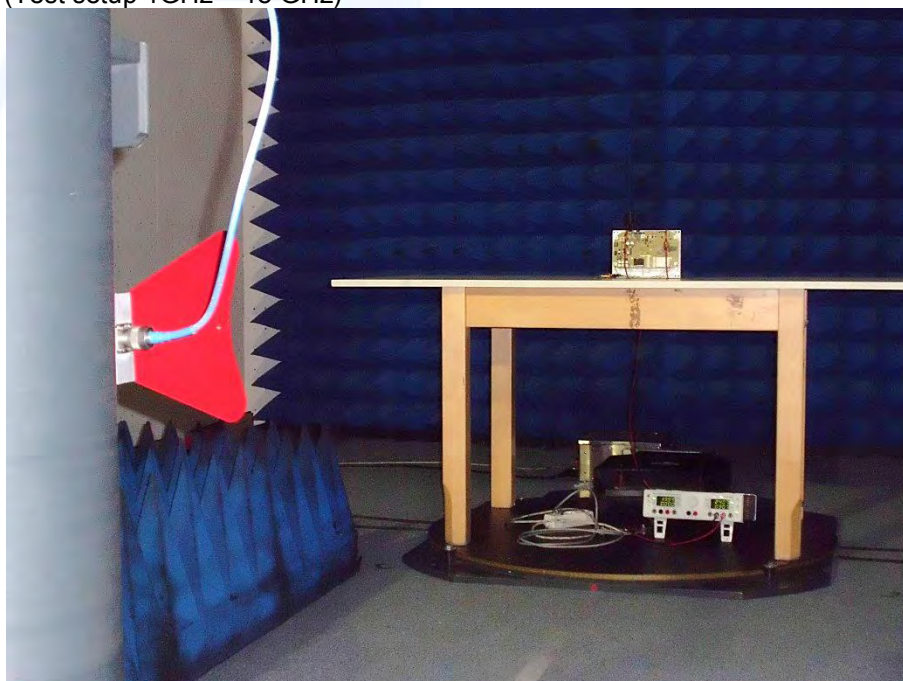


FCC ID: LYHMPCIE1V1

Open area test site (Test setup for 300 MHz – 1000 MHz)

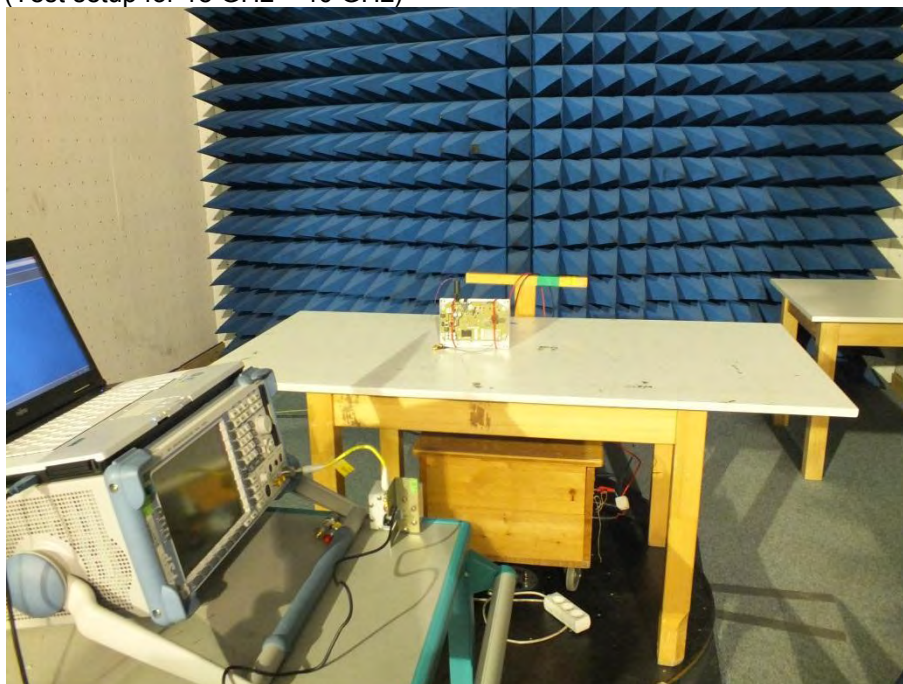


Anechoic chamber (Test setup 1GHz – 18 GHz)



FCC ID: LYHMPCIE1V1

Anechoic chamber (Test setup for 18 GHz – 40 GHz)



5.6.3 Applicable standard

According to FCC Part 15, Section 15.247(d):

In any 100 kHz bandwidth outside the frequency bands 2400 – 2483.50 MHz and 5725 – 5850 MHz, the digitally modulated radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or an radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limit specified in Section 15.209(a) (see Section 15.205(c)).

5.6.4 Description of Measurement

The radiated power of the spurious emission from the EUT cabinet is measured with terminated antenna connector in a test setup following the procedures set out in KDB 558074 D01. If the emission level of the EUT in peak mode complies with the general average limit then testing will be stopped and peak values of the EUT will be reported, otherwise the emission will be measured in average mode again and reported.

EMI receiver settings: $f < 1$ GHz:

9 kHz $< f < 150$ kHz: RBW: 200 Hz;

150 kHz $< f < 30$ MHz: RBW: 9 kHz;

30 MHz $< f < 1000$ MHz: RBW: 120 kHz;

Spectrum analyser settings $f > 1$ GHz:

RBW: 1 MHz, VBW: 3 MHz,

Detector: Max peak,

Trace: Max hold,

Sweep: Auto;

5.6.1 Test result

9 kHz $< f < 1000$ MHz:

For all kinds of modulation no emission could be detected within 20 dB to the limit.

FCC ID: LYHMPCIE1V1
5.6.1.1 2.4 GHz range:
1000 MHz < f < 25000 MHz:
802.11g, Port1:

Lowest frequency: 2412 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBμV/m)	(dBμV/m)	(dB)
1000	2400	1000	2002.0	53.0	74.0	-21.0
2483.5	4000	1000	2500.0	51.3	74.0	-22.7
4000	12000	1000	11952.0	50.2	74.0	-23.8
12000	18000	1000	17220.0	53.4	74.0	-20.6
18000	25000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

Middle frequency: 2437 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBμV/m)	(dBμV/m)	(dB)
1000	2400	1000	2002.0	53.3	74.0	-20.7
2483.5	4000	1000	2500.0	50.6	74.0	-23.4
4000	12000	1000	4864.0	47.0	74.0	-27.0
12000	18000	1000		< 50	74.0	< -24
18000	25000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

Highest frequency: 2472 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBμV/m)	(dBμV/m)	(dB)
1000	2400	1000	2002.0	54.4	74.0	-19.6
2483.5	4000	1000	3106.0	49.5	74.0	-24.5
4000	12000	1000	4912.0	45.3	74.0	-28.7
12000	18000	1000	11808.0	50.3	74.0	-23.7
18000	25000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

HT20, Port1 + Port2:

Lowest frequency: 2412 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBμV/m)	(dBμV/m)	(dB)
1000	2400	1000	1996.0	53.2	74.0	-20.8
2483.5	4000	1000	2500.0	50.1	74.0	-23.9
4000	12000	1000		< 50	74.0	< -24
12000	18000	1000	15984.0	53.2	74.0	-20.8
18000	25000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

FCC ID: LYHMPCIE1V1

Middle frequency: 2437 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBµV/m)	(dBµV/m)	(dB)
1000	2400	1000	1996.0	52.6	74.0	-21.4
2483.5	4000	1000	2500.0	50.2	74.0	-23.8
4000	12000	1000		< 50	74.0	< -24
12000	18000	1000	16032.0	53.0	74.0	-21.0
18000	25000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

Highest frequency: 2472 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBµV/m)	(dBµV/m)	(dB)
1000	2400	1000	2002.0	53.6	74.0	-20.4
2483.5	4000	1000	2500.0	50.4	74.0	-23.6
4000	12000	1000	4904.0	47.1	74.0	-26.9
12000	18000	1000		< 50	74.0	< -24
18000	25000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

HT40, Port1 + Port2 + Port3:

Channel 1up						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBµV/m)	(dBµV/m)	(dB)
1000	2400	1000	2002.0	52.2	74.0	-21.8
2483.5	4000	1000	2500.0	50.6	74.0	-23.4
4000	12000	1000		< 50	74.0	< -24
12000	18000	1000		< 50	74.0	< -24
18000	25000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

Channel 4up						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBµV/m)	(dBµV/m)	(dB)
1000	2400	1000	2002.0	52.5	74.0	-21.5
2483.5	4000	1000	2500.0	50.6	74.0	-23.4
4000	12000	1000		< 50	74.0	< -24
12000	18000	1000		< 50	74.0	< -24
18000	25000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

FCC ID: LYHMPCIE1V1

Channel 7up						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBμV/m)	(dBμV/m)	(dB)
1000	2400	1000	2002.0	53.4	74.0	-20.6
2483.5	4000	1000	2770.0	51.8	74.0	-22.2
4000	12000	1000		< 50	74.0	< -24
12000	18000	1000		< 50	74.0	< -24
18000	25000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

5.6.1.2 5 GHz range:

HT20, Port1 + Port2:

Lowest frequency: 5745 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBμV/m)	(dBμV/m)	(dB)
1000	4000	1000	1720.0	50.1	74.0	-23.9
4000	5150	1000		< 46	74.0	< -28
5850	12000	1000	11496.0	52.4	74.0	-21.6
12000	18000	1000	17028.0	53.3	74.0	-20.7
18000	40000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

Middle frequency: 5785 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBμV/m)	(dBμV/m)	(dB)
1000	4000	1000	2002.0	51.3	74.0	-22.7
4000	5150	1000		< 46	74.0	< -28
5850	12000	1000		< 50	74.0	< -24
12000	18000	1000		< 50	74.0	< -24
18000	40000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

Highest frequency: 5825 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBμV/m)	(dBμV/m)	(dB)
1000	4000	1000	2002.0	51.0	74.0	-23.0
4000	5150	1000		< 46	74.0	< -28
5850	12000	1000	11656.0	52.8	74.0	-21.2
12000	18000	1000	17484.0	53.1	74.0	-20.9
18000	40000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

FCC ID: LYHMPCIE1V1
HT40, Port1 + Port2 + Port3:

Lowest frequency: 5755 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBµV/m)	(dBµV/m)	(dB)
1000	4000	1000	1996.0	50.4	74.0	-23.6
4000	5150	1000		< 46	74.0	< -28
5850	12000	1000		< 50	74.0	< -24
12000	18000	1000	17160.0	52.7	74.0	-21.3
18000	40000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

Highest frequency: 5795 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBµV/m)	(dBµV/m)	(dB)
1000	4000	1000	1996.0	50.0	74.0	-24.0
4000	5150	1000		< 46	74.0	< -28
5850	12000	1000		< 50	74.0	< -24
12000	18000	1000		< 50	74.0	< -24
18000	40000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

802.11a, Port1:

Lowest frequency: 5745 MHz						
Highest power setting: P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBµV/m)	(dBµV/m)	(dB)
1000	4000	1000	2002.0	52.9	74.0	-21.1
4000	5150	1000		< 46	74.0	< -28
5850	12000	1000	11504.0	62.9	74.0	-11.1
12000	18000	1000	17244.0	58.4	74.0	-15.6
18000	40000	1000		< 50	74.0	< -24
Measurement uncertainty			±6 dB			

Lowest frequency: 5745 MHz						
Highest power setting : P20					EIRP	
AV-Measurement			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dBµV/m)	(dBµV/m)	(dB)
5850	12000	1000	11504.0	53.0	54.0	-1.0
12000	18000	1000	17244.0	45.2	54.0	-8.8
Measurement uncertainty			±6 dB			

FCC ID: LYHMPCIE1V1

Middle frequency: 5785 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dB μ V/m)	(dB μ V/m)	(dB)
1000	4000	1000	1996.0	50.9	74.0	-23.1
4000	5150	1000		< 46	74.0	< -28
5850	12000	1000		< 50	74.0	< -24
12000	18000	1000		< 50	74.0	< -24
18000	40000	1000		< 50	74.0	< -24
Measurement uncertainty			± 6 dB			

Highest frequency: 5825 MHz						
Highest power setting : P20					EIRP	
			Test results			
Start frequ.	Stop frequ.	RBW	Maximum emission		Limit	Margin
(MHz)	(MHz)	(kHz)	(MHz)	(dB μ V/m)	(dB μ V/m)	(dB)
1000	4000	1000	1996.0	51.1	74.0	-22.9
4000	5150	1000		< 46	74.0	< -28
5850	12000	1000		< 50	74.0	< -24
12000	18000	1000	17472.0	54.0	74.0	-20.0
18000	40000	1000		< 50	74.0	< -24
Measurement uncertainty			± 6 dB			

Radiated limits according to FCC Part 15 Section 15.209(a) for spurious emissions which fall in restricted bands:

Frequency	Field strength of spurious emissions		Measurement distance
(MHz)	(μ V/m)	dB(μ V/m)	(metres)
0.009-0.490	2400/F (kHz)		300
0.490-1.705	24000/F (kHz)		30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

FCC ID: LYHMPCIE1V1

Restricted bands of operation:

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.41425 – 8.41475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4	3600 – 4400	Above 38.6

The requirements are **FULFILLED**.

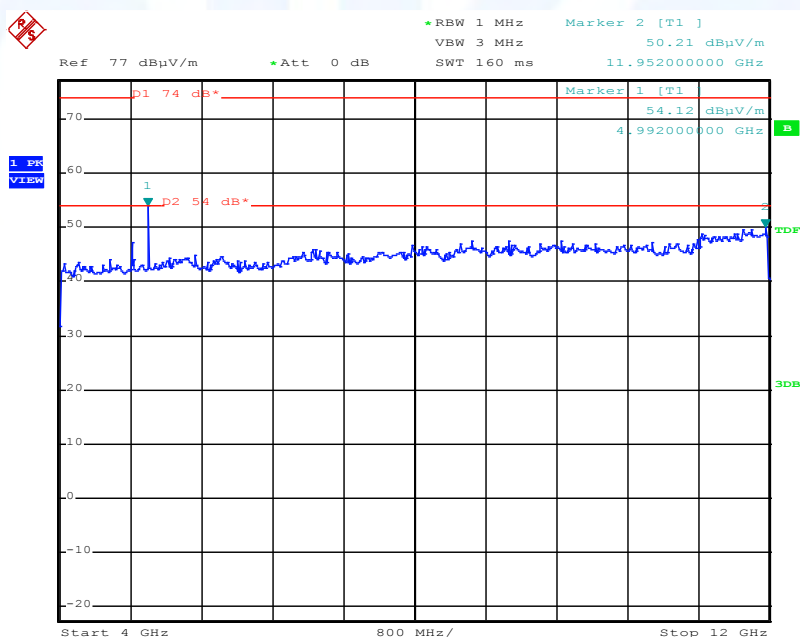
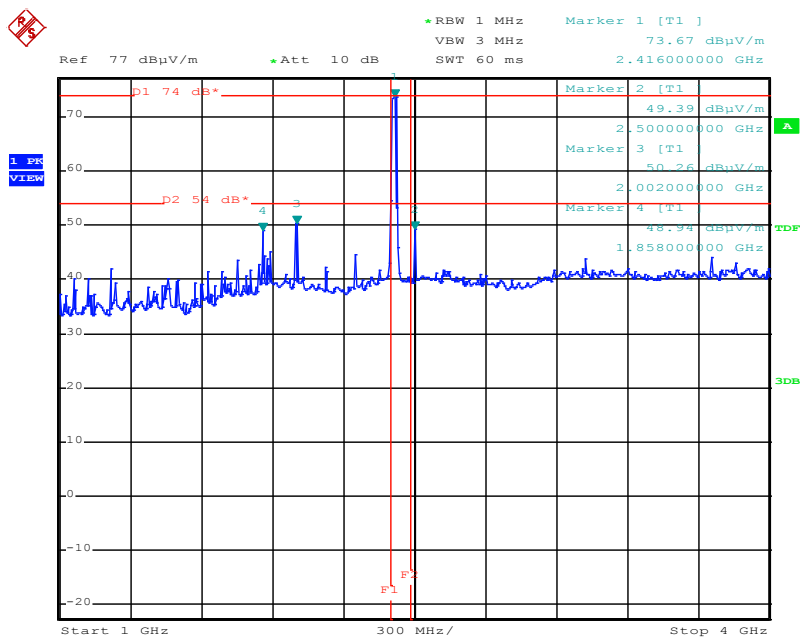
Remarks: All emissions not reported are more than 20 dB below the specified limit. For detailed test results please see the following test protocols. Only the worst cases of the plots are listed.

FCC ID: LYHMPCIE1V1

5.6.2 Test protocols of cabinet radiation

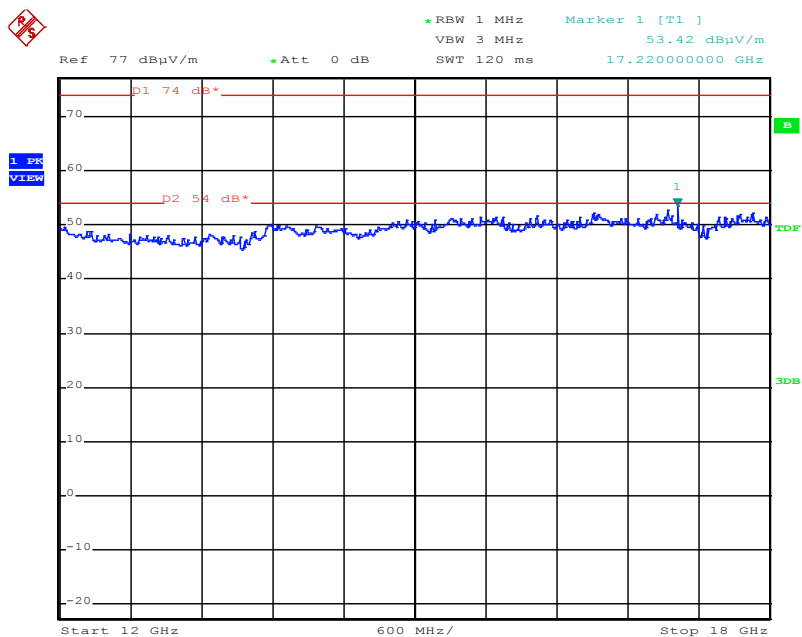
801.11g:

Channel1

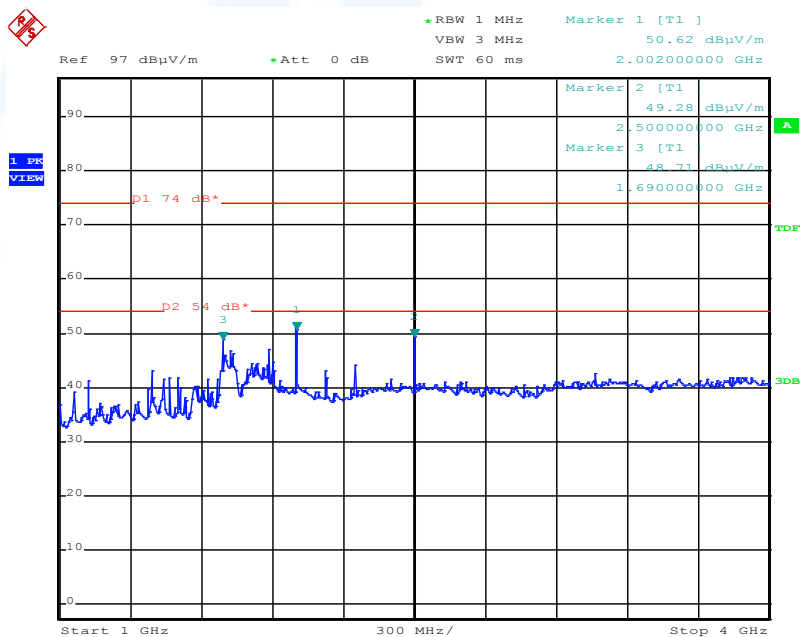


Note: The emission at 4992 MHz is a c-plug emission of the test jig. Will not be considered for testing.

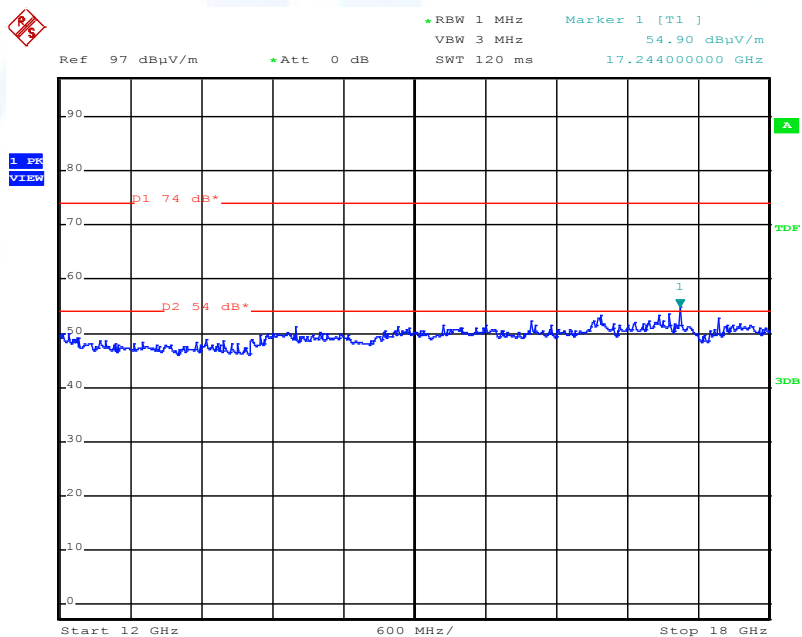
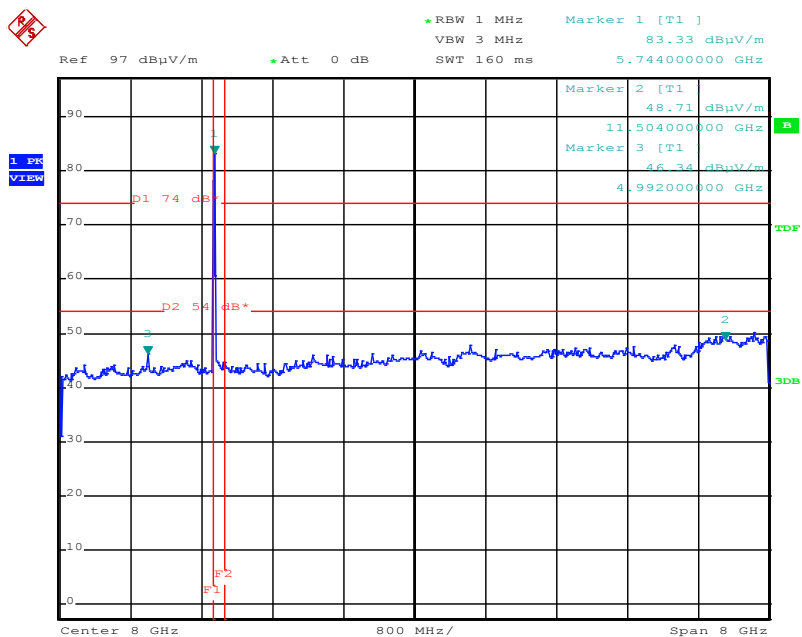
FCC ID: LYHMPDIE1V1



Channel 149:



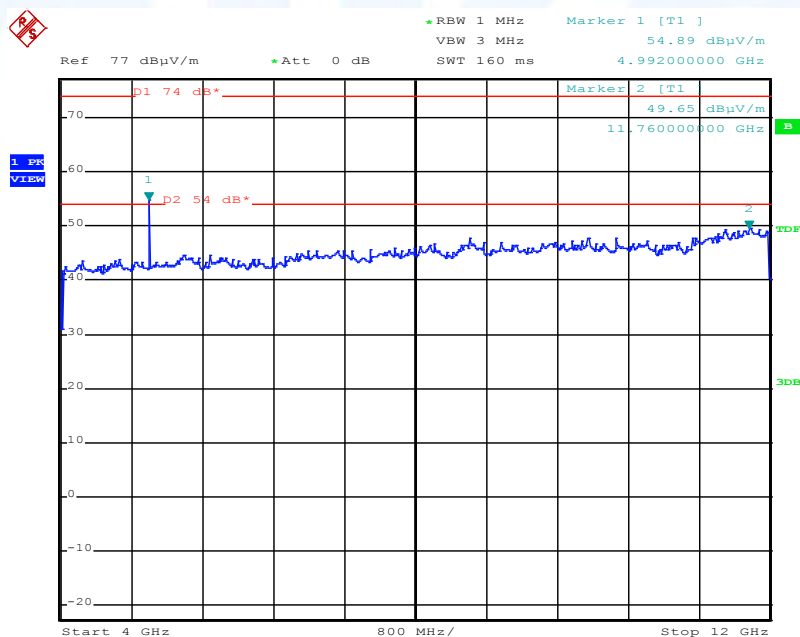
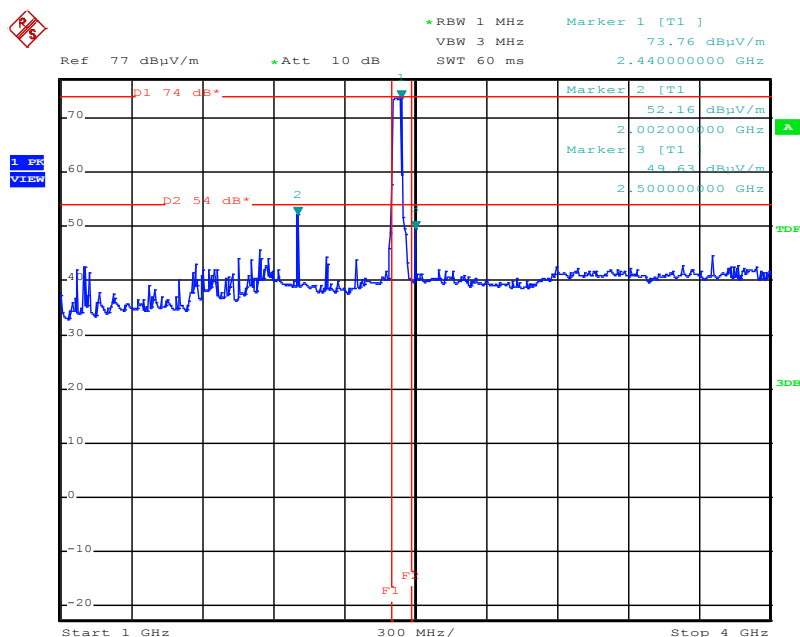
FCC ID: LYHMPDIE1V1



FCC ID: LYHMPCIE1V1

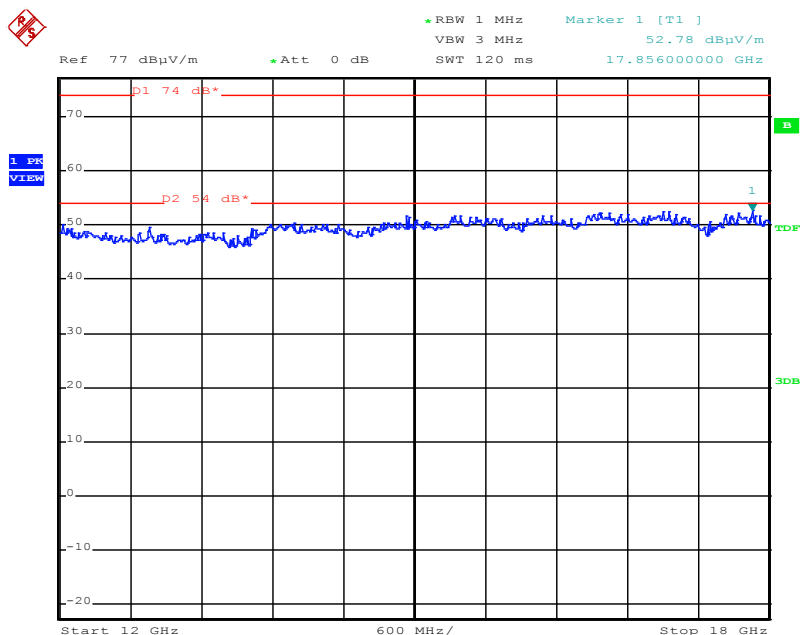
HT40:

Channel 1up:

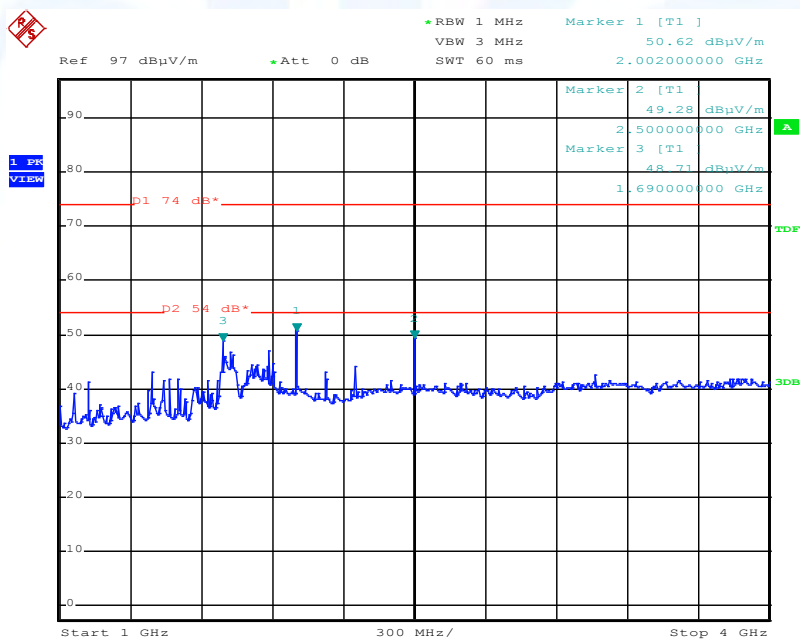


Note: The emission at 4992 MHz is a c-plug emission of the test jig. Will not be considered for testing.

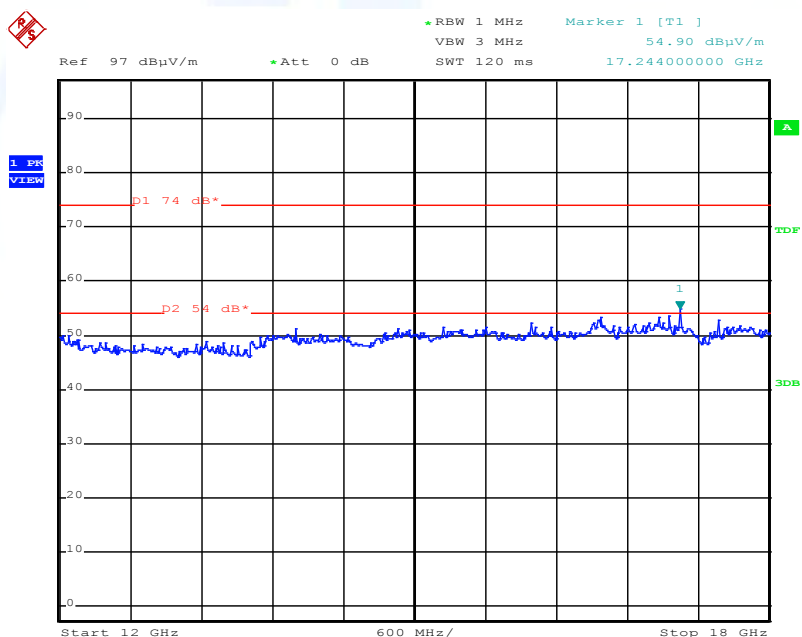
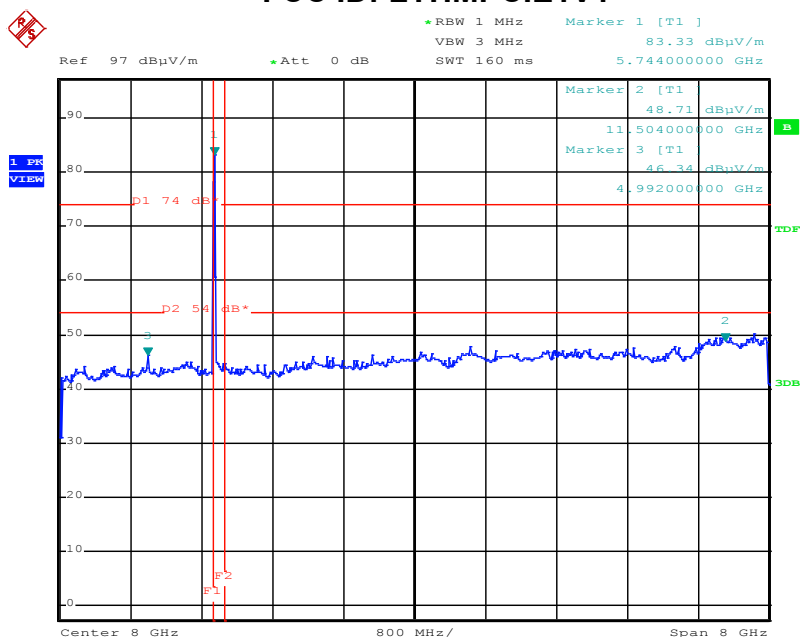
FCC ID: LYHMPCIE1V1



Channel 149up:

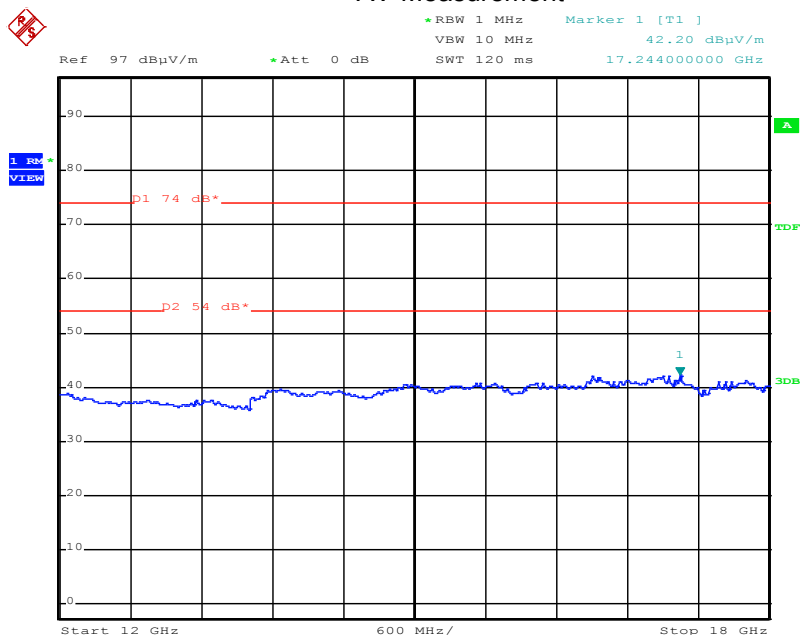


FCC ID: LYHMPCIE1V1



FCC ID: LYHMPCIE1V1

AV-Measurement



FCC ID: LYHMPCIE1V1

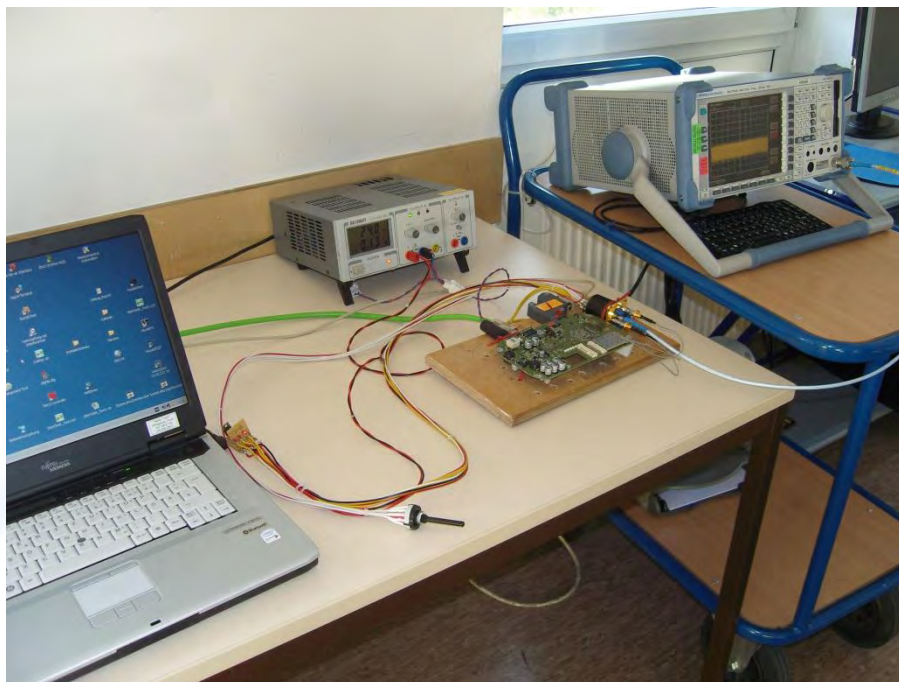
5.7 Power spectral density

For test instruments and accessories used see section 6 Part CPC 3.

5.7.1 Description of the test location

Test location: AREA4

5.7.2 Photo documentation of the test set-up



5.7.3 Applicable standard

According to FCC Part 15, Section 15.247(e):

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the Antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

5.7.4 Description of Measurement

The measurement is performed using the procedure set out in KDB-558074. The power measurement was done using a power meter, option 1. Therefore the PSD is measured with PSD option 1. The max peak was located and zoomed in with the spectrum analyser. The zoom is done with the following settings. The cable loss is taken into account with an amplitude offset. For this MIMO transmitter the Antenna output 1 is measured and the output 2 is taken into account with the formula according OET 662911, $10 \log(N)$, where N is the number of outputs. The total sum is calculated to add a correction factor of 3 dB ($10 \log 2$) to the analyser reading of each Antenna output.

Spectrum analyser settings:

RBW: 3 kHz, VBW: 10 kHz, Detector: Peak, Sweep time: 10 s, Span: 30 kHz

FCC ID: LYHMPCIE1V1

5.7.5 Test result

802.11g, 6 Mbps, 1 TX		Test results conducted				
Duty cycle: 100%						
Chain 1		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Lowest frequency: CH1						
T_{nom}	V_{nom}	-23.3	-17.6	-15.2	8.0	-23.2
Middle frequency: CH6						
T_{nom}	V_{nom}	-20.6	-15.6	-14.5	8.0	-22.5
Highest frequency: CH11						
T_{nom}	V_{nom}	-20.7	-19.0	-13.8	8.0	-21.8

HT20, MCS8, 2 TX		Test results conducted				
Duty cycle: 100%						
Chain 1		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)		
Lowest frequency: CH1						
T_{nom}	V_{nom}	-24.1	-20.8	-18.2		
Middle frequency: CH6						
T_{nom}	V_{nom}	-25.2	-20.5	-15.9		
Highest frequency: CH11						
T_{nom}	V_{nom}	-24.5	-20.0	-16.4		

HT20, MCS8, 2 TX		Test results conducted				
Duty cycle: 100%						
Chain 2		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)		
Lowest frequency: CH1						
T_{nom}	V_{nom}	-22.2	-19.1	-15.6		
Middle frequency: CH6						
T_{nom}	V_{nom}	-24.4	-21.4	-17.0		
Highest frequency: CH11						
T_{nom}	V_{nom}	-23.0	-20.0	-18.6		

HT20, MCS8, 2 TX		Test results conducted				
Duty cycle: 100%						
Chain 1+2		PD1+PD2 (dBm/3kHz)	PD1+PD2 (dBm/3kHz)	PD1+PD2 (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Lowest frequency: CH1						
T_{nom}	V_{nom}	-20.0	-16.9	-13.7	8.0	-21.7
Middle frequency: CH6						
T_{nom}	V_{nom}	-21.7	-17.9	-13.4	8.0	-21.4
Highest frequency: CH11						
T_{nom}	V_{nom}	-20.7	-17.0	-14.4	8.0	-22.4

HT20, MCS8, 2 TX		Test results conducted				
Duty cycle: 100%						
Chain 1		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)		
Lowest frequency: CH149						
T_{nom}	V_{nom}	-21.1	-23.0	-19.9		
Middle frequency: CH157						
T_{nom}	V_{nom}	-26.8	-22.1	-23.3		
Highest frequency: CH165						
T_{nom}	V_{nom}	-26.9	-23.0	-22.7		

FCC ID: LYHMPCIE1V1

HT20, MCS8, 2 TX		Test results conducted				
Duty cycle:						
Chain 2		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)		
Lowest frequency: CH149						
T_{nom}	V_{nom}	-23.5	-23.2	-18.0		
Middle frequency: CH157						
T_{nom}	V_{nom}	-27.3	-21.0	-21.6		
Highest frequency: CH165						
T_{nom}	V_{nom}	-23.4	-22.5	-20.7		

HT20, MCS8, 2 TX		Test results conducted				
Duty cycle: 100%						
Chain 1+2		PD 1+2 [P12] (dBm/3kHz)	PD1+2 [P17] (dBm/3kHz)	PD1+2 [P20] (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Lowest frequency: CH149						
T_{nom}	V_{nom}	-19.1	-20.1	-15.8	8.0	-23.8
Middle frequency: CH157						
T_{nom}	V_{nom}	-24.0	-18.5	-19.3	8.0	-27.3
Highest frequency: CH165						
T_{nom}	V_{nom}	-21.8	-19.7	-18.5	8.0	-26.5

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 1		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)		
Lowest frequency: CH1up						
T_{nom}	V_{nom}	-27.1	-29.1	-21.1		
Middle frequency: CH4up						
T_{nom}	V_{nom}	-28.0	-26.2	-25.8		
Highest frequency: CH7up						
T_{nom}	V_{nom}	-30.4	-23.7	-21.8		

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 2		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)		
Lowest frequency: CH1up						
T_{nom}	V_{nom}	-28.4	-23.5	-20.0		
Middle frequency: CH4up						
T_{nom}	V_{nom}	-27.0	-24.4	-22.0		
Highest frequency: CH7up						
T_{nom}	V_{nom}	-27.8	-24.4	-22.8		

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 3		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)		
Lowest frequency: CH1up						
T_{nom}	V_{nom}	-30.6	-24.8	-20.4		
Middle frequency: CH4up						
T_{nom}	V_{nom}	-28.3	-25.4	-23.7		
Highest frequency: CH7up						
T_{nom}	V_{nom}	-29.6	-22.1	-23.7		

FCC ID: LYHMPCIE1V1

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 1+2+3		PD1+2+3 [P12] (dBm/3kHz)	PD1+2+3 [P17] (dBm/3kHz)	PD1+2+3 [P20] (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Lowest frequency: CH1up						
T_{nom}	V_{nom}	-23.7	-20.4	-15.7	8.0	-23.7
Middle frequency: CH4up						
T_{nom}	V_{nom}	-23.0	-20.5	-18.8	8.0	-26.8
Highest frequency: CH7up						
T_{nom}	V_{nom}	-24.3	-18.6	-17.9	8.0	-25.9

HT40, MCS16, 3 TX		Test results conducted			
Duty cycle: 100%					
Chain 1		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)	
Lowest frequency: CH149up					
T_{nom}	V_{nom}	-33.9	-29.8	-27.1	
Middle frequency: CH157up					
T_{nom}	V_{nom}	-30.5	-29.4	-26.9	

HT40, MCS16, 3 TX		Test results conducted			
Duty cycle: 100%					
Chain 2		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)	
Lowest frequency: CH149up					
T_{nom}	V_{nom}	-30.8	-25.1	-23.5	
Highest frequency: CH157up					
T_{nom}	V_{nom}	-25.9	-26.9	-22.4	

HT40, MCS16, 3 TX		Test results conducted			
Duty cycle: 100%					
Chain 3		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)	
Lowest frequency: CH149up					
T_{nom}	V_{nom}	-29.0	-20.8	-19.1	
Highest frequency: CH157up					
T_{nom}	V_{nom}	-35.2	-22.0	-21.1	

HT40, MCS16, 3 TX		Test results conducted				
Duty cycle: 100%						
Chain 1+2+3		PD1+2+3 [P12] (dBm/3kHz)	PD1+2+3 [P17] (dBm/3kHz)	PD1+2+3 [P20] (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
CH149up						
T_{nom}	V_{nom}	-26.0	-19.0	-17.3	8.0	-25.3
CH157up						
T_{nom}	V_{nom}	-24.3	-20.2	-18.1	8.0	-26.1

802.11a, 6 Mbps, 1 TX		Test results conducted				
Duty cycle: 100%						
Chain 1		PD [P12] (dBm/3kHz)	PD [P17] (dBm/3kHz)	PD [P20] (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Lowest frequency: CH149						
T_{nom}	V_{nom}	-20.5	-18.0	-18.4	8.0	-26.4
Middle frequency: CH157						
T_{nom}	V_{nom}	-24.2	-18.6	-18.8	8.0	-26.8
Highest frequency: CH165						
T_{nom}	V_{nom}	-22.7	-16.4	-21.3	8.0	-29.3

FCC ID: LYHMPCIE1V1

Power spectral density limit according to FCC Part 15, Section 15.247(e):

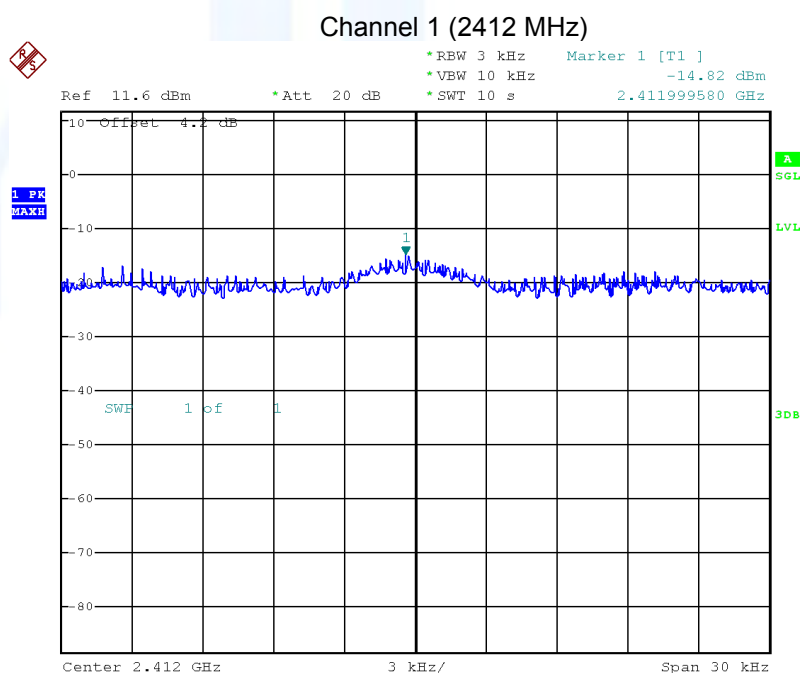
Frequency (MHz)	Power spectral density limit
	(dBm/3kHz)
5725 - 5850	8

The requirements are **FULFILLED**.

Remarks: For detailed test results please see the following test protocols.

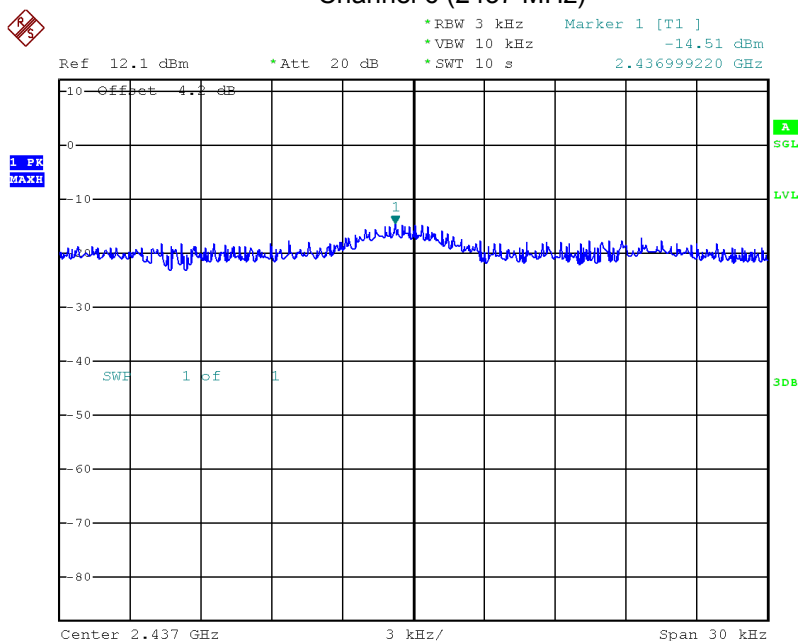
5.7.6 Test protocols PSD

802.11g, Port1:

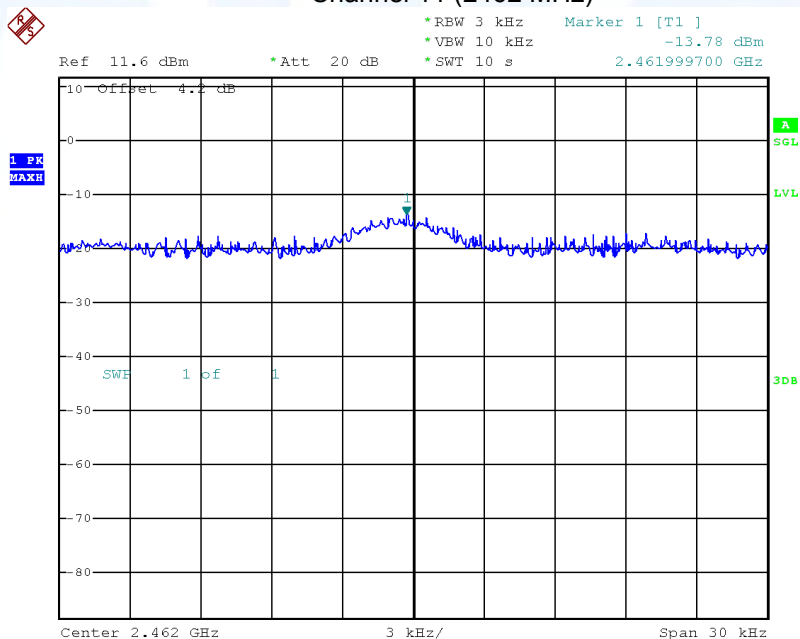


FCC ID: LYHMPCIE1V1

Channel 6 (2437 MHz)



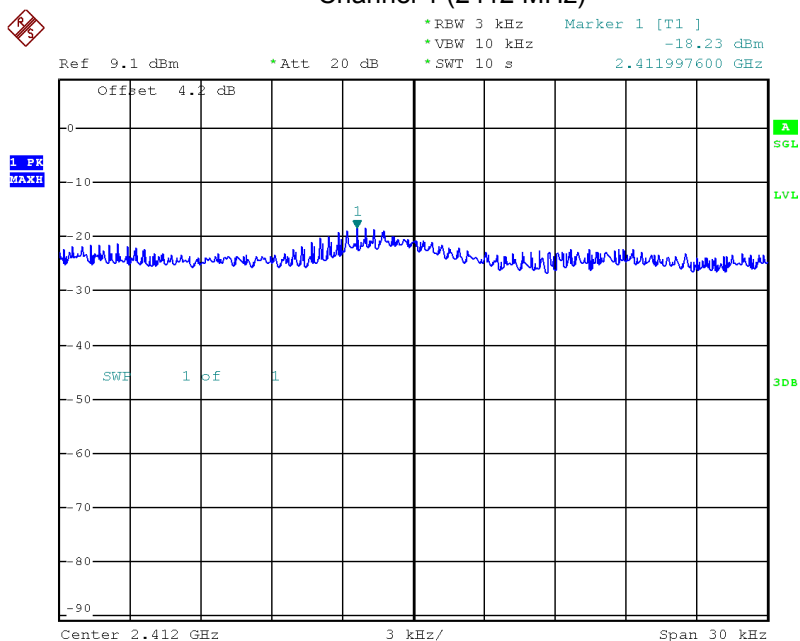
Channel 11 (2462 MHz)



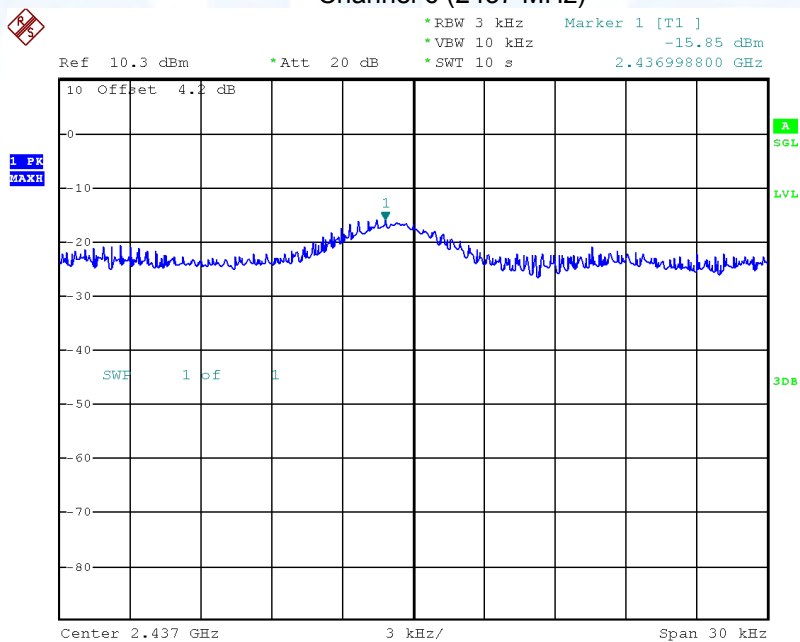
FCC ID: LYHMPCIE1V1

HT20, Port1, P20

Channel 1 (2412 MHz)

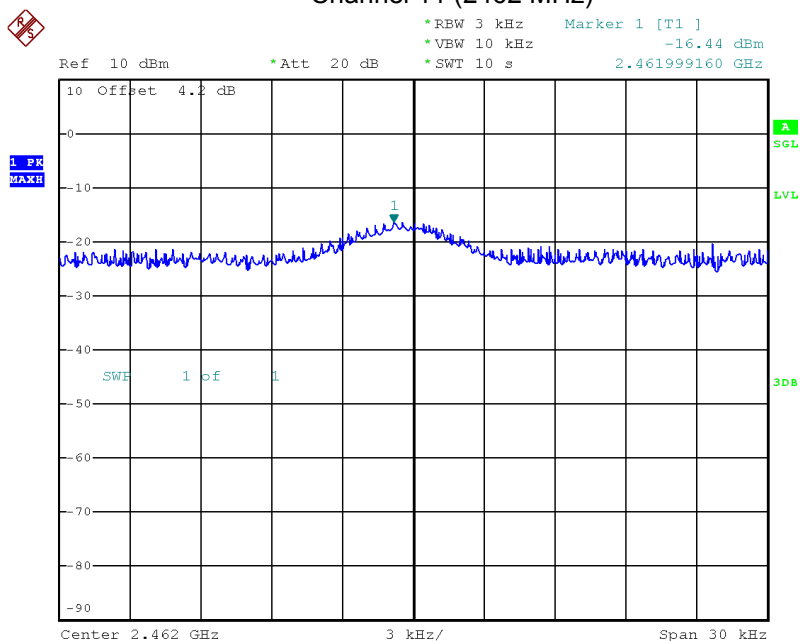


Channel 6 (2437 MHz)

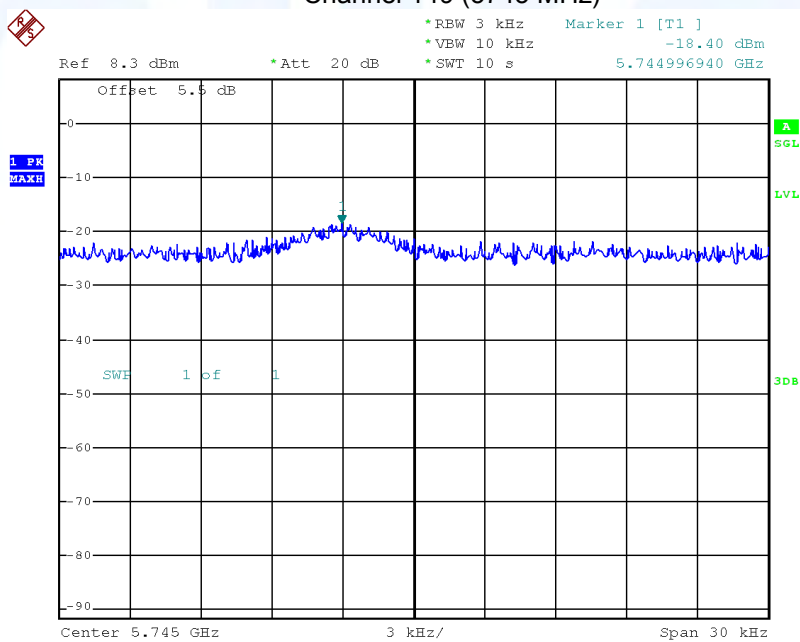


FCC ID: LYHMPCIE1V1

Channel 11 (2462 MHz)

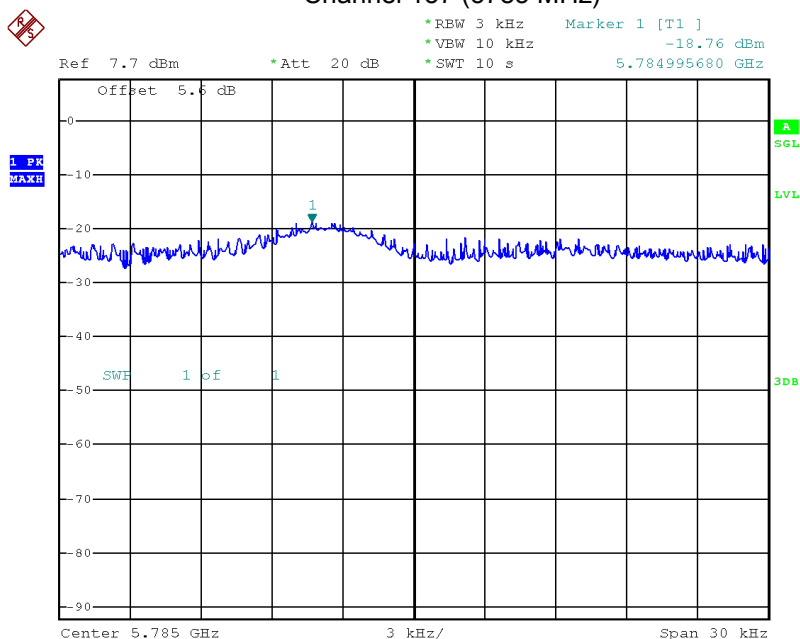


Channel 149 (5745 MHz)

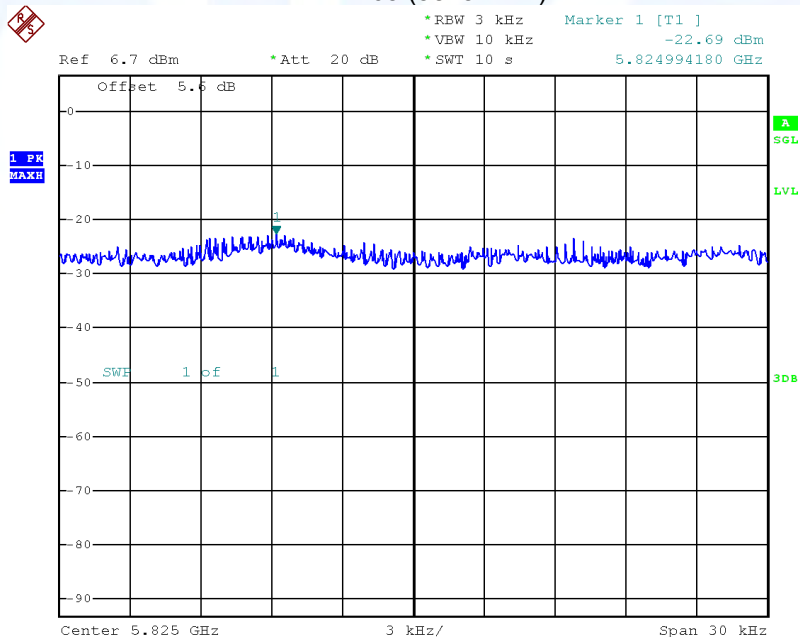


FCC ID: LYHMPCIE1V1

Channel 157 (5785 MHz)



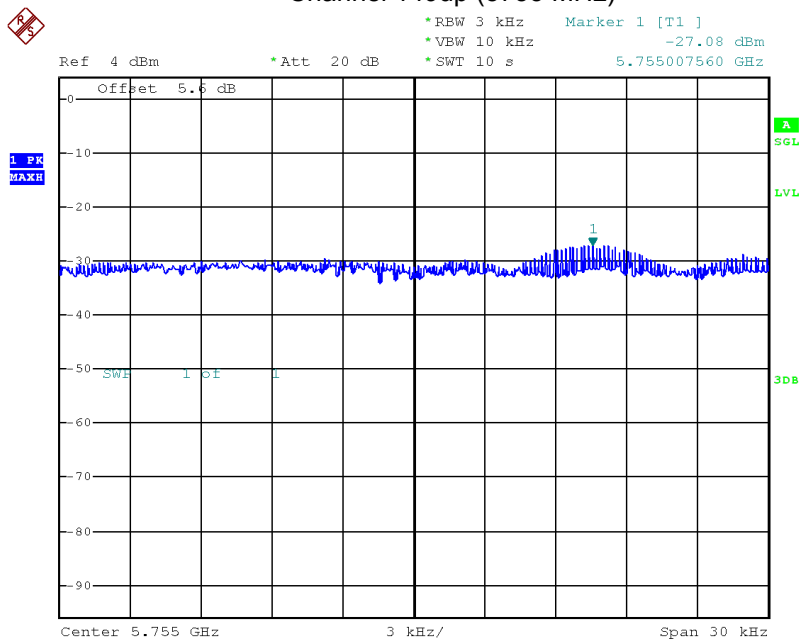
165 (5825 MHz)



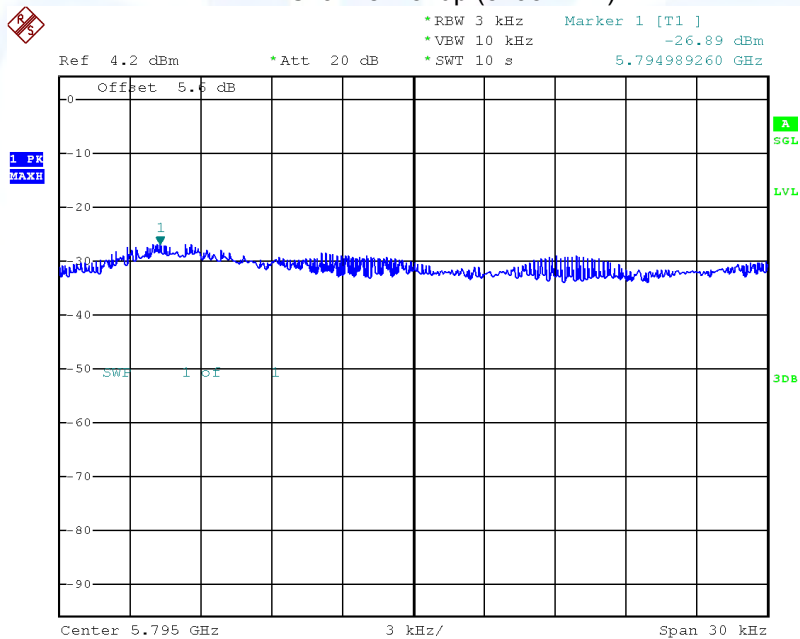
FCC ID: LYHMPCIE1V1

HT40, Port1, P20:

Channel 149up (5755 MHz)



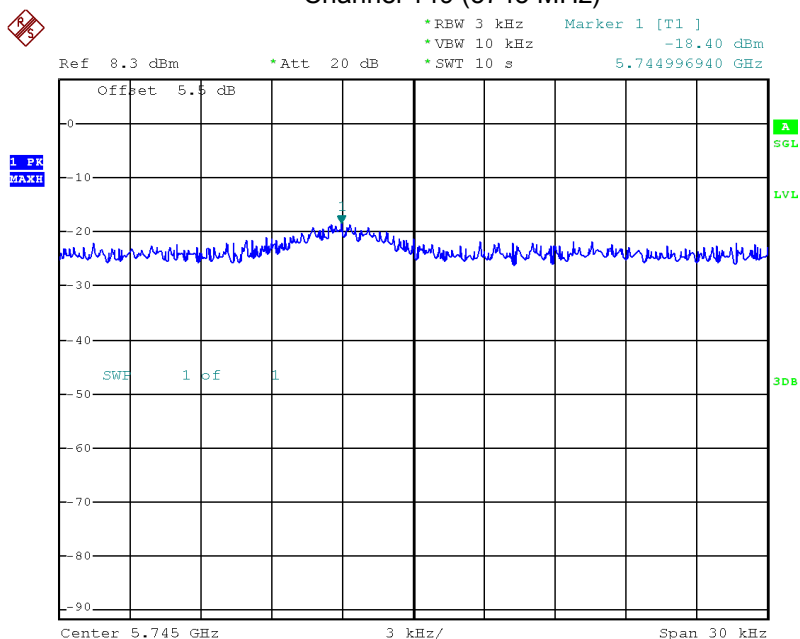
Channel 157up (5795 MHz)



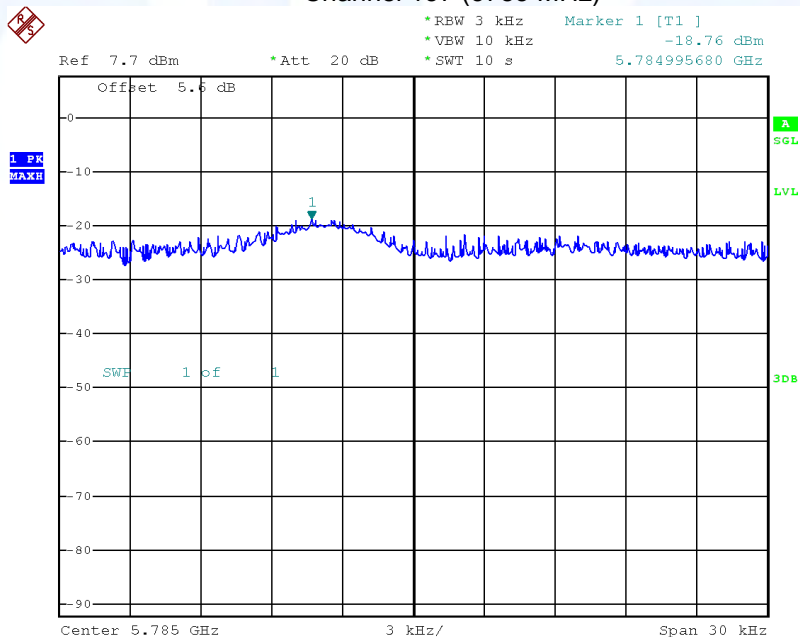
FCC ID: LYHMPCIE1V1

802.11a, Port1:

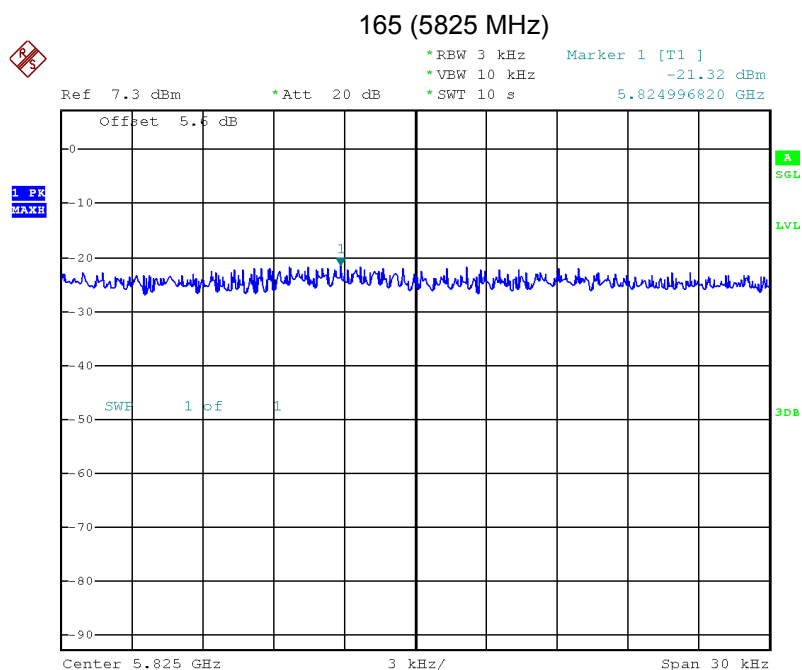
Channel 149 (5745 MHz)



Channel 157 (5785 MHz)



FCC ID: LYHMPCIE1V1



mikes

FCC ID: LYHMPCIE1V1

5.8 Maximum permissible exposure (MPE)

For test instruments and accessories used see section 6 Part **CPC 3**.

5.8.1 Description of the test location

Test location: AREA4

5.8.2 Applicable standard

According to FCC Part 15, Section 15.247(i):

Systems operating under the provisions of this section shall be operated in a manner that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

The test methods used comply with ANSI/IEEE C95.1, "IEEE Standard for Safety Levels with respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz".

This test report shows the compliance with the limits for Maximum Permissible Exposure (MPE) specified in FCC Part 1, Section 1.1310 and the criteria to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in FCC Part 1, Section 1.1307(b).

5.8.3 Description of Measurement

The maximum total power input to the Antenna has been measured conducted as described in clause 5.3 of this document. Through the Friis transmission formula, the known maximum gain of the Antenna and the maximum power, can be calculated the MPE in a defined distance away from the product.

Friis transmission formula:

$$P_d = \frac{P_{out} * G}{4 * \pi * r^2}$$

where

P_d = power density (mW/cm²)

P_{out} = output power to Antenna (mW)

G = gain of Antenna (linear scale)

r = distance between Antenna and observation point (cm)

According to FCC Rules 47CFR 2.1093(b) the EUT is not a portable device. The EUT is designed to be used that radiating structures are 20 cm outside of the body of the user. ($r = 20$ cm)

5.8.4 Test result

WLAN Standard 802.11g, 6 Mbps, 1 TX chain

Channel No.	Power	A (dBm)	Antgain (dBi)	A (mW)	G linear	P (W)	S (mW/cm ²)	Limit S_{eq} (mW/cm ²)
1	P20	17.7	6.0	58.75	3.98	0.2339	0.0465	1.0
6	P20	18.5	6.0	70.63	3.98	0.2812	0.0559	1.0
11	P20	18.5	6.0	71.12	3.98	0.2831	0.0563	1.0

WLAN Standard 802.11n, HT20, MCS8, 2 TX chains

Channel No.	Power	A1 + A2 (dBm)	Antgain (dBi)	A (mW)	G linear	P (W)	S (mW/cm ²)	Limit S_{eq} (mW/cm ²)
1	P20	19.2	6.0	82.42	3.98	0.3281	0.0653	1.0
6	P20	19.7	6.0	92.90	3.98	0.3699	0.0736	1.0
11	P20	19.6	6.0	90.26	3.98	0.3593	0.0715	1.0
149	P20	17.2	6.0	53.06	3.98	0.2112	0.0420	1.0
157	P20	17.4	6.0	55.57	3.98	0.2212	0.0440	1.0
165	P20	17.0	6.0	50.22	3.98	0.1999	0.0398	1.0

FCC ID: LYHMPCIE1V1

WLAN Standard 802.11n, HT40, MCS16, 3 TX chains

Channel No.	Power	A 1+2+3 (dBm)	Antgain (dBi)	A (mW)	G linear	P (W)	S (mW/cm ²)	Limit S _{eq} (mW/cm ²)
1up	P20	19.0	6.0	79.57	3.98	0.3168	0.0630	1.0
4up	P20	19.3	6.0	84.37	3.98	0.3359	0.0668	1.0
7up	P20	19.3	6.0	84.27	3.98	0.3355	0.0667	1.0
149up	P20	18.3	6.0	67.29	3.98	0.2679	0.0533	1.0
157up	P20	18.2	6.0	65.99	3.98	0.2627	0.0523	1.0

WLAN Standard 802.11a, 6 Mbps, 1 TX chain

Channel No.	Power	A (dBm)	Antgain (dBi)	A (mW)	G linear	P (W)	S (mW/cm ²)	Limit S _{eq} (mW/cm ²)
149	P20	14.3	6.0	26.98	3.98	0.1074	0.0214	1.0
157	P20	14.1	6.0	25.76	3.98	0.1026	0.0204	1.0
165	P20	13.9	6.0	24.66	3.98	0.0982	0.0195	1.0

Limits for maximum permissible exposure (MPE):

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(B) Limits for General Population / Uncontrolled Exposure				
0.3 – 3.0	614	1.63	100	30
3.0 – 30	824/f	2.19/f	180/f ²	30
30 - 300	27.5	0.073	0.2	30
300-1500	---	---	f/1500	30
1500-100000	---	---	1.0	30

f = Frequency in MHz

The requirements are **FULFILLED**.

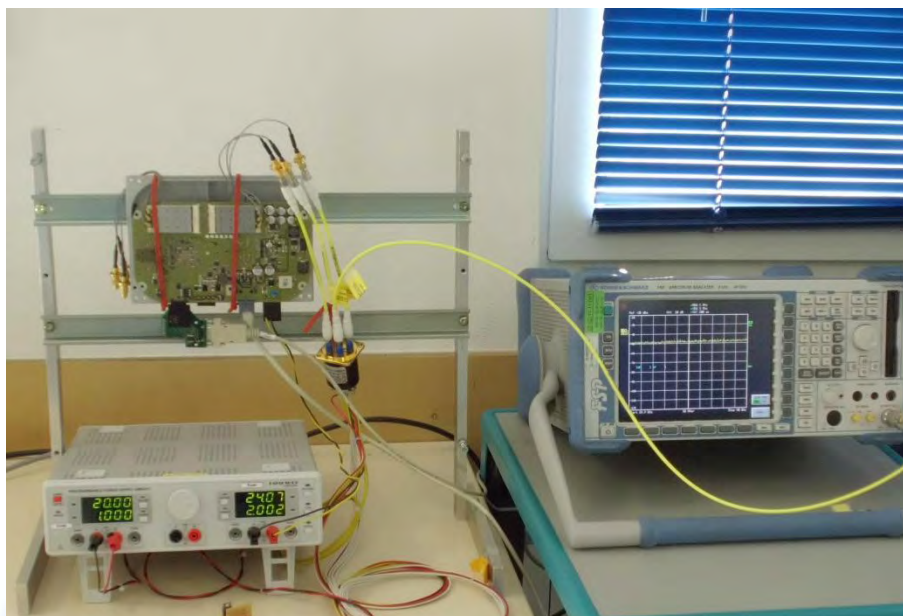
Remarks:

FCC ID: LYHMPCIE1V1

5.9 Co-location and co-transmission

Applicable standard:

OET Bulletin 65, Edition 97-01, Section 2: Multiple-transmitter sites and Complex Environments



It may be that 2 WLAN-modules are implemented in one unit. This has been tested under this section. There is no co-location issue. The firmware of the unit splits the transmission time that one module can only transmit at a time. The MIMO Antenna technology has been tested and used for the determination of the worst case.

Remarks:

5.10 Antenna application

5.10.1 Applicable standard

According to FCC Part 15C, Section 15.203:

An intentional radiator shall be designed to ensure that no Antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit that broken Antennas can be replaced by the user, but the use of a standard Antenna jack is prohibited.

This paragraph does not apply because of the professional installation of the equipment.

FCC ID: LYHMPCIE1V1
5.10.2 Antenna requirements

According to FCC Part 15C, Section 15.247(b)(4):

The conducted output power limit specified in paragraph (b) of 15.247 is based on the use of Antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting Antennas of directional gain greater than 6 dBi are used, the conducted output power from intentional radiator shall be reduced below the stated values in paragraph (b)(1), (b)(2) and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the Antenna exceeds 6 dBi.

Determination of output power reduction for the applied antennas:

2.4 GHz range:

Antenna	Gx (dBi)	Cond. limit (dBm)	max. G (dBi)	A [P20] (dBm)	Limit P _{out} (dBm)	Reduction (dB)
ANT792-8DN	14.0	30.0	6.0	19.7	22.0	-2.3
ANT795-6DC	9.0	30.0	6.0	19.7	27.0	-7.3
ANT795-6MN	6.0	30.0	6.0	19.7	30.0	-10.3
ANT792-6MN	6.0	30.0	6.0	19.7	30.0	-10.3
ANT795-6MT	5.0	30.0	6.0	19.7	31.0	-11.3
ANT792-4DN	4.0	30.0	6.0	19.7	32.0	-12.3
ANT795-4MC	3.0	30.0	6.0	19.7	33.0	-13.3
ANT795-4MD	3.0	30.0	6.0	19.7	33.0	-13.3
ANT795-4MA	3.0	30.0	6.0	19.7	33.0	-13.3
A5E002280427-06	3.0	30.0	6.0	19.7	33.0	-13.3
Rcoax 2G	0.0	30.0	6.0	19.7	36.0	-16.3

5 GHz range:

Antenna	Gx (dBi)	Cond. limit (dBm)	max. G (dBi)	A [P12] (dBm)	Limit P _{out} (dBm)	Reduction (dB)
ANT793-8DK	23.0	30.0	6.0	11.9	13.0	-1.1

Antenna	Gx (dBi)	Cond. limit (dBm)	max. G (dBi)	A [P17] (dBm)	Limit P _{out} (dBm)	Reduction (dB)
ANT793-8DJ	18.0	30.0	6.0	16.5	18.0	-1.5

Antenna	Gx (dBi)	Cond. limit (dBm)	max. G (dBi)	A [P20] (dBm)	Limit P _{out} (dBm)	Reduction (dB)
ANT793-6DT	9.0	30.0	6.0	18.3	27.0	-8.7
ANT793-6DG	9.0	30.0	6.0	18.3	27.0	-8.7
ANT795-6DC	9.0	30.0	6.0	18.3	27.0	-8.7
ANT795-6MN	8.0	30.0	6.0	18.3	28.0	-9.7
ANT795-6MT	7.0	30.0	6.0	18.3	29.0	-10.7
ANT793-6MN	5.0	30.0	6.0	18.3	31.0	-12.7
ANT793-4MN	6.0	30.0	6.0	18.3	30.0	-11.7
ANT795-4MC	5.0	30.0	6.0	18.3	31.0	-12.7
ANT795-4MD	5.0	30.0	6.0	18.3	31.0	-12.7
ANT795-4MA	5.0	30.0	6.0	18.3	31.0	-12.7
A5E002280427-06	5.0	30.0	6.0	18.3	31.0	-12.7
Rcoax 5G	0.0	30.0	6.0	18.3	36.0	-17.7

Note: In case of HT20 and HT40 is falling back into CDD-Modes the firmware will compensate automatically the array gain for this kind of correlating signals depending of used ports.

Remarks: No power reduction results with the listed antennas.

FCC ID: LYHMPCIE1V1

6 USED TEST EQUIPMENT AND ACCESSORIES

All test instruments used are calibrated and verified regularly. The calibration history is available on request.

Test ID	Model Type	Equipment No.	Next Calib.	Last Calib.	Next Verif.	Next Verif.	
CPC 3	FSP 40	02-02/11-11-001	02/09/2012	02/09/2011			
	VLP-1602 PRO	02-02/50-10-015					
	KMS102-1m	02-02/50-11-014					
	KMS102-0,2m	02-02/50-11-016					
	KMS102-0,2m	02-02/50-11-017					
	KMS102-0,2m	02-02/50-11-018					
	DC-40GHz - D/C9914	02-02/50-12-010					
MB	FSP 40	02-02/11-11-001	02/09/2012	02/09/2011			
	VLP-1602 PRO	02-02/50-10-015					
	KMS102-1m	02-02/50-11-014					
	KMS102-0,2m	02-02/50-11-016					
	KMS102-0,2m	02-02/50-11-017					
	KMS102-0,2m	02-02/50-11-018					
	DC-40GHz - D/C9914	02-02/50-12-010					
SEC 1-3	FSP 40	02-02/11-11-001	02/09/2012	02/09/2011			
	VLP-1602 PRO	02-02/50-10-015					
	KMS102-1m	02-02/50-11-014					
	KMS102-0,2m	02-02/50-11-016					
	KMS102-0,2m	02-02/50-11-017					
	KMS102-0,2m	02-02/50-11-018					
	DC-40GHz - D/C9914	02-02/50-12-010					
SER 1	FMZB 1516	01-02/24-01-018	16/02/2013	16/02/2012			
	ESCI	02-02/03-05-005	21/11/2012	21/11/2011			
	S10162-B	02-02/50-05-031					
	KK-EF393-21N-16	02-02/50-05-033					
	NW-2000-NB	02-02/50-05-113					
SER 2	ESVS 30	02-02/03-05-006	20/06/2012	20/06/2011	23/03/2012	23/09/2011	
	BBA 9106 / VHA 9103	02-02/24-05-002	08/09/2012	08/03/2012			
	UHALP 9108 A	02-02/24-05-004	23/09/2014	23/09/2011			
	S10162-B	02-02/50-05-031					
	KK-EF393-21N-16	02-02/50-05-033					
	NW-2000-NB	02-02/50-05-113					
SER 3	FSP 40	02-02/11-11-001	02/09/2012	02/09/2011			
	AFS4-01000400-10-10P-4	02-02/17-05-003					
	AMF-4F-04001200-15-10P	02-02/17-05-004					
	AFS5-12001800-18-10P-6	02-02/17-06-002	16/02/2013	16/02/2012			
	3117	02-02/24-05-009					
	R1 _ 18 - 40 GHz	02-02/30-09-002					
	Sucoflex N-1000-SMA	02-02/50-05-072	19/12/2012	19/12/2011			
	Sucoflex N-1600-SMA	02-02/50-05-073					
	Sucoflex N-2000-SMA	02-02/50-05-075					
HM8143	02-02/50-10-016						