

FCC 15.407 2015/RSS 247 2017

DUT Information

Frequencies

WLAN CH 36 (5180 MHz)

WLAN CH 44 (5220 MHz)

WLAN CH 48 (5240 MHz)

Gain Tables

0.000 dBm (0 dBm)

Port 1: 3.6dBi;

DUT Settings

No. of transmission chains

1

DFS capability

No

Equipment Type

Indoor

TPC

No

Hardware Setup: WMS Measurements\Hardware Setup

Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR
TCPIP::192.168.48.148::INST0::INSTR), SN 1307.9002K40/101076,
FW 3.10 SP1

Vector Generator:

VG SMBV100A (VG SMBV100A) @ VISA (ADR
TCPIP::192.168.48.149::INST0::INSTR), SN 260451, FW 5.4.0

Generator:

SMB100A (SMB100A) @ VISA (ADR
TCPIP::192.168.48.144::INST0::INSTR), SN 107790, FW Rev
2.20.1, 08/2012, CVI 2009

OSP:

OSP (OSP) @ VISA (ADR TCPIP::192.168.48.147::INST0::INSTR),
SN OSP120 V02, 101258, FW 2.53.140911

Power Meter:

OSP-B157 Power Meter (OSP-B157 Power Meter) @ USB (ADR 20),
SN 26591983, FW 3.1

Summary

Test	Frequency (MHz)	Nominal Bandwidth (MHz)	Result
Tx Spurious Emission	5180.000	20.000000	PASS
Tx Spurious Emission	5220.000	20.000000	PASS
Tx Spurious Emission	5240.000	20.000000	PASS

Tx Spurious Emission (5180 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5180.000000	PASS

Final measurements

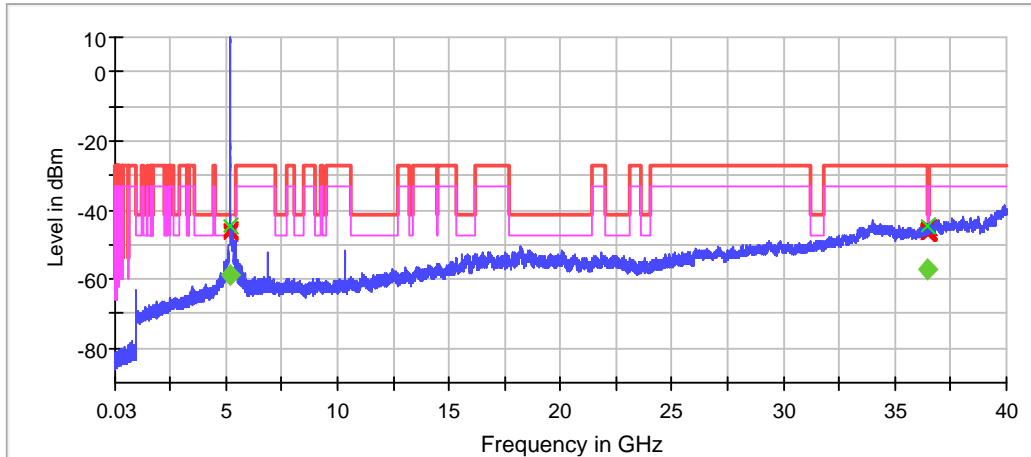
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
5148.500361	-44.8	-59.0	-41.2	17.8	PASS
36445.753875	-44.9	-57.4	-41.2	16.2	PASS

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
5148.500361	-44.8	3.6	-41.2
36445.753875	-44.9	3.7	-41.2
36497.750161	-45.0	3.8	-41.2
36458.752946	-45.3	4.1	-41.2
36498.750089	-45.4	4.2	-41.2
36474.751803	-45.5	4.3	-41.2
36489.750732	-45.6	4.4	-41.2
36451.753446	-45.6	4.4	-41.2
36468.752232	-45.6	4.4	-41.2
36435.754589	-45.7	4.5	-41.2
36477.751589	-45.8	4.6	-41.2
36478.751518	-45.8	4.6	-41.2
36447.753732	-45.8	4.6	-41.2
36459.752875	-45.8	4.6	-41.2
36454.753232	-45.8	4.6	-41.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	22 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.06 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	18 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 2

Setting	Instrument Value	Target Value
Span	ZeroSpan	ZeroSpan
RBW	1.000 MHz	~ 1.000 MHz
VBW	3.000 MHz	~ 3.000 MHz
SweepPoints	10001	~ 10001
SweepTime	50.000 ms	50.000 ms
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off

Tx Spurious Emission (5220 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5220.000000	PASS

Final measurements

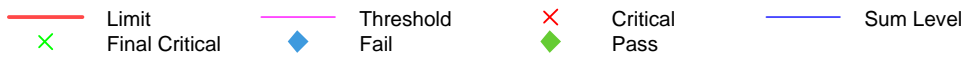
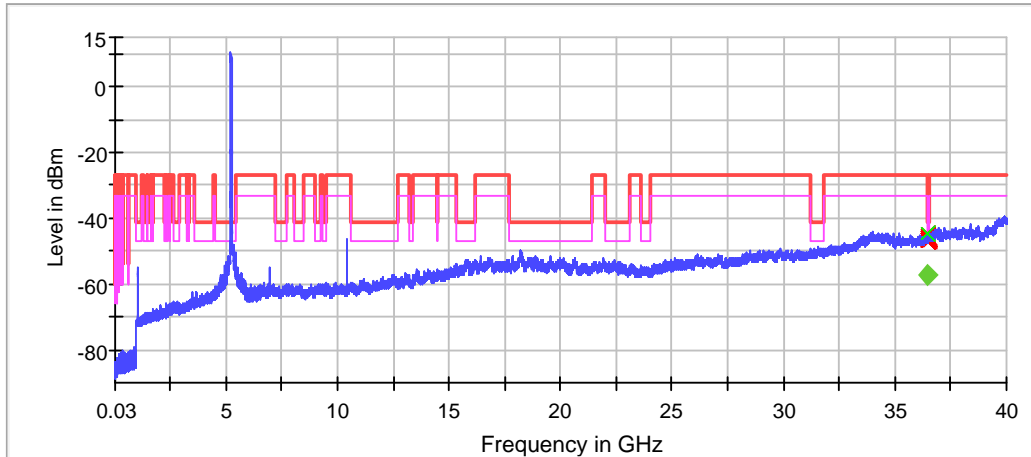
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
36484.751089	-44.9	-57.1	-41.2	15.9	PASS

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
36484.751089	-44.9	3.7	-41.2
36490.750661	-45.4	4.2	-41.2
36436.754518	-45.5	4.3	-41.2
36486.750946	-45.5	4.3	-41.2
36469.752161	-45.5	4.3	-41.2
36437.754446	-45.6	4.4	-41.2
36471.752018	-45.8	4.6	-41.2
36476.751661	-45.8	4.6	-41.2
36477.751589	-45.8	4.6	-41.2
36498.750089	-45.9	4.7	-41.2
36479.751446	-45.9	4.7	-41.2
36473.751875	-45.9	4.7	-41.2
36441.754160	-46.0	4.8	-41.2
36466.752375	-46.0	4.8	-41.2
36472.751946	-46.0	4.8	-41.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	≤ 1.000 MHz
VBW	3.000 MHz	≥ 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	25 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 2

Setting	Instrument Value	Target Value
Span	ZeroSpan	ZeroSpan
RBW	1.000 MHz	~ 1.000 MHz
VBW	3.000 MHz	~ 3.000 MHz
SweepPoints	10001	~ 10001
SweepTime	50.000 ms	50.000 ms
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off

Tx Spurious Emission (5240 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

Result

DUT Frequency (MHz)	Result
5240.000000	PASS

Final measurements

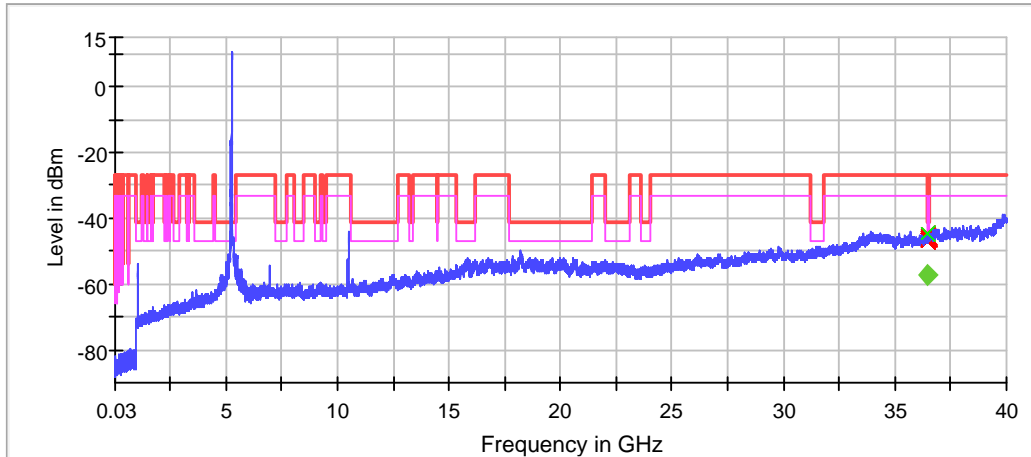
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
36476.751661	-44.5	-57.2	-41.2	16.0	PASS

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
36476.751661	-44.5	3.3	-41.2
36441.754160	-45.2	4.0	-41.2
36474.751803	-45.4	4.2	-41.2
36463.752589	-45.6	4.4	-41.2
36499.750018	-45.6	4.4	-41.2
36487.750875	-45.6	4.4	-41.2
36479.751446	-45.7	4.5	-41.2
36440.754232	-45.7	4.5	-41.2
36437.754446	-45.7	4.5	-41.2
36496.750232	-45.8	4.6	-41.2
36431.754875	-45.9	4.7	-41.2
36498.750089	-45.9	4.7	-41.2
36477.751589	-46.0	4.8	-41.2
36460.752803	-46.0	4.8	-41.2
36482.751232	-46.1	4.9	-41.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	5150.000000	2	2
5150.000000	5250.000000	2	2
5250.000000	5350.000000	2	2
5350.000000	5470.000000	2	2
5470.000000	5725.000000	2	2
5725.000000	5850.000000	2	2
5850.000000	7000.000000	2	2
7000.000000	26000.000000	2	2
26000.000000	40000.000000	2	2



— Limit — Threshold × Critical — Sum Level
× Final Critical ◆ Fail ◆ Critical Pass

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	9700	~ 9700
SweepTime	9.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	≤ 1.000 MHz
VBW	3.000 MHz	≥ 3.000 MHz
SweepPoints	4150	~ 4150
SweepTime	4.150 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	22 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 2

Setting	Instrument Value	Target Value
Span	ZeroSpan	ZeroSpan
RBW	1.000 MHz	~ 1.000 MHz
VBW	3.000 MHz	~ 3.000 MHz
SweepPoints	10001	~ 10001
SweepTime	50.000 ms	50.000 ms
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off