



FCC RF TEST REPORT

Applicant : Zhejiang Dahua Vision Technology Co., Ltd.

Address : The 1st floor, building F, No.1199 Bin'an road, Changhe Street, Binjiang District, Hangzhou, P.R. China.

Manufacturer : Zhejiang Dahua Vision Technology Co., Ltd.

Address : The 1st floor, building F, No.1199 Bin'an road, Changhe Street, Binjiang District, Hangzhou, P.R. China.

Equipment : Network Video Recorder

Model No. : NVR4104HS-W-SX,NVR4108HS-W-SX,DHI-NVR4104HS-W-SX, DHI-NVR4108HS-W-SX,DHI-NVR41A04HS-W-SX,
DHI-NVR41A08HS-W-SX (X can be 2/3/4/5)

FCC ID : SVNDHNVR41WSX

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of **CerpPASS Technology (Suzhou) Corp.**, the test report shall not be reproduced except in full.

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.10 – 2013** and the energy emitted by this equipment was **passed**.

CISPR PUB. 22 and FCC Part 15 in both radiated and conducted emission class B limits. Testing was carried out on Aug.12,2016~ Nov.10,2016 at **CerpPASS Technology (Suzhou) Co., Ltd.**

Approved by:

Miro Chueh
EMC/RF Manager

Laboratory Accreditation:

CerpPASS Technology Corporation Test Laboratory

☐	NVLAP LAB Code:	200954-0
	TAF LAB Code:	1439

CerpPASS Technology (SuZhou) Co., Ltd.

☒	NVLAP LAB Code:	200814-0
	CNAS LAB Code:	L5515



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History of this Test Report

Report No.	Version	Issue Date	Description
SEFI1607085	Rev 01	Nov.11, 2016	Original.



1. Report of Measurements and Examinations

Reference STD		Description of Test	Compliance results
1	FCC Rules §15.207(a);	AC Conducted Emission	PASS
2	FCC Rules §15.209(a)	Radiated Emission	PASS
3	FCC Rules §15.247(a)(2);	6dB Bandwidth	PASS
4	FCC Rules §15.247(b)(3);	Output Power	PASS
5	FCC Rules §15.247(e)	Power Spectral Density	PASS
6	FCC Rules §15.247(d)	Conducted Band Edge and Out-of-Band Emissions	PASS
7	FCC Rules §15.247(d);	Radiated Emission Band Edges	PASS



2. General Information

2.1 Description of EUT

Product name	Network Video Recorder	
Model No.	NVR4104HS-W-SX,NVR4108HS-W-SX,DHI-NVR4104HS-W-SX, DHI-NVR4108HS-W-SX,DHI-NVR41A04HS-W-SX, DHI-NVR41A08HS-W-SX (X can be 2/3/4/5)	
Power supply 1#	ADS-25FSG-12 12024GPG	
	Input:	100~240V AC 50-60Hz 0.7A
	Output:	12V $\overline{\text{---}}$ 2.0A
Power supply cable	Shielded, 1.5m	
Power supply 2#	ADS-25FSG-12 12024GPB	
	Input:	100~240V AC 50-60Hz 0.7A
	Output:	12V $\overline{\text{---}}$ 2.0A
	Non-Shielded, 1.5m	
Power supply 3#	EUSA+24120-2000	
	Input:	100~240V AC 50-60Hz 0.6A
	Output:	12V $\overline{\text{---}}$ 2.0A
	Non-Shielded, 1.5m	



2.2 Description of wireless module

WLAN	SWD23F-DH
Spreading	802.11b: CCK, DQPSK, DBPSK 802.11g: 64 QAM, 16 QAM, QPSK, BPSK 802.11n: BPSK, QPSK, 16-QAM, 64-QAM
Frequency Range	802.11b/g/n(20MHz): 2412-2462MHz 802.11n(40MHz): 2422-2452MHz
Number of Channels	802.11b/g/n (20MHz):11 802.11n (40MHz): 7
Data Rate	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0~MCS7

Note: For more details, please refer to the EUT User manual.

2.3 Description of Antenna

Antenna	Manufacturer	Model No.	Peak Gain
Dipole Antenna	Walsin Technology Corporation	RFDPA191315IMLB301	5dBi for 2.40~2.50GHz band

deirectional gain= $10\log \left[\frac{(10^{G1/20} + 10^{G2/20} \dots + 10^{GN/20})^2}{NANT} \right]$ dBi=9.77 dBi

Note: The “20” s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.



2.4 Carrier Frequency of Channels

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

802.11n(40MHz)			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	---	08	2447
02	---	09	2452
03	2422	---	---
04	2427	---	---
05	2432	---	---
06	2437	---	---
07	2442	---	---

2.5 The Worst Case Configuration

Data rate Configuration:

Modulation Mode	Worst Data Rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	MCS0
802.11n(HT40)	MCS0

2.6 EUT Exercise Software

1	Turn on the power of equipment.
2	Run 'cart.exe', input RF test command and set the test mode and channel, then press OK to start continue transmit.

**2.7 Power Parameter Value of the test software**

Mode	Frequency (MHz)	Power Setting			
		Ant 1	Ant 2	Ant 3	MIMO Mode(Ant1+2+3)
802.11b	2412	45	45	45	×
	2437	50	50	50	×
	2462	41	39	39	×
802.11g	2412	36	36	36	×
	2437	47	47	50	×
	2462	34	32	32	×
802.11n(20M Hz)	2412	36	34	34	35
	2437	47	47	50	38
	2462	34	31	31	31
802.11n(40M Hz)	2422	30	29	29	30
	2437	47	50	50	38
	2452	30	27	29	30

2.8 The test mode of the test software can support.

Test Mode	Test Channel	Ant 1	Ant 2	Ant 3	MIMO Mode(Ant1+2+3)
802.11b	2412	√	√	√	×
	2437	√	√	√	×
	2462	√	√	√	×
802.11g	2412	√	√	√	×
	2437	√	√	√	×
	2462	√	√	√	×
802.11n(20MHz)	2412	√	√	√	√
	2437	√	√	√	√
	2462	√	√	√	√
802.11n(40MHz)	2422	√	√	√	√
	2437	√	√	√	√
	2452	√	√	√	√

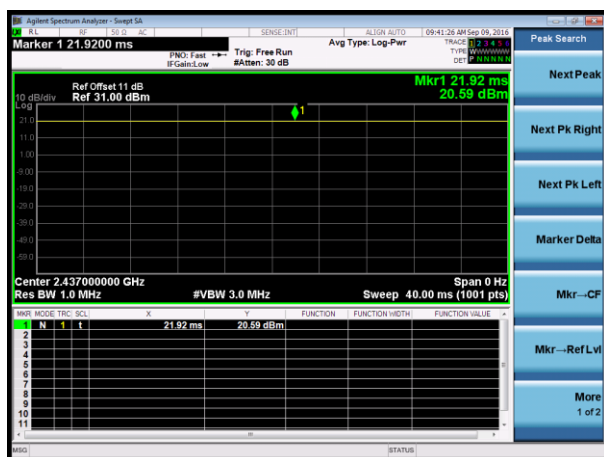


2.9 Duty cycle

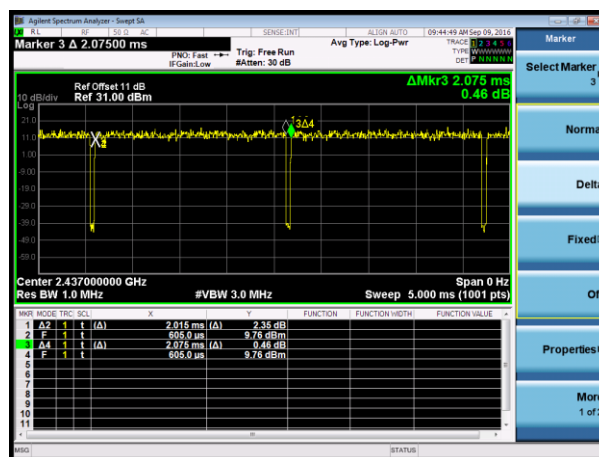
Test Item	Duty cycle
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Mode	Frequency (MHz)	Measurement (%)
802.11b	2437	99.9
802.11g	2437	97.1
802.11n(20MHz)	2437	96.9
802.11n(40MHz)	2437	93.0

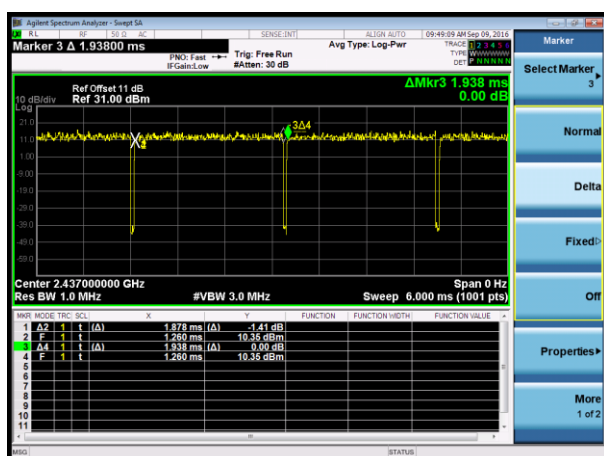
802.11b (2437MHz)



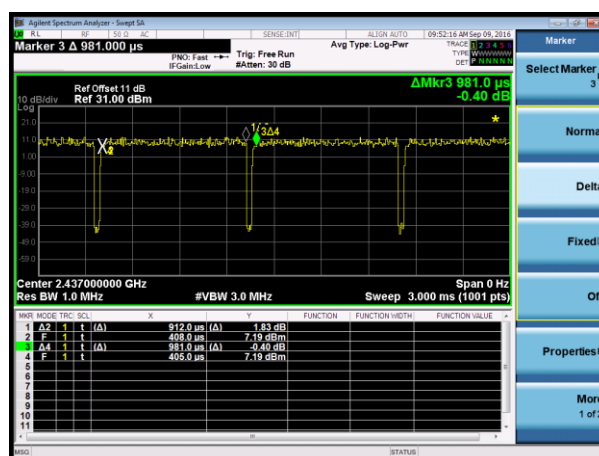
802.11g (2437MHz)



802.11n(20MHz)(2437MHz)



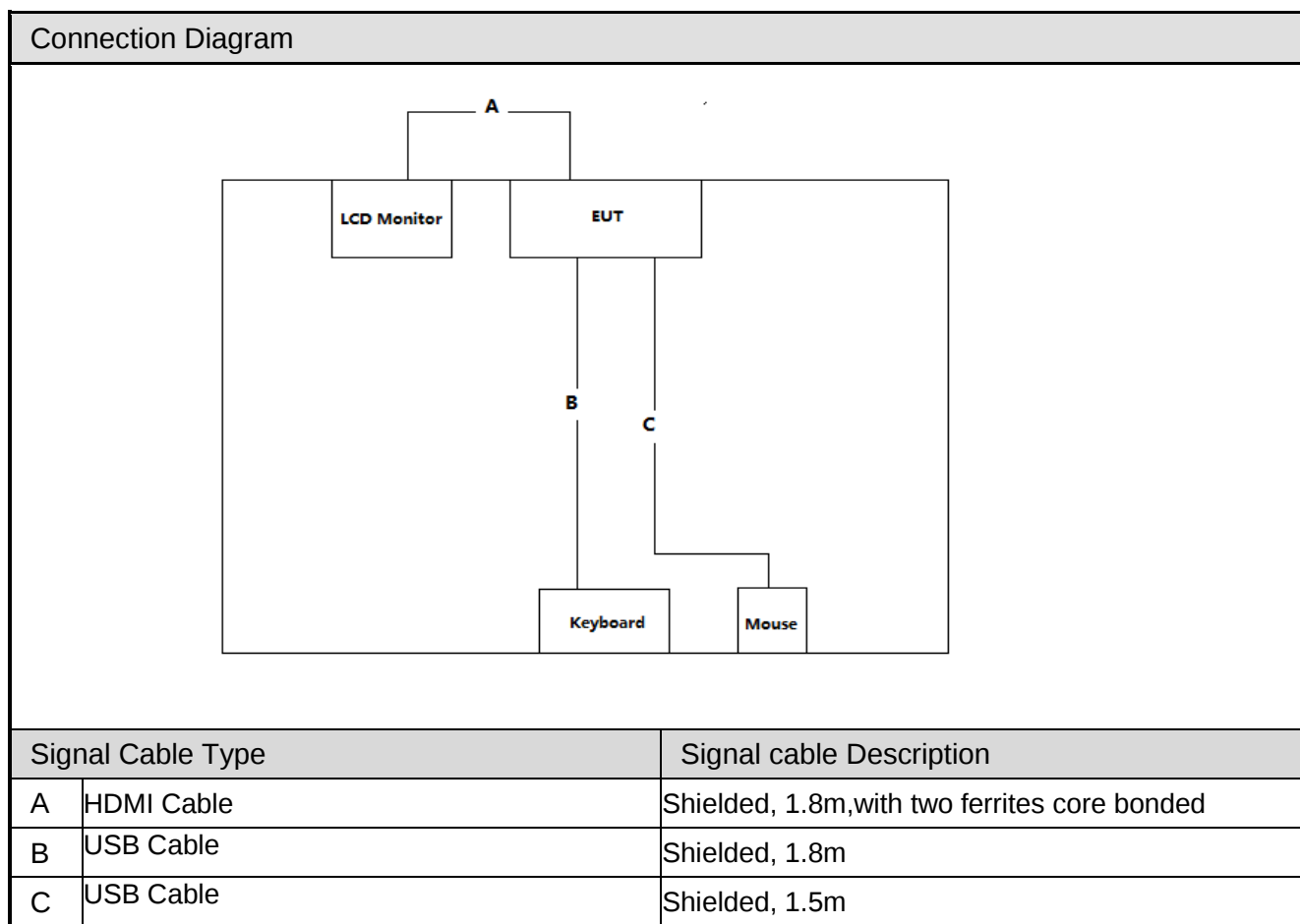
802.11n(40MHz)(2437MHz)





2.10 Support equipment

Product	Manufacturer	Model No.	Serial No.	Power Cord
LCD Monitor	DELL	3008WFPt	N/A	N/A
Keyboard	DELL	SK-8115	N/A	N/A
Mouse	DELL	G0K02XYK	N/A	N/A





3. General Information of Test Site

3.1 Information of Test Site

Test Site	CerpPASS Technology(Suzhou) Co., Ltd.
Test Site Location	No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China
NVLAP LAB Code	200814-0
FCC Registration Number	916572, 331395
IC Registration Number	7290A-1, 7290A-2
VCCI Registration Number	T-1945 for Telecommunication Test C-2919 for Conducted emission test R-2670 for Radiated emission test below 1GHz G-227 for Radiated emission test above 1GHz

3.2 Measuring Equipment

RF Conducted Measuring Equipment-AC104					
Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
Peak Power Sensor	Boonton	55006	9778	2016.06.08	2017.06.07
Series Power Meter	ANRITSU	ML2495A	1224005	2016.03.27	2017.03.26
Spectrum Analyzer	N9010A	Agilent	MY53400169	2015.11.11	2016.11.11
Spectrum Analyzer	E4407B	Agilent	MY44211883	2016.10.15	2017.10.14
Temperature/Humidity Meter	Zhicheng	ZC1-11	CEP-TH-003	2016.03.31	2017.03.30

AC Conducted Emission Measuring Equipment-SR101					
Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
EZ-EMC	Fala	Ver CT3A1	N/A	N/A	N/A
EMI Test Receiver	R&S	ESCI	100565	2016.03.26	2017.03.25
Artificial-Mains-Network	R&S	ESH2-Z5	100182	2016.08.31	2017.08.30
Line Impedance Stabilization Network	FCC	FCC-LISN-50-200-2-02	112087	2016.08.31	2017.08.30
Temperature/Humidity Meter	Zhicheng	ZC1-11	CEP-TH-004	2016.03.29	2017.03.28



Radiated Measuring Equipment-AC102					
Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
Loop Antenna	R&S	HFH2-Z2	100150	2016.08.31	2017.08.30
Bilog Antenna	Sunol Science	JB1	A072414-1	2016.04.16	2017.04.15
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-619	2016.07.16	2017.07.15
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	9170-348	2016.05.07	2017.05.06
Preamplifier	HP	8447F	3113A05582	2016.03.26	2017.03.25
Preamplifier	EMCI	EMC-051835	980085	2016.09.06	2017.09.05
Preamplifier	COM-POWER	PA-840	711885	2016.03.26	2017.03.25
EMI Test Receiver	R&S	ESCI-3	101183	2016.06.29	2017.06.28
Spectrum Analyzer	N9010A	Agilent	MY53400169	2016.11.11	2017.11.11
Spectrum Analyzer	R&S	FS040	100324	2016.03.26	2017.03.25
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2016.03.31	2017.03.30

3.3 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor ($k=2$)).

RF Conducted Measurement

Test Item		Uncertainty	Limit
Radio Frequency		$\pm 8.7 \times 10^{-7}$	$\pm 1 \times 10^{-5}$
RF output power, conducted		$\pm 0.63\text{dB}$	$\pm 1.5\text{dB}$
Power density, conducted		$\pm 1.21\text{dB}$	$\pm 3\text{dB}$
Unwanted emissions, conducted	30-1000MHz	$\pm 0.51\text{dB}$	$\pm 3\text{dB}$
	1-25GHz	$\pm 0.67\text{dB}$	$\pm 3\text{dB}$
All emissions, radiated	30-1000MHz	$\pm 2.28\text{dB}$	$\pm 6\text{dB}$
	1-25GHz	$\pm 2.59\text{dB}$	$\pm 6\text{dB}$
Temperature		$\pm 0.8^\circ\text{C}$	$\pm 1^\circ\text{C}$
Humidity		$\pm 3\%$	$\pm 5\%$
DC and low frequency voltages		$\pm 3\%$	$\pm 3\%$

**AC Conducted Measurement**

Measurement	Frequency	Uncertainty
Conducted emissions(LINE)	9KHz-30MHz	+/- 0.7738 dB
Conducted emissions(NEUTRAL)	9KHz-30MHz	+/- 0.7886 dB
Conducted emissions(10Mbps)	150KHz-30MHz	+/- 1.3013dB
Conducted emissions(100Mbps)	150KHz-30MHz	+/- 1.3197 dB
Conducted emissions(1000Mbps)	150KHz-30MHz	+/- 1.2987 dB

Radiated Measurement

Measurement	Polarity	Frequency	Uncertainty
Radiated emissions	Horizontal	below 1GHz	+/- 3.8936 dB
	Vertical	below 1GHz	+/- 3.8928 dB
	Horizontal	above 1GHz	+/- 5.18858dB
	Vertical	above 1GHz	+/- 5.18928 dB



4. AC Conducted Emission Measurement

4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.10-2013 Section 6.2. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 6.2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

4.2 Test Standard

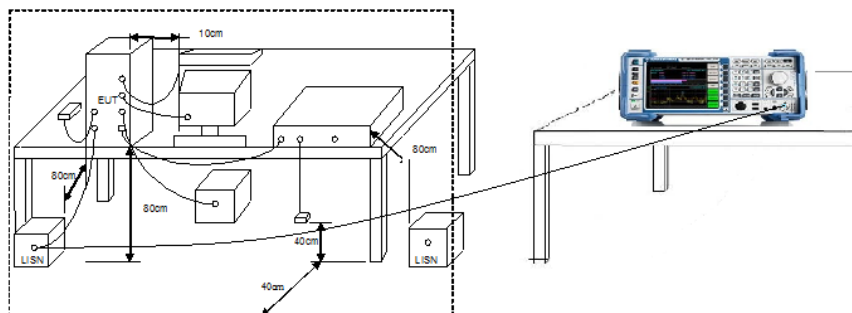
ANSI C63.10-2013 Section 6.2.

4.3 Test Procedures

- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



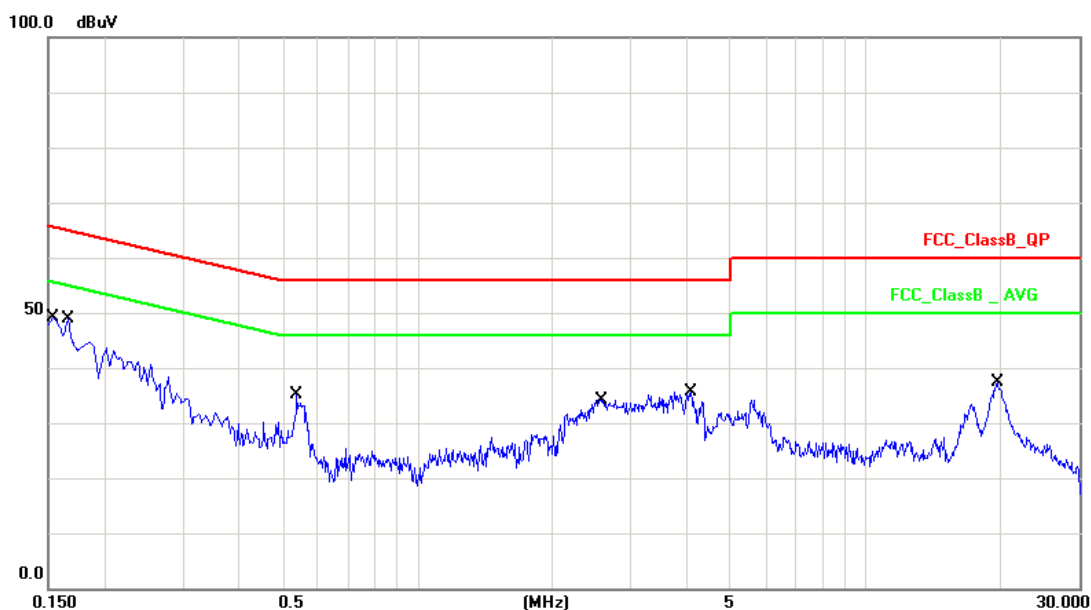
4.4 Test Setup Layout





4.5 Test Result

Test Mode :	Mode 1: Normal Operation with WIFI on		
AC Power :	AC 120V/60Hz	Phase:	LINE
Temperature :	26°C	Humidity:	60%
Pressure(mbar) :	1002	Date:	2016/08/15

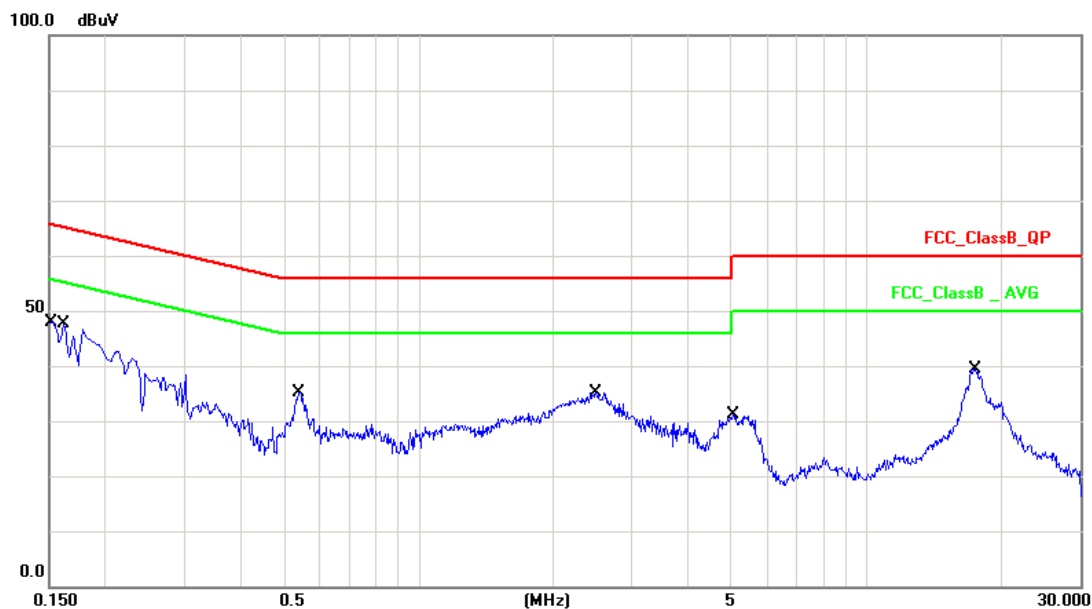


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1539	10.13	35.25	45.38	65.78	-20.40	QP
2	0.1539	10.13	17.31	27.44	55.78	-28.34	AVG
3	0.1660	10.13	33.57	43.70	65.15	-21.45	QP
4	0.1660	10.13	14.47	24.60	55.15	-30.55	AVG
5	0.5380	10.16	20.37	30.53	56.00	-25.47	QP
6	0.5380	10.16	14.26	24.42	46.00	-21.58	AVG
7	2.5780	10.18	20.26	30.44	56.00	-25.56	QP
8	2.5780	10.18	14.26	24.44	46.00	-21.56	AVG
9	4.0780	10.20	16.15	26.35	56.00	-29.65	QP
10	4.0780	10.20	8.57	18.77	46.00	-27.23	AVG
11	19.7300	10.35	21.36	31.71	60.00	-28.29	QP
12	19.7300	10.35	15.57	25.92	50.00	-24.08	AVG

Note: Measurement Level = Reading Level + Correct Factor



Test Mode :	Mode 1: Normal Operation with WIFI on		
AC Power :	AC 120V/60Hz	Phase :	NEUTRAL
Temperature :	26°C	Humidity :	60%
Pressure(mbar) :	1002	Date:	2016/08/15



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	10.13	35.15	45.28	65.99	-20.71	QP
2	0.1500	10.13	17.46	27.59	55.99	-28.40	AVG
3	0.1620	10.13	34.37	44.50	65.36	-20.86	QP
4	0.1620	10.13	17.48	27.61	55.36	-27.75	AVG
5	0.5420	10.15	23.02	33.17	56.00	-22.83	QP
6	0.5420	10.15	16.03	26.18	46.00	-19.82	AVG
7	2.4980	10.19	21.53	31.72	56.00	-24.28	QP
8	2.4980	10.19	15.82	26.01	46.00	-19.99	AVG
9	5.0380	10.26	14.30	24.56	60.00	-35.44	QP
10	5.0380	10.26	6.05	16.31	50.00	-33.69	AVG
11	17.5060	10.48	24.61	35.09	60.00	-24.91	QP
12	17.5060	10.48	18.95	29.43	50.00	-20.57	AVG

Note: Measurement Level = Reading Level + Correct Factor



5. Radiated Emission Measurement

5.1 Test Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

FREQUENCIES (MHz)	FIELD STRENGTH (micro volts/meter)	MEASUREMENT DISTANCE (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

For unintentional device, according to CISPR PUB.22, for Class B digital devices, the general requirement of field strength of radiated emissions from intentional radiators at a distance of 10 meters shall not exceed the above table.

Frequency (MHz)	Distance Meters	Radiated (dB μ V/ M)
30-230	10	30
230-1000	10	37

5.2 Test Standard

ANSI C63.10-2013 Section 6.5 & Section 6.6



5.3 Test Procedures

Peak Field Strength Measurements:

Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

1. RBW=As specified in Table 1
2. VBW=3×RBW
3. Detector=Peak
4. Trace mode=Max hold
5. Sweep time=Auto couple
6. Allow the trace to stabilize

Table 1-RBW as a function of frequency

Frequency	RBW
9 ~ 150kHz	200 ~ 300Hz
0.15 ~ 30MHz	9 ~ 10kHz
30 ~ 1000MHz	100 ~ 120kHz
> 1000MHz	1MHz

AVE Field Strength Measurements:

Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

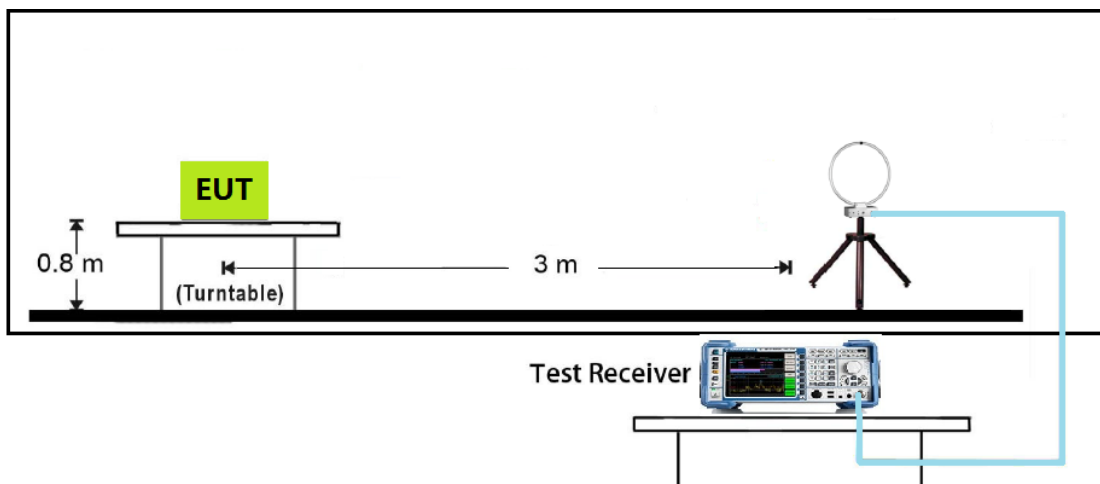
1. RBW= 1MHz
2. VBW≥1/T
3. Detector=Peak
4. Trace mode=Max hold
5. Sweep time=Auto couple
6. Allow max hold to run for at least 50 times(1/duty cycle) trace

Do as an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode

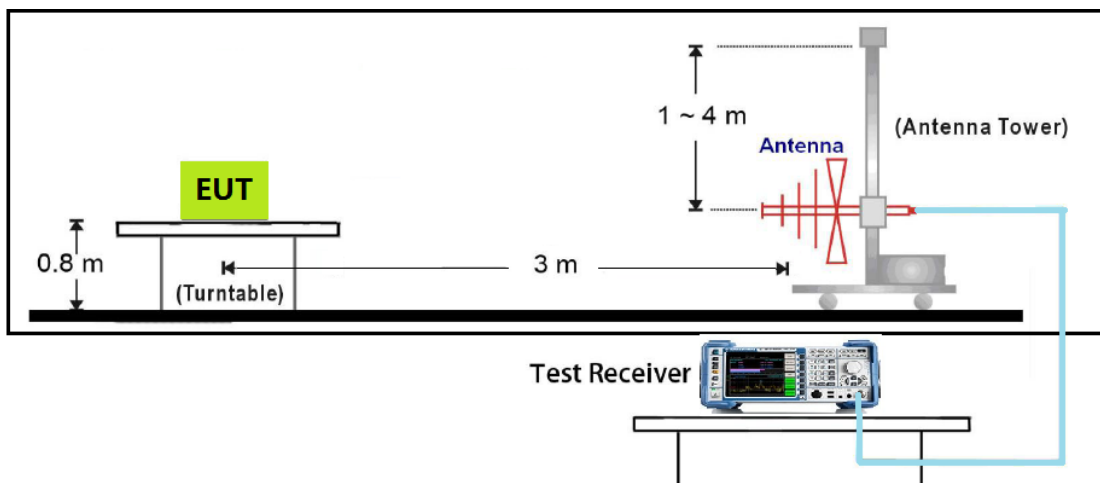


5.4 Test Setup Layout

9kHz~30MHz Test Setup

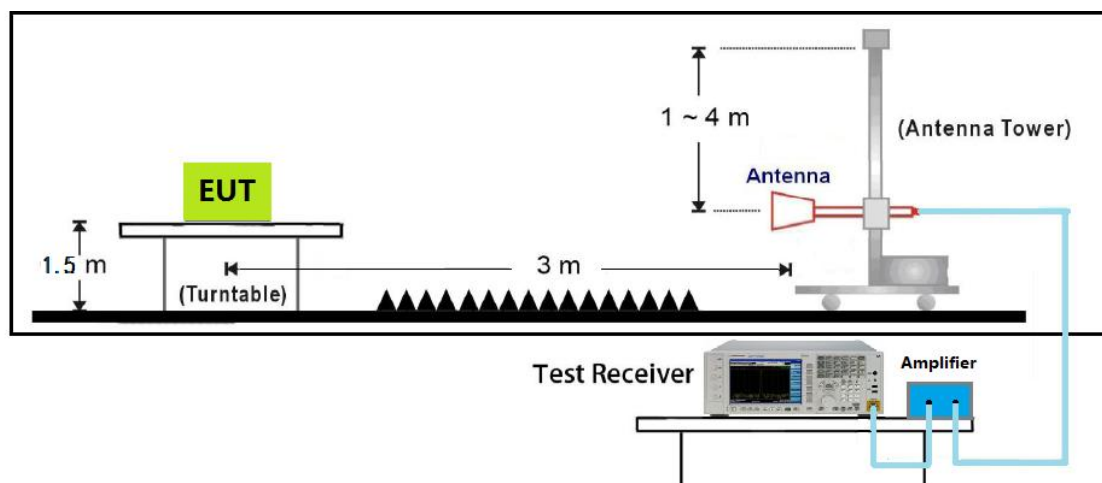


30MHz~1GHz Test Setup

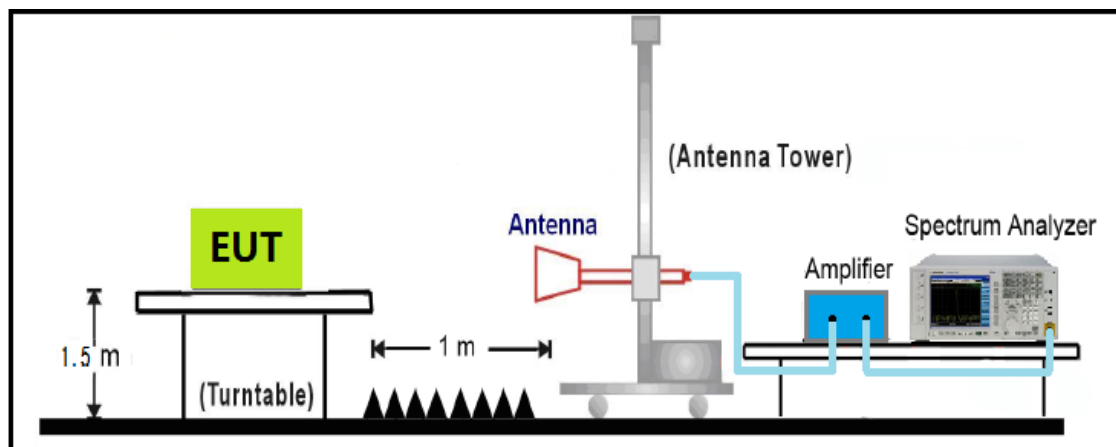




1GHz~18GHz Test Setup



18GHz~40GHz Test Setup

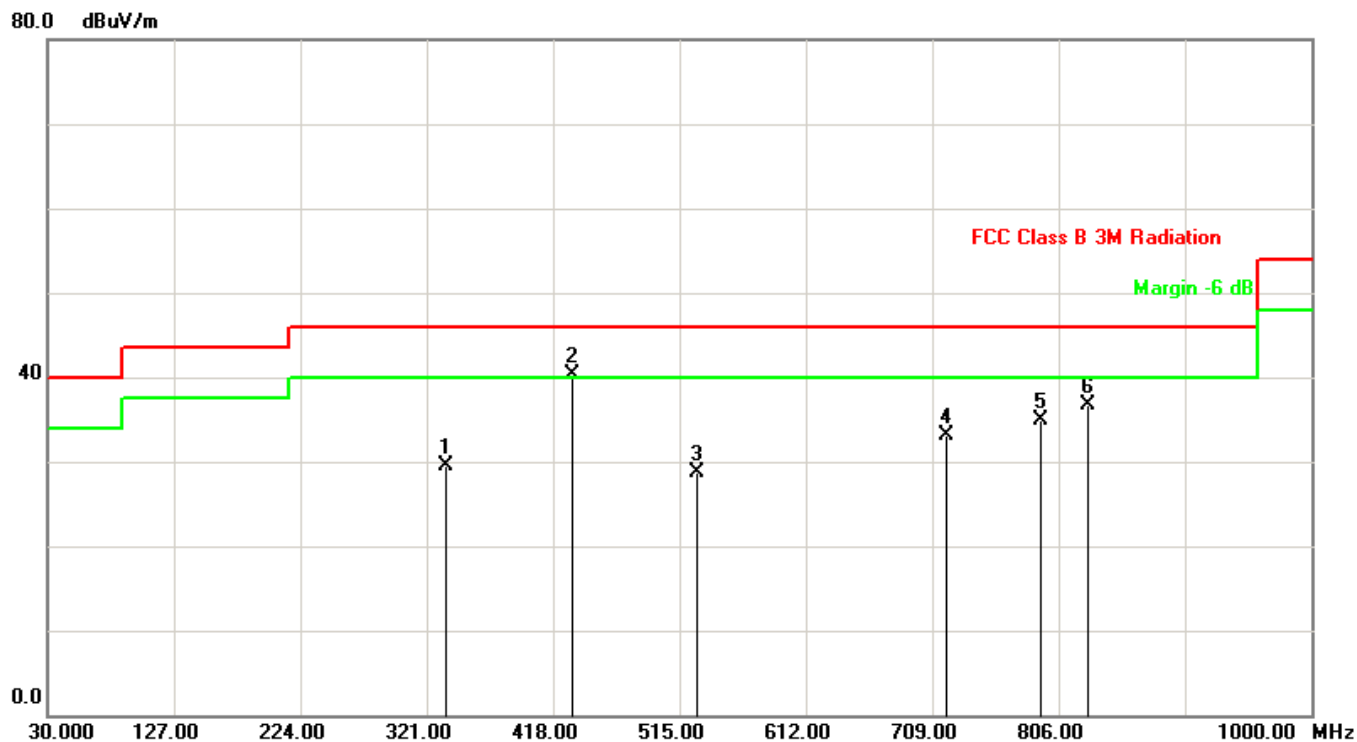




5.5 Test Result

The worst case of Radiated Emission below 1GHz:

Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: NVR	Power: AC 120V/60Hz
Note: Mode : Transmit 802.11b at 2437MHz Ant 1	

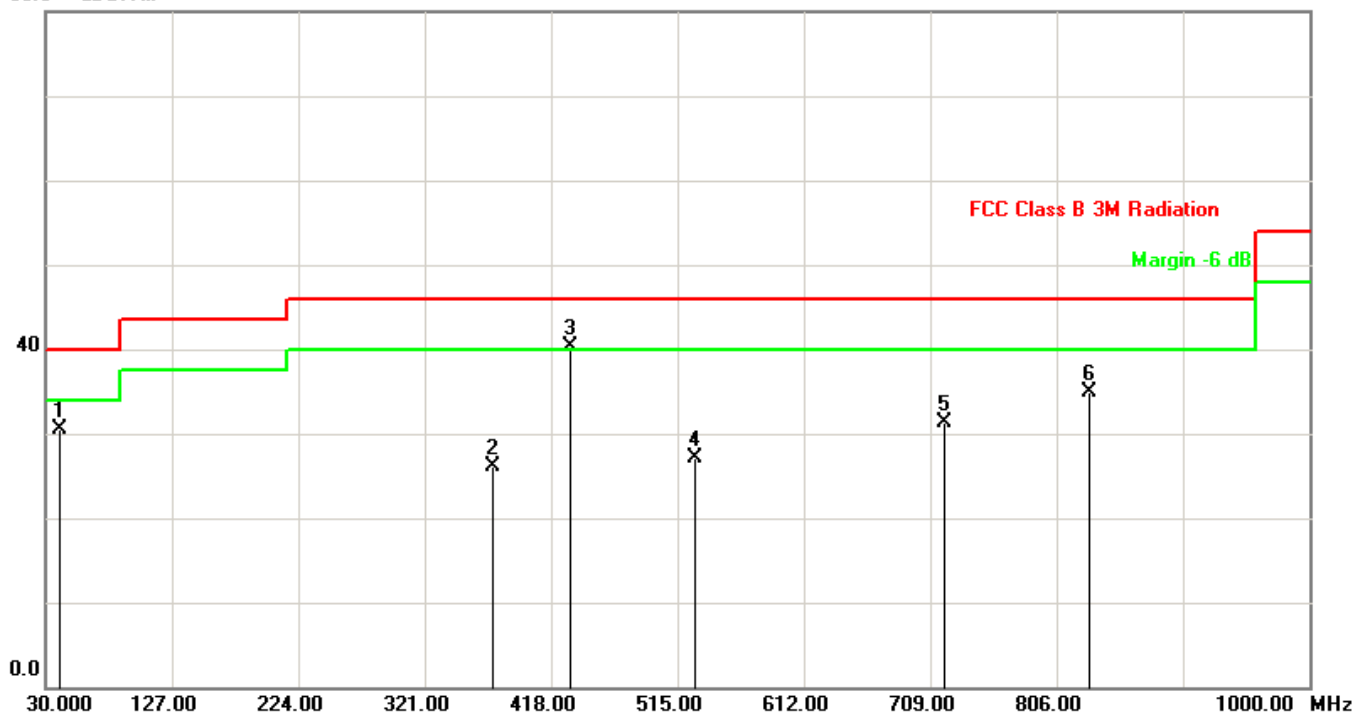


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	335.5500	-6.50	35.96	29.46	46.00	-16.54	QP
2	432.5500	-4.61	44.94	40.33	46.00	-5.67	QP
3	528.5800	-4.26	33.05	28.79	46.00	-17.21	QP
4	720.6399	1.39	31.78	33.17	46.00	-12.83	QP
5	792.4198	0.74	34.17	34.91	46.00	-11.09	QP
6	828.3099	1.17	35.59	36.76	46.00	-9.24	QP



Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: NVR	Power: AC 120V/60Hz
Note: Mode : Transmit 802.11b at 2437MHz Ant 1	

80.0 dBuV/m



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	40.6699	-6.57	37.08	30.51	40.00	-9.49	QP
2	373.3798	-6.96	33.04	26.08	46.00	-19.92	QP
3	432.5500	-4.61	44.91	40.30	46.00	-5.70	QP
4	528.5800	-4.26	31.30	27.04	46.00	-18.96	QP
5	720.6399	1.39	29.98	31.37	46.00	-14.63	QP
6	831.2199	1.24	33.71	34.95	46.00	-11.05	QP

**Radiated Emission above 1GHz:**

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11b at 2412MHz (Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.00	-3.88	49.07	45.19	74.00	-28.81	peak	H
2	7236.00	0.61	44.07	44.68	74.00	-29.32	peak	H
3	4824.00	-3.88	47.15	43.27	74.00	-30.73	peak	V
4	7236.00	0.61	44.56	45.17	74.00	-28.83	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11b at 2437MHz(Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	45.89	42.04	74.00	-31.96	peak	H
2	7311.00	0.79	44.72	45.51	74.00	-28.49	peak	H
3	4874.00	-3.85	49.28	45.43	74.00	-28.57	peak	V
4	7311.00	0.79	44.57	45.36	74.00	-28.64	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11b at 2462MHz(Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4924.00	-3.82	46.10	42.28	74.00	-31.72	peak	H
2	7386.00	0.97	44.75	45.72	74.00	-28.28	peak	H
3	4924.00	-3.82	46.69	42.87	74.00	-31.13	peak	V
4	7386.00	0.97	43.56	44.53	74.00	-29.47	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11g at 2412MHz(Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.00	-3.88	48.77	44.89	74.00	-29.11	peak	H
2	7236.00	0.61	43.51	44.12	74.00	-29.88	peak	H
3	4824.00	-3.88	45.94	42.06	74.00	-31.94	peak	V
4	7236.00	0.61	44.52	45.13	74.00	-28.87	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11g at 2437MHz(Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	45.12	41.27	74.00	-32.73	peak	H
2	7311.00	0.79	43.95	44.74	74.00	-29.26	peak	H
3	4874.00	-3.85	45.65	41.80	74.00	-32.20	peak	V
4	7311.00	0.79	44.29	45.08	74.00	-28.92	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11g at 2462MHz(Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4924.00	-3.82	46.21	42.39	74.00	-31.61	peak	H
2	7386.00	0.97	45.03	46.00	74.00	-28.00	peak	H
3	4924.00	-3.82	45.99	42.17	74.00	-31.83	peak	V
4	7386.00	0.97	46.17	47.14	74.00	-26.86	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2412MHz(Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.00	-3.88	45.47	41.59	74.00	-32.41	peak	H
2	7236.00	0.61	46.42	47.03	74.00	-26.97	peak	H
3	4824.00	-3.88	45.51	41.63	74.00	-32.37	peak	V
4	7236.00	0.61	45.00	45.61	74.00	-28.39	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2437MHz(Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	46.62	42.77	74.00	-31.23	peak	H
2	7311.00	0.79	47.36	48.15	74.00	-25.85	peak	H
3	4874.00	-3.85	45.69	41.84	74.00	-32.16	peak	V
4	7311.00	0.79	44.79	45.58	74.00	-28.42	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2462MHz(Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4924.00	-3.82	45.36	41.54	74.00	-32.46	peak	H
2	7386.00	0.97	44.76	45.73	74.00	-28.27	peak	H
3	4924.00	-3.82	45.41	41.59	74.00	-32.41	peak	V
4	7386.00	0.97	44.65	45.62	74.00	-28.38	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2422MHz(Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4844.00	-3.87	46.17	42.30	74.00	-31.70	peak	H
2	7266.00	0.68	40.34	41.02	74.00	-32.98	peak	H
3	4844.00	-3.87	39.43	35.56	74.00	-38.44	peak	V
4	7266.00	0.68	38.07	38.75	74.00	-35.25	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2437MHz(Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	38.85	35.00	74.00	-39.00	peak	H
2	7311.00	0.79	36.55	37.34	74.00	-36.66	peak	H
3	4874.00	-3.85	42.90	39.05	74.00	-34.95	peak	V
4	7311.00	0.79	37.63	38.42	74.00	-35.58	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2452MHz(Ant 1)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4904.00	-3.83	48.56	44.73	74.00	-29.27	peak	H
2	7356.00	0.92	41.68	42.60	74.00	-31.40	peak	H
3	4904.00	-3.83	48.32	44.49	74.00	-29.51	peak	V
4	7356.00	0.92	44.36	45.28	74.00	-28.72	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11b at 2412MHz (Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.00	-3.88	46.20	42.32	74.00	-31.68	peak	H
2	7236.00	0.61	44.23	44.84	74.00	-29.16	peak	H
3	4824.00	-3.88	48.06	44.18	74.00	-29.82	peak	V
4	7236.00	0.61	44.98	45.59	74.00	-28.41	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11b at 2437MHz(Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	45.12	41.27	74.00	-32.73	peak	H
2	7311.00	0.79	44.39	45.18	74.00	-28.82	peak	H
3	4874.00	-3.85	49.93	46.08	74.00	-27.92	peak	V
4	7311.00	0.79	43.87	44.66	74.00	-29.34	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11b at 2462MHz(Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4924.00	-3.82	51.17	47.35	74.00	-26.65	peak	H
2	7386.00	0.97	44.98	45.95	74.00	-28.05	peak	H
3	4924.00	-3.82	47.43	43.61	74.00	-30.39	peak	V
4	7386.00	0.97	44.33	45.30	74.00	-28.70	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11g at 2412MHz(Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.00	-3.88	49.52	45.64	74.00	-28.36	peak	H
2	7236.00	0.61	44.18	44.79	74.00	-29.21	peak	H
3	4824.00	-3.88	46.39	42.51	74.00	-31.49	peak	V
4	7236.00	0.61	44.98	45.59	74.00	-28.41	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11g at 2437MHz(Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	45.95	42.10	74.00	-31.90	peak	H
2	7311.00	0.79	44.09	44.88	74.00	-29.12	peak	H
3	4874.00	-3.85	45.97	42.12	74.00	-31.88	peak	V
4	7311.00	0.79	44.67	45.46	74.00	-28.54	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11g at 2462MHz(Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4924.00	-3.82	45.48	41.66	74.00	-32.34	peak	H
2	7386.00	0.97	45.57	46.54	74.00	-27.46	peak	H
3	4924.00	-3.82	46.05	42.23	74.00	-31.77	peak	V
4	7386.00	0.97	46.54	47.51	74.00	-26.49	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2412MHz(Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.00	-3.88	45.39	41.51	74.00	-32.49	peak	H
2	7236.00	0.61	46.32	46.93	74.00	-27.07	peak	H
3	4824.00	-3.88	45.76	41.88	74.00	-32.12	peak	V
4	7236.00	0.61	45.69	46.30	74.00	-27.70	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2437MHz(Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	45.25	41.40	74.00	-32.60	peak	H
2	7311.00	0.79	44.90	45.69	74.00	-28.31	peak	H
3	4874.00	-3.85	45.15	41.30	74.00	-32.70	peak	V
4	7311.00	0.79	45.47	46.26	74.00	-27.74	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2462MHz(Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4924.00	-3.82	45.83	42.01	74.00	-31.99	peak	H
2	7386.00	0.97	44.99	45.96	74.00	-28.04	peak	H
3	4924.00	-3.82	45.73	41.91	74.00	-32.09	peak	V
4	7386.00	0.97	43.82	44.79	74.00	-29.21	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2422MHz(Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4844.00	-3.87	46.26	42.39	74.00	-31.61	peak	H
2	7266.00	0.68	39.54	40.22	74.00	-33.78	peak	H
3	4844.00	-3.87	39.22	35.35	74.00	-38.65	peak	V
4	7266.00	0.68	37.75	38.43	74.00	-35.57	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2437MHz(Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	39.17	35.32	74.00	-38.68	peak	H
2	7311.00	0.79	35.90	36.69	74.00	-37.31	peak	H
3	4874.00	-3.85	42.89	39.04	74.00	-34.96	peak	V
4	7311.00	0.79	37.56	38.35	74.00	-35.65	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2452MHz(Ant 2)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4904.00	-3.83	48.81	44.98	74.00	-29.02	peak	H
2	7356.00	0.92	41.90	42.82	74.00	-31.18	peak	H
3	4904.00	-3.83	48.28	44.45	74.00	-29.55	peak	V
4	7356.00	0.92	44.05	44.97	74.00	-29.03	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11b at 2412MHz (Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.00	-3.88	45.42	41.54	74.00	-32.46	peak	H
2	7236.00	0.61	44.07	44.68	74.00	-29.32	peak	H
3	4824.00	-3.88	47.50	43.62	74.00	-30.38	peak	V
4	7236.00	0.61	44.79	45.40	74.00	-28.60	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11b at 2437MHz(Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	45.04	41.19	74.00	-32.81	peak	H
2	7311.00	0.79	44.33	45.12	74.00	-28.88	peak	H
3	4874.00	-3.85	49.25	45.40	74.00	-28.60	peak	V
4	7311.00	0.79	44.58	45.37	74.00	-28.63	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11b at 2462MHz(Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4924.00	-3.82	51.67	47.85	74.00	-26.15	peak	H
2	7386.00	0.97	44.64	45.61	74.00	-28.39	peak	H
3	4924.00	-3.82	47.24	43.42	74.00	-30.58	peak	V
4	7386.00	0.97	44.38	45.35	74.00	-28.65	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11g at 2412MHz(Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.00	-3.88	48.91	45.03	74.00	-28.97	peak	H
2	7236.00	0.61	43.56	44.17	74.00	-29.83	peak	H
3	4824.00	-3.88	45.96	42.08	74.00	-31.92	peak	V
4	7236.00	0.61	45.09	45.70	74.00	-28.30	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11g at 2437MHz(Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	45.10	41.25	74.00	-32.75	peak	H
2	7311.00	0.79	44.17	44.96	74.00	-29.04	peak	H
3	4874.00	-3.85	45.66	41.81	74.00	-32.19	peak	V
4	7311.00	0.79	45.02	45.81	74.00	-28.19	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11g at 2462MHz(Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4924.00	-3.82	46.02	42.20	74.00	-31.80	peak	H
2	7386.00	0.97	45.14	46.11	74.00	-27.89	peak	H
3	4924.00	-3.82	46.00	42.18	74.00	-31.82	peak	V
4	7386.00	0.97	46.25	47.22	74.00	-26.78	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2412MHz(Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.00	-3.88	45.58	41.70	74.00	-32.30	peak	H
2	7236.00	0.61	45.76	46.37	74.00	-27.63	peak	H
3	4824.00	-3.88	46.50	42.62	74.00	-31.38	peak	V
4	7236.00	0.61	45.06	45.67	74.00	-28.33	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2437MHz(Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	45.04	41.19	74.00	-32.81	peak	H
2	7311.00	0.79	45.38	46.17	74.00	-27.83	peak	H
3	4874.00	-3.85	45.16	41.31	74.00	-32.69	peak	V
4	7311.00	0.79	44.95	45.74	74.00	-28.26	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2462MHz(Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4924.00	-3.82	45.55	41.73	74.00	-32.27	peak	H
2	7386.00	0.97	44.96	45.93	74.00	-28.07	peak	H
3	4924.00	-3.82	45.32	41.50	74.00	-32.50	peak	V
4	7386.00	0.97	44.54	45.51	74.00	-28.49	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2422MHz(Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4844.00	-3.87	45.89	42.02	74.00	-31.98	peak	H
2	7266.00	0.68	40.28	40.96	74.00	-33.04	peak	H
3	4844.00	-3.87	39.52	35.65	74.00	-38.35	peak	V
4	7266.00	0.68	37.87	38.55	74.00	-35.45	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2437MHz(Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	38.76	34.91	74.00	-39.09	peak	H
2	7311.00	0.79	36.11	36.90	74.00	-37.10	peak	H
3	4874.00	-3.85	42.95	39.10	74.00	-34.90	peak	V
4	7311.00	0.79	37.10	37.89	74.00	-36.11	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2452MHz(Ant 3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4904.00	-3.83	48.71	44.88	74.00	-29.12	peak	H
2	7356.00	0.92	42.26	43.18	74.00	-30.82	peak	H
3	4904.00	-3.83	48.13	44.30	74.00	-29.70	peak	V
4	7356.00	0.92	44.16	45.08	74.00	-28.92	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2412MHz (Ant 1+2+3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.00	-3.88	45.94	42.06	74.00	-31.94	peak	H
2	7236.00	0.61	45.80	46.41	74.00	-27.59	peak	H
3	4824.00	-3.88	45.83	41.95	74.00	-32.05	peak	V
4	7236.00	0.61	44.99	45.60	74.00	-28.40	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2437MHz (Ant 1+2+3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	44.89	41.04	74.00	-32.96	peak	H
2	7311.00	0.79	45.26	46.05	74.00	-27.95	peak	H
3	4874.00	-3.85	45.11	41.26	74.00	-32.74	peak	V
4	7311.00	0.79	45.41	46.20	74.00	-27.80	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(20MHz) at 2462MHz (Ant 1+2+3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4924.00	-3.82	45.42	41.60	74.00	-32.40	peak	H
2	7386.00	0.97	44.45	45.42	74.00	-28.58	peak	H
3	4924.00	-3.82	45.53	41.71	74.00	-32.29	peak	V
4	7386.00	0.97	44.33	45.30	74.00	-28.70	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2422MHz (Ant 1+2+3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4844.00	-3.87	46.69	42.82	74.00	-31.18	peak	H
2	7266.00	0.68	39.86	40.54	74.00	-33.46	peak	H
3	4844.00	-3.87	39.31	35.44	74.00	-38.56	peak	V
4	7266.00	0.68	38.06	38.74	74.00	-35.26	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2437MHz (Ant 1+2+3)

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4874.00	-3.85	38.86	35.01	74.00	-38.99	peak	H
2	7311.00	0.79	35.77	36.56	74.00	-37.44	peak	H
3	4874.00	-3.85	42.51	38.66	74.00	-35.34	peak	V
4	7311.00	0.79	37.76	38.55	74.00	-35.45	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

Engineer : Ternence	Site : EMC Lab AC 102
Limit : FCC_15_03M_PK	Margin : 6
EUT: NVR	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit 802.11n(40MHz) at 2452MHz (Ant 1+2+3)

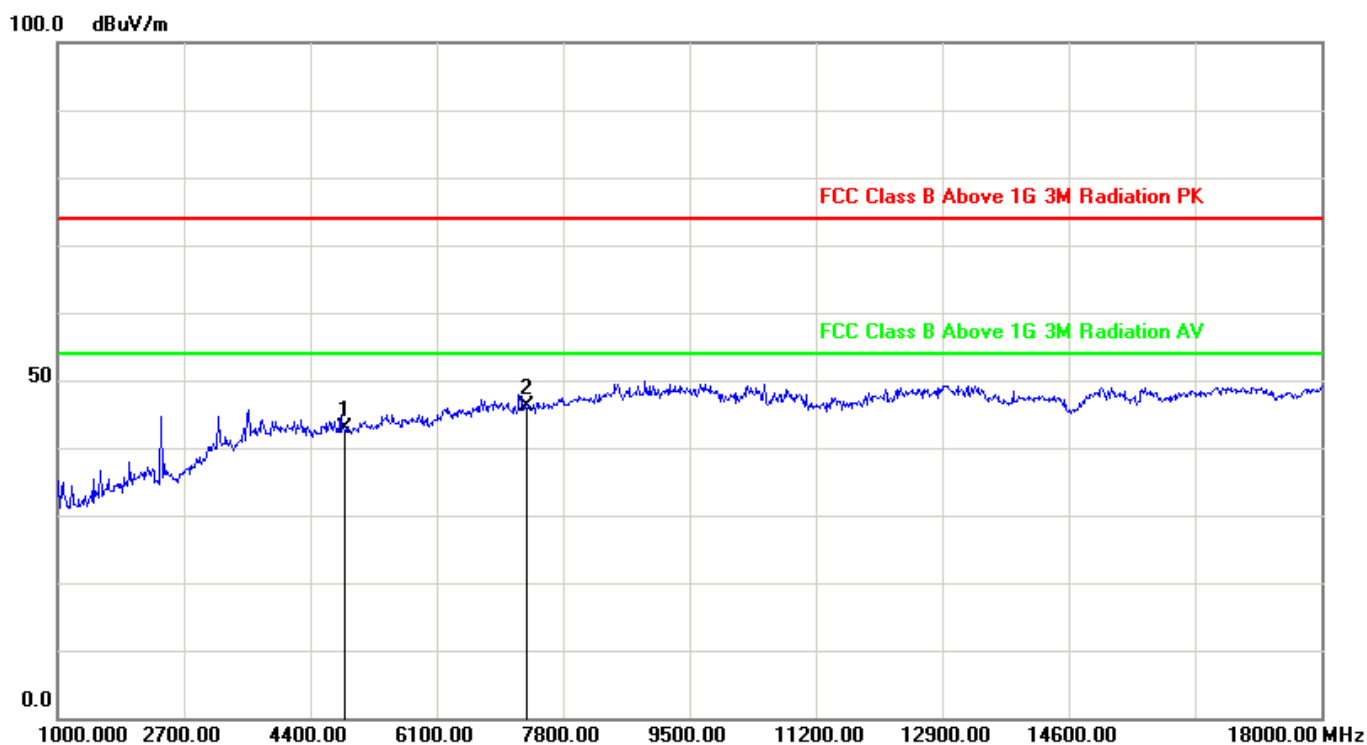
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4904.00	-3.83	49.10	45.27	74.00	-28.73	peak	H
2	7356.00	0.92	42.24	43.16	74.00	-30.84	peak	H
3	4904.00	-3.83	48.29	44.46	74.00	-29.54	peak	V
4	7356.00	0.92	44.25	45.17	74.00	-28.83	peak	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor

**The worst case of Radiated Emission 1~18GHz:**

Site: AC102	Time: 2016/09/04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Horizontal
EUT: 001	Power: AC 120V/60Hz
Note: Mode: Transmit 802.11n(20MHz) at 2437MHz Ant 1	



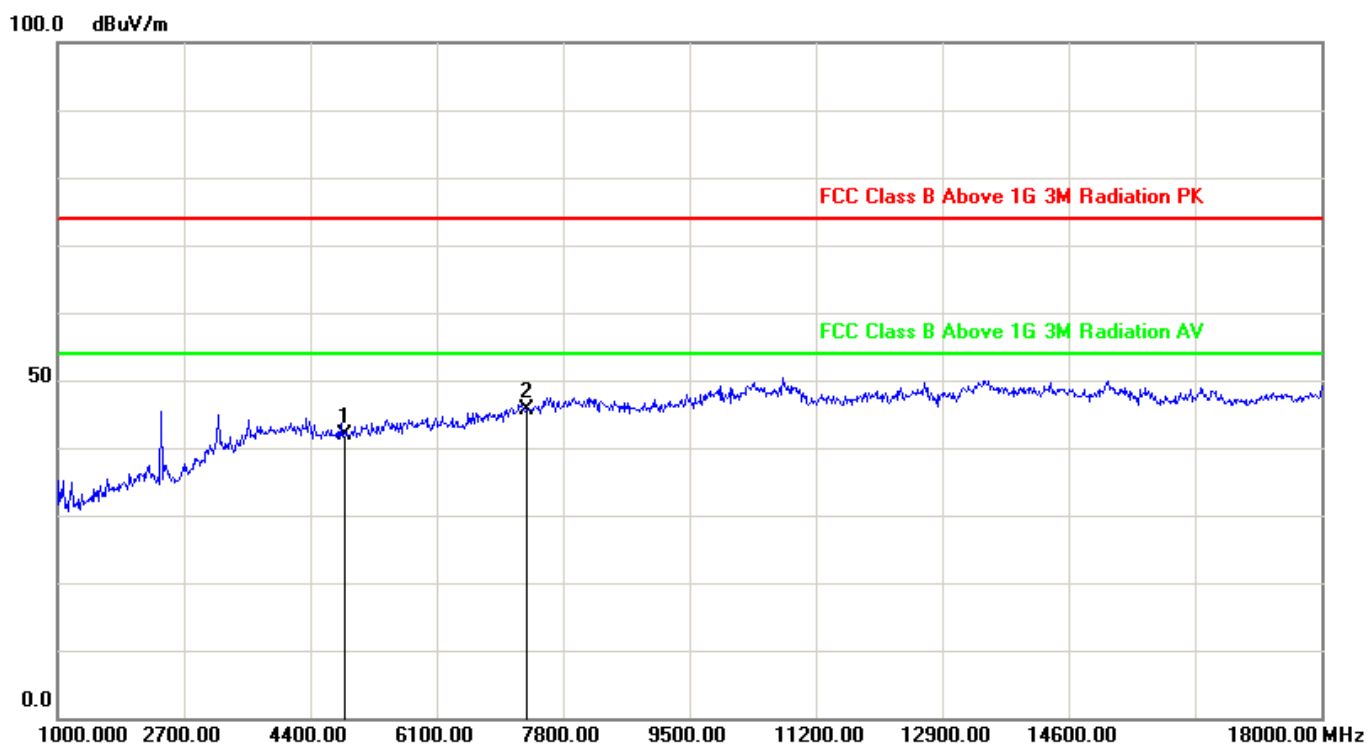
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	4874.000	-3.85	46.62	42.77	74.00	-31.23	peak
2	7311.000	0.79	47.36	48.15	74.00	-25.85	peak

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Site: AC102	Time: 2016/09/04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: N/A	Polarity: Vertical
EUT: 001	Power: AC 120V/60Hz
Note: Mode: Transmit 802.11n(20MHz) at 2437MHz Ant 1	



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	4874.000	-3.85	45.69	41.84	74.00	-32.16	peak
2	7311.000	0.79	44.79	45.58	74.00	-28.42	peak

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor
3. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~40GHz), therefore no data appear in the report.



6. 6dB Bandwidth Measurement

6.1 Test Limit

The minimum 6dB bandwidth shall be at least 500 kHz..

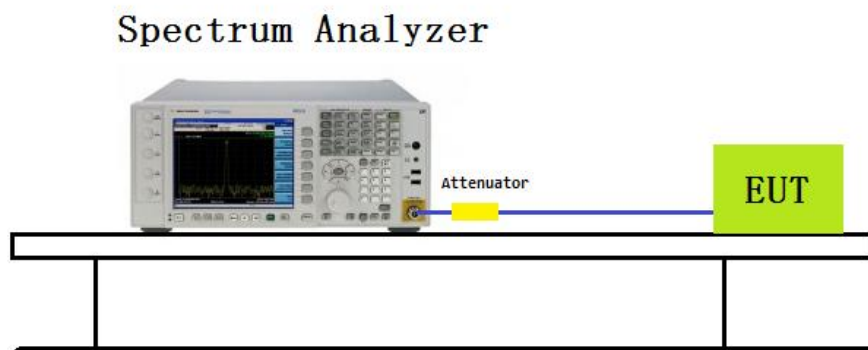
6.2 Test Standard

KDB 558074 D01v03r05 – Section 8.2 Option 2

6.3 Test Procedures

1. Set RBW=100KHz
2. VBW $\geq$ 3 $\times$ RBW
3. Detector=Peak
4. Trace mode=Max hold
5. Sweep time=Auto couple
6. Allow the trace to stabilize
7. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.

6.4 Test Setup Layout

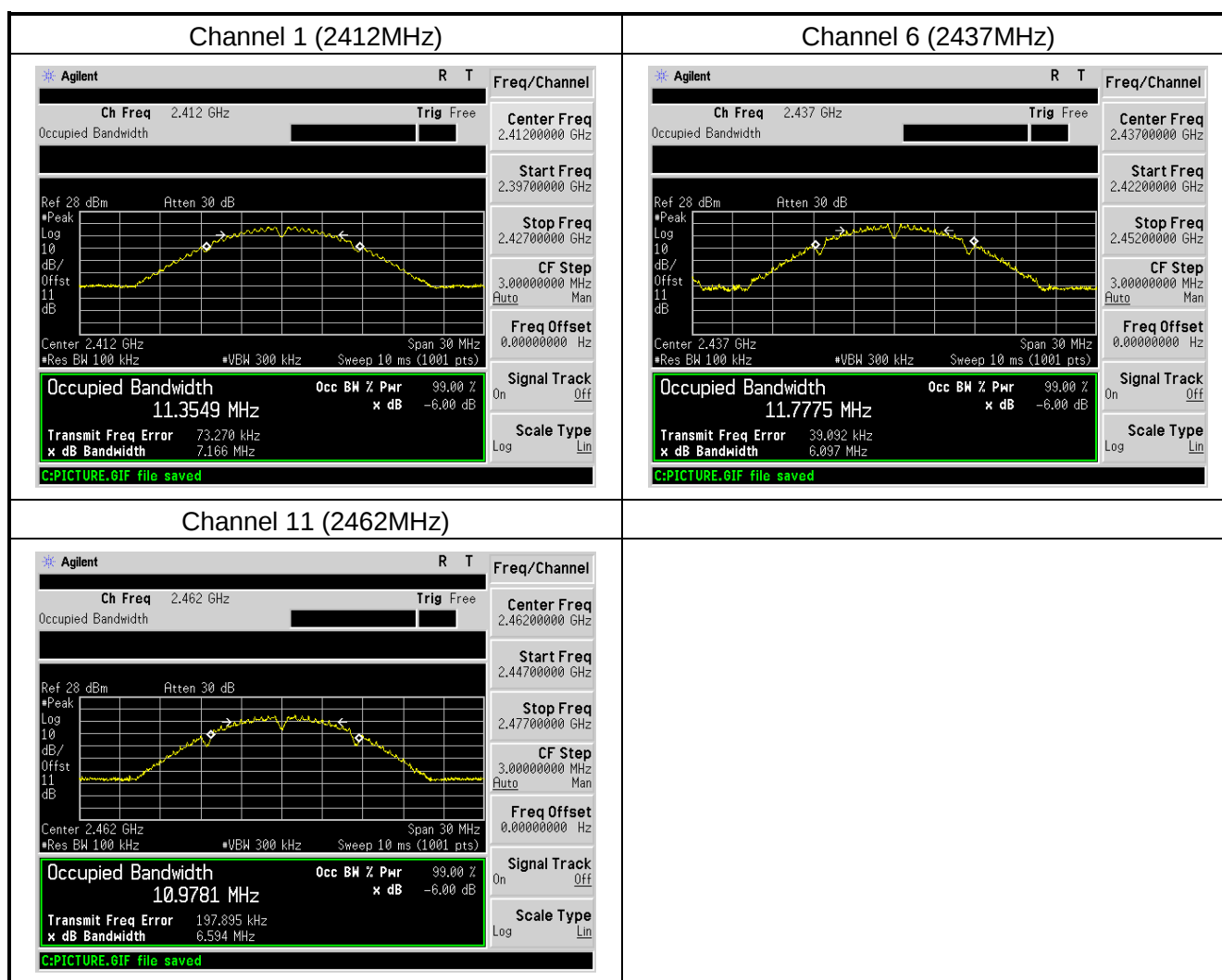




6.5 Test Result

Test Item	Occupied Bandwidth
Test Mode	Mode 1: Transmit by 802.11b (Ant 1)

Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
1	2412	7.166	11.3549
6	2437	6.097	11.7775
11	2462	6.594	10.9781





Test Item	Occupied Bandwidth
Test Mode	Mode 2: Transmit by 802.11g (Ant 1)

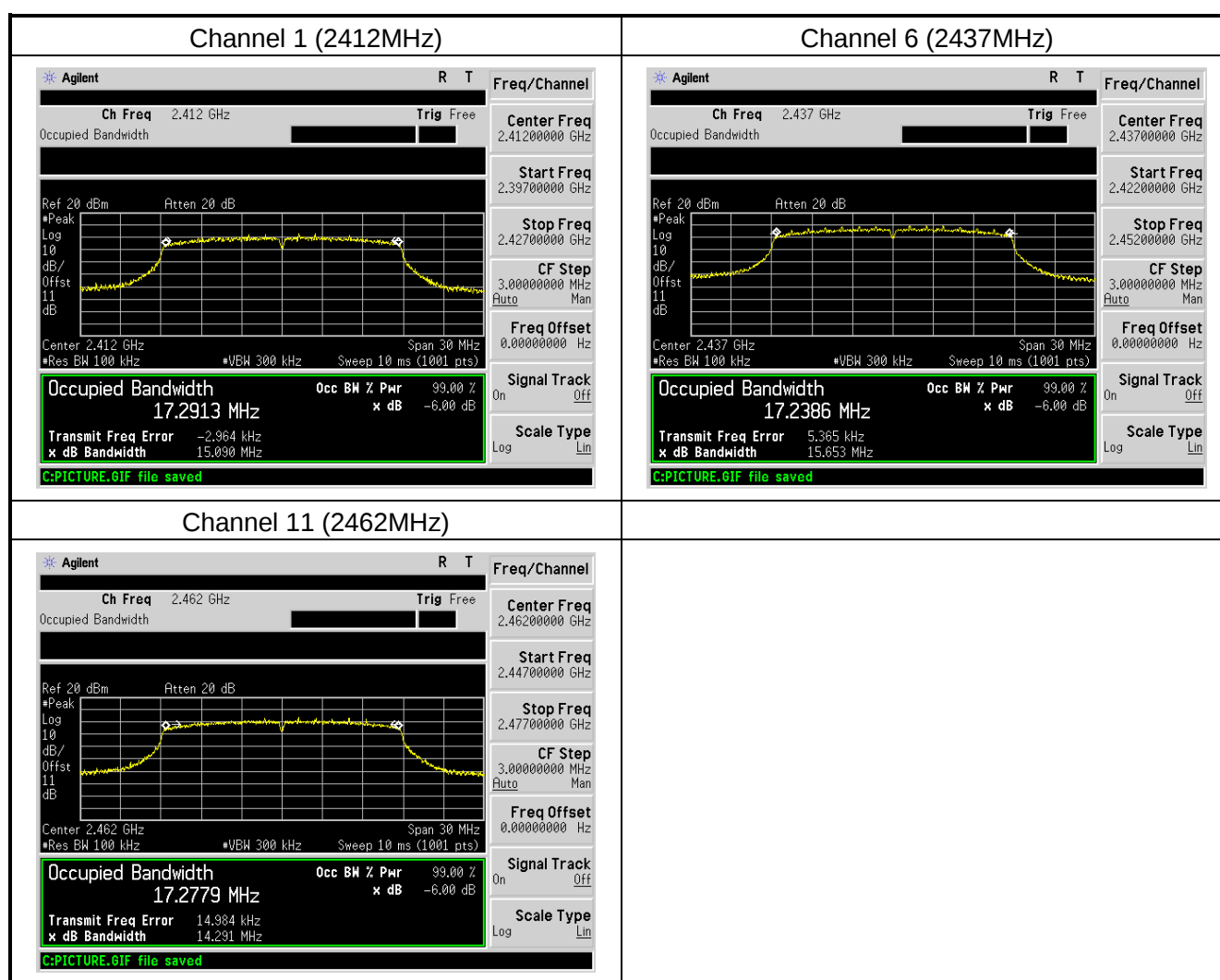
Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
1	2412	15.474	16.1564
6	2437	15.331	16.1970
11	2462	15.652	16.1665





Test Item	Occupied Bandwidth
Test Mode	Mode 3: Transmit by 802.11n(20MHz) (Ant 1)

Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
1	2412	15.090	17.2913
6	2437	15.653	17.2386
11	2462	14.291	17.2779





Test Item	Occupied Bandwidth
Test Mode	Mode 4: Transmit by 802.11n(40MHz) (Ant 1)

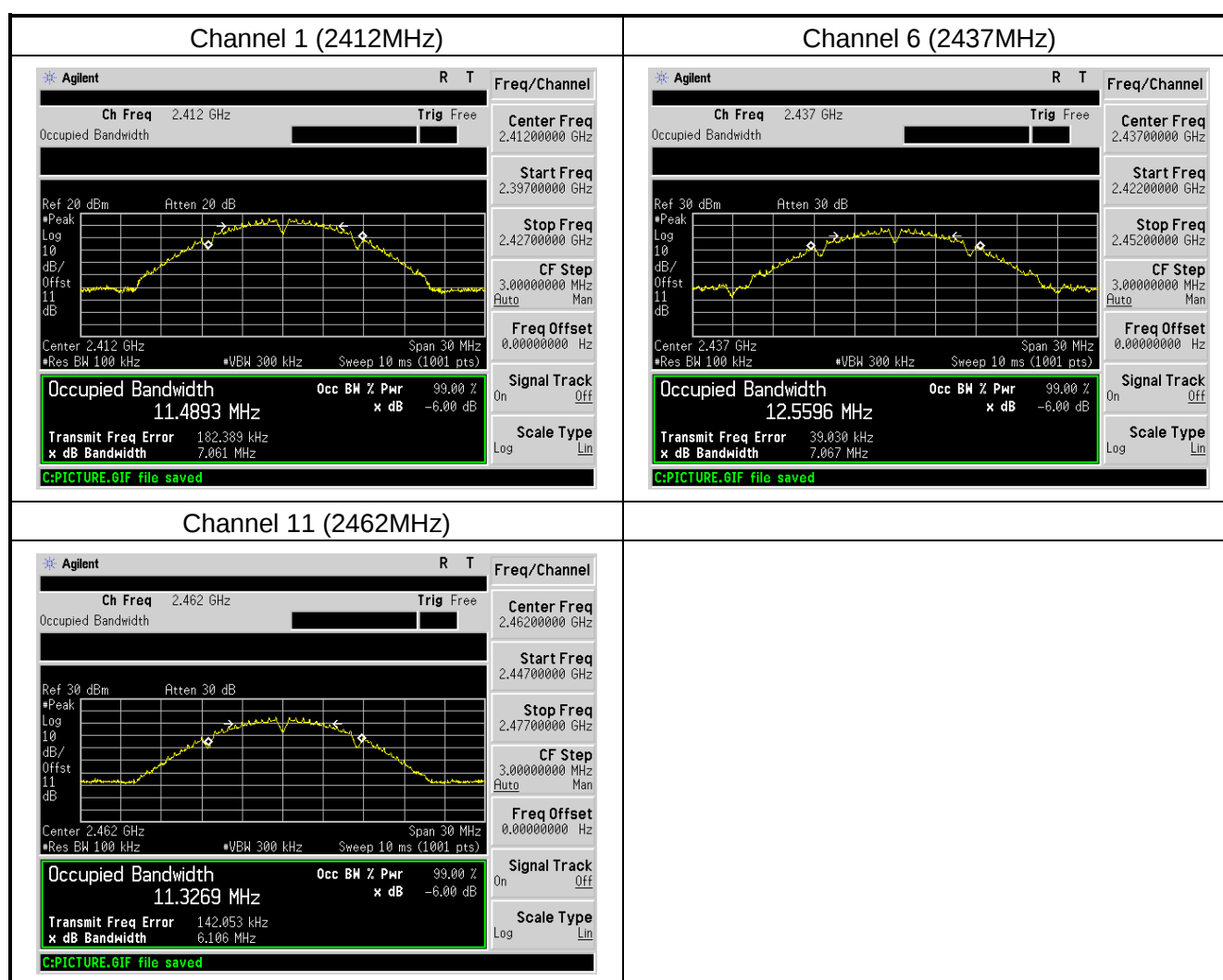
Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
3	2422	33.774	35.6810
6	2437	33.868	35.6043
9	2452	32.463	35.6478





Test Item	Occupied Bandwidth
Test Mode	Mode 1: Transmit by 802.11b (Ant 2)

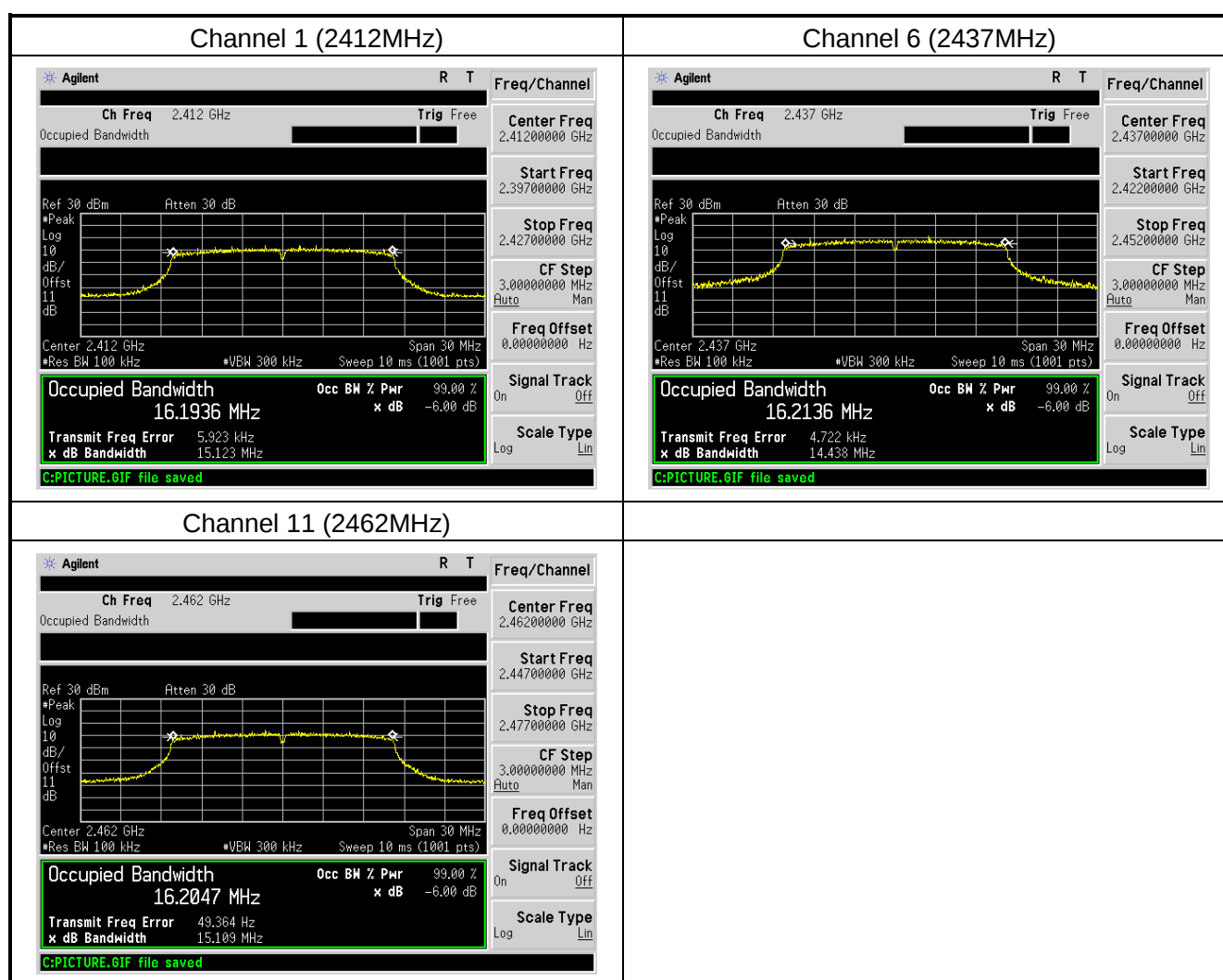
Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
1	2412	7.061	11.4893
6	2437	7.067	12.5596
11	2462	6.106	11.3269





Test Item	Occupied Bandwidth
Test Mode	Mode 2: Transmit by 802.11g (Ant 2)

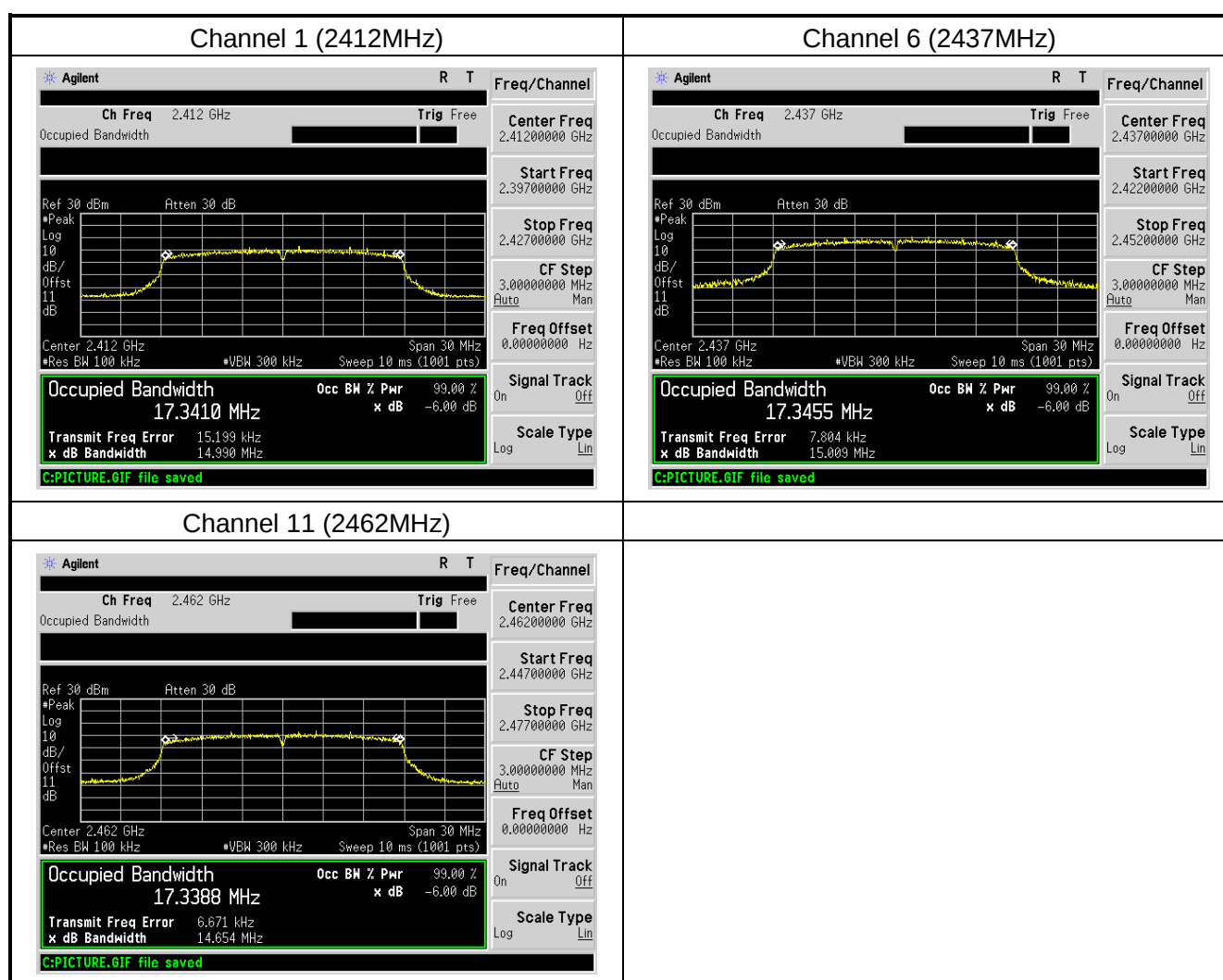
Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
1	2412	15.123	16.1936
6	2437	14.438	16.2136
11	2462	15.109	16.2047





Test Item	Occupied Bandwidth
Test Mode	Mode 3: Transmit by 802.11n(20MHz) (Ant 2)

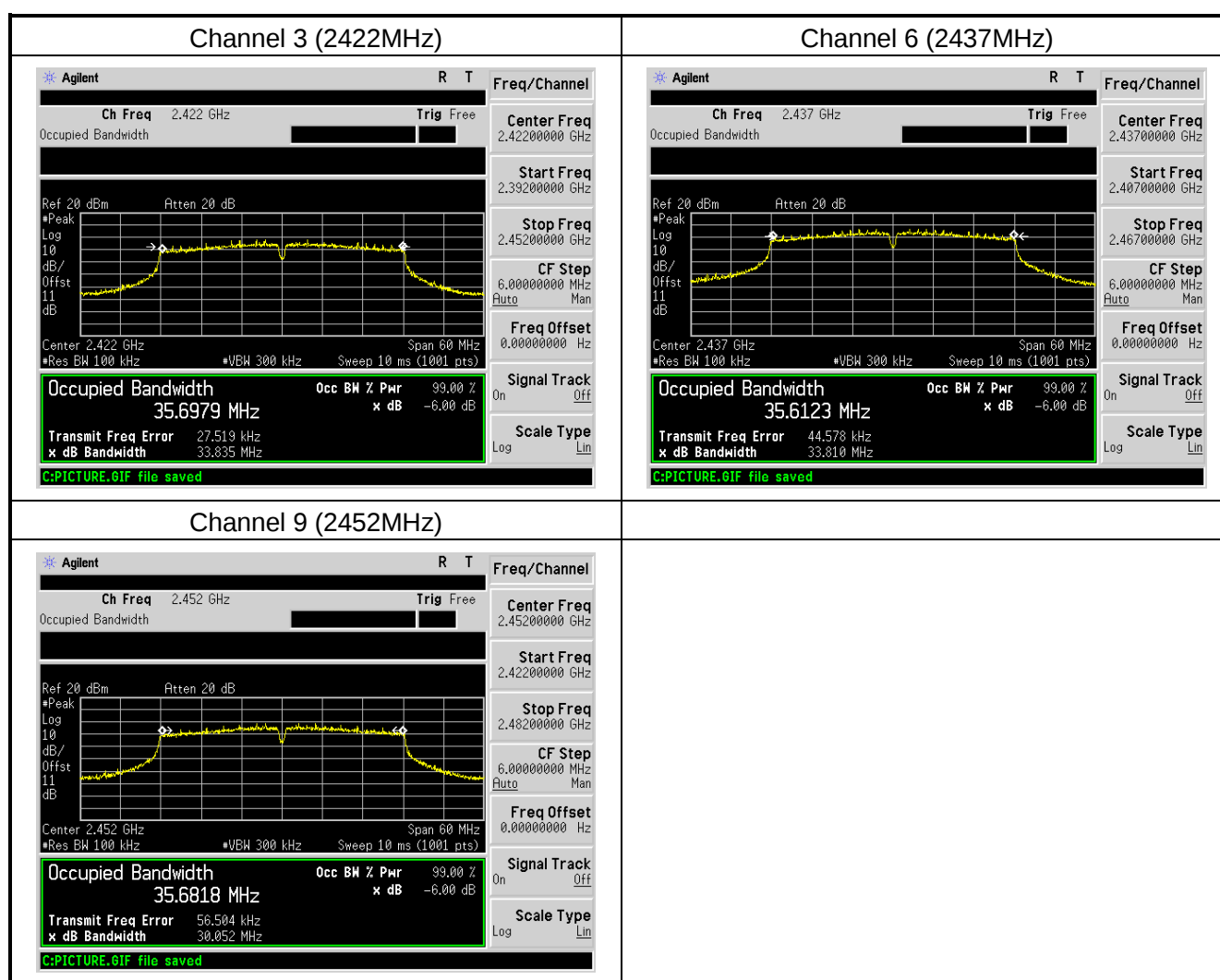
Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
1	2412	14.990	17.3410
6	2437	15.009	17.3455
11	2462	14.654	17.3388





Test Item	Occupied Bandwidth
Test Mode	Mode 4: Transmit by 802.11n(40MHz) (Ant 2)

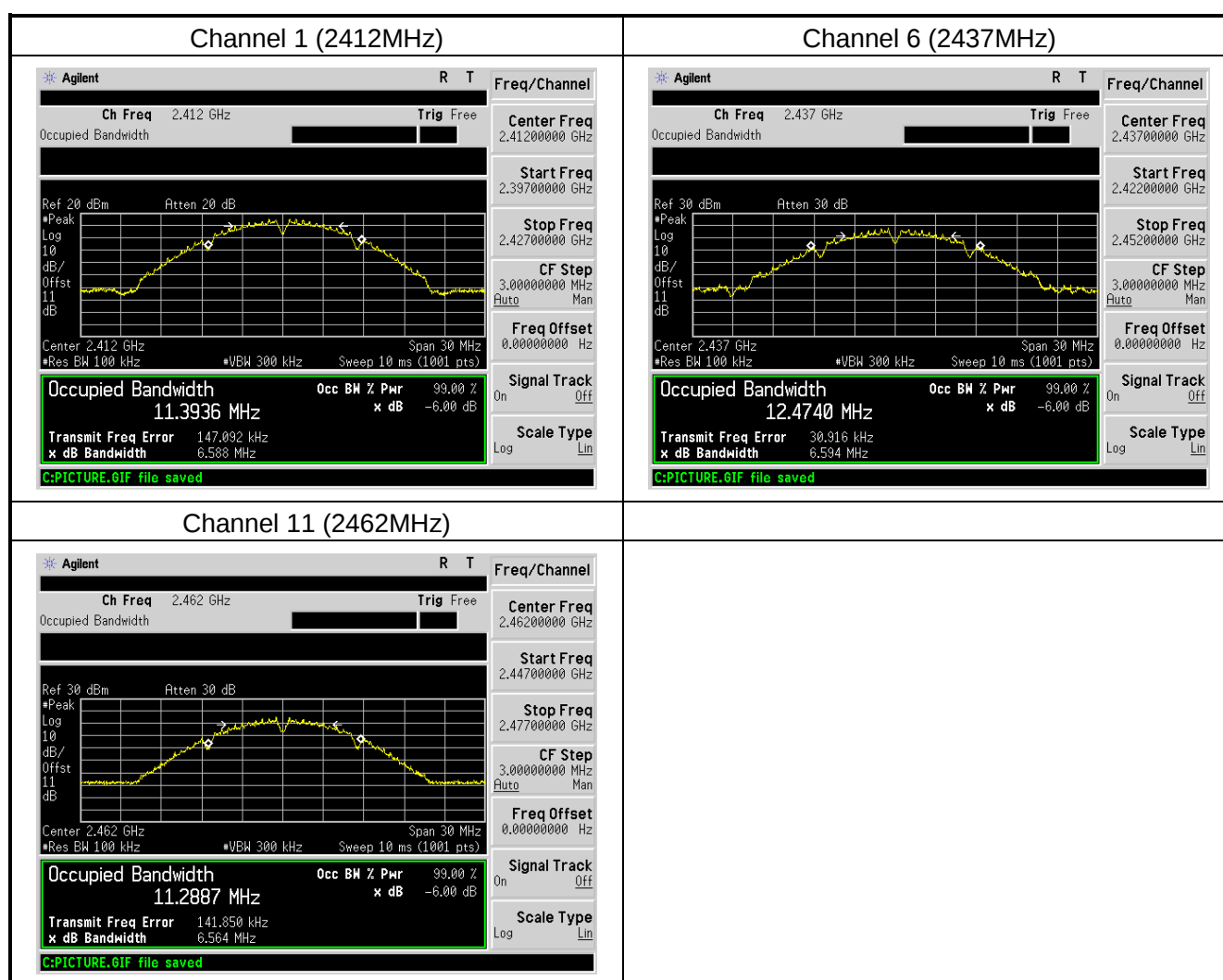
Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
3	2422	33.835	35.6979
6	2437	33.810	35.6123
9	2452	30.052	35.6818





Test Item	Occupied Bandwidth
Test Mode	Mode 1: Transmit by 802.11b (Ant 3)

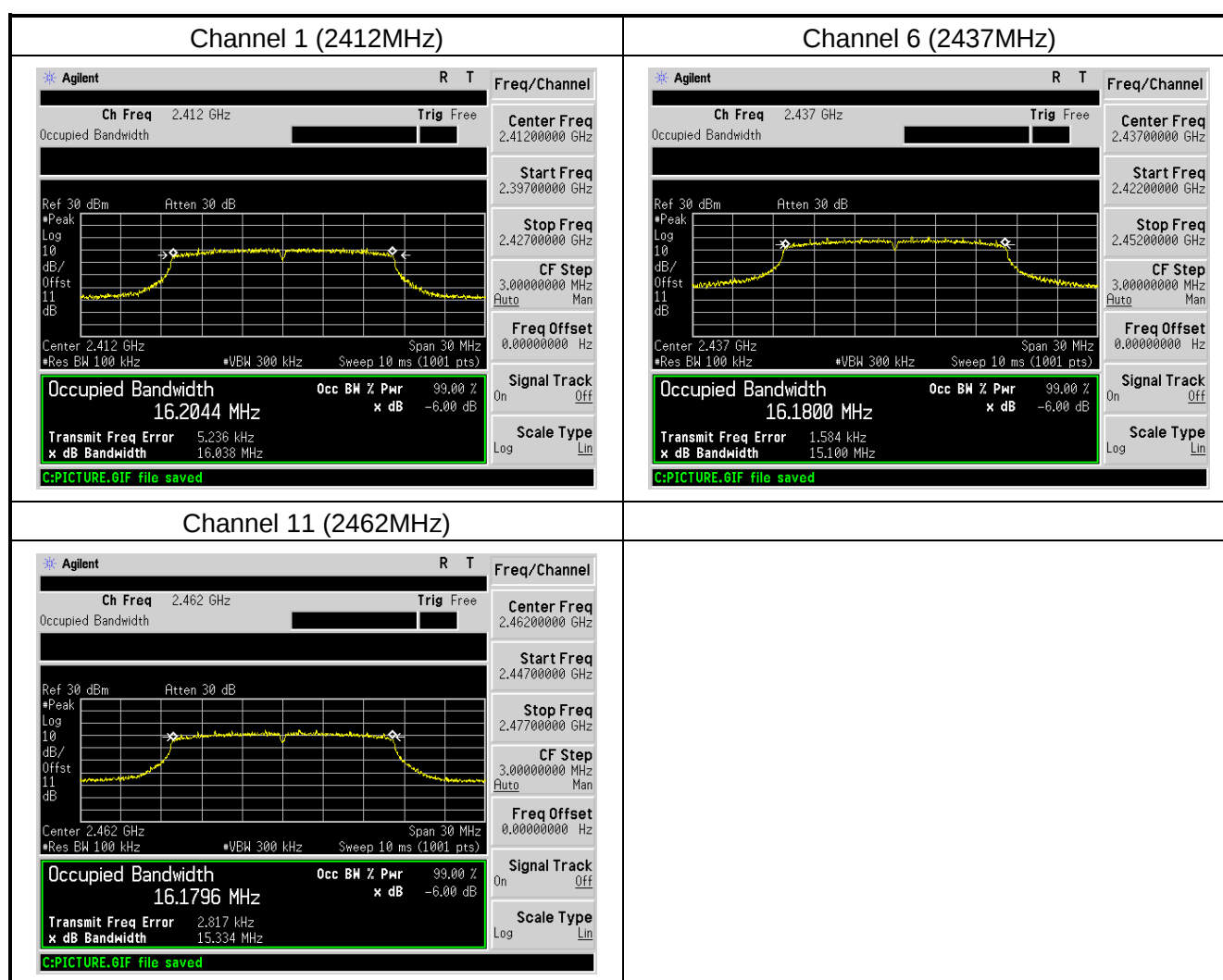
Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
1	2412	6.588	11.3936
6	2437	6.594	12.4740
11	2462	6.564	11.2887





Test Item	Occupied Bandwidth
Test Mode	Mode 2: Transmit by 802.11g (Ant 3)

Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
1	2412	16.038	16.2044
6	2437	15.100	16.1800
11	2462	15.334	16.1796





Test Item	Occupied Bandwidth
Test Mode	Mode 3: Transmit by 802.11n(20MHz) (Ant 3)

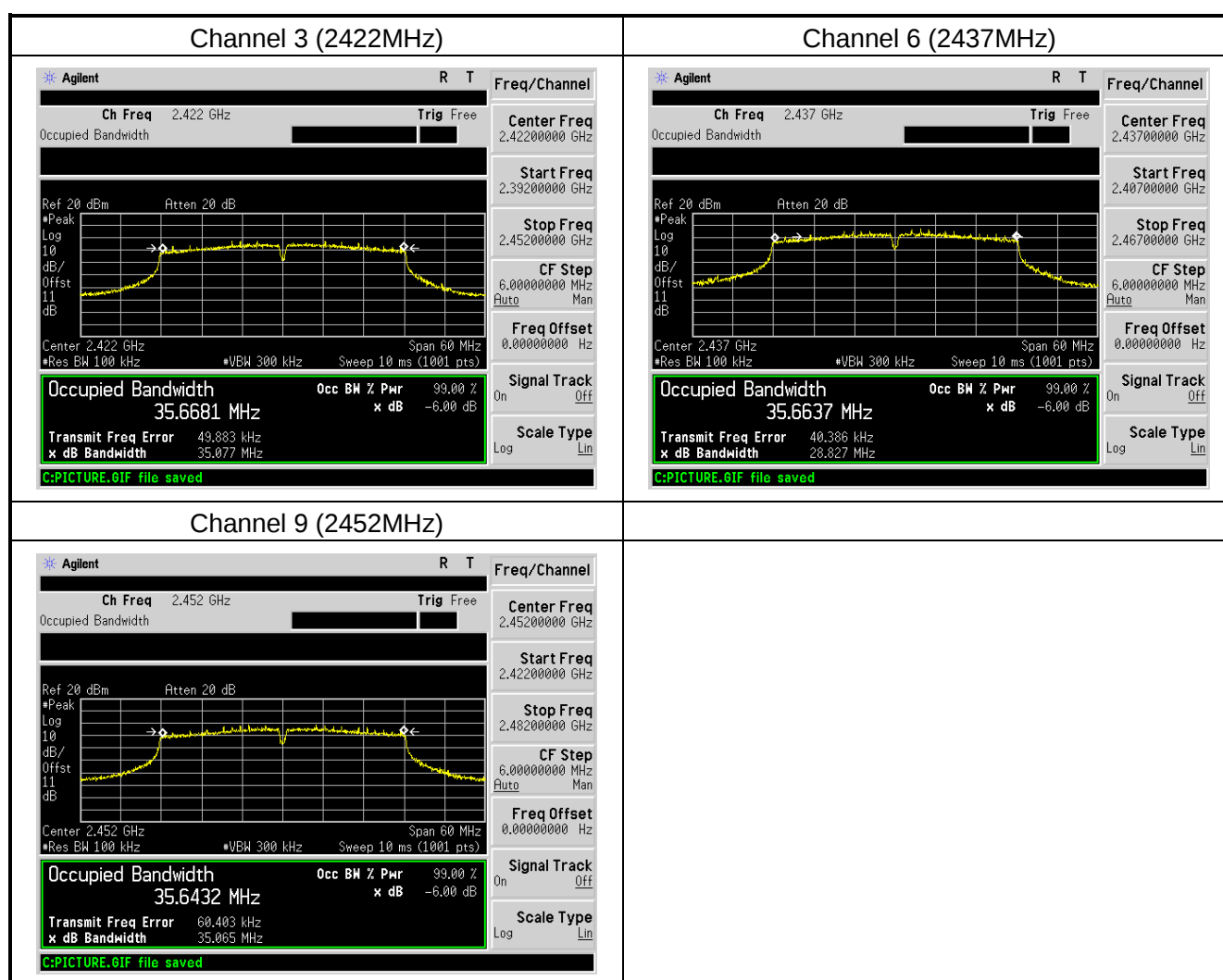
Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
1	2412	15.251	17.2845
6	2437	15.009	17.2899
11	2462	15.042	17.2741





Test Item	Occupied Bandwidth
Test Mode	Mode 4: Transmit by 802.11n(40MHz) (Ant 3)

Channel No.	Frequency(MHz)	6dB Bandwidth(MHz)	99% Bandwidth(MHz)
3	2422	35.077	35.6681
6	2437	28.827	35.6637
9	2452	35.065	35.6432





7. Output Power Measurement

7.1 Test Limit

The Maximum Output Power Measurement is 1W (30dBm).

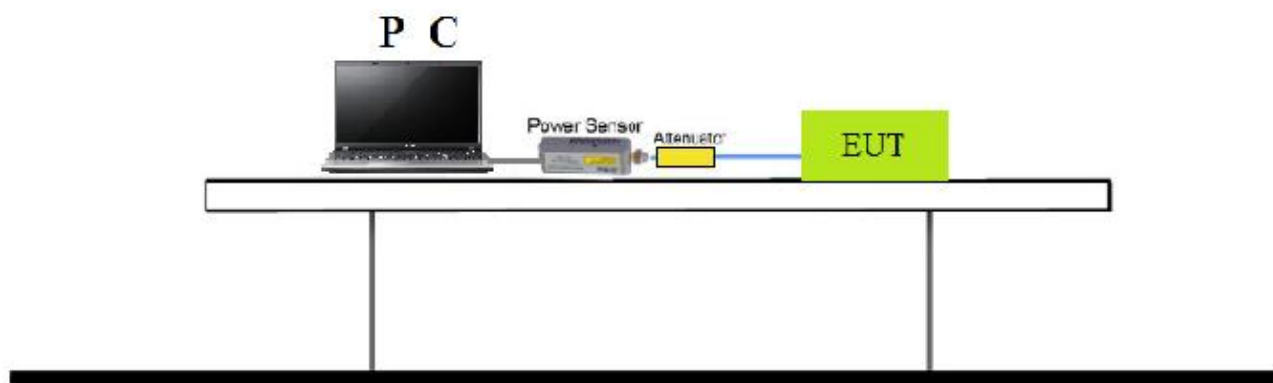
7.2 Test Standard

KDB 558074 D01v03r05 - Section 9.1.2 PKPM1 Peak Power Method (for signals with BW $\leq$ 50MHz)

7.3 Test Procedures

Out power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The pulse sensor employs a VBW = 50MHz so this method was only used for signals whose DTS bandwidth was less than or equal to 50MHz.

7.4 Test Setup Layout





7.5 Test Result

For Peak Power :

Ant 1

Test Mode	Channel No.	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Result
802.11b	1	2412	26.17	30	Pass
	6	2437	28.77	30	Pass
	11	2462	26.26	30	Pass
802.11g	1	2412	23.62	30	Pass
	6	2437	29.34	30	Pass
	11	2462	24.39	30	Pass
802.11n(20MHz)	1	2412	23.83	30	Pass
	6	2437	29.20	30	Pass
	11	2462	24.65	30	Pass
802.11n(40MHz)	3	2422	21.07	30	Pass
	6	2437	29.37	30	Pass
	9	2452	22.19	30	Pass

Ant 2

Test Mode	Channel No.	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Result
802.11b	1	2412	26.58	30	Pass
	6	2437	28.74	30	Pass
	11	2462	26.16	30	Pass
802.11g	1	2412	24.34	30	Pass
	6	2437	29.41	30	Pass
	11	2462	25.18	30	Pass
802.11n(20MHz)	1	2412	23.83	30	Pass
	6	2437	29.50	30	Pass
	11	2462	24.93	30	Pass
802.11n(40MHz)	3	2422	21.67	30	Pass
	6	2437	29.39	30	Pass
	9	2452	22.15	30	Pass

**Ant 3**

Test Mode	Channel No.	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Result
802.11b	1	2412	23.78	30	Pass
	6	2437	26.77	30	Pass
	11	2462	22.26	30	Pass
802.11g	1	2412	21.44	30	Pass
	6	2437	28.23	30	Pass
	11	2462	20.72	30	Pass
802.11n(20MHz)	1	2412	20.30	30	Pass
	6	2437	28.26	30	Pass
	11	2462	20.41	30	Pass
802.11n(40MHz)	3	2422	18.03	30	Pass
	6	2437	28.13	30	Pass
	9	2452	18.74	30	Pass

Ant 1+2+3

Test Mode	Channel No.	Frequency (MHz)	Peak Output Power (dBm)				Limit (dBm)	Result
			Ant 1	Ant 2	Ant 3	Total		
802.11n(20MHz)	1	2412	19.14	19.60	18.87	23.99	26.23	Pass
	6	2437	20.32	21.55	21.21	25.83	26.23	Pass
	11	2462	18.05	19.48	18.74	23.57	26.23	Pass
802.11n(40MHz)	3	2422	16.28	16.75	16.23	21.20	26.23	Pass
	6	2437	20.93	21.16	20.67	25.70	26.23	Pass
	9	2452	17.31	18.55	17.56	22.61	26.23	Pass

Note: Total Limit (dBm)=30dBm-(9.77dBi-6dBi)=26.23dBm

**For Average Power :****Ant 1**

Test Mode	Channel No.	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)	Result
802.11b	1	2412	22.86	30	Pass
	6	2437	25.73	30	Pass
	11	2462	22.99	30	Pass
802.11g	1	2412	14.45	30	Pass
	6	2437	20.51	30	Pass
	11	2462	15.15	30	Pass
802.11n(20MHz)	1	2412	13.23	30	Pass
	6	2437	20.17	30	Pass
	11	2462	15.07	30	Pass
802.11n(40MHz)	3	2422	11.70	30	Pass
	6	2437	20.40	30	Pass
	9	2452	12.93	30	Pass

Ant 2

Test Mode	Channel No.	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)	Result
802.11b	1	2412	23.56	30	Pass
	6	2437	26.15	30	Pass
	11	2462	23.08	30	Pass
802.11g	1	2412	15.31	30	Pass
	6	2437	21.86	30	Pass
	11	2462	16.08	30	Pass
802.11n(20MHz)	1	2412	14.39	30	Pass
	6	2437	21.82	30	Pass
	11	2462	15.52	30	Pass
802.11n(40MHz)	3	2422	12.39	30	Pass
	6	2437	21.66	30	Pass
	9	2452	12.66	30	Pass

**Ant 3**

Test Mode	Channel No.	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)	Result
802.11b	1	2412	20.52	30	Pass
	6	2437	23.46	30	Pass
	11	2462	19.96	30	Pass
802.11g	1	2412	12.06	30	Pass
	6	2437	19.56	30	Pass
	11	2462	11.48	30	Pass
802.11n(20MHz)	1	2412	10.74	30	Pass
	6	2437	19.54	30	Pass
	11	2462	10.92	30	Pass
802.11n(40MHz)	3	2422	8.56	30	Pass
	6	2437	19.18	30	Pass
	9	2452	9.59	30	Pass

Ant 1+2+3

Test Mode	Channel No.	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)	Result
			Ant 1	Ant 2	Ant 3	Total		
802.11n(20MHz)	1	2412	9.40	9.84	9.25	14.28	26.23	Pass
	6	2437	10.62	11.62	11.26	15.96	26.23	Pass
	11	2462	8.74	10.12	9.07	14.12	26.23	Pass
802.11n(40MHz)	3	2422	6.70	7.20	6.72	11.65	26.23	Pass
	6	2437	10.48	11.45	10.85	15.72	26.23	Pass
	9	2452	7.70	9.03	8.08	13.08	26.23	Pass

Note: Total Limit (dBm)=30dBm-(9.77dBi-6dBi)=26.23dBm



8. Power Spectral Density Measurement

8.1 Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band.

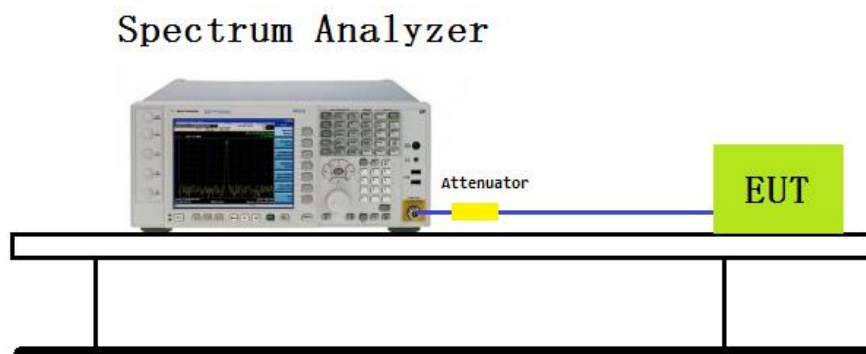
8.2 Test Standard

KDB 558074 D01v03r05 - Section 10.2 Method PKPSD

8.3 Test Procedures

1. Set RBW=3kHz
2. Set RBW=10kHz
3. Span = 1.5 times the DTS channel bandwidth
4. Detector=Peak
5. Trace mode=Max hold
6. Sweep time=Auto couple
7. Allow the trace to stabilize
8. Analyzer was set to the center frequency of the DTS channel under investigation.

8.4 Test Setup Layout



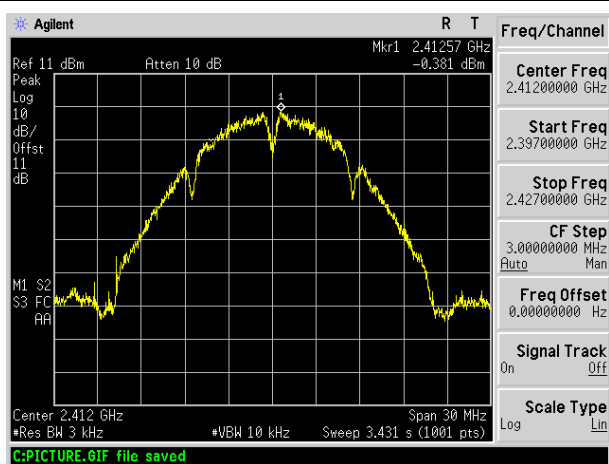


8.5 Test Result

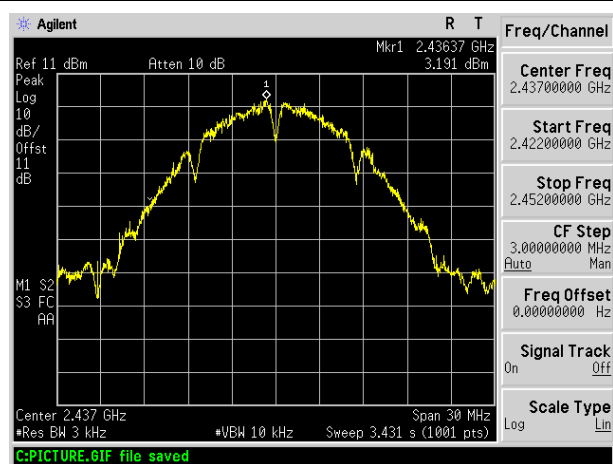
Test Item	Power Spectral Density
Test Mode	Mode 1: Transmit by 802.11b (Ant 1)

Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	2412	-0.381	8	Pass
6	2437	3.191	8	Pass
11	2462	-0.101	8	Pass

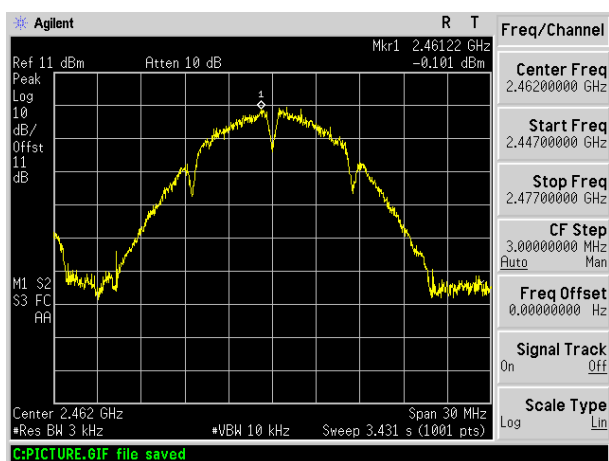
Channel 1 (2412MHz)



Channel 6 (2437MHz)



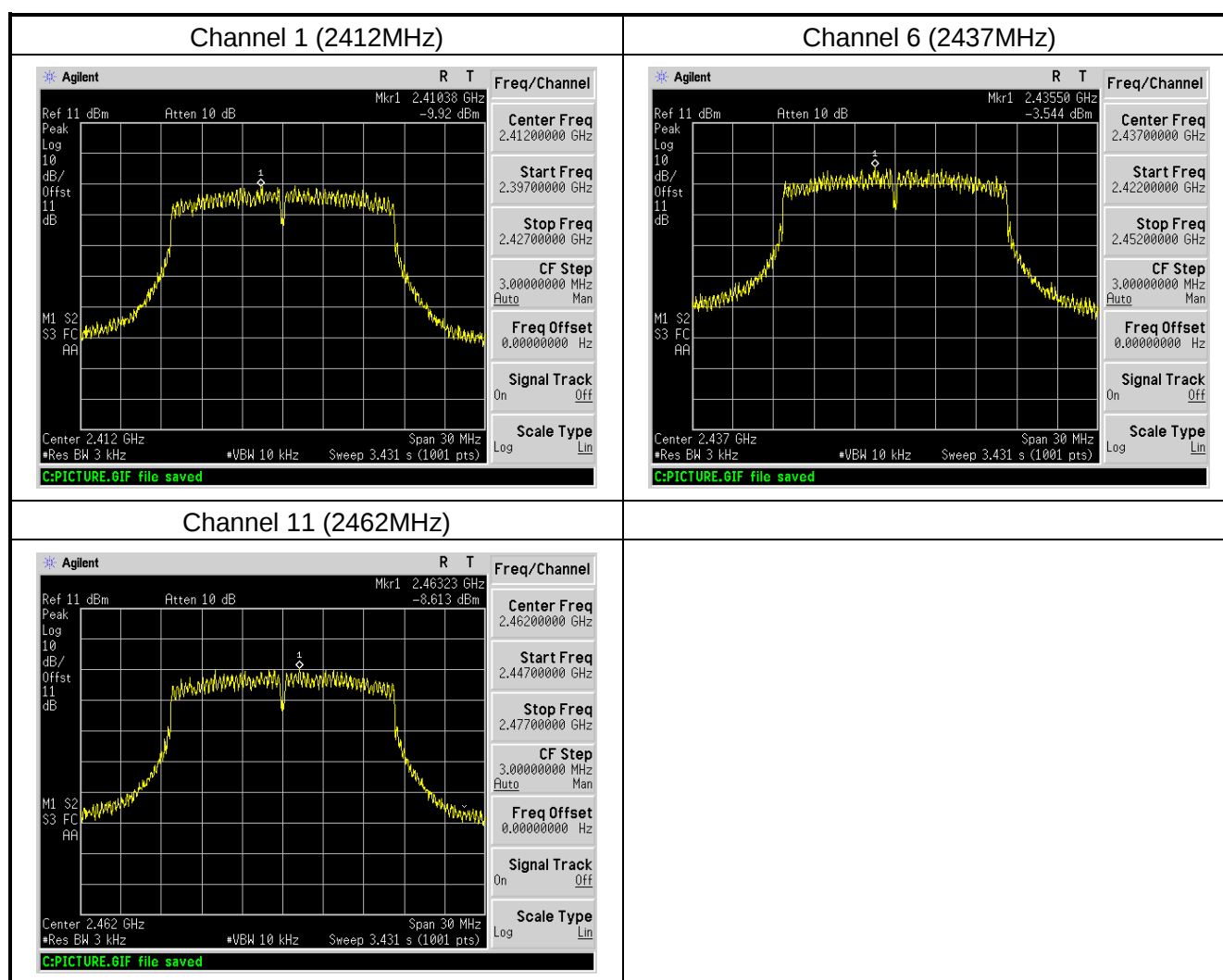
Channel 11 (2462MHz)





Test Item	Power Spectral Density
Test Mode	Mode 2: Transmit by 802.11g (Ant 1)

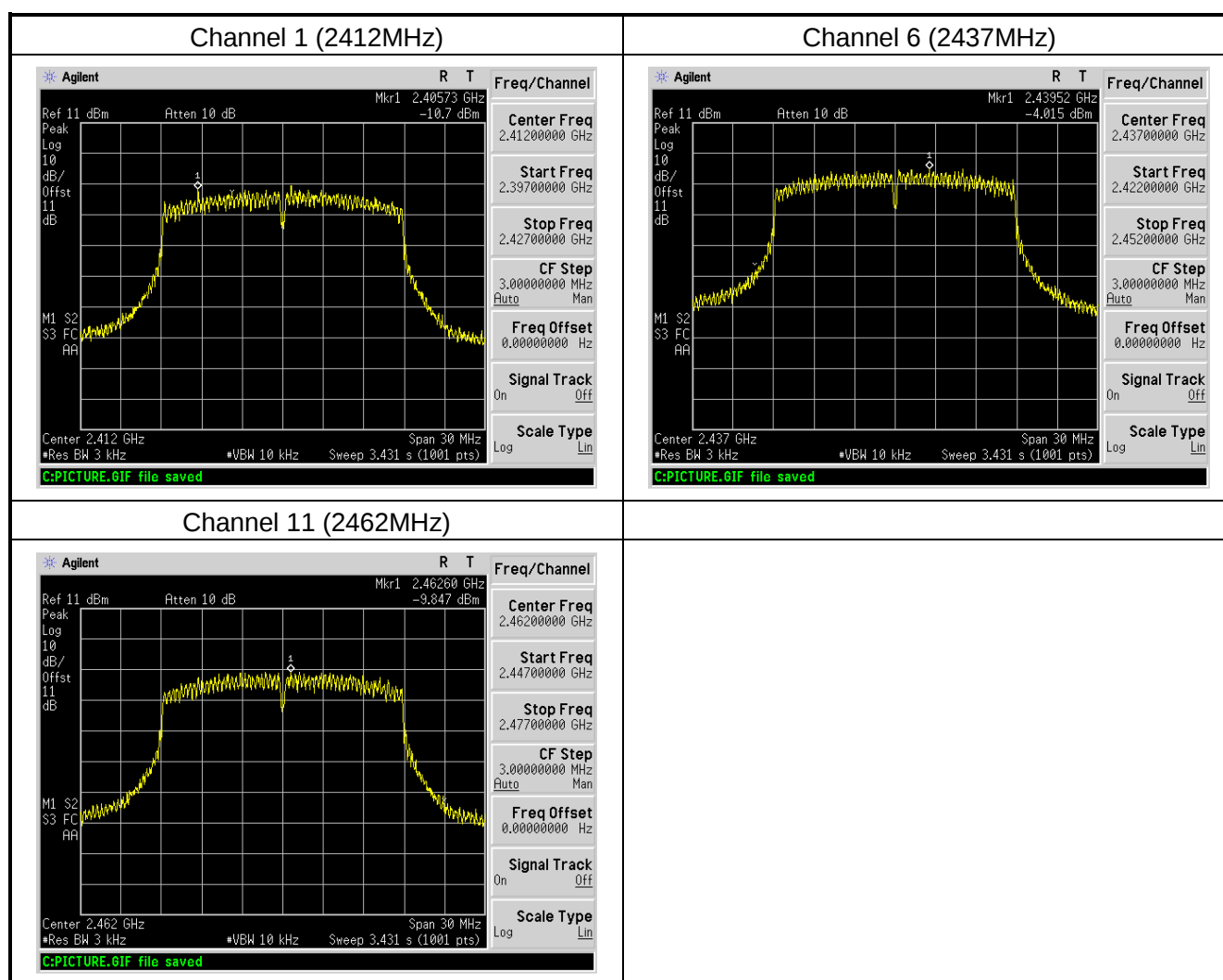
Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	2412	-9.920	8	Pass
6	2437	-3.544	8	Pass
11	2462	-8.613	8	Pass





Test Item	Power Spectral Density
Test Mode	Mode 3: Transmit by 802.11n(20MHz) (Ant 1)

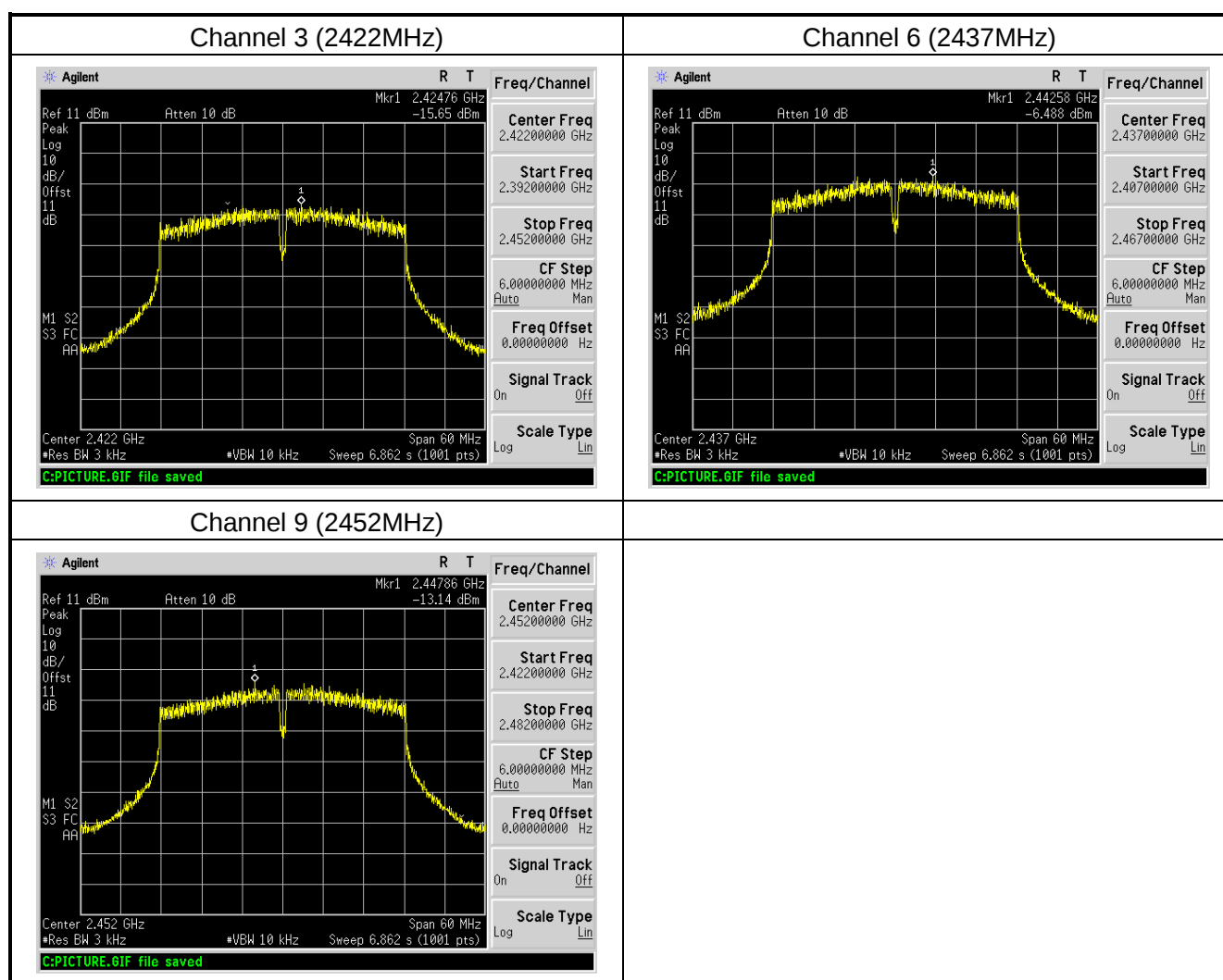
Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	2412	-10.700	8	Pass
6	2437	-4.015	8	Pass
11	2462	-9.847	8	Pass





Test Item	Power Spectral Density
Test Mode	Mode 4: Transmit by 802.11n(40MHz) (Ant 1)

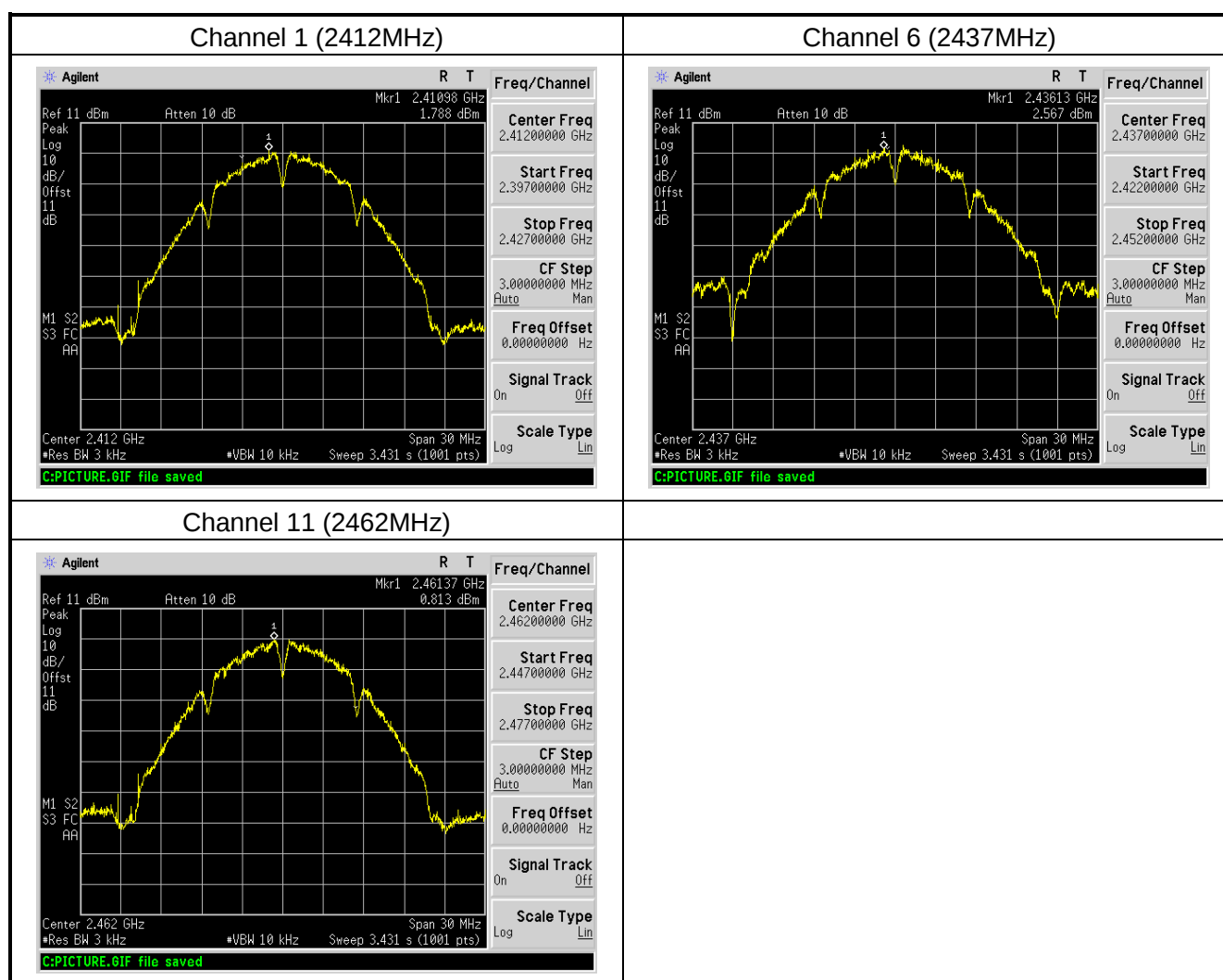
Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
3	2422	-15.650	8	Pass
6	2437	-6.488	8	Pass
9	2452	-13.140	8	Pass





Test Item	Power Spectral Density
Test Mode	Mode 1: Transmit by 802.11b (Ant 2)

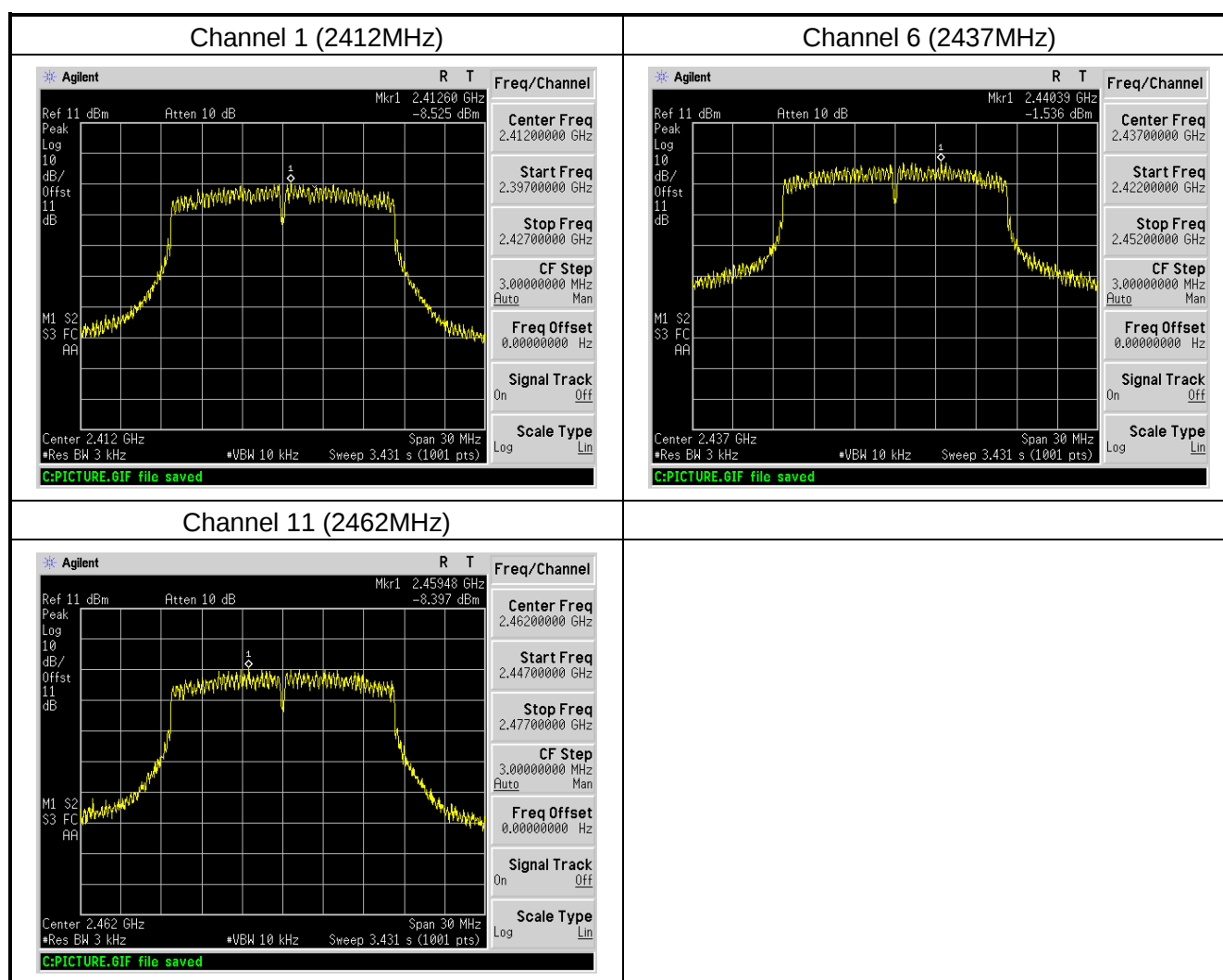
Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	2412	1.788	8	Pass
6	2437	2.567	8	Pass
11	2462	0.813	8	Pass





Test Item	Power Spectral Density
Test Mode	Mode 2: Transmit by 802.11g (Ant 2)

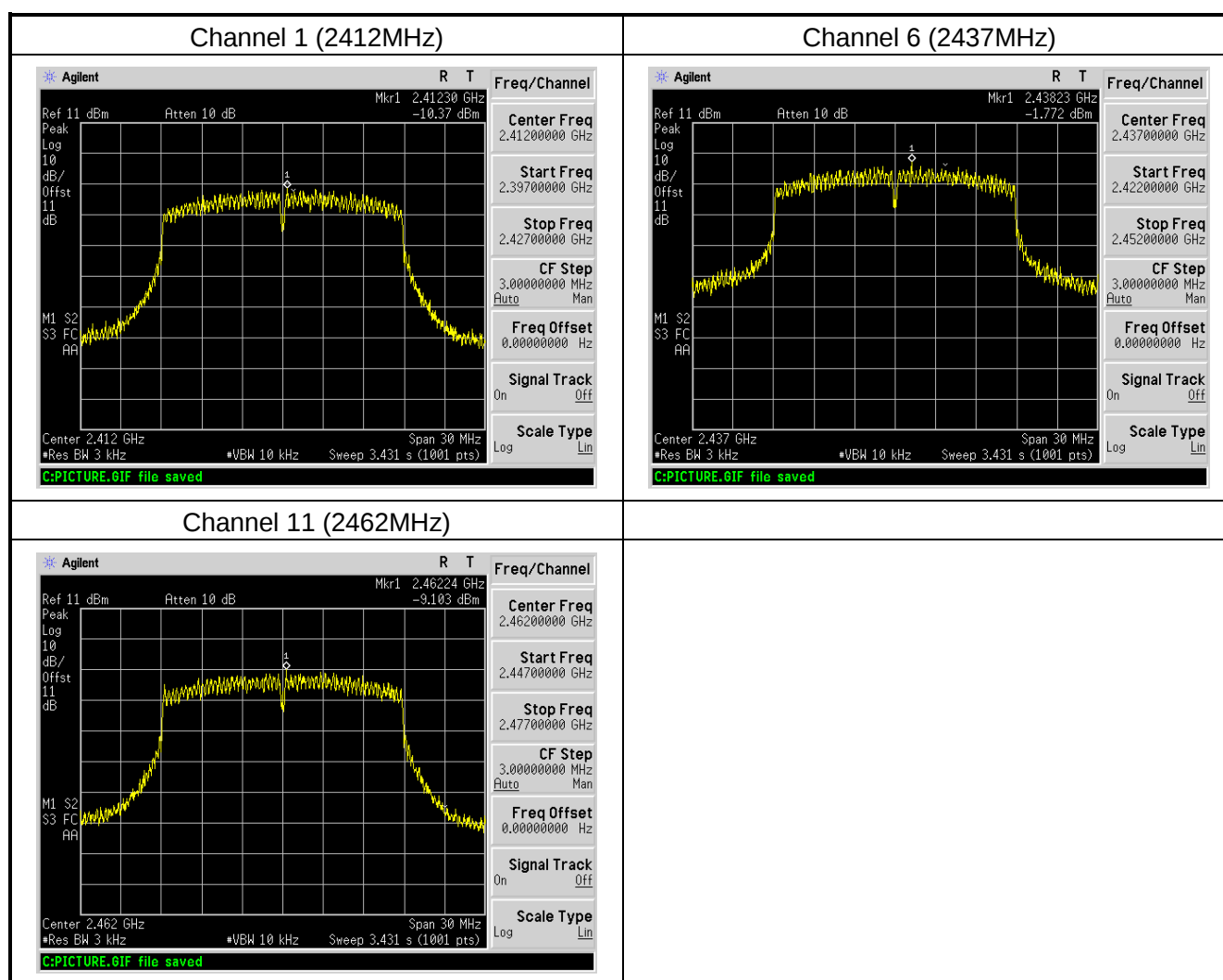
Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	2412	-8.525	8	Pass
6	2437	-1.536	8	Pass
11	2462	-8.397	8	Pass





Test Item	Power Spectral Density
Test Mode	Mode 3: Transmit by 802.11n(20MHz) (Ant 2)

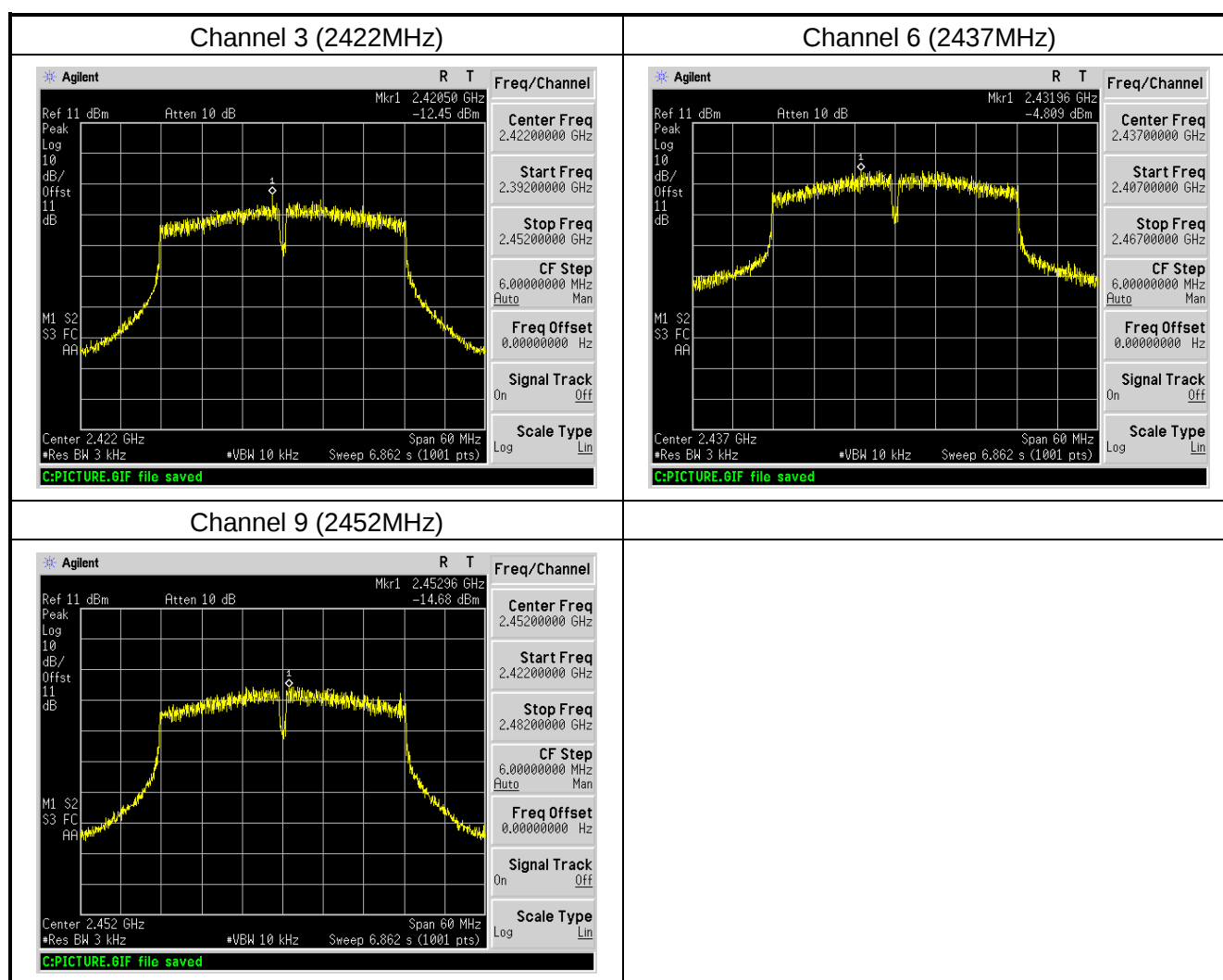
Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	2412	-10.370	8	Pass
6	2437	-1.772	8	Pass
11	2462	-9.103	8	Pass





Test Item	Power Spectral Density
Test Mode	Mode 4: Transmit by 802.11n(40MHz) (Ant 2)

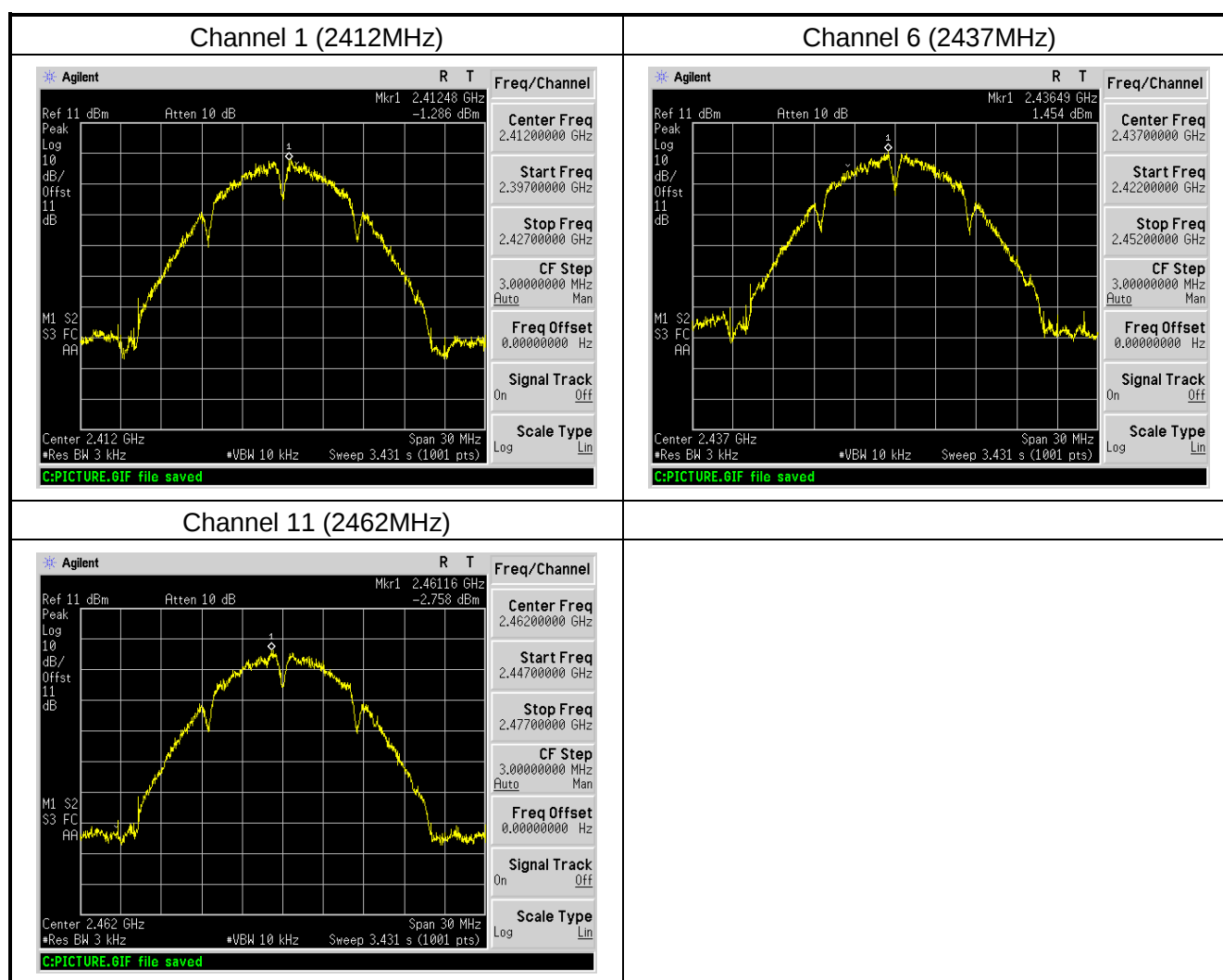
Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
3	2422	-12.450	8	Pass
6	2437	-4.809	8	Pass
9	2452	-14.680	8	Pass





Test Item	Power Spectral Density
Test Mode	Mode 1: Transmit by 802.11b (Ant 3)

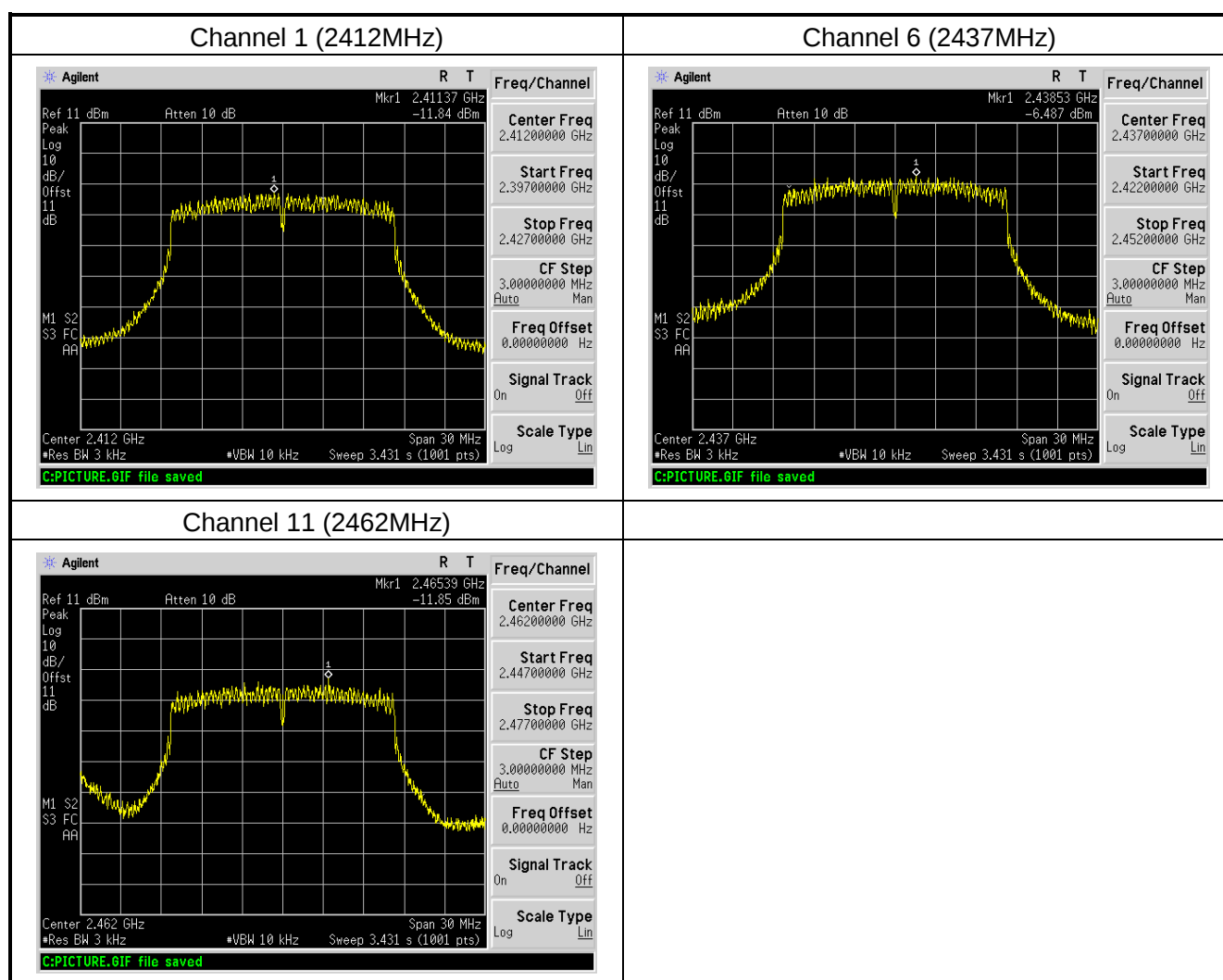
Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	2412	-1.286	8	Pass
6	2437	1.454	8	Pass
11	2462	-2.758	8	Pass





Test Item	Power Spectral Density
Test Mode	Mode 2: Transmit by 802.11g (Ant 3)

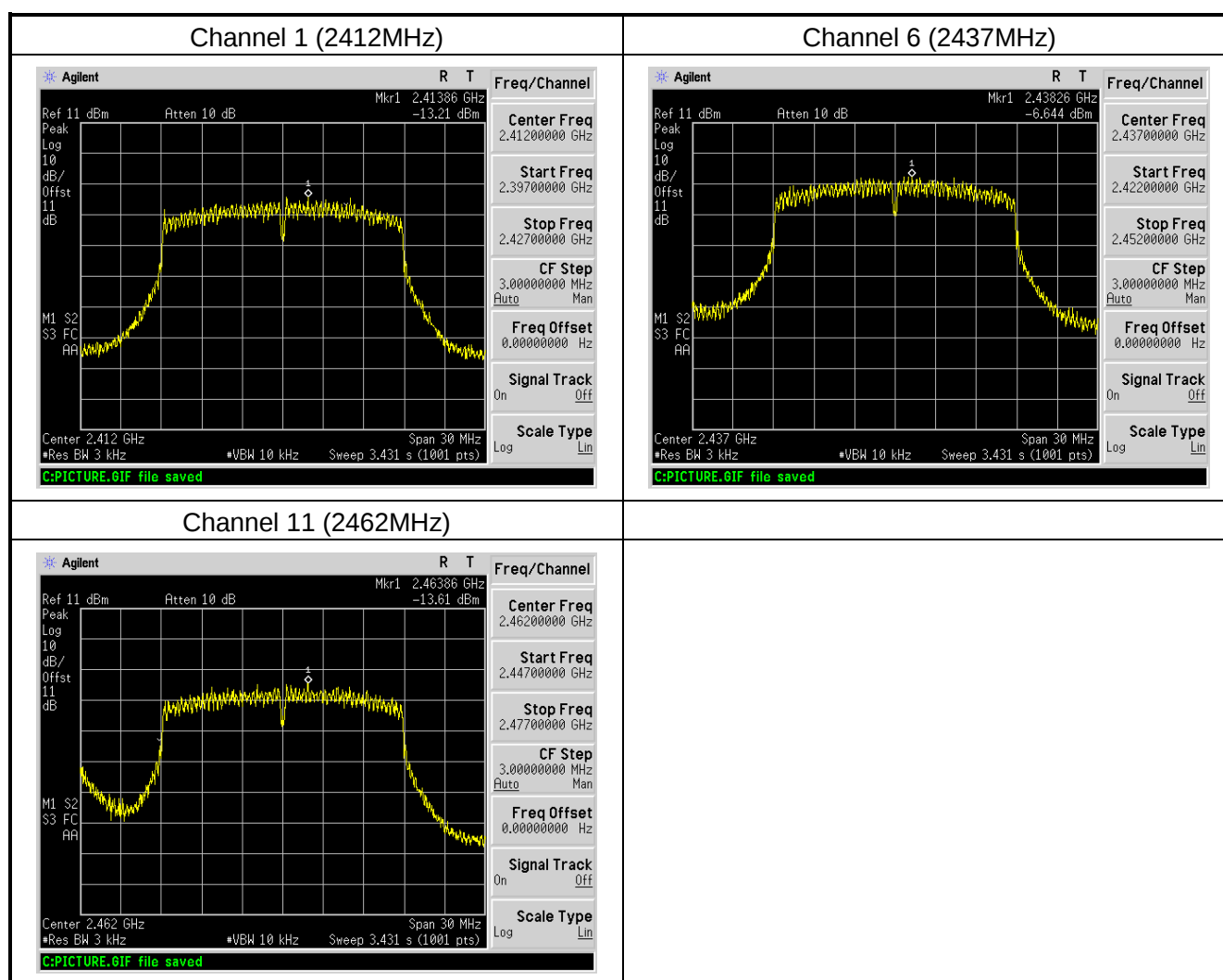
Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	2412	-11.840	8	Pass
6	2437	-6.487	8	Pass
11	2462	-11.850	8	Pass





Test Item	Power Spectral Density
Test Mode	Mode 3: Transmit by 802.11n(20MHz) (Ant 3)

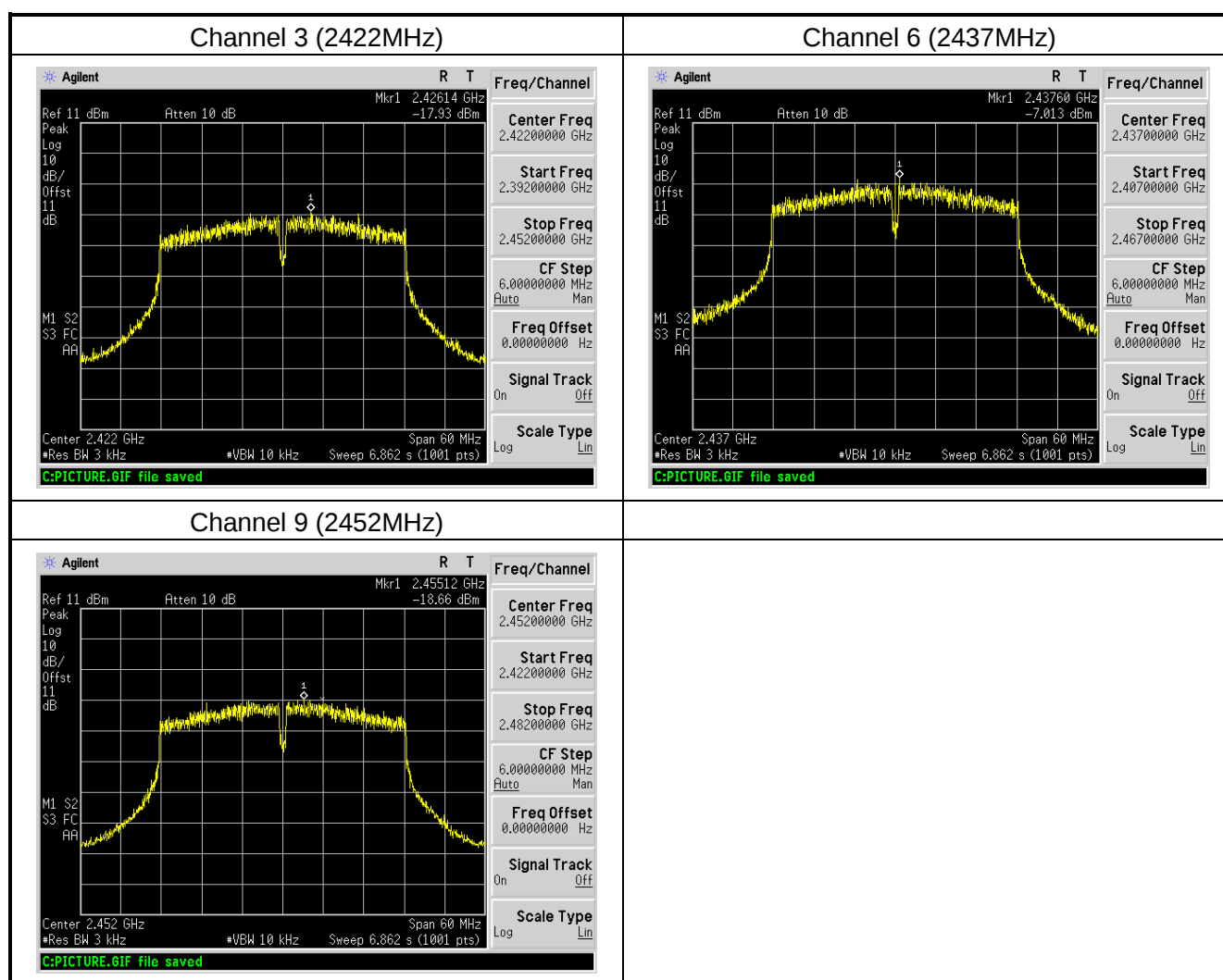
Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	2412	-13.210	8	Pass
6	2437	-6.644	8	Pass
11	2462	-13.610	8	Pass





Test Item	Power Spectral Density
Test Mode	Mode 4: Transmit by 802.11n(40MHz) (Ant 3)

Channel No.	Frequency(MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
3	2422	-17.930	8	Pass
6	2437	-7.013	8	Pass
9	2452	-18.660	8	Pass



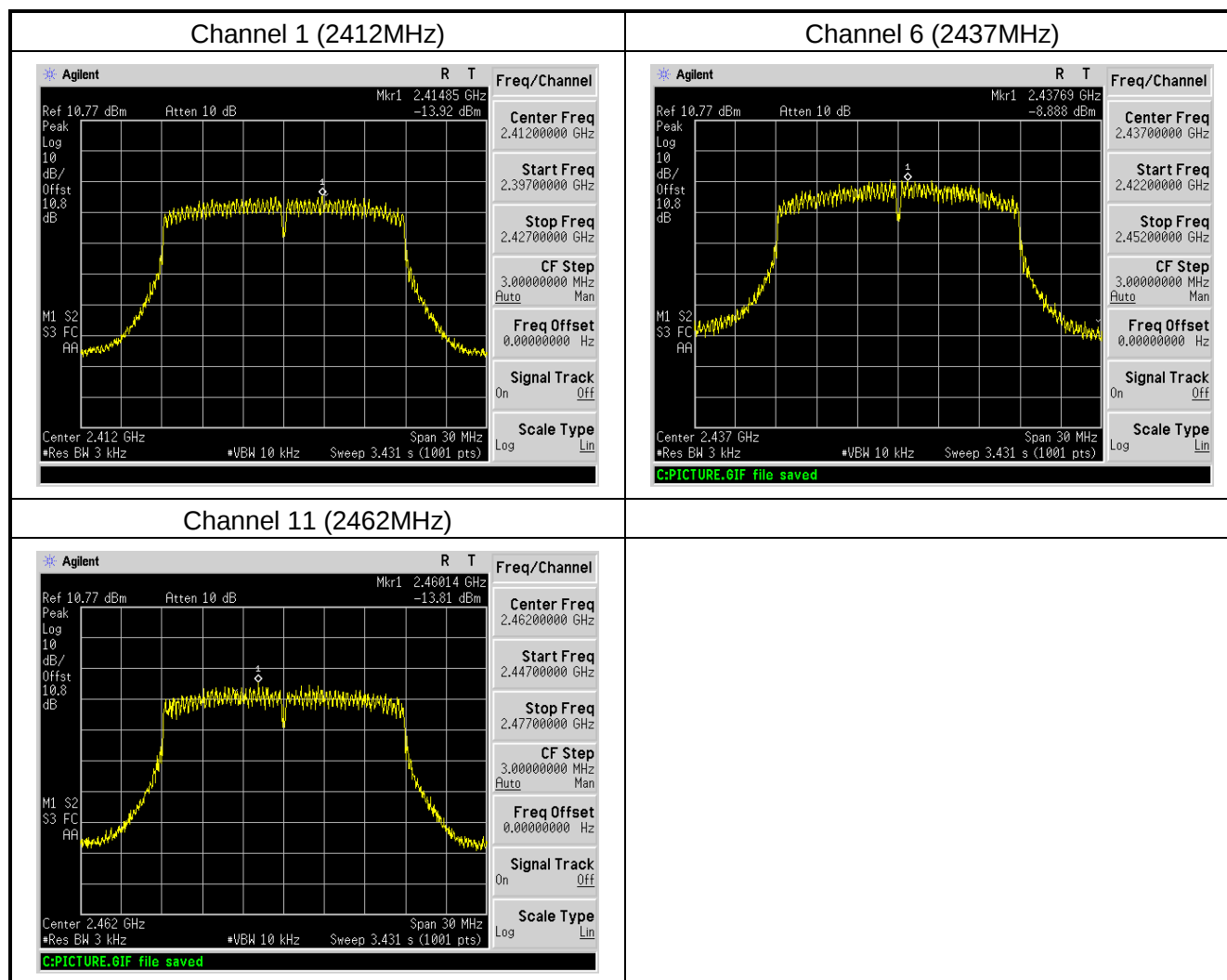


Test Mode	Channel No.	Frequency (MHz)	Power Spectral Density (dBm/3kHz)				Limit (dBm/3kHz)	Result
			Ant 1	Ant 2	Ant 3	Total		
802.11n(20MHz)	1	2412	-13.92	-12.95	-12.47	-8.30	4.23	Pass
	6	2437	-8.89	-7.53	-7.54	-3.17	4.23	Pass
	11	2462	-13.81	-11.96	-11.96	-7.72	4.23	Pass
802.11n(40MHz)	3	2422	-20.14	-17.55	-17.60	-13.50	4.23	Pass
	6	2437	-10.88	-10.54	-9.13	-5.34	4.23	Pass
	9	2452	-18.38	-17.55	-16.02	-12.43	4.23	Pass

Note: Total Limit (dBm/3KHz)=8dBm/3KHz-(9.77dBi-6dBi)=4.23dBm/3KHz

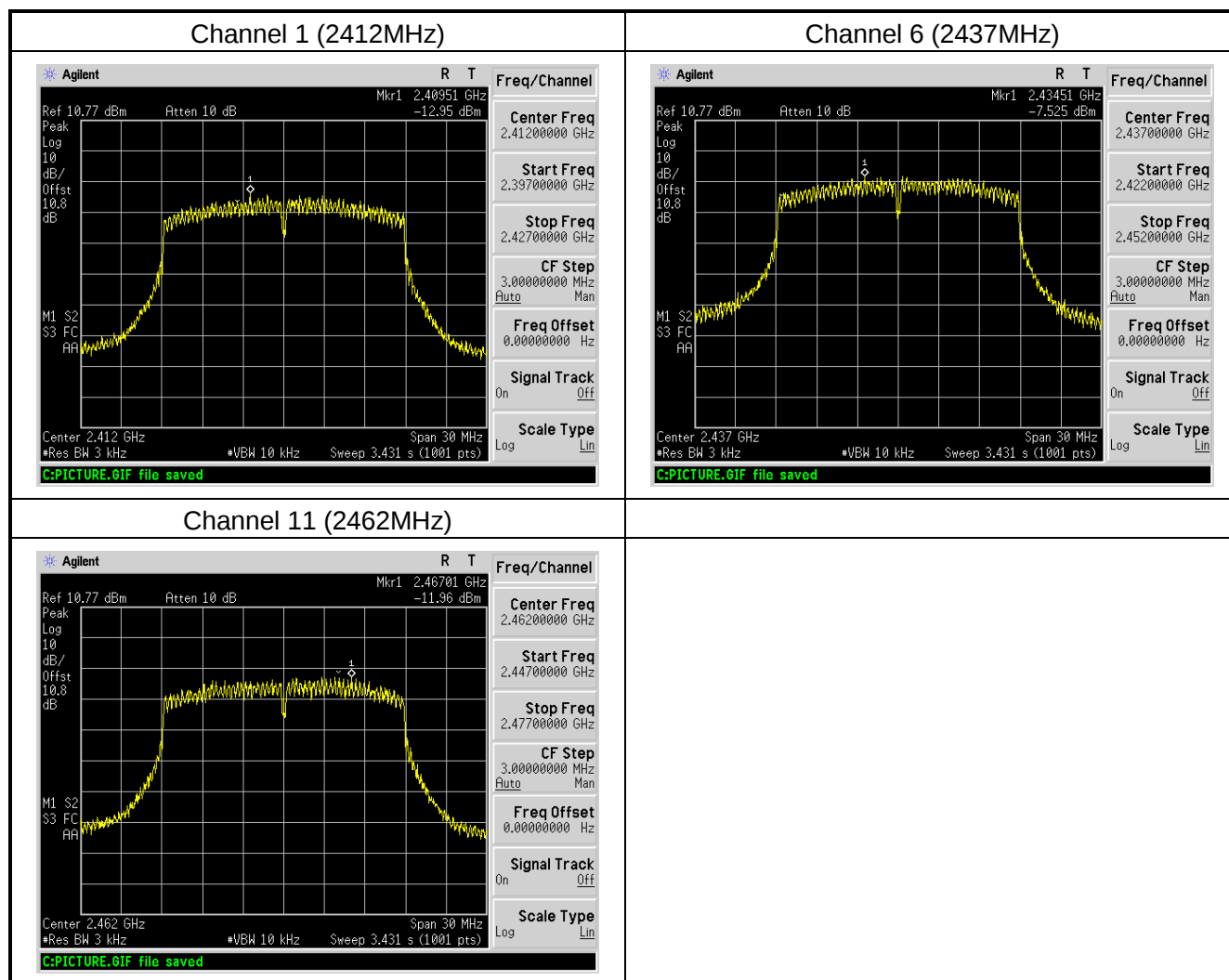


Test Item	Power Spectral Density
Test Mode	Mode 3: Transmit by 802.11n(20MHz) (Ant 1+2+3)-Ant 1





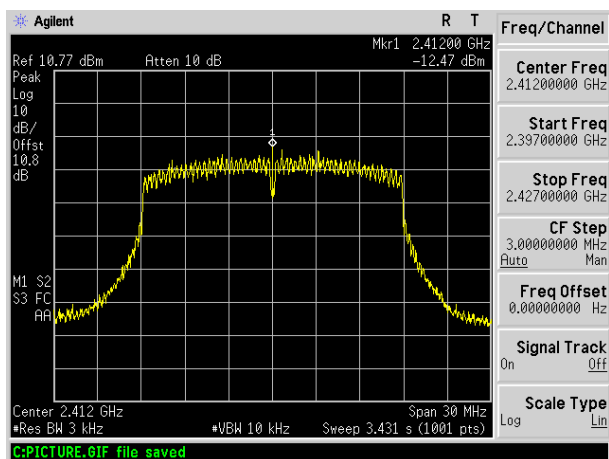
Test Item	Power Spectral Density
Test Mode	Mode 3: Transmit by 802.11n(20MHz) (Ant 1+2+3)-Ant 2



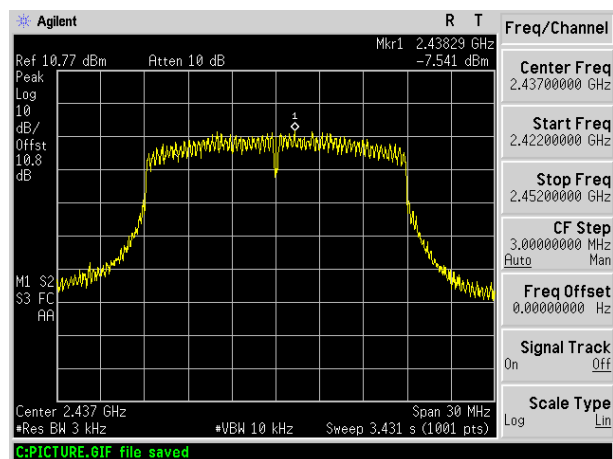


Test Item	Power Spectral Density
Test Mode	Mode 3: Transmit by 802.11n(20MHz) (Ant 1+2+3)-Ant 3

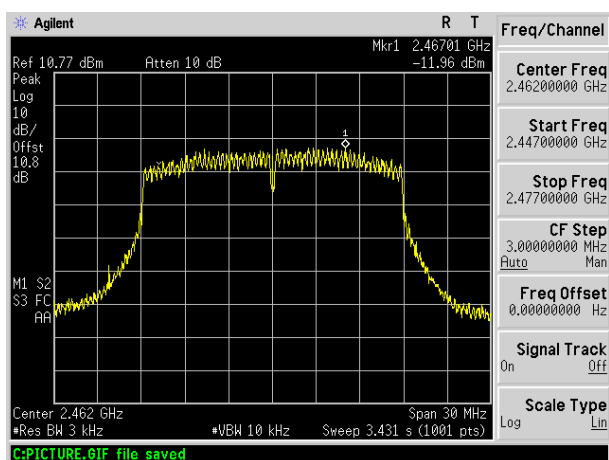
Channel 1 (2412MHz)



Channel 6 (2437MHz)



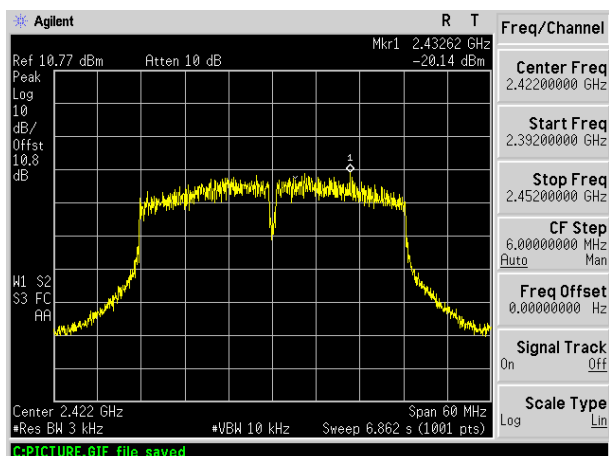
Channel 11 (2462MHz)



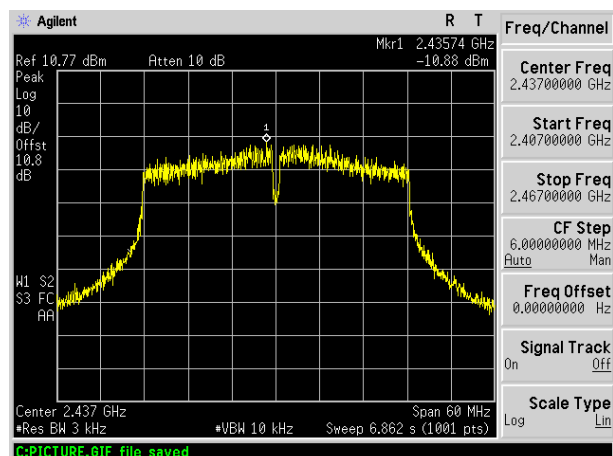


Test Item	Power Spectral Density
Test Mode	Mode 4: Transmit by 802.11n(40MHz) (Ant 1+2+3)-Ant 1

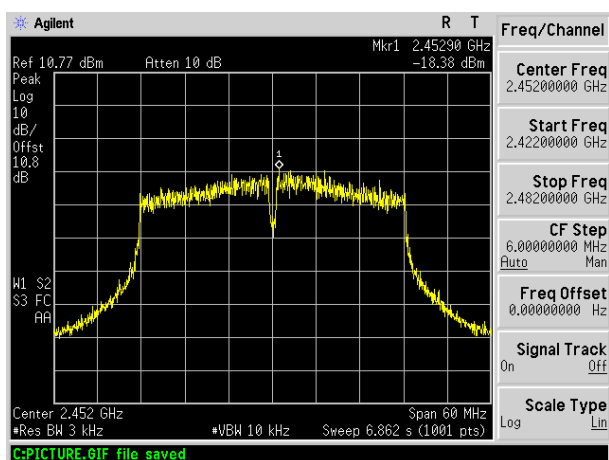
Channel 3 (2422MHz)



Channel 6 (2437MHz)



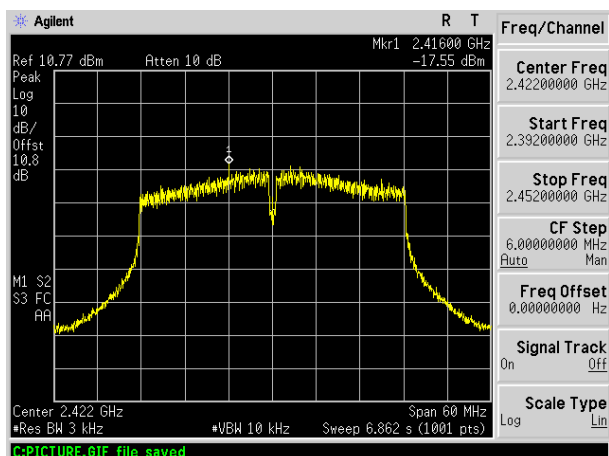
Channel 9 (2452MHz)



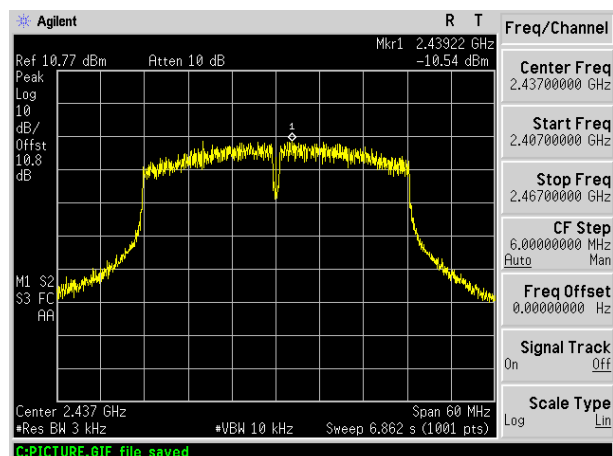


Test Item	Power Spectral Density
Test Mode	Mode 4: Transmit by 802.11n(40MHz) (Ant 1+2+3)-Ant 2

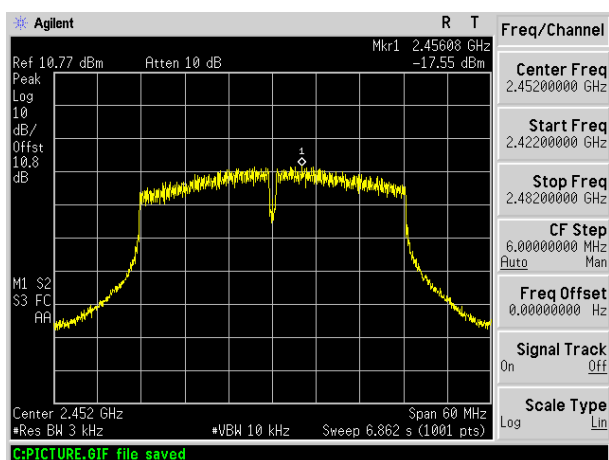
Channel 3 (2422MHz)



Channel 6 (2437MHz)



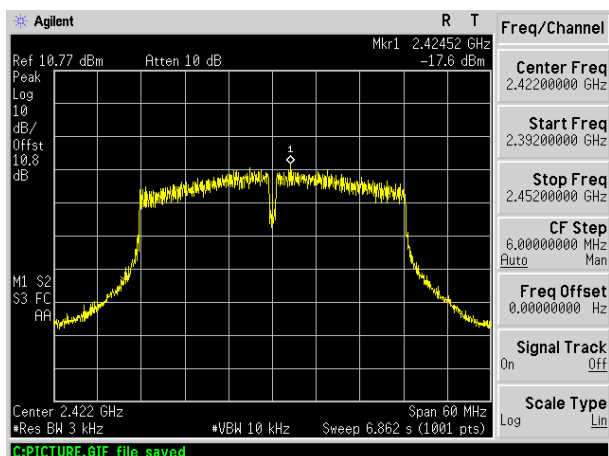
Channel 9 (2452MHz)



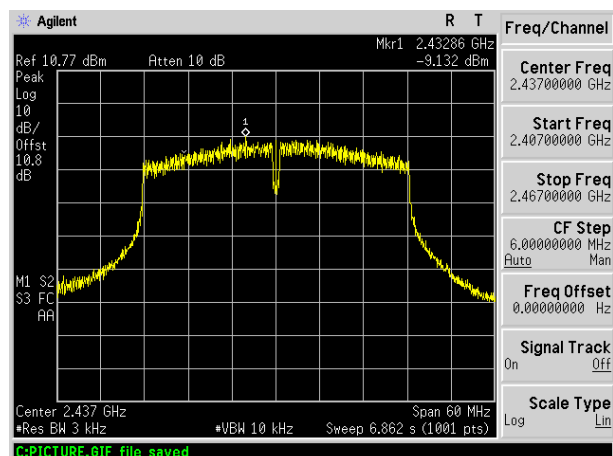


Test Item	Power Spectral Density
Test Mode	Mode 4: Transmit by 802.11n(40MHz) (Ant 1+2+3)-Ant 3

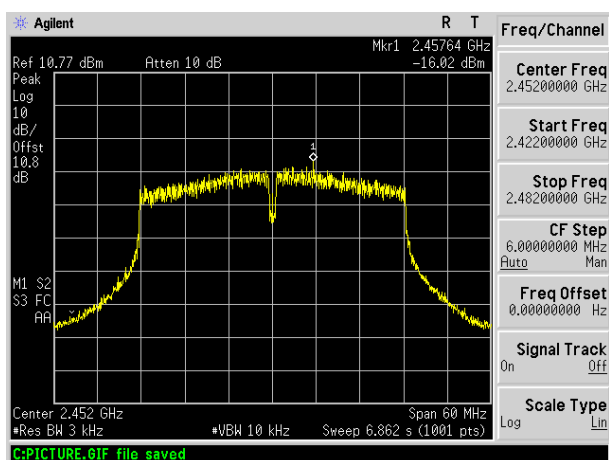
Channel 3 (2422MHz)



Channel 6 (2437MHz)



Channel 9 (2452MHz)





9. Conducted Band Edge and Out-of-Band Emissions Measurement

9.1 Test Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the 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 a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) of FCC part 15 is not required.

9.2 Test Standard

KDB 558074 D01v03r05 - Section 11.2 & Section 11.3



9.3 Test Procedures

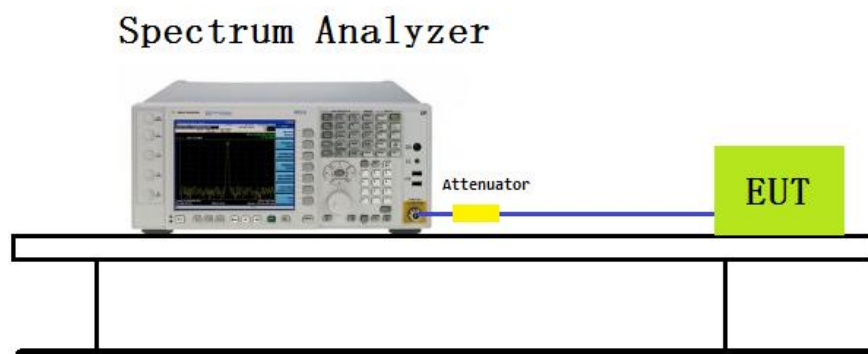
Reference level measurement:

1. Set the RBW = 100 kHz
2. Set the VBW $\geq 3 \times$ RBW
3. Set the span to ≥ 1.5 times the DTS bandwidth
4. Detector = peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. Allow trace to fully stabilize
8. Set instrument center frequency to DTS channel center frequency

Emission level measurement:

1. RBW = 100kHz
2. VBW = 300kHz
3. Detector = Peak
4. Trace mode = max hold
5. Sweep time = auto couple
6. The trace was allowed to stabilize
7. Set the center frequency and span to encompass frequency range to be measured

9.4 Test Setup Layout





9.5 Test Result

The worst case of Conducted Band Edge and Out-of-Band Emissions:

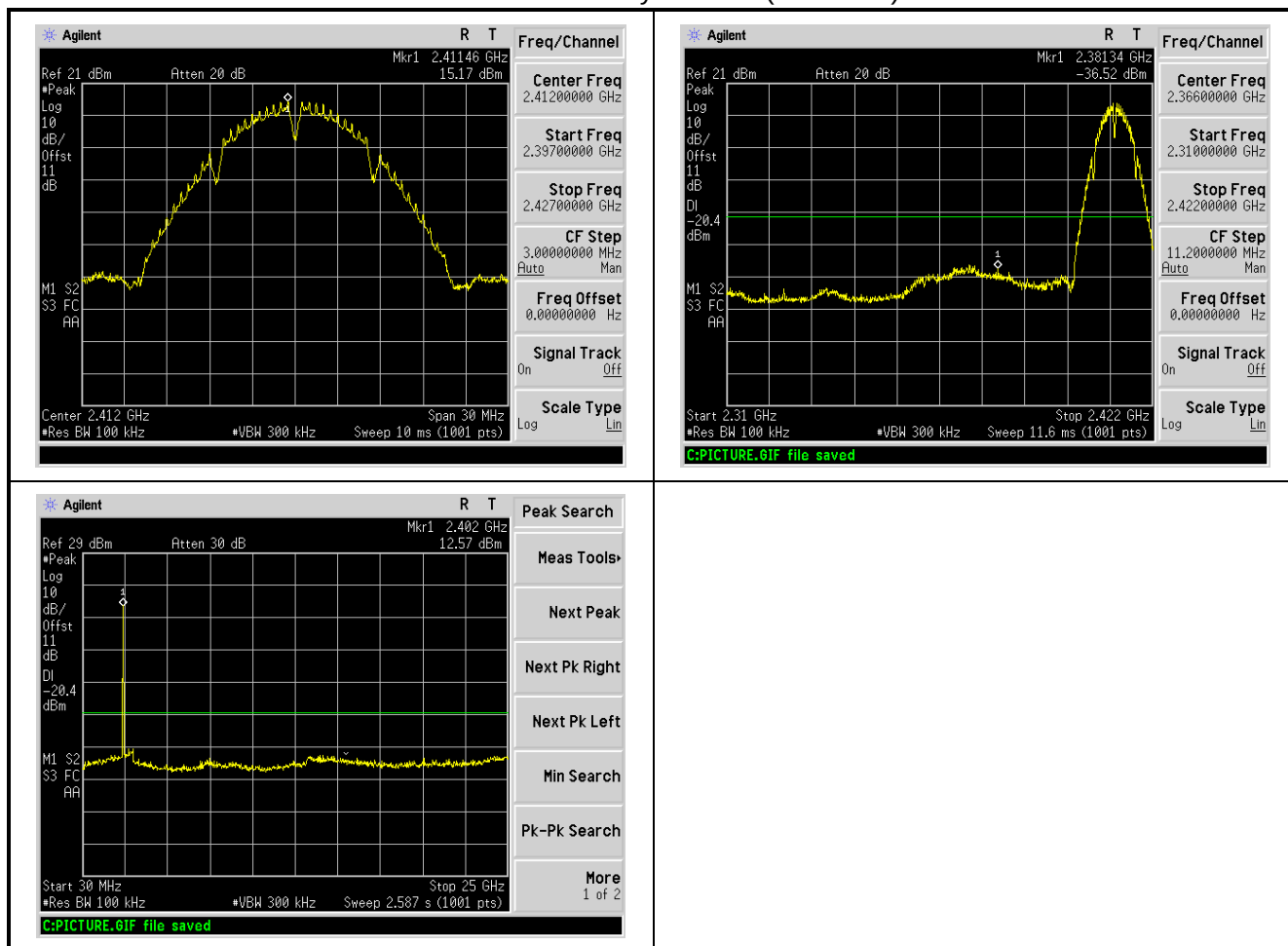
Ant 1

Test Mode	Channel No.	Frequency (MHz)	Limit	Result
802.11b	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11g	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11n(20MHz)	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11n(40MHz)	3	2422	20dBc	Pass
	6	2437	20dBc	Pass
	9	2452	20dBc	Pass



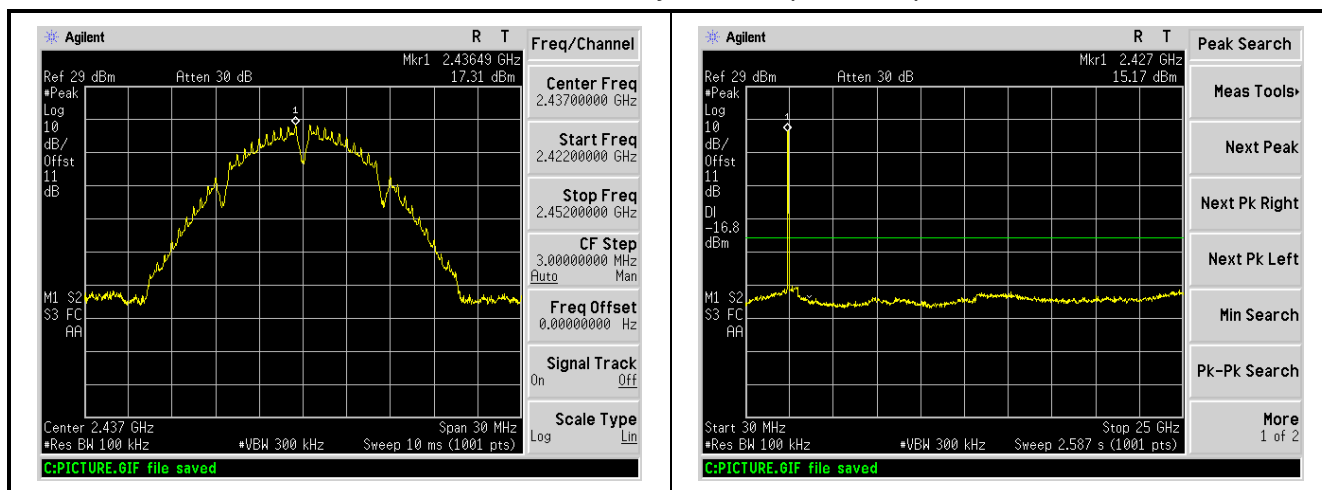
Test Item	:	Conducted Band Edge and Out-of-Band Emissions
Test Mode	:	Mode 1: Transmit by 802.11b

Mode 1: Transmit by 802.11b (2412MHz)

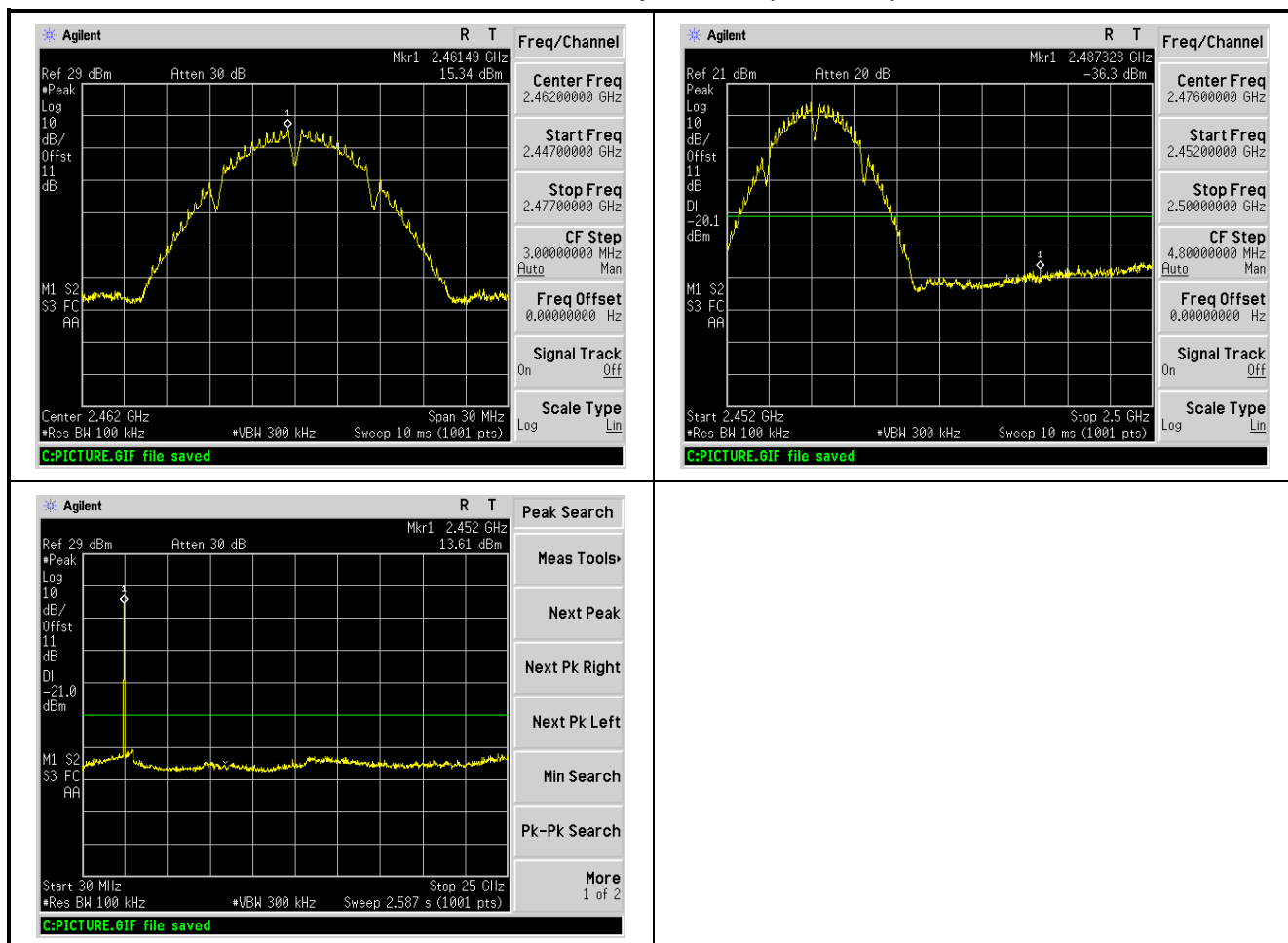




Mode 1: Transmit by 802.11b (2437MHz)



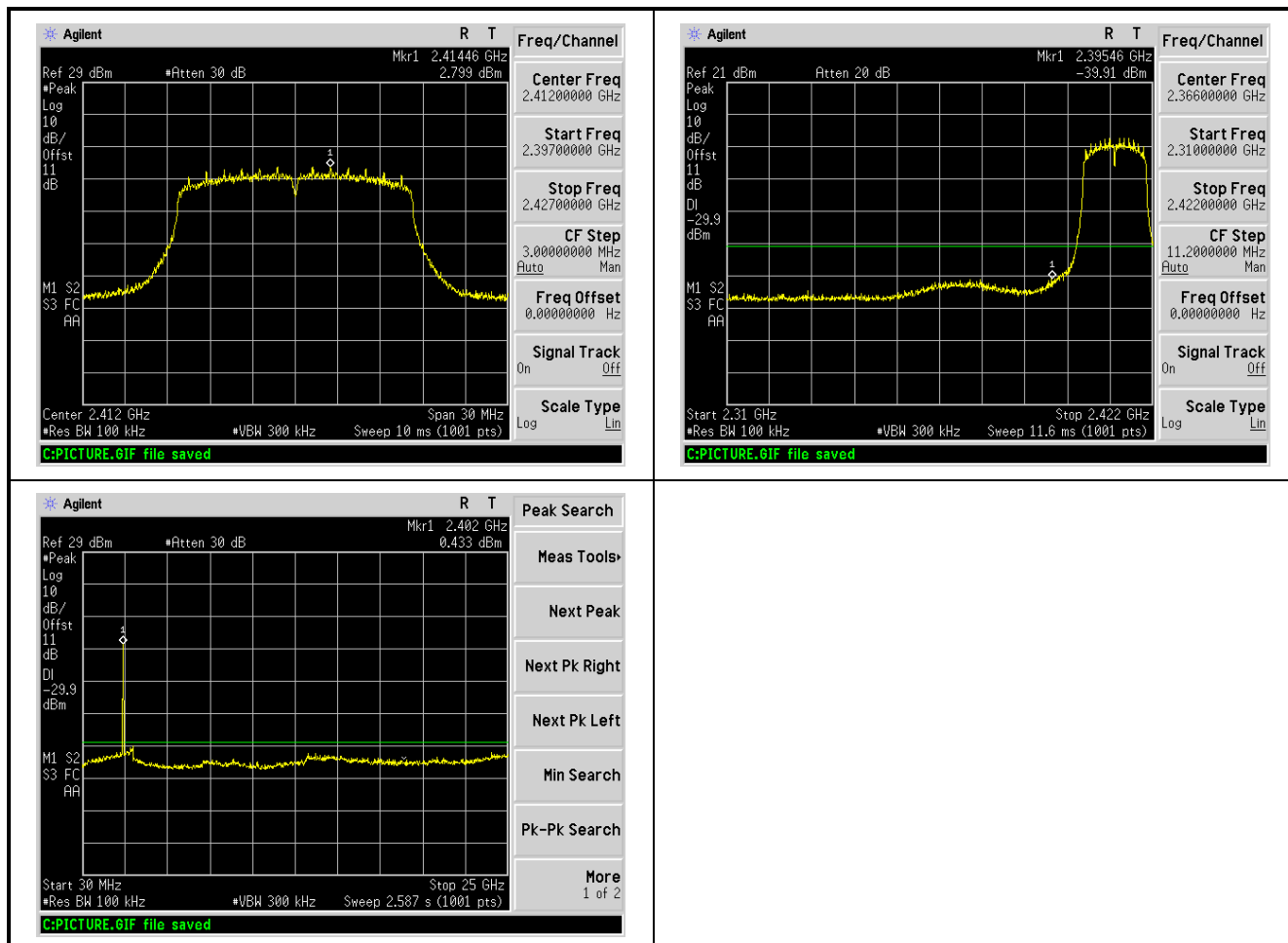
Mode 1: Transmit by 802.11b (2462MHz)





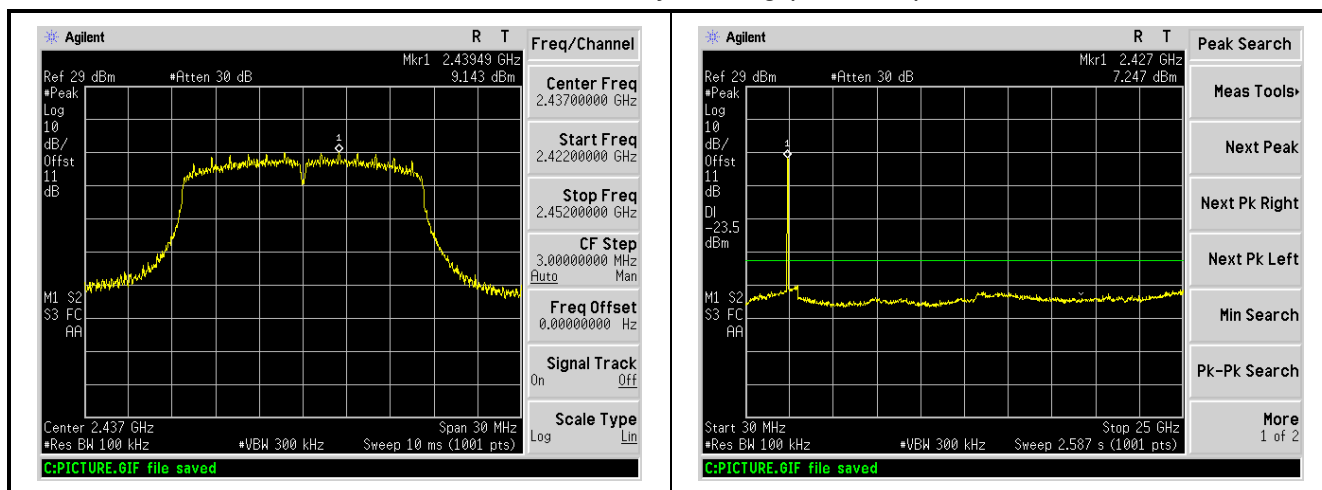
Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 2: Transmit by 802.11g

Mode 2: Transmit by 802.11g (2412MHz)

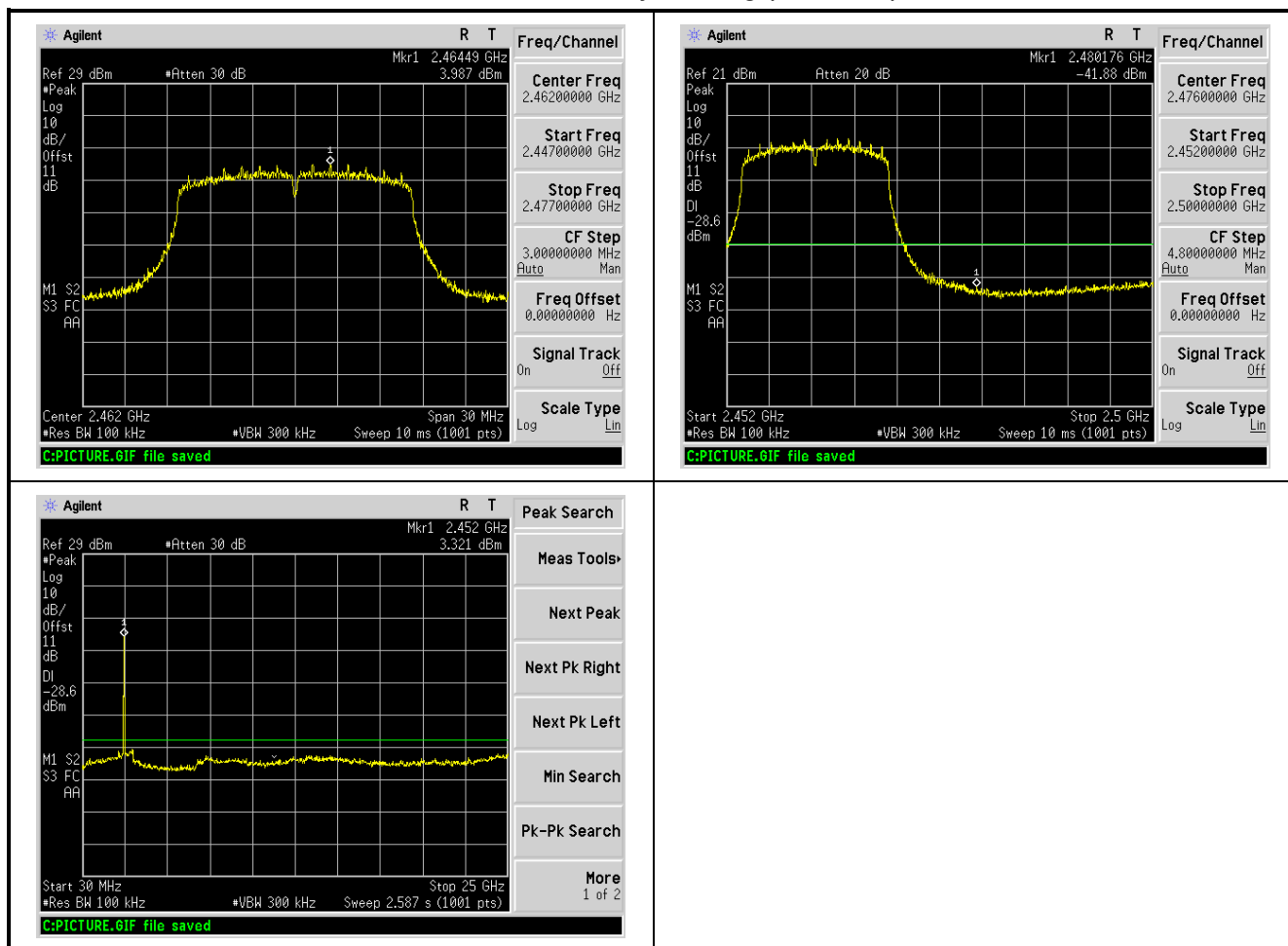




Mode 2: Transmit by 802.11g (2437MHz)



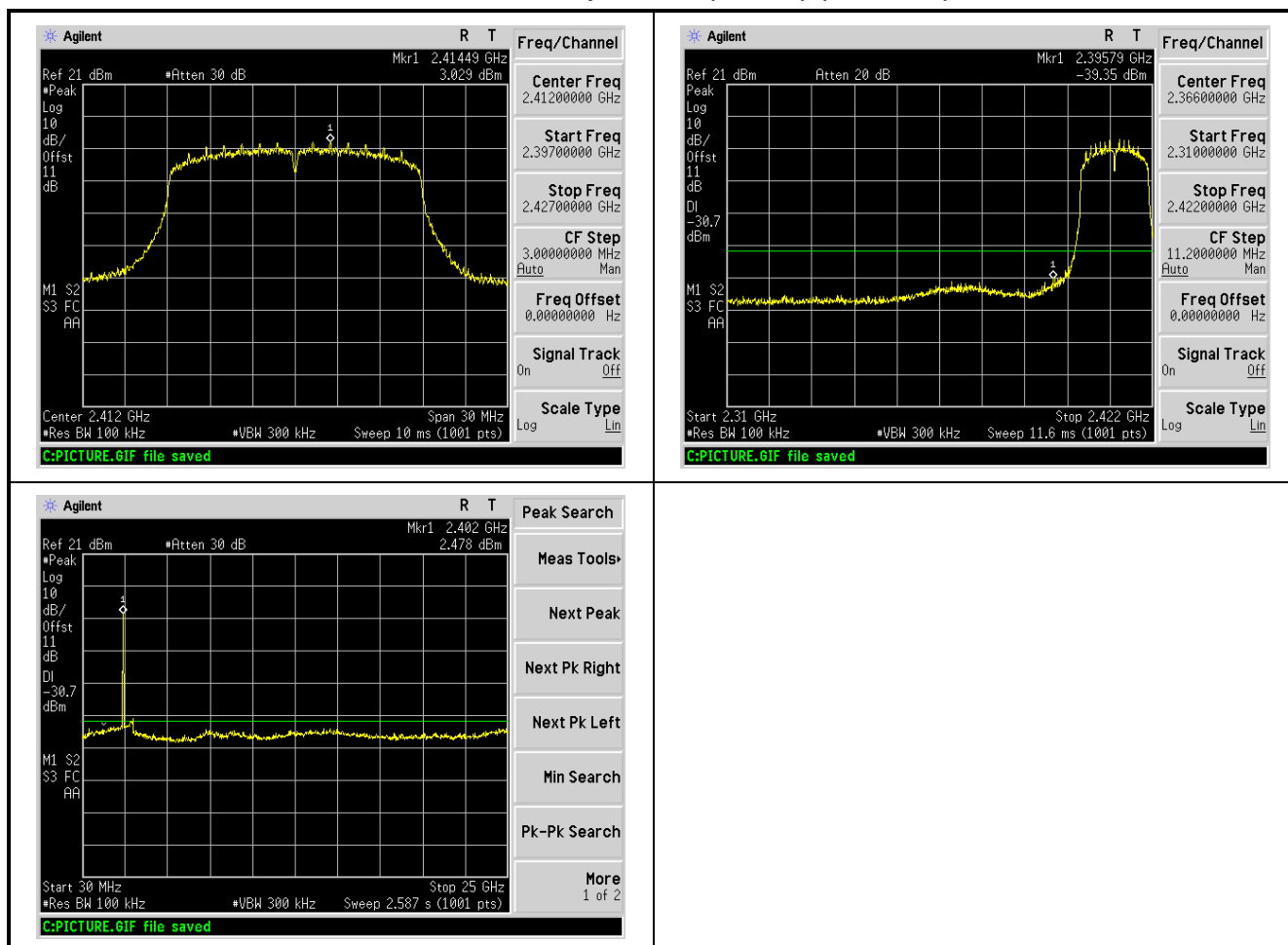
Mode 2: Transmit by 802.11g (2462MHz)





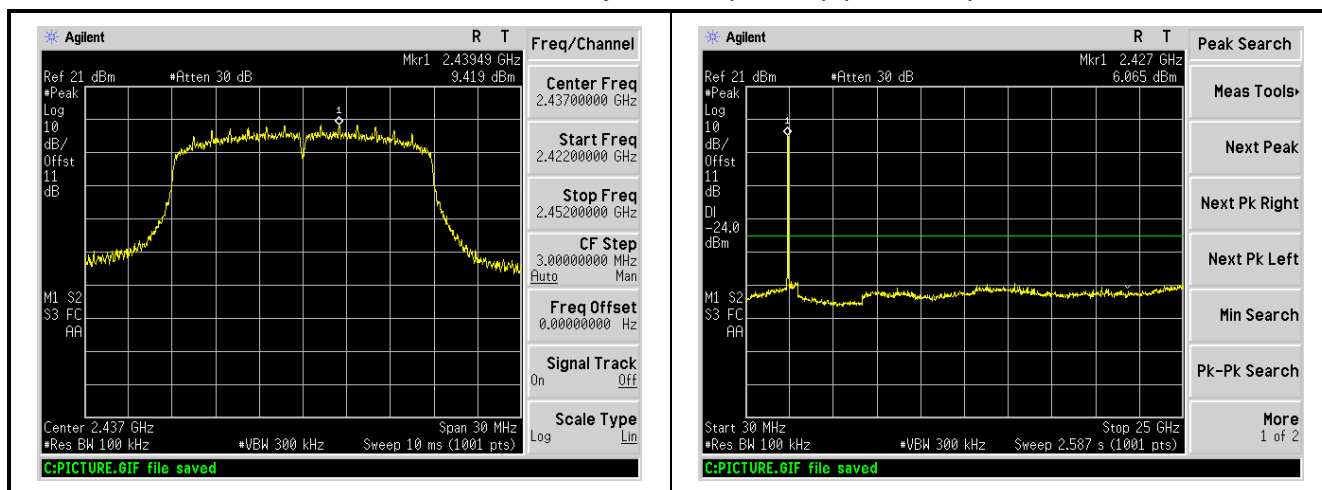
Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 3: Transmit by 802.11n(20MHz)

Mode 3: Transmit by 802.11n(20MHz) (2412MHz)

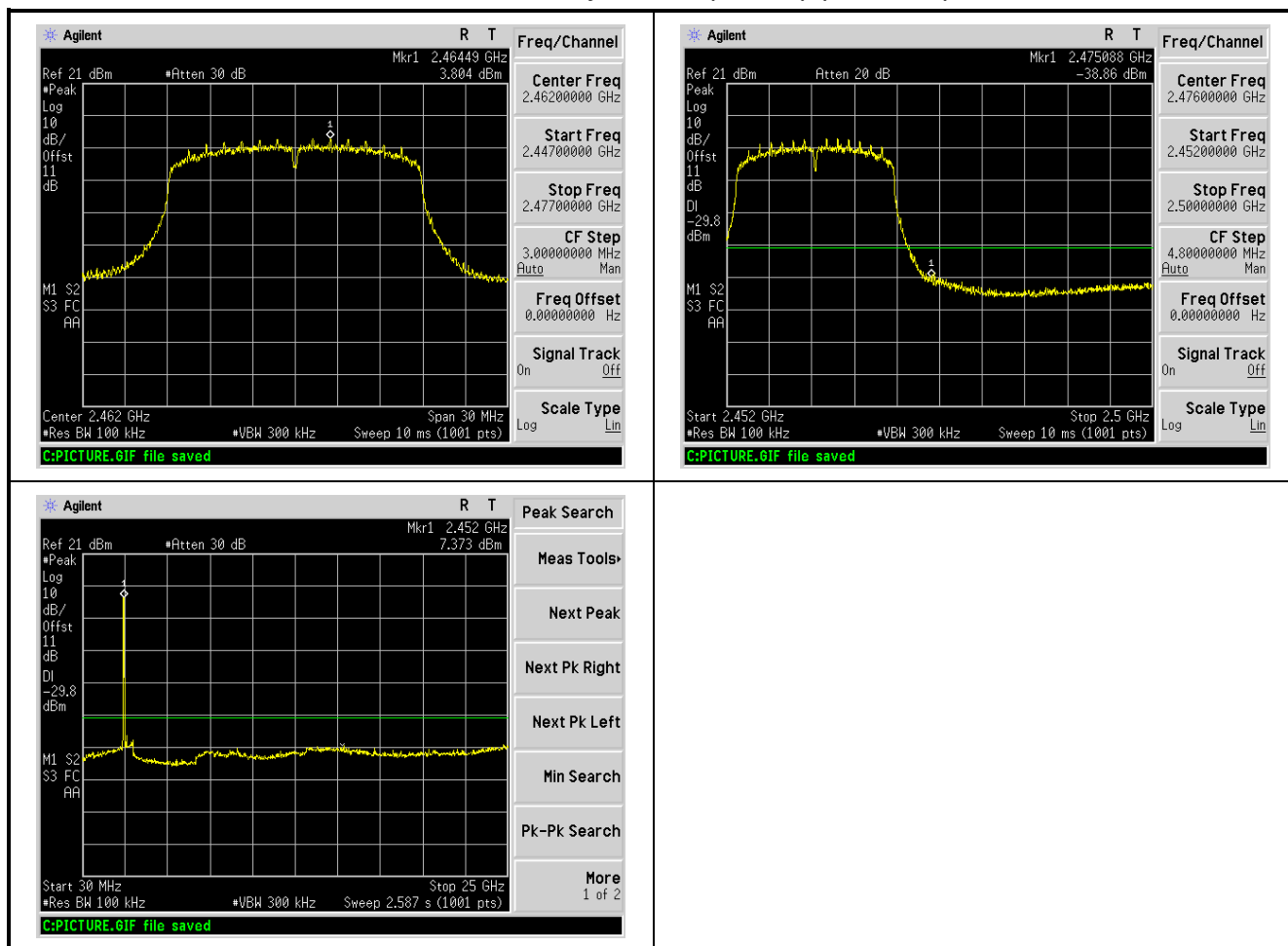




Mode 3: Transmit by 802.11n(20MHz) (2437MHz)



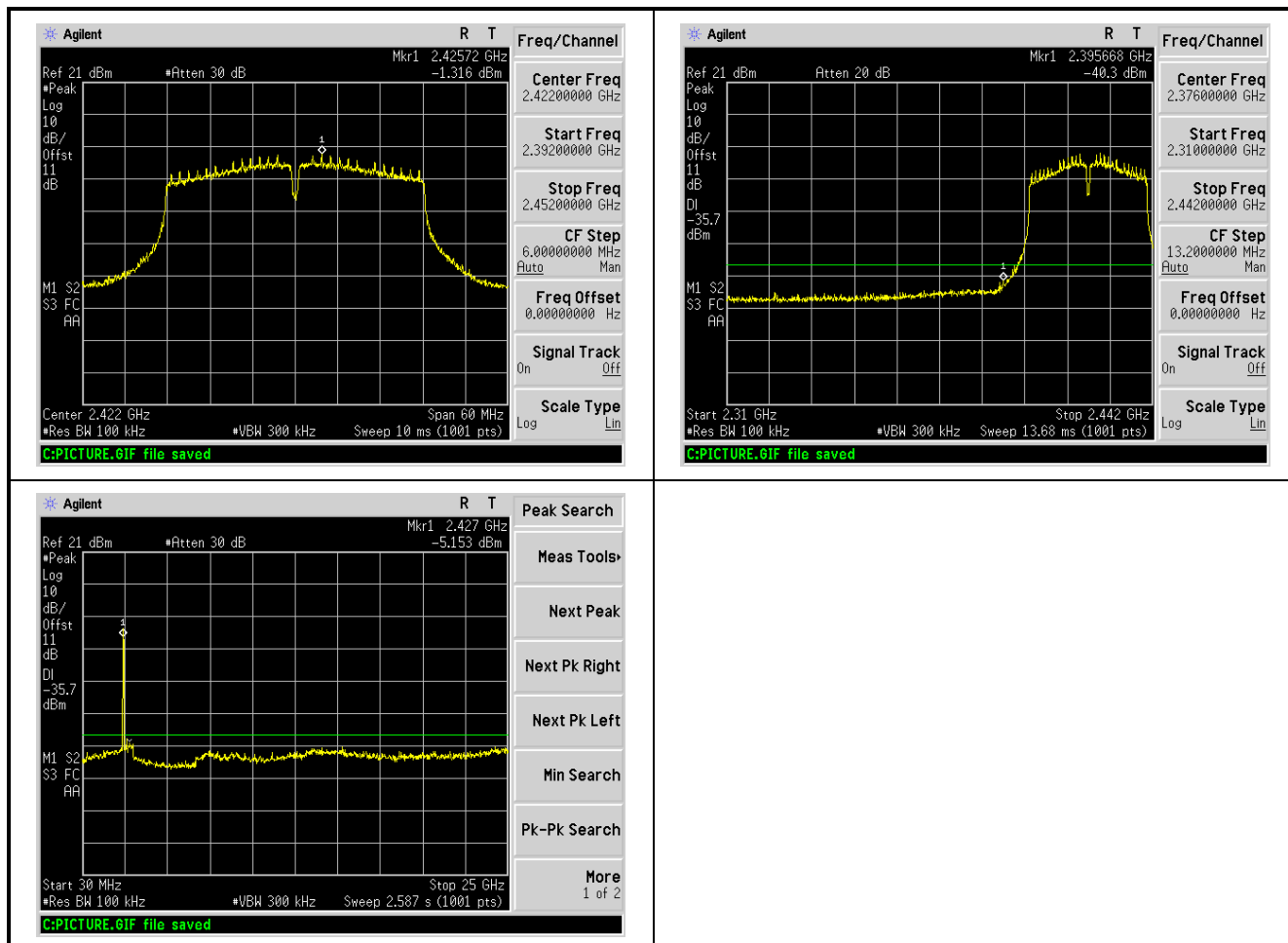
Mode 3: Transmit by 802.11n(20MHz) (2462MHz)





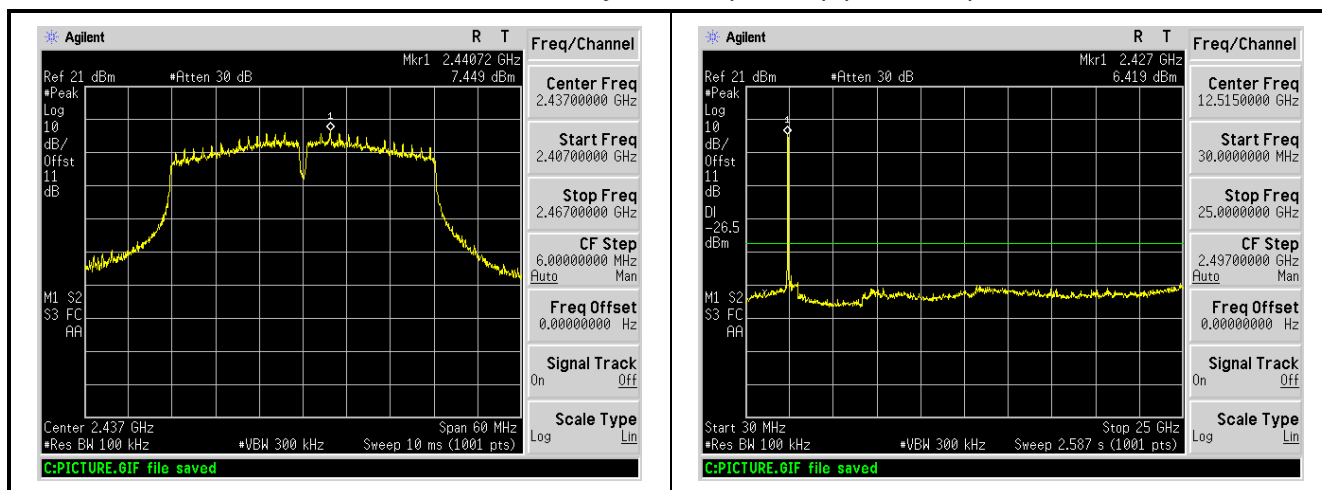
Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 4: Transmit by 802.11n(40MHz)

Mode 4: Transmit by 802.11n(40MHz) (2422MHz)

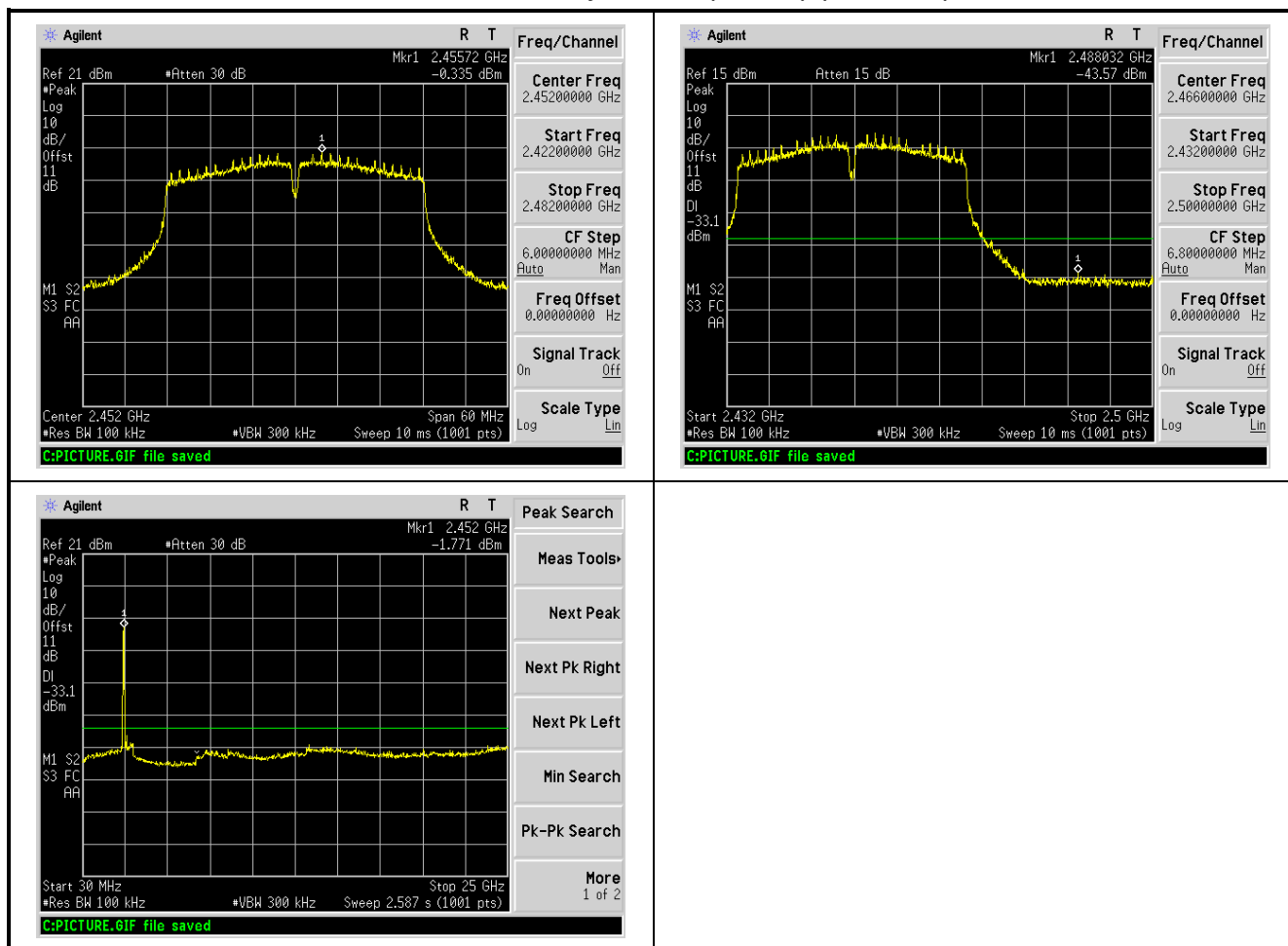




Mode 4: Transmit by 802.11n(40MHz) (2437MHz)



Mode 4: Transmit by 802.11n(40MHz) (2452MHz)



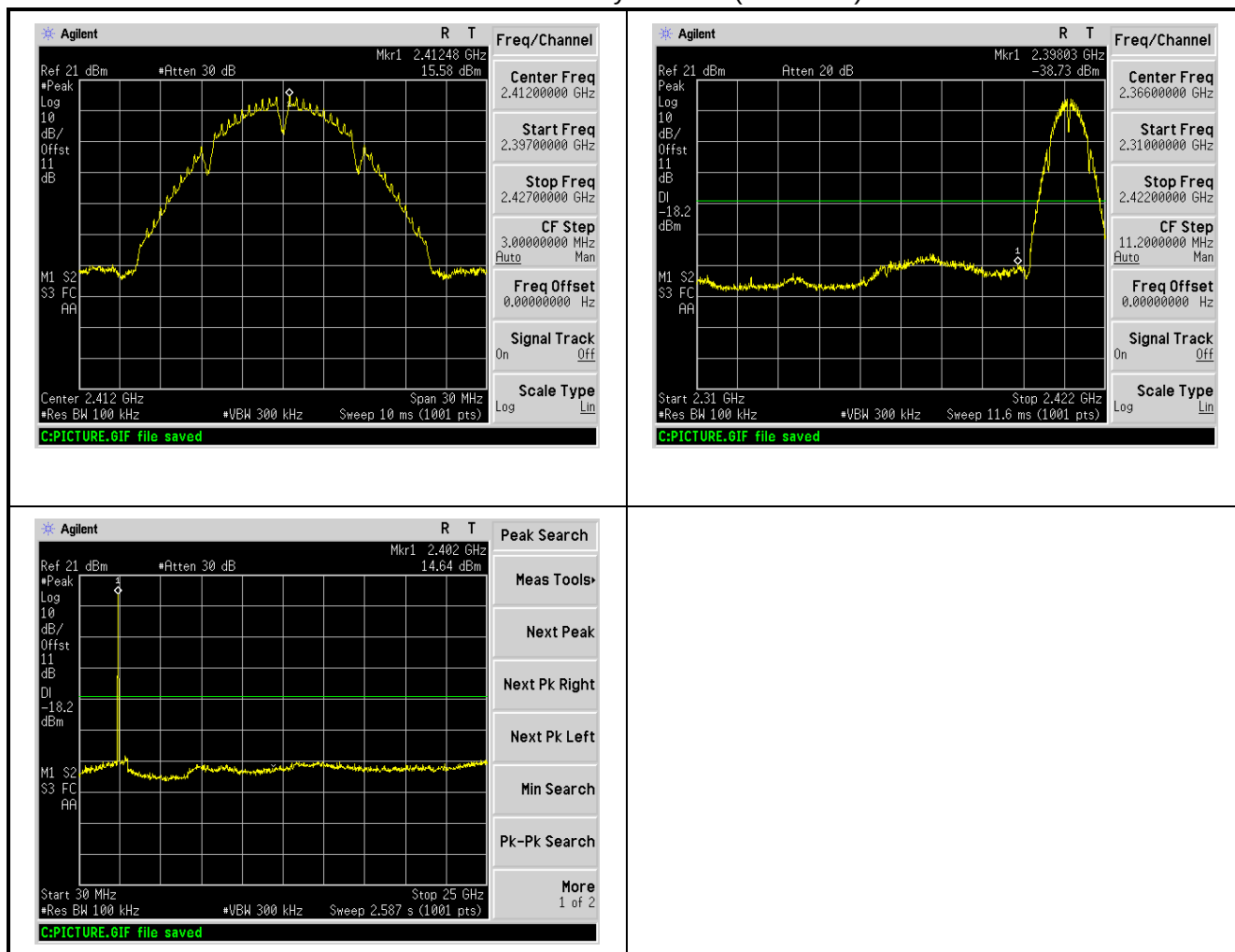
**Ant 2**

Test Mode	Channel No.	Frequency (MHz)	Limit	Result
802.11b	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11g	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11n(20MHz)	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11n(40MHz)	3	2422	20dBc	Pass
	6	2437	20dBc	Pass
	9	2452	20dBc	Pass



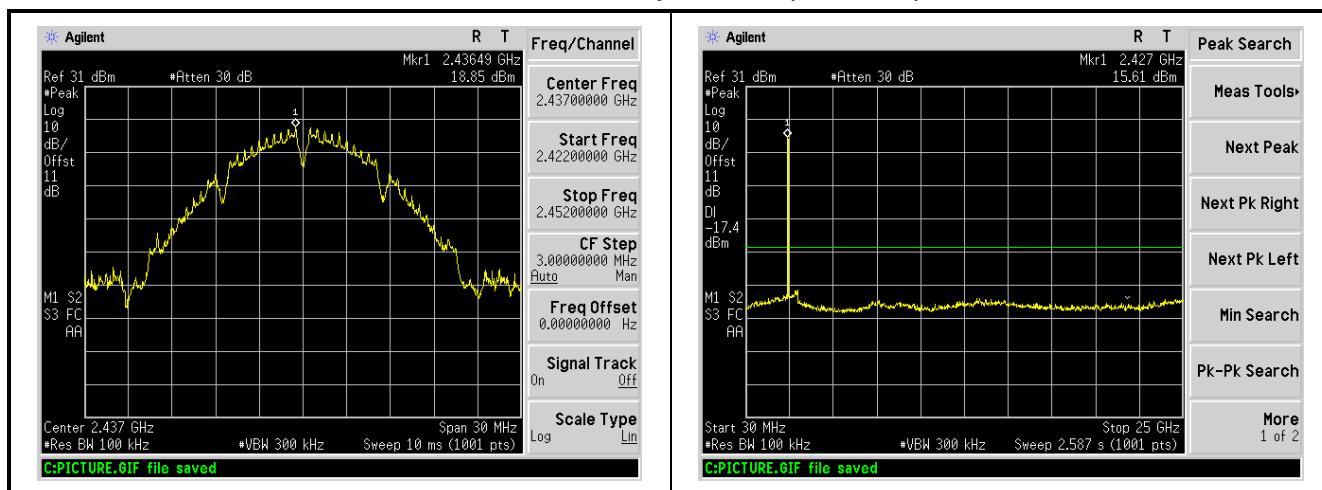
Test Item	:	Conducted Band Edge and Out-of-Band Emissions
Test Mode	:	Mode 1: Transmit by 802.11b

Mode 1: Transmit by 802.11b (2412MHz)

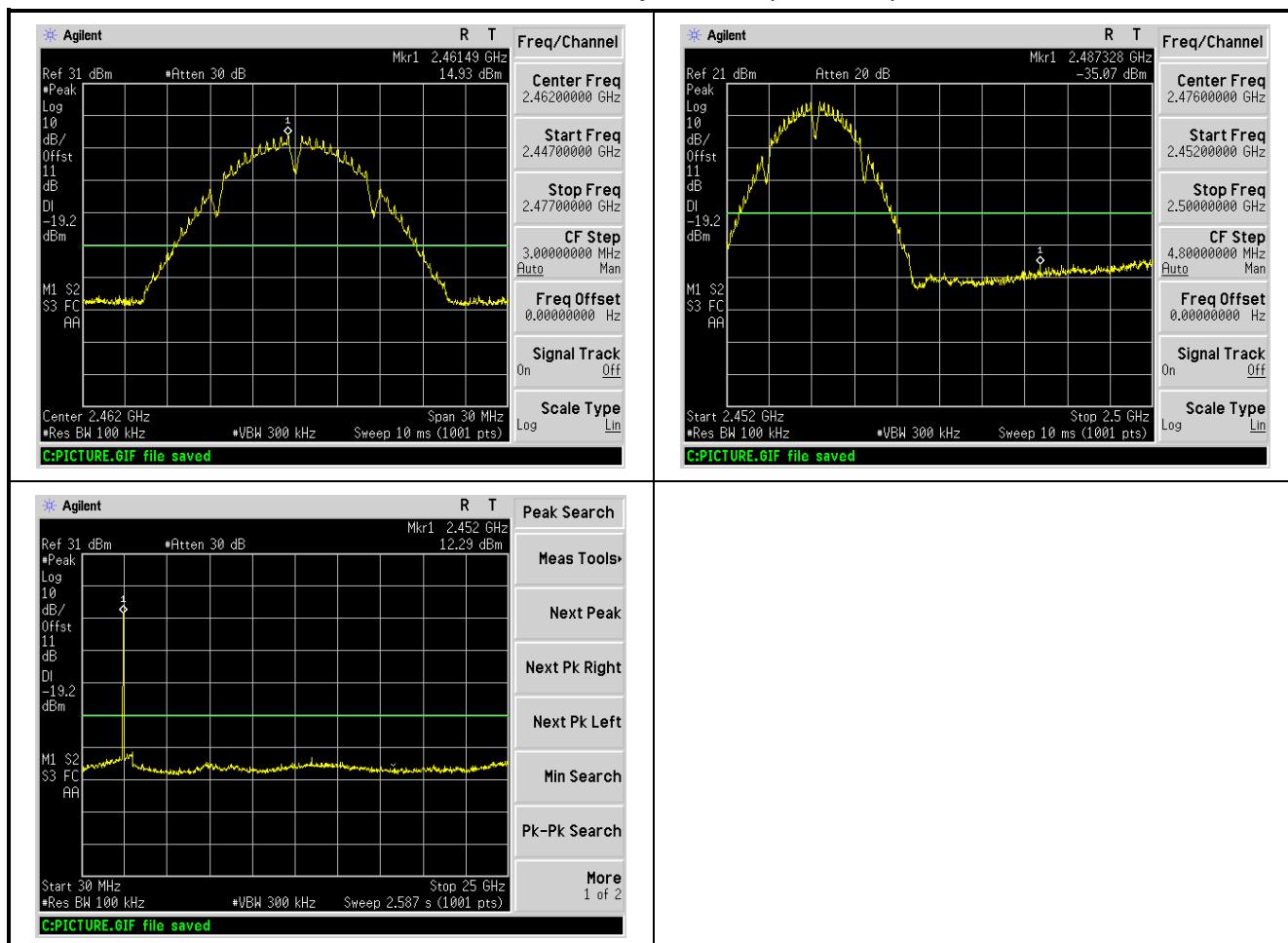




Mode 1: Transmit by 802.11b (2437MHz)



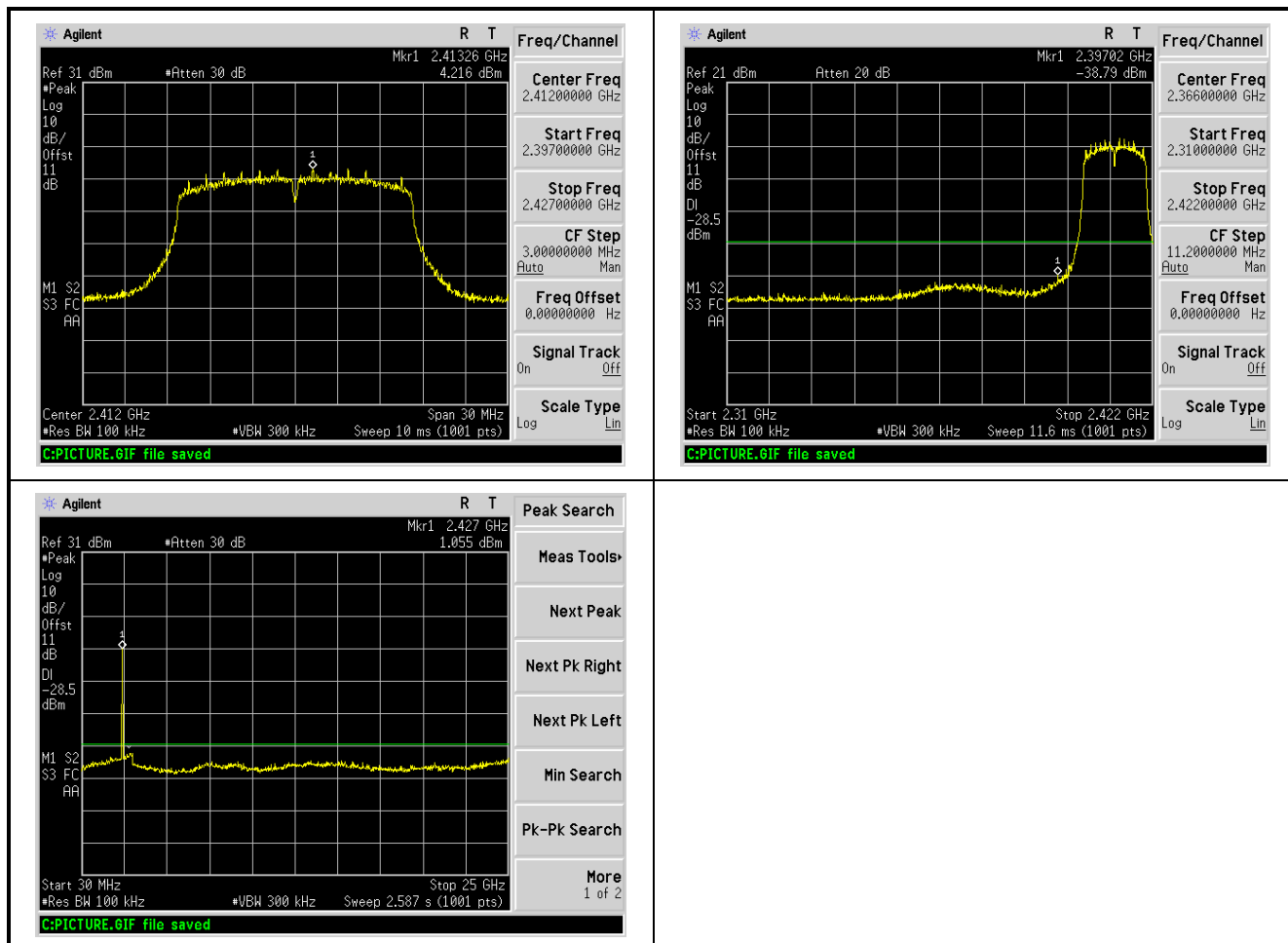
Mode 1: Transmit by 802.11b (2462MHz)





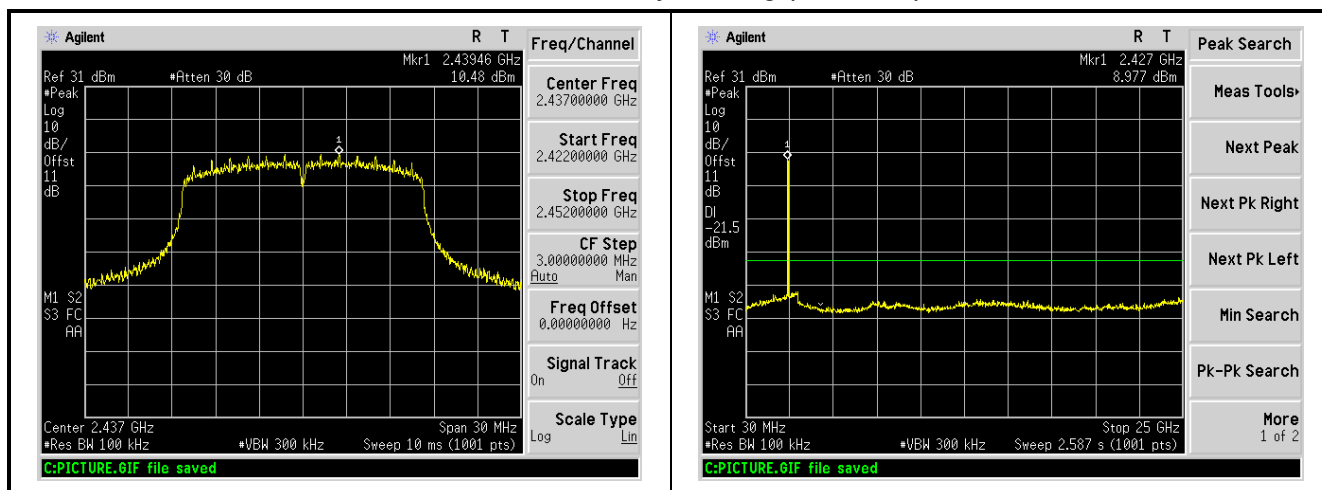
Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 2: Transmit by 802.11g

Mode 2: Transmit by 802.11g (2412MHz)

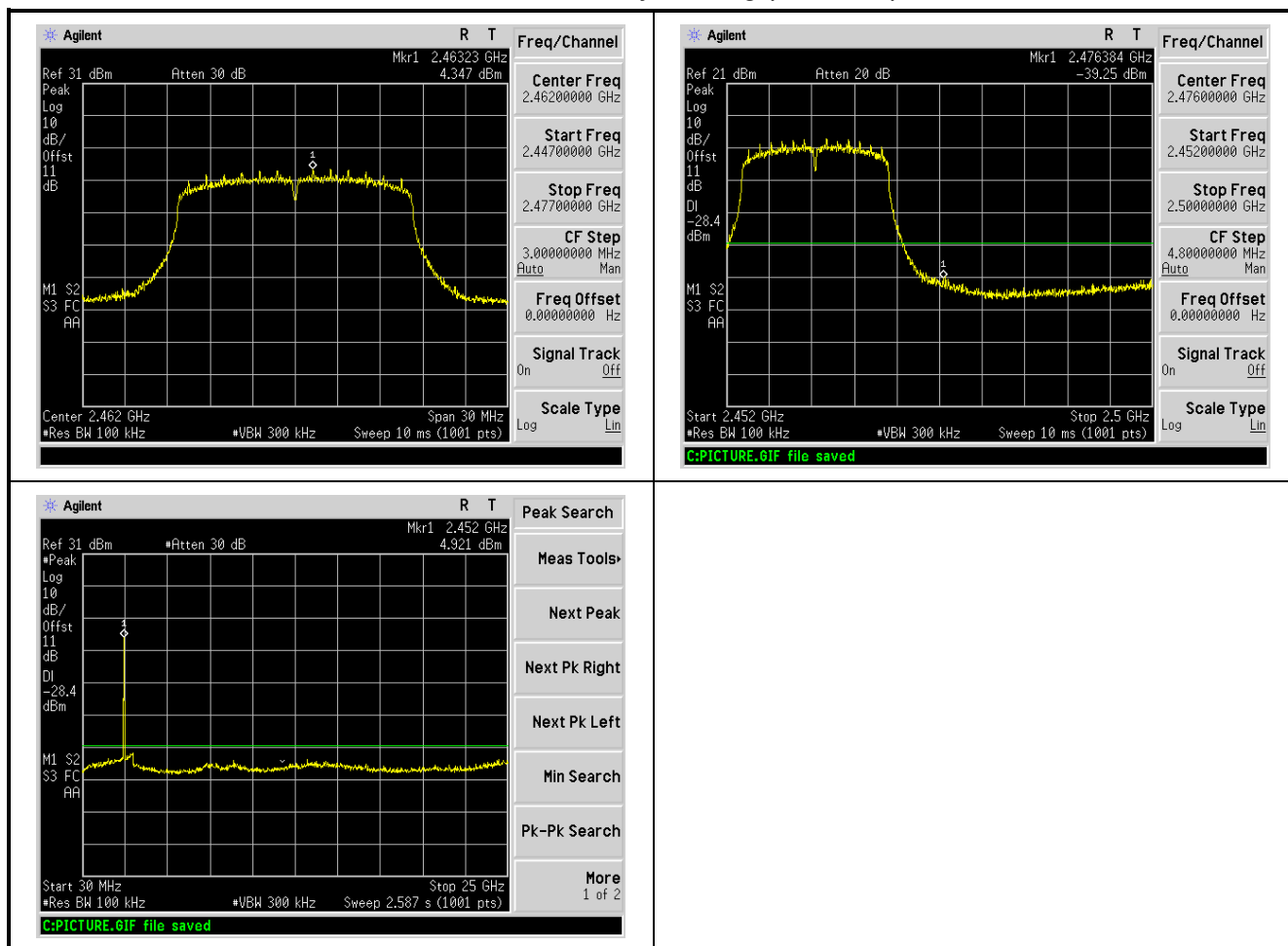




Mode 2: Transmit by 802.11g (2437MHz)



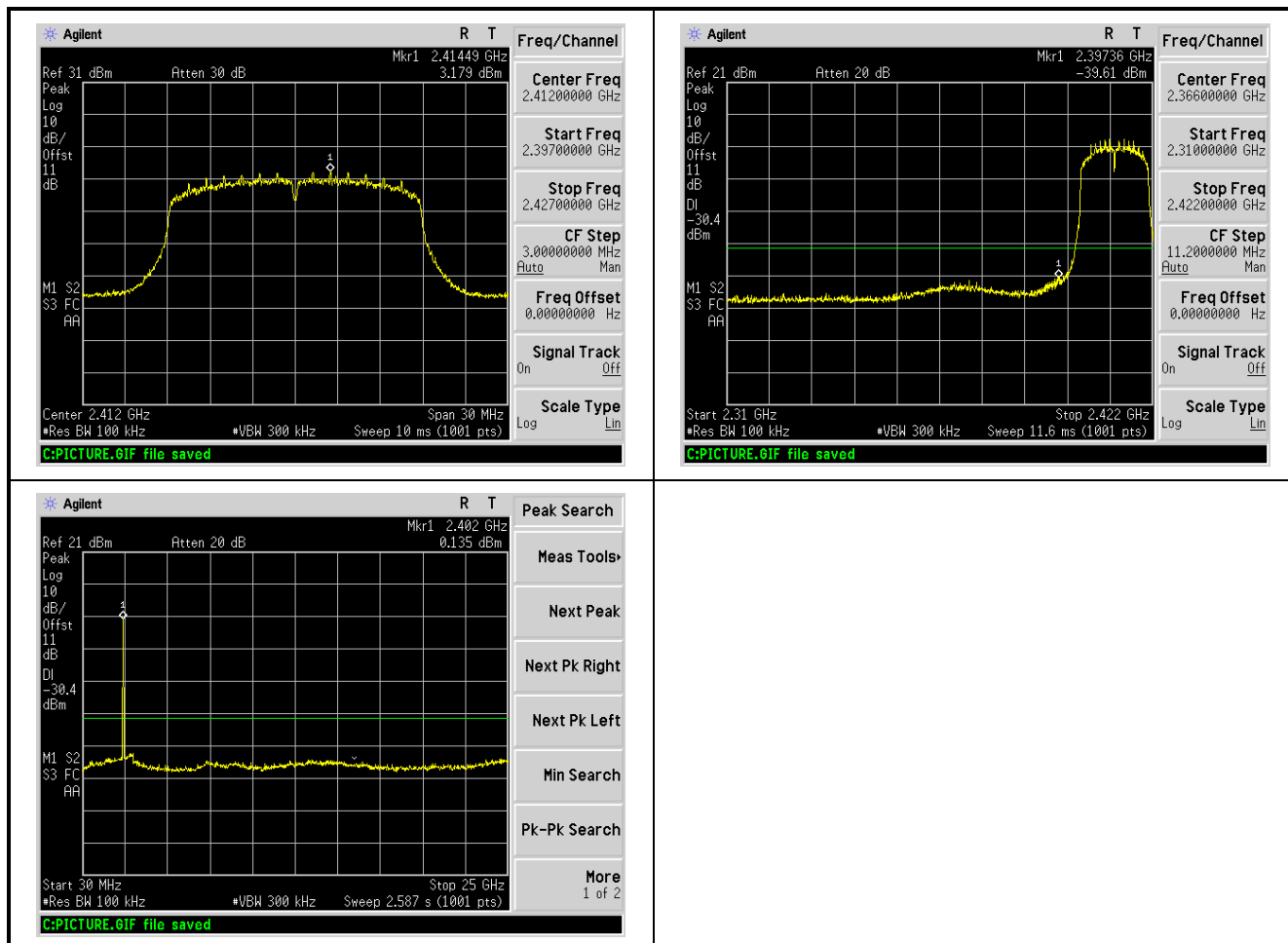
Mode 2: Transmit by 802.11g (2462MHz)





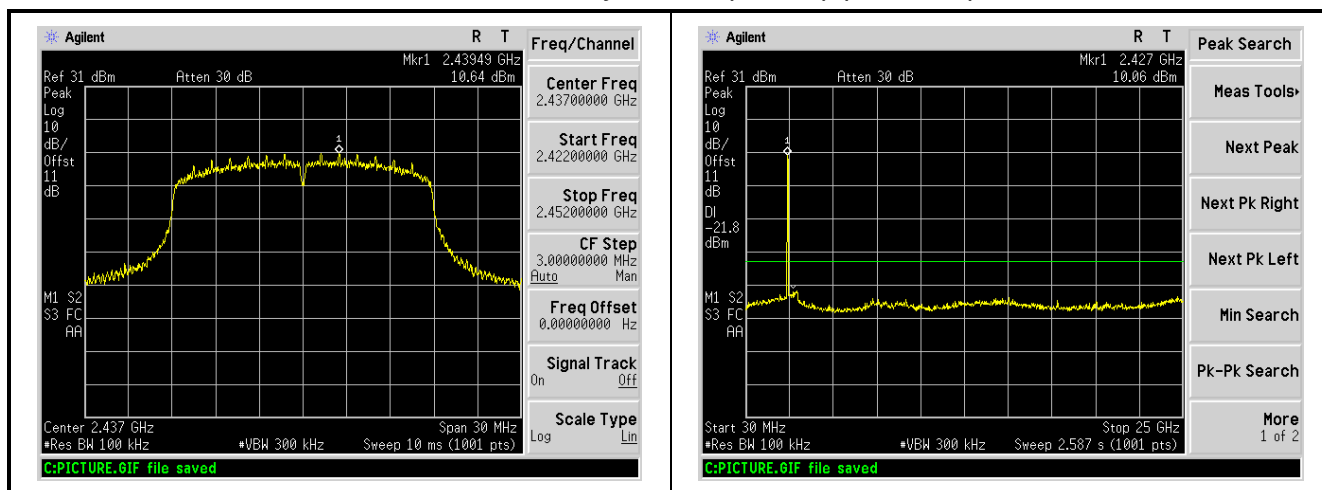
Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 3: Transmit by 802.11n(20MHz)

Mode 3: Transmit by 802.11n(20MHz) (2412MHz)

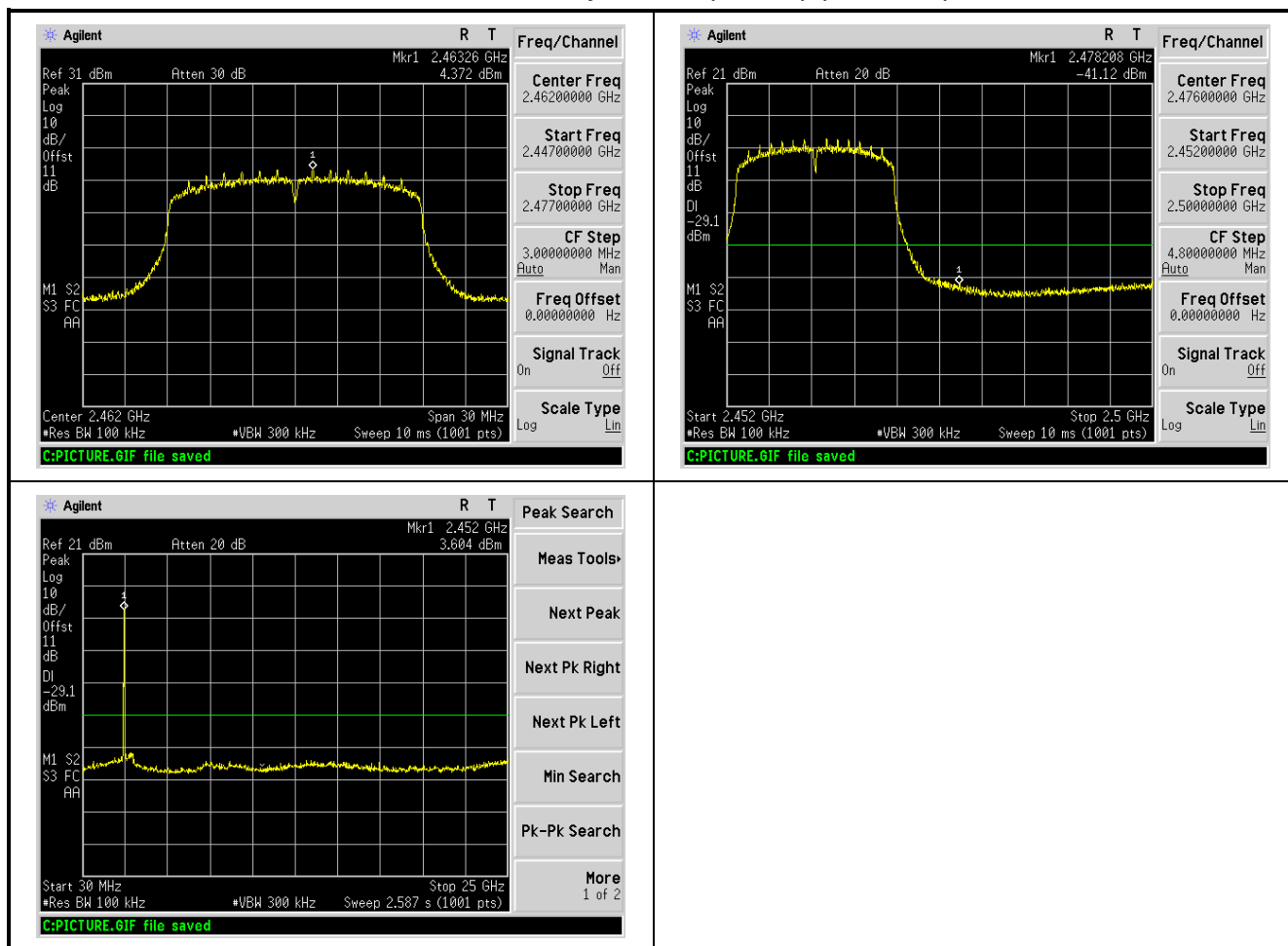




Mode 3: Transmit by 802.11n(20MHz) (2437MHz)



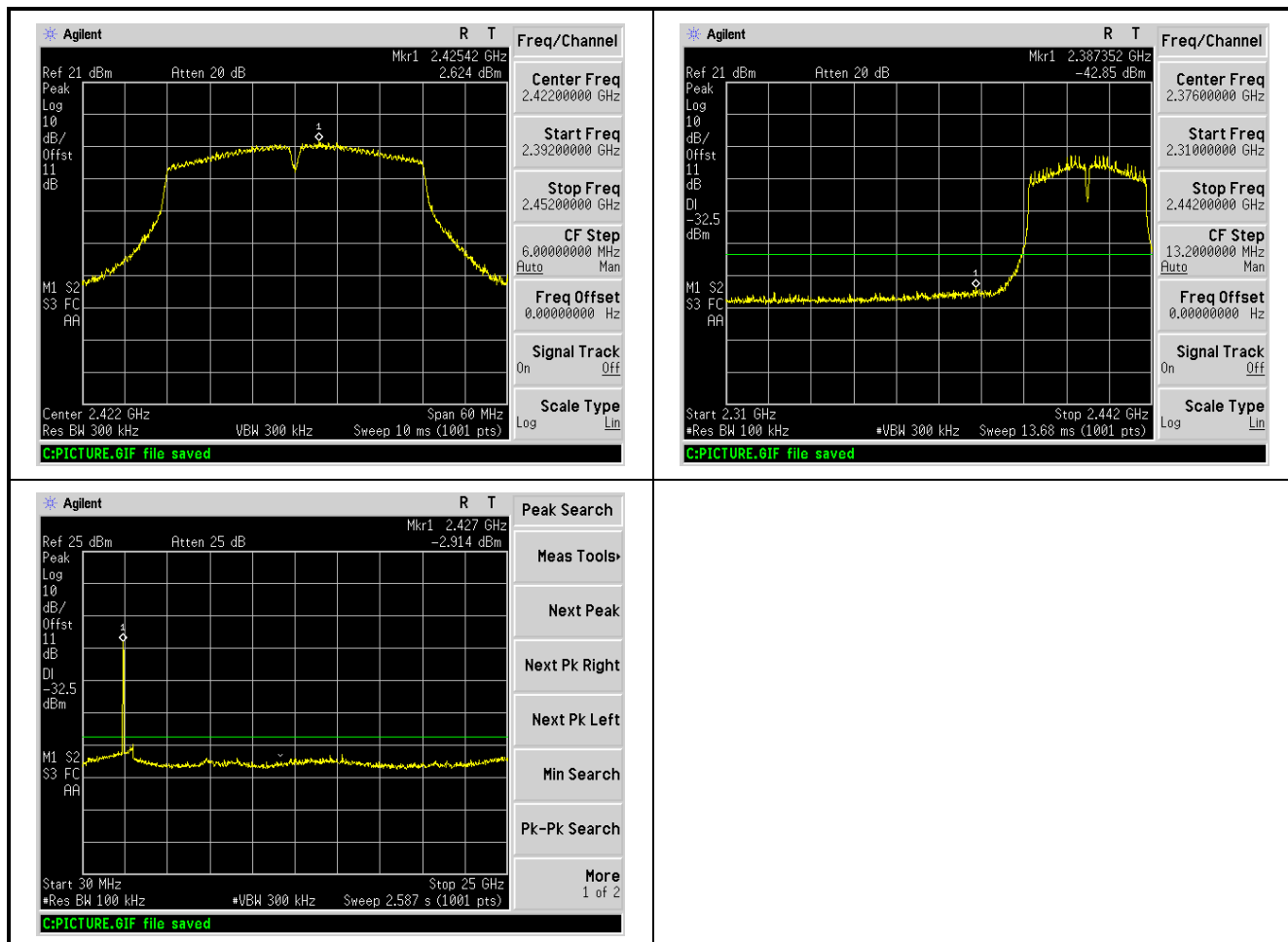
Mode 3: Transmit by 802.11n(20MHz) (2462MHz)





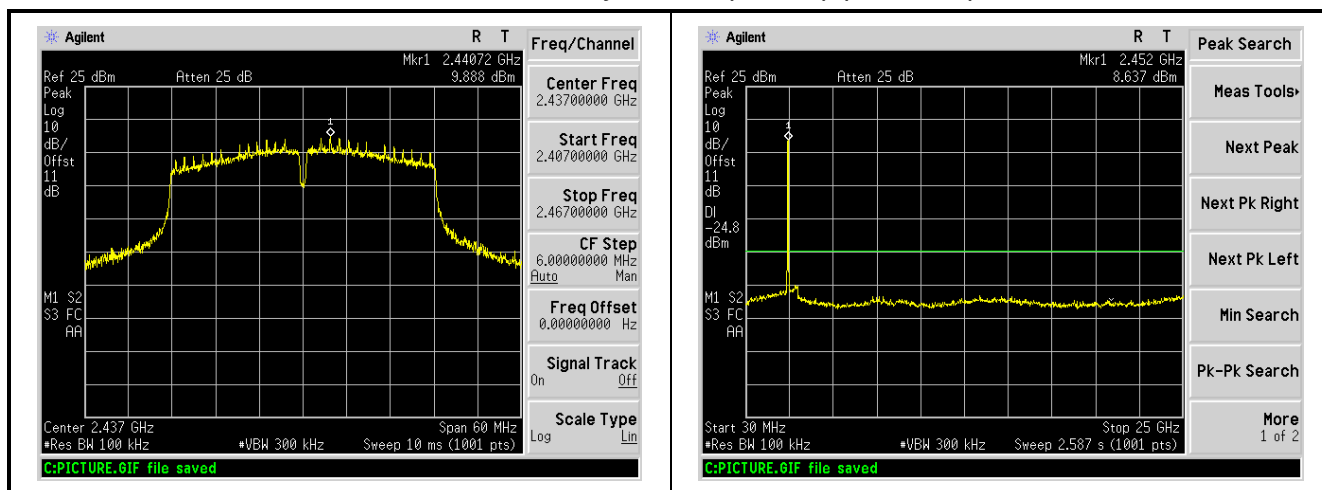
Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 4: Transmit by 802.11n(40MHz)

Mode 4: Transmit by 802.11n(40MHz) (2422MHz)

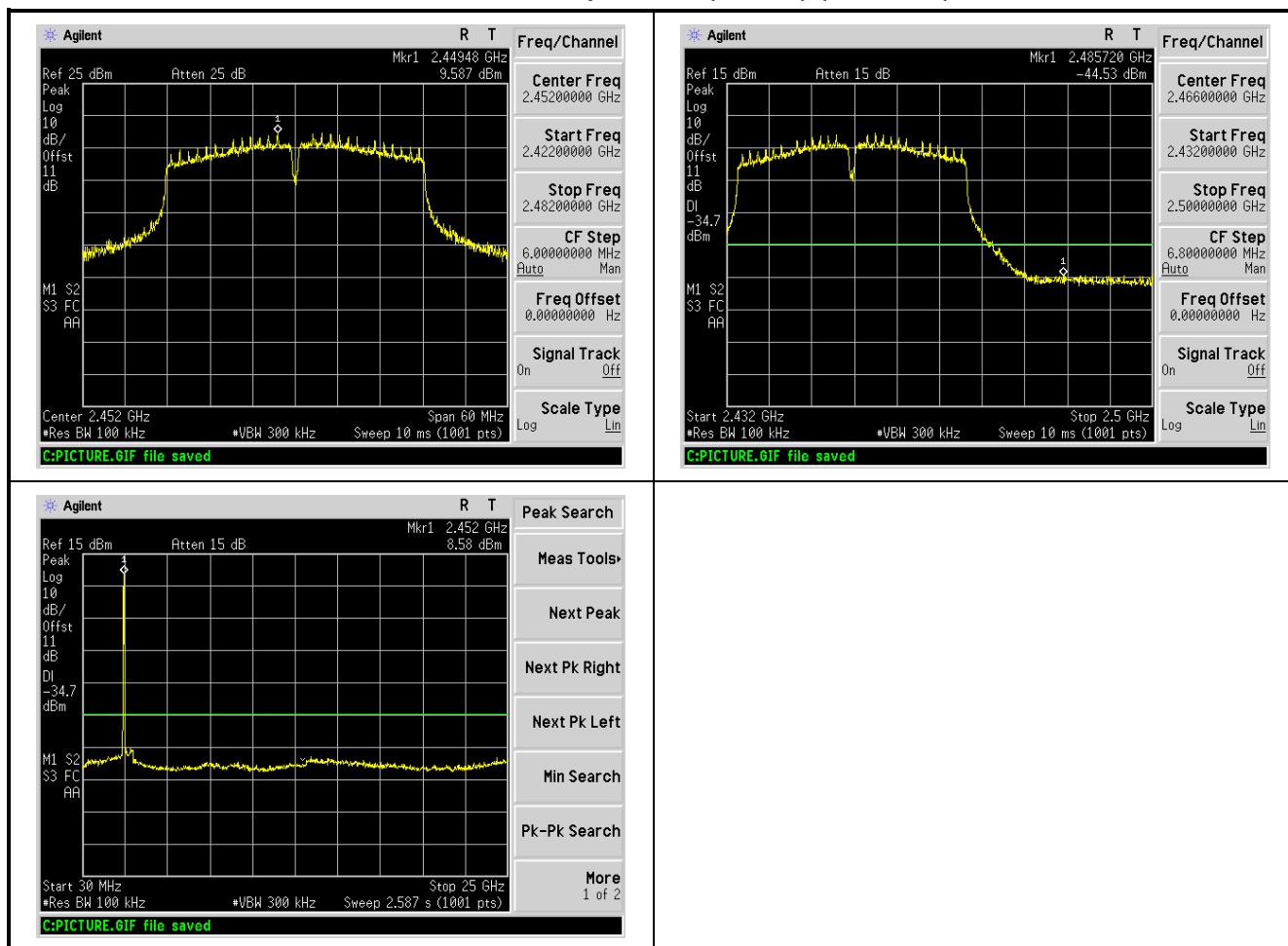




Mode 4: Transmit by 802.11n(40MHz) (2437MHz)



Mode 4: Transmit by 802.11n(40MHz) (2452MHz)



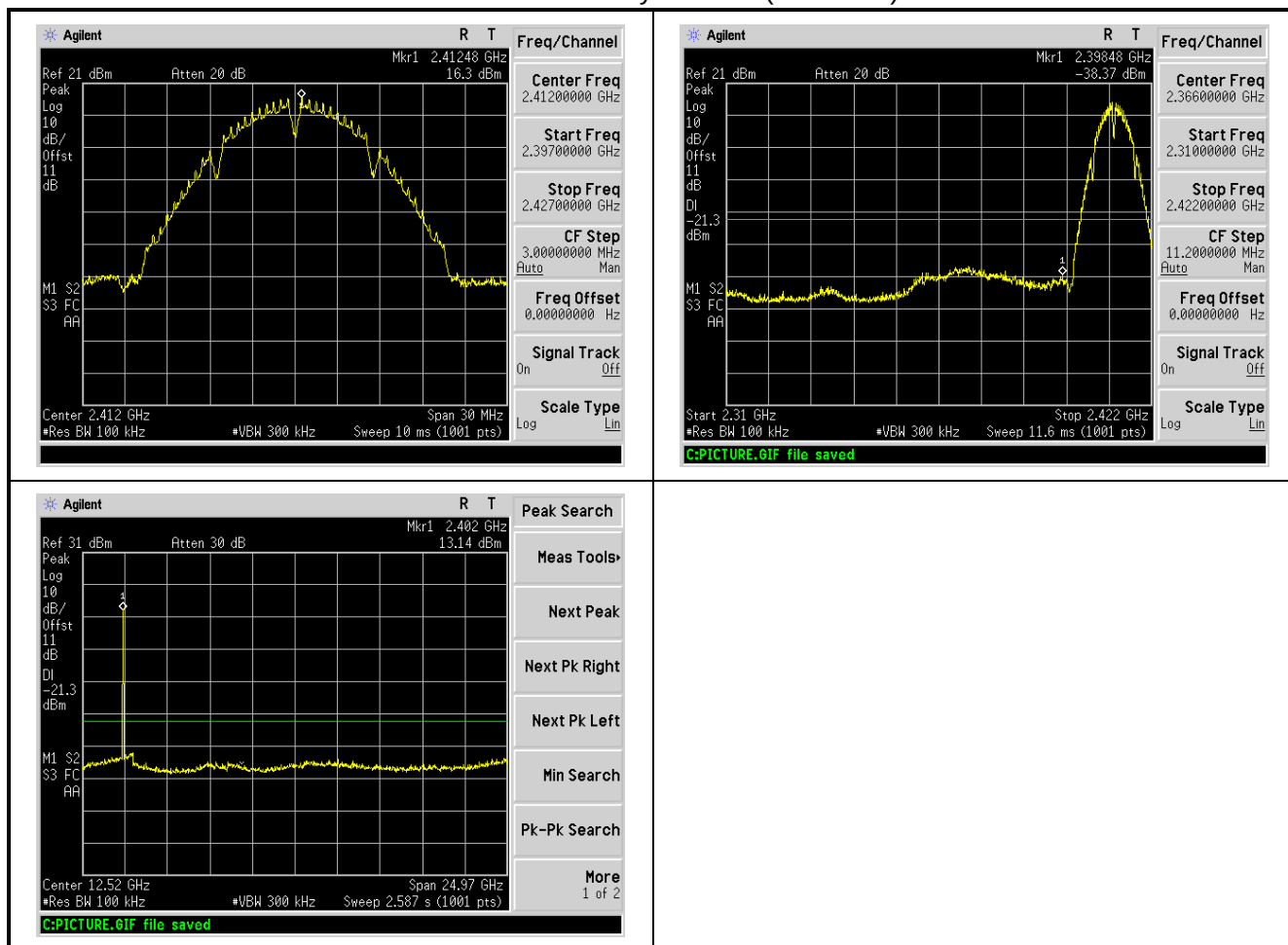
**Ant 3**

Test Mode	Channel No.	Frequency (MHz)	Limit	Result
802.11b	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11g	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11n(20MHz)	1	2412	20dBc	Pass
	6	2437	20dBc	Pass
	11	2462	20dBc	Pass
802.11n(40MHz)	3	2422	20dBc	Pass
	6	2437	20dBc	Pass
	9	2452	20dBc	Pass



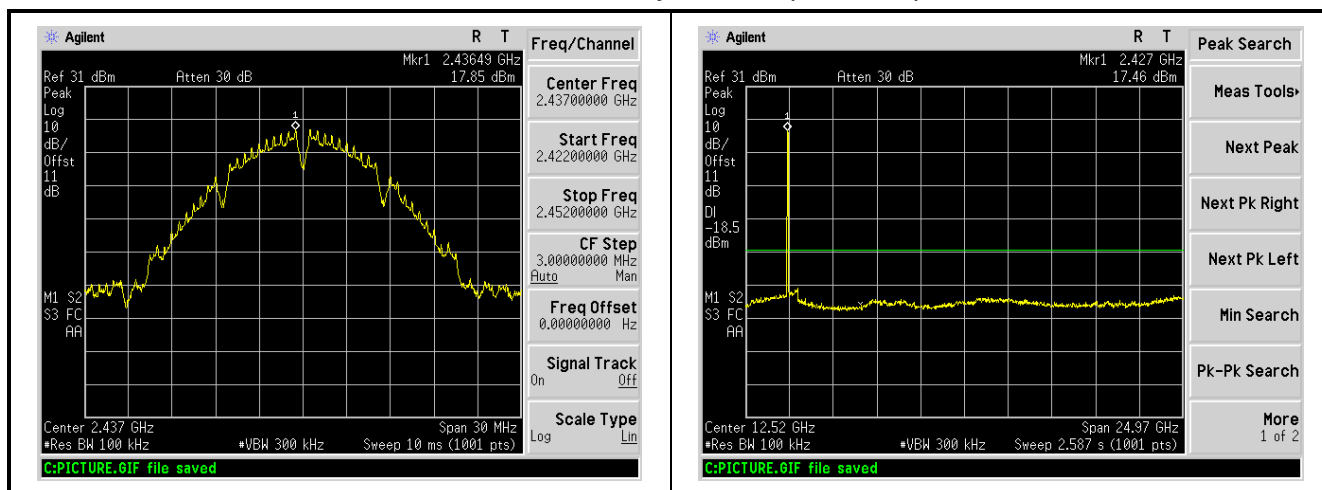
Test Item	:	Conducted Band Edge and Out-of-Band Emissions
Test Mode	:	Mode 1: Transmit by 802.11b

Mode 1: Transmit by 802.11b (2412MHz)

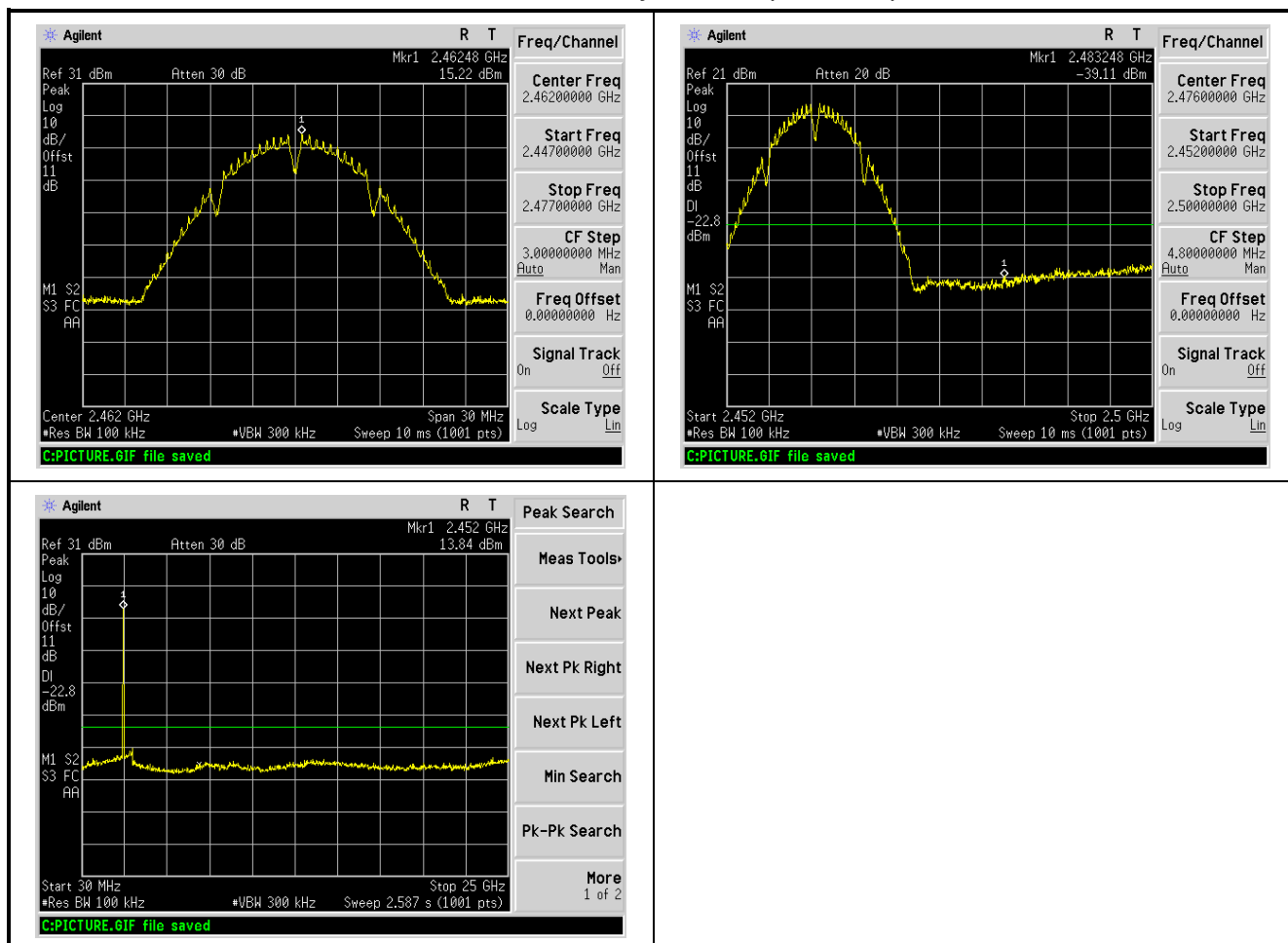




Mode 1: Transmit by 802.11b (2437MHz)



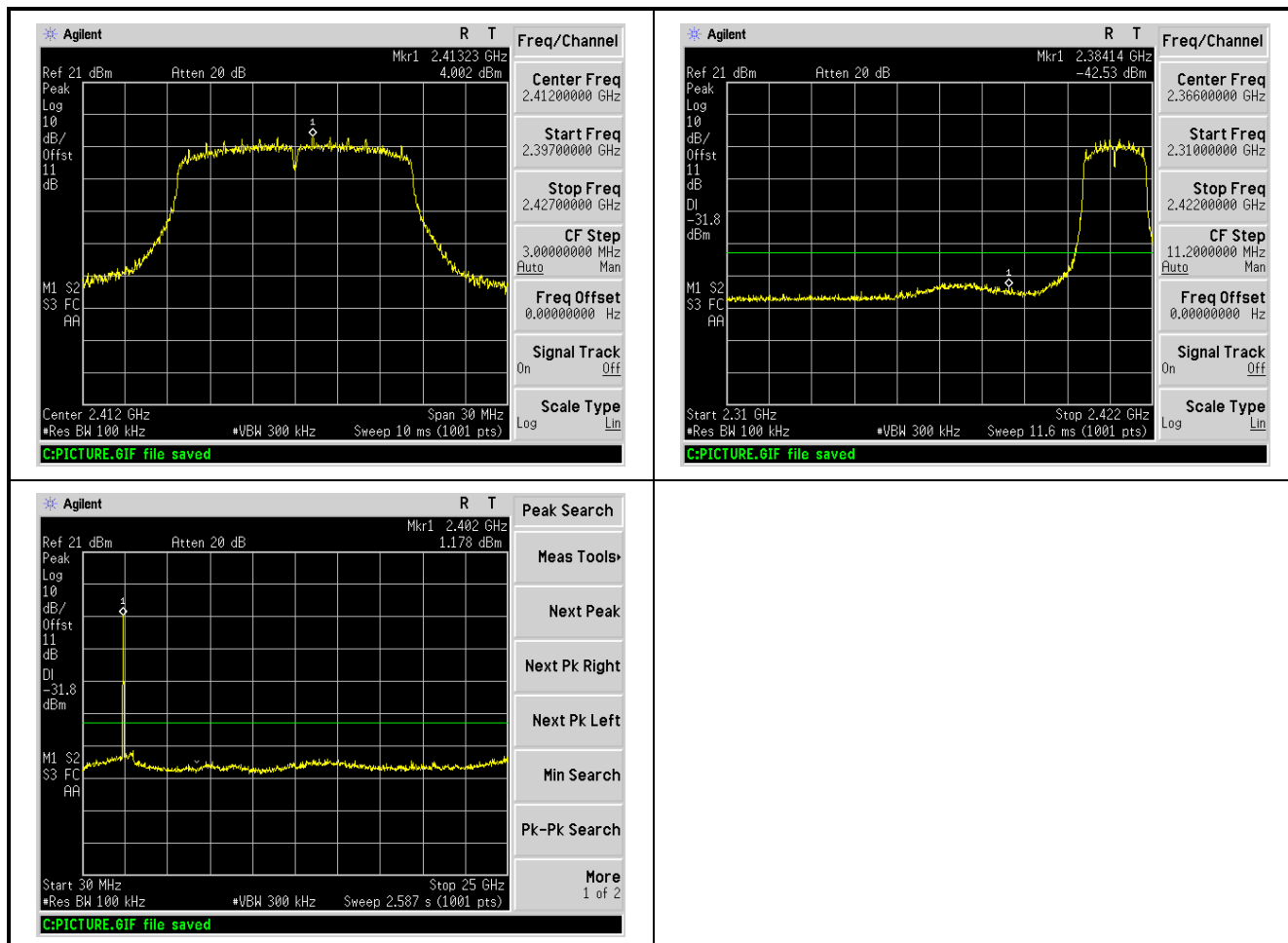
Mode 1: Transmit by 802.11b (2462MHz)





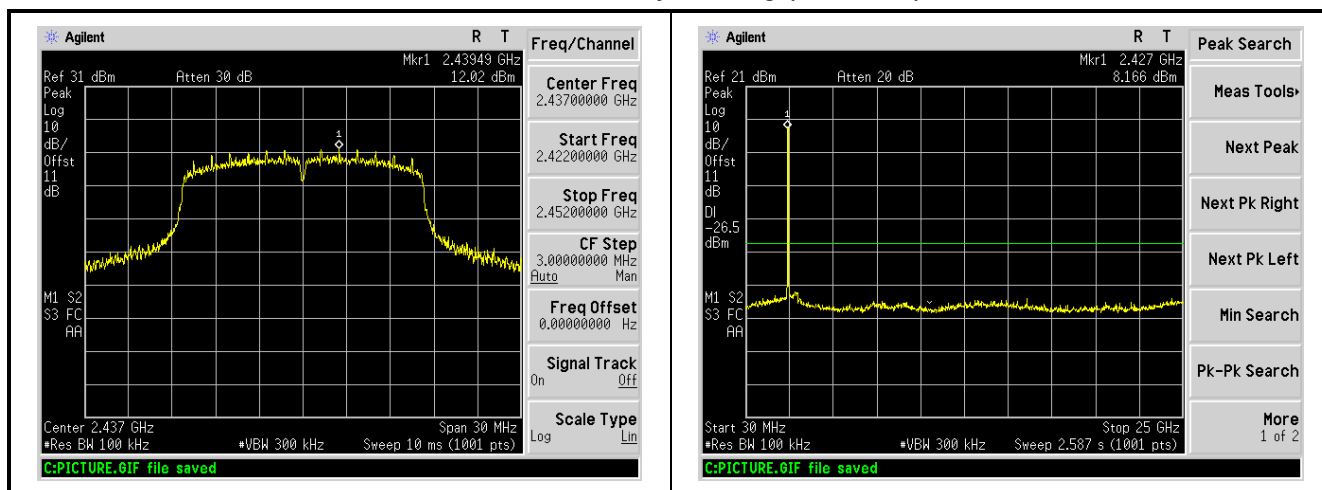
Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 2: Transmit by 802.11g

Mode 2: Transmit by 802.11g (2412MHz)

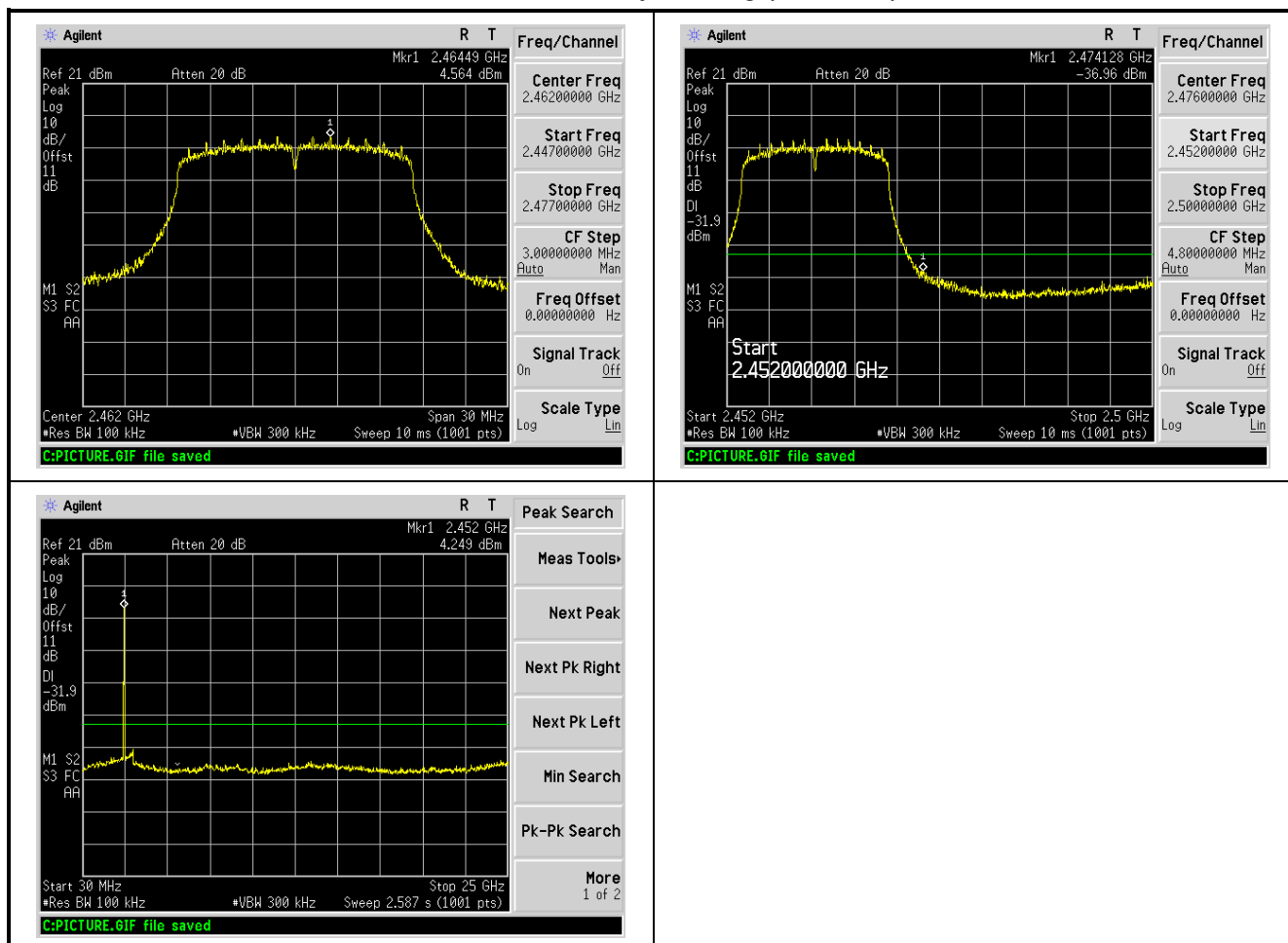




Mode 2: Transmit by 802.11g (2437MHz)



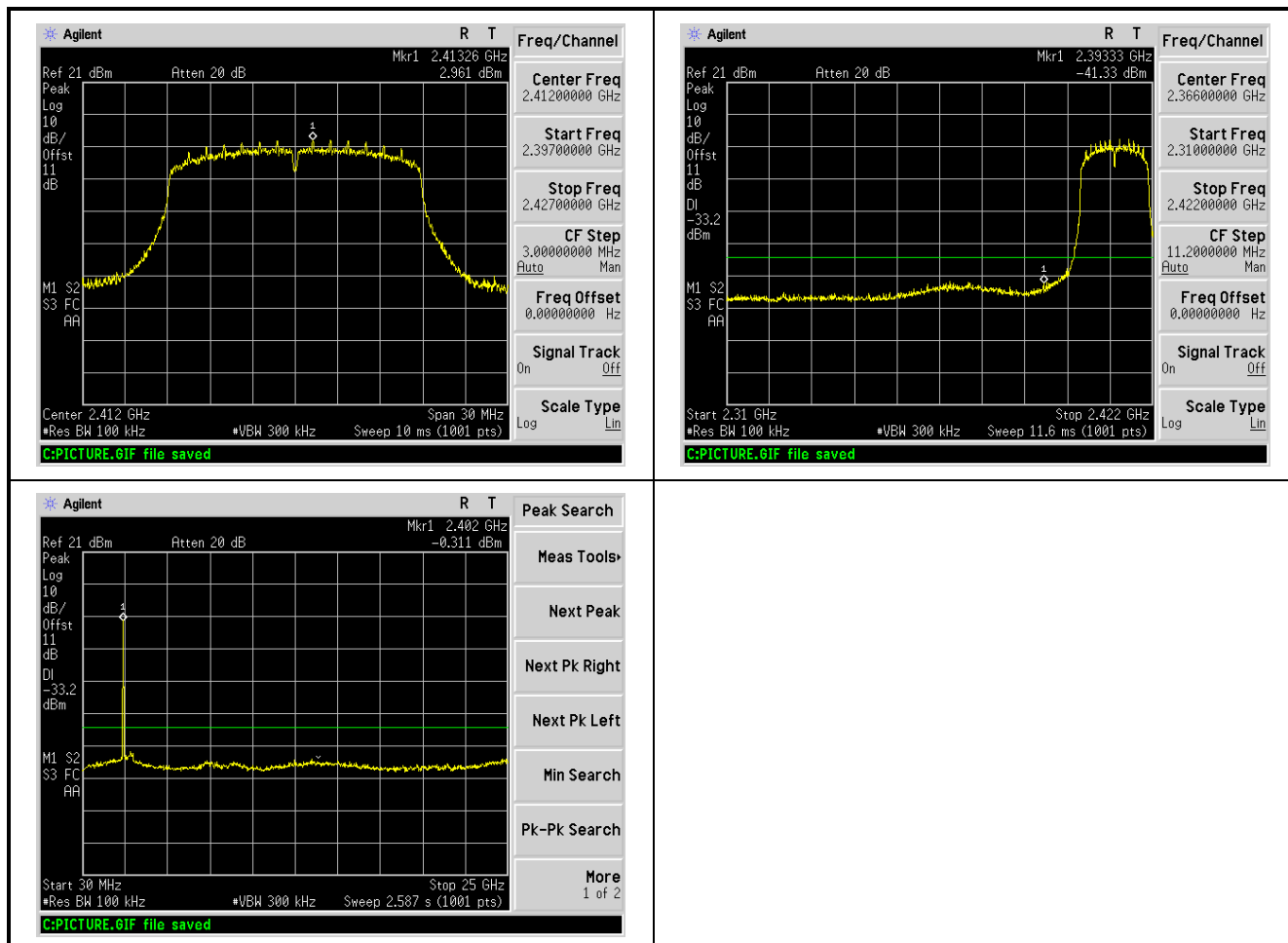
Mode 2: Transmit by 802.11g (2462MHz)





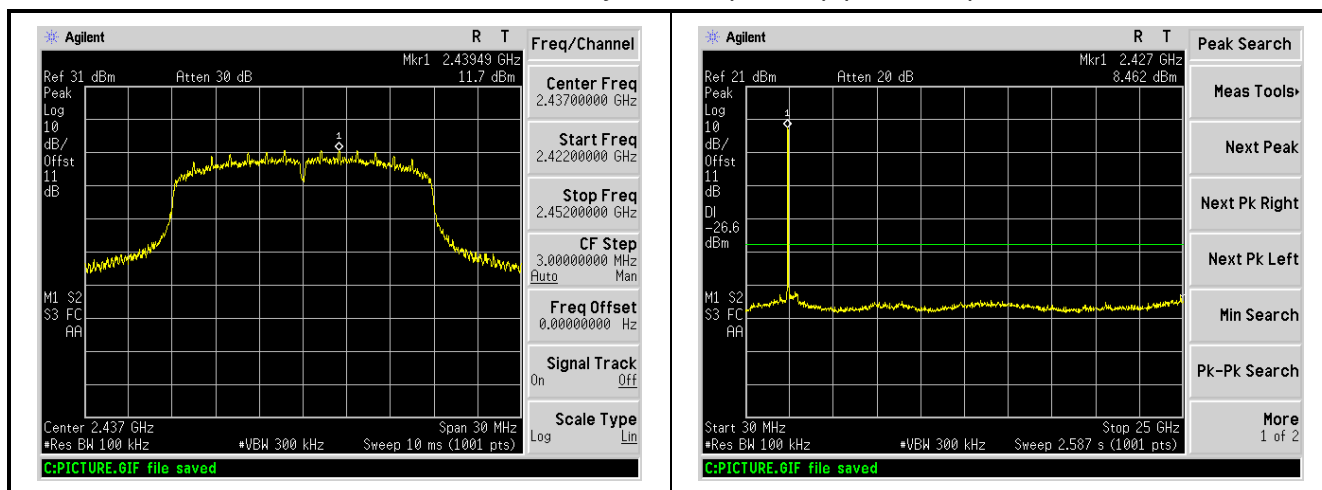
Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 3: Transmit by 802.11n(20MHz)

Mode 3: Transmit by 802.11n(20MHz) (2412MHz)

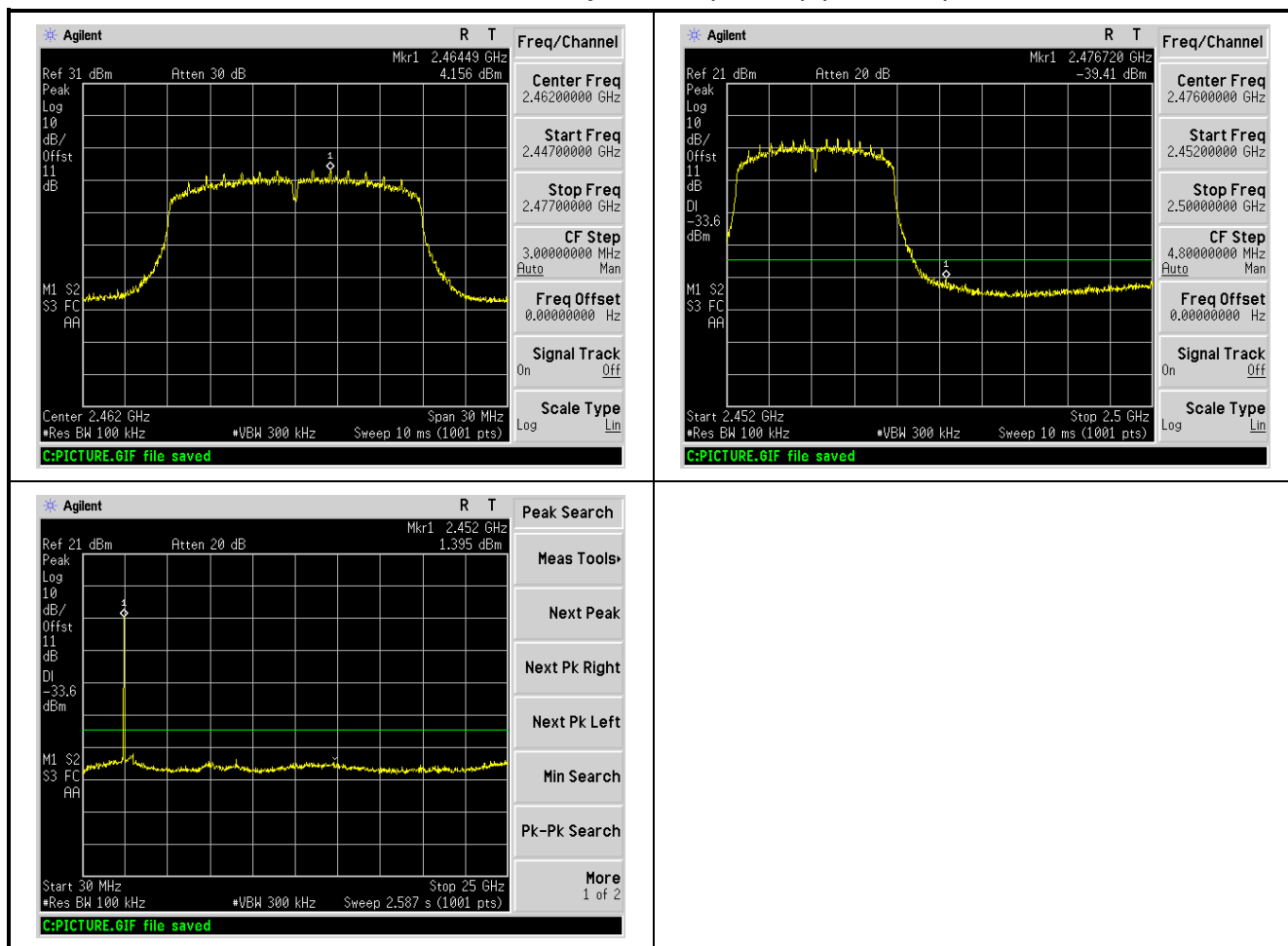




Mode 3: Transmit by 802.11n(20MHz) (2437MHz)



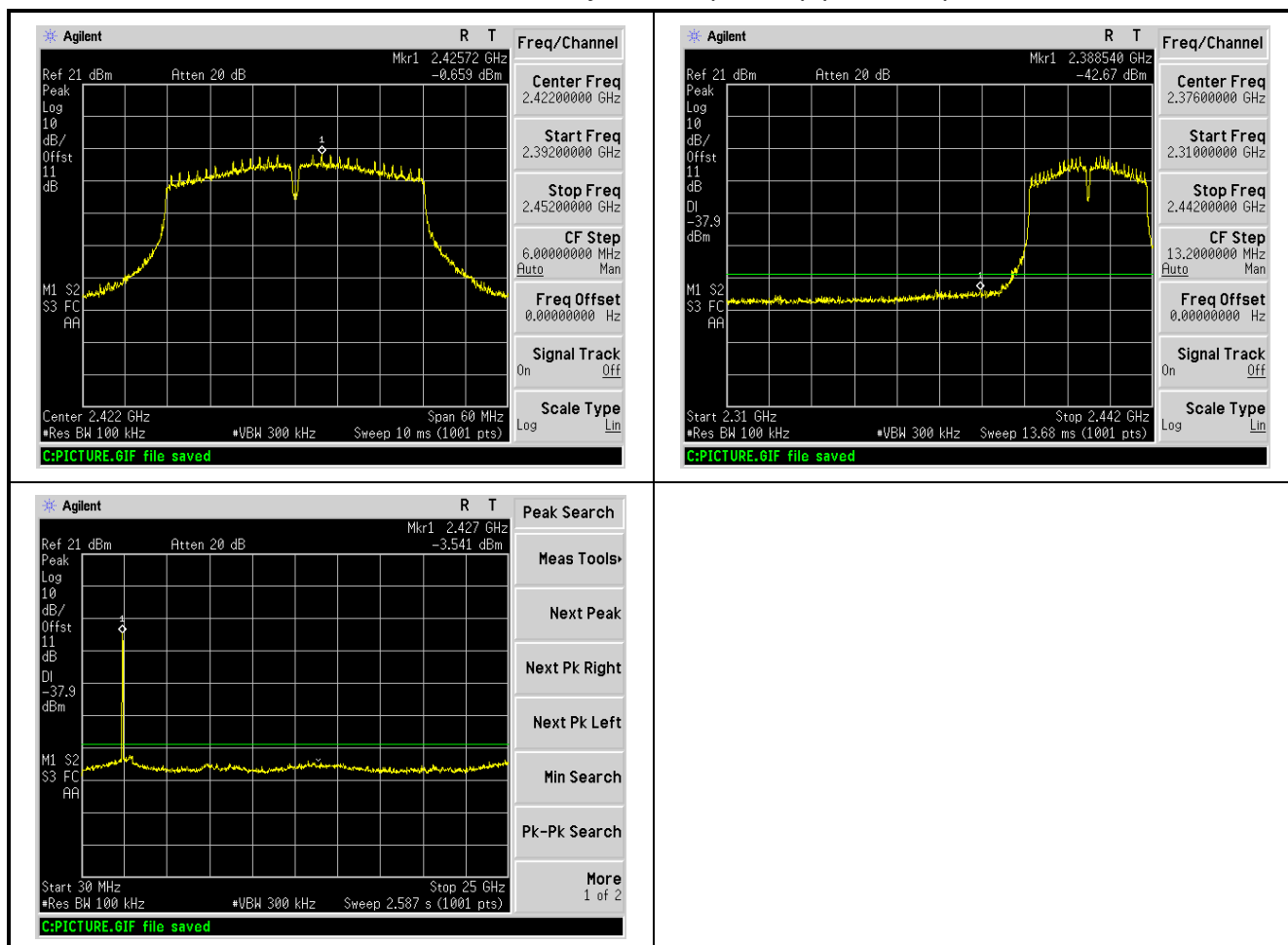
Mode 3: Transmit by 802.11n(20MHz) (2462MHz)





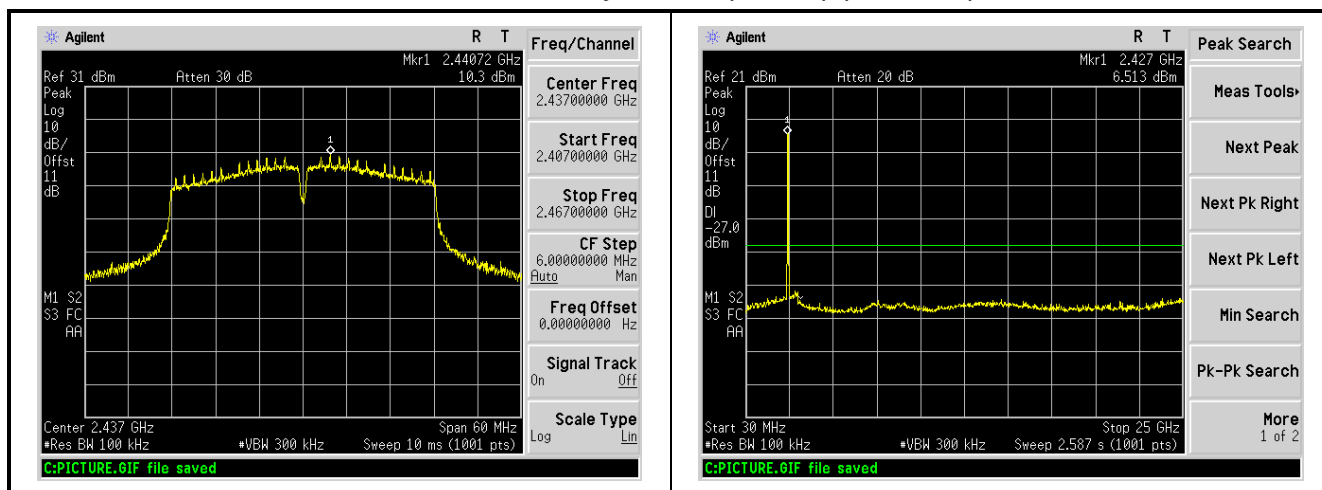
Test Item	:	Band-edge Compliance & Conducted Spurious Emissions
Test Mode	:	Mode 4: Transmit by 802.11n(40MHz)

Mode 4: Transmit by 802.11n(40MHz) (2422MHz)





Mode 4: Transmit by 802.11n(40MHz) (2437MHz)



Mode 4: Transmit by 802.11n(40MHz) (2452MHz)

