

Conducted emission (AC Mains)

During Preliminary Tests, the following operating mode were investigated

Channel / Frequency	Mode State (802.11b & 802.11g)	The worst operating condition
1 (2412MHz)	Transmitting	☐
6 (2437MHz)	Transmitting	☒
11 (2462MHz)	Transmitting	☐

1) 802.11b mode

Frequency (MHz)	Line	QP Level (dBuV)	Limit (dBuV)	Margin (dB)	AV Level (dBuV)	Limit (dBuV)	Margin (dB)
0.190	HOT	-	-	-	37.8	54.1	16.3
0.195	HOT	43.8	63.8	20.0	-	-	-
0.255	HOT	-	-	-	34.3	51.6	17.3
0.260	HOT	35.9	61.4	25.5	-	-	-
0.320	HOT	37.5	59.7	22.2	29.4	49.7	20.3
0.510	HOT	32.4	56.0	23.6	30.8	46.0	15.2
0.700	HOT	28.4	56.0	27.6	-	-	-
0.765	HOT	30.6	56.0	25.4	27.6	46.0	18.4
1.1500	HOT	-	-	-	28.0	46.0	18.0
17.295	HOT	-	-	-	35.2	50.0	14.8
17.485	HOT	-	-	-	34.9	50.0	15.1
17.550	HOT	36.8	60.0	23.2	-	-	-
17.740	HOT	37.2	60.0	22.8	-	-	-
17.870	HOT	-	-	-	34.5	50.0	15.5
0.190	NEUTRAL	45.7	63.5	17.8	-	-	-
0.255	NEUTRAL	40.5	62.6	21.1	-	-	-
0.320	NEUTRAL	-	-	-	31.9	49.7	17.8
0.380	NEUTRAL	35.2	58.3	23.1	-	-	-
0.385	NEUTRAL	-	-	-	29.8	48.2	18.4
0.445	NEUTRAL	-	-	-	30.4	47.0	16.6
0.830	NEUTRAL	31.5	56.0	23.1	30.5	46.0	15.5
1.340	NEUTRAL	31.3	56.0	24.7	30.4	46.0	15.6
1.405	NEUTRAL	-	-	-	30.0	46.0	16.0
2.425	NEUTRAL	30.7	56.0	25.3	-	-	-
17.360	NEUTRAL	-	-	-	36.9	50.0	13.1
17.425	NEUTRAL	-	-	-	37.2	50.0	12.8
17.490	NEUTRAL	-	-	-	37.4	50.0	12.6
17.550	NEUTRAL	38.5	60.0	21.5	-	-	-
17.615	NEUTRAL	38.9	60.0	21.1	-	-	-

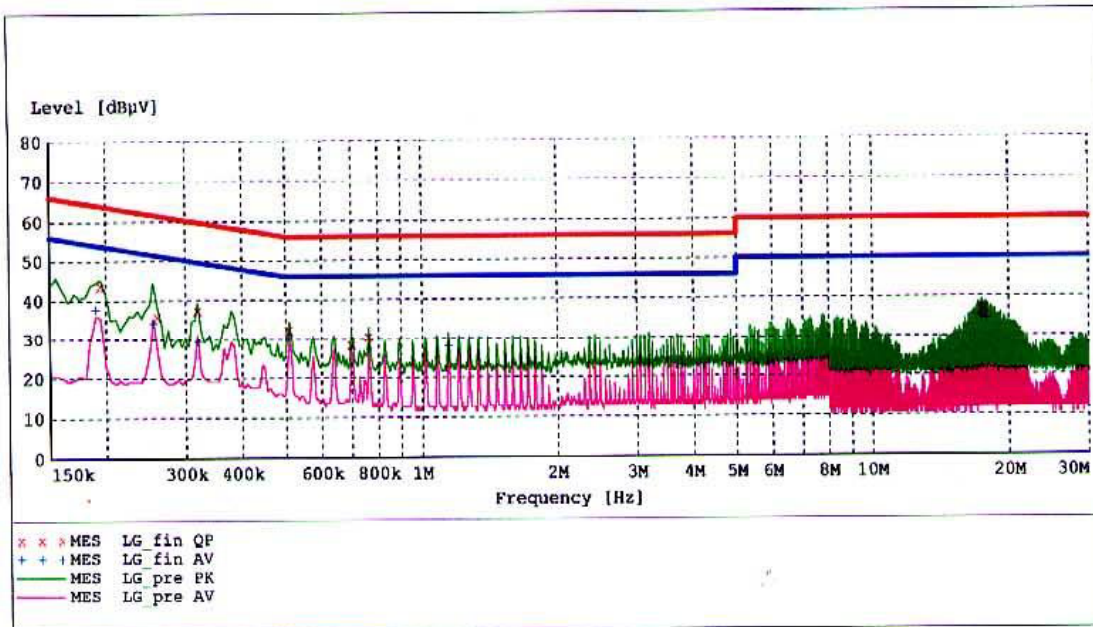
* Line Conducted Emissions Tabulated Data

HCT
EMC TESTING Laboratory

EUT: 15LW1R
 Manufacturer: LG ELECTRONICS INC.
 Operating Condition: TRANSMITTING, 11M, 2437MHz
 Test Site: SHIELD ROOM
 Operator: SANG-HUN, KANG
 Test Specification: CISPR 22 CLASS B
 Comment: H
 Start of Test: 11/30/04 / 9:24:06AM

SCAN TABLE: "CISPR 22 Voltage"

Short Description:			CISPR 22 Voltage			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
150.0 kHz	500.0 kHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
500.0 kHz	5.0 MHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			



MEASUREMENT RESULT: "LG_fin QP"

11/30/04 9:27AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.195000	43.80	10.1	64	20.0	1	---
0.260000	35.90	10.1	61	25.5	1	---
0.320000	37.50	10.1	60	22.2	1	---
0.510000	32.40	10.1	56	23.6	1	---
0.700000	28.40	10.2	56	27.6	1	---
0.765000	30.60	10.2	56	25.4	1	---
17.550000	36.80	10.5	60	23.2	1	---
17.740000	37.20	10.5	60	22.8	1	---

MEASUREMENT RESULT: "LG_fin AV"

11/30/04 9:27AM

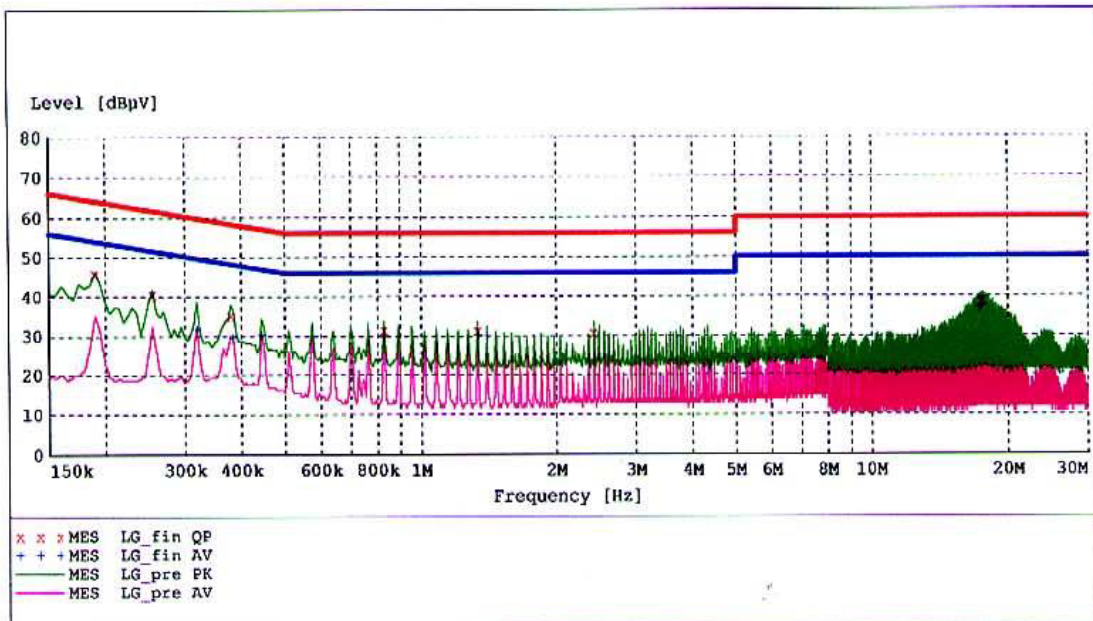
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.190000	37.80	10.1	54	16.3	1	---
0.255000	34.30	10.1	52	17.3	1	---
0.320000	29.40	10.1	50	20.3	1	---
0.510000	30.80	10.1	46	15.2	1	---
0.765000	27.60	10.2	46	18.4	1	---
1.150000	28.00	10.1	46	18.0	1	---
17.295000	35.20	10.5	50	14.8	1	---
17.485000	34.90	10.5	50	15.1	1	---
17.870000	34.50	10.5	50	15.5	1	---

HCT
EMC TESTING Laboratory

EUT: 15LW1R
 Manufacturer: LG ELECTRONICS INC.
 Operating Condition: TRANSMITTING, 11M, 2437MHz
 Test Site: SHIELD ROOM
 Operator: SANG-HUN, KANG
 Test Specification: CISPR 22 CLASS B
 Comment: N
 Start of Test: 11/30/04 / 9:28:24AM

SCAN TABLE: "CISPR 22 Voltage"

Short Description:			CISPR 22 Voltage			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
150.0 kHz	500.0 kHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
500.0 kHz	5.0 MHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			



MEASUREMENT RESULT: "LG_fin QP"

11/30/04 9:31AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.190000	45.70	10.1	64	18.4	1	---
0.255000	40.50	10.1	62	21.1	1	---
0.380000	35.20	10.1	58	23.1	1	---
0.830000	31.50	10.1	56	24.5	1	---
1.340000	31.30	10.2	56	24.7	1	---
2.425000	30.70	10.3	56	25.3	1	---
17.550000	38.50	10.5	60	21.5	1	---
17.615000	38.90	10.5	60	21.1	1	---

MEASUREMENT RESULT: "LG_fin AV"

11/30/04 9:31AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.320000	31.90	10.1	50	17.8	1	---
0.385000	29.80	10.1	48	18.4	1	---
0.445000	30.40	10.1	47	16.6	1	---
0.830000	30.50	10.1	46	15.5	1	---
1.340000	30.40	10.2	46	15.6	1	---
1.405000	30.00	10.2	46	16.0	1	---
17.360000	36.90	10.5	50	13.1	1	---
17.425000	37.20	10.5	50	12.8	1	---
17.490000	37.40	10.5	50	12.6	1	---

2) 802.11g mode

Frequency (MHz)	Line	QP Level (dBuV)	Limit (dBuV)	Margin (dB)	AV Level (dBuV)	Limit (dBuV)	Margin (dB)
0.195	HOT	43.5	63.8	20.3	33.7	53.8	20.1
0.255	HOT	42.2	61.5	19.3	34.0	51.6	17.6
0.385	HOT	33.4	58.1	24.7	28.0	48.2	20.2
0.510	HOT	32.4	56.0	23.6	30.7	46.0	15.3
0.765	HOT	30.4	56.0	25.6	-	-	-
1.085	HOT	-	-	-	28.1	46.0	17.9
1.150	HOT	-	-	-	28.3	46.0	17.7
4.275	HOT	27.6	56.0	28.4	-	-	-
17.490	HOT	37.5	60.0	22.5	35.5	50.0	14.5
17.555	HOT	37.2	60.0	22.8	-	-	-
17.810	HOT	36.5	60.0	23.5	-	-	-
18.065	HOT	-	-	-	34.5	50.0	15.5
0.190	NEUTRAL	44.9	64.0	19.1	-	-	-
0.255	NEUTRAL	40.2	61.6	21.4	-	-	-
0.320	NEUTRAL	-	-	-	31.7	49.7	18.0
0.385	NEUTRAL	-	-	-	29.7	48.2	18.5
0.445	NEUTRAL	-	-	-	30.3	47.0	16.7
0.575	NEUTRAL	31.8	56.0	24.2	30.6	46.0	15.4
0.765	NEUTRAL	31.0	56.0	25.0	-	-	-
0.830	NEUTRAL	-	-	-	30.6	46.0	15.4
1.405	NEUTRAL	31.1	56.0	24.9	30.3	46.0	15.7
17.490	NEUTRAL	38.1	60.0	21.9	-	-	-
17.555	NEUTRAL	38.6	60.0	21.4	36.3	50.0	13.7
17.620	NEUTRAL	39.0	60.0	21.0	37.4	50.0	12.6

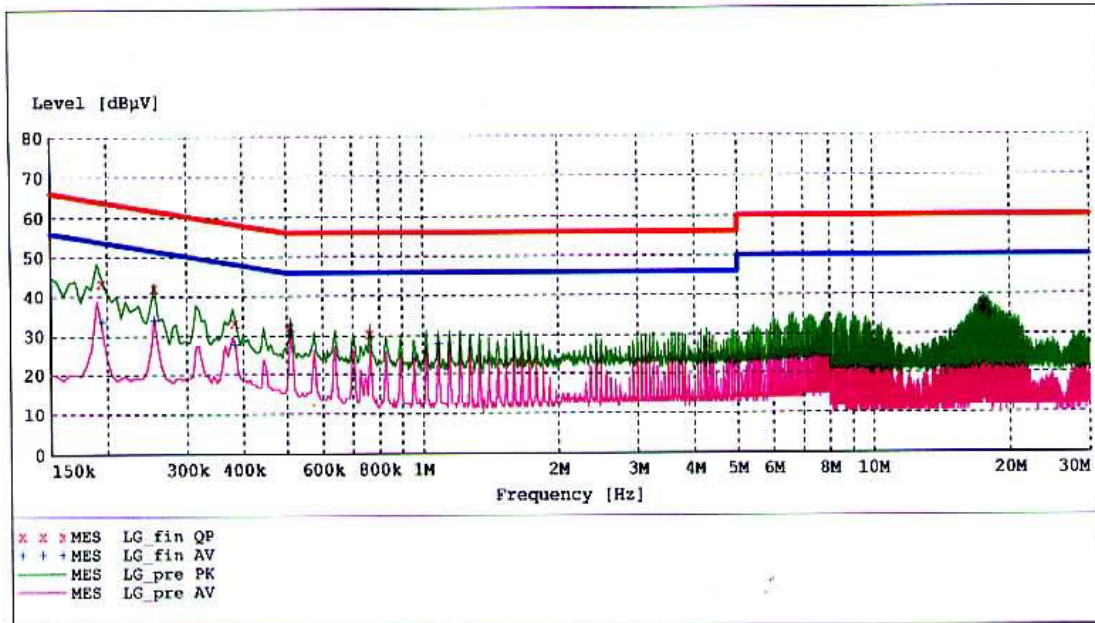
* Line Conducted Emissions Tabulated Data

HCT
EMC TESTING Laboratory

EUT: 15LW1R
 Manufacturer: LG ELECTRONICS INC.
 Operating Condition: TRANSMITTING, 54M, 2437MHz
 Test Site: SHIELD ROOM
 Operator: SANG-HUN, KANG
 Test Specification: CISPR 22 CLASS B
 Comment: H
 Start of Test: 11/30/04 / 9:34:07AM

SCAN TABLE: "CISPR 22 Voltage"

Short Description:			CISPR 22 Voltage				Transducer
Start	Stop	Step	Detector	Meas. Time	IF Bandw.		
Frequency	Frequency	Width					
150.0 kHz	500.0 kHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				
500.0 kHz	5.0 MHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	None	
			Average				



MEASUREMENT RESULT: "LG_fin QP"

11/30/04 9:37AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.195000	43.50	10.1	64	20.3	1	---
0.255000	42.20	10.1	62	19.3	1	---
0.385000	33.40	10.1	58	24.7	1	---
0.510000	32.40	10.1	56	23.6	1	---
0.765000	30.40	10.2	56	25.6	1	---
4.275000	27.60	10.3	56	28.4	1	---
17.490000	37.50	10.5	60	22.5	1	---
17.555000	37.20	10.5	60	22.8	1	---
17.810000	36.50	10.5	60	23.5	1	---

MEASUREMENT RESULT: "LG_fin AV"

11/30/04 9:37AM

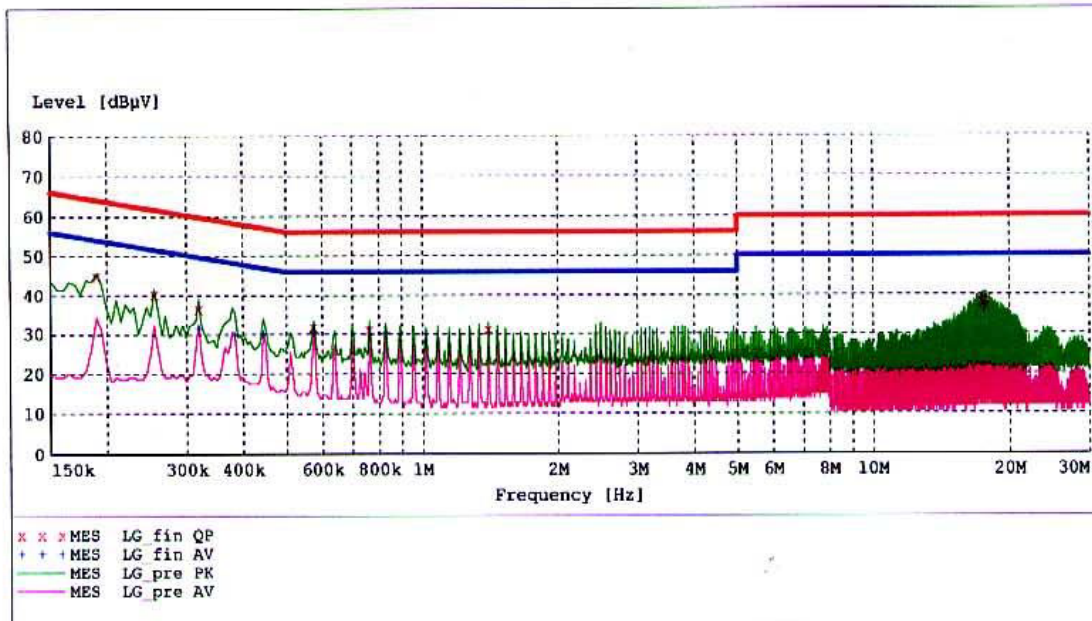
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.195000	33.70	10.1	54	20.1	1	---
0.255000	34.00	10.1	52	17.6	1	---
0.385000	28.00	10.1	48	20.2	1	---
0.510000	30.70	10.1	46	15.3	1	---
1.085000	28.10	10.1	46	17.9	1	---
1.150000	28.30	10.1	46	17.7	1	---
17.490000	35.50	10.5	50	14.5	1	---
18.065000	34.50	10.5	50	15.5	1	---

HCT
EMC TESTING Laboratory

EUT: 15LW1R
 Manufacturer: LG ELECTRONICS INC.
 Operating Condition: TRANSMITTING, 54M, 2437MHz
 Test Site: SHIELD ROOM
 Operator: SANG-HUN, KANG
 Test Specification: CISPR 22 CLASS B
 Comment: N
 Start of Test: 11/30/04 / 9:38:31AM

SCAN TABLE: "CISPR 22 Voltage"

Short Description:			CISPR 22 Voltage			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
150.0 kHz	500.0 kHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			
500.0 kHz	5.0 MHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	None
			Average			



MEASUREMENT RESULT: "LG_fin_QP"

11/30/04 9:42AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.190000	44.90	10.1	64	19.1	1	---
0.255000	40.20	10.1	62	21.4	1	---
0.320000	36.70	10.1	60	23.0	1	---
0.575000	31.80	10.1	56	24.2	1	---
0.765000	31.00	10.2	56	25.0	1	---
1.405000	31.10	10.2	56	24.9	1	---
17.490000	38.10	10.5	60	21.9	1	---
17.555000	38.60	10.5	60	21.4	1	---
17.620000	39.00	10.5	60	21.0	1	---

MEASUREMENT RESULT: "LG_fin AV"

11/30/04 9:42AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.320000	31.70	10.1	50	18.0	1	---
0.385000	29.70	10.1	48	18.5	1	---
0.445000	30.30	10.1	47	16.7	1	---
0.575000	30.60	10.1	46	15.4	1	---
0.830000	30.60	10.1	46	15.4	1	---
1.405000	30.30	10.2	46	15.7	1	---
17.555000	36.30	10.5	50	13.7	1	---
17.620000	37.40	10.5	50	12.6	1	---

Radiated emission (30MHz~25GHz)

During Preliminary Tests, the following operating mode were investigated

Channel / Frequency	Mode State (802.11b & 802.11g)	The worst operation condition (X,Y,Z)
1 (2412MHz)	Transmitting	X
6 (2437MHz)	Transmitting	X
11 (2462MHz)	Transmitting	X

1) 802.11b mode

Channel	Frequency MHz	ANT POL (H/V)	Quasi-Peak dBuV/m	Limit dBuV/m	Margin dB	Average dBuV/m	Limit dBuV/m	Margin dB
Ch 1	195.000	V	38.4	43.5	5.1	-	-	-
	195.000	H	36.7	43.5	6.8	-	-	-
	325.000	V	38.2	46.0	7.8	-	-	-
	325.000	H	39.2	46.0	6.8	-	-	-
	1365.00	V	43.2	74.0	30.8	33.9	54.0	20.1
	1365.00	H	45.9	74.0	28.1	39.4	54.0	14.6
	4824.00	V	52.5	74.0	21.5	39.3	54.0	14.7
	4824.00	H	51.9	74.0	22.1	39.4	54.0	14.6
Ch 6	195.000	V	38.4	43.5	5.1	-	-	-
	195.000	H	36.9	43.5	6.6	-	-	-
	325.000	V	38.1	46.0	7.9	-	-	-
	325.000	H	39.2	46.0	6.8	-	-	-
	1365.00	V	43.3	74.0	30.7	34.1	54.0	19.9
	1365.00	H	46.4	74.0	27.6	39.8	54.0	14.2
	4874.00	V	52.1	74.0	21.9	38.9	54.0	15.1
	4874.00	H	51.7	74.0	22.3	38.9	54.0	15.1
Ch 11	195.000	V	38.3	43.5	5.2	-	-	-
	195.000	H	37.2	43.5	6.3	-	-	-
	325.000	V	38.2	46.0	7.8	-	-	-
	325.000	H	39.1	46.0	6.9	-	-	-
	1365.00	V	43.3	74.0	30.7	34.0	54.0	20.0
	1365.00	H	46.5	74.0	27.5	40.1	54.0	13.9
	4924.00	V	53.3	74.0	20.7	39.7	54.0	14.3
	4924.00	H	53.5	74.0	20.5	39.8	54.0	14.2

2) 802.11g mode

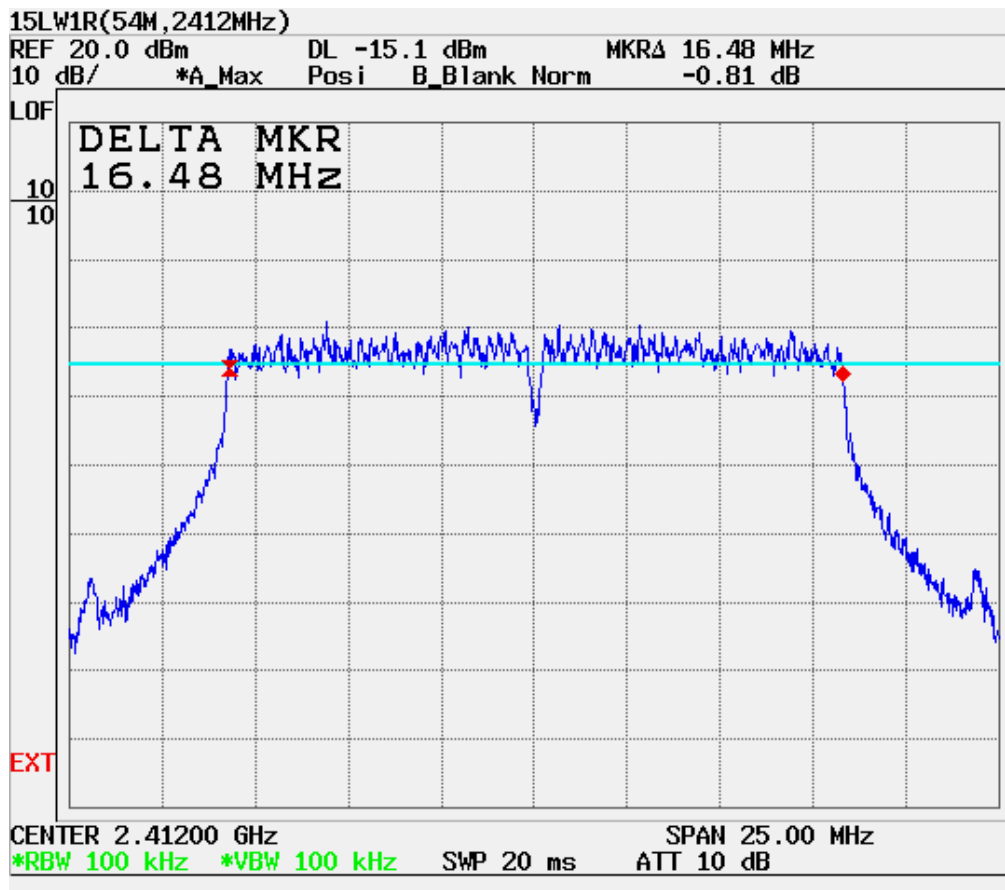
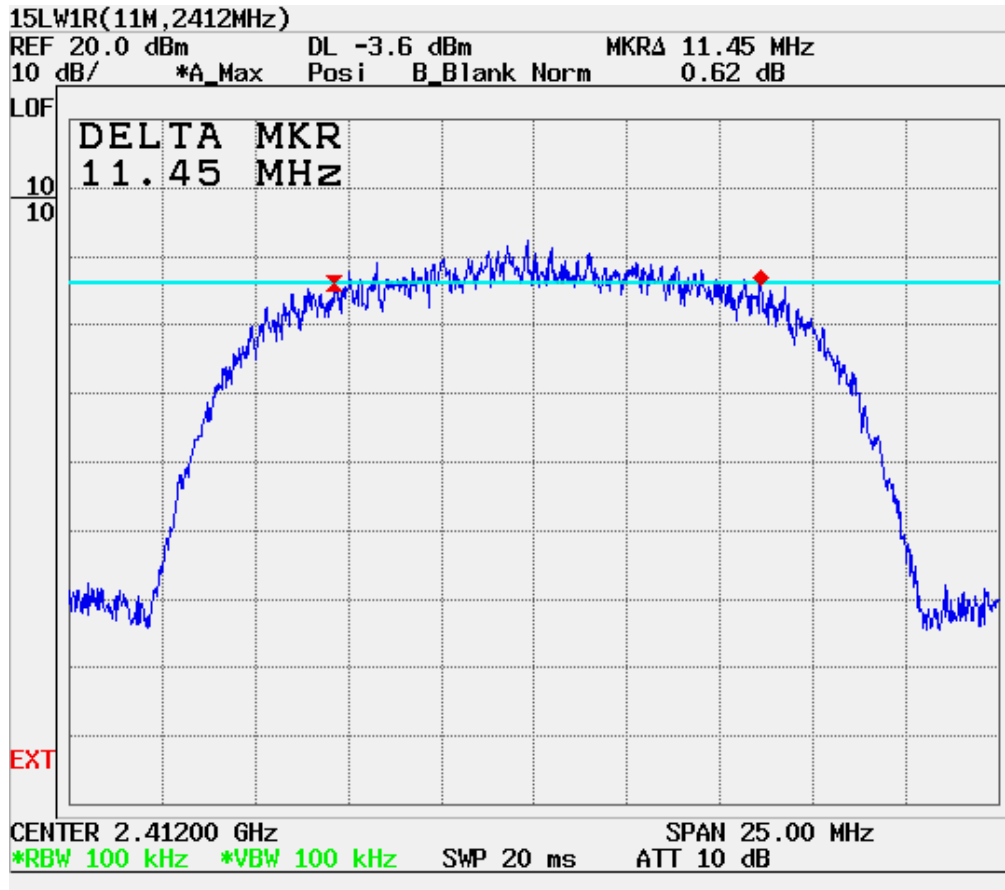
Channel	Frequency MHz	ANT POL (H/V)	Quasi-Peak dBuV/m	Limit dBuV/m	Margin dB	Average dBuV/m	Limit dBuV/m	Margin dB
Ch 1	195.000	V	37.3	43.5	6.2	-	-	-
	195.000	H	40.5	43.5	3.0	-	-	-
	325.000	V	39.9	46.0	6.1	-	-	-
	325.000	H	39.2	46.0	6.8	-	-	-
	1365.00	V	43.6	74.0	30.4	34.0	54.0	20.0
	1365.00	H	46.9	74.0	27.1	40.2	54.0	13.8
	4824.00	V	52.8	74.0	21.2	39.4	54.0	14.6
	4824.00	H	52.8	74.0	21.2	39.2	54.0	14.8
Ch 6	195.000	V	37.3	43.5	6.2	-	-	-
	195.000	H	40.0	43.5	3.5	-	-	-
	325.000	V	39.7	46.0	6.3	-	-	-
	325.000	H	39.1	46.0	6.9	-	-	-
	1365.00	V	43.3	74.0	30.7	34.3	54.0	19.7
	1365.00	H	46.8	74.0	27.2	40.2	54.0	13.8
	4874.00	V	51.7	74.0	22.3	38.8	54.0	15.2
	4874.00	H	51.9	74.0	22.1	38.9	54.0	15.1
Ch 11	195.000	V	37.2	43.5	6.3	-	-	-
	195.000	H	40.5	43.5	3.0	-	-	-
	325.000	V	39.7	46.0	6.3	-	-	-
	325.000	H	39.1	46.0	6.9	-	-	-
	1365.00	V	43.6	74.0	30.4	34.6	54.0	19.4
	1365.00	H	46.1	74.0	27.9	39.6	54.0	14.4
	4924.00	V	52.9	74.0	21.1	39.7	54.0	14.3
	4924.00	H	52.8	74.0	21.2	39.8	54.0	14.2

6dB Bandwidth (Conducted)

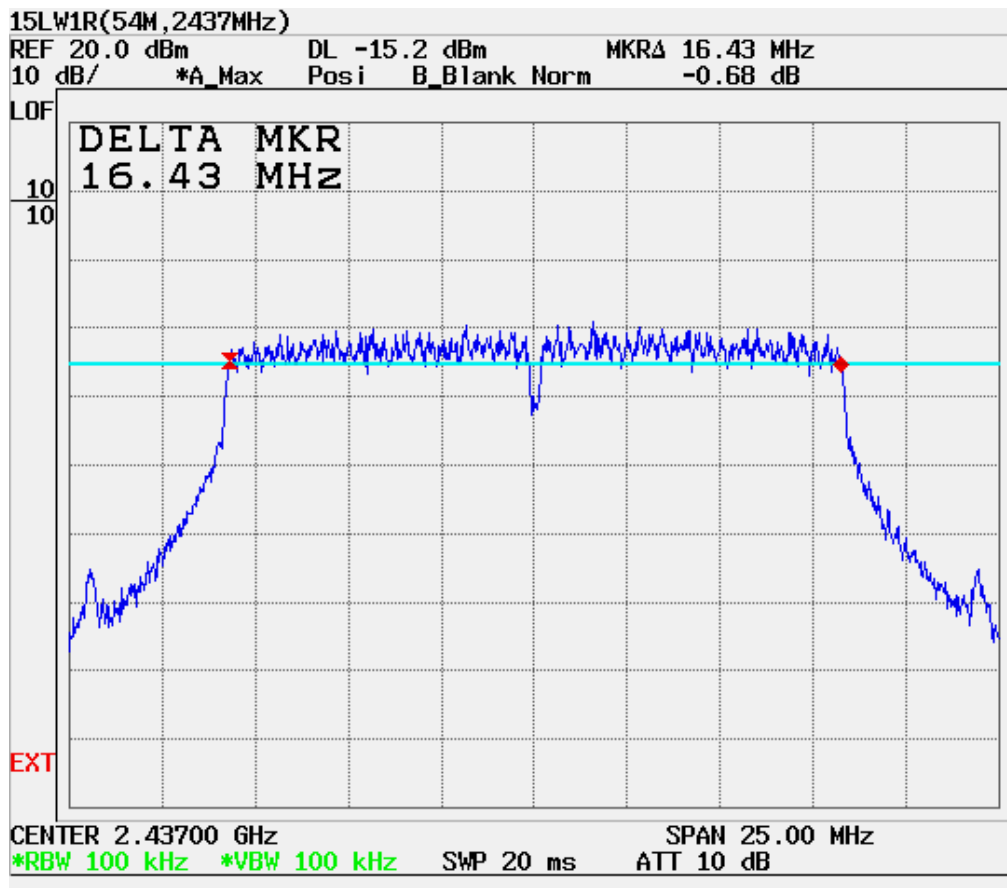
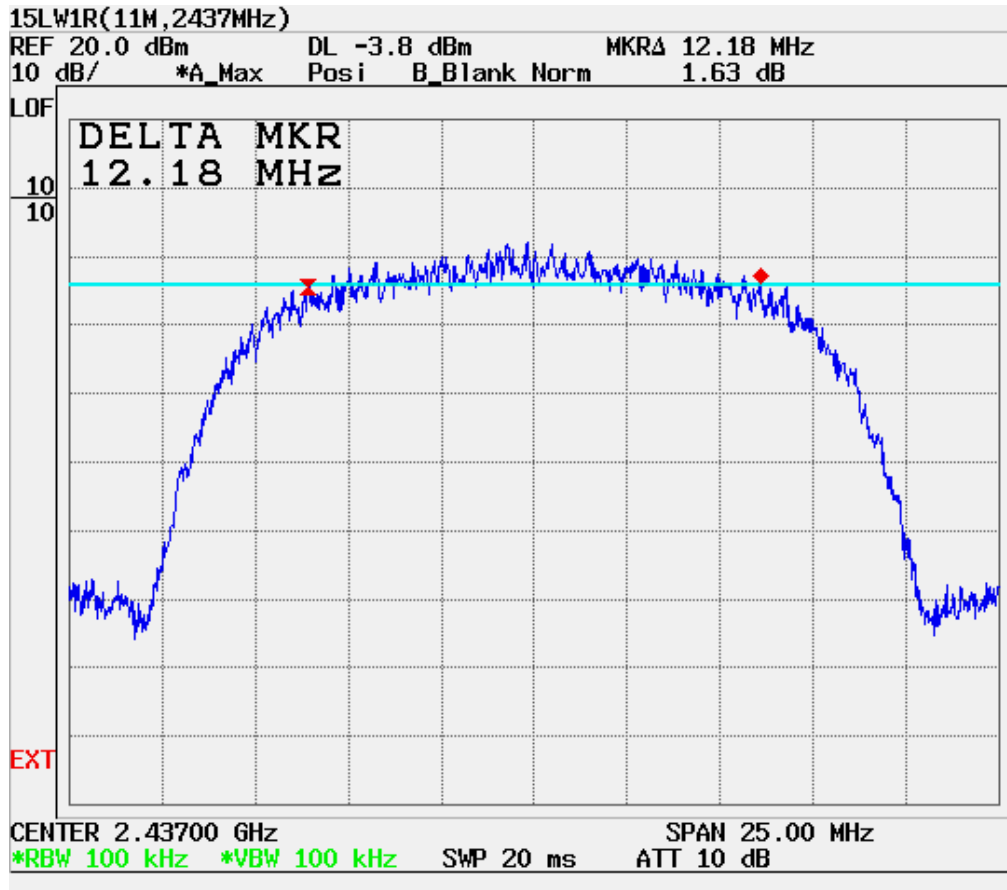
Frequency (MHz)	Mode	6dB Band width (MHz)	Limit (MHz)	Result
Ch1 2412	802.11b(11M bps)	11.45	>0.5	Pass
	802.11g(54M bps)	16.48	>0.5	Pass
Ch6 2437	802.11b(11M bps)	12.18	>0.5	Pass
	802.11g(54M bps)	16.43	>0.5	Pass
Ch11 2462	802.11b(11M bps)	11.47	>0.5	Pass
	802.11g(54M bps)	16.43	>0.5	Pass

Please refer to graph as below:

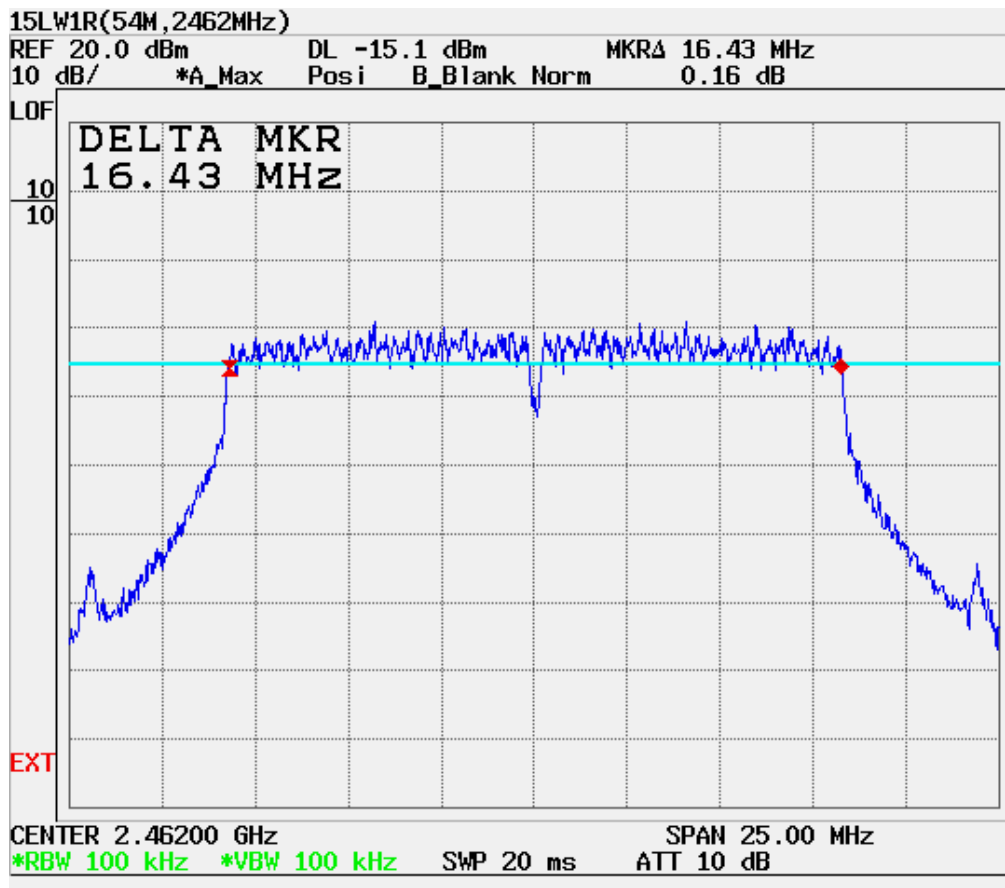
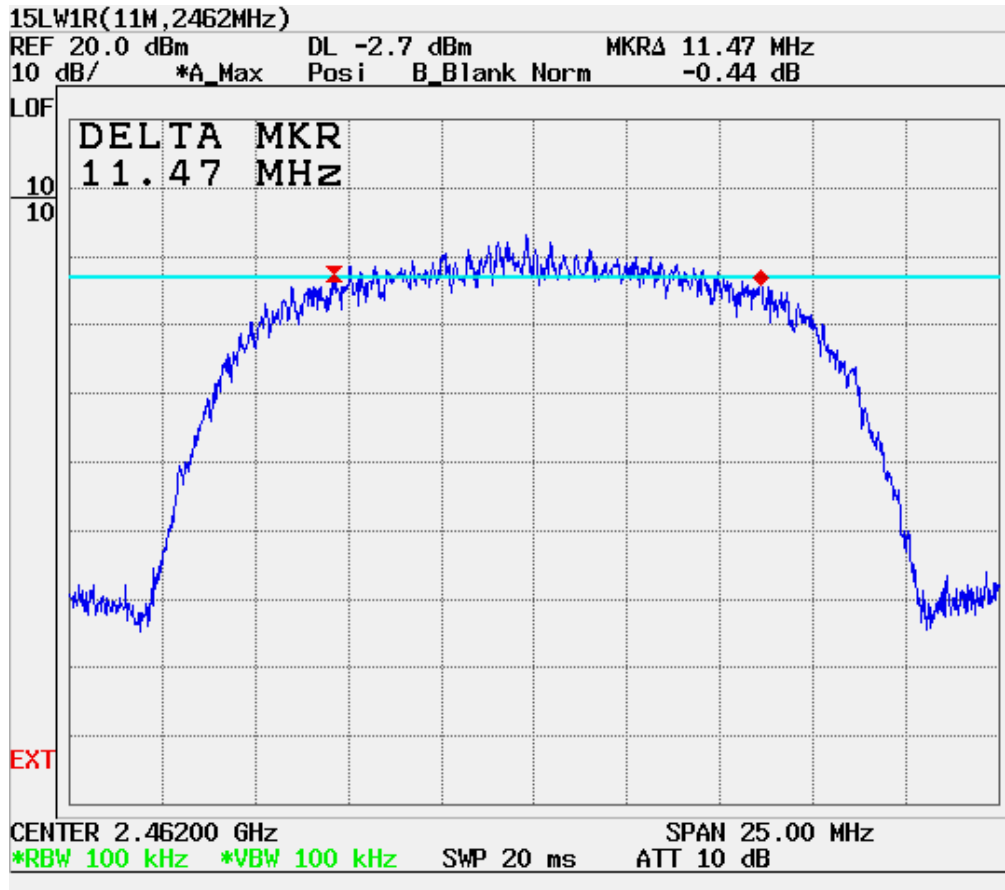
Ch. 1: 2412MHz (802.11b & 802.11g)



Ch. 2: 2437MHz (802.11b & 802.11g)



Ch. 3: 2462MHz (802.11b & 802.11g)



Maximum peak output power (Radiated/Conducted)

1) 802.11b mode

CH.	FREQ [MHz]	Radiated [EIRP]		*Conducted[dBm]		Antenna Gain(dBi)	Limit [dBm / W]
		Peak[dBm]	Peak[mW]	Peak	Average		
1	2412	20.06	101.4	18.18	13.39	1.88	30.0dBm/ 1W
6	2437	21.06	127.6	18.05	13.72	3.01	30.0dBm/ 1W
11	2462	20.46	111.2	18.10	13.99	2.36	30.0dBm/ 1W

* Vertical was Max Peak power measured.

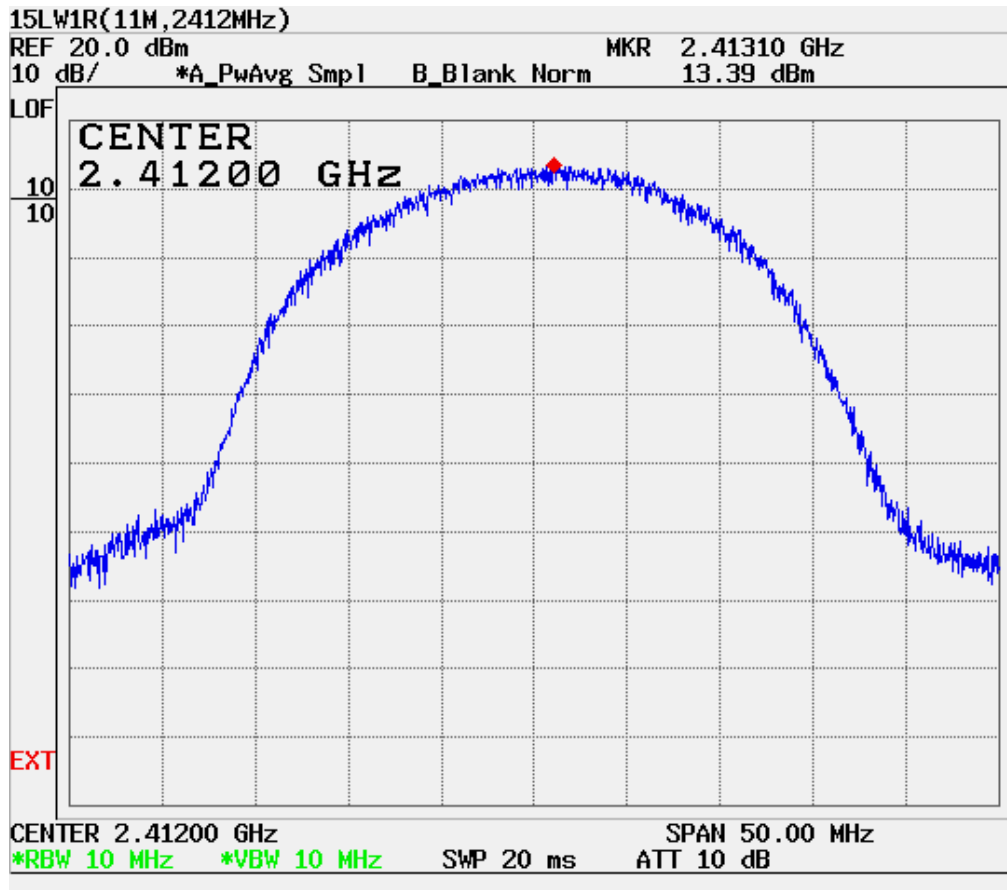
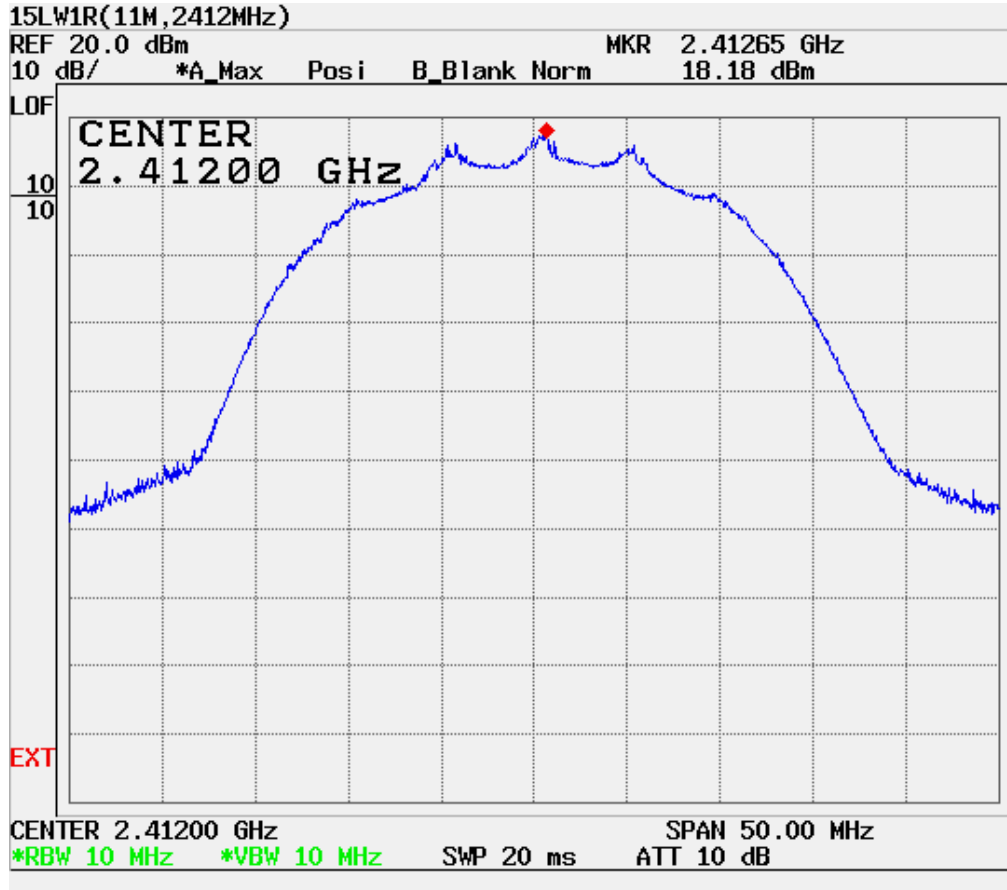
2) 802.11g mode

CH.	FREQ [MHz]	Radiated [EIRP]		*Conducted[dBm]		Antenna Gain(dBi)	Limit [dBm / W]
		Peak[dBm]	Peak[mW]	Peak	Average		
1	2412	13.93	24.7	12.05	5.06	1.88	30.0dBm/ 1W
6	2437	15.01	31.7	12.09	5.45	3.01	30.0dBm/ 1W
11	2462	14.46	27.9	12.10	5.27	2.36	30.0dBm/ 1W

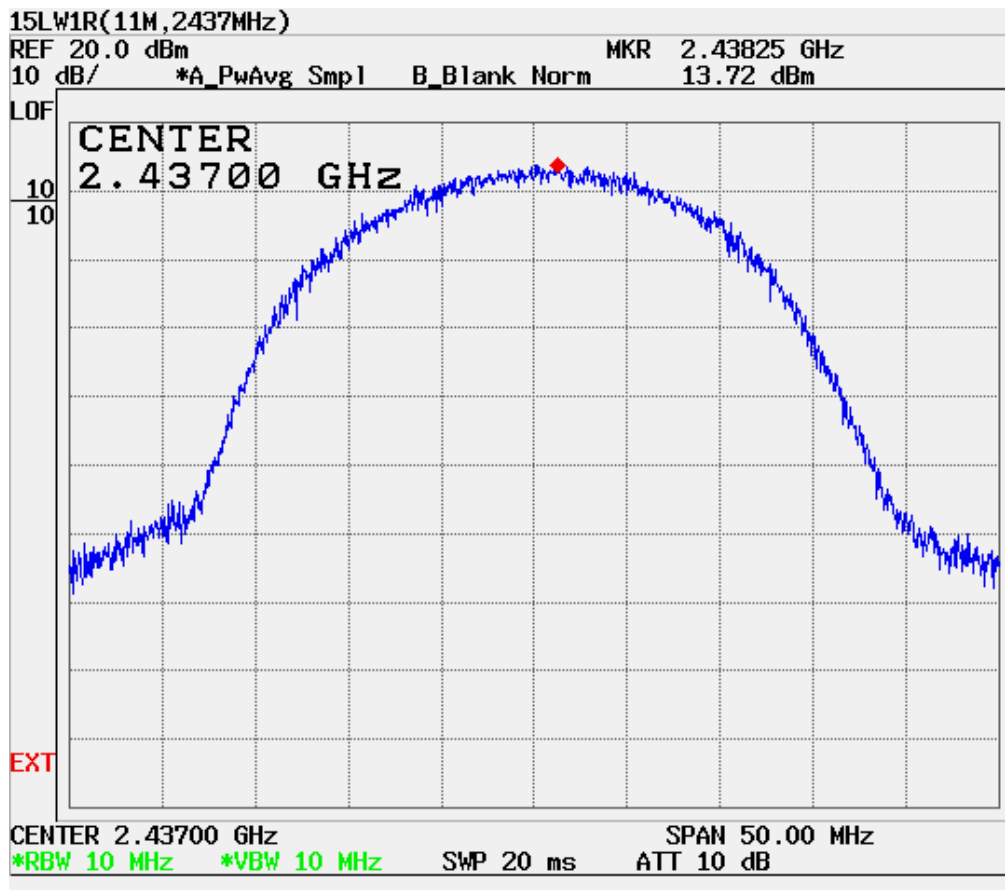
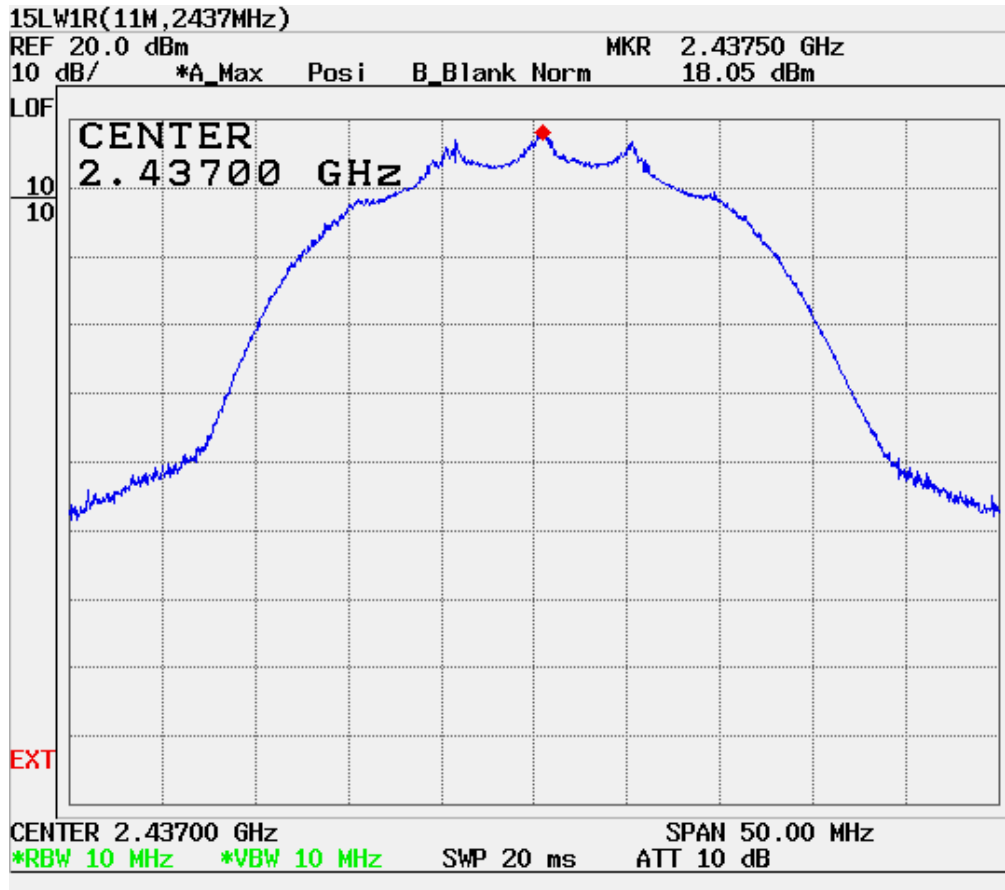
* Vertical was Max Peak power measured.

*Please refer to graph as below:

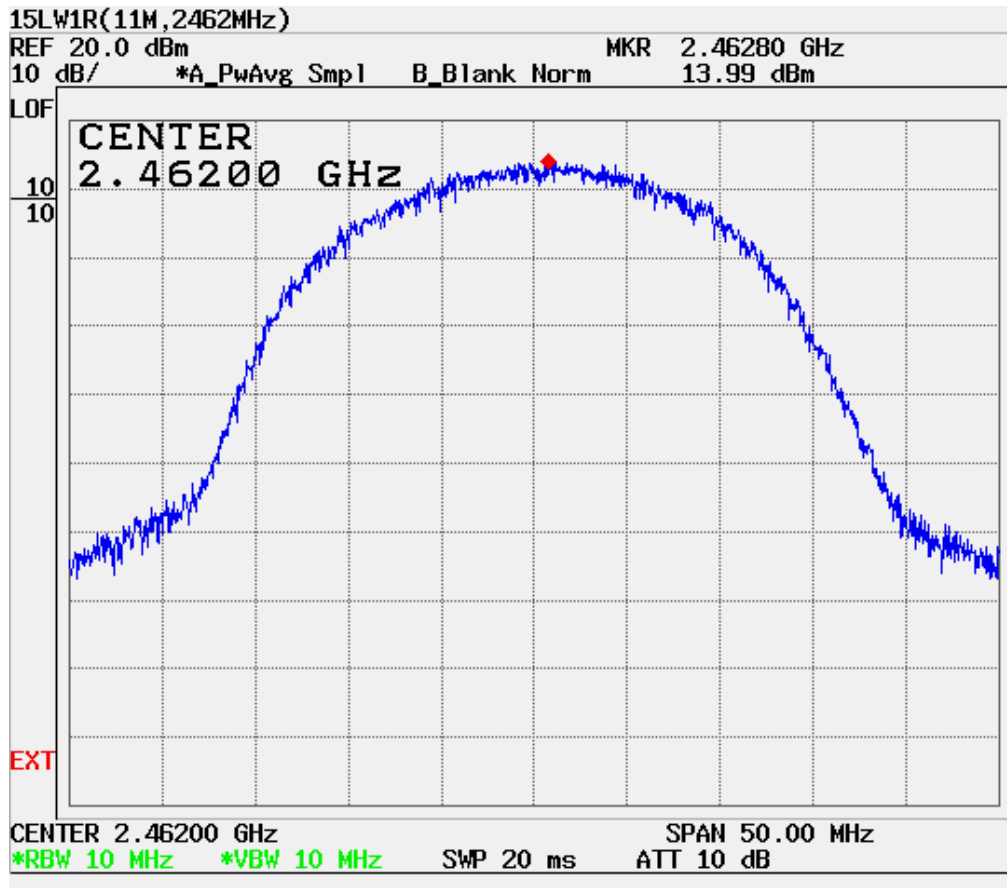
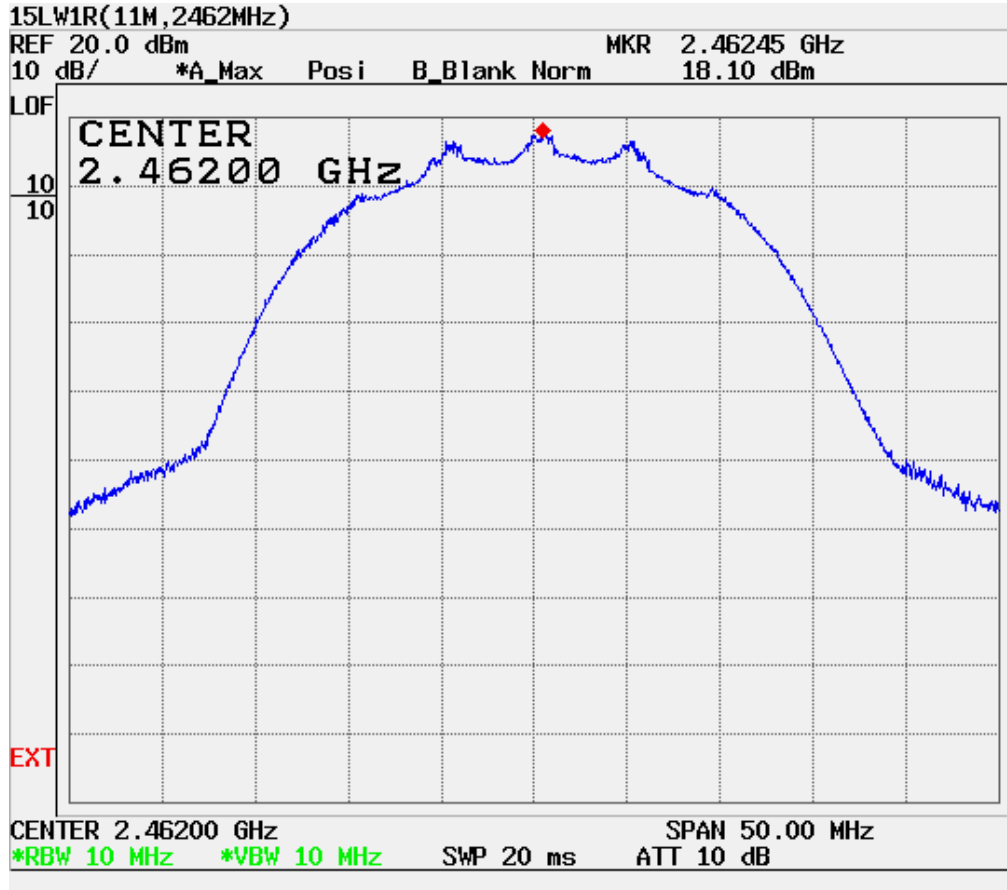
(1) CH1, 802.11b mode (Peak & Average)



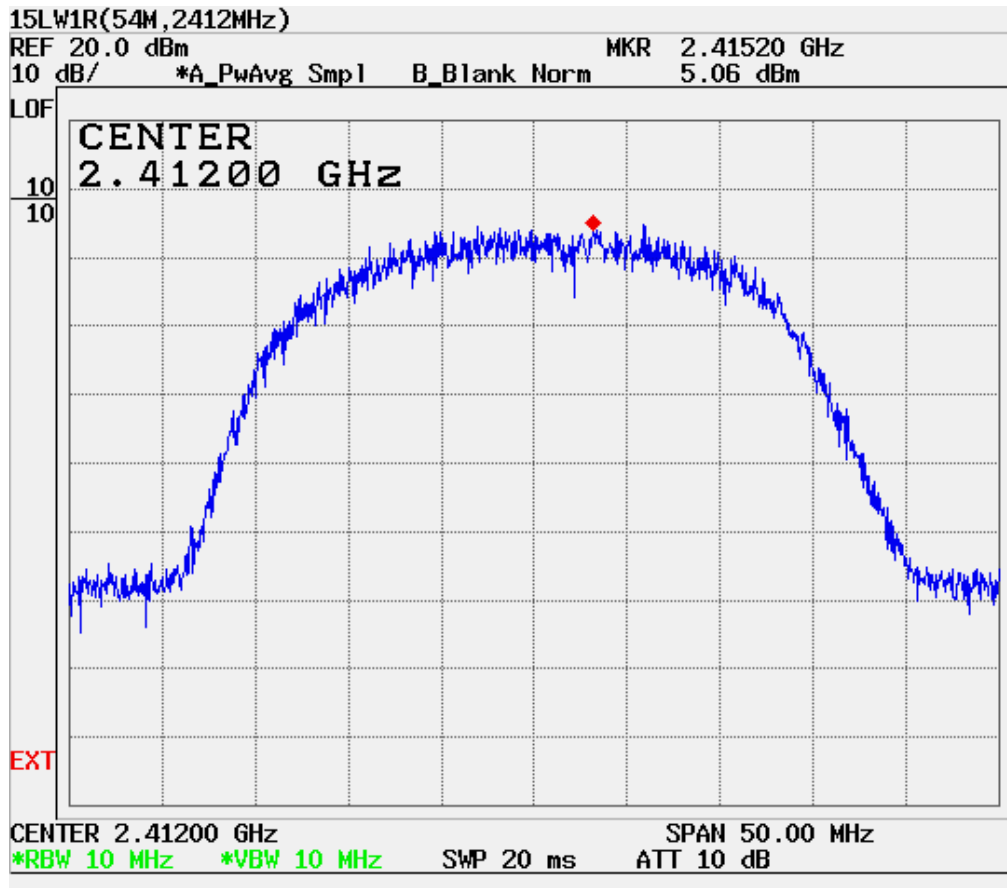
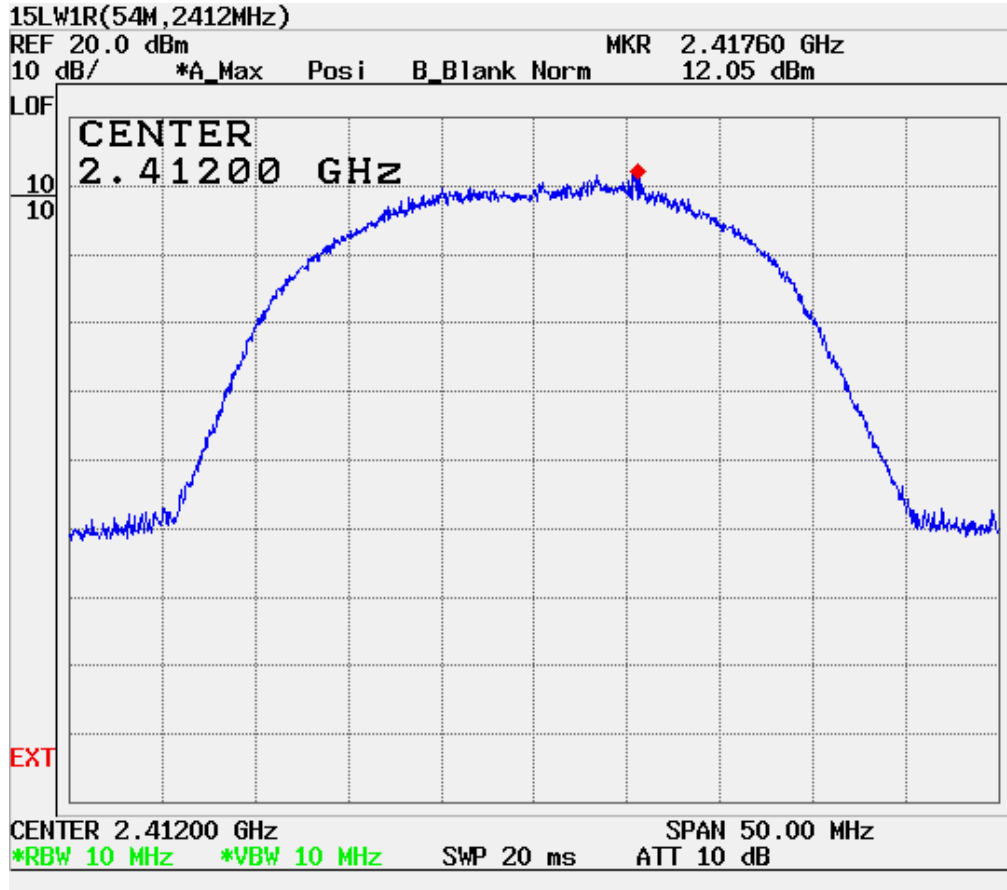
(2) CH2, 802.11b mode (Peak & Average)



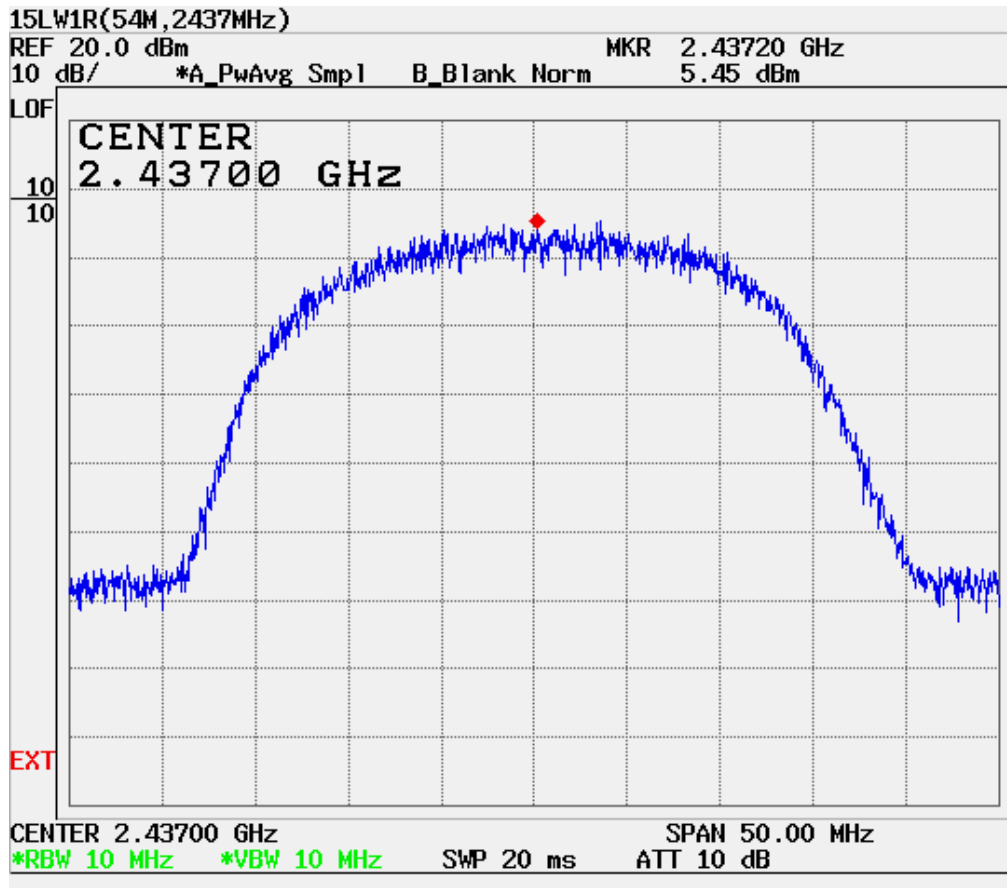
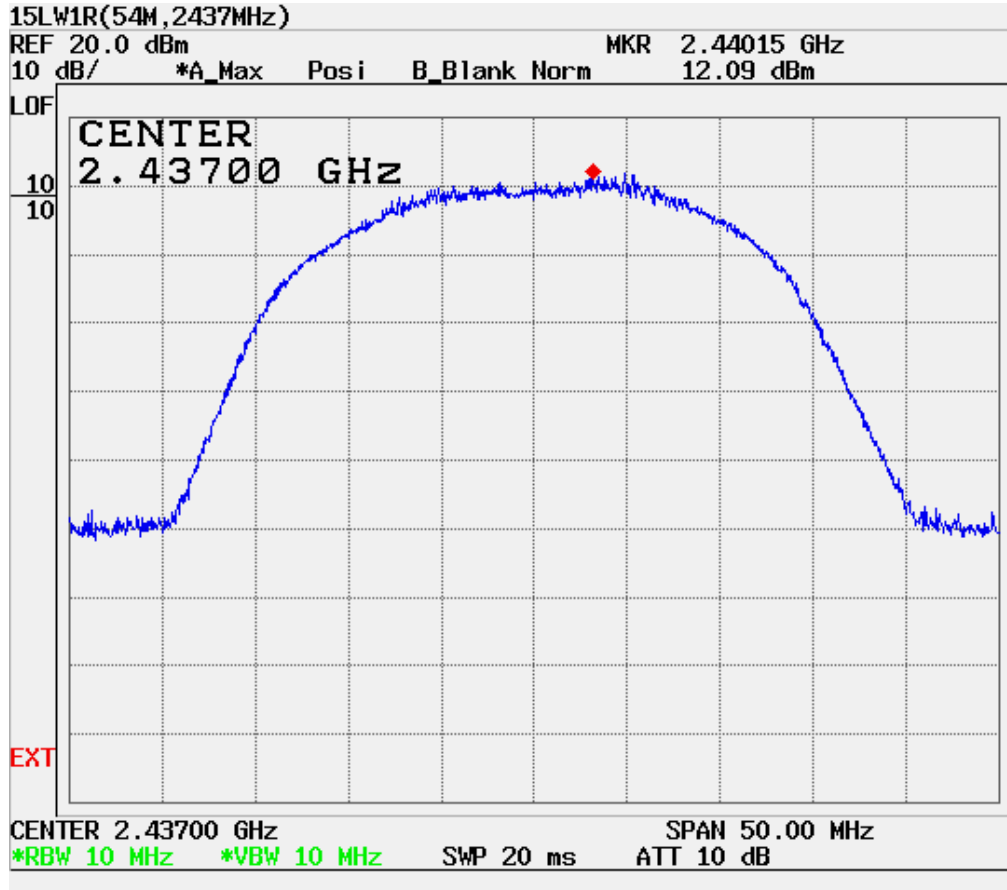
(3) CH3, 802.11b mode (Peak & Average)



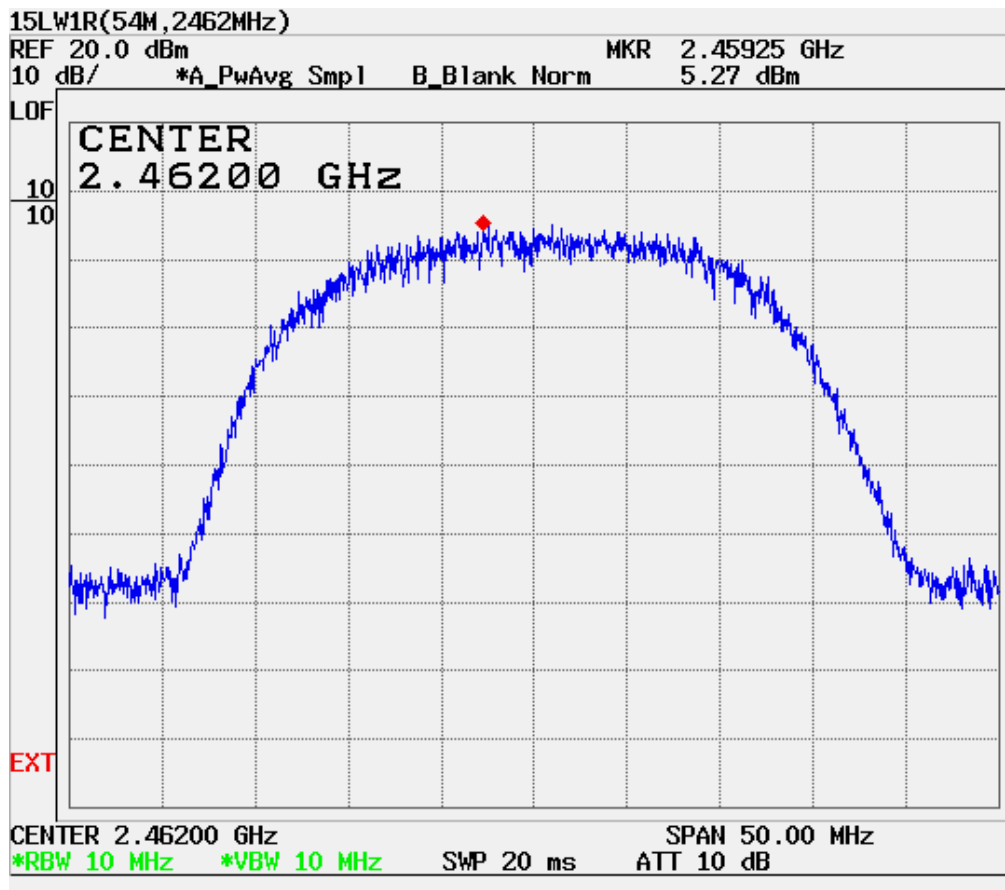
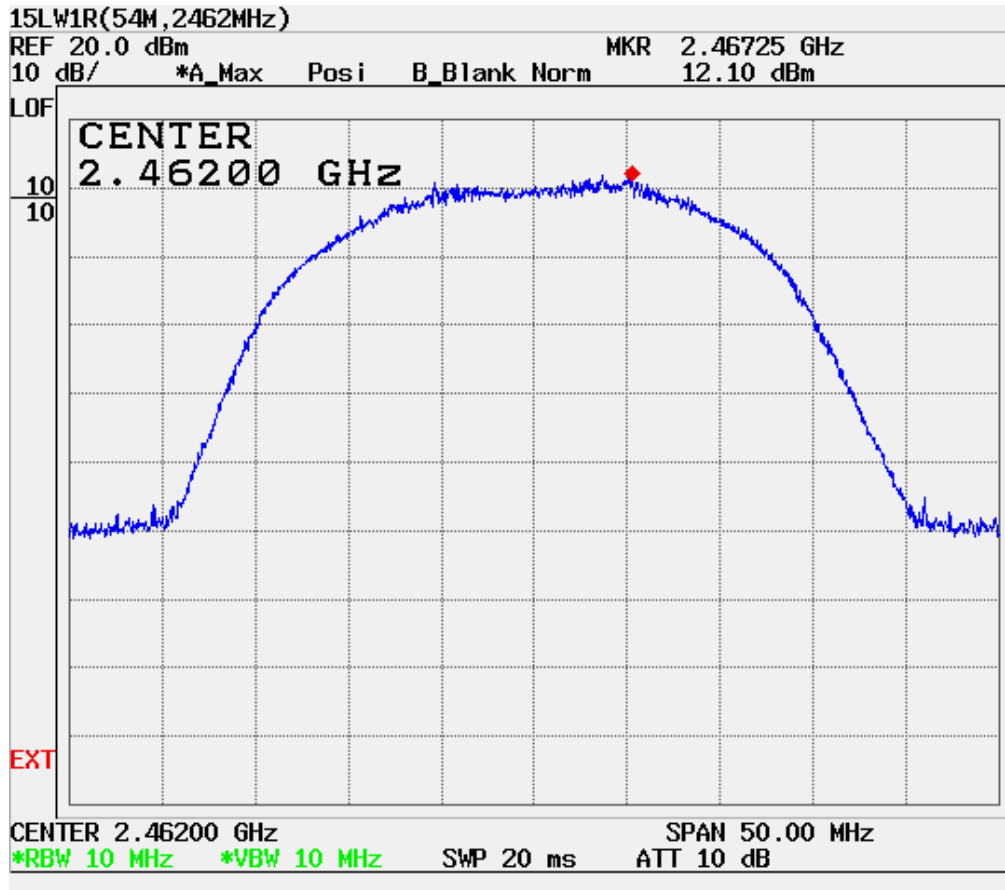
(4) CH1, 802.11g mode (Peak & Average)



(5) CH2, 802.11g mode (Peak & Average)



(6) CH3, 802.11g mode (Peak & Average)

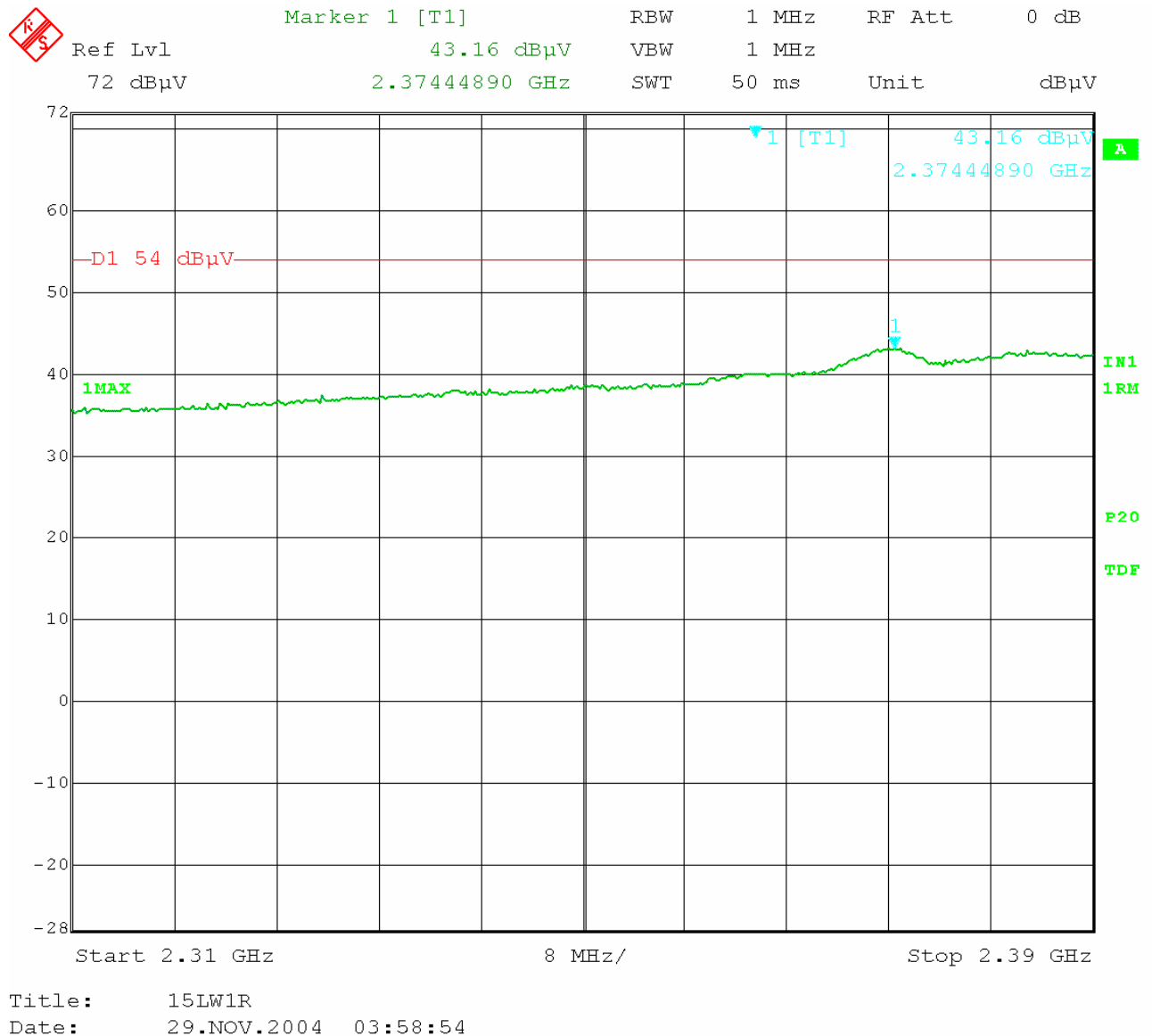


Out of band emissions (Radiated)

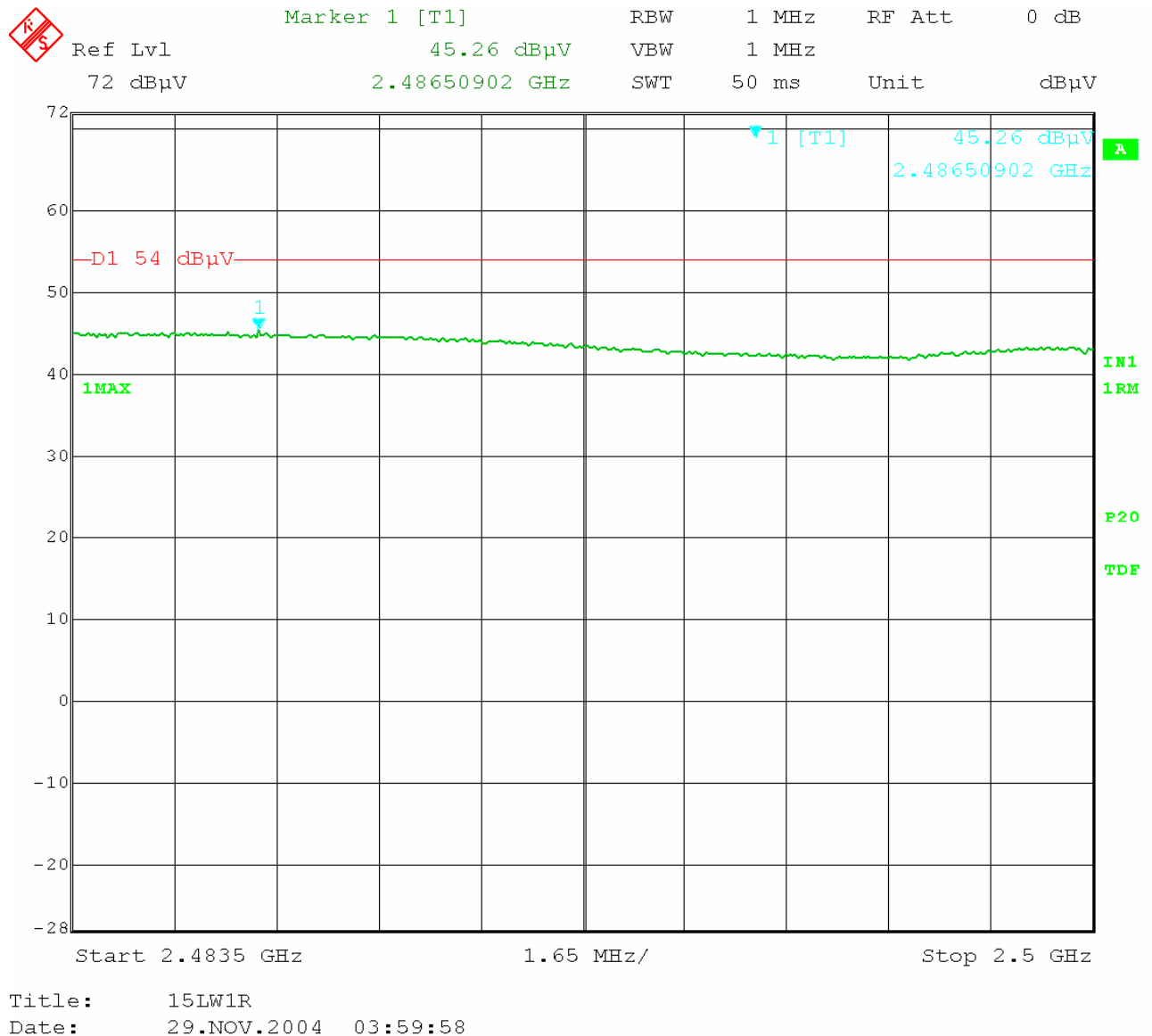
Mode	CH.	FREQ [MHz]	Ant. Pol. (V / H)	RESULT [dBuV/m]	Limit [dBuV/m]	Margin [dB]
802.11b (11M bps)	1	2412	V	43.2	54	10.8
			H	37.2	54	16.8
	11	2462	V	45.3	54	8.7
			H	37.7	54	16.3
802.11g (54M bps)	1	2412	V	40.7	54	13.3
			H	36.2	54	17.8
	11	2462	V	42.1	54	11.9
			H	36.6	54	17.4

*Please refer to graph as below:

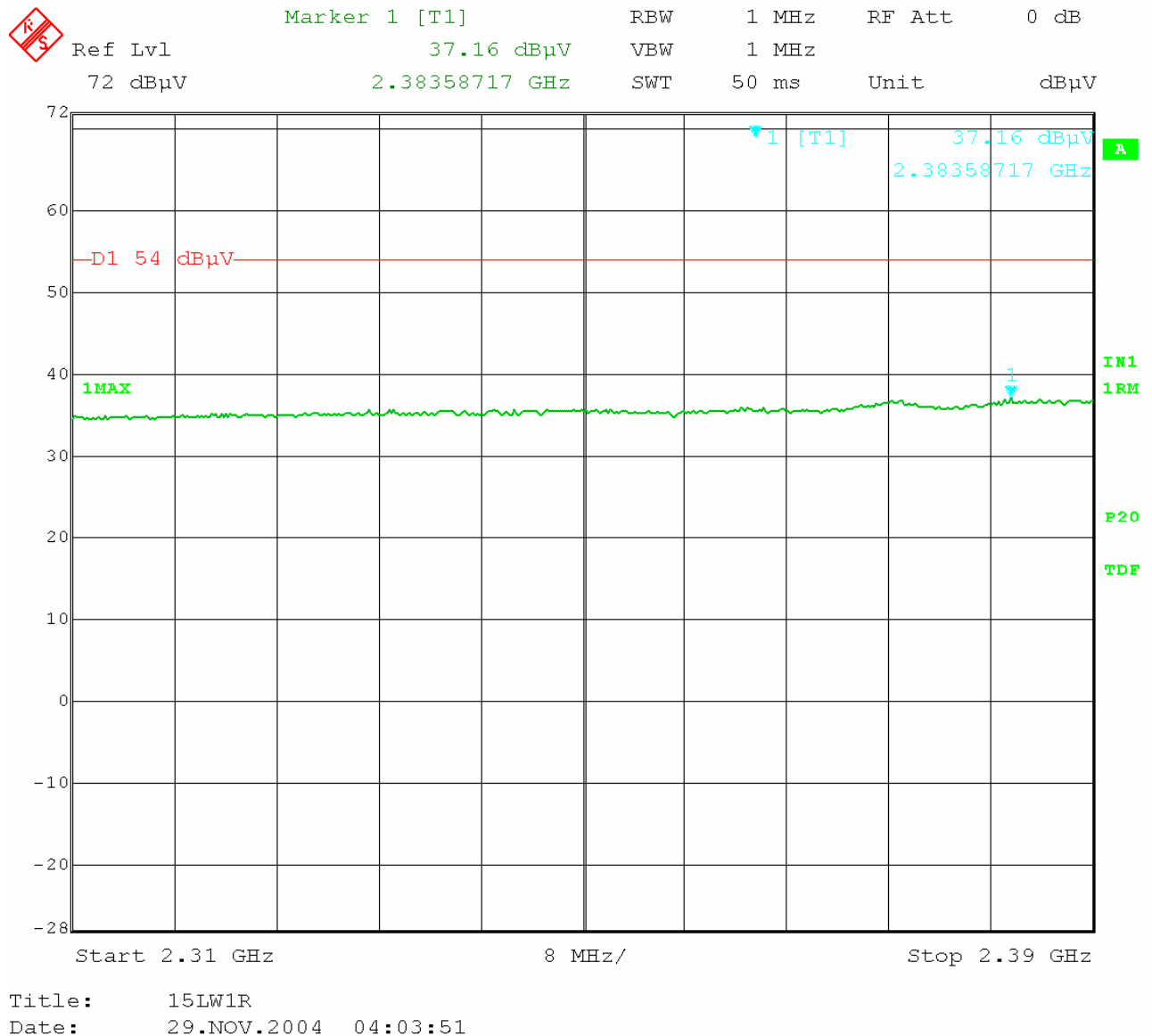
(1) Radiated , 802.11b, CH 1, Vertical



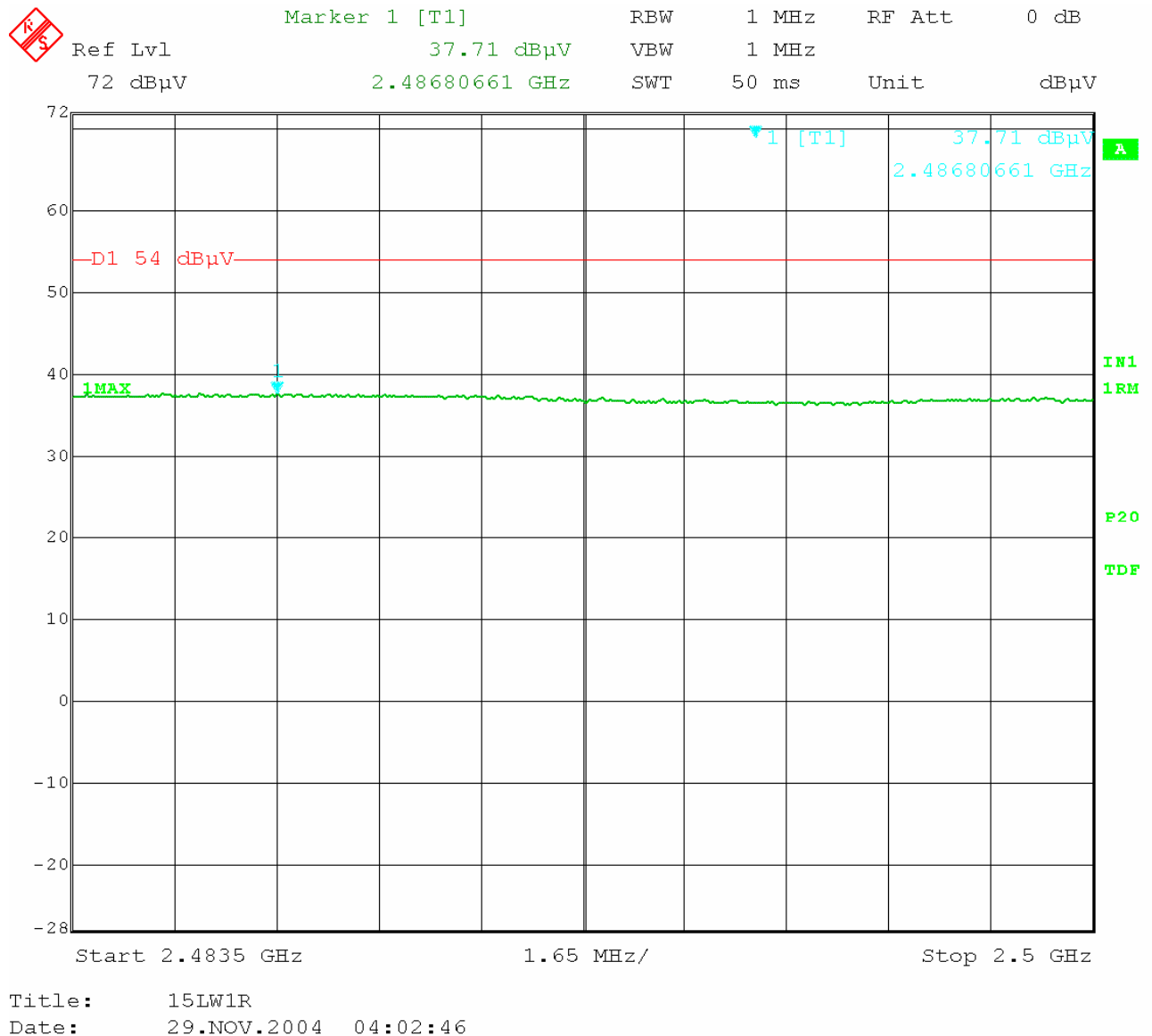
(2) Radiated , 802.11b, CH 11, Vertical



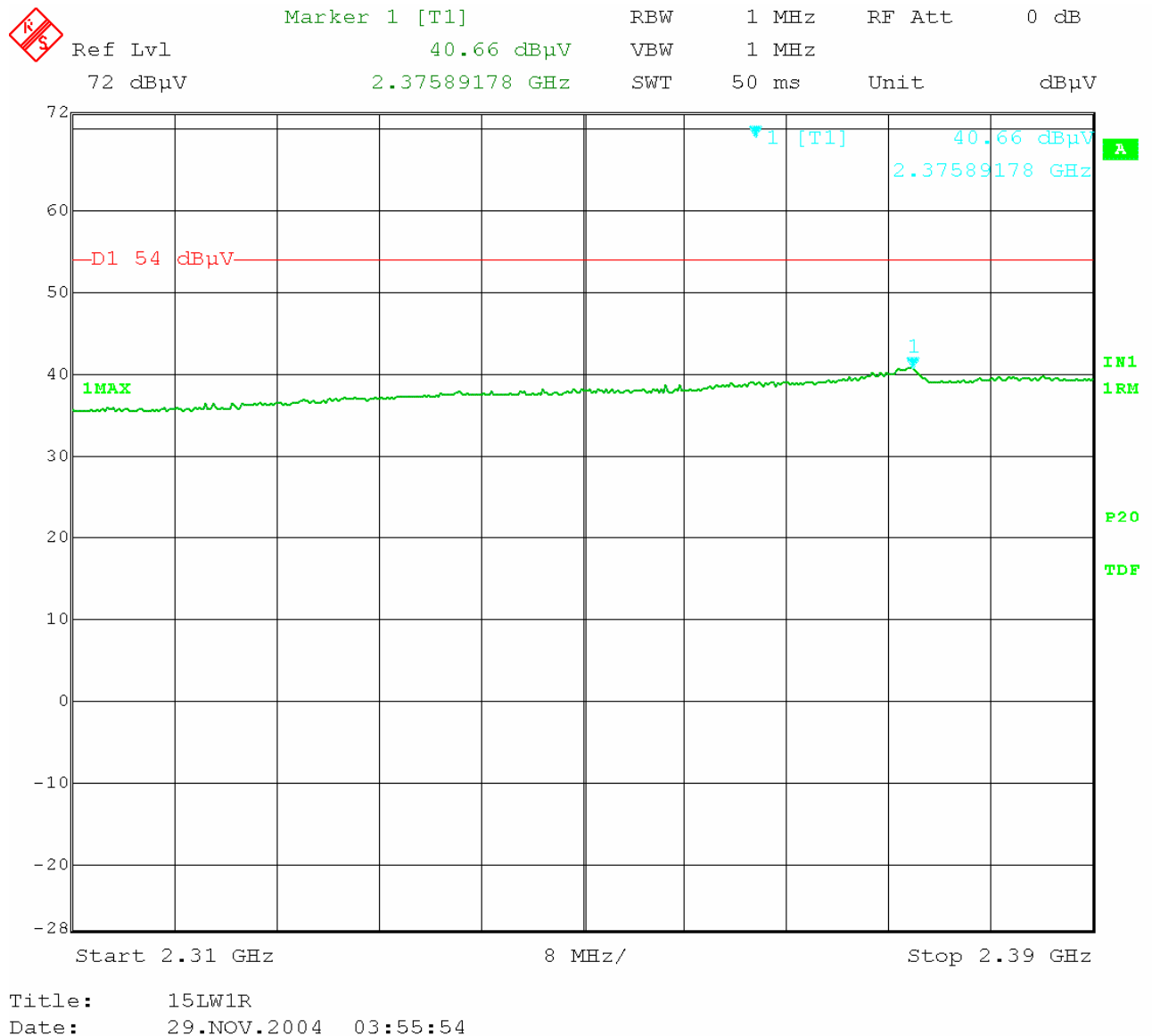
(3) Radiated , 802.11b, CH 1, Horizontal



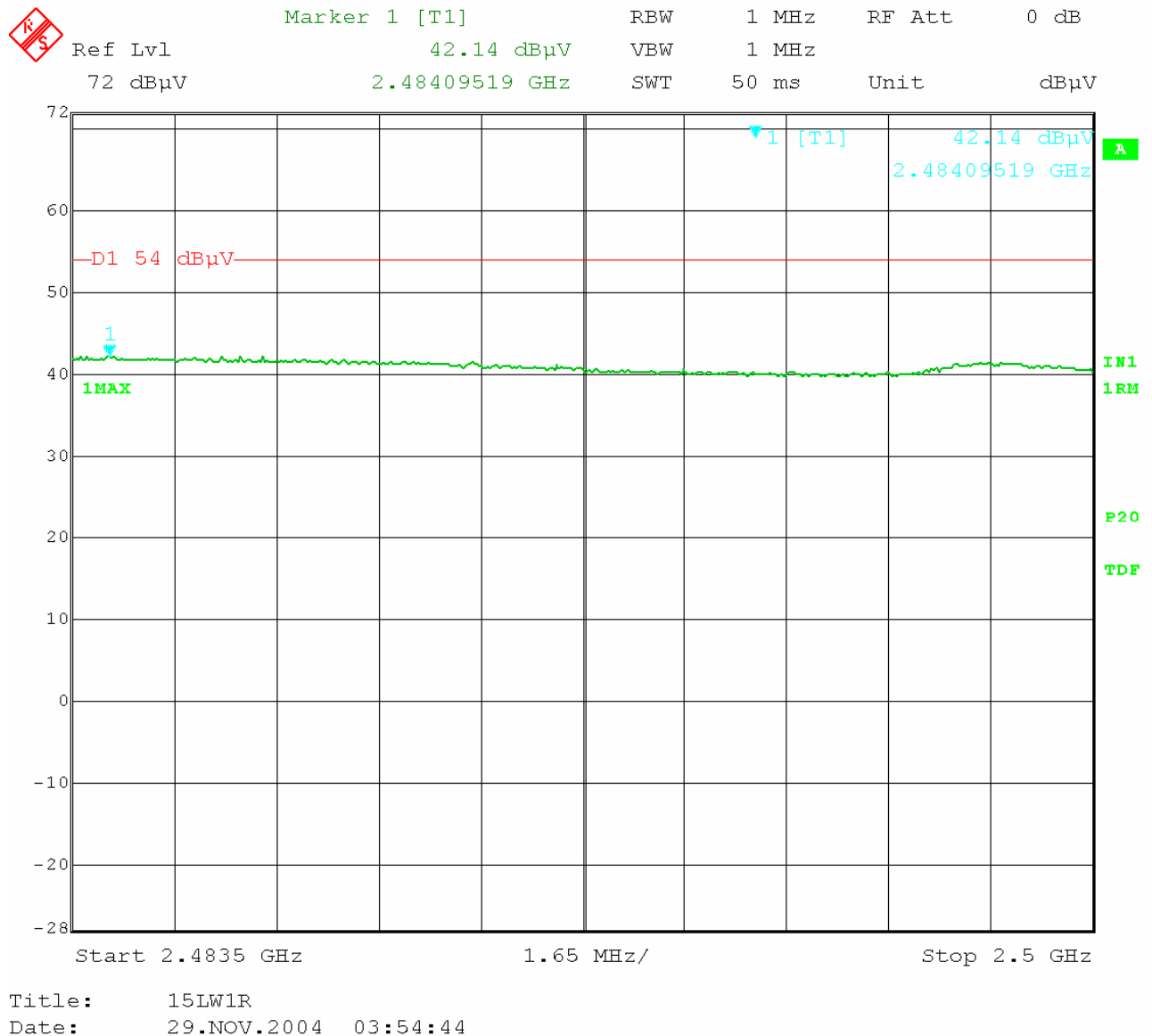
(4) Radiated , 802.11b, CH 11, Horizontal



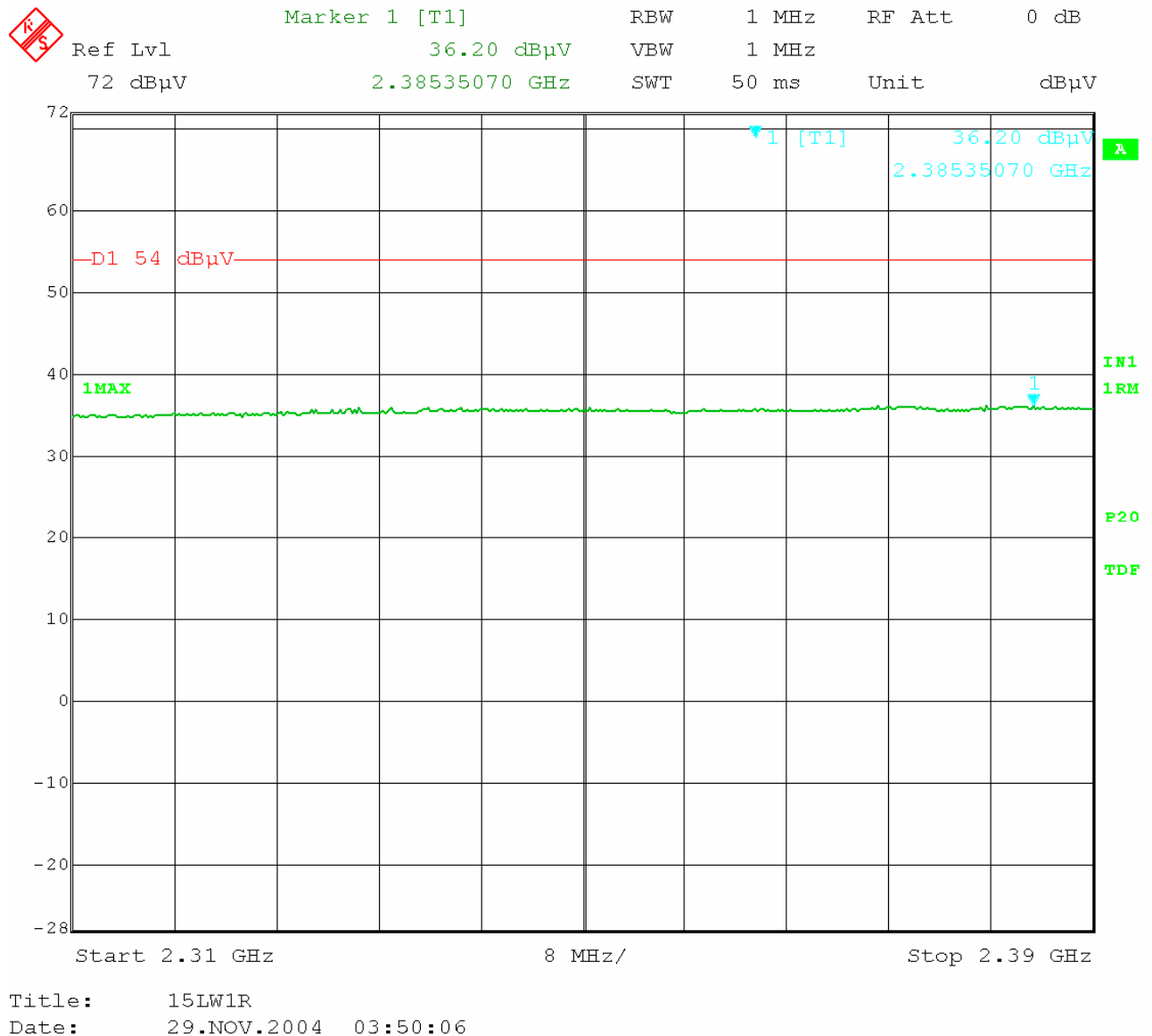
(5) Radiated , 802.11g, CH 1, Vertical



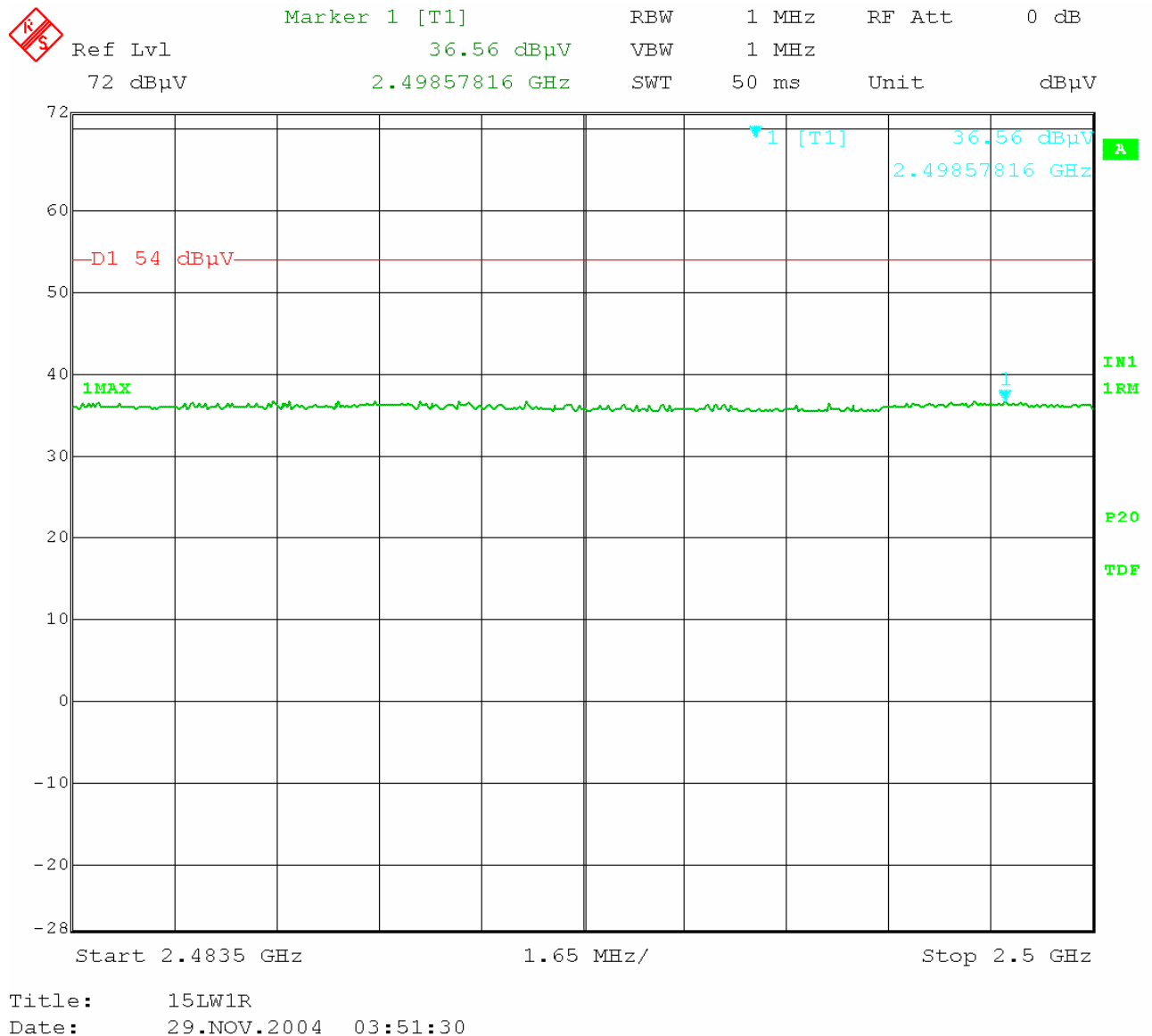
(6) Radiated , 802.11g, CH 11, Vertical



(7) Radiated , 802.11g, CH 1, Horizontal



(8) Radiated , 802.11g, CH 11, Horizontal

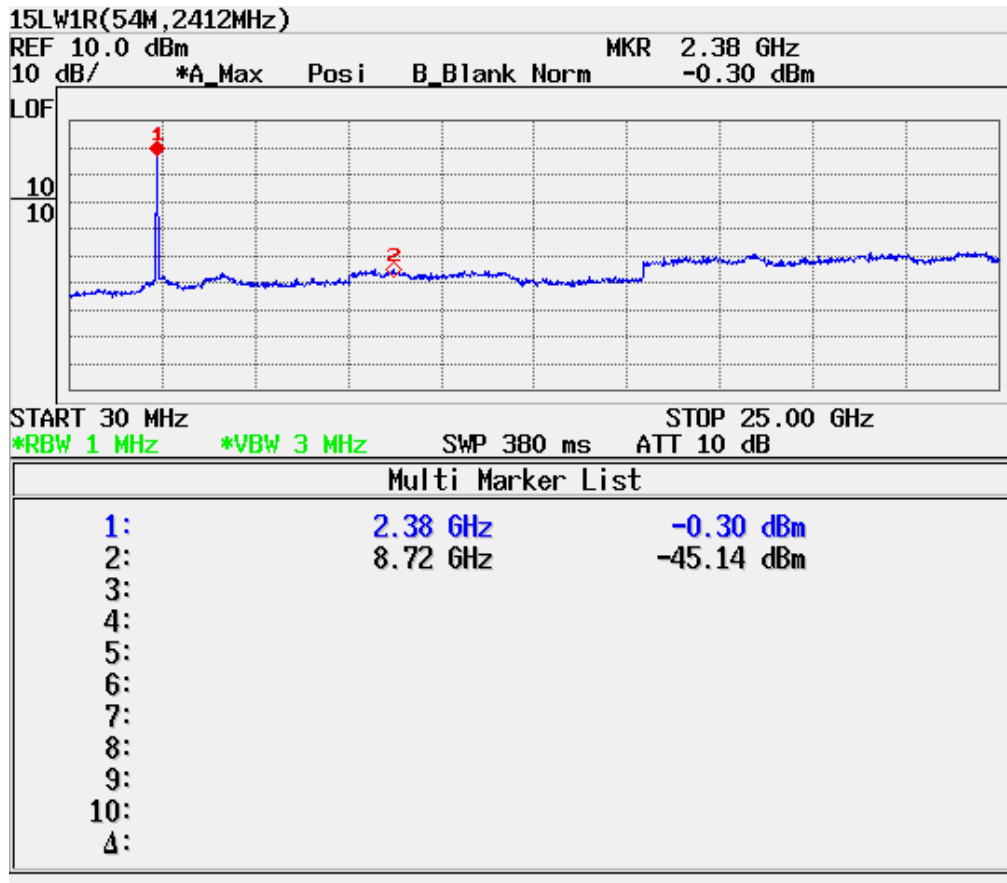
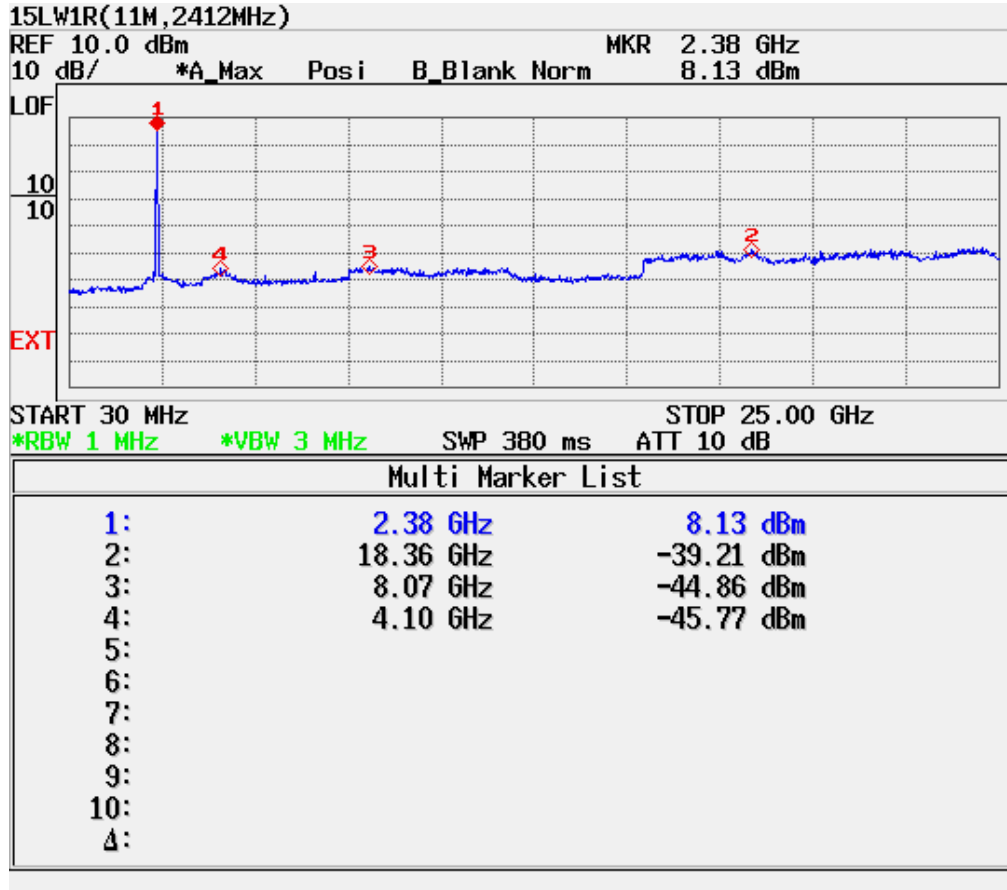


Out of band emissions (Conducted)

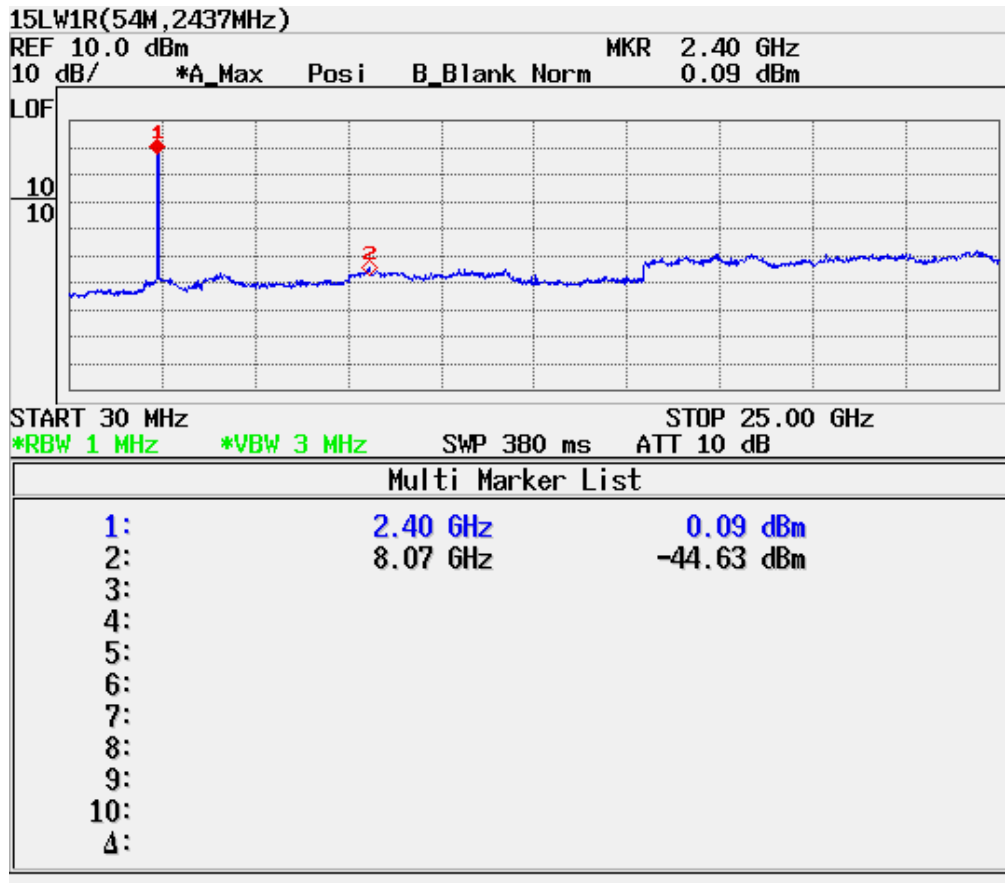
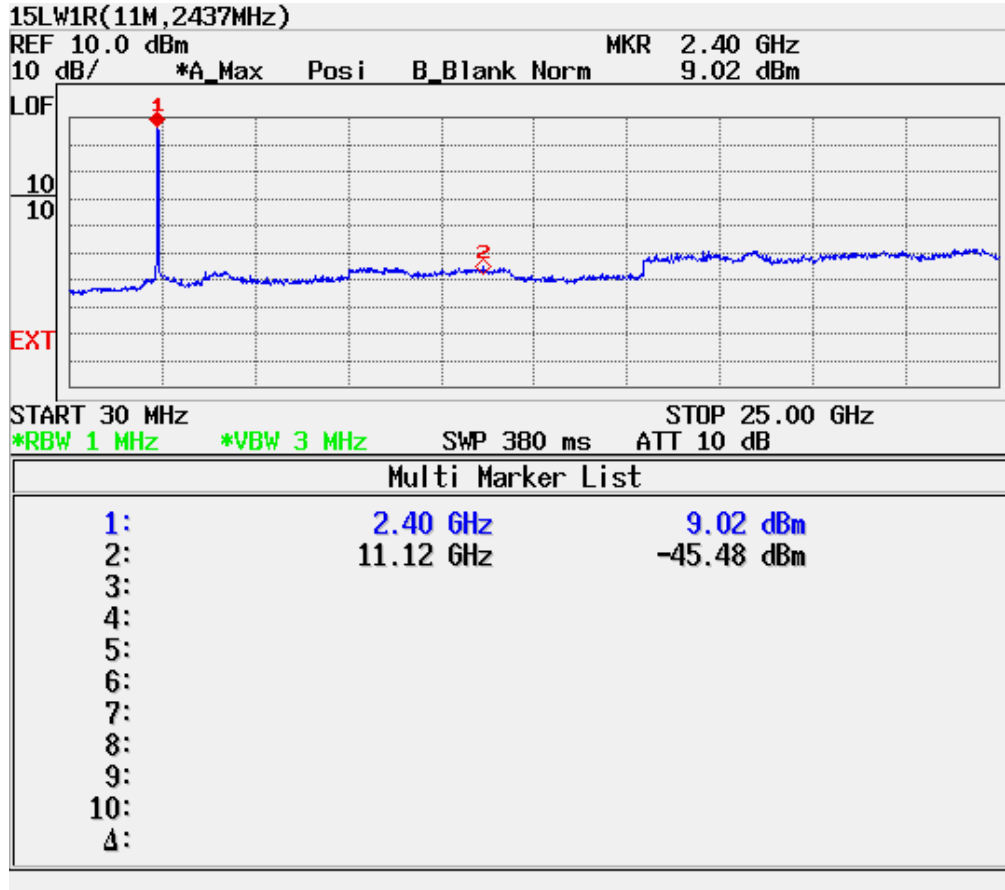
mode	CH.	FREQ [MHz]	RESULT [dBc]	Limit [dBc]	Margin [dB]
802.11b (11M bps)	1	2412	47.34	20	27.34
	6	2437	54.50	20	34.50
	11	2362	53.89	20	33.89
802.11g (54M bps)	1	2412	44.84	20	24.84
	6	2437	44.54	20	24.54
	11	2362	44.44	20	24.44

*Please refer to graph as below:

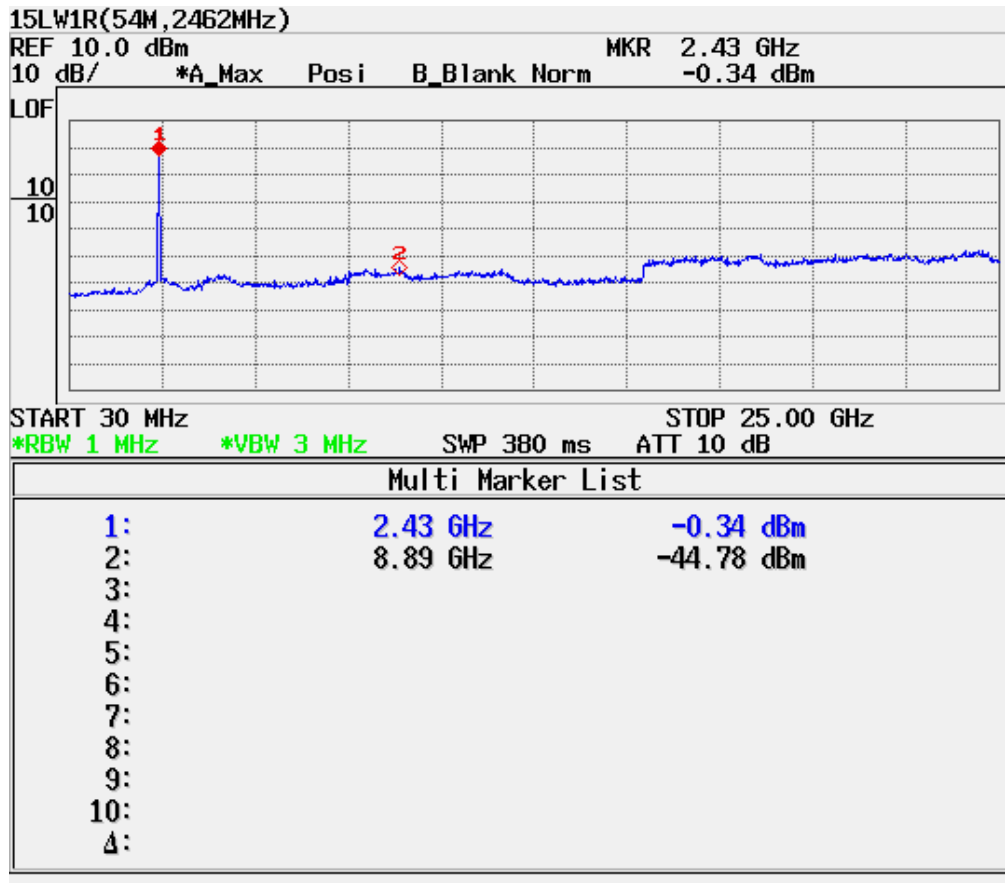
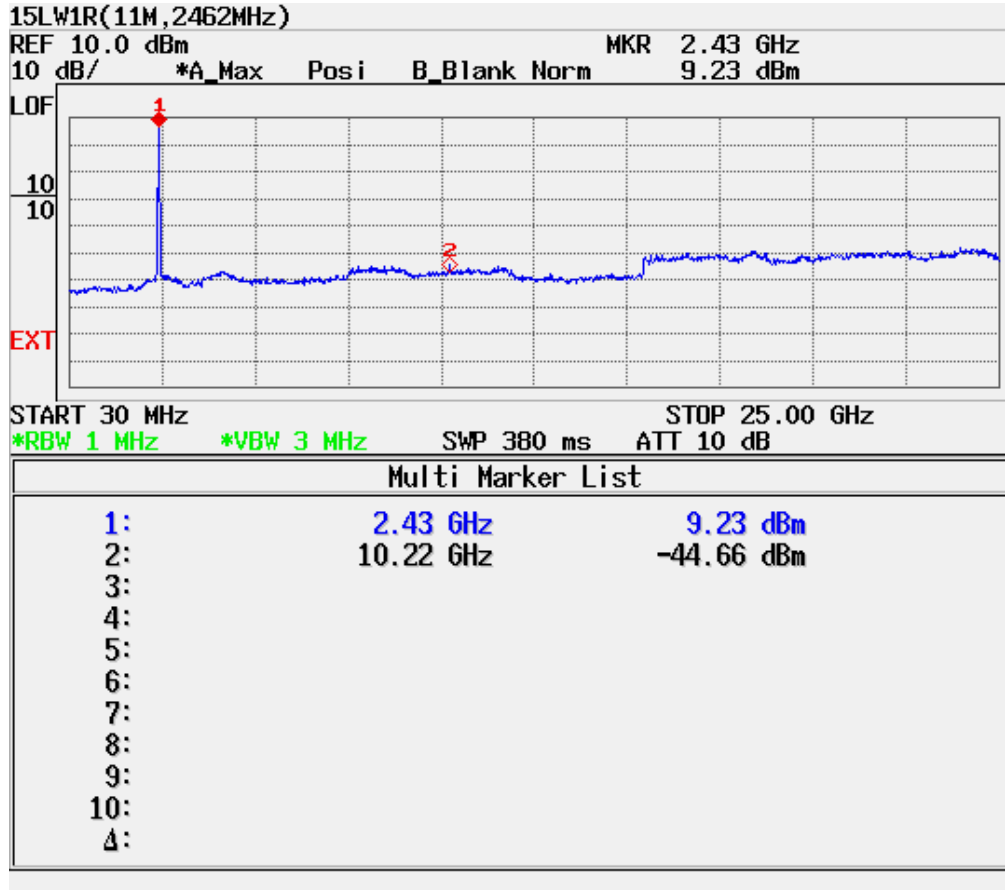
(1) Ch 1(802.11b & 802.11g)



(2) Ch 6(802.11b & 802.11g)



(3) Ch 11(802.11b & 802.11g)

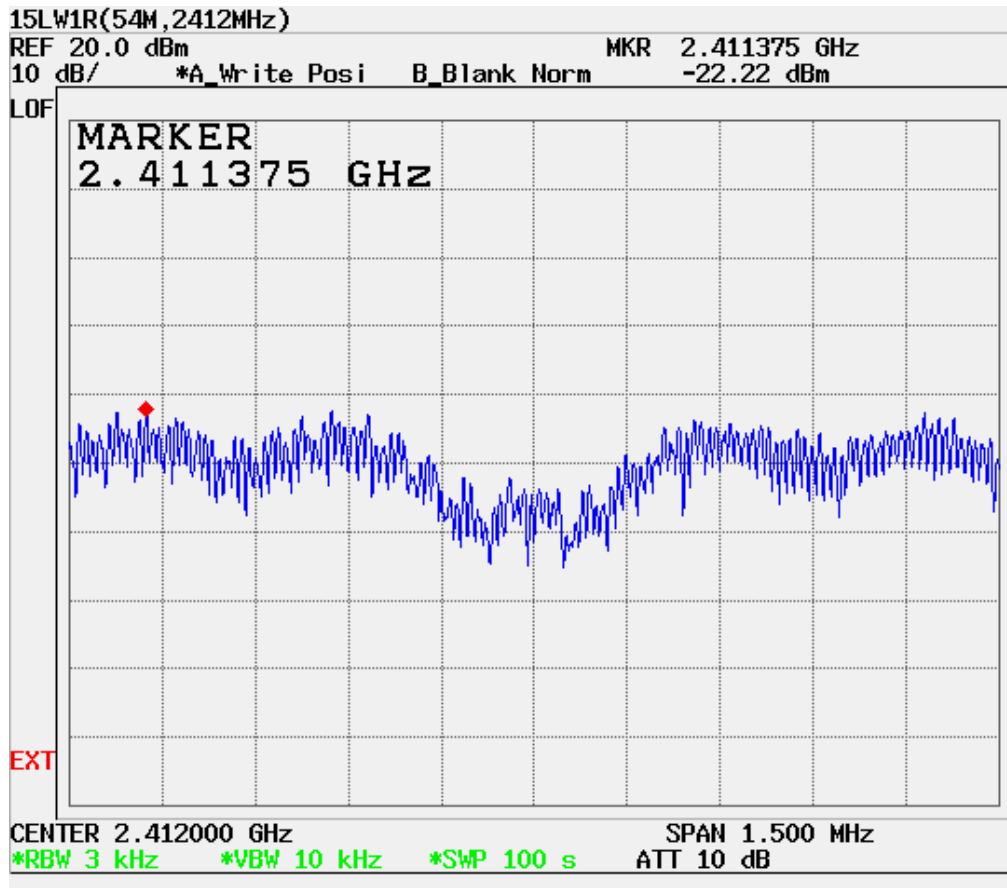
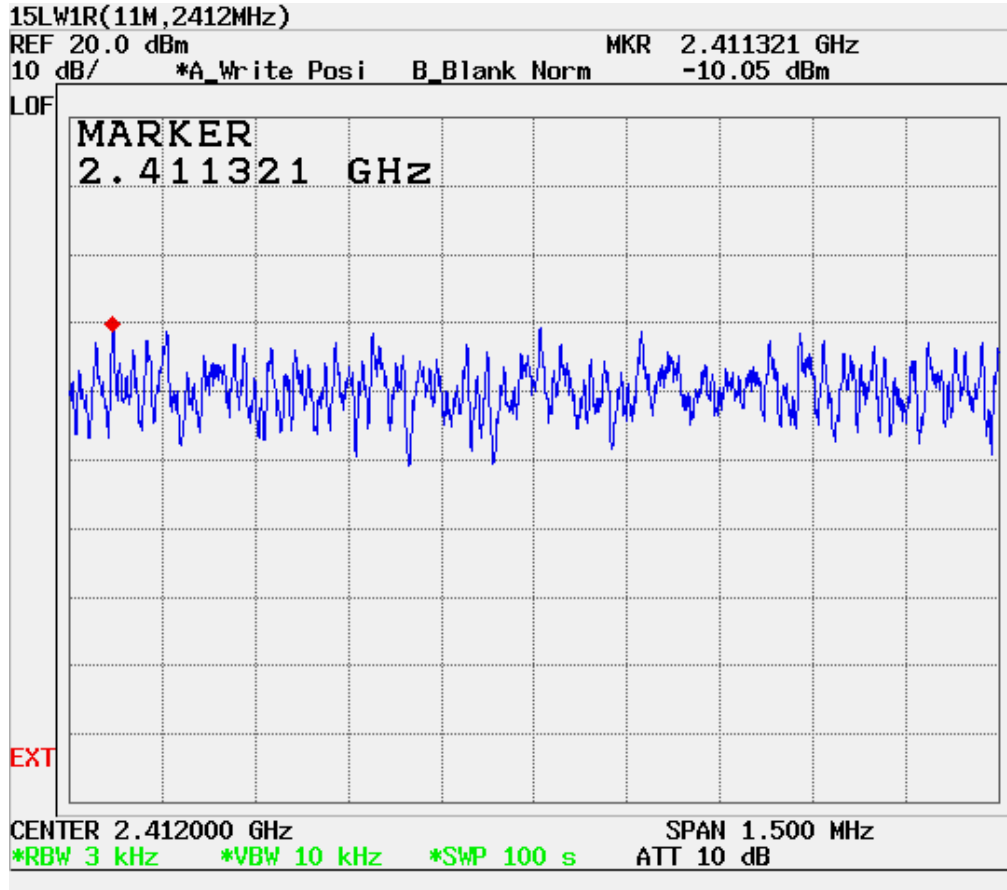


Power density (Conducted)

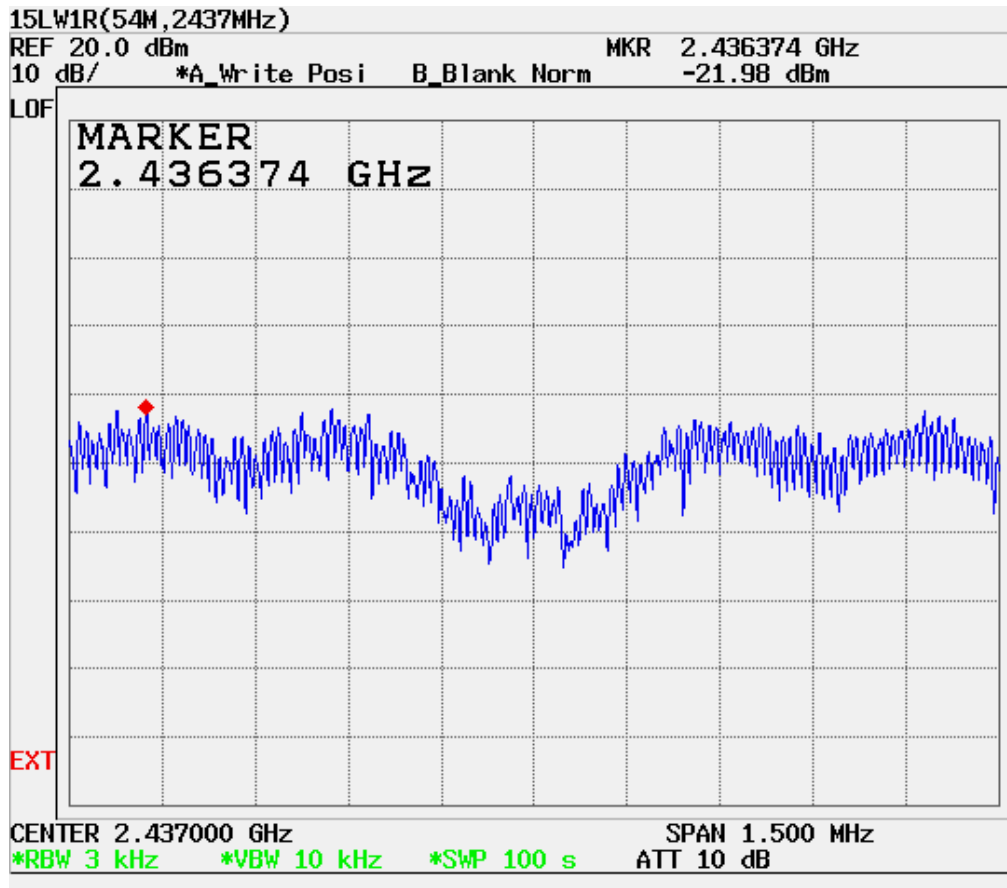
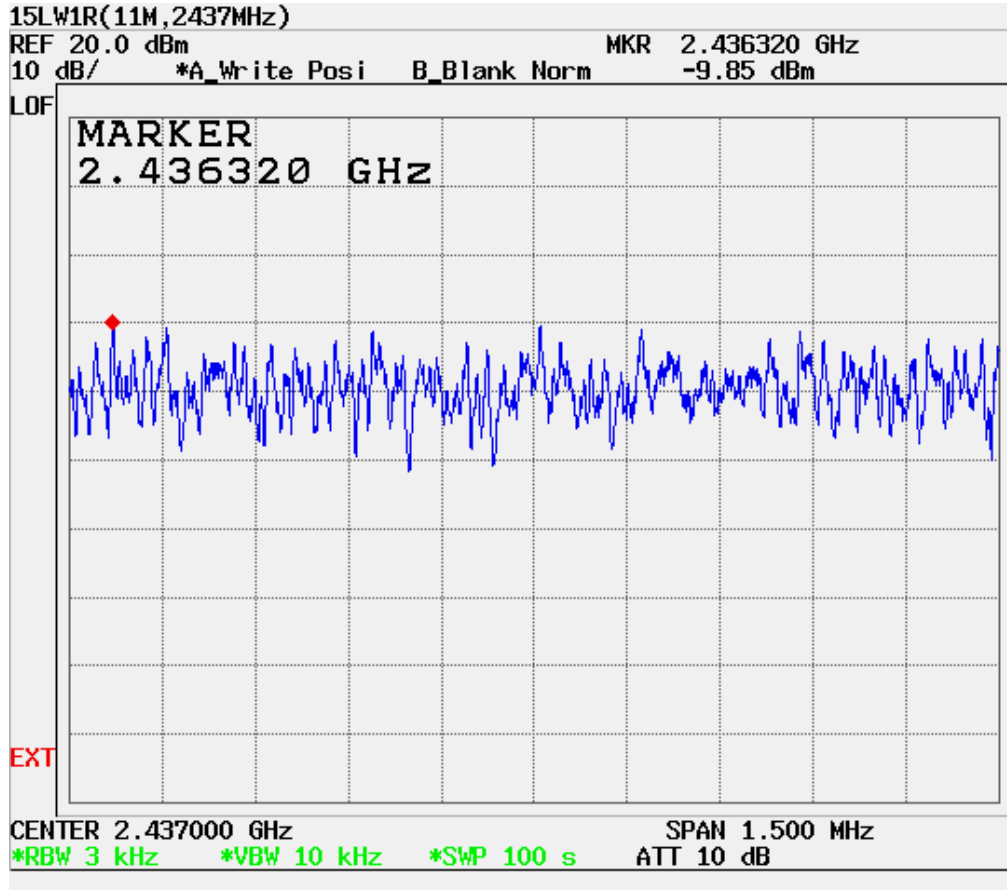
mode	CH.	FREQ [MHz]	RESULT [dBm]	Limit [dBm]	Margin [dB]
802.11b (11M bps)	1	2412	-10.05	8	18.05
	6	2437	-9.85	8	17.85
	11	2362	-9.60	8	17.60
802.11g (54M bps)	1	2412	-22.22	8	30.22
	6	2437	-21.98	8	29.98
	11	2362	-21.70	8	29.70

*Please refer to graph as below:

(1) Ch 1(802.11b & 802.11g)



(2) Ch 6(802.11b & 802.11g)



(3) Ch 11(802.11b & 802.11g)

