4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2006

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP

4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

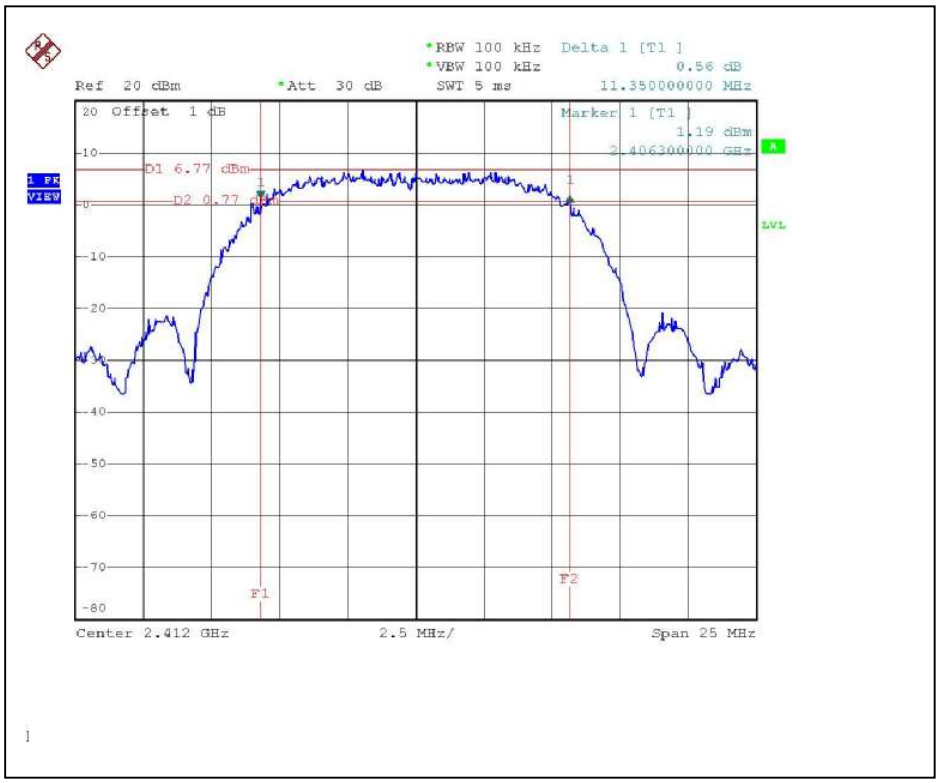
4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.35	0.5	PASS
6	2437	10.70	0.5	PASS
11	2462	11.00	0.5	PASS

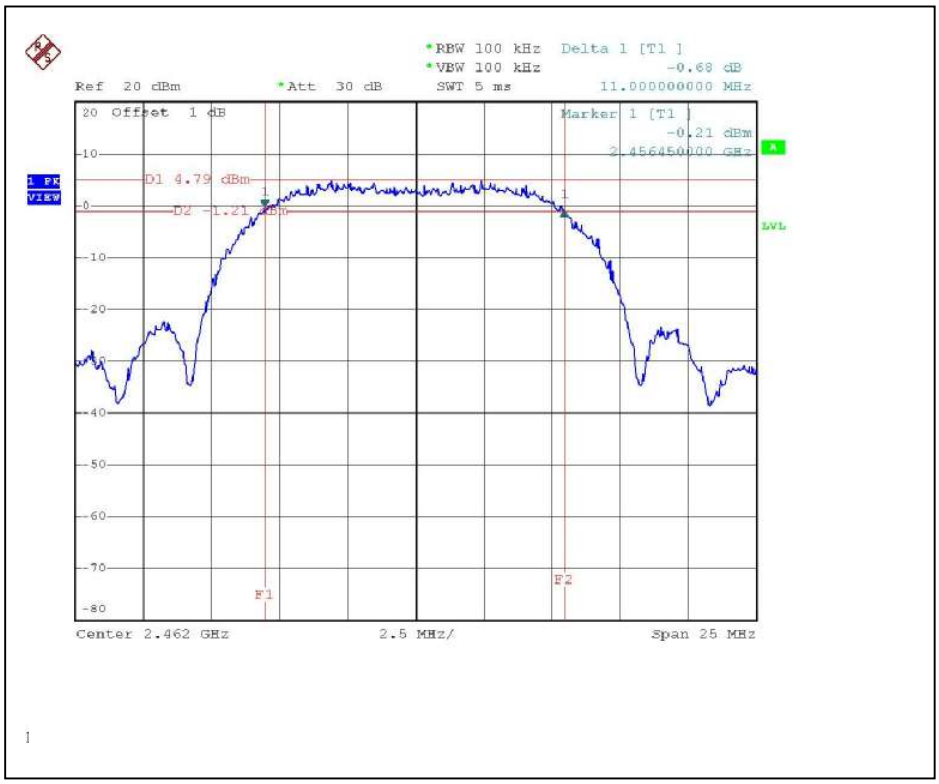
CH1



CH6

*RBW 100 kHz Delta 1 [T1]
*VBW 100 kHz -0.39 dB
Ref 20 dBm *Att 30 dB SWT 5 ms 10.700000000 MHz
20 Offset 1 dB
Marker 1 [T1]
0.59 dBm
2.431550000 GHz
D1 6.39 dBm
D2 0.39 dBm
1 PK VIEW
A
LVL
F1
F2
Center 2.437 GHz 2.5 MHz/ Span 25 MHz

CH11

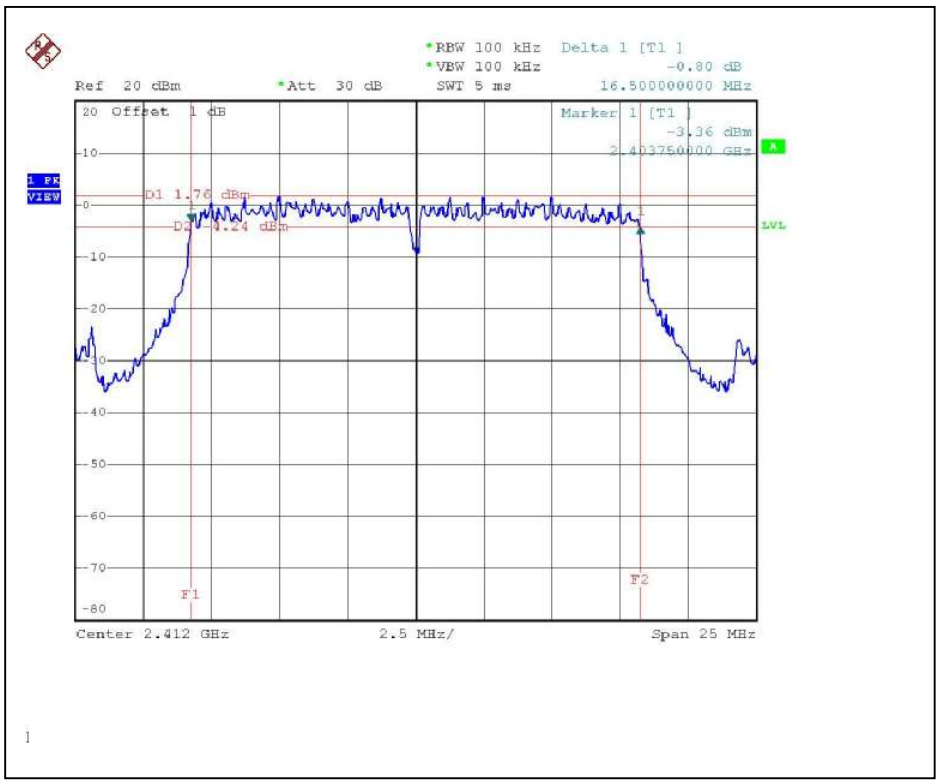

*RBW 100 kHz Delta 1 [T1]
*VBW 100 kHz -0.68 dB
Ref 20 dBm *Att 30 dB SWT 5 ms 11.000000000 MHz
20 Offset 1 dB
Marker 1 [T1]
-0.21 dBm
2.456450000 GHz
D1 4.79 dBm
D2 -1.21 dBm
1 PK VIEW
A
LVL
F1
F2
Center 2.462 GHz 2.5 MHz/ Span 25 MHz

802.11g OFDM MODULATION:

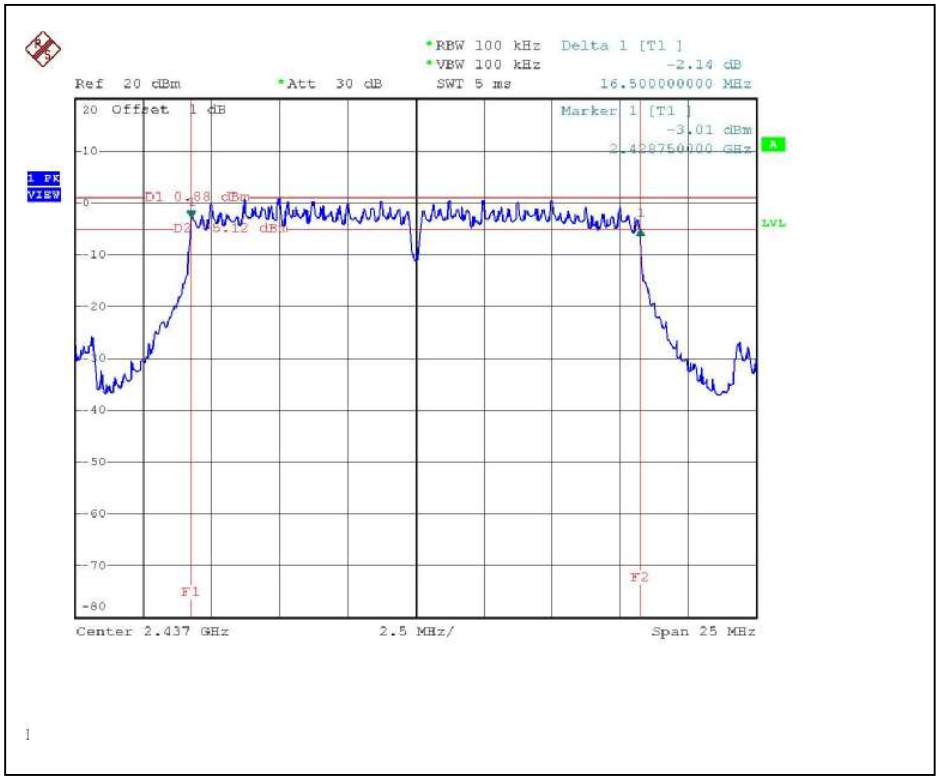
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.50	0.5	PASS
6	2437	16.50	0.5	PASS
11	2462	16.45	0.5	PASS

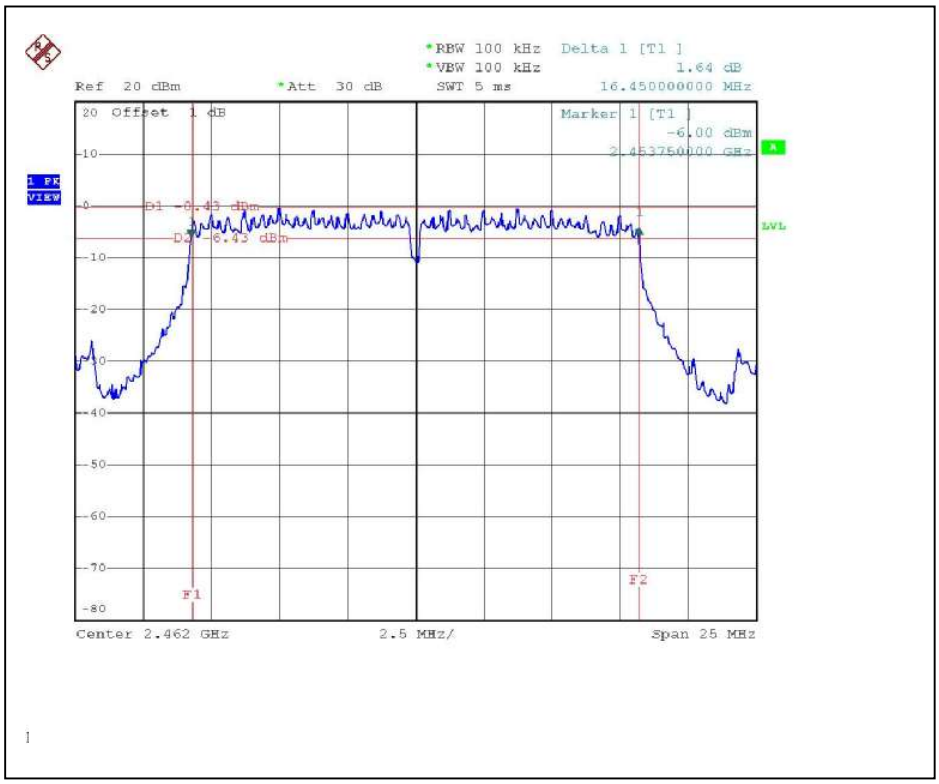
CH1



CH6


*RBW 100 kHz Delta 1 [T1]
*VBW 100 kHz -2.14 dB
Ref 20 dBm *Att 30 dB SWT 5 ms 16.500000000 MHz
20 Offset 1 dB
Marker 1 [T1]
-3.01 dBm
2.428750000 GHz
1 PK VIEW
D1 0.88 dBm
D2 -3.12 dBm
LVL
F1
F2
Center 2.437 GHz 2.5 MHz/ Span 25 MHz

CH11

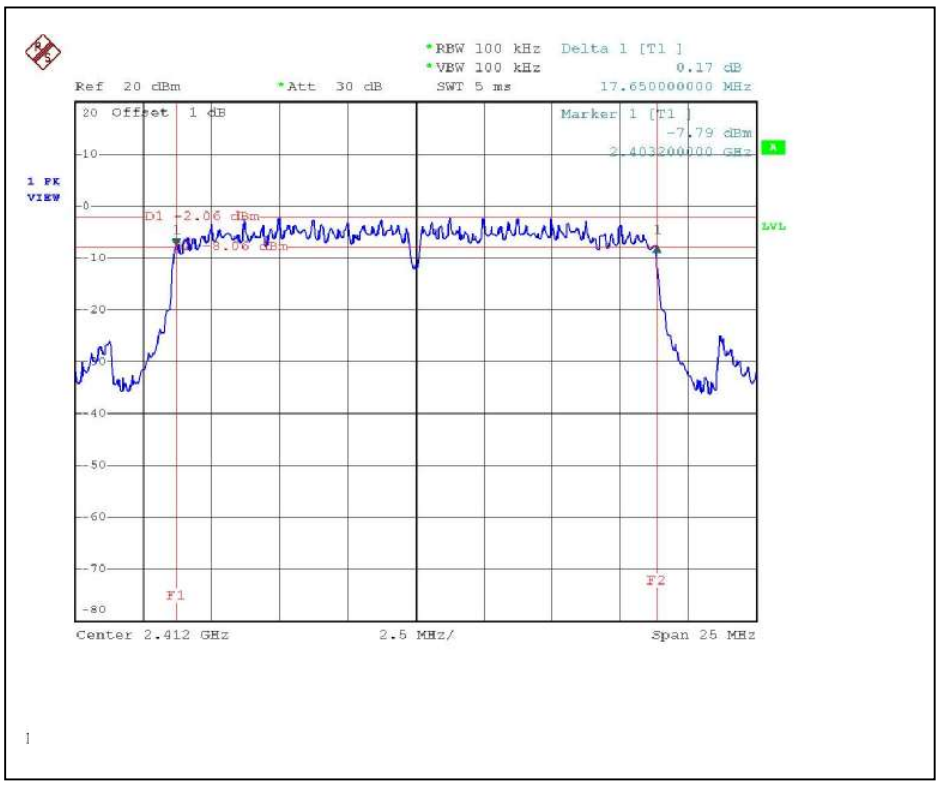

*RBW 100 kHz Delta 1 [T1]
*VBW 100 kHz 1.64 dB
Ref 20 dBm *Att 30 dB SWT 5 ms 16.450000000 MHz
20 Offset 1 dB
Marker 1 [T1]
-6.00 dBm
2.453750000 GHz
1 PK VIEW
D1 -0.43 dBm
D2 -6.43 dBm
LVL
F1
F2
Center 2.462 GHz 2.5 MHz/ Span 25 MHz

DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX:

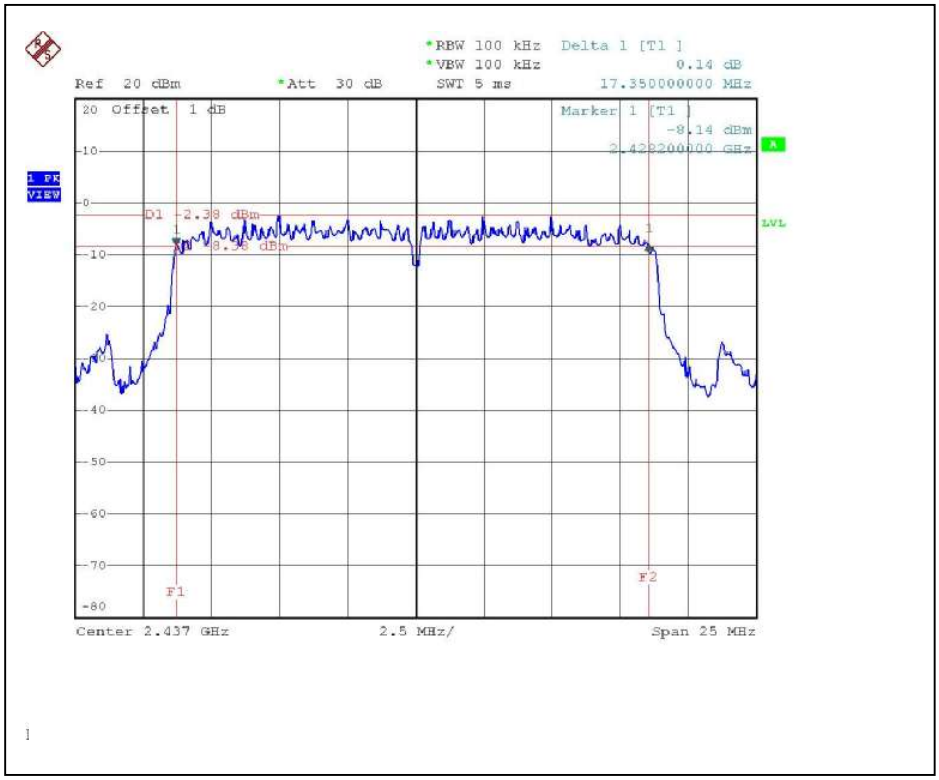
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	17.65	17.55	0.5	PASS
6	2437	17.35	17.25	0.5	PASS
11	2462	17.65	17.60	0.5	PASS

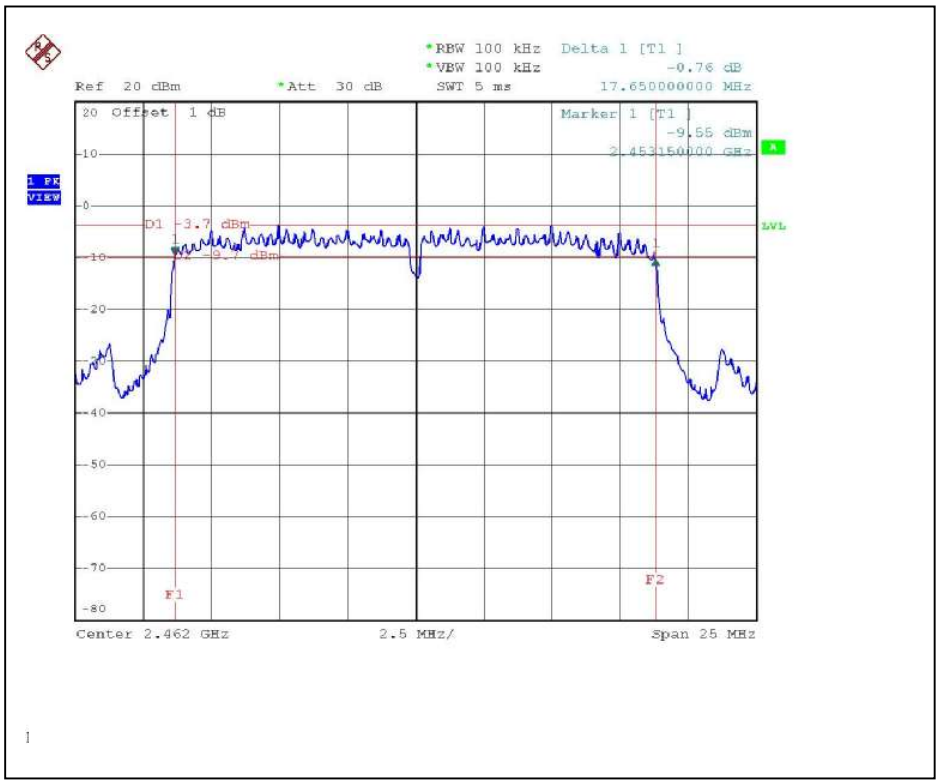
FOR CHAIN 0: CH1



CH6

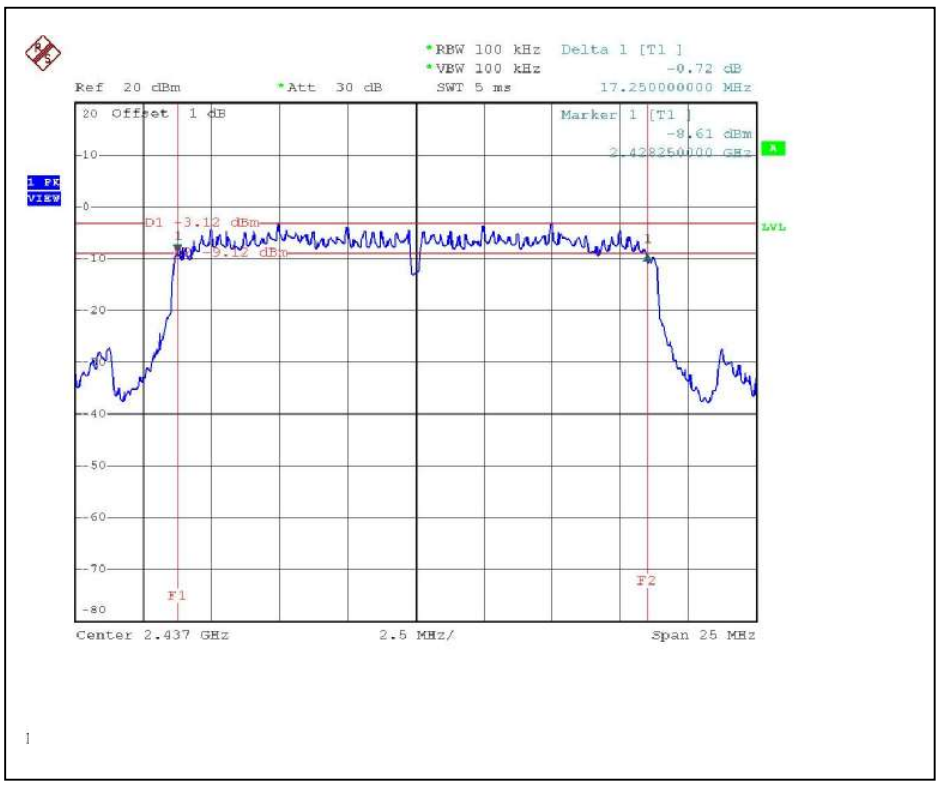

*RBW 100 kHz
Delta 1 [T1]
*VBW 100 kHz
0.14 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
17.350000000 MHz
20 Offset 1 dB
Marker 1 [T1]
-8.14 dBm
2.429200000 GHz
1 PK
VIEW
D1 -2.38 dBm
LVL
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz

CH11

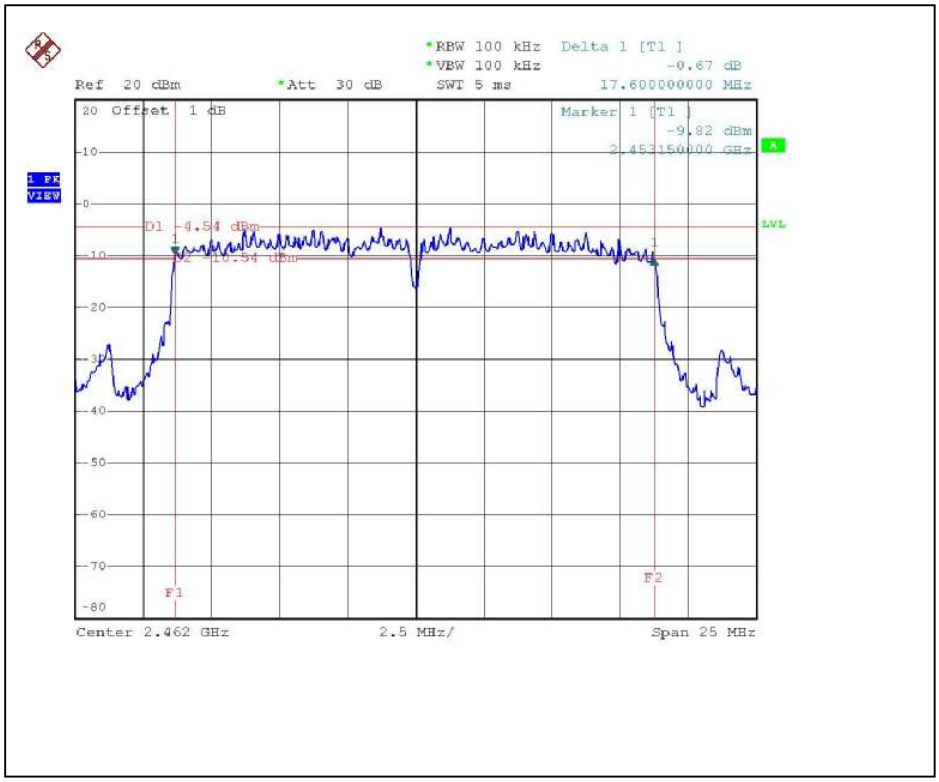

*RBW 100 kHz
Delta 1 [T1]
*VBW 100 kHz
-0.76 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
17.650000000 MHz
20 Offset 1 dB
Marker 1 [T1]
-9.55 dBm
2.453150000 GHz
1 PK
VIEW
D1 -3.7 dBm
LVL
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz

FOR CHAIN 1: CH1

CH6



CH11

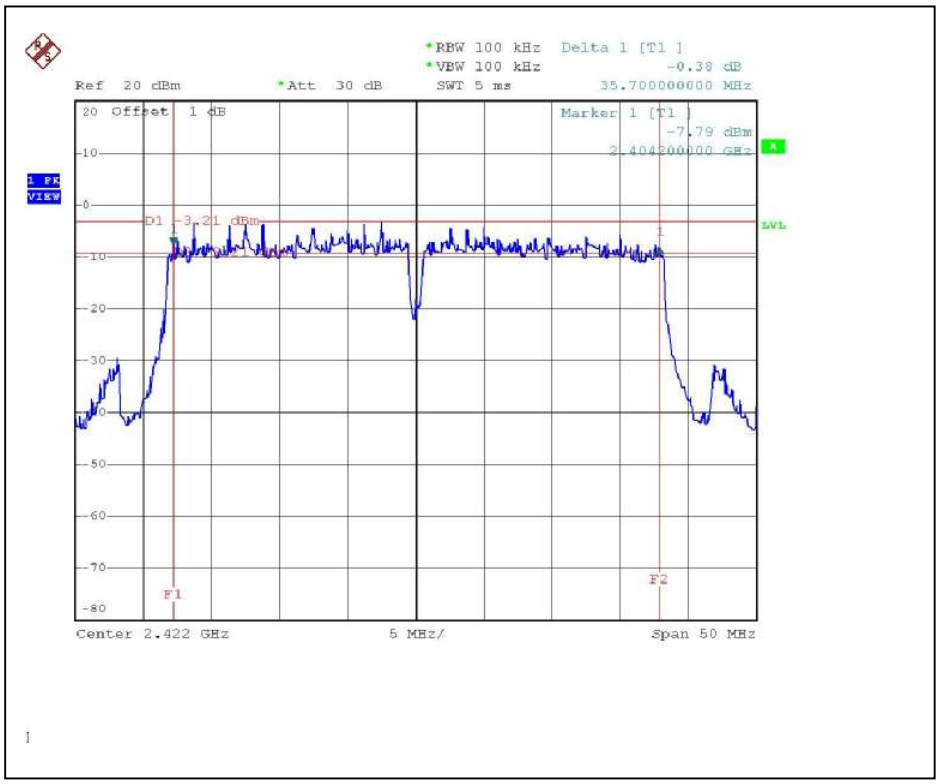

*RBW 100 kHz
Delta 1 [T1]
*VBW 100 kHz
-0.67 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
17.600000000 MHz
20 Offset 1 dB
Marker 1 [T1]
-9.82 dBm
2.453150000 GHz
D1 -4.54 dBm
D2 -10.54 dBm
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz

DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX:

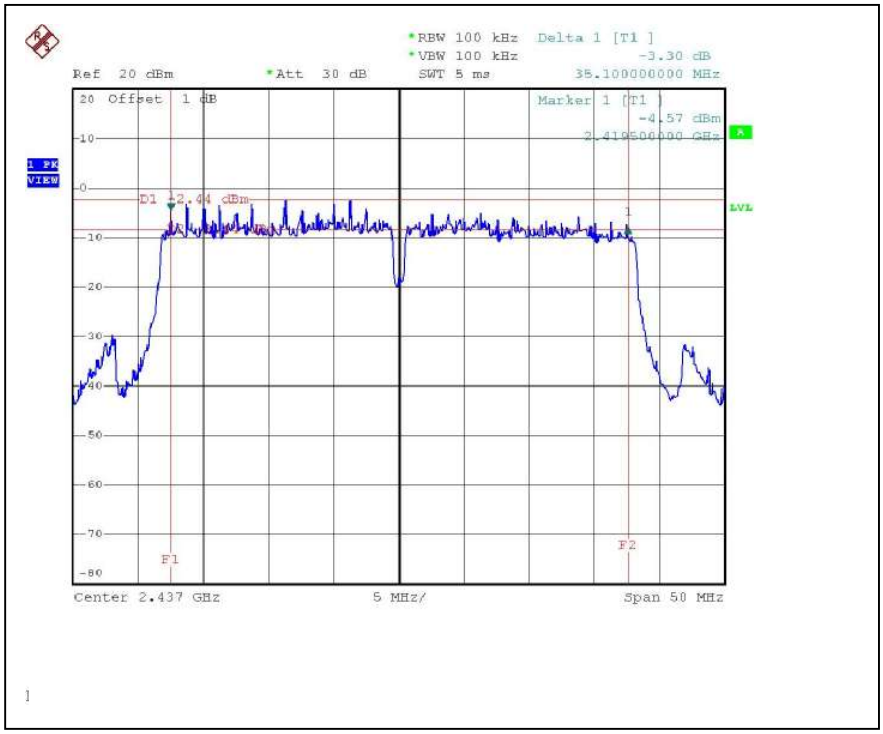
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2422	35.70	35.70	0.5	PASS
4	2437	35.10	35.10	0.5	PASS
7	2452	35.30	33.80	0.5	PASS

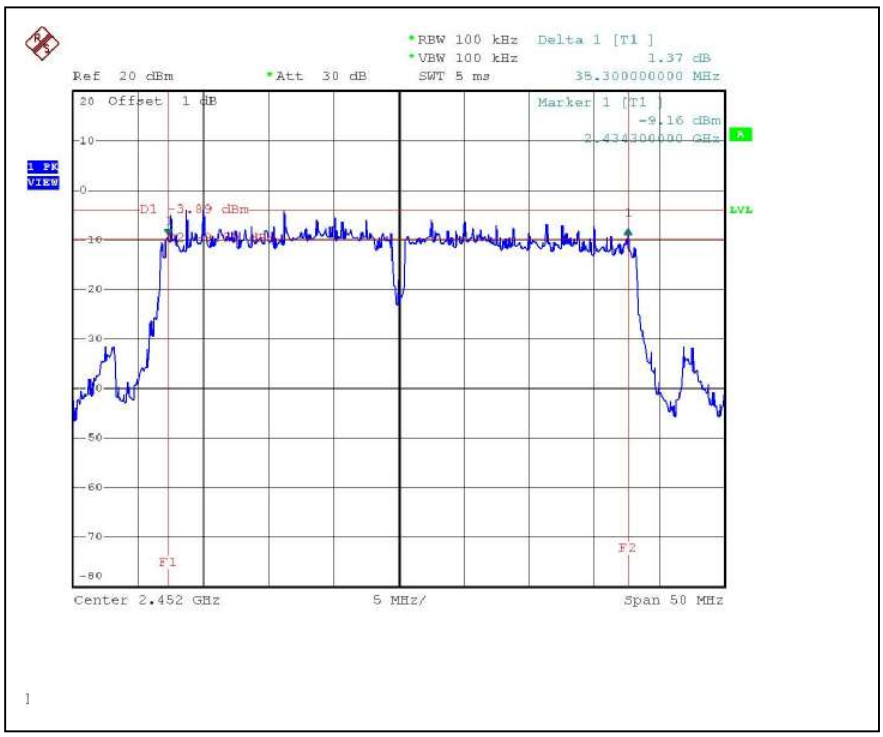
FOR CHAIN 0: CH1



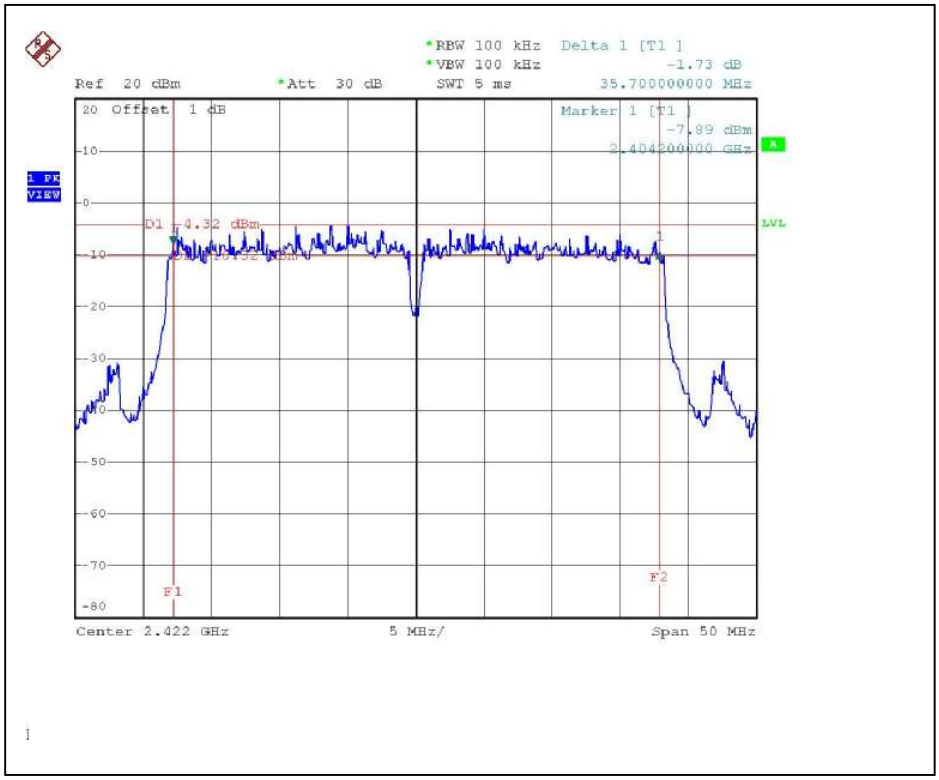
CH4


*RBW 100 kHz
*VBW 100 kHz
Delta 1 [T1]
-3.30 dB
35.100000000 MHz
Ref 20 dBm
*Att 30 dB
SWT 5 ms
20 Offset 1 dB
Marker 1 [T1]
-4.57 dBm
2.419500000 GHz
1 PK
VIEW
D1 -2.44 dBm
LVL
F1
F2
Center 2.437 GHz
5 MHz/
Span 50 MHz

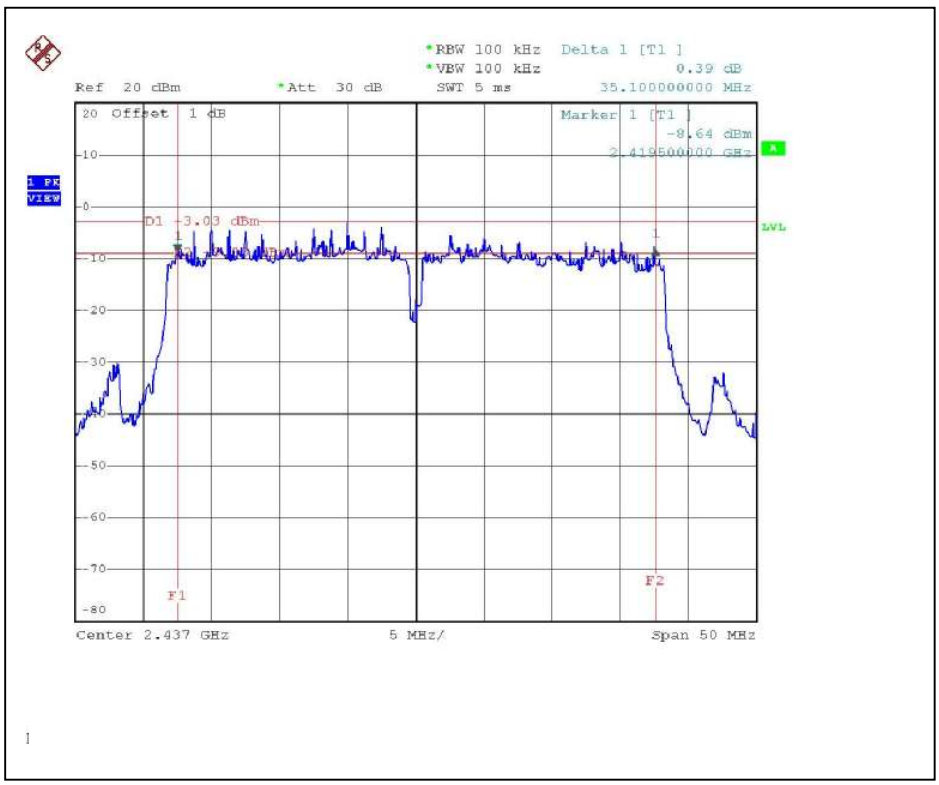
CH7


*RBW 100 kHz
*VBW 100 kHz
Delta 1 [T1]
1.37 dB
35.300000000 MHz
Ref 20 dBm
*Att 30 dB
SWT 5 ms
20 Offset 1 dB
Marker 1 [T1]
-9.16 dBm
2.434300000 GHz
1 PK
VIEW
D1 -3.09 dBm
LVL
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz

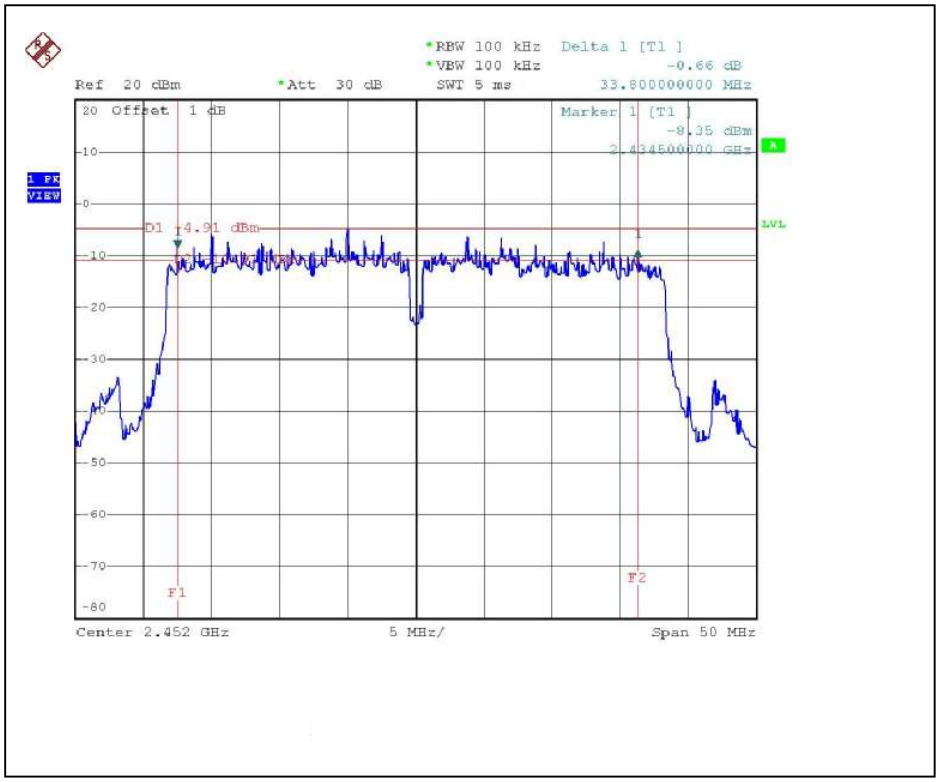
FOR CHAIN 1: CH1



CH4



CH7


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.66 dB
33.800000000 MHz
Ref 20 dBm
*Att 30 dB
20 Offset 1 dB
Marker 1 [T1]
-8.35 dBm
2.434500000 GHz
1 PK
VIEW
D1 4.91 dBm
LVL
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2006
Agilent SIGNAL GENERATOR	E8257C	MY43320668	Dec. 07, 2006
TEKTRONIX OSCILLOSCOPE	TDS380	B016335	Jun. 22, 2006
NARDA DETECTOR	4503A	FSCM99899	NA

NOTE:
The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

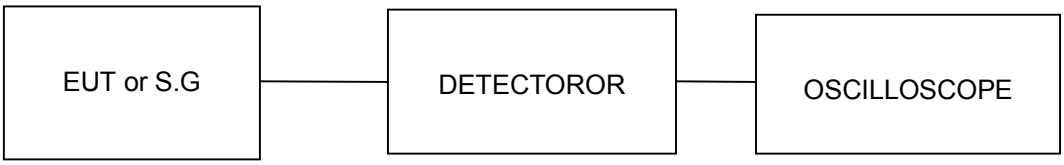
4.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

802.11b DSSS MODULATION:

MODULATION TYPE	DBPSK	**TRANSFER RATE**	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	125.893	21.0	30	PASS
6	2437	104.713	20.2	30	PASS
11	2462	83.176	19.2	30	PASS

802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	134.896	21.3	30	PASS
6	2437	93.325	19.7	30	PASS
11	2462	83.176	19.2	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX:

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	2412	35.481	29.512	15.5	14.7	64.993	18.1	30	PASS
6	2437	26.915	23.442	14.3	13.7	50.358	17.0	30	PASS
11	2462	23.988	17.783	13.8	12.5	41.771	16.2	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX:

MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	2422	37.154	31.623	15.7	15.0	68.776	18.4	30	PASS
4	2437	28.184	23.442	14.5	13.7	51.626	17.1	30	PASS
7	2452	23.988	17.783	13.8	12.5	41.771	16.2	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2006

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.5.3 TEST PROCEDURE

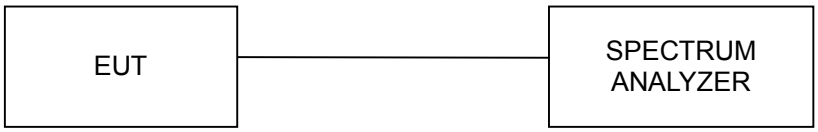
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

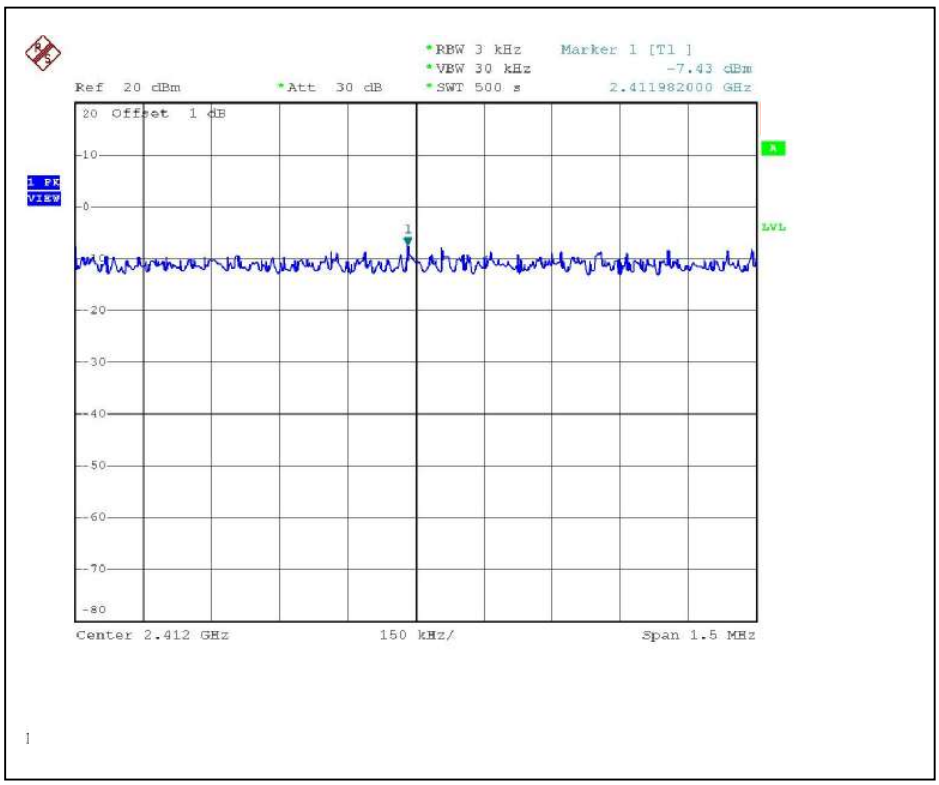
4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

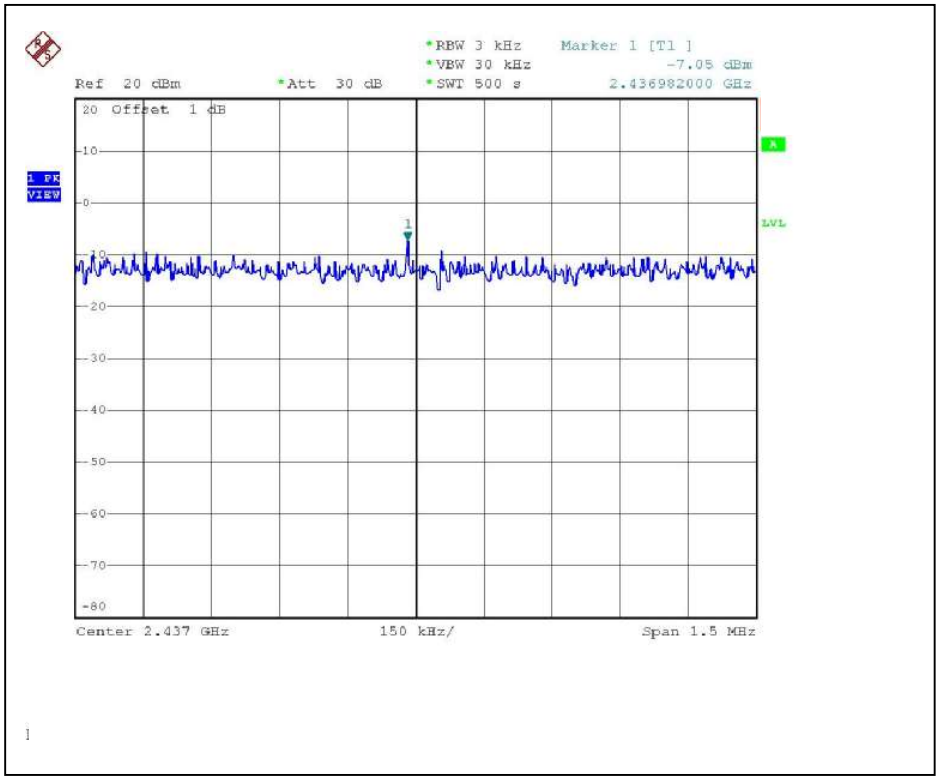
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-7.43	8	PASS
6	2437	-7.05	8	PASS
11	2462	-7.35	8	PASS

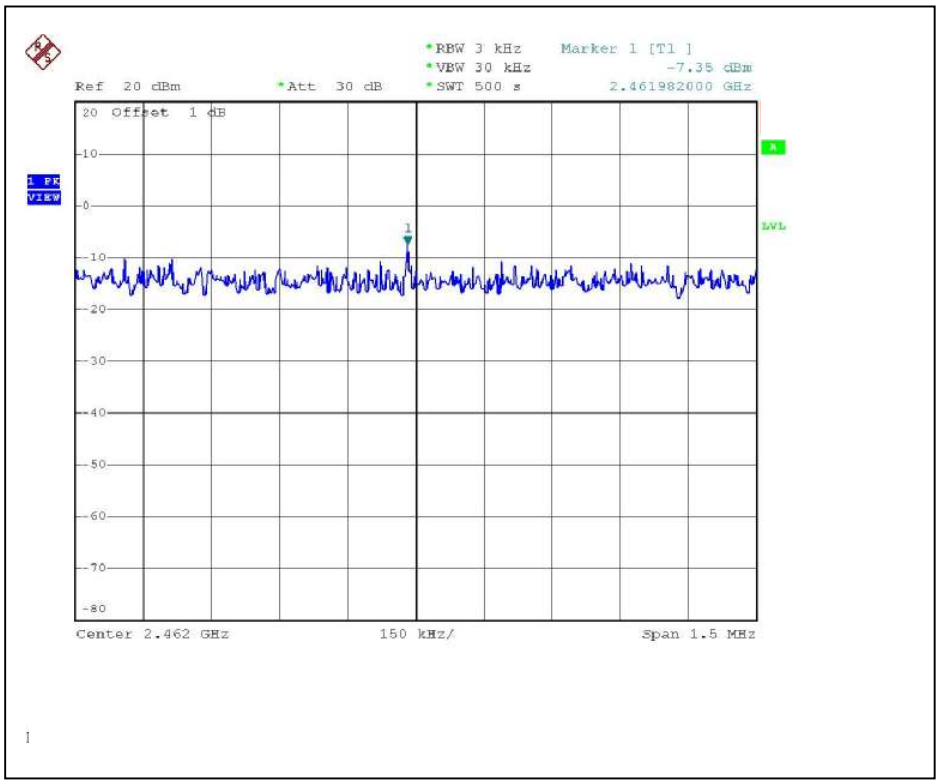
CH1



CH6


*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-7.05 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.436982000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
Center 2.437 GHz
150 kHz/
Span 1.5 MHz

CH11

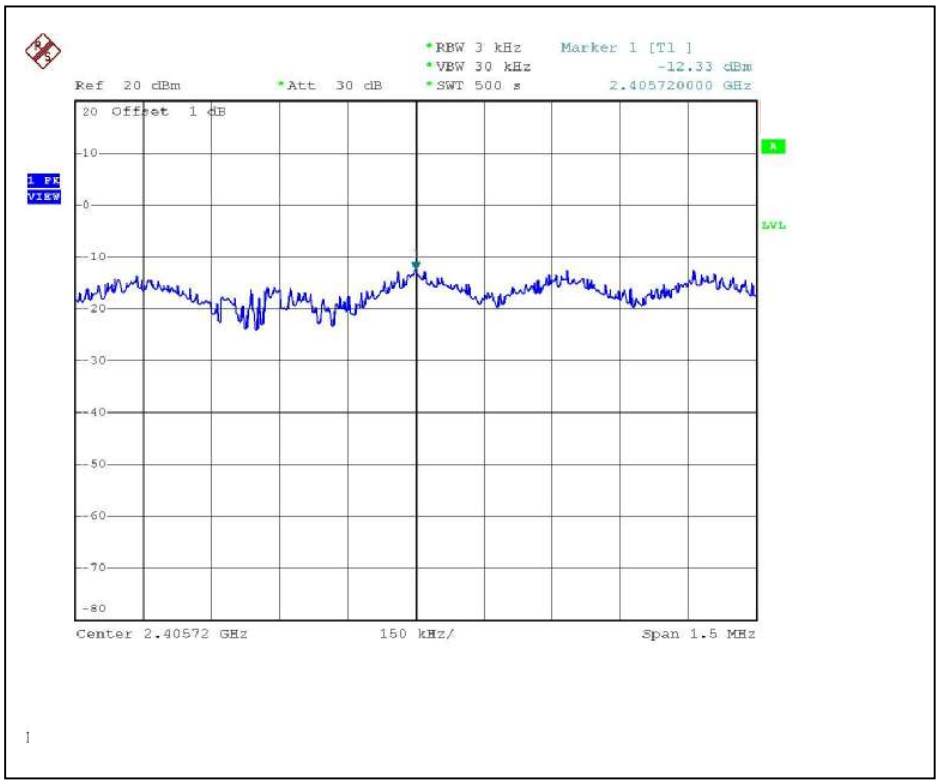

*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-7.35 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.461982000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
Center 2.462 GHz
150 kHz/
Span 1.5 MHz

802.11g OFDM MODULATION:

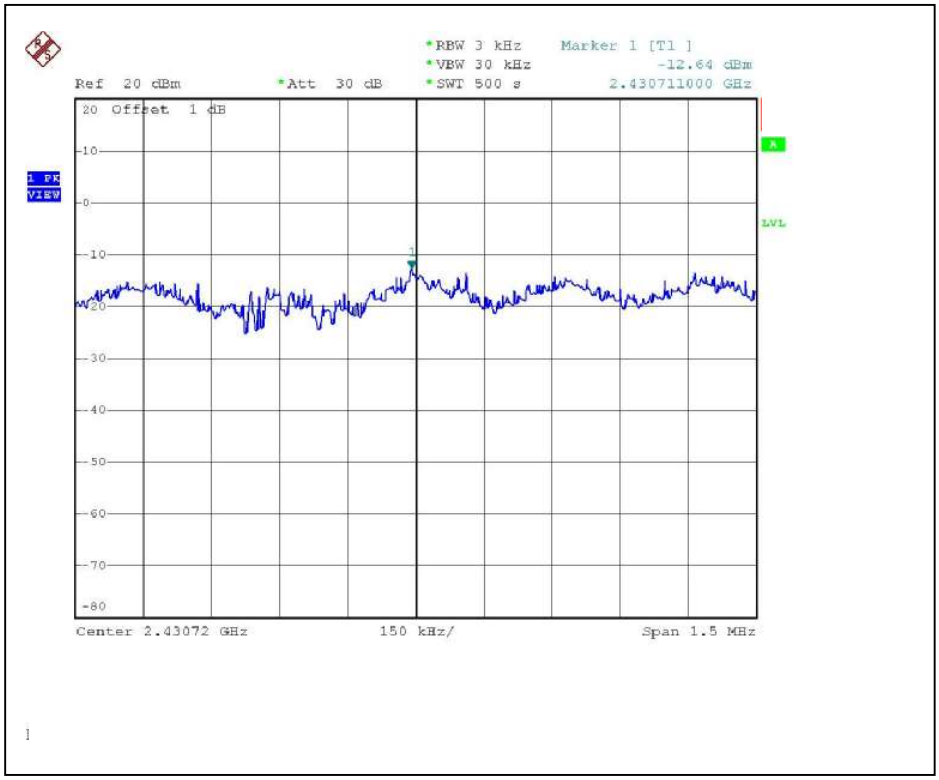
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-12.33	8	PASS
6	2437	-12.64	8	PASS
11	2462	-13.76	8	PASS

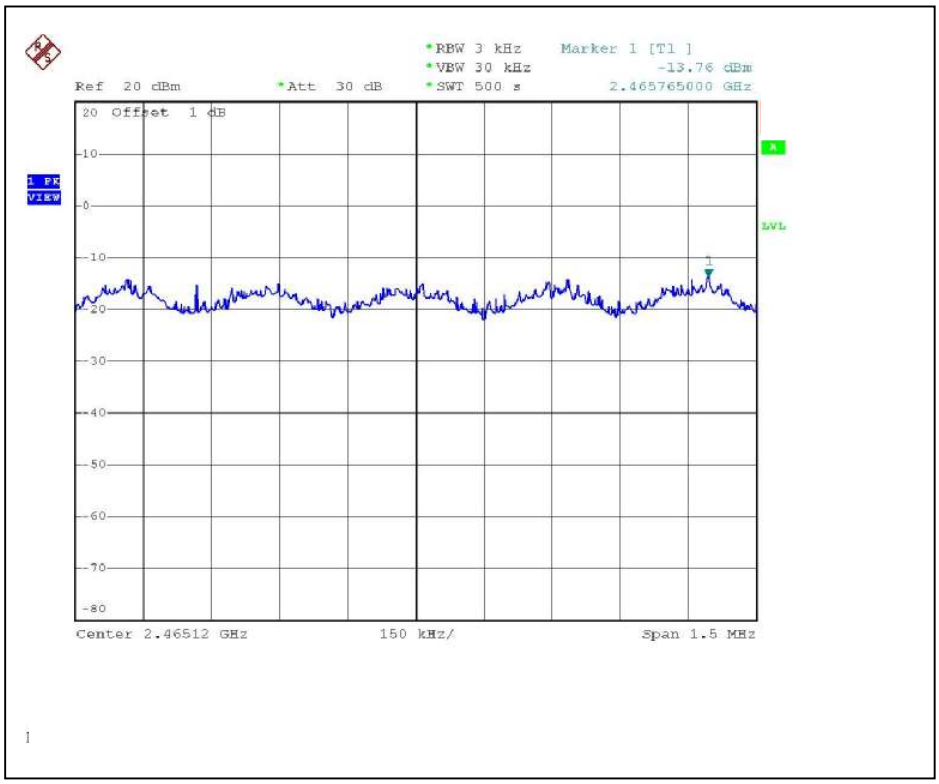
CH1



CH6


*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-12.64 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.430711000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
Center 2.43072 GHz
150 kHz/
Span 1.5 MHz

CH11

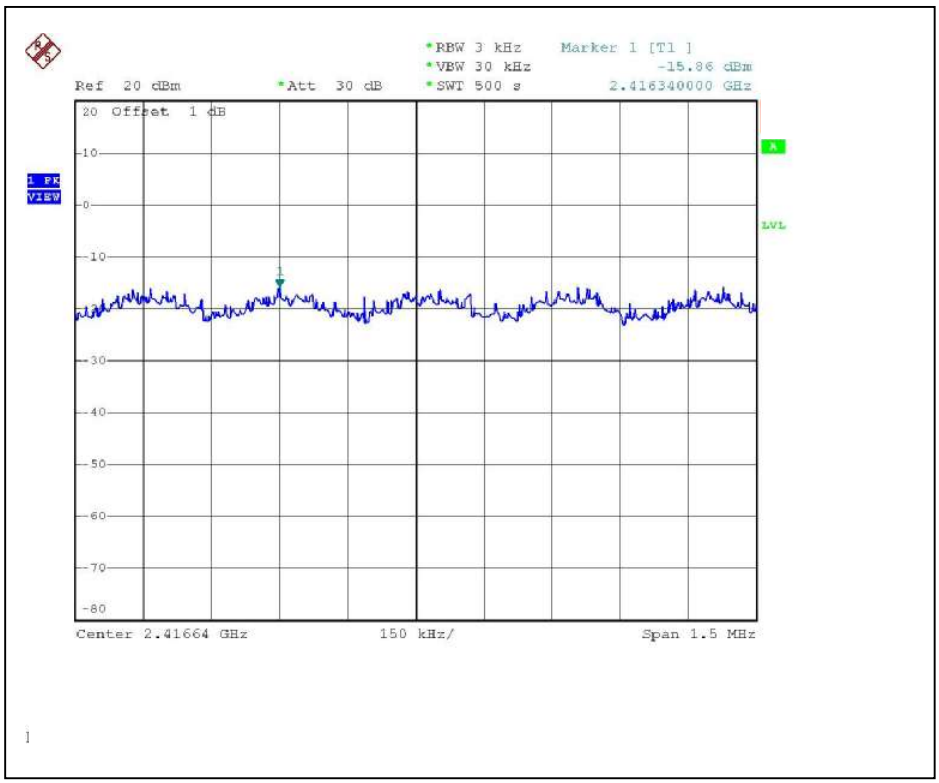

*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-13.76 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.465765000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
Center 2.46512 GHz
150 kHz/
Span 1.5 MHz

DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX:

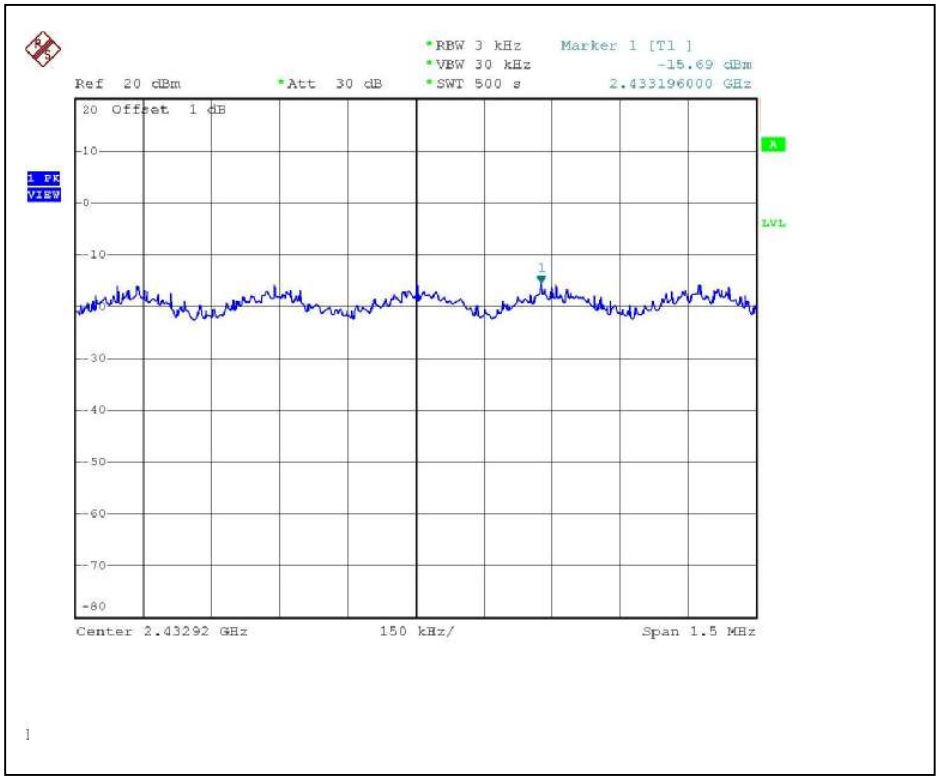
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	-15.86	-16.66	8	PASS
6	2437	-15.69	-15.86	8	PASS
11	2462	-17.29	-17.55	8	PASS

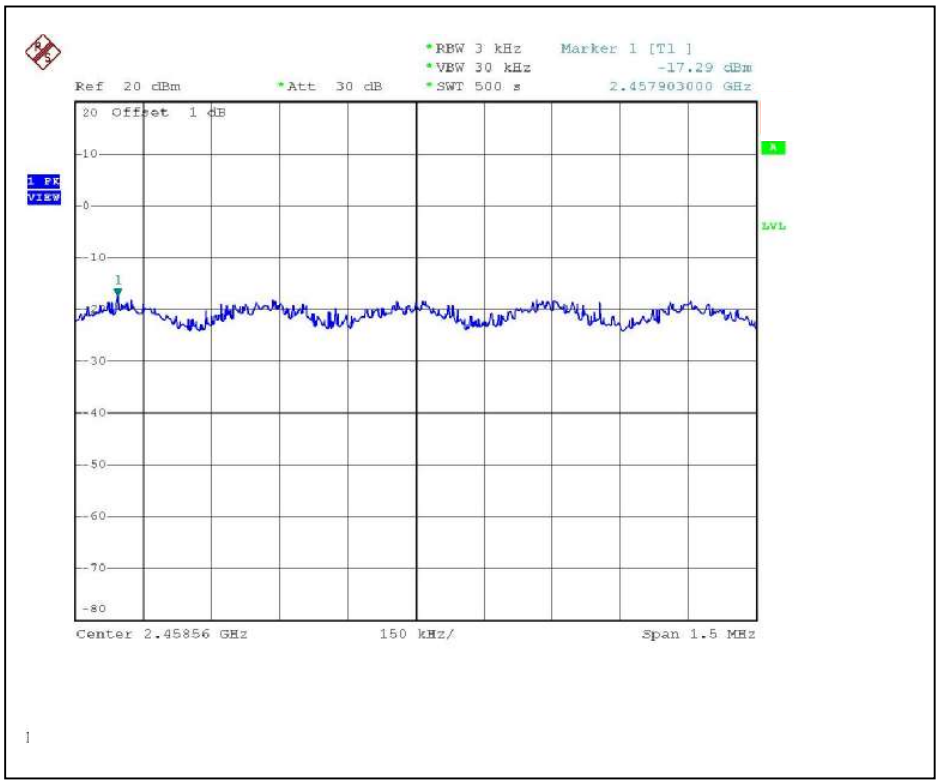
FOR CHAIN 0: CH1



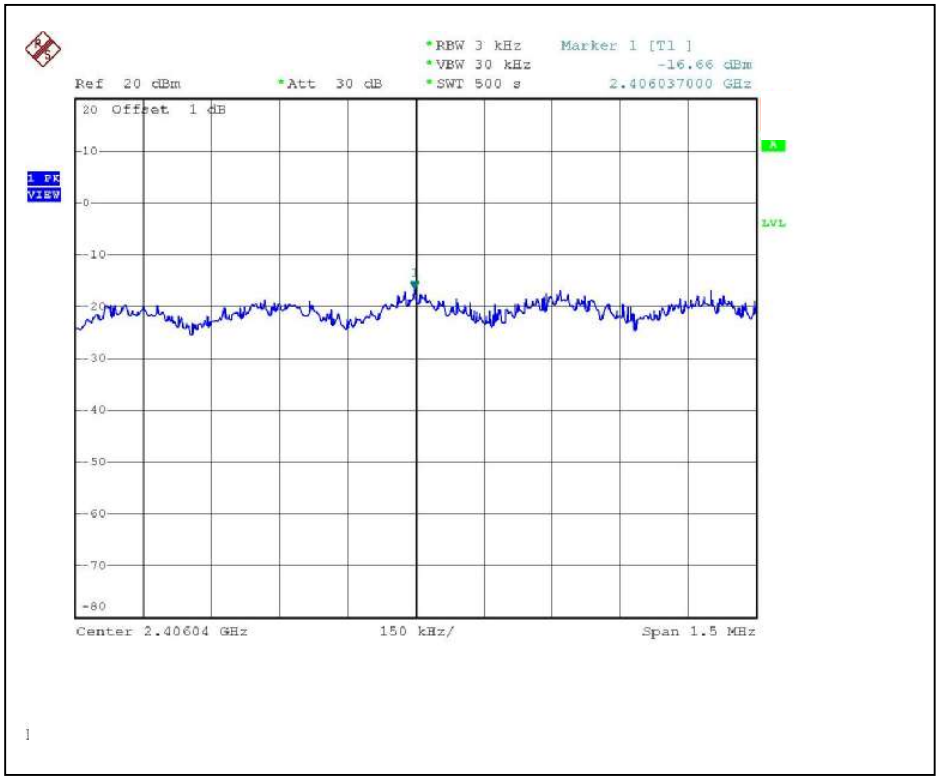
CH6


*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-15.69 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.433196000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
Center 2.43292 GHz
150 kHz/
Span 1.5 MHz

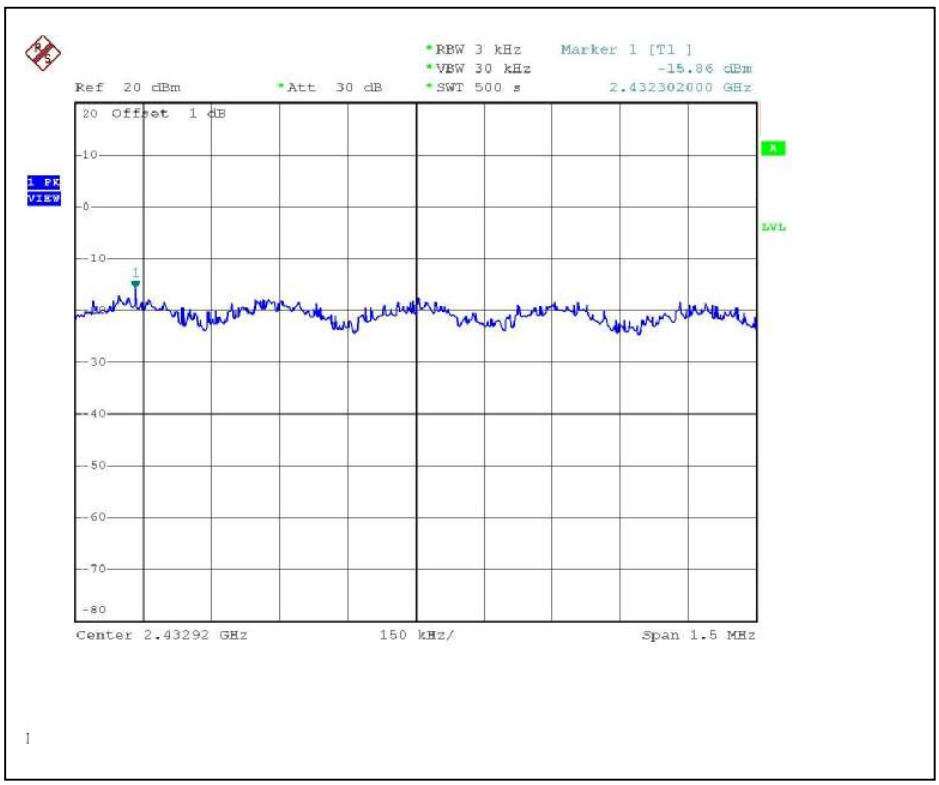
CH11


*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-17.29 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.457903000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
Center 2.45856 GHz
150 kHz/
Span 1.5 MHz

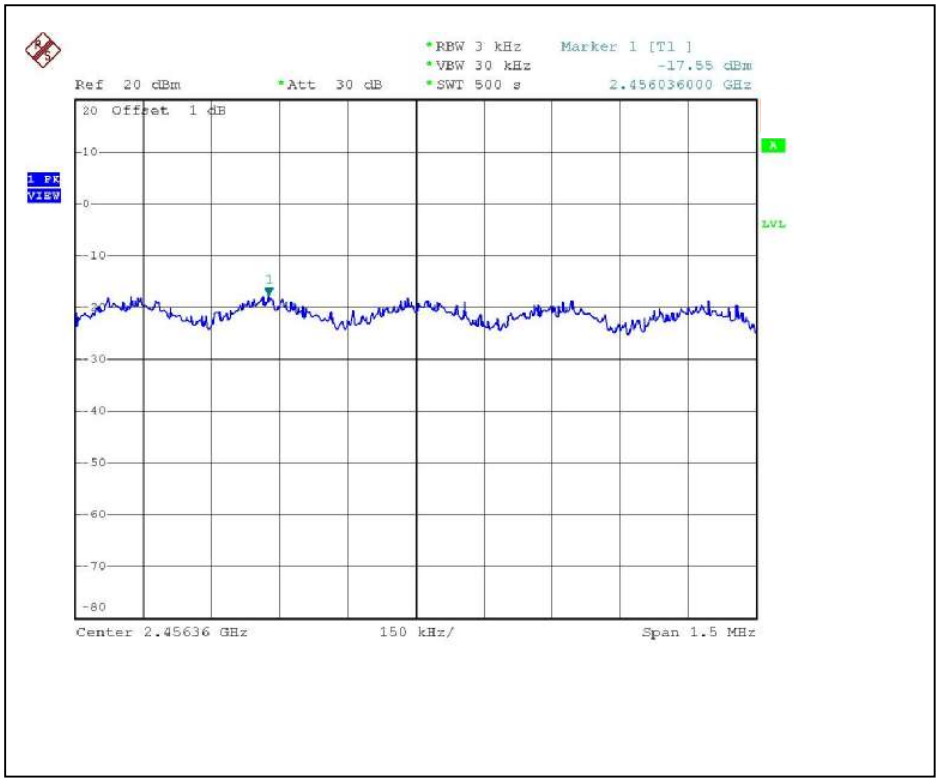
FOR CHAIN 1: CH1



CH6



CH11

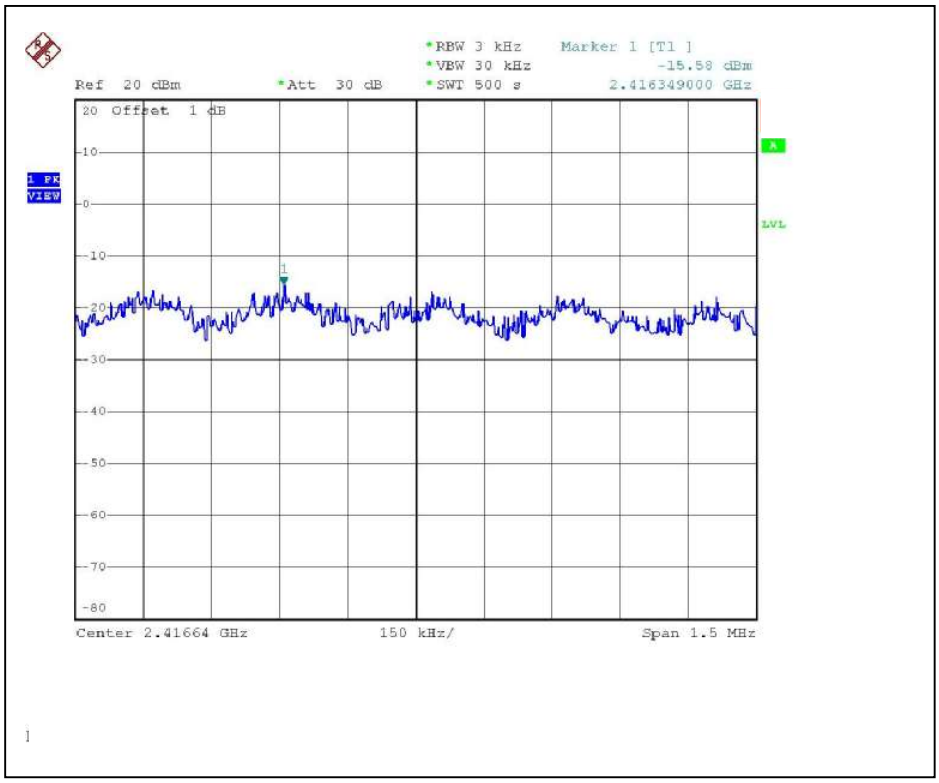

*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-17.55 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.456036000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
Center 2.45636 GHz
150 kHz/
Span 1.5 MHz

DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX:

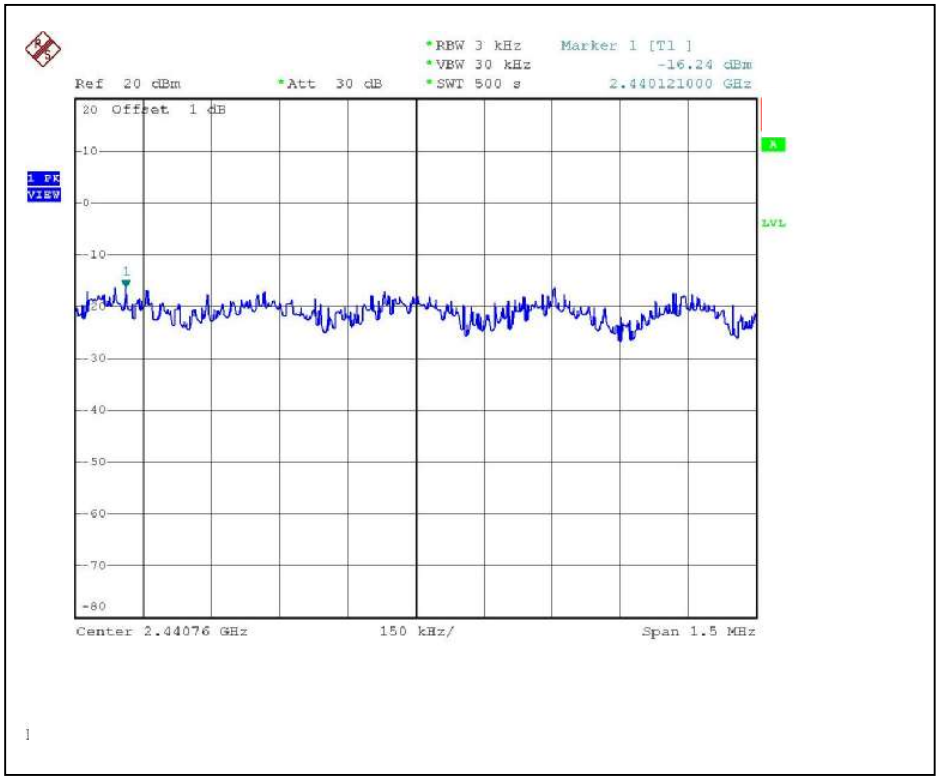
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2422	-15.58	-16.04	8	PASS
4	2437	-16.24	-17.19	8	PASS
7	2452	-16.33	-17.05	8	PASS

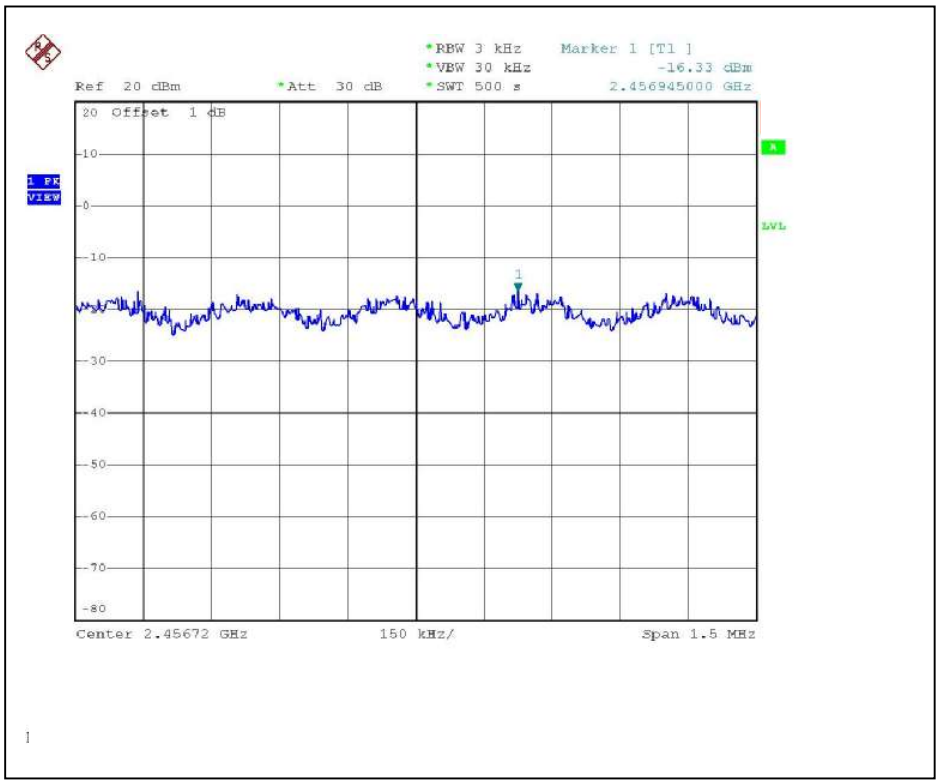
FOR CHAIN 0: CH1



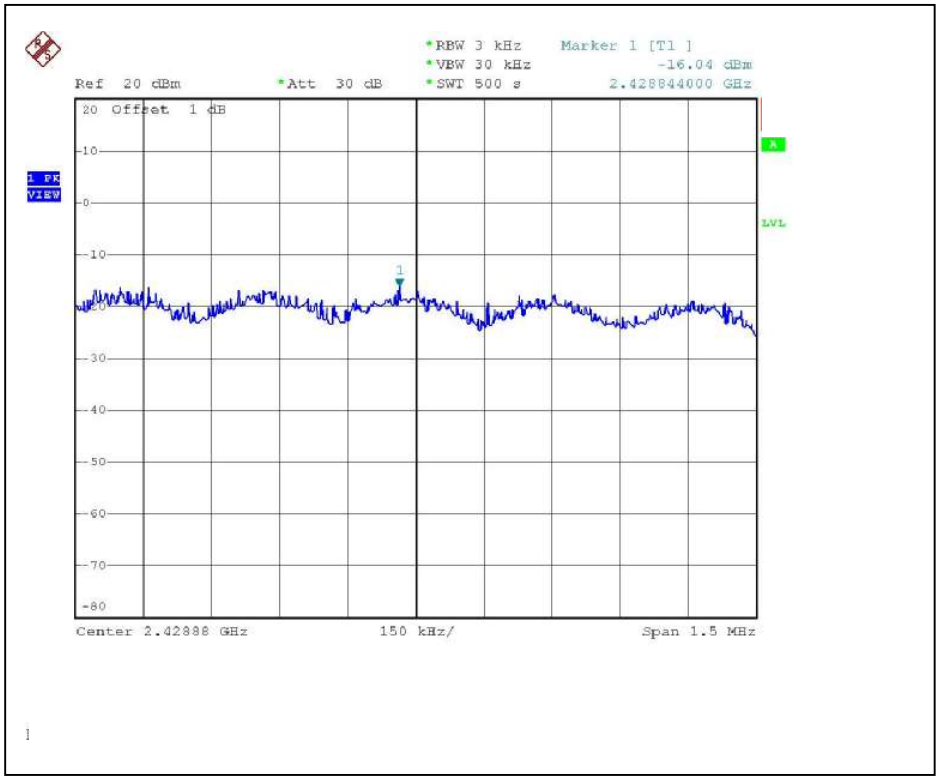
CH4


*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-16.24 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.440121000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
Center 2.44076 GHz
150 kHz/
Span 1.5 MHz

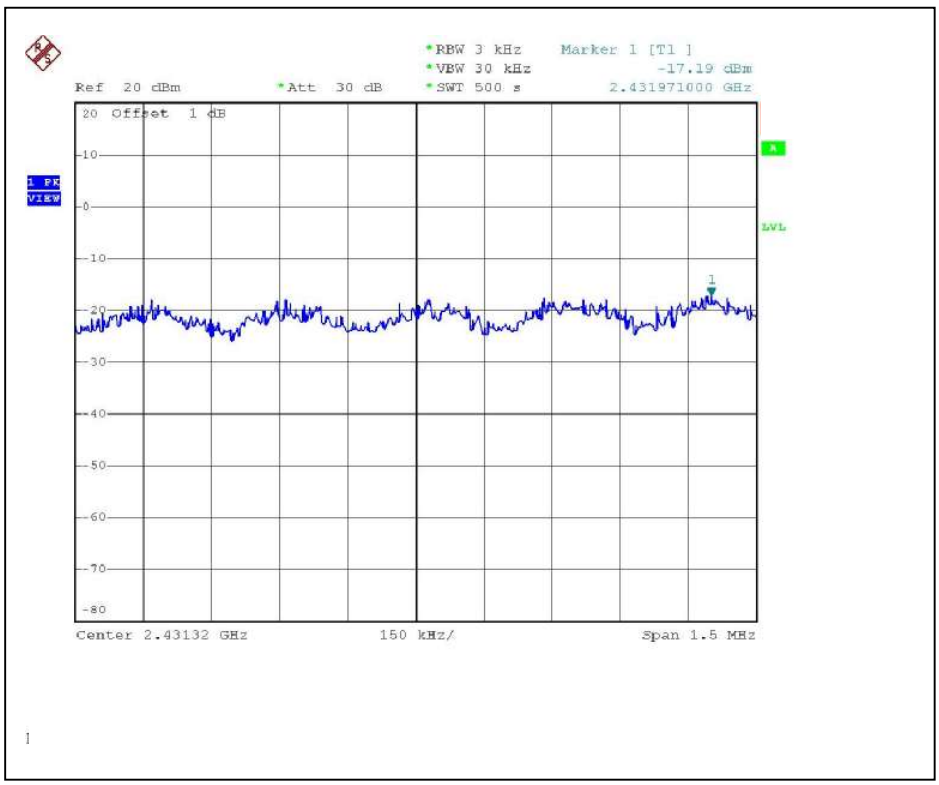
CH7


*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-16.33 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.456945000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
Center 2.45672 GHz
150 kHz/
Span 1.5 MHz

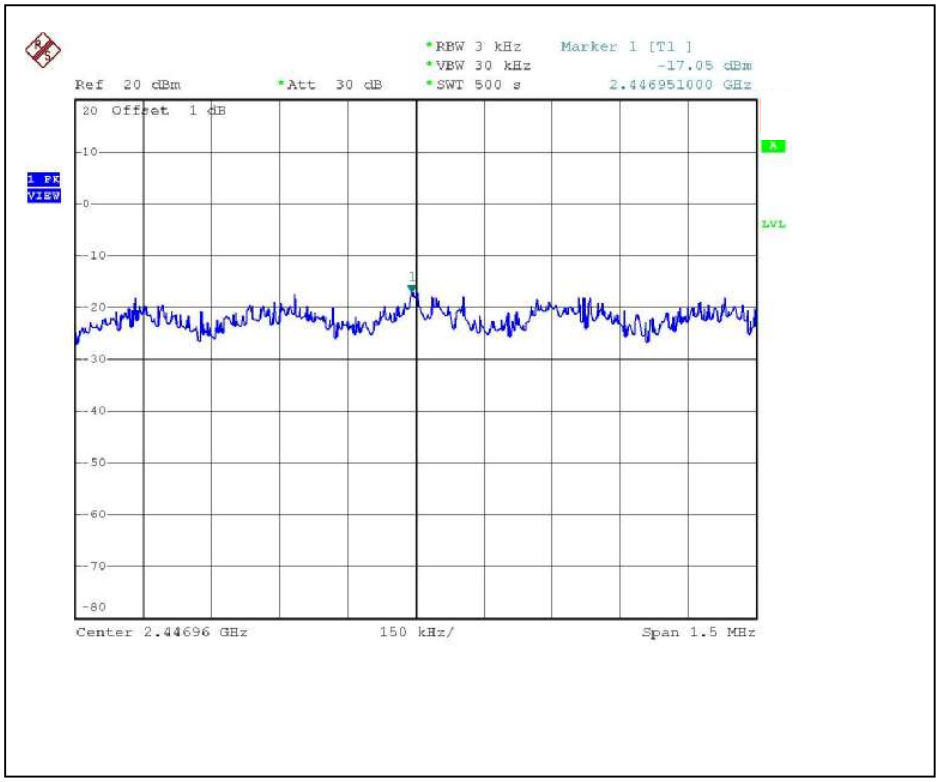
FOR CHAIN 1: CH1



CH4



CH7


*RBW 3 kHz
Marker 1 [T1]
*VBW 30 kHz
-17.05 dBm
Ref 20 dBm
*Att 30 dB
*SWT 500 s
2.446951000 GHz
20 Offset 1 dB
1 PK
VIEW
A
LVL
Center 2.44696 GHz
150 kHz/
Span 1.5 MHz

4.6 CONDUCTED EMISSION AND BAND EDGES MEASUREMENT

4.6.1 LIMITS OF CONDTCTED EMISSION AND BAND EDGES MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2006

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (RBW = VBW = 100kHz) are attached on the following pages.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

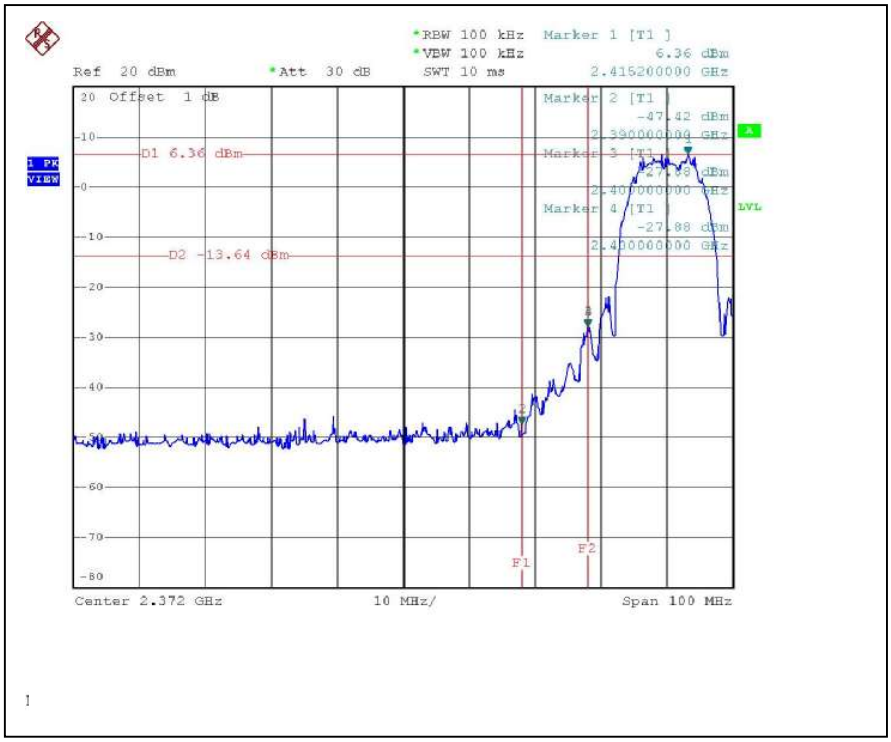
Same as Item 4.3.6

4.6.6 TEST RESULTS

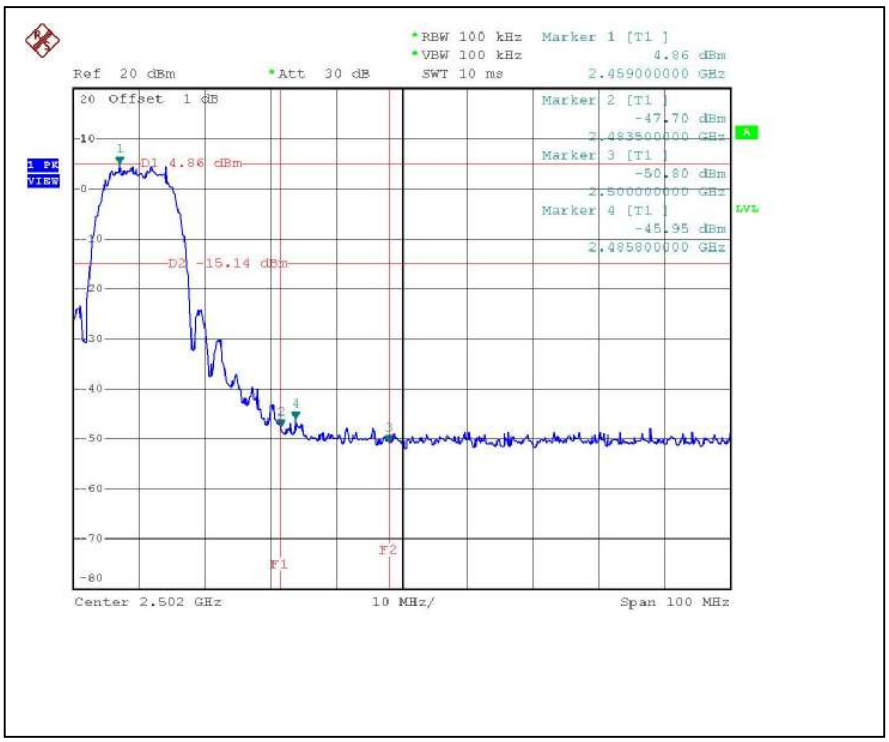
The spectrum plots are attached on the following 12 images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b DSSS MODULATION:

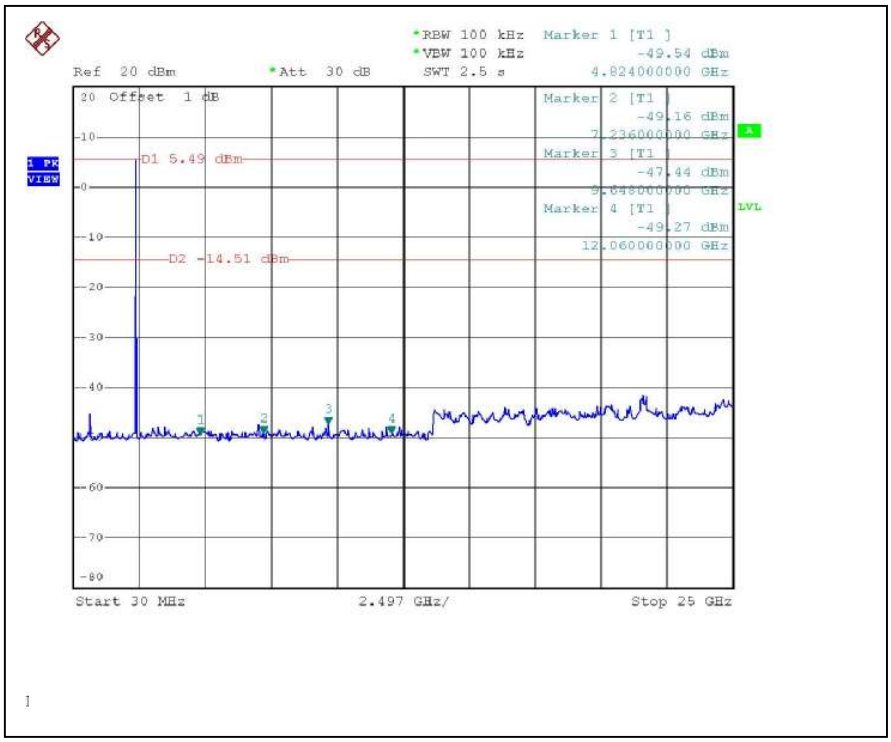
CH1



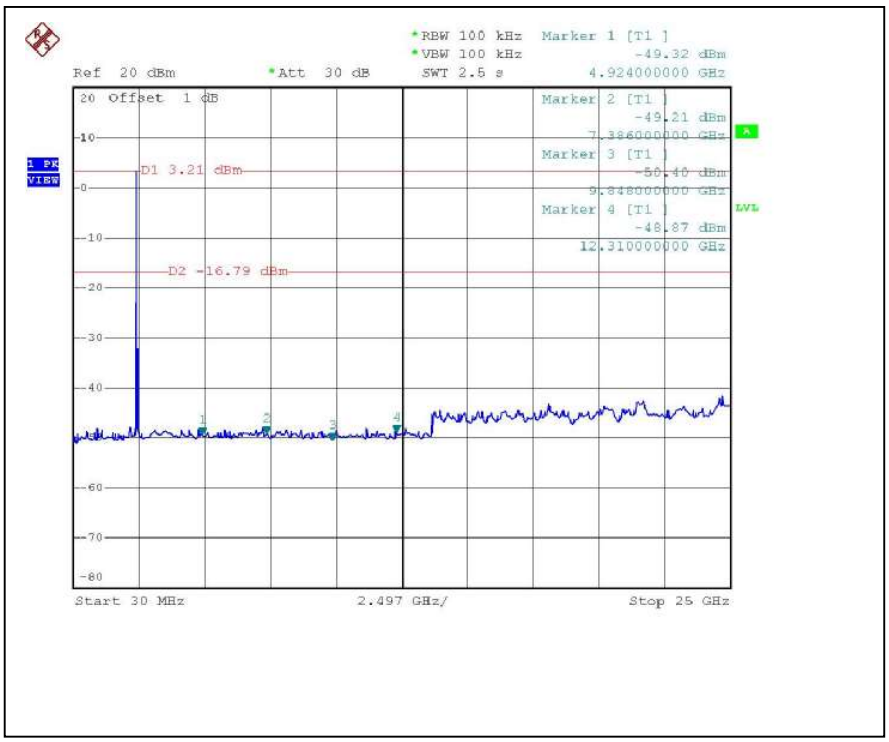
CH11



CH1

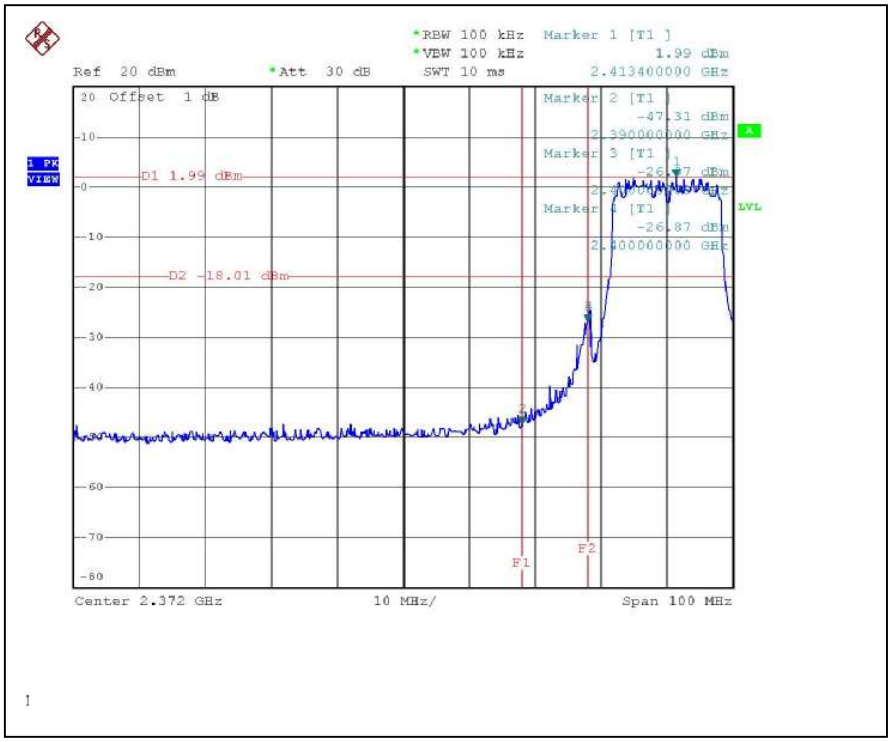

*RBW 100 kHz
*VBW 100 kHz
Ref 20 dBm
*Att 30 dB
SWT 2.5 s
Marker 1 [T1]
-49.54 dBm
4.824000000 GHz
20 Offset 1 dB
Marker 2 [T1
-49.16 dBm
7.236000000 GHz
Marker 3 [T1
-47.44 dBm
9.648000000 GHz
Marker 4 [T1
-49.27 dBm
12.060000000 GHz
D1 5.49 dBm
D2 -14.51 dBm
1 PK VIEW
A
LVL
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH11

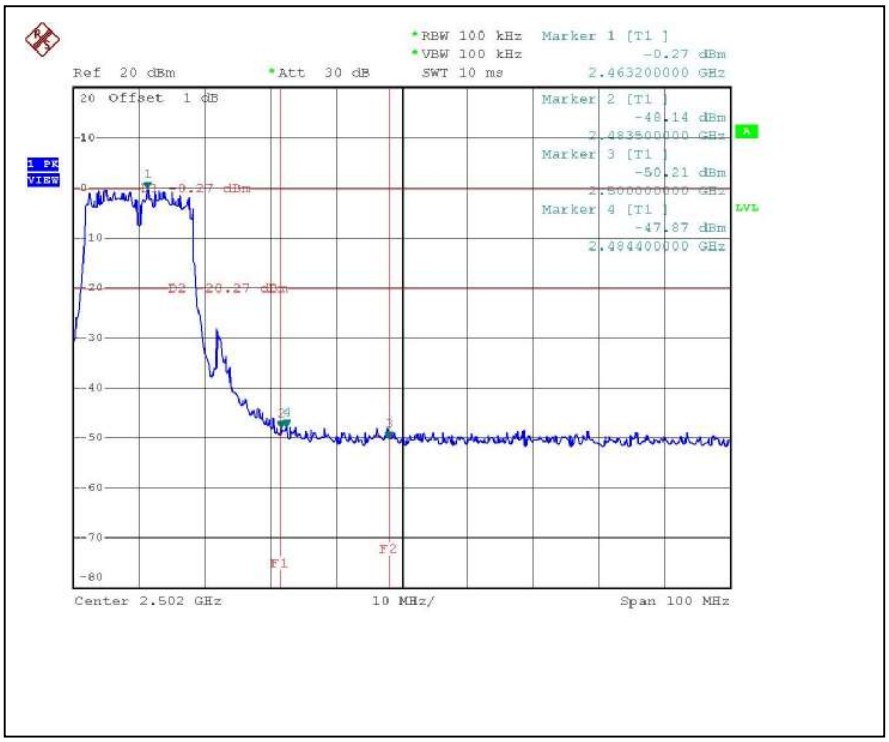

*RBW 100 kHz
*VBW 100 kHz
Ref 20 dBm
*Att 30 dB
SWT 2.5 s
Marker 1 [T1]
-49.32 dBm
4.924000000 GHz
20 Offset 1 dB
Marker 2 [T1]
-49.21 dBm
7.386000000 GHz
Marker 3 [T1]
-50.40 dBm
9.848000000 GHz
Marker 4 [T1]
-48.87 dBm
12.310000000 GHz
D1 3.21 dBm
D2 -16.79 dBm
1 PK VIEW
A
LVL
Start 30 MHz
2.497 GHz/
Stop 25 GHz

802.11g OFDM MODULATION:

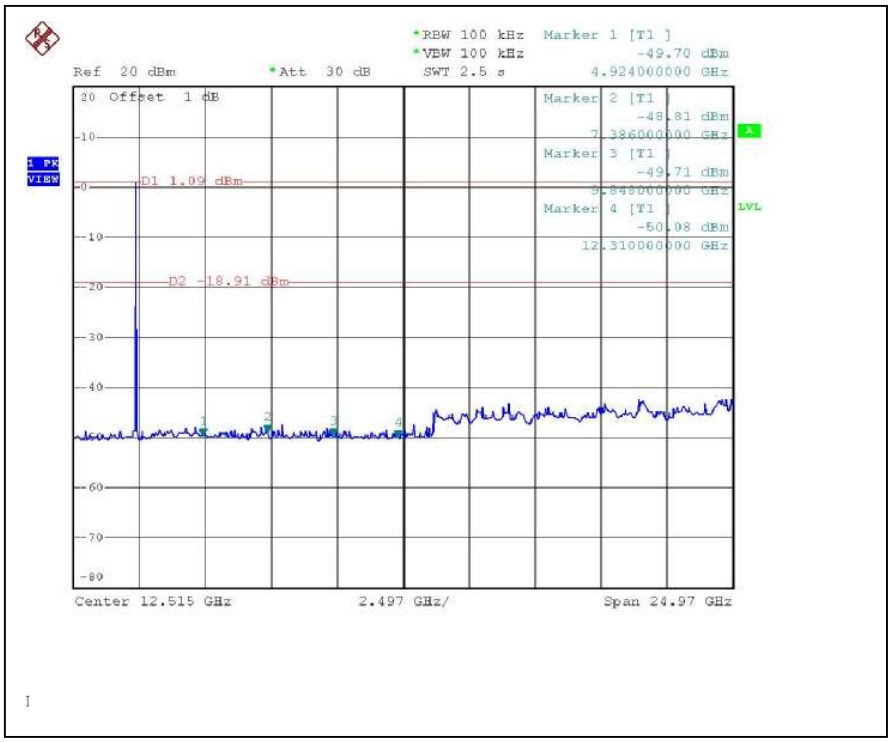
CH1



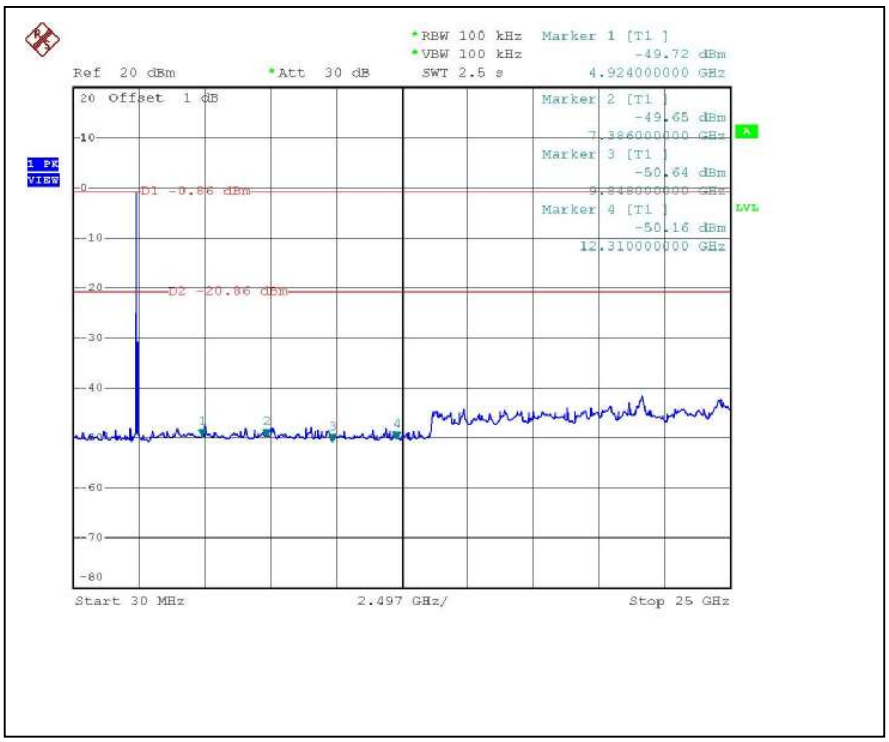
CH11



CH1

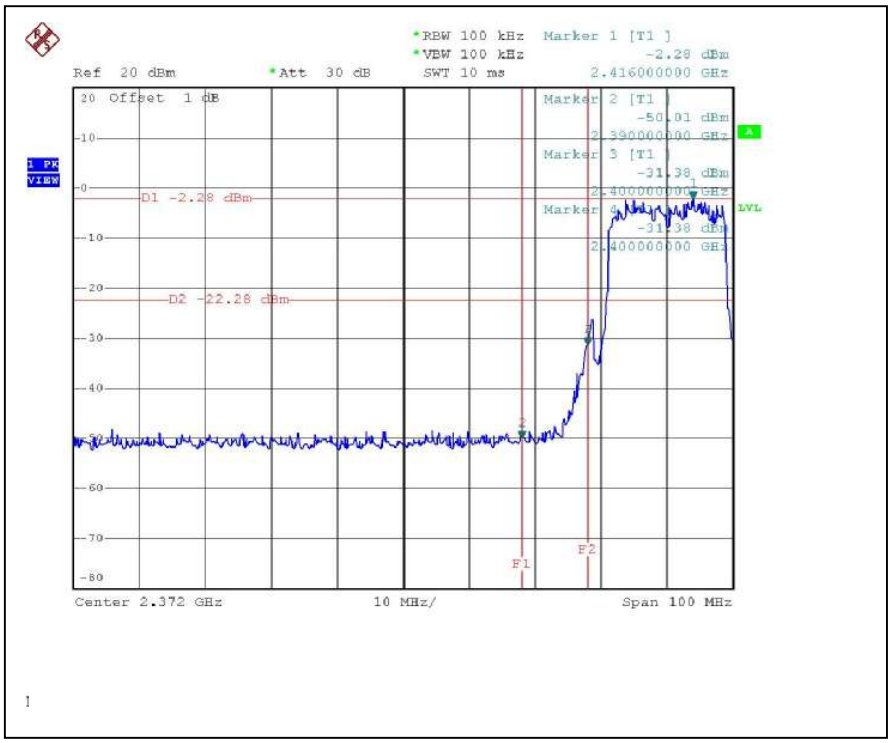

*RBW 100 kHz
*VBW 100 kHz
Marker 1 [T1]
-49.70 dBm
4.924000000 GHz
Ref 20 dBm
*Att 30 dB
SWT 2.5 s
20 Offset 1 dB
Marker 2 [T1]
-48.81 dBm
7.386000000 GHz
Marker 3 [T1]
-49.71 dBm
9.848000000 GHz
Marker 4 [T1]
-50.08 dBm
12.310000000 GHz
1 PK VIEW
D1 1.09 dBm
D2 -18.91 dBm
Center 12.515 GHz
2.497 GHz/
Span 24.97 GHz

CH11

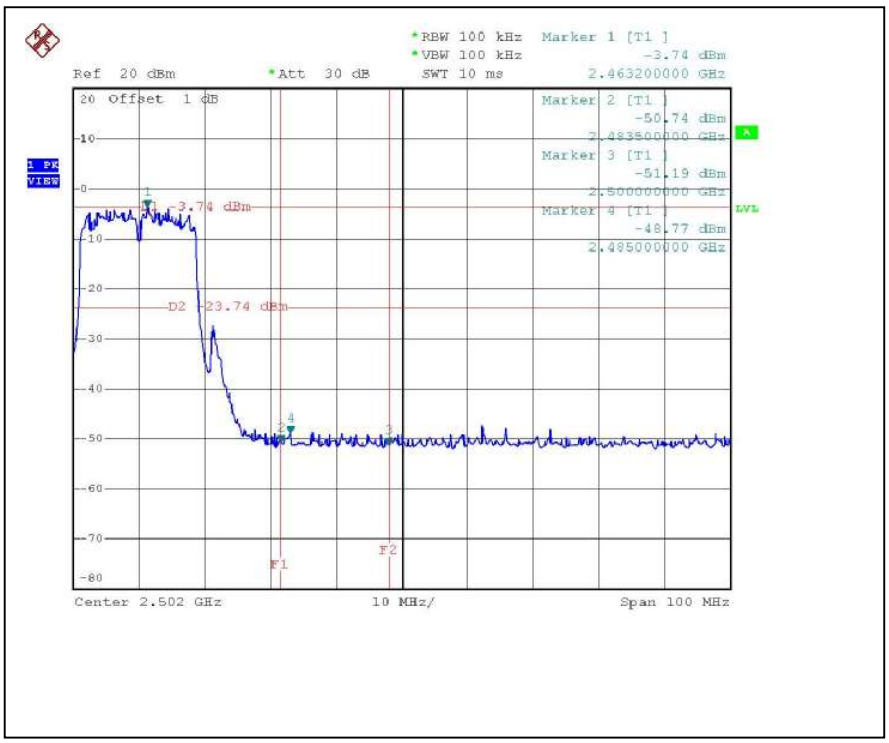

*RBW 100 kHz
*VBW 100 kHz
Marker 1 [T1]
-49.72 dBm
4.924000000 GHz
Ref 20 dBm
*Att 30 dB
SWT 2.5 s
20 Offset 1 dB
Marker 2 [T1]
-49.65 dBm
7.386000000 GHz
Marker 3 [T1]
-50.64 dBm
9.848000000 GHz
Marker 4 [T1]
-50.16 dBm
12.310000000 GHz
1 PK VIEW
D1 -0.86 dBm
D2 -20.86 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX:

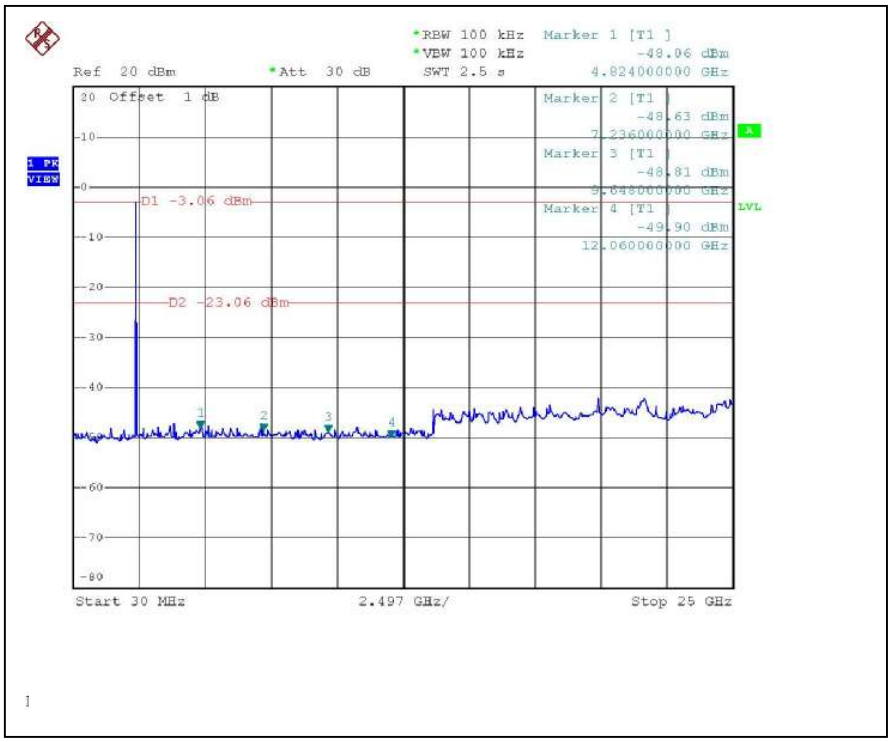
FOR CHAIN 0:CH1



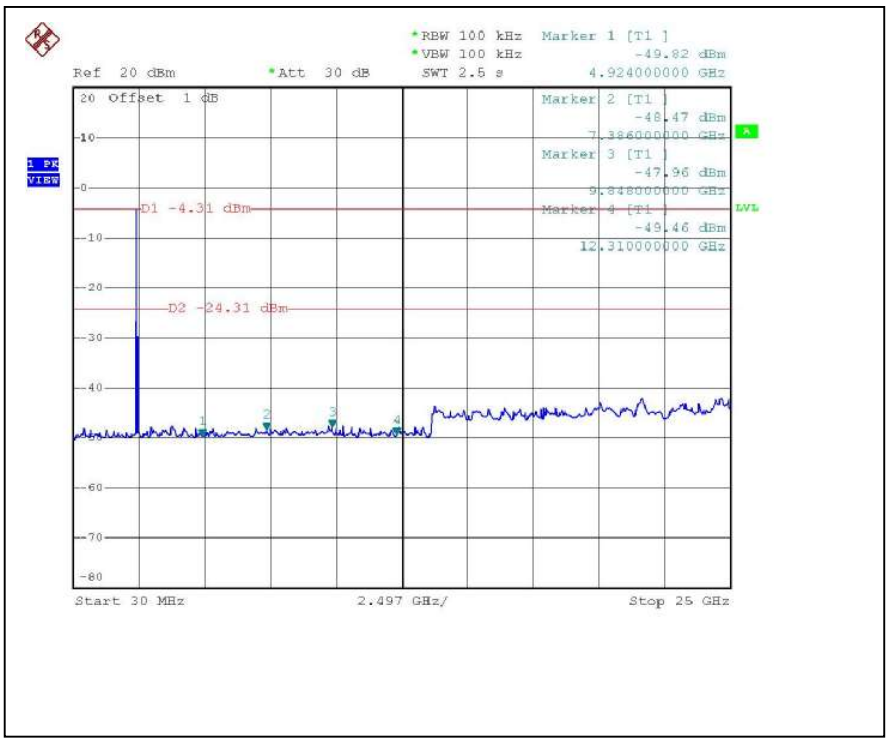
CH11



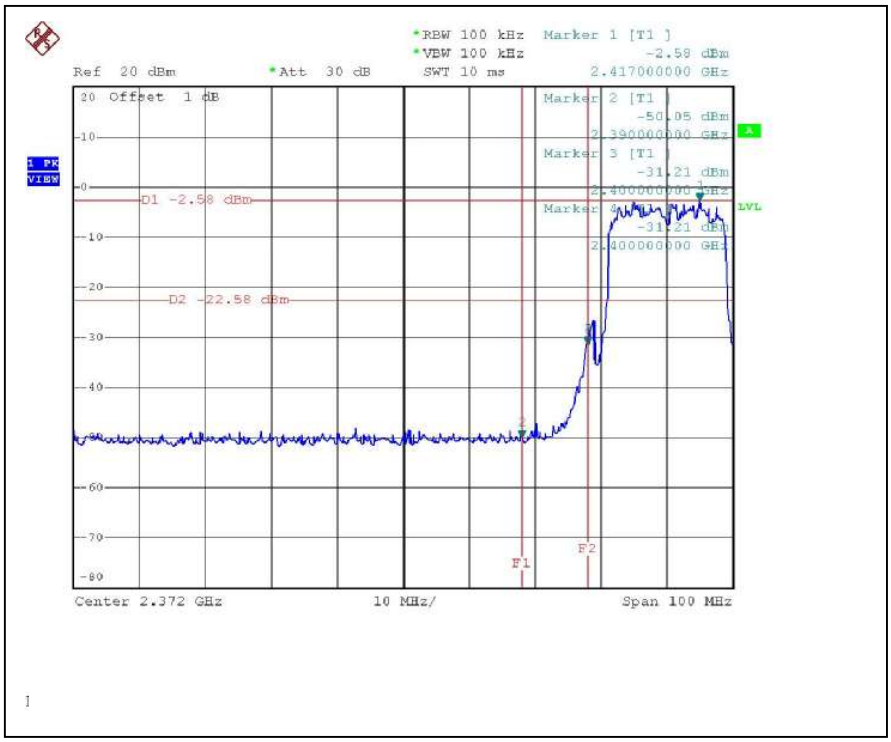
CH1


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-48.06 dBm
4.824000000 GHz
Ref 20 dBm
*Att 30 dB
20 Offset 1 dB
Marker 2 [T1]
-48.63 dBm
7.236000000 GHz
Marker 3 [T1]
-48.81 dBm
9.648000000 GHz
Marker 4 [T1]
-49.90 dBm
12.060000000 GHz
D1 -3.06 dBm
D2 -23.06 dBm
1 PK VIEW
A
LVL
Start 30 MHz
2.497 GHz/
Stop 25 GHz

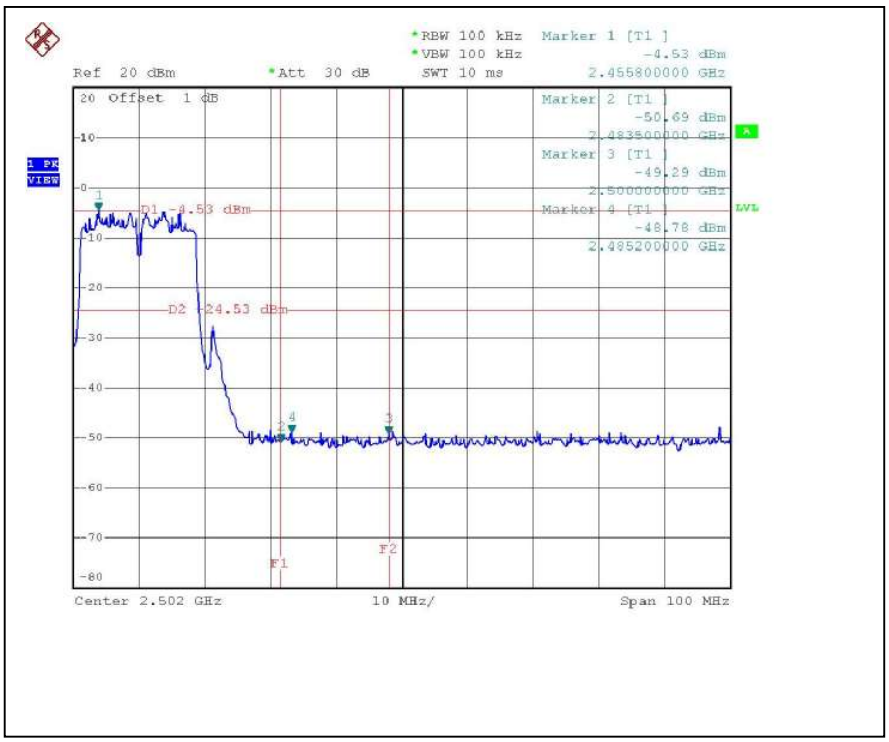
CH11


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-49.82 dBm
4.924000000 GHz
Ref 20 dBm
*Att 30 dB
20 Offset 1 dB
Marker 2 [T1]
-48.47 dBm
7.386000000 GHz
Marker 3 [T1]
-47.96 dBm
9.848000000 GHz
Marker 4 [T1]
-49.46 dBm
12.310000000 GHz
D1 -4.31 dBm
D2 -24.31 dBm
1 PK VIEW
A
LVL
Start 30 MHz
2.497 GHz/
Stop 25 GHz

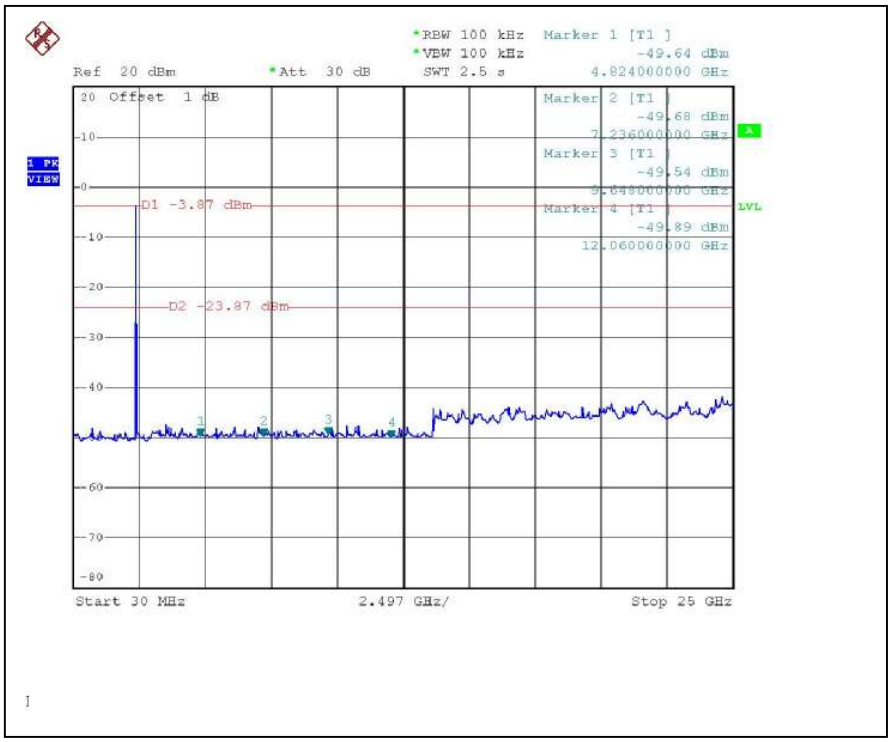
FOR CHAIN 1:CH1



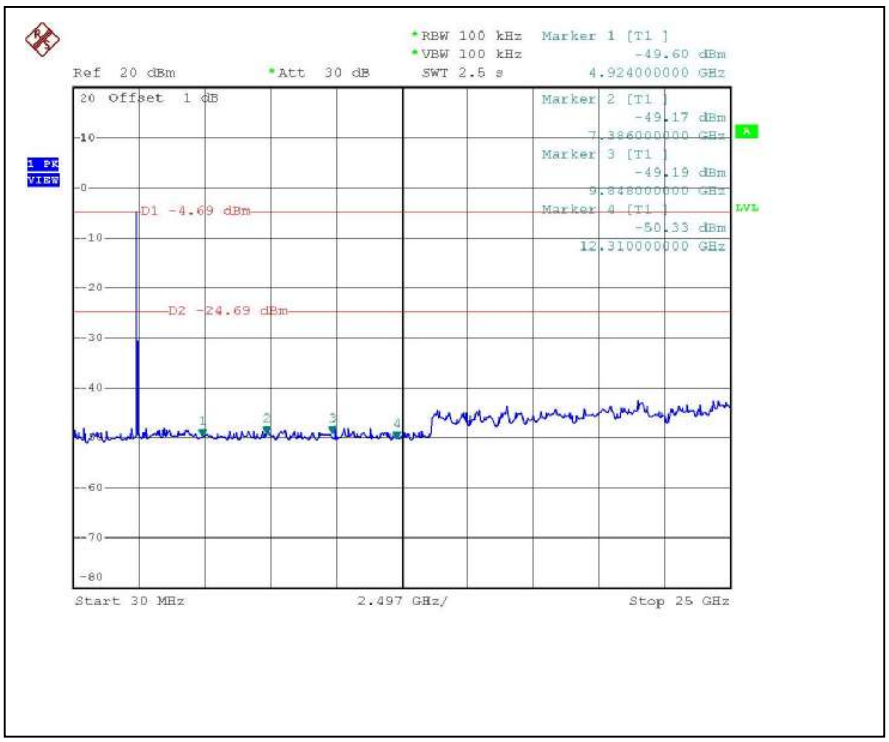
CH11



CH1

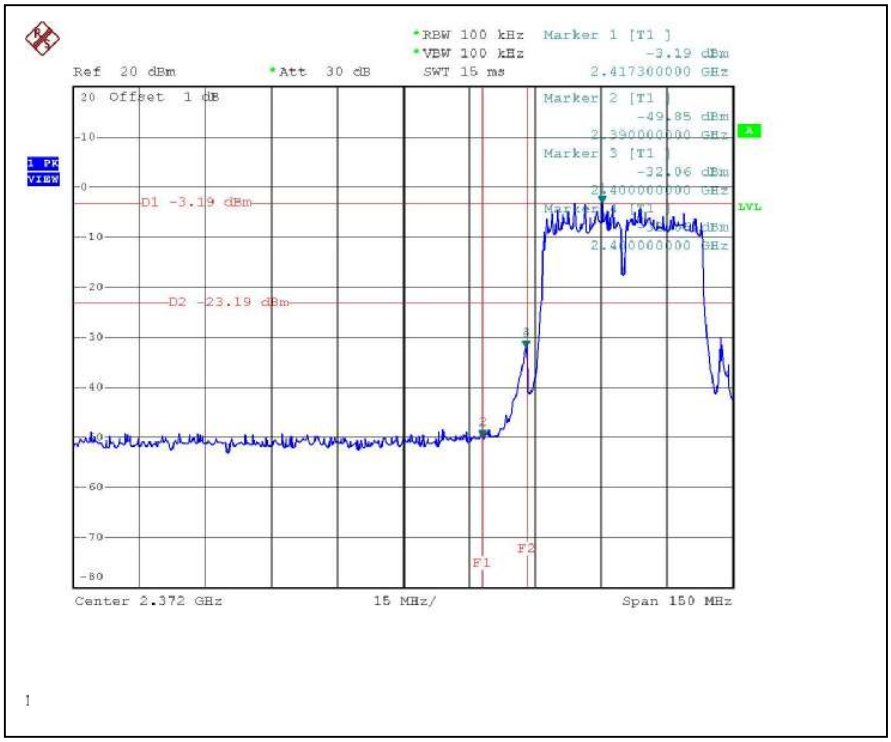

*RBW 100 kHz
*VBW 100 kHz
Marker 1 [T1]
-49.64 dBm
4.824000000 GHz
Ref 20 dBm
*Att 30 dB
SWT 2.5 s
20 Offset 1 dB
Marker 2 [T1]
-49.68 dBm
7.236000000 GHz
Marker 3 [T1]
-49.54 dBm
9.648000000 GHz
Marker 4 [T1]
-49.89 dBm
12.060000000 GHz
1 PK VIEW
D1 -3.87 dBm
D2 -23.87 dBm
LVL
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH11

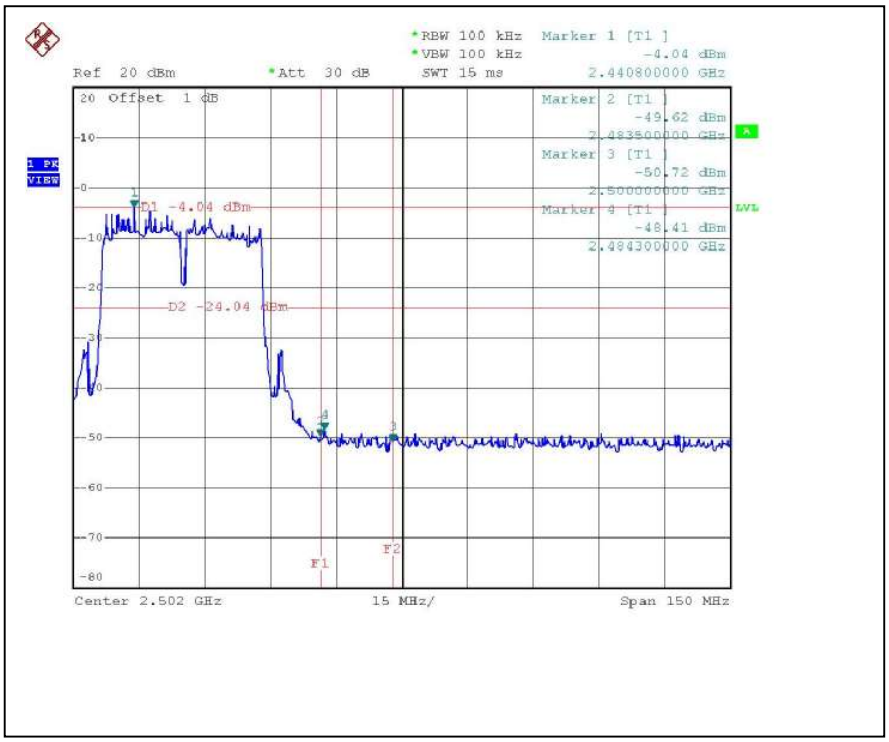

*RBW 100 kHz
*VBW 100 kHz
Marker 1 [T1]
-49.60 dBm
4.924000000 GHz
Ref 20 dBm
*Att 30 dB
SWT 2.5 s
20 Offset 1 dB
Marker 2 [T1]
-49.17 dBm
7.386000000 GHz
Marker 3 [T1]
-49.19 dBm
9.848000000 GHz
Marker 4 [T1]
-50.33 dBm
12.310000000 GHz
1 PK VIEW
D1 -4.69 dBm
D2 -24.69 dBm
LVL
Start 30 MHz
2.497 GHz/
Stop 25 GHz

DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX:

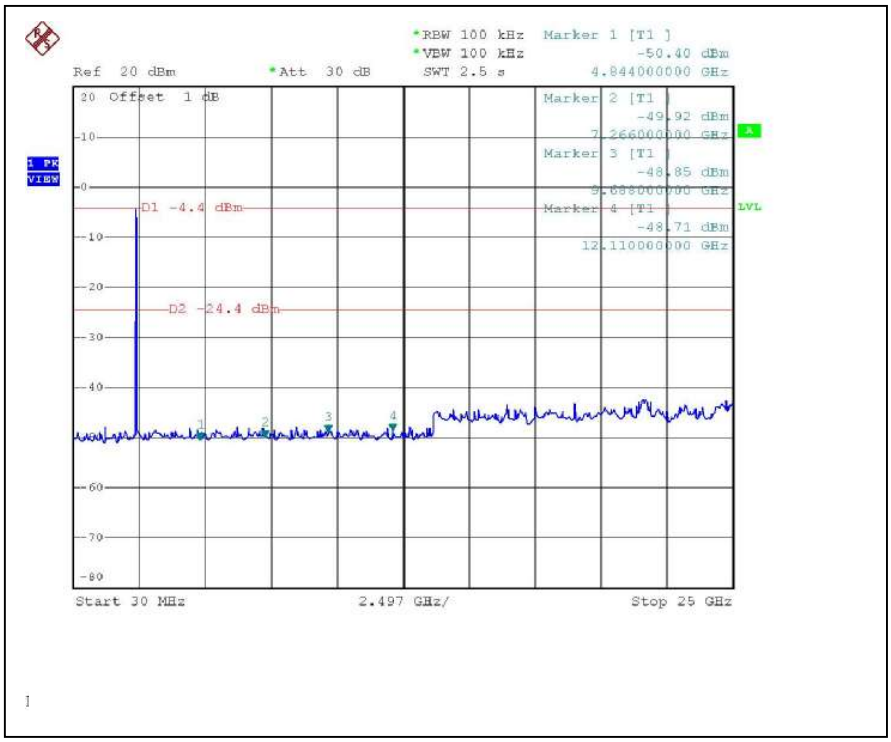
FOR CHAIN 0:CH1



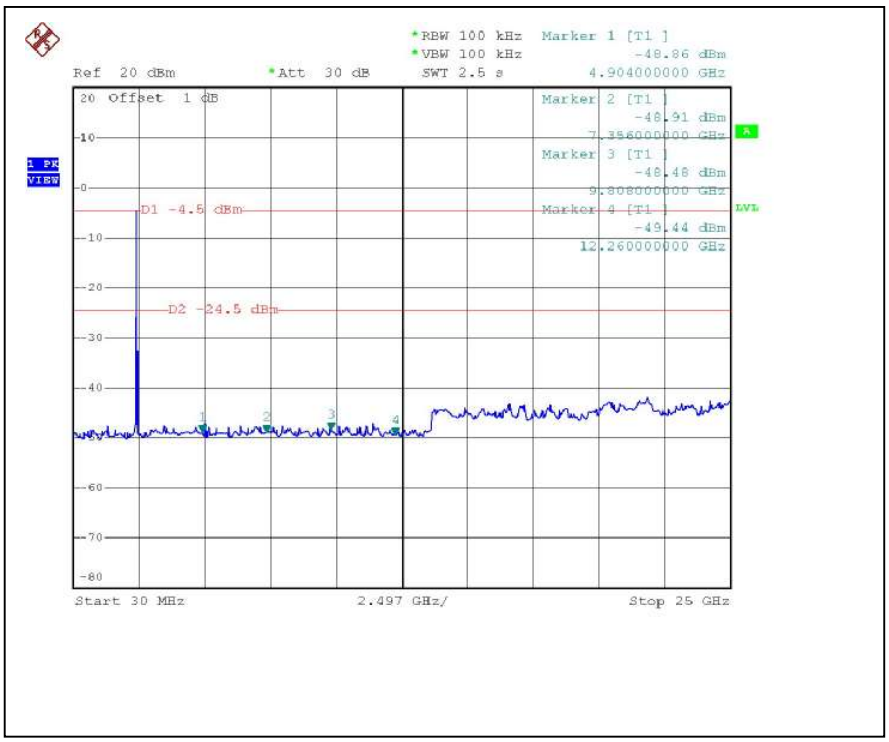
CH7



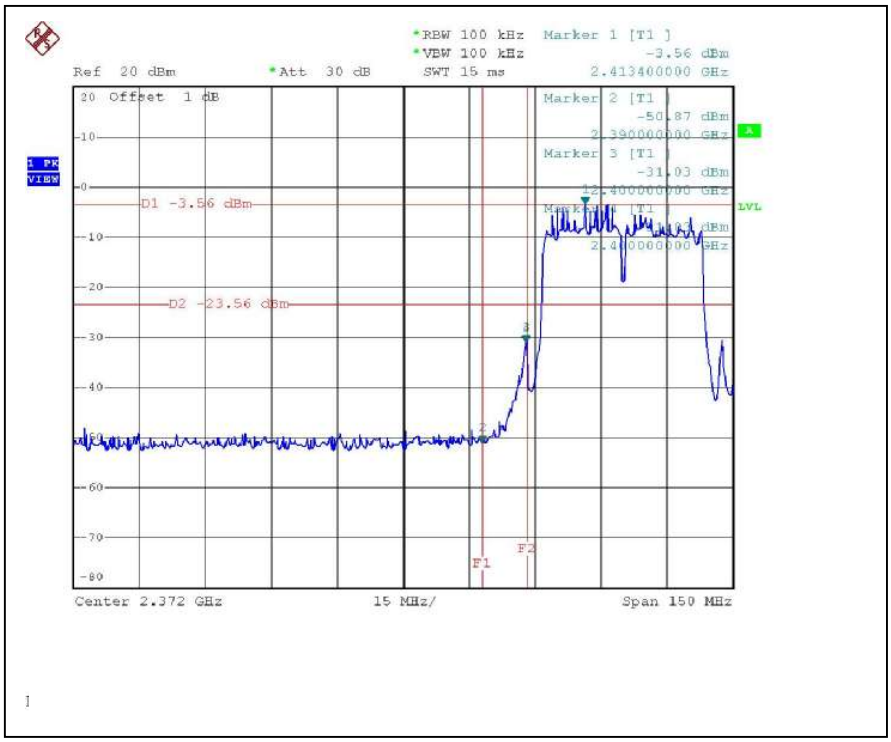
CH1


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-50.40 dBm
4.844000000 GHz
Ref 20 dBm
*Att 30 dB
20 Offset 1 dB
Marker 2 [T1
-49.92 dBm
7.266000000 GHz
Marker 3 [T1
-48.85 dBm
9.688000000 GHz
Marker 4 [T1
-48.71 dBm
12.110000000 GHz
D1 -4.4 dBm
D2 -24.4 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

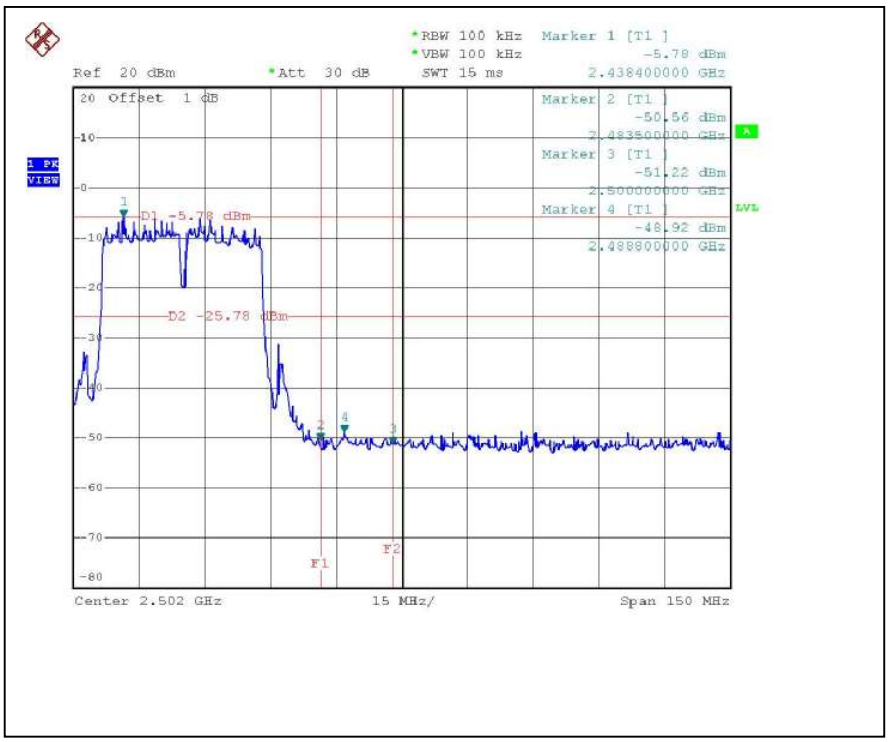
CH7


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-48.86 dBm
4.904000000 GHz
Ref 20 dBm
*Att 30 dB
20 Offset 1 dB
Marker 2 [T1]
-48.91 dBm
7.356000000 GHz
Marker 3 [T1]
-48.48 dBm
9.808000000 GHz
Marker 4 [T1]
-49.44 dBm
12.260000000 GHz
D1 -4.5 dBm
D2 -24.5 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

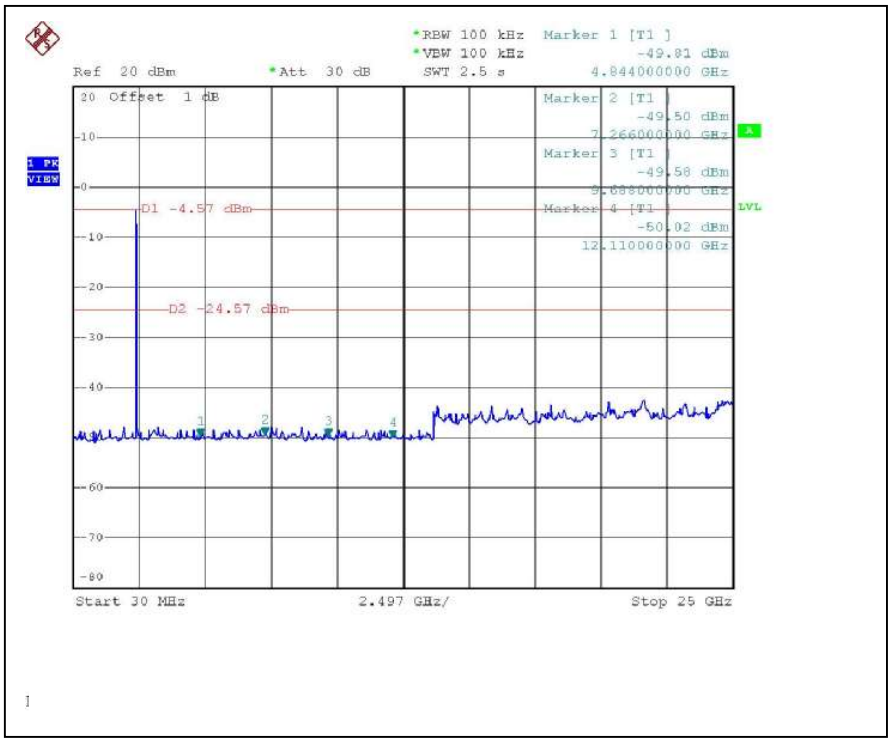
FOR CHAIN 1:CH1



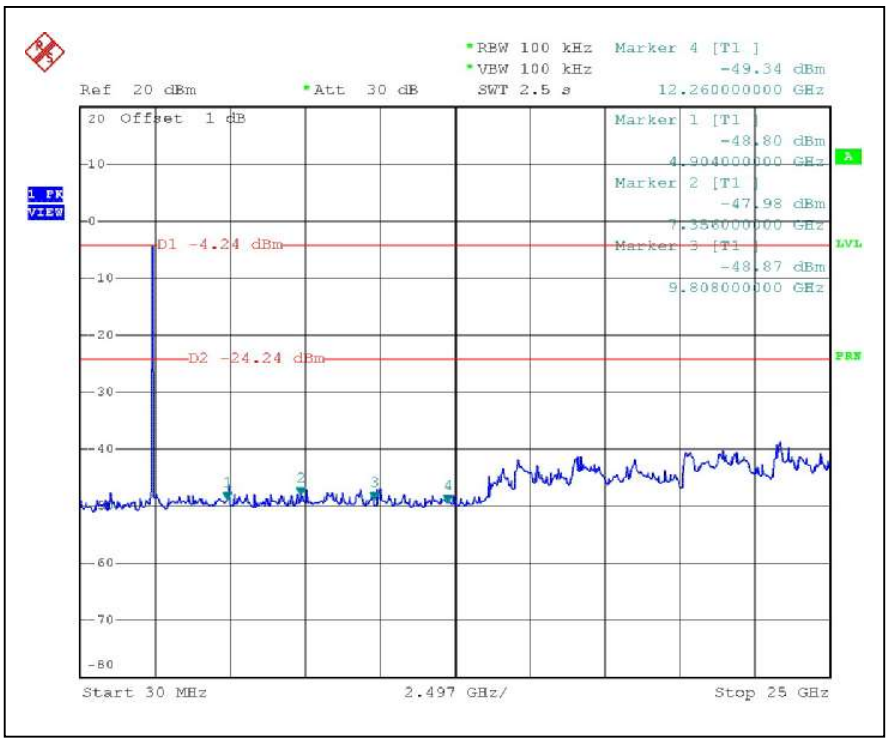
CH7



CH1


RBW 100 kHz
VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-49.81 dBm
4.844000000 GHz
Ref 20 dBm
Att 30 dB
20 Offset 1 dB
Marker 2 [T1]
-49.50 dBm
7.266000000 GHz
Marker 3 [T1]
-49.58 dBm
9.688000000 GHz
Marker 4 [T1]
-50.02 dBm
12.110000000 GHz
D1 -4.57 dBm
D2 -24.57 dBm
1 PK VIEW
A
LVL
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH7


RBW 100 kHz
VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-49.34 dBm
12.260000000 GHz
Ref 20 dBm
Att 30 dB
20 Offset 1 dB
Marker 1 [T1]
-48.80 dBm
4.904000000 GHz
Marker 2 [T1]
-47.98 dBm
7.356000000 GHz
Marker 3 [T1]
-48.87 dBm
9.808000000 GHz
D1 -4.24 dBm
D2 -24.24 dBm
1 PK VIEW
A
LVL
PRN
Start 30 MHz
2.497 GHz/
Stop 25 GHz

4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is printed antenna without connector. The maximum Gain of the antenna is 3.49dBi.

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST

RADIATED EMISSION TEST

6. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	FCC, UL, A2LA
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, DGT
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

APPENDIX-A

MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST

RADIATED EMISSION TEST