FCC Test Report

Report No.:	RF180613C24
FCC ID:	PY317300397
Test Model:	Leopard
Received Date:	Jun. 13, 2018
Test Date:	Jun. 27 ~ Aug. 02, 2018
Issued Date:	Aug. 03, 2018
Applicant:	NETGEAR, INC.
Address:	350 East Plumeria Drive San Jose, CA 95134
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
RF180613C24	Original release.	Aug. 03, 2018

1 Certificate of Conformity

Product:	Leopard
Brand:	NETGEAR
Test Model:	Leopard
Sample Status:	Engineering sample
Applicant:	NETGEAR, INC.
Test Date:	Jun. 27 ~ Aug. 02, 2018
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) ANSI C63.10:2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Aug. 03, 2018

Suntee Liu / Specialist

Approved by : _____ , **Date:** Aug. 03, 2018

Bruce Chen / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -20.62dB at 0.39800MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 2390.00, 2483.50MHz.
15.247(d)	Antenna Port Emission	Pass	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	Pass	Meet the requirement of limit.
15.247(b)	Conducted power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is I-PEX not a standard connector.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.94 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.63 dB
	200MHz ~1000MHz	3.64 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Leopard
Brand	NETGEAR
Test Model	Leopard
Sample Status	Engineering sample
Power Supply Rating	19Vdc (adapter)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM for OFDMA
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b:11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 600Mbps 802.11ax: up to 1148Mbps
Operating Frequency	2412~2462MHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20), 802.11ax (HE20): 11 802.11n (HT40), 802.11ax (HE40): 7
Output Power	994.519mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter
Data Cable Supplied	NA

Note:

1. The EUT incorporates a MIMO function. Physically, the EUT provides 4 completed transmitters and 4 receivers.

Band	Modulation Mode	Beamforming Mode	TX Function
2.4GHz	802.11b	Not Support	4TX
	802.11g	Not Support	4TX
	802.11n (HT20)	Not Support	4TX
	802.11n (HT40)	Not Support	4TX
	802.11ax (HE20)	Not Support	4TX
	802.11ax (HE40)	Not Support	4TX

* The bandwidth and modulation are similar for HT20/HT40 on 802.11n mode and HE20/HE40 on 802.11ax mode. Therefore the investigated worst case is the representative mode in test report. (Final test mode refer section 3.2.1)

2. The EUT uses following antenna.

Antenna Type	Dipole			Connecter Type	I-PEX		
Directional Antenna Gain (dBi)							
Antenna No.	2.4G	5G Band 1			5G Band 4		
		CDD	NSS1	NSS2	CDD	NSS1	NSS2
8TX	3.29	3.22	11.37	8.76	3.10	11.55	8.32
4TX+4TX	-	3.22	-	-	3.10	-	-

3. The EUT consumes power from the following adapters.

Adapter 1	
Brand	NETGEAR
Model	2ABS060K NA
P/N	332-10856-01
Input Power	100-240Vac, 50/60Hz, 1.7A
Output Power	19Vdc, 3.16A
Power Cord	1.8m power cable without core attached on adapter

Adapter 2	
Brand	NETGEAR
Model	AD2073F20
P/N	332-10835-01
Input Power	100-240Vac, 50/60Hz, 1.5A
Output Power	19Vdc, 3.16A
Power Cord	1.8m power cable without core attached on adapter

* Adapter 2 is the worst case for final test after pretesting.

4. The worst case spurious emission of the simultaneous operation mode is listed as below and the test data please refer to BV CPS report no.: RF180613C24-2.

No	Mode
1	WLAN 2.4GHz + WLAN 5GHz B4

3.2 Description of Test Modes

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20), 802.11ax (HE20):

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

7 channels are provided for 802.11n (HT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
3	2422 MHz	7	2442 MHz
4	2427 MHz	8	2447 MHz
5	2432 MHz	9	2452 MHz
6	2437 MHz		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where RE≥1G: Radiated Emission above 1GHz & Bandedge Measurement RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission APCM: Antenna Port Conducted Measurement

Radiated Emission Test (Above 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)	Remark
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	-
	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	-
	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	MCS0	-
	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	MCS0	-

Radiated Emission Test (Below 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)	Remark
-	802.11b	1 to 11	6,	DSSS	DBPSK	1.0	-

Power Line Conducted Emission Test:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)	Remark
-	802.11b	1 to 11	6,	DSSS	DBPSK	1.0	-

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)	Remark
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	-
	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	-
	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	MCS0	-
	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	MCS0	-
	802.11ax (HE20)	1 to 11	1, 6, 11	OFDMA	BPSK	MCS0	-
	802.11ax (HE40)	3 to 9	3, 6, 9	OFDMA	BPSK	MCS0	-

* 802.11ax mode is presented in output power test item only.

Test Condition:

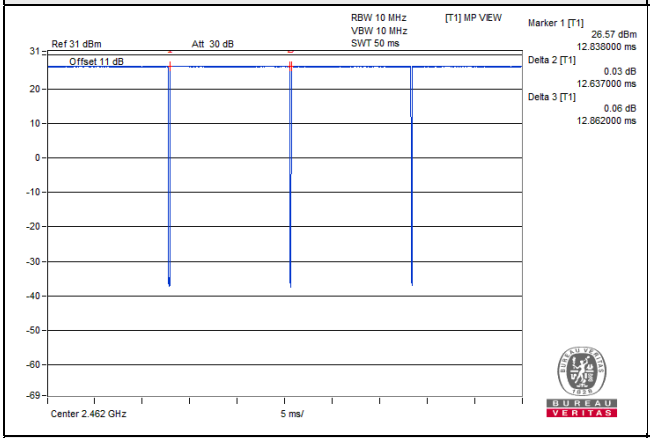
Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	25deg. C, 70%RH	120Vac, 60Hz	Noah Chang
RE<1G	25deg. C, 71%RH	120Vac, 60Hz	Noah Chang
PLC	25deg. C, 75%RH	120Vac, 60Hz	Noah Chang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Alan Wu

3.3 Duty Cycle of Test Signal

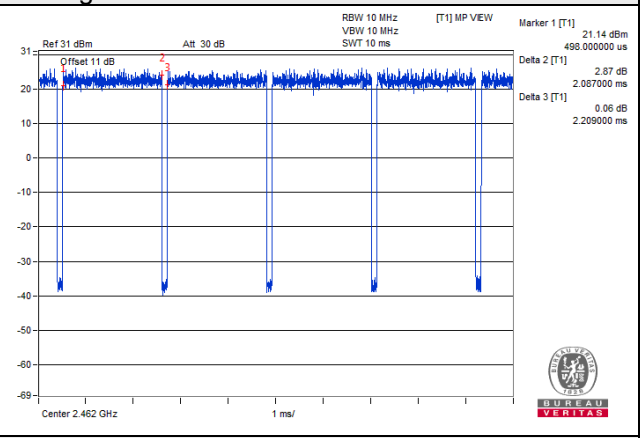
Duty cycle of test signal is ≥ 98%, duty factor is not required.
Duty cycle of test signal is < 98%, duty factor is required.

802.11b: Duty cycle = 12.637/12.862 = 0.983
802.11g: Duty cycle = 2.087/2.209 = 0.945, Duty factor = 10 * log(1/0.945) = 0.25
802.11n (HT20): Duty cycle = 5.415/5.72 = 0.947, Duty factor = 10 * log(1/0.947) = 0.24
802.11n (HT40): Duty cycle = 5.41/5.7 = 0.949, Duty factor = 10 * log(1/0.949) = 0.23

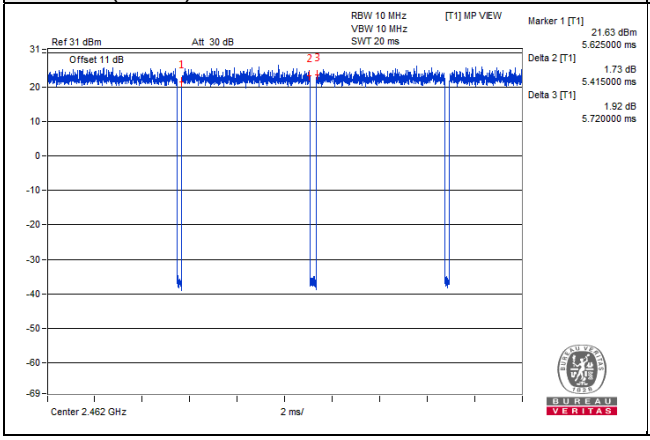
802.11b



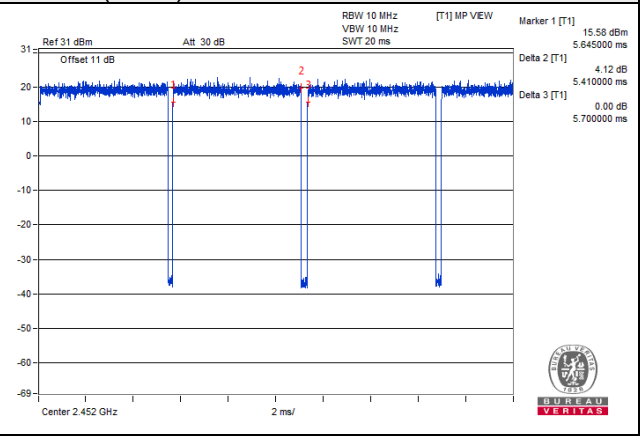
802.11g



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

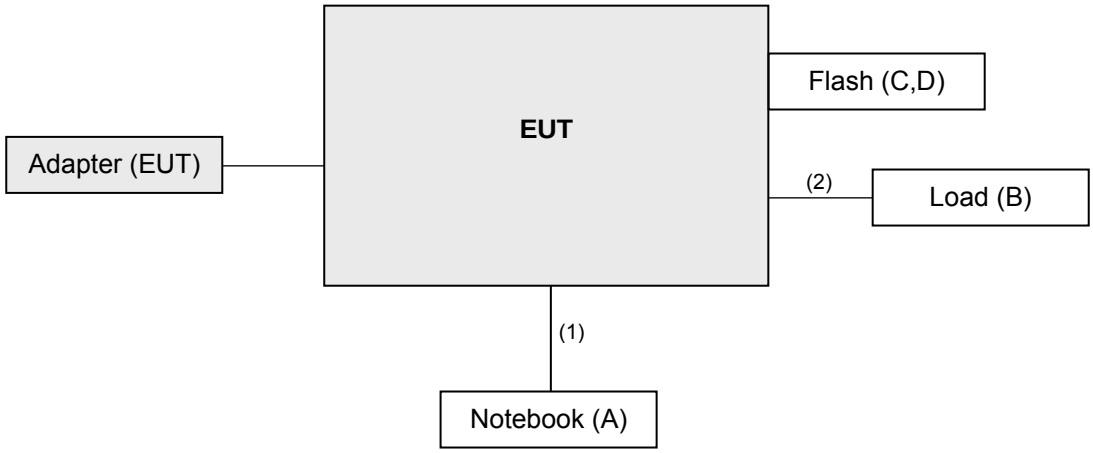
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	HP	11-u018TU	8CG70505V9	FCC DoC Approved	-
B.	Load	NA	NA	NA	NA	-
C.	Flash	HP	v250W	06	NA	-
D.	Flash	HP	v250W	03	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ45, Cat5e	1	5	N	0	-
2.	RJ45, Cat5e	5	1.5	N	0	-

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.247)
KDB 558074 D01 DTS Meas Guidance v04
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/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

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 17, 2017	Oct. 16, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 18, 2017	Aug. 17, 2018
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Dec. 11, 2017	Dec. 10, 2018
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Dec. 13, 2017	Dec. 12, 2018
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 01, 2017	Nov. 30, 2018
Loop Antenna EMCI	EM-6879	269	Aug. 11, 2017	Aug. 10, 2018
Preamplifier Agilent (Below 1GHz)	8447D	2944A10631	Aug. 08, 2017	Aug. 07, 2018
Preamplifier Agilent (Above 1GHz)	8449B	3008A01960	Aug. 08, 2017	Aug. 07, 2018
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Aug. 08, 2017	Aug. 07, 2018
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Aug. 08, 2017	Aug. 07, 2018
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
High Speed Peak Power Meter	ML2495A	0824012	Aug. 18, 2017	Aug. 17, 2018
Power Sensor	MA2411B	0738171	Aug. 18, 2017	Aug. 17, 2018

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 4.
3. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
4. The IC Site Registration No. is IC 7450F-4.

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

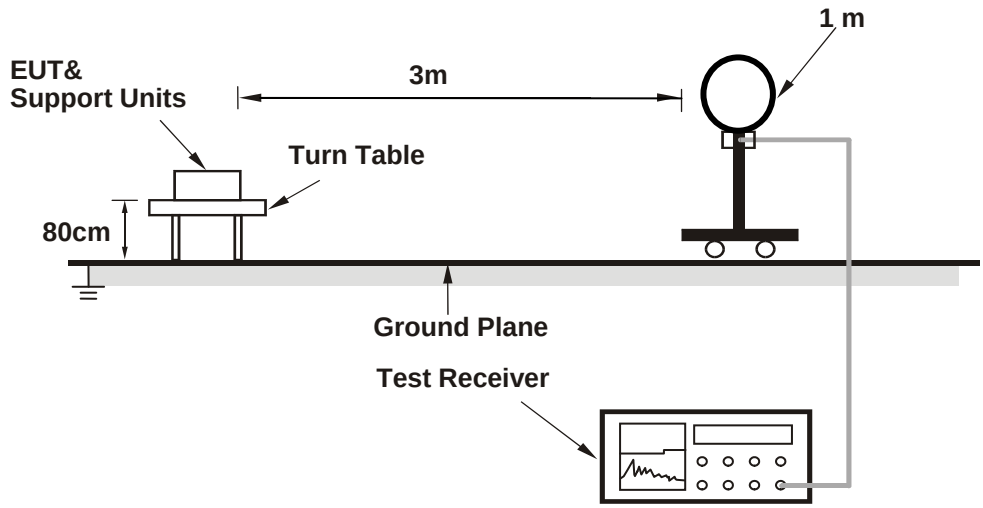
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10 Hz (Duty cycle ≥ 98%) for Peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

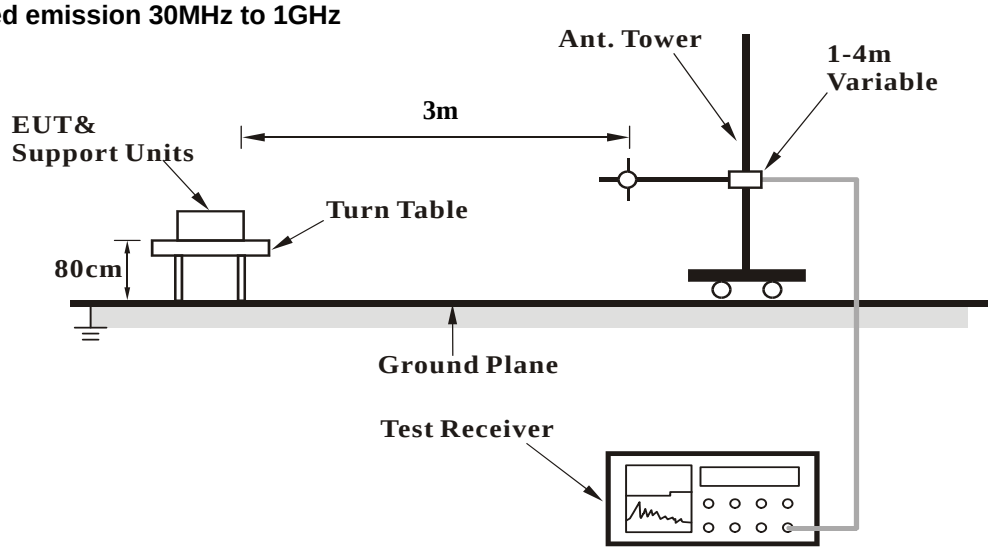
No deviation.

4.1.5 Test Set Up

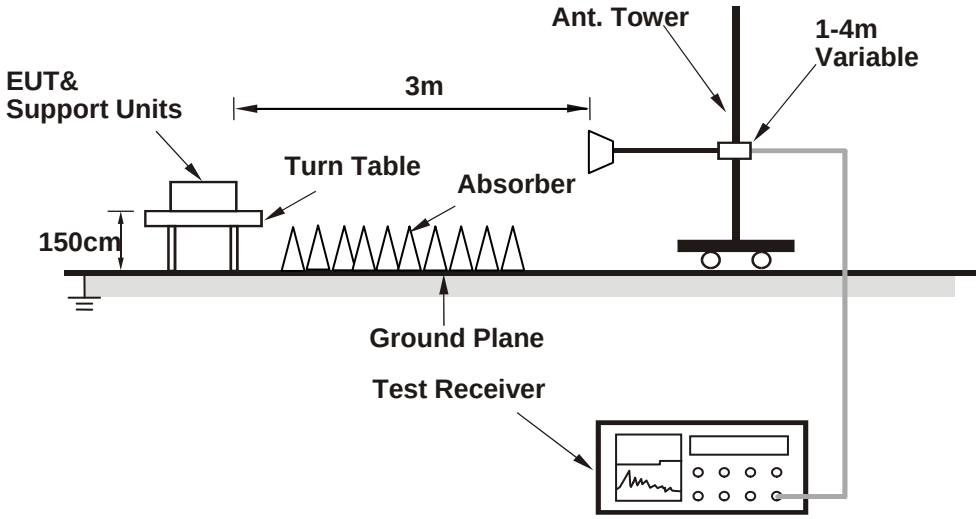
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

a. Placed the EUT on the testing table.
b. Prepared a notebook to act as a communication partner and placed it outside of testing area.
c. The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The necessary accessories enable the system in full functions.

4.1.7 Test Results

Above 1GHz worst-case data:

802.11b

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.9 PK	74.0	-17.1	1.00 H	25	23.5	33.4
2	2390.00	46.1 AV	54.0	-7.9	1.00 H	25	12.7	33.4
3	*2412.00	113.0 PK			1.00 H	25	79.6	33.4
4	*2412.00	108.3 AV			1.00 H	25	74.9	33.4
5	4824.00	48.8 PK	74.0	-25.2	2.56 H	322	45.2	3.6
6	4824.00	41.8 AV	54.0	-12.2	2.56 H	322	38.2	3.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.8 PK	74.0	-14.2	1.88 V	48	26.4	33.4
2	2390.00	49.6 AV	54.0	-4.4	1.88 V	48	16.2	33.4
3	*2412.00	122.9 PK			1.88 V	48	89.5	33.4
4	*2412.00	118.2 AV			1.88 V	48	84.8	33.4
5	4824.00	51.5 PK	74.0	-22.5	1.09 V	174	47.9	3.6
6	4824.00	44.8 AV	54.0	-9.2	1.09 V	174	41.2	3.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	113.0 PK			1.23 H	55	79.6	33.4
2	*2437.00	108.4 AV			1.23 H	55	75.0	33.4
3	4874.00	49.5 PK	74.0	-24.5	2.56 H	325	46.2	3.3
4	4874.00	40.5 AV	54.0	-13.5	2.56 H	325	37.2	3.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	123.3 PK			1.86 V	56	89.9	33.4
2	*2437.00	118.6 AV			1.86 V	56	85.2	33.4
3	4874.00	51.6 PK	74.0	-22.4	1.22 V	188	48.3	3.3
4	4874.00	44.8 AV	54.0	-9.2	1.22 V	188	41.5	3.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	112.9 PK			1.00 H	35	79.4	33.5
2	*2462.00	108.2 AV			1.00 H	35	74.7	33.5
3	2483.50	56.9 PK	74.0	-17.1	1.00 H	35	23.4	33.5
4	2483.50	46.1 AV	54.0	-7.9	1.00 H	35	12.6	33.5
5	4924.00	48.6 PK	74.0	-25.4	1.25 H	325	45.3	3.3
6	4924.00	38.4 AV	54.0	-15.6	1.25 H	325	35.1	3.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	122.4 PK			2.13 V	52	88.9	33.5
2	*2462.00	117.7 AV			2.13 V	52	84.2	33.5
3	2483.50	61.0 PK	74.0	-13.0	2.13 V	52	27.5	33.5
4	2483.50	50.6 AV	54.0	-3.4	2.13 V	52	17.1	33.5
5	4924.00	49.8 PK	74.0	-24.2	2.13 V	244	46.5	3.3
6	4924.00	40.1 AV	54.0	-13.9	2.13 V	244	36.8	3.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.3 PK	74.0	-5.7	3.76 H	275	34.9	33.4
2	2390.00	47.3 AV	54.0	-6.7	3.76 H	275	13.9	33.4
3	*2412.00	112.7 PK			3.76 H	275	79.3	33.4
4	*2412.00	102.9 AV			3.76 H	275	69.5	33.4
5	4824.00	48.2 PK	74.0	-25.8	1.55 H	321	44.6	3.6
6	4824.00	36.2 AV	54.0	-17.8	1.55 H	321	32.6	3.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	**2390.00**	**73.9 PK**	**74.0**	**-0.1**	**2.50 V**	**72**	**40.5**	**33.4**
2	2390.00	51.7 AV	54.0	-2.3	2.50 V	72	18.3	33.4
3	*2412.00	120.7 PK			2.50 V	72	87.3	33.4
4	*2412.00	110.9 AV			2.50 V	72	77.5	33.4
5	4824.00	49.4 PK	74.0	-24.6	2.49 V	179	45.8	3.6
6	4824.00	37.9 AV	54.0	-16.1	2.49 V	179	34.3	3.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	115.3 PK			3.75 H	210	81.9	33.4
2	*2437.00	105.8 AV			3.75 H	210	72.4	33.4
3	4874.00	47.9 PK	74.0	-26.1	1.20 H	102	44.6	3.3
4	4874.00	35.7 AV	54.0	-18.3	1.20 H	102	32.4	3.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	123.8 PK			2.33 V	162	90.4	33.4
2	*2437.00	114.3 AV			2.33 V	162	80.9	33.4
3	4874.00	49.2 PK	74.0	-24.8	1.50 V	232	45.9	3.3
4	4874.00	37.9 AV	54.0	-16.1	1.50 V	232	34.6	3.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.0 PK			3.74 H	277	79.5	33.5
2	*2462.00	103.2 AV			3.74 H	277	69.7	33.5
3	2483.50	68.9 PK	74.0	-5.1	3.74 H	277	35.4	33.5
4	2483.50	46.6 AV	54.0	-7.4	3.74 H	277	13.1	33.5
5	4924.00	47.8 PK	74.0	-26.2	1.50 H	26	44.5	3.3
6	4924.00	35.7 AV	54.0	-18.3	1.50 H	26	32.4	3.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	121.0 PK			2.64 V	109	87.5	33.5
2	*2462.00	111.2 AV			2.64 V	109	77.7	33.5
3	**2483.50**	**73.9 PK**	**74.0**	**-0.1**	**2.64 V**	**109**	**40.4**	**33.5**
4	2483.50	51.2 AV	54.0	-2.8	2.64 V	109	17.7	33.5
5	4924.00	48.9 PK	74.0	-25.1	2.88 V	256	45.6	3.3
6	4924.00	37.9 AV	54.0	-16.1	2.88 V	256	34.6	3.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

802.11n (HT20)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.3 PK	74.0	-16.7	3.44 H	266	23.9	33.4
2	2390.00	48.8 AV	54.0	-5.2	3.44 H	266	15.4	33.4
3	*2412.00	113.4 PK			3.44 H	266	80.0	33.4
4	*2412.00	102.8 AV			3.44 H	266	69.4	33.4
5	4824.00	48.3 PK	74.0	-25.7	1.45 H	59	44.7	3.6
6	4824.00	35.5 AV	54.0	-18.5	1.45 H	59	31.9	3.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.8 PK	74.0	-7.2	2.01 V	49	33.4	33.4
2	2390.00	53.5 AV	54.0	-0.5	2.01 V	49	20.1	33.4
3	*2412.00	120.9 PK			2.01 V	49	87.5	33.4
4	*2412.00	110.3 AV			2.01 V	49	76.9	33.4
5	4824.00	49.4 PK	74.0	-24.6	2.49 V	179	45.8	3.6
6	4824.00	37.9 AV	54.0	-16.1	2.49 V	179	34.3	3.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	113.4 PK			3.77 H	245	80.0	33.4
2	*2437.00	104.0 AV			3.77 H	245	70.6	33.4
3	4874.00	48.2 PK	74.0	-25.8	1.52 H	326	44.9	3.3
4	4874.00	35.2 AV	54.0	-18.8	1.52 H	326	31.9	3.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	121.4 PK			1.61 V	47	88.0	33.4
2	*2437.00	112.0 AV			1.61 V	47	78.6	33.4
3	4874.00	48.6 PK	74.0	-25.4	2.56 V	320	45.3	3.3
4	4874.00	37.6 AV	54.0	-16.4	2.56 V	320	34.3	3.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	112.2 PK			3.65 H	245	78.7	33.5
2	*2462.00	102.8 AV			3.65 H	245	69.3	33.5
3	2483.50	57.4 PK	74.0	-16.6	3.65 H	245	23.9	33.5
4	2483.50	48.8 AV	54.0	-5.2	3.65 H	245	15.3	33.5
5	4924.00	48.4 PK	74.0	-25.6	1.44 H	99	45.1	3.3
6	4924.00	35.4 AV	54.0	-18.6	1.44 H	99	32.1	3.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	120.3 PK			2.13 V	49	86.8	33.5
2	*2462.00	109.9 AV			2.13 V	49	76.4	33.5
3	2483.50	66.0 PK	74.0	-8.0	2.13 V	49	32.5	33.5
4	2483.50	53.6 AV	54.0	-0.4	2.13 V	49	20.1	33.5
5	4924.00	50.4 PK	74.0	-23.6	2.55 V	256	47.1	3.3
6	4924.00	39.1 AV	54.0	-14.9	2.55 V	256	35.8	3.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

802.11n (HT40)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.2 PK	74.0	-14.8	3.39 H	273	25.8	33.4
2	2390.00	48.5 AV	54.0	-5.5	3.39 H	273	15.1	33.4
3	*2422.00	108.6 PK			3.39 H	273	75.2	33.4
4	*2422.00	97.8 AV			3.39 H	273	64.4	33.4
5	2483.50	58.0 PK	74.0	-16.0	3.39 H	273	24.5	33.5
6	2483.50	46.0 AV	54.0	-8.0	3.39 H	273	12.5	33.5
7	4844.00	48.0 PK	74.0	-26.0	1.55 H	150	44.5	3.5
8	4844.00	34.8 AV	54.0	-19.2	1.55 H	150	31.3	3.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.3 PK	74.0	-7.7	2.12 V	50	32.9	33.4
2	2390.00	53.6 AV	54.0	-0.4	2.12 V	50	20.2	33.4
3	*2422.00	116.1 PK			2.12 V	50	82.7	33.4
4	*2422.00	105.3 AV			2.12 V	50	71.9	33.4
5	2483.50	59.0 PK	74.0	-15.0	2.12 V	50	25.5	33.5
6	2483.50	47.1 AV	54.0	-6.9	2.12 V	50	13.6	33.5
7	4844.00	49.2 PK	74.0	-24.8	1.55 V	321	45.7	3.5
8	4844.00	39.4 AV	54.0	-14.6	1.55 V	321	35.9	3.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.2 PK	74.0	-12.8	3.40 H	262	27.8	33.4
2	2390.00	48.8 AV	54.0	-5.2	3.40 H	262	15.4	33.4
3	*2437.00	111.2 PK			3.40 H	262	77.8	33.4
4	*2437.00	100.3 AV			3.40 H	262	66.9	33.4
5	2483.50	61.0 PK	74.0	-13.0	3.40 H	262	27.5	33.5
6	2483.50	48.2 AV	54.0	-5.8	3.40 H	262	14.7	33.5
7	4874.00	48.5 PK	74.0	-25.5	1.58 H	326	45.2	3.3
8	4874.00	39.2 AV	54.0	-14.8	1.58 H	326	35.9	3.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.0 PK	74.0	-7.0	2.33 V	49	33.6	33.4
2	2390.00	53.8 AV	54.0	-0.2	2.33 V	49	20.4	33.4
3	*2437.00	118.7 PK			2.33 V	49	85.3	33.4
4	*2437.00	107.8 AV			2.33 V	49	74.4	33.4
5	2483.50	66.3 PK	74.0	-7.7	2.33 V	49	32.8	33.5
6	2483.50	52.6 AV	54.0	-1.4	2.33 V	49	19.1	33.5
7	4874.00	50.5 PK	74.0	-23.5	1.55 V	321	47.2	3.3
8	4874.00	40.4 AV	54.0	-13.6	1.55 V	321	37.1	3.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.5 PK	74.0	-15.5	3.52 H	271	25.1	33.4
2	2390.00	47.0 AV	54.0	-7.0	3.52 H	271	13.6	33.4
3	*2452.00	110.1 PK			3.52 H	271	76.6	33.5
4	*2452.00	99.6 AV			3.52 H	271	66.1	33.5
5	2483.50	62.4 PK	74.0	-11.6	3.52 H	271	28.9	33.5
6	2483.50	50.4 AV	54.0	-3.6	3.52 H	271	16.9	33.5
7	4904.00	47.9 PK	74.0	-26.1	1.45 H	120	44.6	3.3
8	4904.00	35.9 AV	54.0	-18.1	1.45 H	120	32.6	3.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.9 PK	74.0	-9.1	2.74 V	52	31.5	33.4
2	2390.00	49.2 AV	54.0	-4.8	2.74 V	52	15.8	33.4
3	*2452.00	117.1 PK			2.74 V	52	83.6	33.5
4	*2452.00	106.6 AV			2.74 V	52	73.1	33.5
5	2483.50	66.9 PK	74.0	-7.1	2.74 V	52	33.4	33.5
6	2483.50	53.8 AV	54.0	-0.2	2.74 V	52	20.3	33.5
7	4904.00	48.4 PK	74.0	-25.6	3.12 V	150	45.1	3.3
8	4904.00	37.9 AV	54.0	-16.1	3.12 V	150	34.6	3.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

Below 1GHz worst-case data:

802.11b

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	41.54	30.9 QP	40.0	-9.1	1.49 H	176	40.3	-9.4
2	171.55	37.5 QP	43.5	-6.0	1.49 H	270	46.4	-8.9
3	239.46	31.9 QP	46.0	-14.1	1.49 H	196	41.5	-9.6
4	307.38	35.0 QP	46.0	-11.0	1.00 H	94	41.9	-6.9
5	546.05	40.6 QP	46.0	-5.4	1.49 H	233	43.2	-2.6
6	747.85	39.3 QP	46.0	-6.7	1.49 H	6	36.9	2.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	59.01	35.9 QP	40.0	-4.1	1.00 V	171	45.0	-9.1
2	171.55	36.3 QP	43.5	-7.2	1.00 V	310	45.2	-8.9
3	307.38	33.3 QP	46.0	-12.7	1.00 V	250	40.2	-6.9
4	536.34	35.8 QP	46.0	-10.2	1.00 V	233	38.5	-2.7
5	714.86	42.0 QP	46.0	-4.0	2.00 V	316	40.7	1.3
6	938.81	42.2 QP	46.0	-3.8	1.98 V	111	36.4	5.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 23, 2017	Nov. 22, 2018
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Sep. 05, 2017	Sep. 04, 2018
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 06, 2018	Mar. 05, 2019
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 15, 2017	Aug. 14, 2018
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 1.
3. The VCCI Site Registration No. is C-2040.

4.2.3 Test Procedures

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

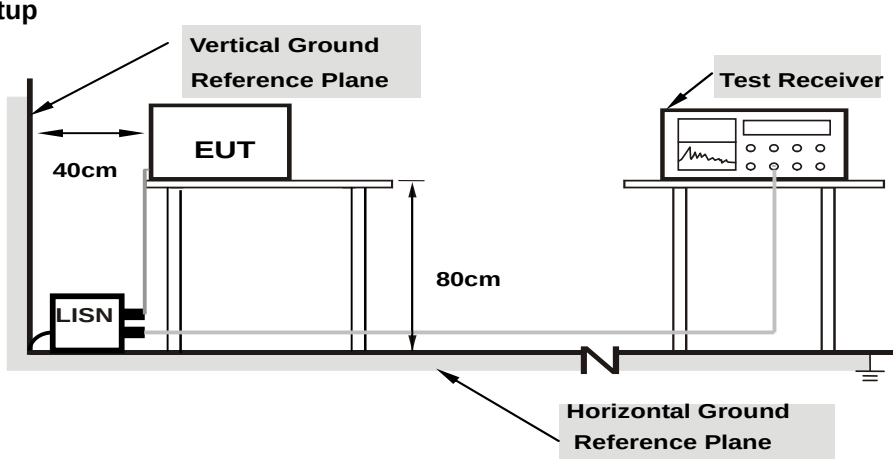
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Conditions

Same as item 4.3.6.

4.2.7 Test Results

Worst-case data:

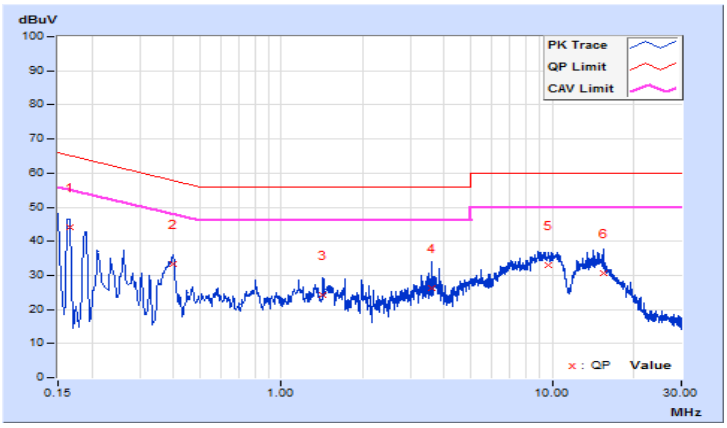
802.11b

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16600	10.16	33.84	16.77	44.00	26.93	65.16	55.16	-21.16	-28.23
2	**0.39800**	**10.21**	**23.05**	**17.07**	**33.26**	**27.28**	**57.90**	**47.90**	**-24.64**	**-20.62**
3	1.43054	10.20	13.89	9.74	24.09	19.94	56.00	46.00	-31.91	-26.06
4	3.59800	10.33	16.09	8.27	26.42	18.60	56.00	46.00	-29.58	-27.40
5	9.64200	10.63	22.30	17.41	32.93	28.04	60.00	50.00	-27.07	-21.96
6	15.50600	10.98	19.70	14.13	30.68	25.11	60.00	50.00	-29.32	-24.89

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

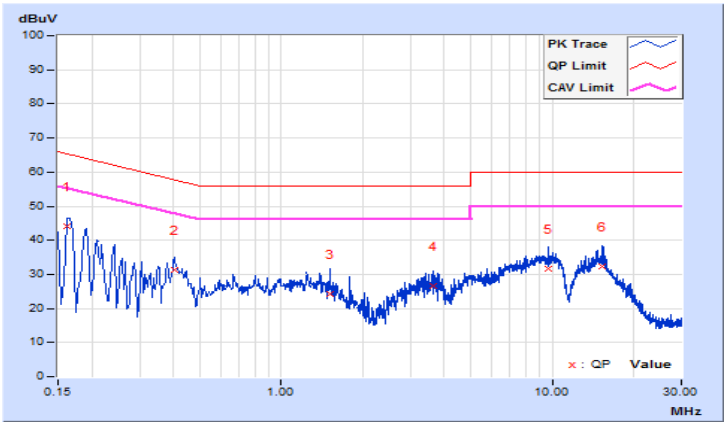


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16233	10.15	33.94	19.64	44.09	29.79	65.34	55.34	-21.25	-25.55
2	0.40285	10.20	21.13	14.46	31.33	24.66	57.79	47.79	-26.46	-23.13
3	1.51000	10.21	14.11	10.40	24.32	20.61	56.00	46.00	-31.68	-25.39
4	3.63400	10.32	16.41	8.77	26.73	19.09	56.00	46.00	-29.27	-26.91
5	9.72200	10.56	21.16	16.31	31.72	26.87	60.00	50.00	-28.28	-23.13
6	15.31400	10.81	21.56	15.38	32.37	26.19	60.00	50.00	-27.63	-23.81

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

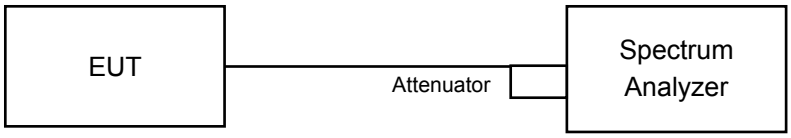


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

a. Set resolution bandwidth (RBW) = 100kHz

b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.

c. Trace mode = max hold.

d. Sweep = auto couple.

e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.5 Deviation fromTest Standard

No deviation.

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 Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
1	2412	8.11	8.11	8.10	7.15	0.5	Pass
6	2437	8.09	8.09	8.09	7.59	0.5	Pass
11	2462	8.11	8.11	8.11	8.06	0.5	Pass

802.11g

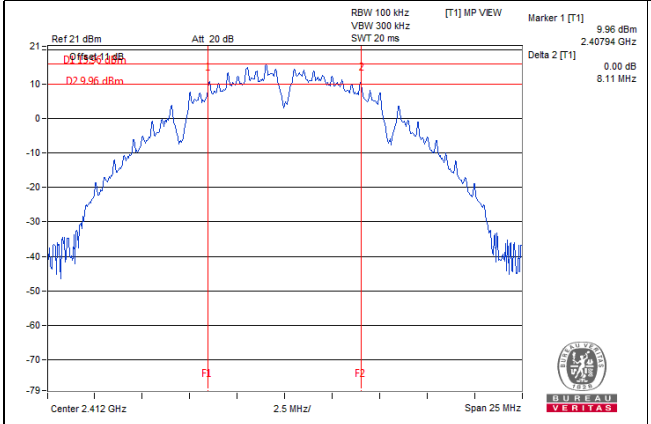
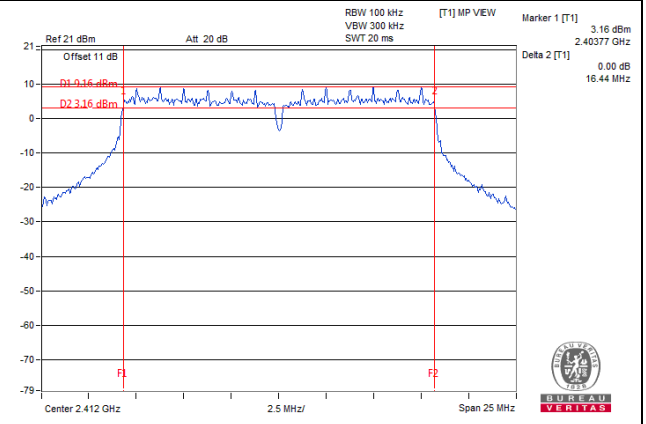
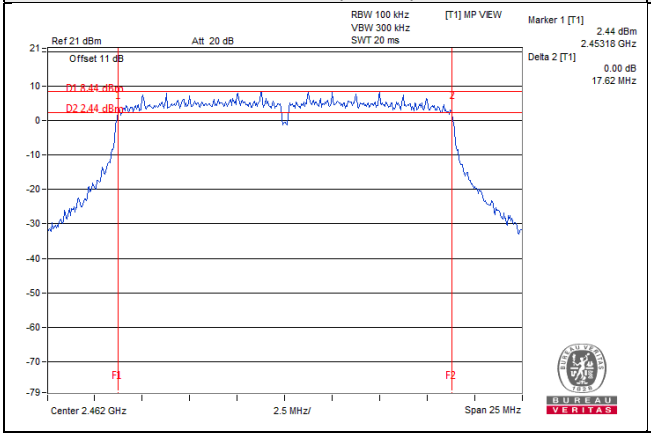
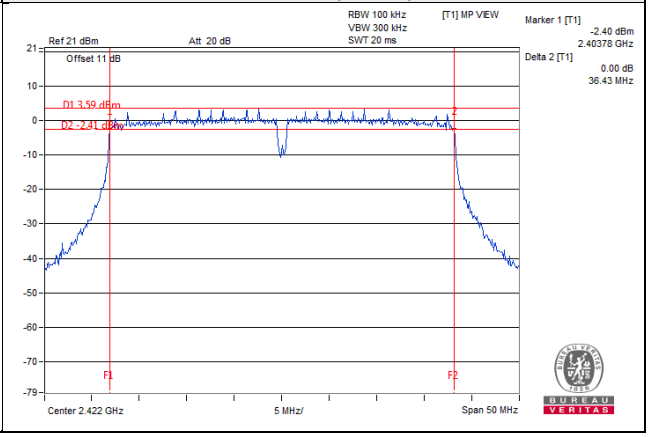
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
1	2412	16.44	16.43	16.44	16.43	0.5	Pass
6	2437	16.42	16.40	16.41	16.42	0.5	Pass
11	2462	16.43	16.40	16.44	16.44	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
1	2412	17.26	17.61	17.58	17.61	0.5	Pass
6	2437	17.19	17.56	17.61	17.59	0.5	Pass
11	2462	16.98	16.85	17.62	17.62	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
3	2422	36.05	35.82	36.43	35.63	0.5	Pass
6	2437	35.55	35.84	35.84	36.16	0.5	Pass
9	2452	35.87	35.85	36.10	36.42	0.5	Pass

Spectrum Plot of Worst Value	
802.11b	802.11g
	
802.11n (HT20)	802.11n (HT40)
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

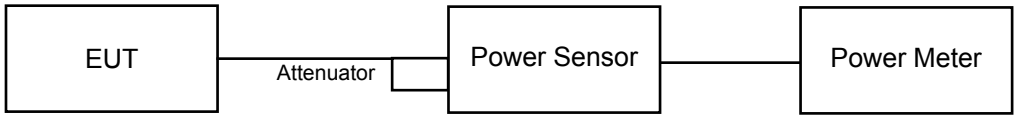
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as item 4.3.6.

4.4.7 Test Results

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	23.89	24.11	23.91	23.82	989.566	29.95	30	Pass
6	2437	23.86	24.01	23.93	24.02	994.508	29.98	30	Pass
11	2462	23.75	24.15	23.98	23.86	990.408	29.96	30	Pass

Note: Directional Gain = 3.29dBi < 6dBi, so the power limit no need to reduced.

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	21.33	20.96	21.10	21.24	522.439	27.18	30	Pass
6	2437	23.94	24.01	24.02	23.85	**994.519**	29.98	30	Pass
11	2462	21.40	20.96	21.16	21.08	521.626	27.17	30	Pass

Note: Directional Gain = 3.29dBi < 6dBi, so the power limit no need to reduced.

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	21.03	20.90	21.27	20.70	501.250	27.00	30	Pass
6	2437	23.93	23.85	24.07	23.95	993.416	29.97	30	Pass
11	2462	20.86	21.14	20.82	21.48	513.302	27.10	30	Pass

Note: Directional Gain = 3.29dBi < 6dBi, so the power limit no need to reduced.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
3	2422	18.98	18.76	18.59	18.94	304.850	24.84	30	Pass
6	2437	21.09	21.28	21.05	20.84	511.494	27.09	30	Pass
9	2452	19.59	19.41	19.94	19.85	373.521	25.72	30	Pass

Note: Directional Gain = 3.29dBi < 6dBi, so the power limit no need to reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	20.89	20.68	21.08	20.47	479.356	26.81	30	Pass
6	2437	23.86	23.58	23.94	23.74	955.588	29.80	30	Pass
11	2462	20.71	21.09	20.56	21.34	496.197	26.96	30	Pass

Note: Directional Gain = 3.29dBi < 6dBi, so the power limit no need to reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
3	2422	18.85	18.73	18.54	18.82	299.039	24.76	30	Pass
6	2437	20.95	21.13	20.91	20.55	490.980	26.91	30	Pass
9	2452	19.52	19.17	19.76	19.59	357.755	25.54	30	Pass

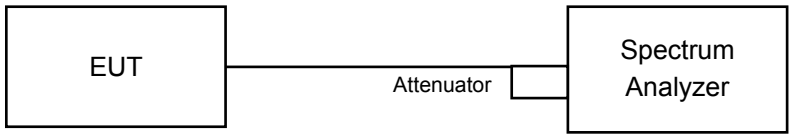
Note: Directional Gain = 3.29dBi < 6dBi, so the power limit no need to reduced.

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 Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For AVG. power (duty cycle ≥ 98%)

a) Set instrument center frequency to DTS channel center frequency.
b) Set span to at least 1.5 times the OBW.
c) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
d) Set VBW ≥3 x RBW.
e) Detector = power averaging (RMS) or sample detector (when RMS not available).
f) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
g) Sweep time = auto couple.
h) Employ trace averaging (RMS) mode over a minimum of 100 traces.
i) Use the peak marker function to determine the maximum amplitude level.

For AVG. power (duty cycle < 98%)

a) Measure the duty cycle (x).
b) Set instrument center frequency to DTS channel center frequency.
c) Set span to at least 1.5 times the OBW.
d) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
e) Set VBW ≥3 x RBW.
f) Detector = power averaging (RMS) or sample detector (when RMS not available).
g) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
h) Sweep time = auto couple.
i) Do not use sweep triggering. Allow sweep to “free run”.
j) Employ trace averaging (RMS) mode over a minimum of 100 traces.
k) Use the peak marker function to determine the maximum amplitude level.
l) Add 10 log (1/x), where x is the duty cycle measured in step (a, to the measured PSD to compute the average PSD during the actual transmission time.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as item 4.3.6.

4.5.7 Test Results

802.11b

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=4) dB	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-3.22	6.02	2.80	8	Pass
	6	2437	-2.88	6.02	3.14	8	Pass
	11	2462	-3.92	6.02	2.10	8	Pass
1	1	2412	-2.86	6.02	3.16	8	Pass
	6	2437	-2.80	6.02	3.22	8	Pass
	11	2462	-4.48	6.02	1.54	8	Pass
2	1	2412	-3.47	6.02	2.55	8	Pass
	6	2437	-3.68	6.02	2.34	8	Pass
	11	2462	-3.72	6.02	2.30	8	Pass
3	1	2412	-3.89	6.02	2.13	8	Pass
	6	2437	-4.40	6.02	1.62	8	Pass
	11	2462	-4.64	6.02	1.38	8	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional Gain = 3.29dBi < 6dBi, so the power limit no need to reduced.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=4) dB	Duty factor (dB)	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-10.24	6.02	0.25	-3.97	8	Pass
	6	2437	-7.57	6.02	0.25	-1.30	8	Pass
	11	2462	-10.70	6.02	0.25	-4.43	8	Pass
1	1	2412	-10.21	6.02	0.25	-3.94	8	Pass
	6	2437	-7.45	6.02	0.25	-1.18	8	Pass
	11	2462	-11.02	6.02	0.25	-4.75	8	Pass
2	1	2412	-11.16	6.02	0.25	-4.89	8	Pass
	6	2437	-8.02	6.02	0.25	-1.75	8	Pass
	11	2462	-10.94	6.02	0.25	-4.67	8	Pass
3	1	2412	-10.09	6.02	0.25	-3.82	8	Pass
	6	2437	-7.77	6.02	0.25	-1.50	8	Pass
	11	2462	-11.07	6.02	0.25	-4.80	8	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional Gain = 3.29dBi < 6dBi, so the power limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

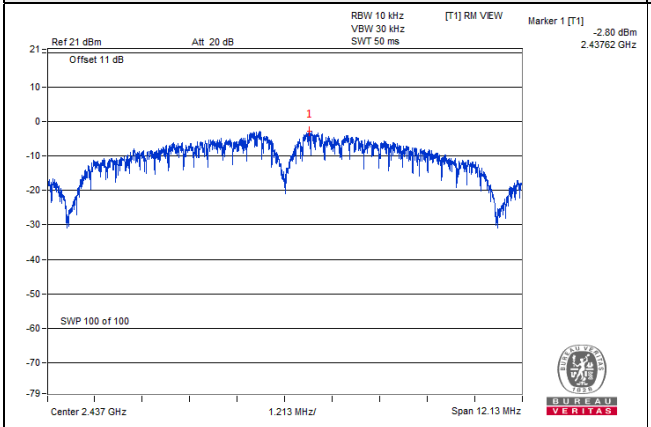
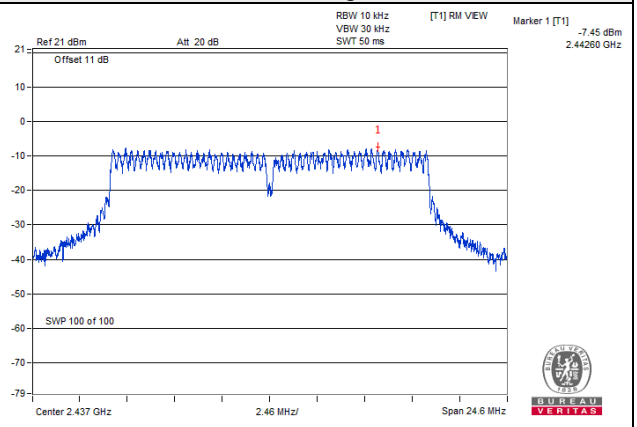
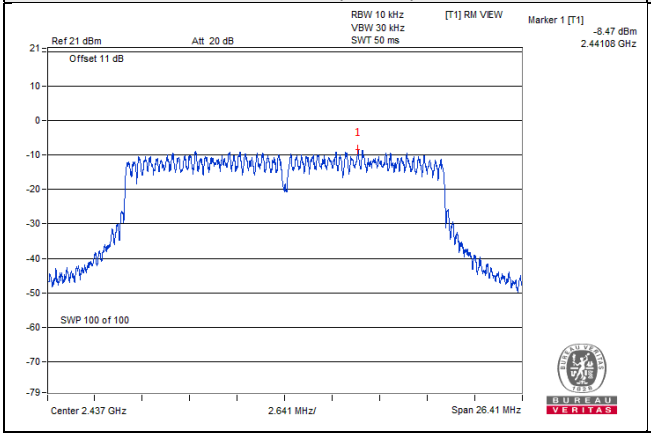
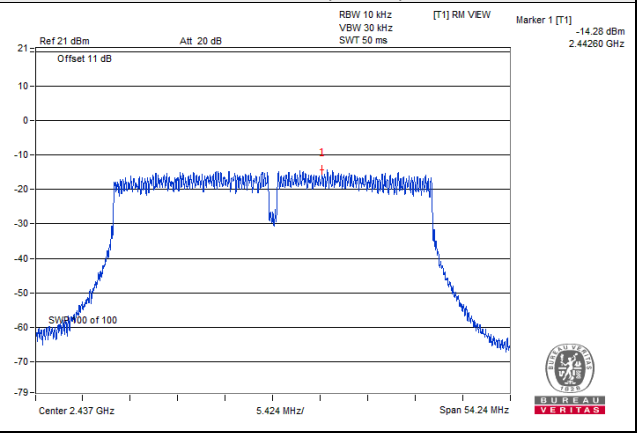
TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=4) dB	Duty factor (dB)	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-11.90	6.02	0.24	-5.64	8	Pass
	6	2437	-9.14	6.02	0.24	-2.88	8	Pass
	11	2462	-12.12	6.02	0.24	-5.86	8	Pass
1	1	2412	-11.41	6.02	0.24	-5.15	8	Pass
	6	2437	-9.54	6.02	0.24	-3.28	8	Pass
	11	2462	-12.21	6.02	0.24	-5.95	8	Pass
2	1	2412	-11.62	6.02	0.24	-5.36	8	Pass
	6	2437	-8.47	6.02	0.24	-2.21	8	Pass
	11	2462	-12.13	6.02	0.24	-5.87	8	Pass
3	1	2412	-11.33	6.02	0.24	-5.07	8	Pass
	6	2437	-8.82	6.02	0.24	-2.56	8	Pass
	11	2462	-11.78	6.02	0.24	-5.52	8	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional Gain = 3.29dBi < 6dBi, so the power limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=4) dB	Duty factor (dB)	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass / Fail
0	3	2422	-17.45	6.02	0.23	-11.20	8	Pass
	6	2437	-14.80	6.02	0.23	-8.55	8	Pass
	9	2452	-16.02	6.02	0.23	-9.77	8	Pass
1	3	2422	-16.83	6.02	0.23	-10.58	8	Pass
	6	2437	-14.79	6.02	0.23	-8.54	8	Pass
	9	2452	-15.62	6.02	0.23	-9.37	8	Pass
2	3	2422	-17.12	6.02	0.23	-10.87	8	Pass
	6	2437	-14.89	6.02	0.23	-8.64	8	Pass
	9	2452	-16.31	6.02	0.23	-10.06	8	Pass
3	3	2422	-16.77	6.02	0.23	-10.52	8	Pass
	6	2437	-14.28	6.02	0.23	-8.03	8	Pass
	9	2452	-15.68	6.02	0.23	-9.43	8	Pass

1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional Gain = 3.29dBi < 6dBi, so the power limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

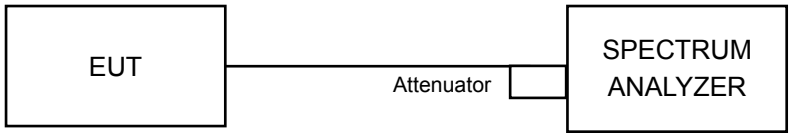
Spectrum Plot of Worst Value	
802.11b	802.11g
	
802.11n (HT20)	802.11n (HT40)
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 30dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = average.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Same as item 4.3.6.

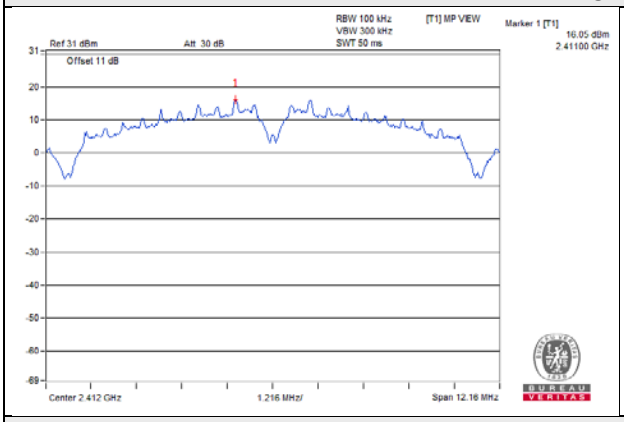
4.6.7 Test Results

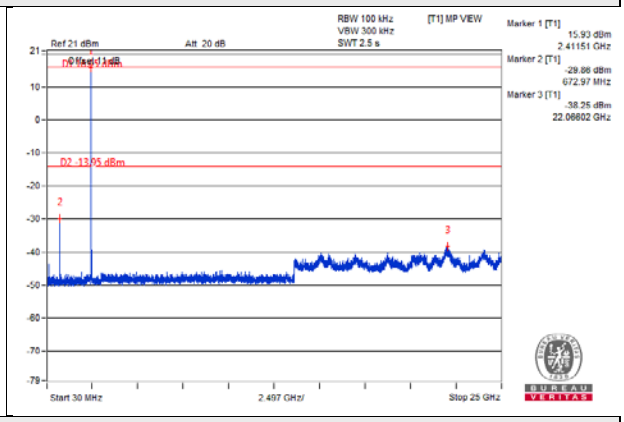
The conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.

The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

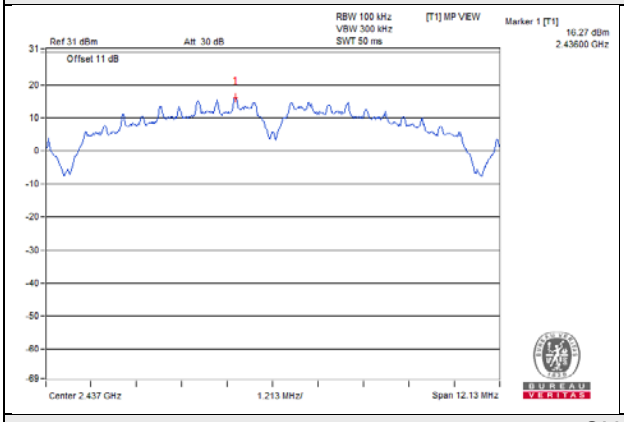
802.11b_Chain 0

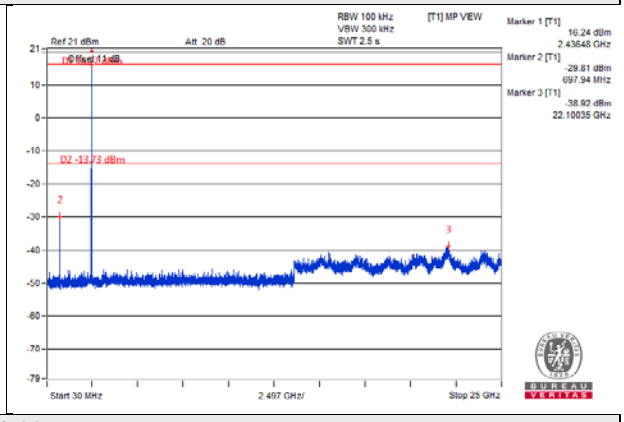
CH 1



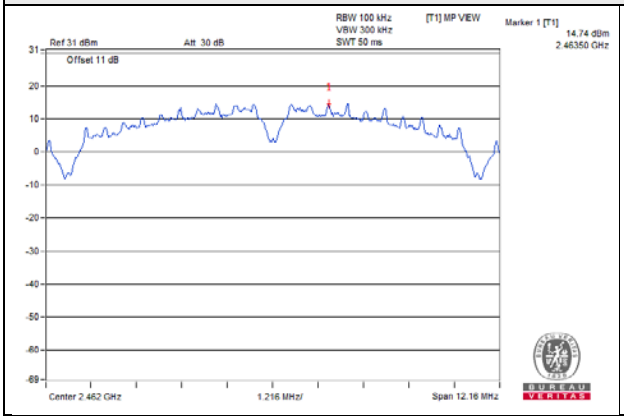


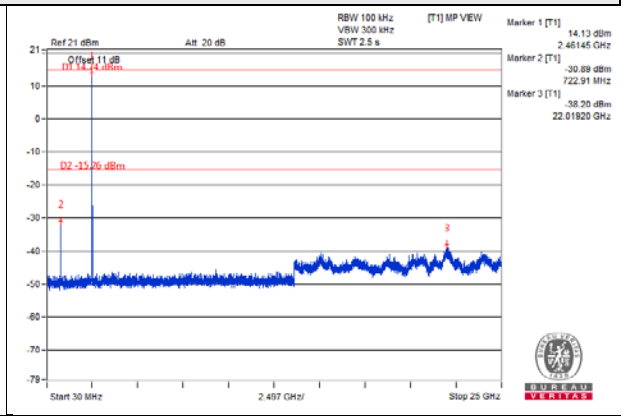
CH 6





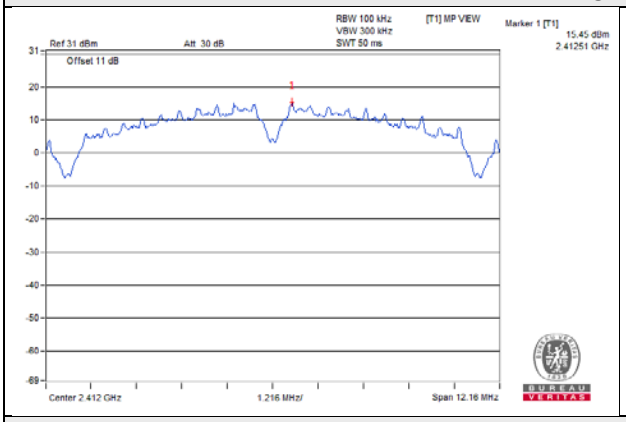
CH 11

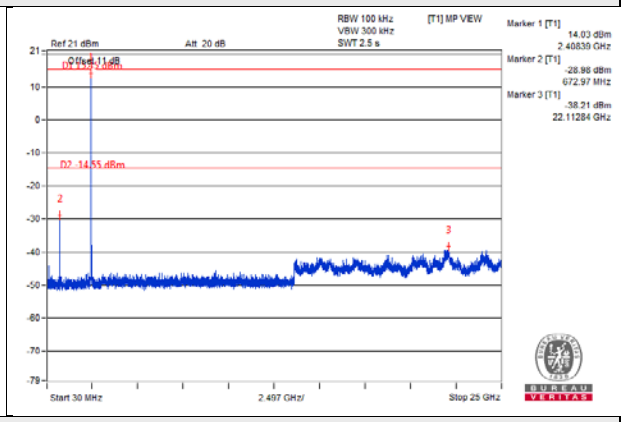




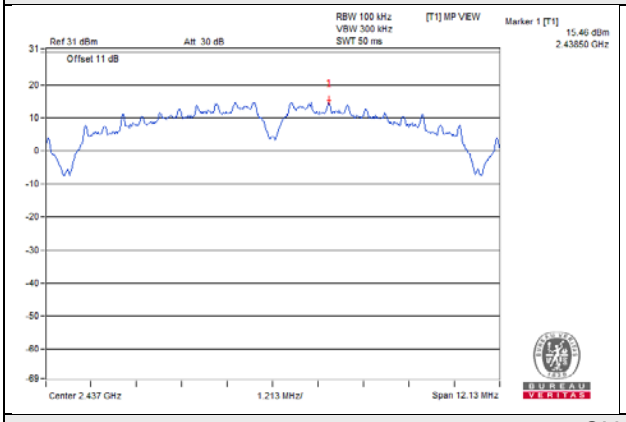
802.11b_Chain 1

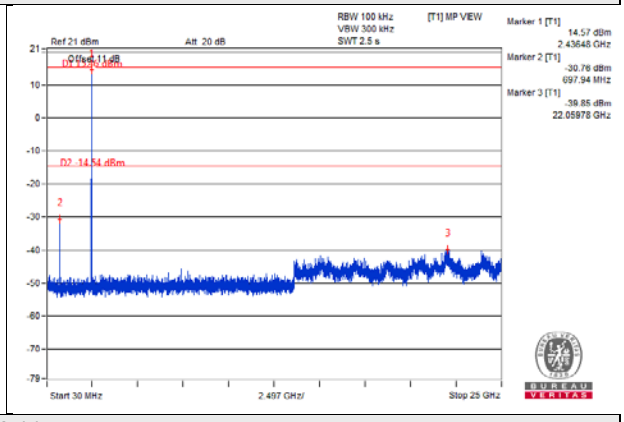
CH 1



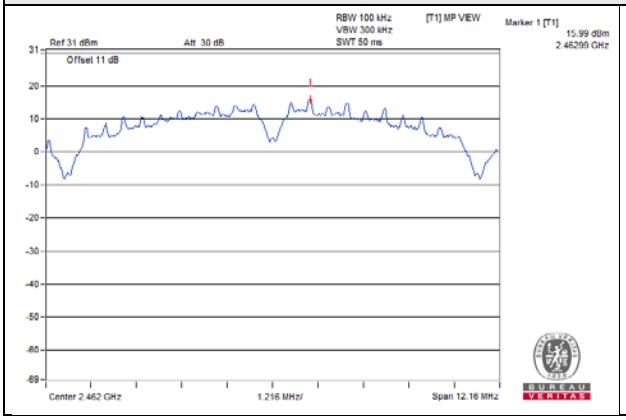


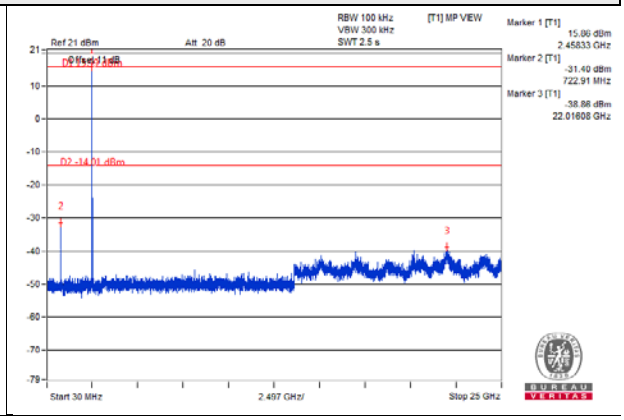
CH 6





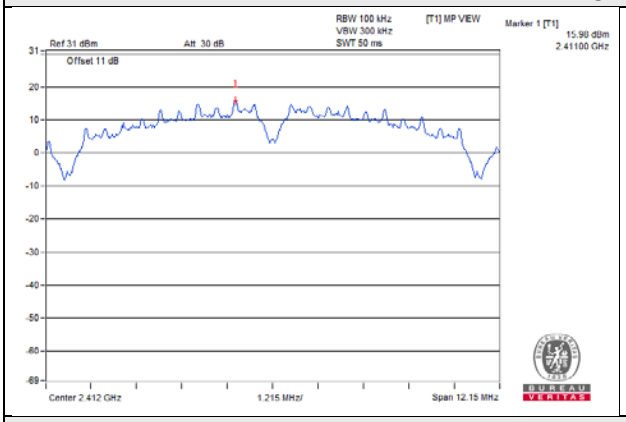
CH 11

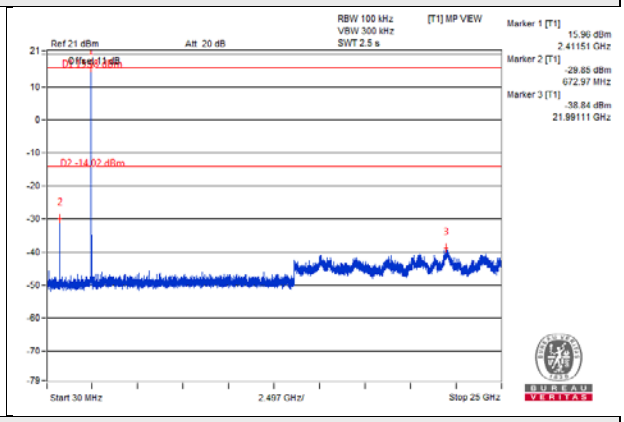




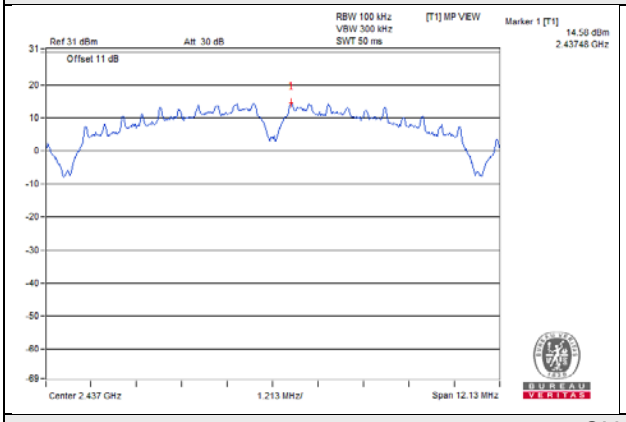
802.11b_Chain 2

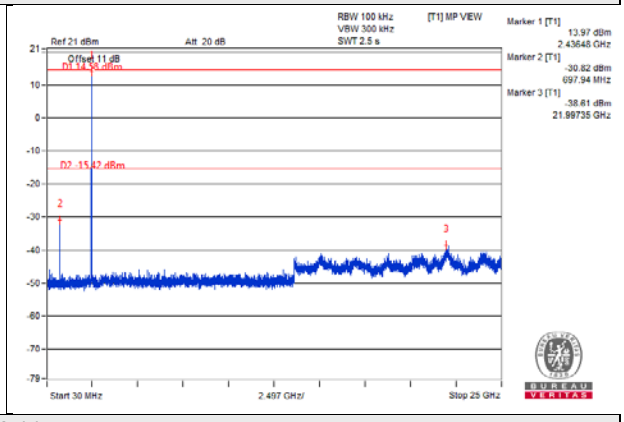
CH 1



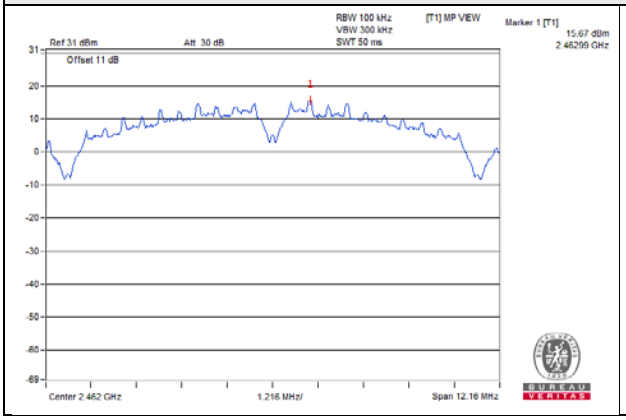


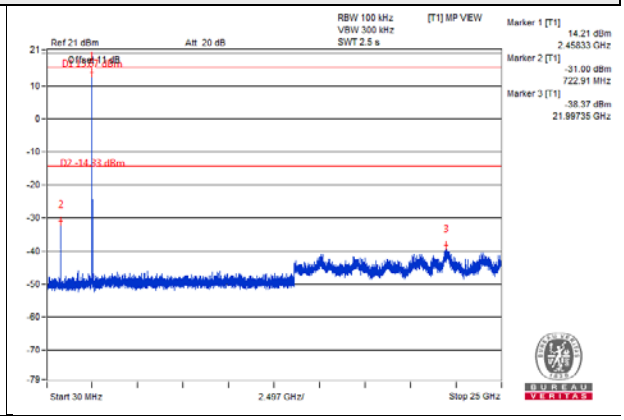
CH 6





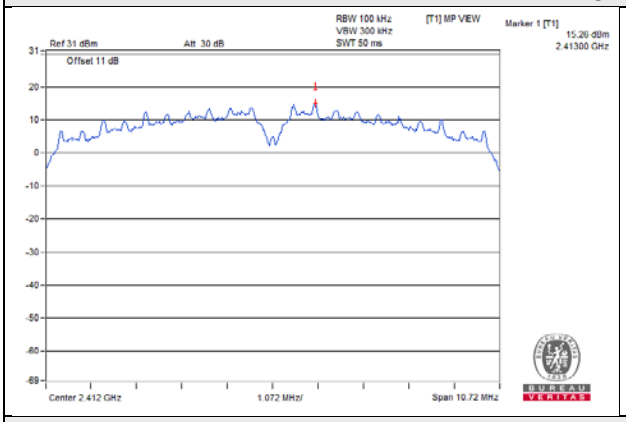
CH 11

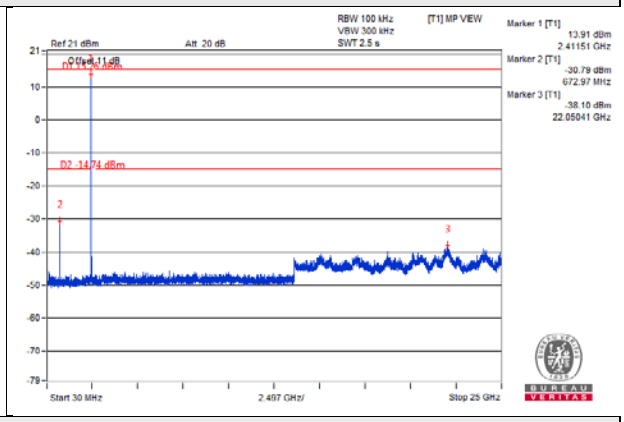




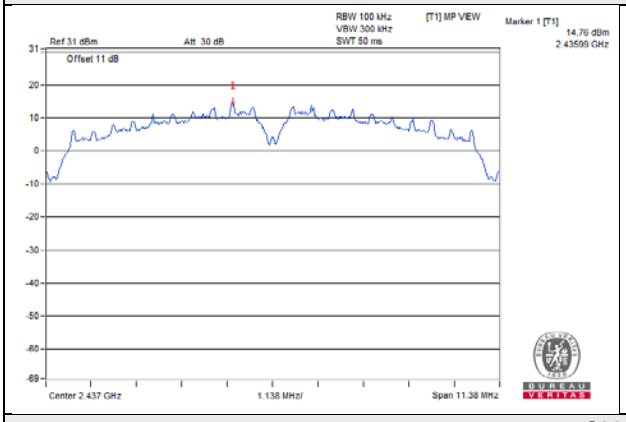
802.11b_Chain 3

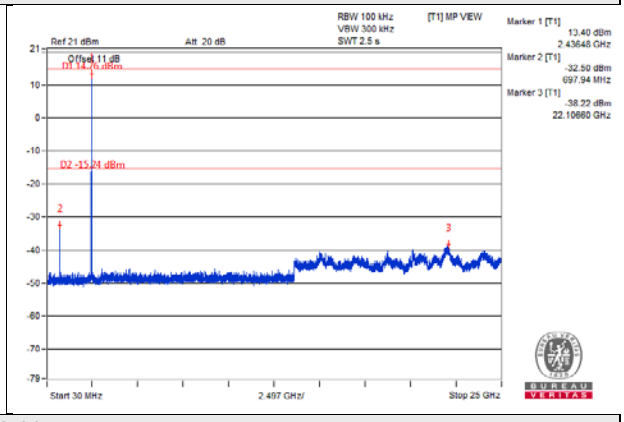
CH 1



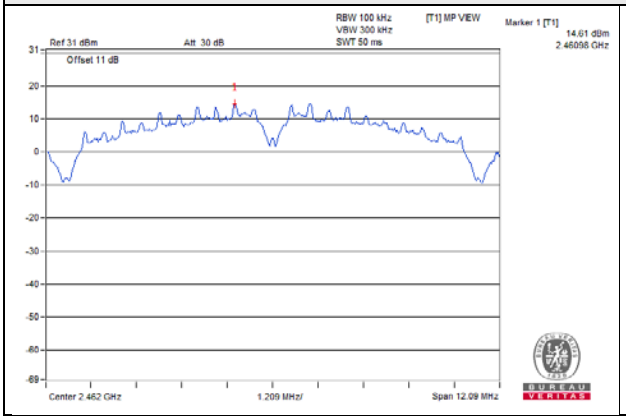


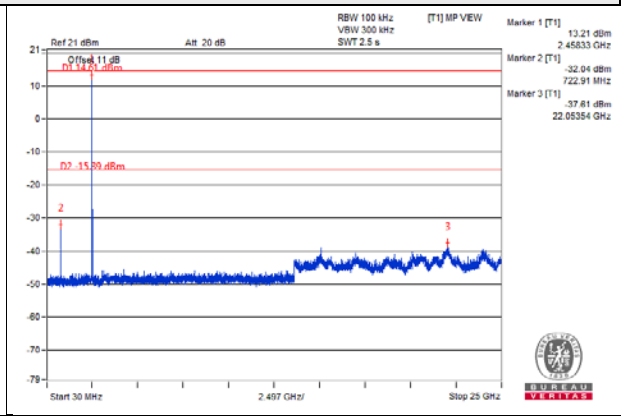
CH 6



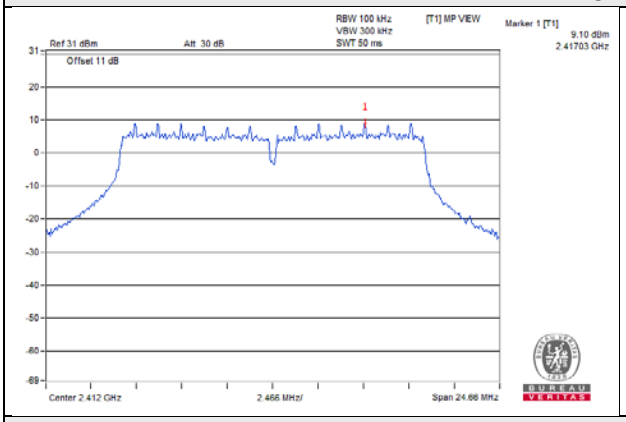
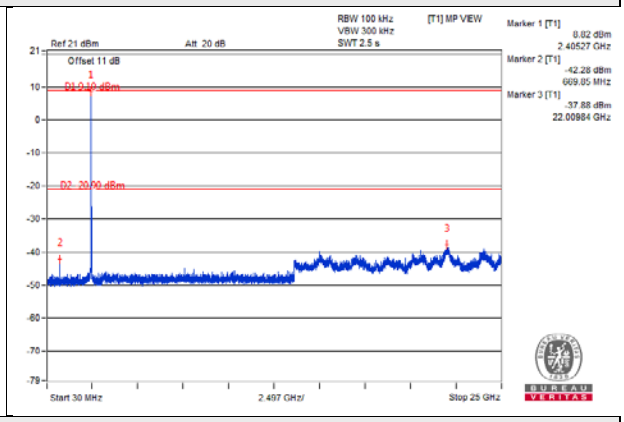
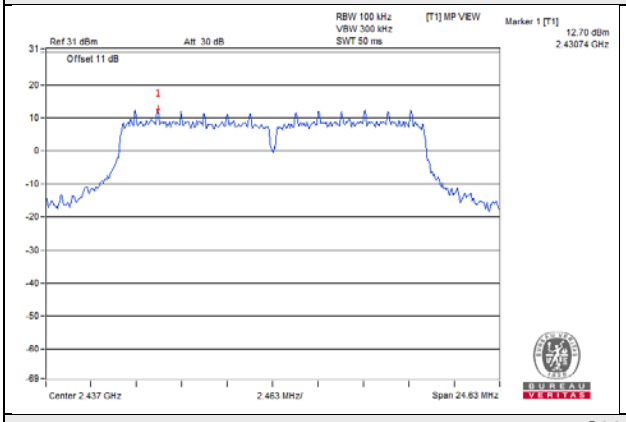
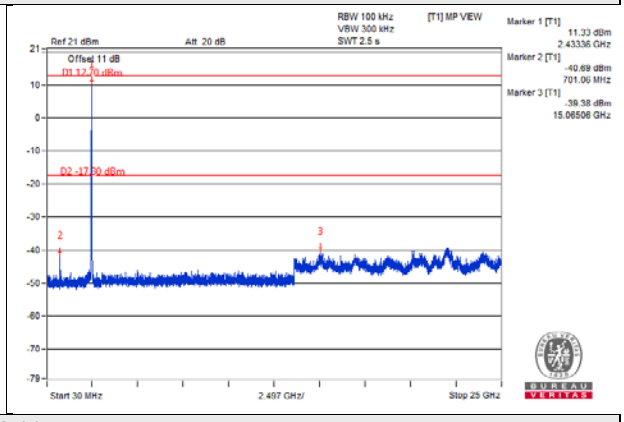


CH 11





802.11g_Chain 0

CH 1	
	
CH 6	
	
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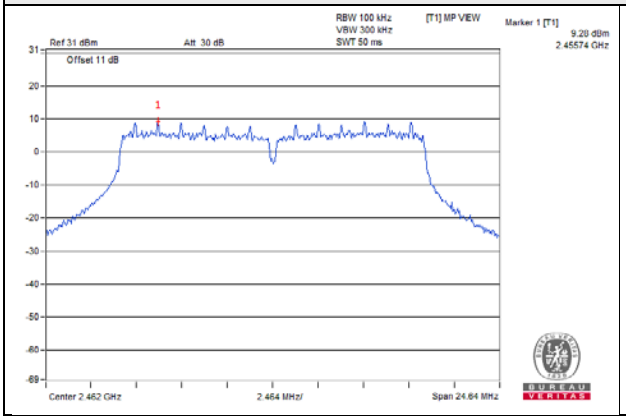
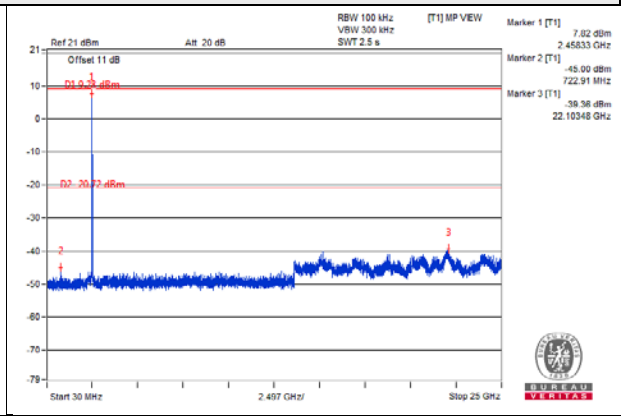
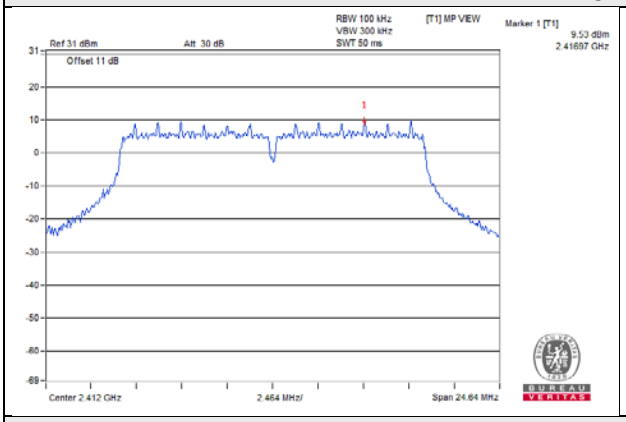
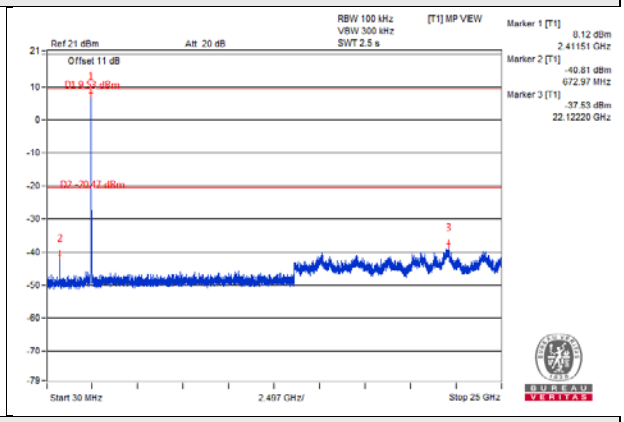
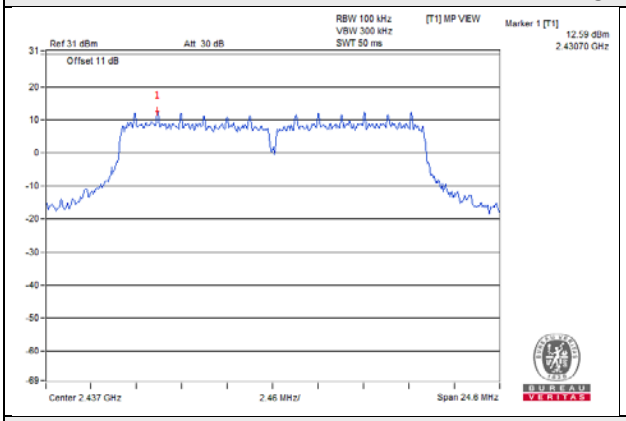
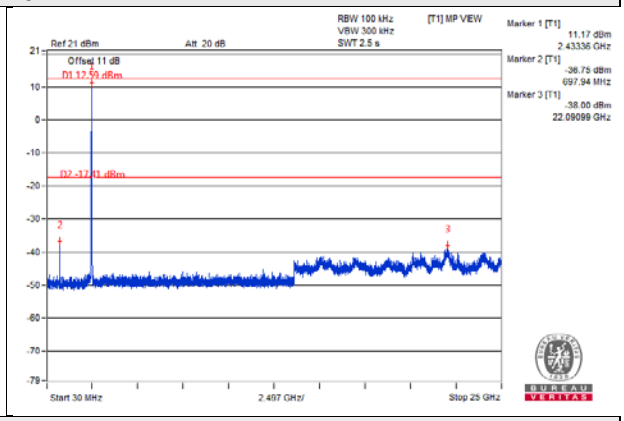
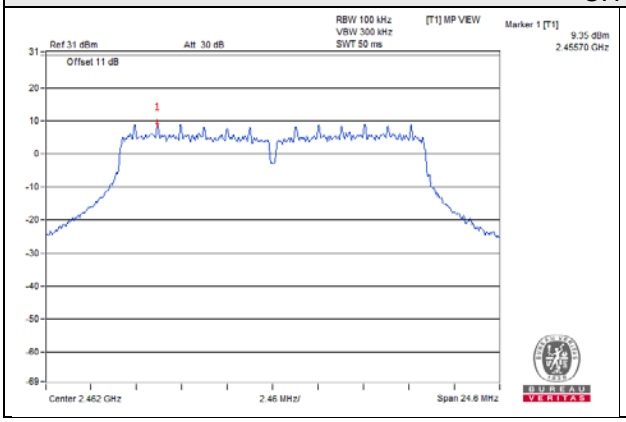
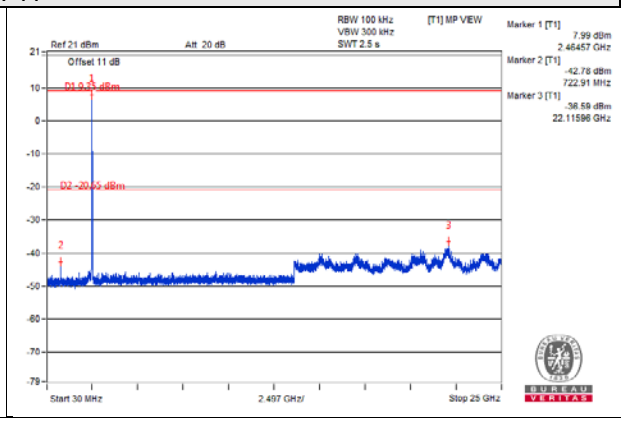
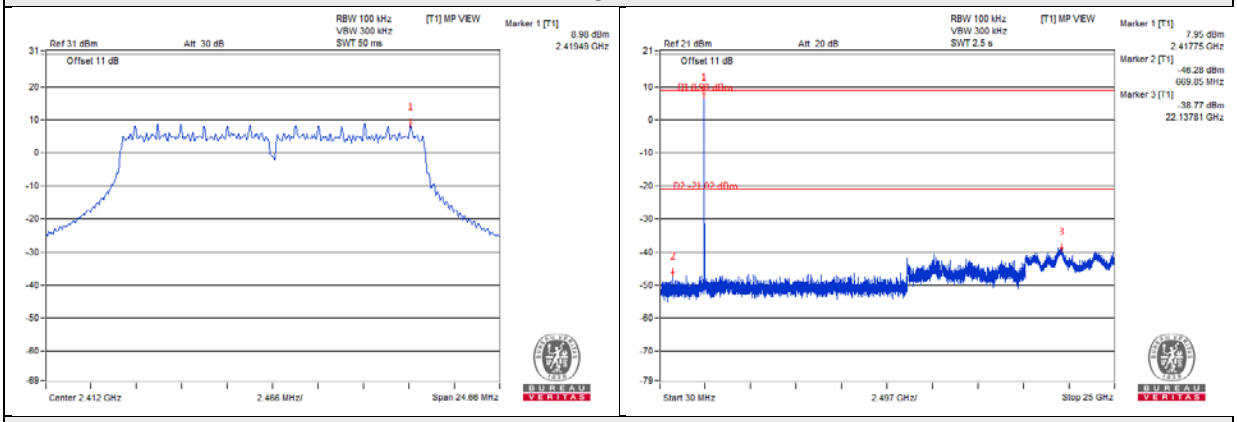
	

802.11g_Chain 1

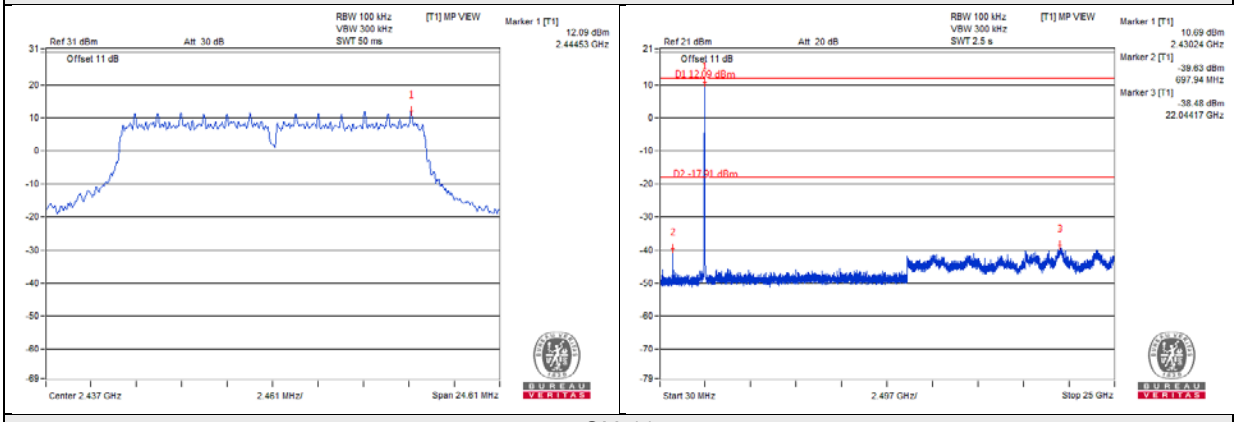
CH 1	
	
CH 6	
	
CH 11	
	

802.11g_Chain 2

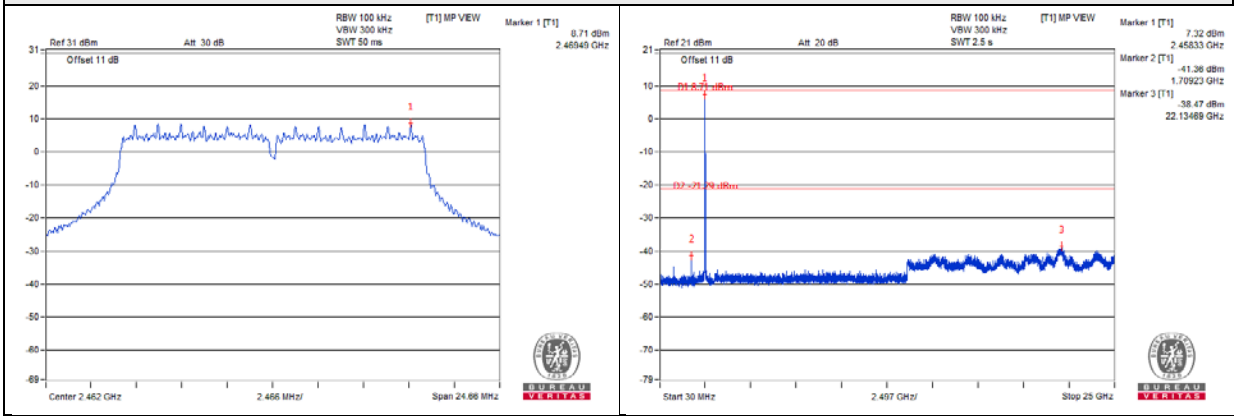
CH 1



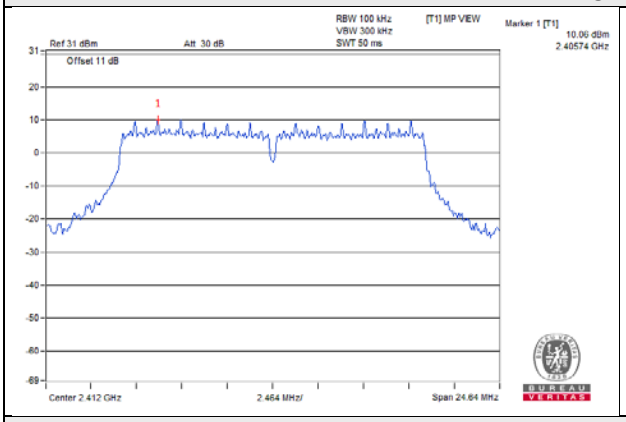
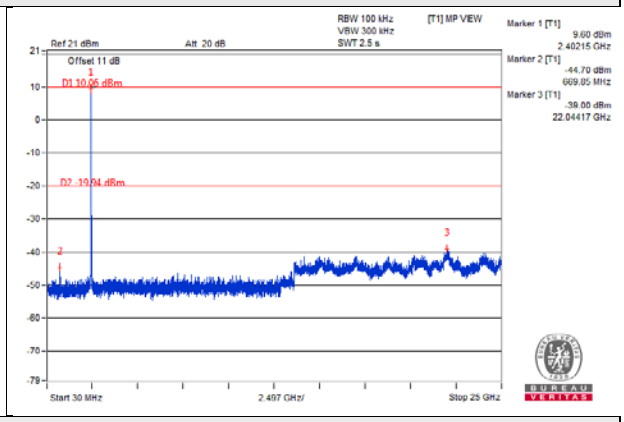
CH 6



CH 11



802.11g_Chain 3

CH 1	
	
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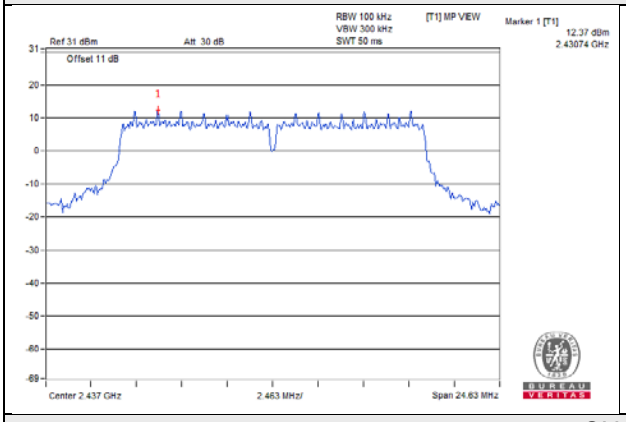	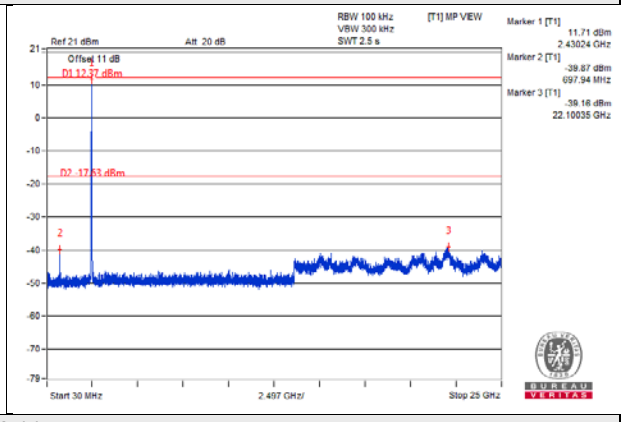
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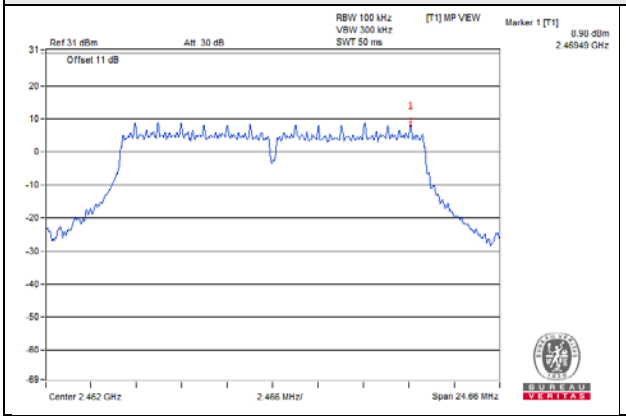
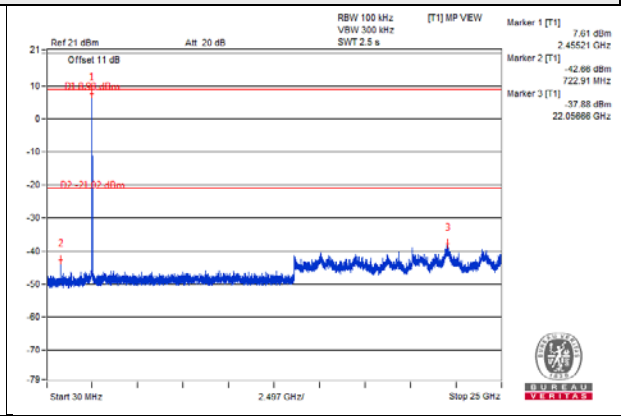
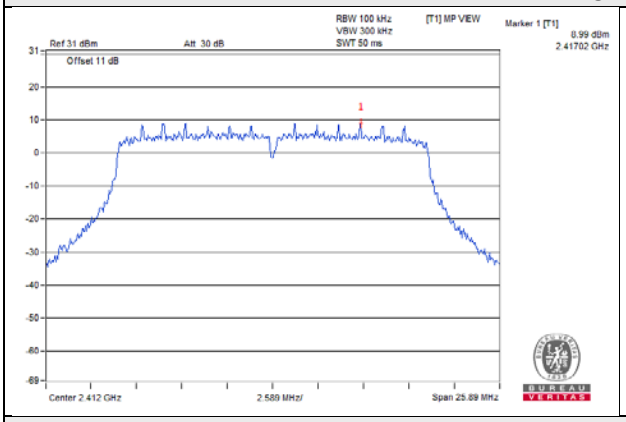
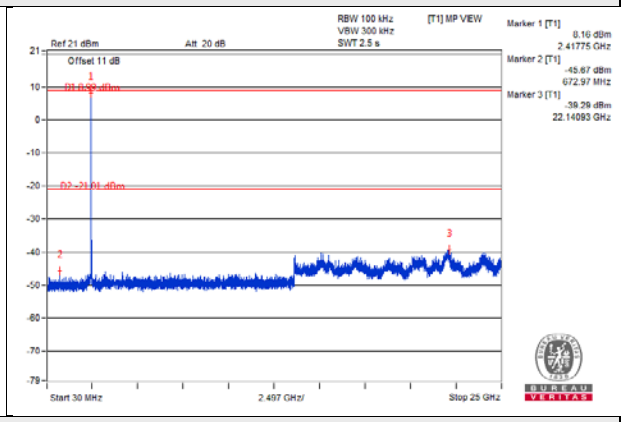
	

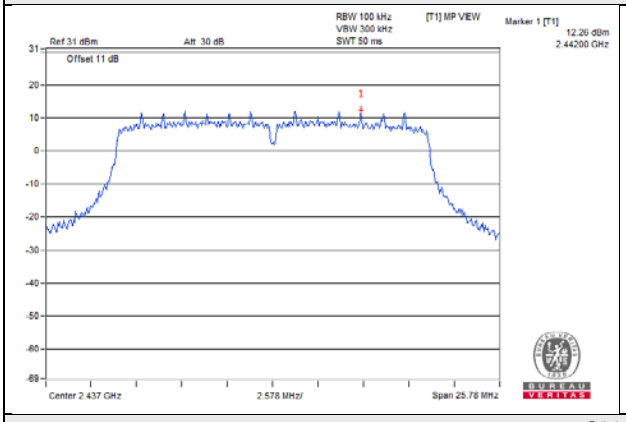
802.11n (HT20)_Chain 0

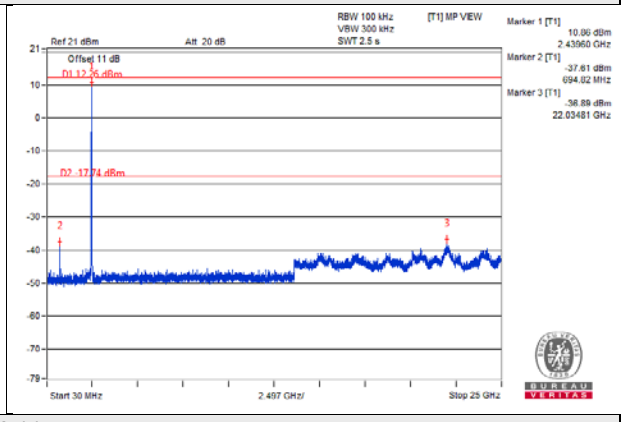
CH 1



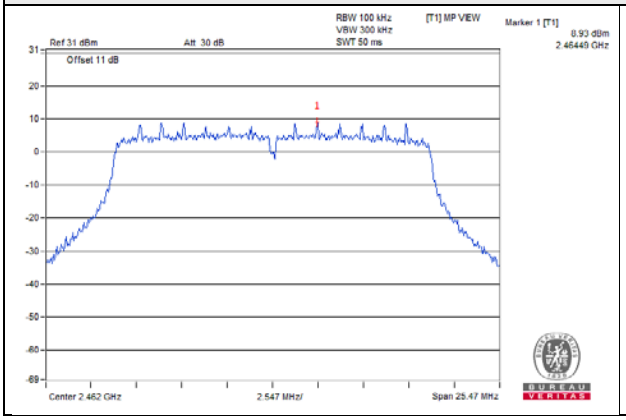


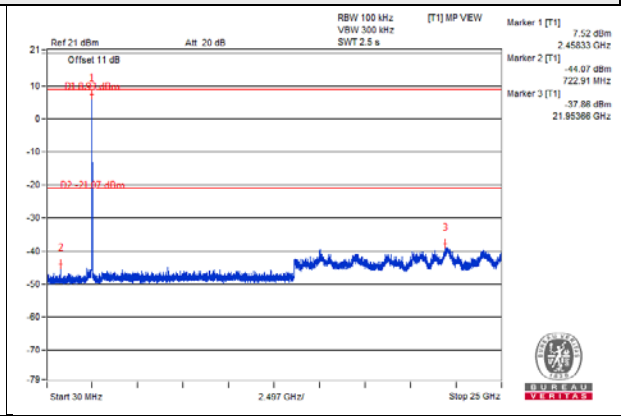
CH 6





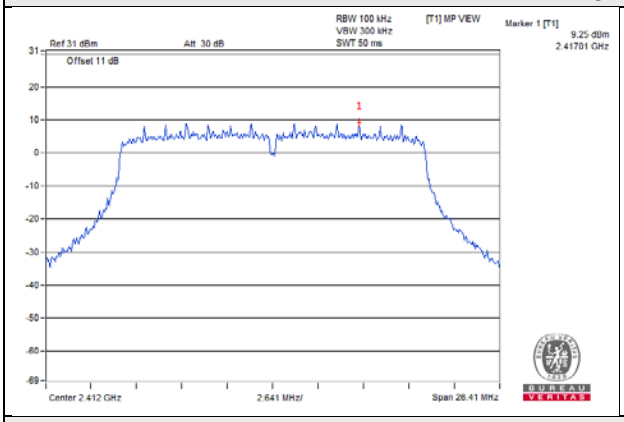
CH 11

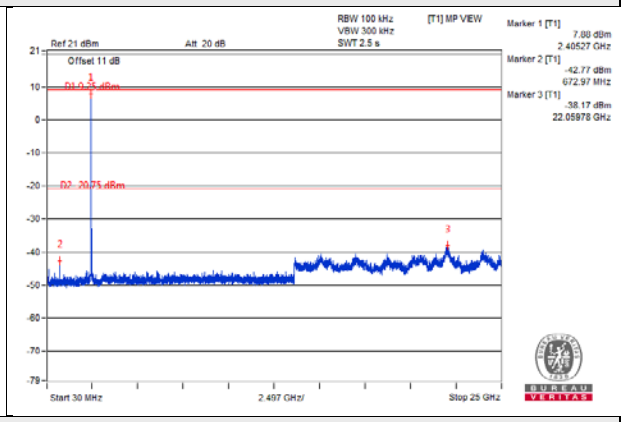




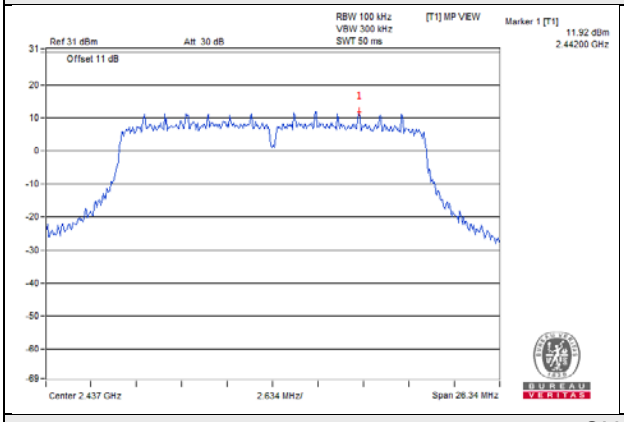
802.11n (HT20)_Chain 1

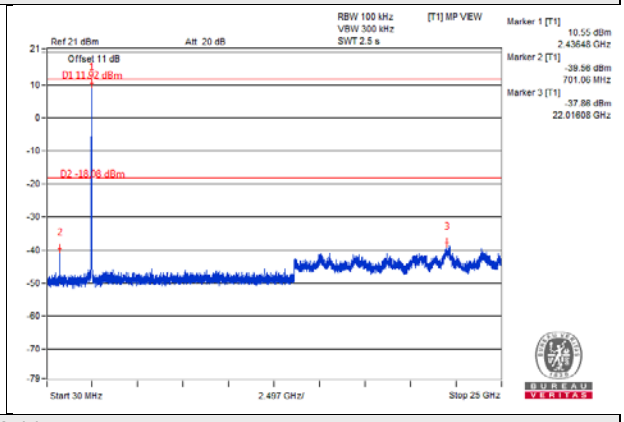
CH 1



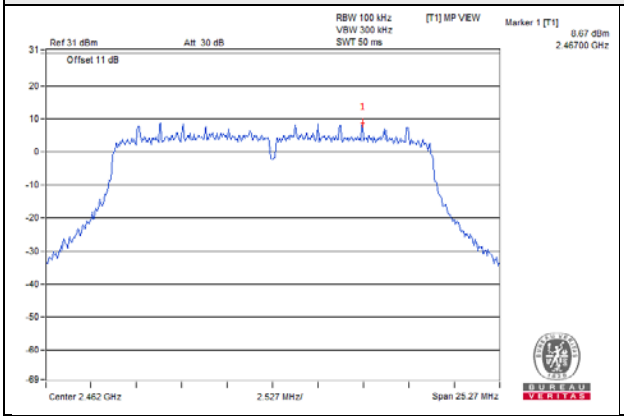


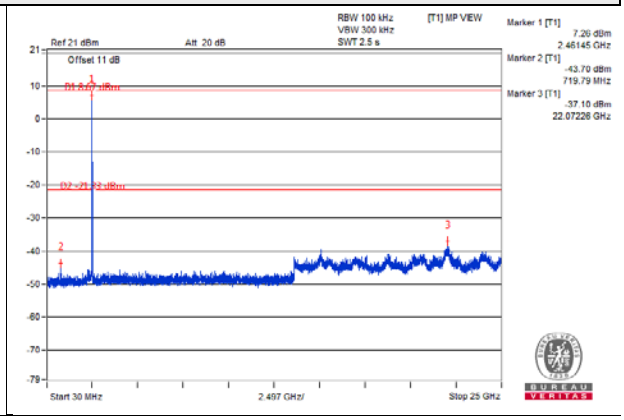
CH 6





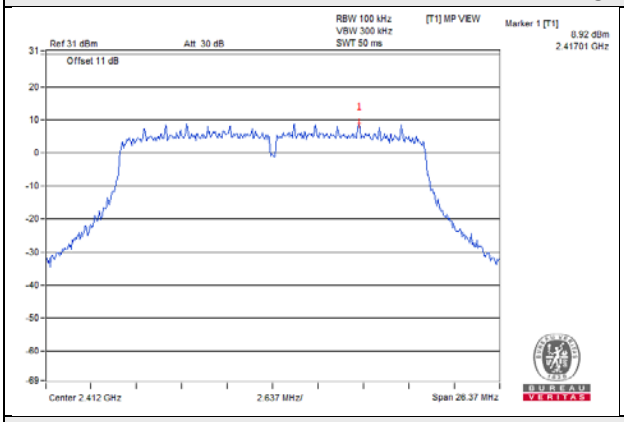
CH 11

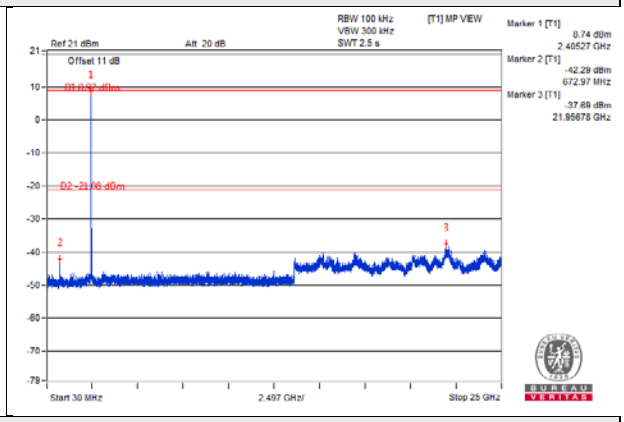




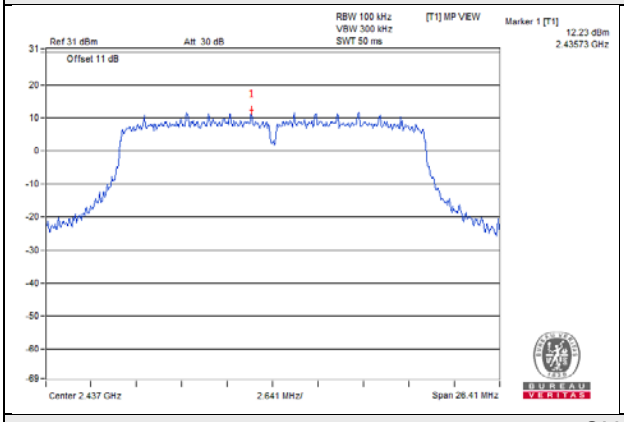
802.11n (HT20)_Chain 2

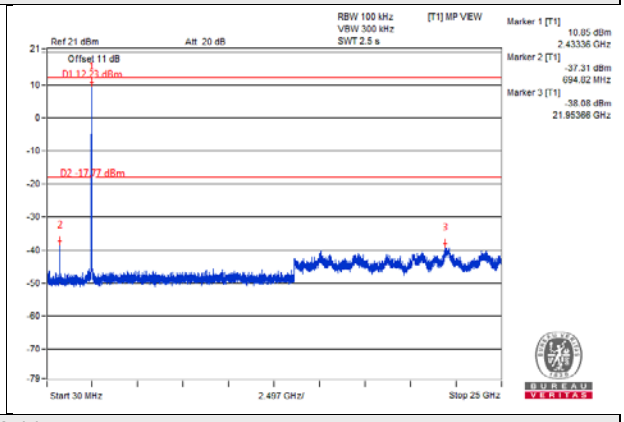
CH 1



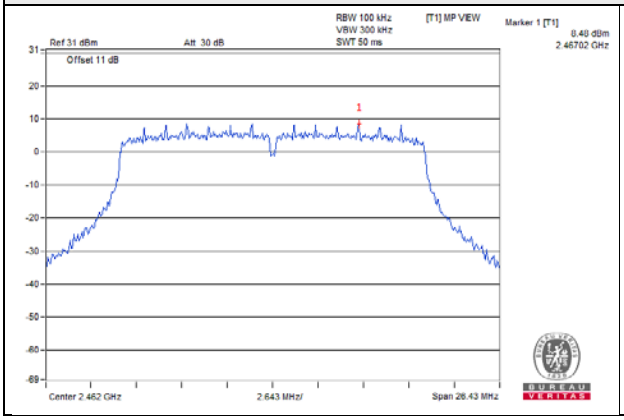


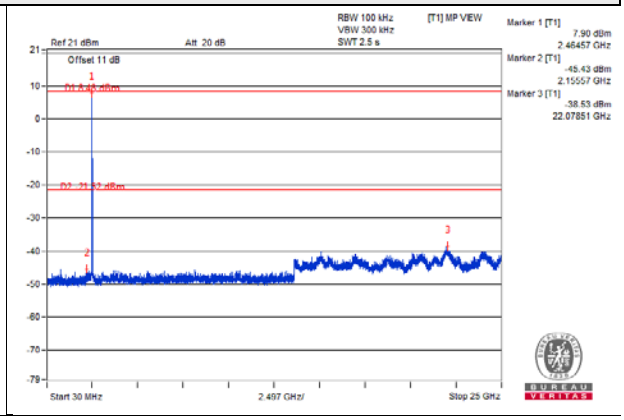
CH 6





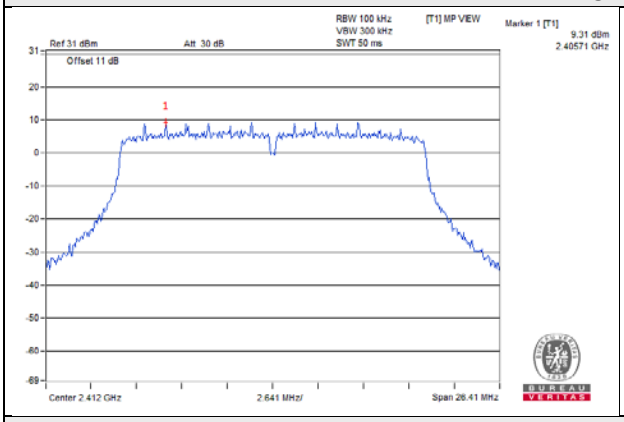
CH 11

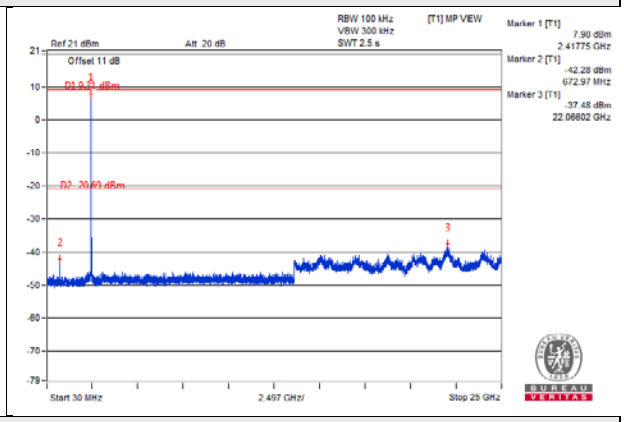




802.11n (HT20)_Chain 3

CH 1





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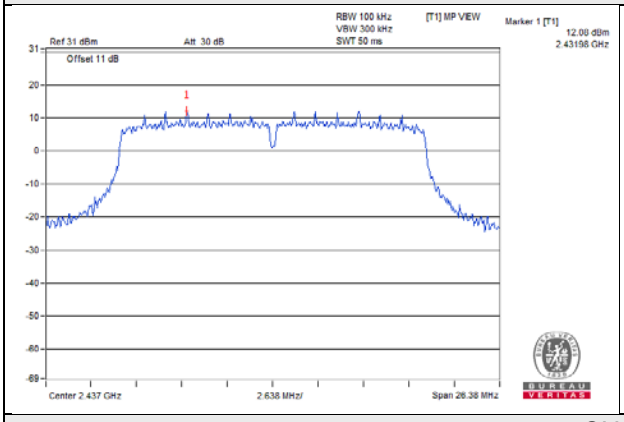
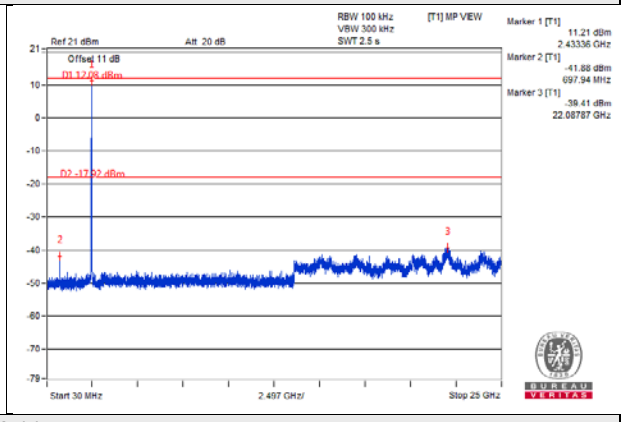
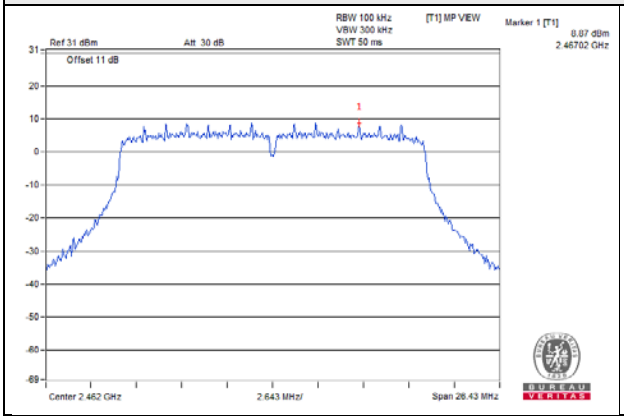
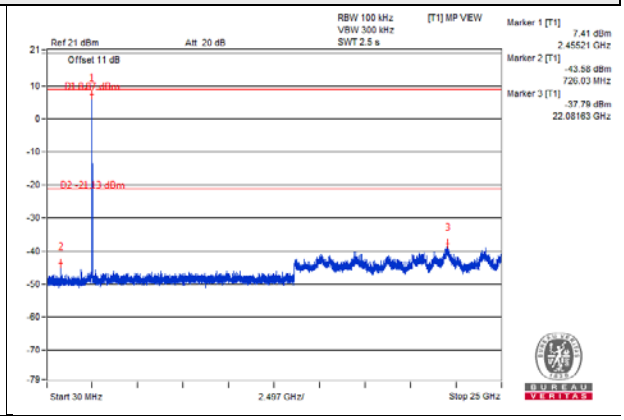




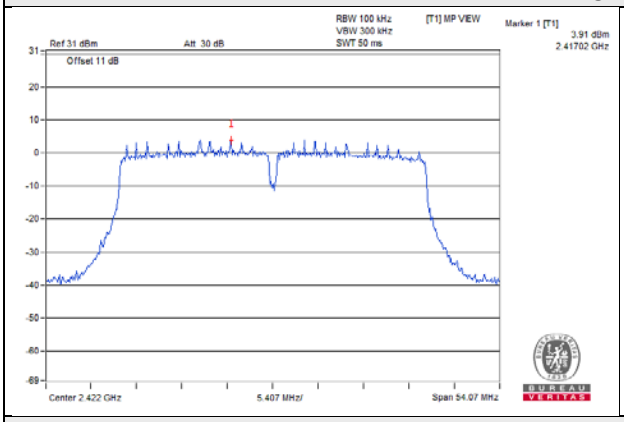
CH 11

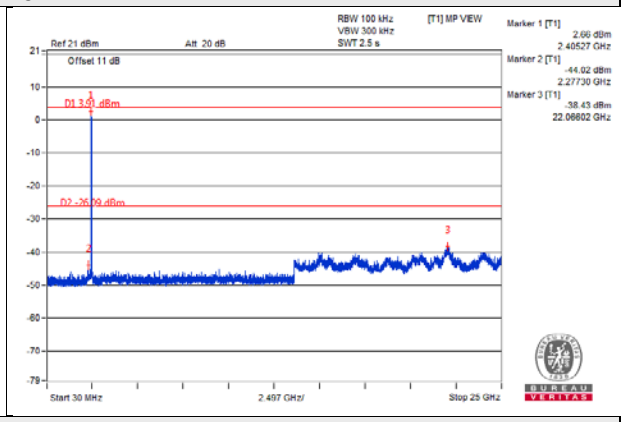




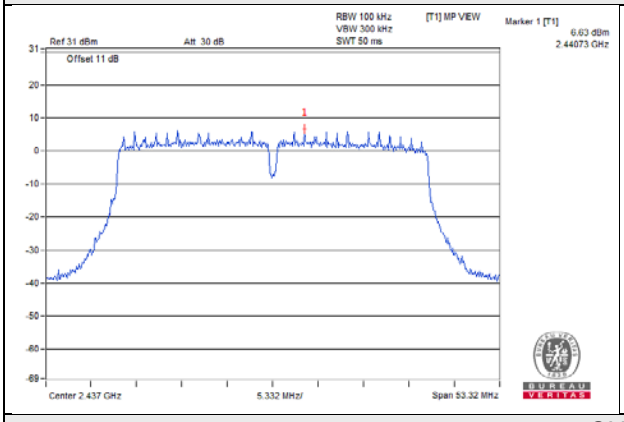
802.11n (HT40)_Chain 0

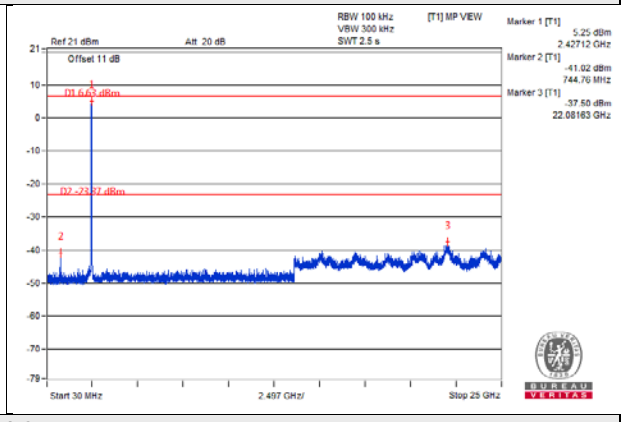
CH 3



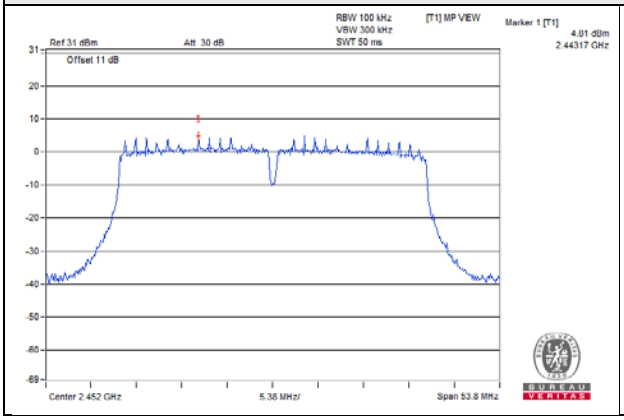


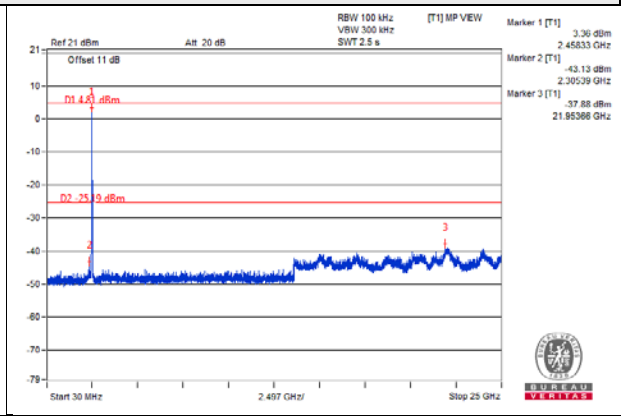
CH 6





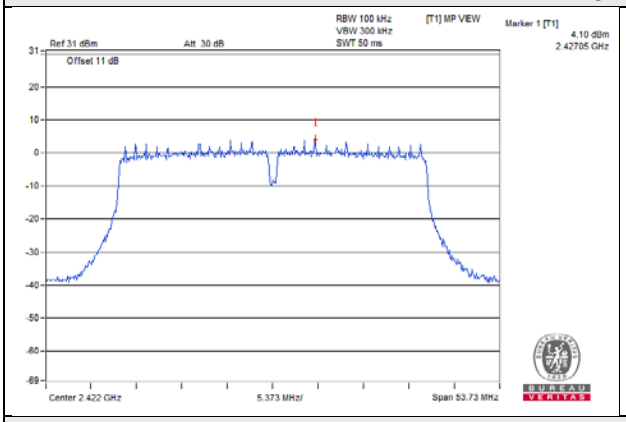
CH 9

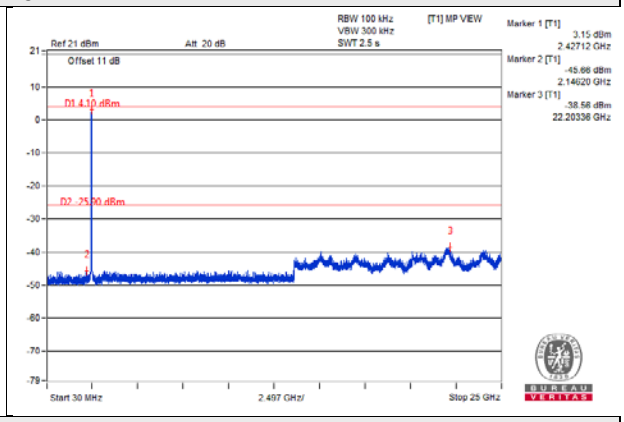




802.11n (HT40)_Chain 1

CH 3





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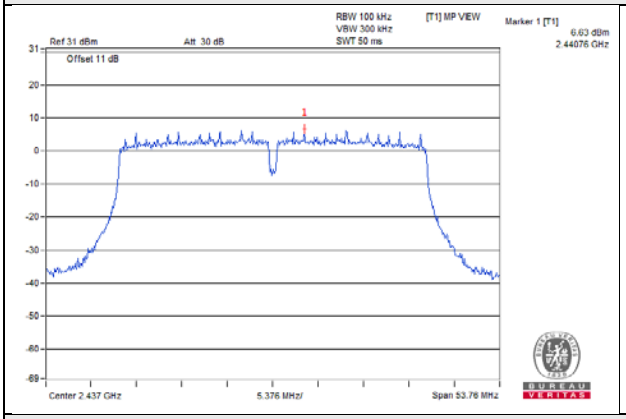
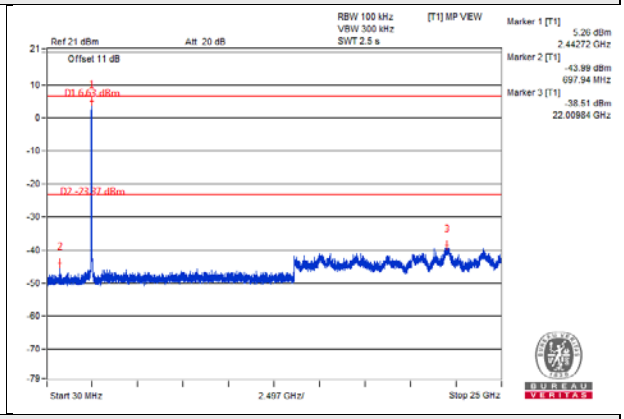
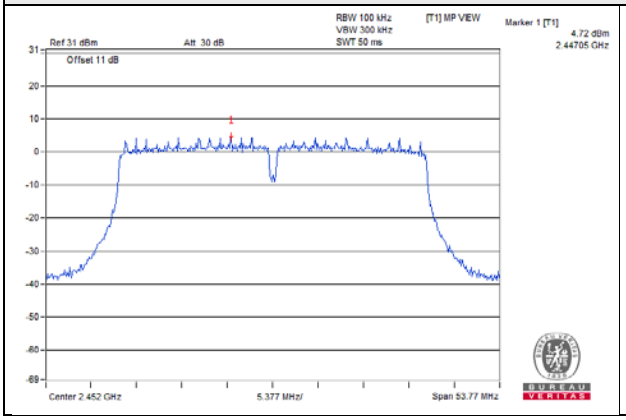
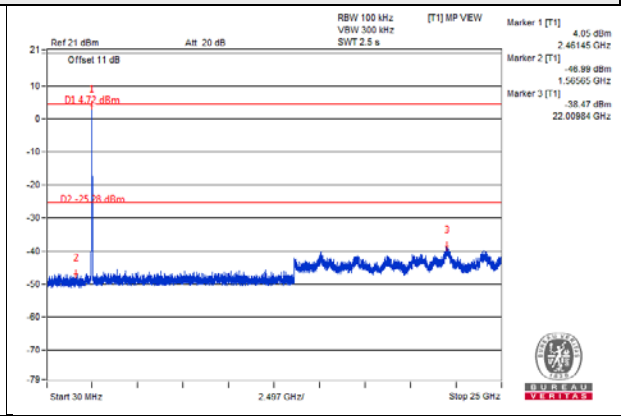




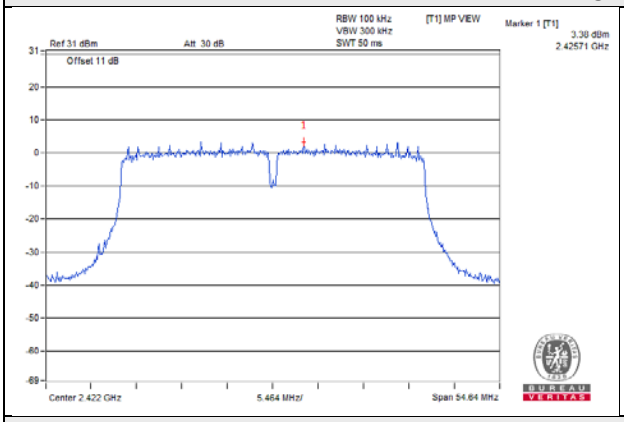
CH 9

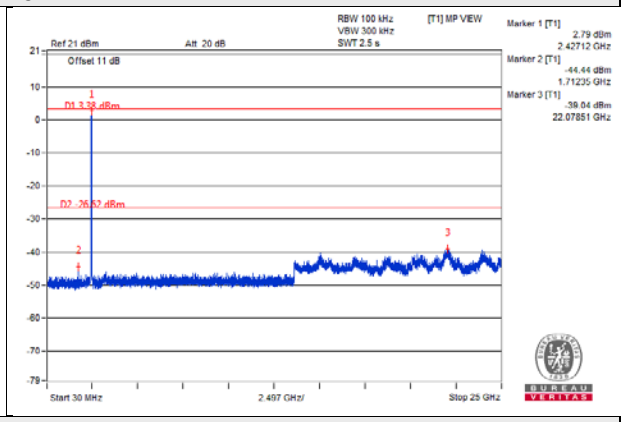




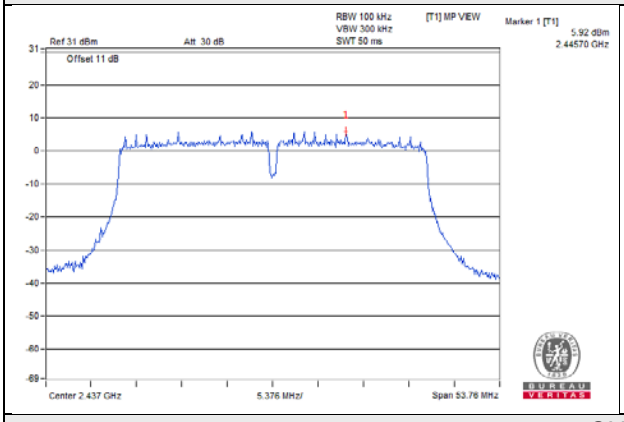
802.11n (HT40)_Chain 2

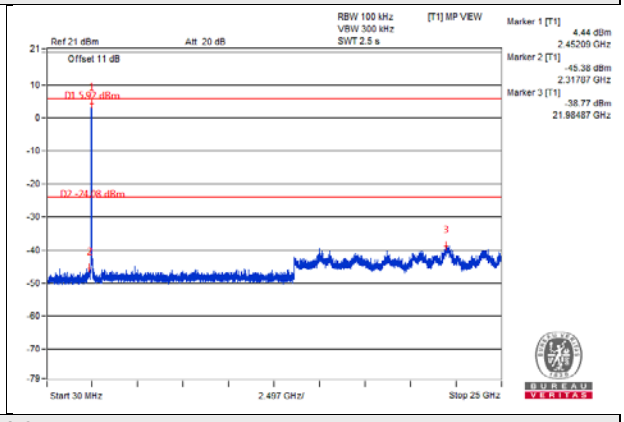
CH 3





CH 6





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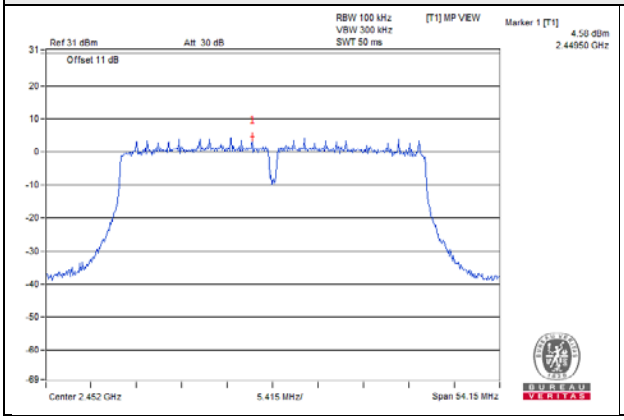
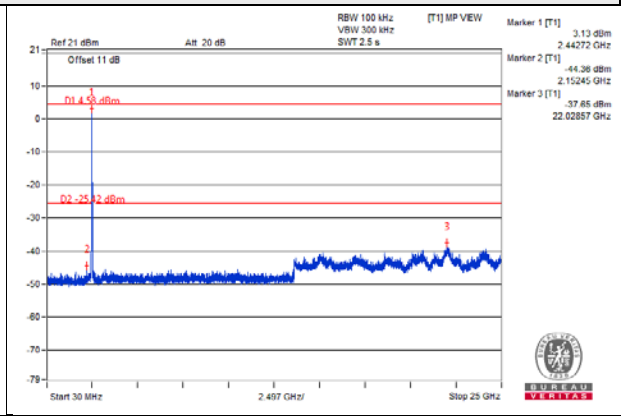
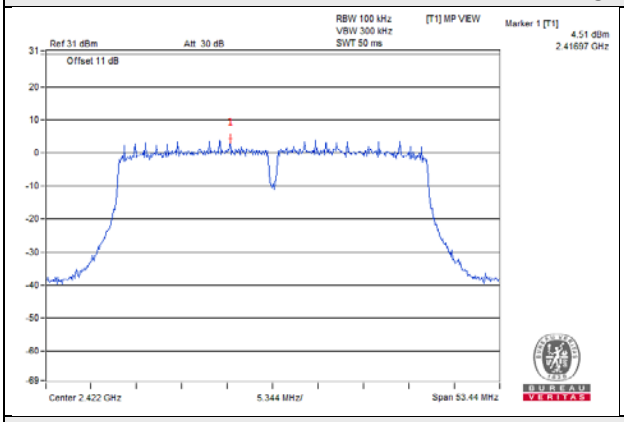
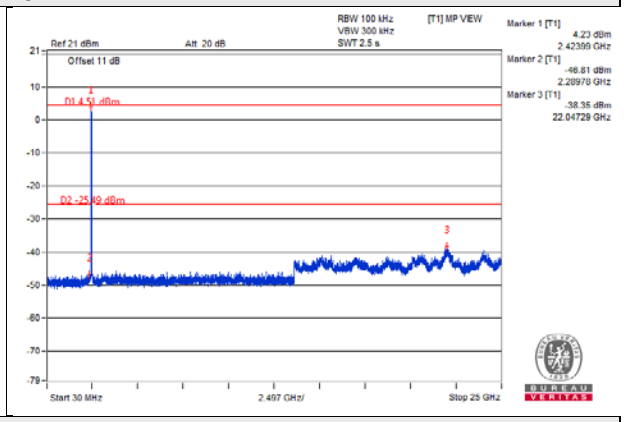




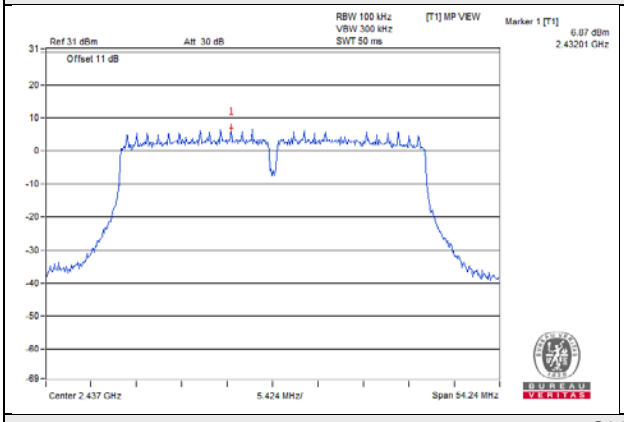
802.11n (HT40)_Chain 3

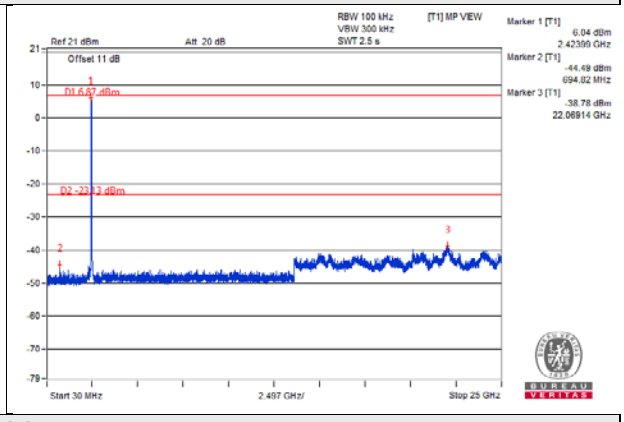
CH 3



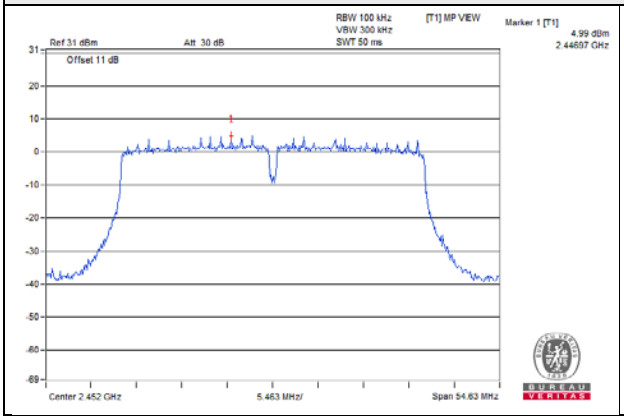


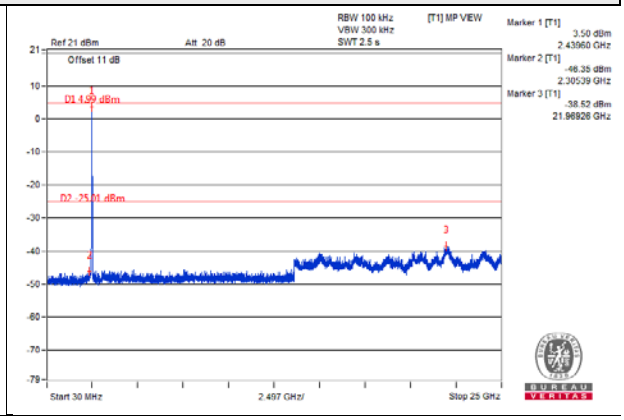
CH 6





CH 9





5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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