

FCC Test Report (WLAN)

Report No.: RF190103E04

FCC ID: NKR-CC1

Test Model: CC1

Received Date: Jan. 03, 2019

Test Date: Jan. 18 to 23, 2019

Issued Date: Feb. 15, 2019

Applicant: Wistron NeWeb Corp.

Address: 20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C.

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory

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Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

**FCC Registration /
Designation Number:** 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
RF190103E04	Original release.	Feb. 15, 2019

1 Certificate of Conformity

Product: AP

Brand: WNC

Test Model: CC1

Sample Status: ENGINEERING SAMPLE

Applicant: Wistron NeWeb Corp.

Test Date: Jan. 18 to 23, 2019

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 EMC characteristics under the conditions specified in this report.

Prepared by : Cindy Hsin , **Date:** Feb. 15, 2019
Cindy Hsin / Specialis

Approved by : May Chen , **Date:** Feb. 15, 2019
May Chen / Manager

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 -9.62dB at 0.68516MHz.
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 2483.50MHz, 2390.00MHz.
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(MHF) not a standard connector.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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	1.84 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.12 dB
	6GHz ~ 18GHz	4.86 dB
	18GHz ~ 40GHz	5.24 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (WLAN)

Product	AP
Brand	WNC
Test Model	CC1
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	120Vac, 0.3A, 60Hz
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	2.4GHz: 2.412GHz ~ 2.462GHz 5GHz: 5.18GHz ~ 5.24GHz, 5.745GHz ~ 5.825GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	2.4GHz: 445.654 mW 5.18 ~ 5.24GHz CDD Mode: 434.541 mW Beamforming Mode: 412.127 mW 5.745 ~ 5.825GHz CDD Mode: 438.753 mW Beamforming Mode: 438.753 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. There are WLAN and Bluetooth technology used for the EUT.
2. Simultaneously transmission condition.

Condition	Technology		
1	WLAN (2.4GHz)	WLAN (5GHz)	Bluetooth
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.			

3. The antennas provided to the EUT, please refer to the following table:

For the antennas provided to the ECU, please refer to the following table.

WLAN Directional gain table			
Frequency range (GHz)	Directional Antenna Gain (dBi)	Antenna Type	Antenna Connector
2.4 ~ 2.5	3.52	PIFA	i-pex(MHF)
5.15 ~ 5.85	5.53		
Bluetooth antenna spec.			
Frequency range (GHz)	Antenna Net Gain (dBi)	Antenna Type	Antenna Connector
2.4 ~ 2.4835	0	CHIP	NA

Note: More detailed information, please refer to operating description.

4. The EUT incorporates a MIMO function.

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX

Note:

- All of modulation mode support beamforming function except 2.4GHz & 802.11a modulation mode.

5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

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

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

7 channels are provided for 802.11n (HT40):

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz & Bandedge Measurement
RE<1G: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission
APCM: Antenna Port Conducted Measurement

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	6	OFDM	BPSK	6

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	6	OFDM	BPSK	6

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	22deg. C, 68%RH	120Vac, 60Hz	Steven Chiang
RE<1G	24deg. C, 67%RH	120Vac, 60Hz	Steven Chiang
PLC	23deg. C, 74%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Jyunchun Lin

3.3 Duty Cycle of Test Signal

If duty cycle of test signal is $\geq 98\%$, duty factor is not required.

If duty cycle of test signal is $< 98\%$, duty factor shall be considered.

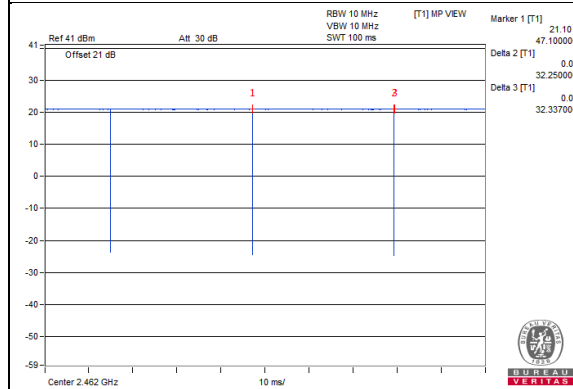
802.11b: Duty cycle = $32.25/32.337 = 0.997$

802.11g: Duty cycle = $5.348/5.406 = 0.989$

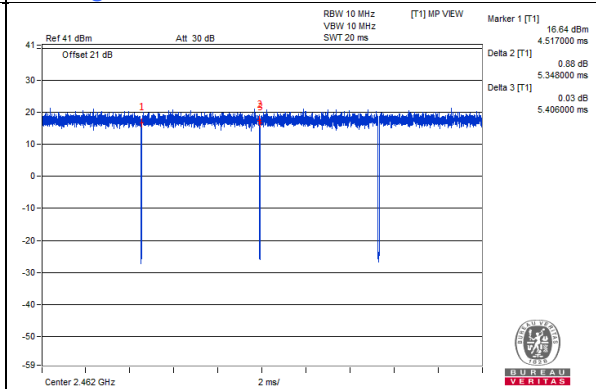
802.11n (HT20): Duty cycle = $4.958/5.035 = 0.985$

802.11n (HT40): Duty cycle = $2.402/2.455 = 0.978$, Duty factor = $10 * \log(1/0.978) = 0.09$

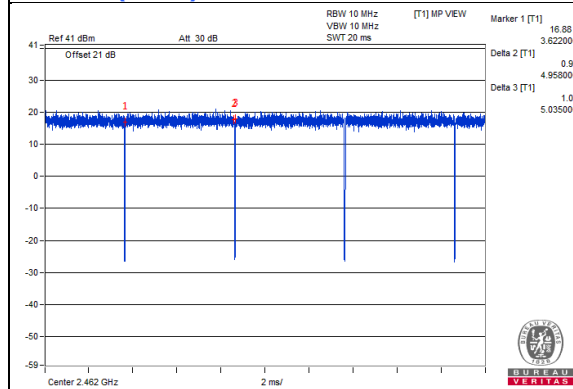
802.11b



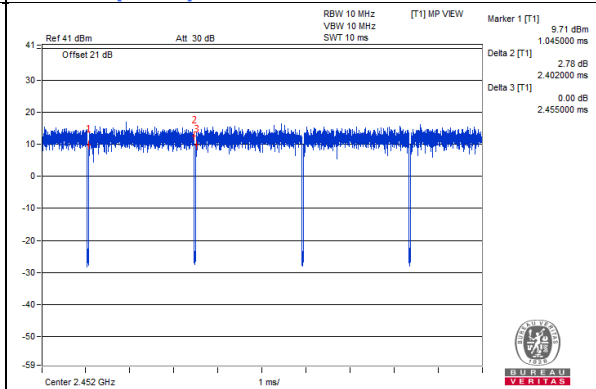
802.11g



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.

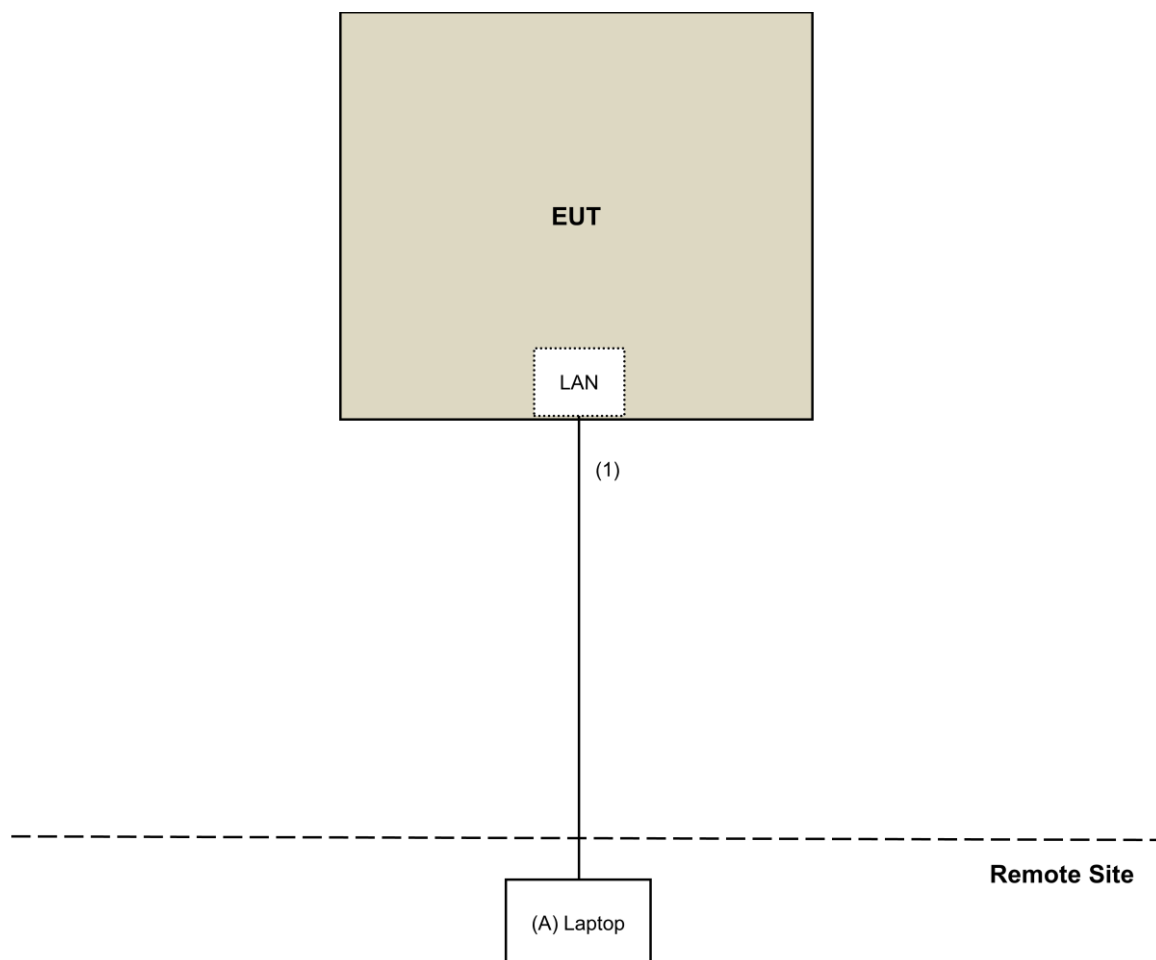
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	HP	Pavilion 14-ab023TU	5CD5340WXZ	NA	Provided by Lab

Note:

1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	10	No	0	Provided by Lab

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 15.247 Meas Guidance v05
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.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 05, 2018	July 04, 2019
Pre-Amplifier EMCi	EMC001340	980142	Feb. 09, 2018	Feb. 08, 2019
Loop Antenna Electro-Metrics	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Oct. 30, 2018	Oct. 29, 2019
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 22, 2018	Nov. 21, 2019
RF Cable	8D	966-4-1	Mar. 21, 2018	Mar. 20, 2019
RF Cable	8D	966-4-2	Mar. 21, 2018	Mar. 20, 2019
RF Cable	8D	966-4-3	Mar. 21, 2018	Mar. 20, 2019
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Sep. 27, 2018	Sep. 26, 2019
Horn Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier Mini-Circuits	ZVA-183-S+	AMP-ZVA-03	May 10, 2018	May 09, 2019
RF Cable	EMC104-SM-SM-1200	160923	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-2000	150318	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-5000	150321	Jan. 29, 2018	Jan. 28, 2019
Pre-Amplifier EMCi	EMC184045SE	980387	Jan. 29, 2018	Jan. 28, 2019
Horn Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160925	Jan. 29, 2018	Jan. 28, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 20, 2018	June 19, 2019
Power meter Anritsu	ML2495A	1014008	May 09, 2018	May 08, 2019
Power sensor Anritsu	MA2411B	0917122	May 09, 2018	May 08, 2019
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 16, 2018	Apr. 15, 2019

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 966 Chamber No. 4.
3. The CANADA Site Registration No. is 20331-2
4. Loop antenna was used for all emissions below 30 MHz.
5. Tested Date: Jan. 18 to 23, 2019

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 detects 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:

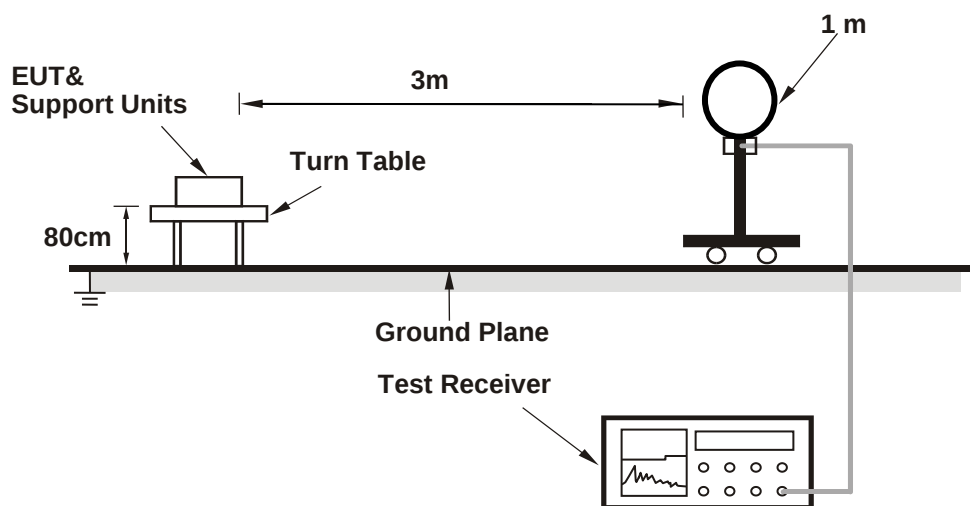
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) 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

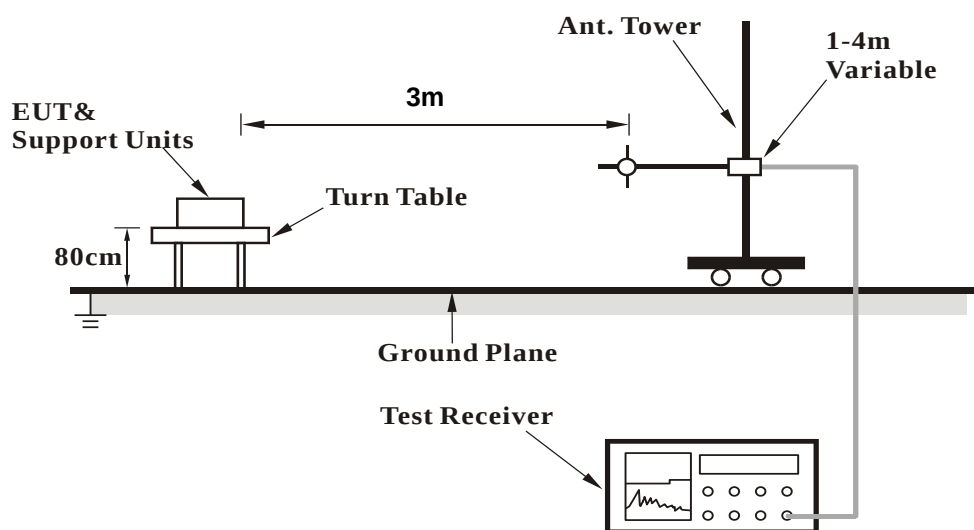
No deviation.

4.1.5 Test Setup

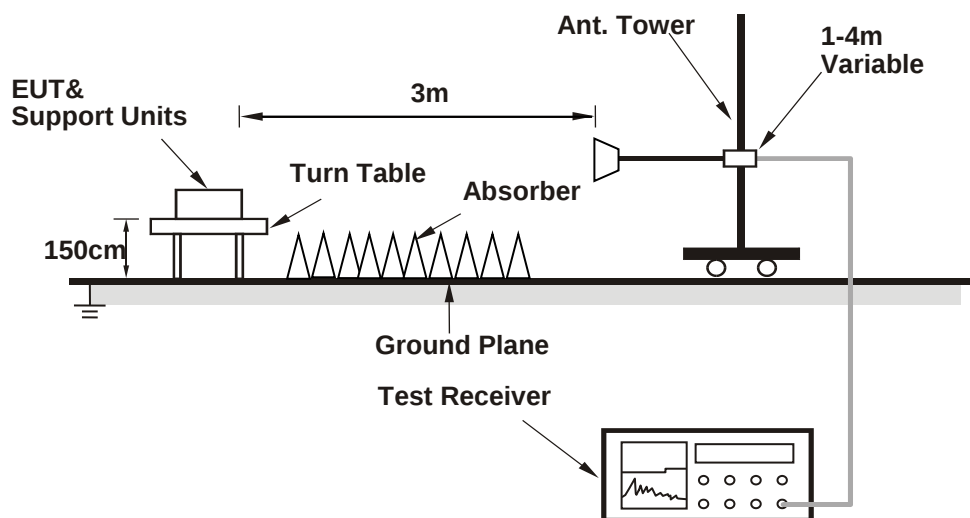
For Radiated emission below 30MHz



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

- Connected the EUT with the Laptop which is placed on remote site.
- Controlling software (QSPR (version-5.0-00086)) has been activated to set the EUT on specific status.

4.1.7 Test Results

Above 1GHz Data:

802.11b

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

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	58.2 PK	74.0	-15.8	3.06 H	59	60.2	-2.0
2	2390.00	47.6 AV	54.0	-6.4	3.06 H	59	49.6	-2.0
3	*2412.00	112.6 PK			3.06 H	59	114.7	-2.1
4	*2412.00	110.3 AV			3.06 H	59	112.4	-2.1
5	4824.00	51.4 PK	74.0	-22.6	1.13 H	178	49.4	2.0
6	4824.00	50.2 AV	54.0	-3.8	1.13 H	178	48.2	2.0
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	56.0 PK	74.0	-18.0	1.84 V	199	58.0	-2.0
2	2390.00	45.4 AV	54.0	-8.6	1.84 V	199	47.4	-2.0
3	*2412.00	110.5 PK			1.84 V	199	112.6	-2.1
4	*2412.00	108.1 AV			1.84 V	199	110.2	-2.1
5	4824.00	53.2 PK	74.0	-20.8	1.00 V	352	51.2	2.0
6	4824.00	52.0 AV	54.0	-2.0	1.00 V	352	50.0	2.0

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)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	54.7 PK	74.0	-19.3	2.61 H	56	56.7	-2.0
2	2390.00	43.4 AV	54.0	-10.6	2.61 H	56	45.4	-2.0
3	*2437.00	112.5 PK			2.61 H	56	114.7	-2.2
4	*2437.00	110.2 AV			2.61 H	56	112.4	-2.2
5	2483.50	57.5 PK	74.0	-16.5	2.61 H	56	59.7	-2.2
6	2483.50	45.0 AV	54.0	-9.0	2.61 H	56	47.2	-2.2
7	4874.00	50.2 PK	74.0	-23.8	1.34 H	162	48.2	2.0
8	4874.00	48.3 AV	54.0	-5.7	1.34 H	162	46.3	2.0
9	7311.00	51.9 PK	74.0	-22.1	2.10 H	114	43.4	8.5
10	7311.00	47.4 AV	54.0	-6.6	2.10 H	114	38.9	8.5

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	52.5 PK	74.0	-21.5	1.77 V	192	54.5	-2.0
2	2390.00	41.2 AV	54.0	-12.8	1.77 V	192	43.2	-2.0
3	*2437.00	110.4 PK			1.77 V	192	112.6	-2.2
4	*2437.00	108.0 AV			1.77 V	192	110.2	-2.2
5	2483.50	55.6 PK	74.0	-18.4	1.77 V	192	57.8	-2.2
6	2483.50	43.1 AV	54.0	-10.9	1.77 V	192	45.3	-2.2
7	4874.00	50.9 PK	74.0	-23.1	1.08 V	352	48.9	2.0
8	4874.00	49.0 AV	54.0	-5.0	1.08 V	352	47.0	2.0
9	7311.00	52.9 PK	74.0	-21.1	1.00 V	335	44.4	8.5
10	7311.00	48.3 AV	54.0	-5.7	1.00 V	335	39.8	8.5

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

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	112.4 PK			2.81 H	54	114.6	-2.2
2	*2462.00	110.1 AV			2.81 H	54	112.3	-2.2
3	2483.50	61.9 PK	74.0	-12.1	2.81 H	54	64.1	-2.2
4	2483.50	53.5 AV	54.0	-0.5	2.81 H	54	55.7	-2.2
5	4924.00	50.3 PK	74.0	-23.7	1.40 H	168	48.3	2.0
6	4924.00	48.2 AV	54.0	-5.8	1.40 H	168	46.2	2.0
7	7386.00	52.2 PK	74.0	-21.8	2.11 H	121	43.6	8.6
8	7386.00	47.5 AV	54.0	-6.5	2.11 H	121	38.9	8.6
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	*2462.00	110.1 PK			1.79 V	185	112.3	-2.2
2	*2462.00	107.8 AV			1.79 V	185	110.0	-2.2
3	2483.50	58.3 PK	74.0	-15.7	1.79 V	185	60.5	-2.2
4	2483.50	50.5 AV	54.0	-3.5	1.79 V	185	52.7	-2.2
5	4924.00	51.6 PK	74.0	-22.4	1.28 V	351	49.6	2.0
6	4924.00	49.7 AV	54.0	-4.3	1.28 V	351	47.7	2.0
7	7386.00	52.3 PK	74.0	-21.7	1.01 V	335	43.7	8.6
8	7386.00	47.7 AV	54.0	-6.3	1.01 V	335	39.1	8.6

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.

802.11g

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

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	69.8 PK	74.0	-4.2	2.69 H	61	71.8	-2.0
2	2390.00	53.5 AV	54.0	-0.5	2.69 H	61	55.5	-2.0
3	*2412.00	113.0 PK			2.69 H	61	115.1	-2.1
4	*2412.00	102.5 AV			2.69 H	61	104.6	-2.1
5	4824.00	45.7 PK	74.0	-28.3	1.39 H	178	43.7	2.0
6	4824.00	33.6 AV	54.0	-20.4	1.39 H	178	31.6	2.0
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	67.6 PK	74.0	-6.4	1.76 V	182	69.6	-2.0
2	2390.00	51.2 AV	54.0	-2.8	1.76 V	182	53.2	-2.0
3	*2412.00	110.9 PK			1.76 V	182	113.0	-2.1
4	*2412.00	100.3 AV			1.76 V	182	102.4	-2.1
5	4824.00	47.7 PK	74.0	-26.3	1.00 V	356	45.7	2.0
6	4824.00	35.5 AV	54.0	-18.5	1.00 V	356	33.5	2.0

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)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	57.2 PK	74.0	-16.8	2.64 H	61	59.2	-2.0
2	2390.00	44.0 AV	54.0	-10.0	2.64 H	61	46.0	-2.0
3	*2437.00	115.2 PK			2.64 H	61	117.4	-2.2
4	*2437.00	105.4 AV			2.64 H	61	107.6	-2.2
5	2483.50	59.9 PK	74.0	-14.1	2.64 H	61	62.1	-2.2
6	2483.50	46.0 AV	54.0	-8.0	2.64 H	61	48.2	-2.2
7	4874.00	48.0 PK	74.0	-26.0	1.35 H	180	46.0	2.0
8	4874.00	35.7 AV	54.0	-18.3	1.35 H	180	33.7	2.0
9	7311.00	54.4 PK	74.0	-19.6	2.14 H	118	45.9	8.5
10	7311.00	42.1 AV	54.0	-11.9	2.14 H	118	33.6	8.5

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	55.1 PK	74.0	-18.9	1.84 V	187	57.1	-2.0
2	2390.00	42.0 AV	54.0	-12.0	1.84 V	187	44.0	-2.0
3	*2437.00	113.0 PK			1.84 V	187	115.2	-2.2
4	*2437.00	103.1 AV			1.84 V	187	105.3	-2.2
5	2483.50	57.7 PK	74.0	-16.3	1.84 V	187	59.9	-2.2
6	2483.50	43.8 AV	54.0	-10.2	1.84 V	187	46.0	-2.2
7	4874.00	49.0 PK	74.0	-25.0	1.00 V	351	47.0	2.0
8	4874.00	37.0 AV	54.0	-17.0	1.00 V	351	35.0	2.0
9	7311.00	53.4 PK	74.0	-20.6	1.00 V	354	44.9	8.5
10	7311.00	41.2 AV	54.0	-12.8	1.00 V	354	32.7	8.5

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

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	111.2 PK			2.88 H	60	113.4	-2.2
2	*2462.00	101.2 AV			2.88 H	60	103.4	-2.2
3	2483.50	73.1 PK	74.0	-0.9	2.88 H	60	75.3	-2.2
4	2483.50	53.9 AV	54.0	-0.1	2.88 H	60	56.1	-2.2
5	4924.00	45.9 PK	74.0	-28.1	1.34 H	175	43.9	2.0
6	4924.00	33.6 AV	54.0	-20.4	1.34 H	175	31.6	2.0
7	7386.00	52.4 PK	74.0	-21.6	2.11 H	113	43.8	8.6
8	7386.00	40.2 AV	54.0	-13.8	2.11 H	113	31.6	8.6
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	*2462.00	109.0 PK			1.84 V	171	111.2	-2.2
2	*2462.00	99.1 AV			1.84 V	171	101.3	-2.2
3	2483.50	70.8 PK	74.0	-3.2	1.84 V	171	73.0	-2.2
4	2483.50	51.4 AV	54.0	-2.6	1.84 V	171	53.6	-2.2
5	4924.00	47.4 PK	74.0	-26.6	1.01 V	345	45.4	2.0
6	4924.00	35.1 AV	54.0	-18.9	1.01 V	345	33.1	2.0
7	7386.00	51.0 PK	74.0	-23.0	1.03 V	360	42.4	8.6
8	7386.00	38.8 AV	54.0	-15.2	1.03 V	360	30.2	8.6

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.

802.11n (HT20)

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

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	70.8 PK	74.0	-3.2	2.67 H	60	72.8	-2.0
2	2390.00	53.9 AV	54.0	-0.1	2.67 H	60	55.9	-2.0
3	*2412.00	112.6 PK			2.67 H	60	114.7	-2.1
4	*2412.00	102.0 AV			2.67 H	60	104.1	-2.1
5	4824.00	45.7 PK	74.0	-28.3	1.36 H	171	43.7	2.0
6	4824.00	33.6 AV	54.0	-20.4	1.36 H	171	31.6	2.0
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	68.5 PK	74.0	-5.5	1.80 V	191	70.5	-2.0
2	2390.00	51.8 AV	54.0	-2.2	1.80 V	191	53.8	-2.0
3	*2412.00	110.4 PK			1.80 V	191	112.5	-2.1
4	*2412.00	99.8 AV			1.80 V	191	101.9	-2.1
5	4824.00	46.8 PK	74.0	-27.2	1.04 V	344	44.8	2.0
6	4824.00	34.7 AV	54.0	-19.3	1.04 V	344	32.7	2.0

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)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	56.4 PK	74.0	-17.6	2.61 H	60	58.4	-2.0
2	2390.00	43.9 AV	54.0	-10.1	2.61 H	60	45.9	-2.0
3	*2437.00	114.7 PK			2.61 H	60	116.9	-2.2
4	*2437.00	105.0 AV			2.61 H	60	107.2	-2.2
5	2483.50	57.3 PK	74.0	-16.7	2.61 H	60	59.5	-2.2
6	2483.50	44.5 AV	54.0	-9.5	2.61 H	60	46.7	-2.2
7	4874.00	48.2 PK	74.0	-25.8	1.33 H	165	46.2	2.0
8	4874.00	35.8 AV	54.0	-18.2	1.33 H	165	33.8	2.0
9	7311.00	54.4 PK	74.0	-19.6	2.19 H	109	45.9	8.5
10	7311.00	42.0 AV	54.0	-12.0	2.19 H	109	33.5	8.5

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	54.2 PK	74.0	-19.8	1.83 V	183	56.2	-2.0
2	2390.00	41.8 AV	54.0	-12.2	1.83 V	183	43.8	-2.0
3	*2437.00	112.5 PK			1.83 V	183	114.7	-2.2
4	*2437.00	102.7 AV			1.83 V	183	104.9	-2.2
5	2483.50	55.5 PK	74.0	-18.5	1.83 V	183	57.7	-2.2
6	2483.50	42.6 AV	54.0	-11.4	1.83 V	183	44.8	-2.2
7	4874.00	49.5 PK	74.0	-24.5	1.00 V	342	47.5	2.0
8	4874.00	37.3 AV	54.0	-16.7	1.00 V	342	35.3	2.0
9	7311.00	53.2 PK	74.0	-20.8	1.05 V	356	44.7	8.5
10	7311.00	41.3 AV	54.0	-12.7	1.05 V	356	32.8	8.5

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

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	111.2 PK			2.89 H	56	113.4	-2.2
2	*2462.00	101.2 AV			2.89 H	56	103.4	-2.2
3	2483.50	72.8 PK	74.0	-1.2	2.89 H	56	75.0	-2.2
4	2483.50	53.8 AV	54.0	-0.2	2.89 H	56	56.0	-2.2
5	4924.00	46.4 PK	74.0	-27.6	1.37 H	169	44.4	2.0
6	4924.00	34.1 AV	54.0	-19.9	1.37 H	169	32.1	2.0
7	7386.00	52.7 PK	74.0	-21.3	2.13 H	116	44.1	8.6
8	7386.00	40.6 AV	54.0	-13.4	2.13 H	116	32.0	8.6
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	*2462.00	109.0 PK			1.77 V	171	111.2	-2.2
2	*2462.00	99.0 AV			1.77 V	171	101.2	-2.2
3	2483.50	70.6 PK	74.0	-3.4	1.77 V	171	72.8	-2.2
4	2483.50	51.7 AV	54.0	-2.3	1.77 V	171	53.9	-2.2
5	4924.00	47.2 PK	74.0	-26.8	1.00 V	331	45.2	2.0
6	4924.00	34.9 AV	54.0	-19.1	1.00 V	331	32.9	2.0
7	7386.00	51.5 PK	74.0	-22.5	1.04 V	360	42.9	8.6
8	7386.00	39.1 AV	54.0	-14.9	1.04 V	360	30.5	8.6

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.

802.11n (HT40)

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

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	67.7 PK	74.0	-6.3	2.67 H	62	69.7	-2.0
2	2390.00	53.8 AV	54.0	-0.2	2.67 H	62	55.8	-2.0
3	*2422.00	106.7 PK			2.67 H	62	108.8	-2.1
4	*2422.00	96.6 AV			2.67 H	62	98.7	-2.1
5	4844.00	45.0 PK	74.0	-29.0	1.34 H	182	43.1	1.9
6	4844.00	32.8 AV	54.0	-21.2	1.34 H	182	30.9	1.9
7	7266.00	51.6 PK	74.0	-22.4	2.16 H	102	43.1	8.5
8	7266.00	39.5 AV	54.0	-14.5	2.16 H	102	31.0	8.5
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	65.6 PK	74.0	-8.4	1.76 V	178	67.6	-2.0
2	2390.00	51.4 AV	54.0	-2.6	1.76 V	178	53.4	-2.0
3	*2422.00	104.5 PK			1.76 V	178	106.6	-2.1
4	*2422.00	94.5 AV			1.76 V	178	96.6	-2.1
5	4844.00	46.9 PK	74.0	-27.1	1.06 V	355	45.0	1.9
6	4844.00	34.4 AV	54.0	-19.6	1.06 V	355	32.5	1.9
7	7266.00	50.0 PK	74.0	-24.0	1.07 V	349	41.5	8.5
8	7266.00	37.8 AV	54.0	-16.2	1.07 V	349	29.3	8.5

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)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	62.7 PK	74.0	-11.3	2.60 H	60	64.7	-2.0
2	2390.00	49.4 AV	54.0	-4.6	2.60 H	60	51.4	-2.0
3	*2437.00	109.4 PK			2.60 H	60	111.6	-2.2
4	*2437.00	99.0 AV			2.60 H	60	101.2	-2.2
5	2483.50	69.8 PK	74.0	-4.2	2.60 H	60	72.0	-2.2
6	2483.50	53.5 AV	54.0	-0.5	2.60 H	60	55.7	-2.2
7	4874.00	46.0 PK	74.0	-28.0	1.37 H	183	44.0	2.0
8	4874.00	33.9 AV	54.0	-20.1	1.37 H	183	31.9	2.0
9	7311.00	52.9 PK	74.0	-21.1	2.11 H	108	44.4	8.5
10	7311.00	40.6 AV	54.0	-13.4	2.11 H	108	32.1	8.5

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	60.9 PK	74.0	-13.1	1.84 V	200	62.9	-2.0
2	2390.00	47.6 AV	54.0	-6.4	1.84 V	200	49.6	-2.0
3	*2437.00	107.0 PK			1.84 V	200	109.2	-2.2
4	*2437.00	96.7 AV			1.84 V	200	98.9	-2.2
5	2483.50	67.6 PK	74.0	-6.4	1.84 V	200	69.8	-2.2
6	2483.50	51.2 AV	54.0	-2.8	1.84 V	200	53.4	-2.2
7	4874.00	47.6 PK	74.0	-26.4	1.02 V	349	45.6	2.0
8	4874.00	35.4 AV	54.0	-18.6	1.02 V	349	33.4	2.0
9	7311.00	51.3 PK	74.0	-22.7	1.06 V	346	42.8	8.5
10	7311.00	38.9 AV	54.0	-15.1	1.06 V	346	30.4	8.5

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

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	*2452.00	105.8 PK			2.64 H	56	108.0	-2.2
2	*2452.00	95.7 AV			2.64 H	56	97.9	-2.2
3	2483.50	69.4 PK	74.0	-4.6	2.64 H	56	71.6	-2.2
4	2483.50	53.7 AV	54.0	-0.3	2.64 H	56	55.9	-2.2
5	4904.00	44.9 PK	74.0	-29.1	1.33 H	195	42.9	2.0
6	4904.00	33.0 AV	54.0	-21.0	1.33 H	195	31.0	2.0
7	7356.00	51.7 PK	74.0	-22.3	2.21 H	118	43.2	8.5
8	7356.00	39.6 AV	54.0	-14.4	2.21 H	118	31.1	8.5
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	*2452.00	103.8 PK			1.81 V	172	106.0	-2.2
2	*2452.00	93.7 AV			1.81 V	172	95.9	-2.2
3	2483.50	67.3 PK	74.0	-6.7	1.81 V	172	69.5	-2.2
4	2483.50	51.6 AV	54.0	-2.4	1.81 V	172	53.8	-2.2
5	4904.00	47.4 PK	74.0	-26.6	1.05 V	360	45.4	2.0
6	4904.00	34.8 AV	54.0	-19.2	1.05 V	360	32.8	2.0
7	7356.00	50.0 PK	74.0	-24.0	1.06 V	352	41.5	8.5
8	7356.00	37.9 AV	54.0	-16.1	1.06 V	352	29.4	8.5

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.

Below 1GHz Data:

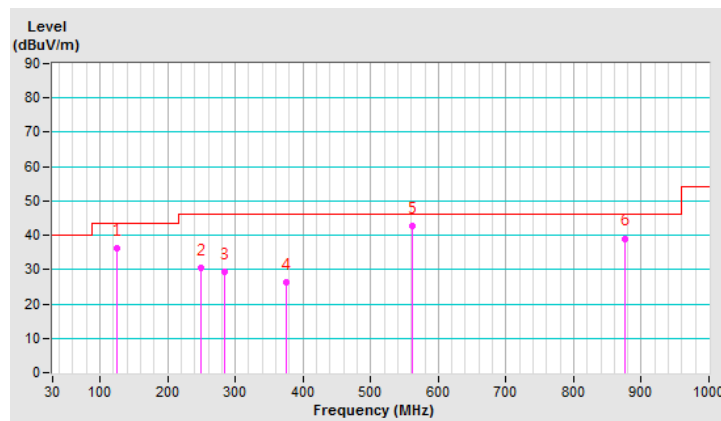
802.11g

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	125.01	36.2 QP	43.5	-7.3	1.50 H	80	45.6	-9.4
2	250.02	30.6 QP	46.0	-15.4	1.00 H	65	39.3	-8.7
3	283.92	29.4 QP	46.0	-16.6	1.00 H	24	36.9	-7.5
4	375.03	26.2 QP	46.0	-19.8	1.00 H	35	31.2	-5.0
5	562.51	42.6 QP	46.0	-3.4	1.50 H	31	43.4	-0.8
6	874.99	39.1 QP	46.0	-6.9	1.50 H	360	33.8	5.3

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. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

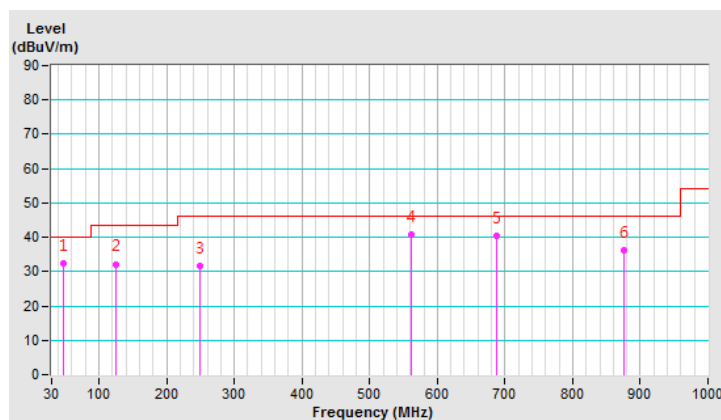


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	47.29	32.5 QP	40.0	-7.5	1.00 V	35	40.7	-8.2
2	125.01	32.2 QP	43.5	-11.3	1.00 V	2	41.6	-9.4
3	250.00	31.7 QP	46.0	-14.3	1.50 V	2	40.4	-8.7
4	562.51	40.7 QP	46.0	-5.3	1.50 V	0	41.5	-0.8
5	687.49	40.4 QP	46.0	-5.6	1.00 V	360	38.7	1.7
6	875.02	36.3 QP	46.0	-9.7	1.50 V	0	31.0	5.3

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. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



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.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 24, 2018	Oct. 23, 2019
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 22, 2018	Oct. 21, 2019
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 04, 2018	June 03, 2019
50 ohms Terminator	N/A	3	Oct. 22, 2018	Oct. 21, 2019
RF Cable	5D-FB	COCCAB-001	Sep. 28, 2018	Sep. 27, 2019
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 16, 2018	Mar. 15, 2019
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
3. Tested Date: Jan. 22, 2019

4.2.3 Test Procedures

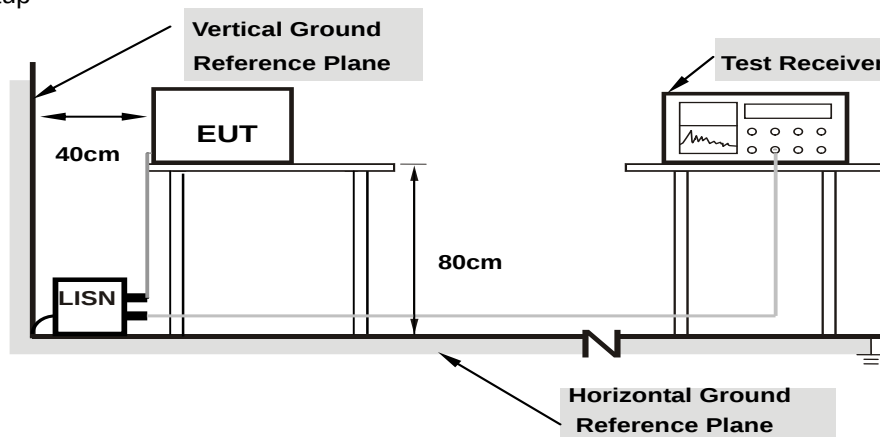
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 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 4.1.6.

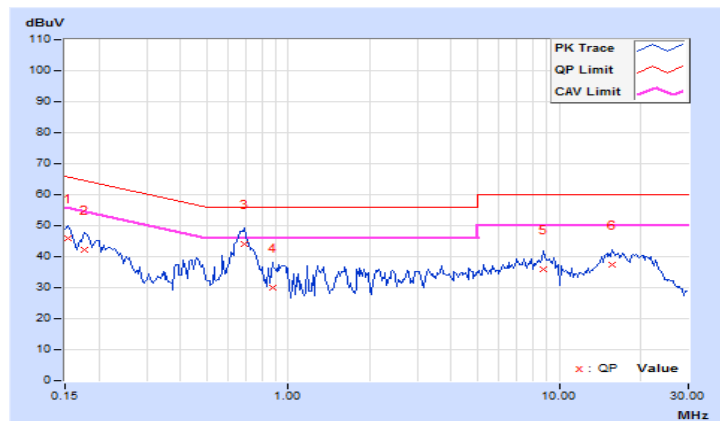
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.03	35.96	24.46	45.99	34.49	65.79	55.79	-19.80	-21.30
2	0.17734	10.04	32.18	21.44	42.22	31.48	64.61	54.61	-22.39	-23.13
3	0.68516	10.10	34.07	26.28	44.17	36.38	56.00	46.00	-11.83	-9.62
4	0.87266	10.12	19.93	11.46	30.05	21.58	56.00	46.00	-25.95	-24.42
5	8.75781	10.62	25.30	17.46	35.92	28.08	60.00	50.00	-24.08	-21.92
6	15.71484	11.08	26.50	19.17	37.58	30.25	60.00	50.00	-22.42	-19.75

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.

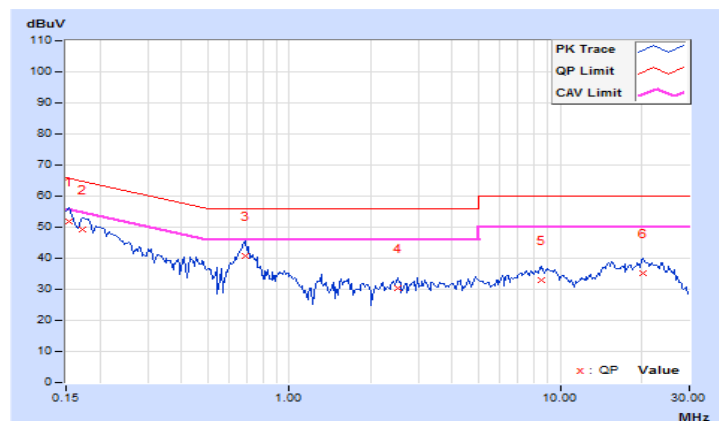


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.94	41.97	28.36	51.91	38.30	65.79	55.79	-13.88	-17.49
2	0.17344	9.94	39.38	26.33	49.32	36.27	64.79	54.79	-15.47	-18.52
3	0.68906	9.99	30.85	23.74	40.84	33.73	56.00	46.00	-15.16	-12.27
4	2.51172	10.10	20.29	11.86	30.39	21.96	56.00	46.00	-25.61	-24.04
5	8.50391	10.44	22.55	15.02	32.99	25.46	60.00	50.00	-27.01	-24.54
6	20.34766	11.15	23.94	16.62	35.09	27.77	60.00	50.00	-24.91	-22.23

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.

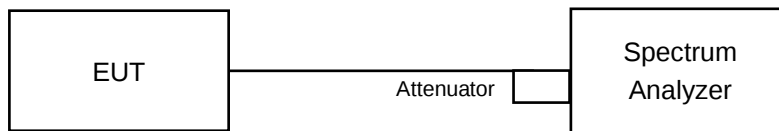


4.3 6dB Bandwidth Measurement

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

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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 from Test 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		
1	2412	7.12	7.11	0.5	Pass
6	2437	7.08	7.10	0.5	Pass
11	2462	7.10	7.12	0.5	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.10	15.06	0.5	Pass
6	2437	15.12	15.12	0.5	Pass
11	2462	13.48	15.12	0.5	Pass

802.11n (HT20)

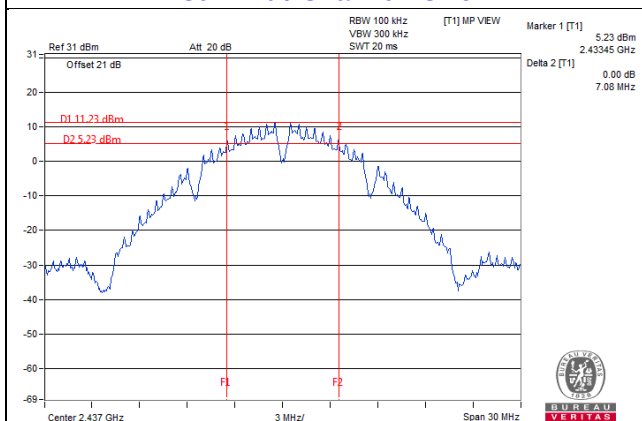
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.14	15.11	0.5	Pass
6	2437	15.12	15.16	0.5	Pass
11	2462	15.10	15.15	0.5	Pass

802.11n (HT40)

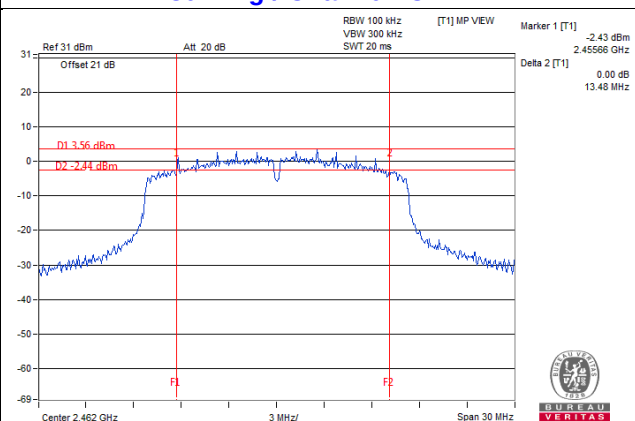
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	32.53	30.14	0.5	Pass
6	2437	28.84	30.05	0.5	Pass
9	2452	31.30	31.36	0.5	Pass

Spectrum Plot of Worst Value

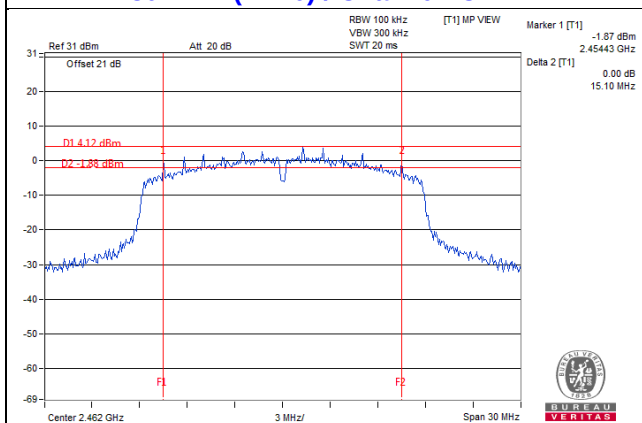
802.11b / Chain 0 : CH6



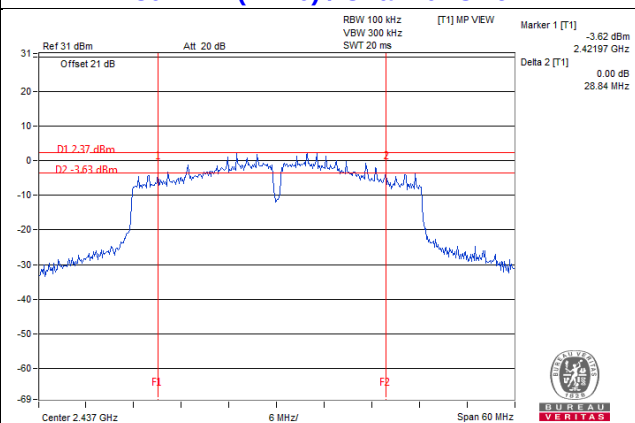
802.11g / Chain 0 : CH11



802.11n (HT20) / Chain 0 : CH11



802.11n (HT40) / Chain 0 : CH6



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,

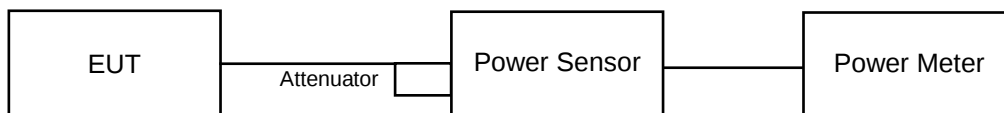
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

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

FOR PEAK POWER

802.11b

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.52	22.15	305.965	24.86	30	Pass
6	2437	21.19	21.83	283.927	24.53	30	Pass
11	2462	20.97	21.19	256.548	24.09	30	Pass

802.11g

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	22.11	22.25	330.435	25.19	30	Pass
6	2437	23.18	23.76	445.654	26.49	30	Pass
11	2462	20.65	21.06	243.789	23.87	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.61	22.51	323.115	25.09	30	Pass
6	2437	23.13	23.46	427.409	26.31	30	Pass
11	2462	20.53	20.90	236.007	23.73	30	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	19.32	20.08	187.366	22.73	30	Pass
6	2437	21.08	21.46	268.192	24.28	30	Pass
9	2452	18.38	18.80	144.723	21.61	30	Pass

FOR AVERAGE POWER

802.11b

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	18.89	19.42	164.944	22.17
6	2437	18.57	19.16	154.359	21.89
11	2462	18.34	18.62	141.012	21.49

802.11g

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	15.55	15.86	74.44	18.72
6	2437	18.31	18.79	143.447	21.57
11	2462	14.24	14.51	54.795	17.39

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	15.28	15.58	69.87	18.44
6	2437	18.41	18.77	144.679	21.60
11	2462	13.78	14.29	50.731	17.05

802.11n (HT40)

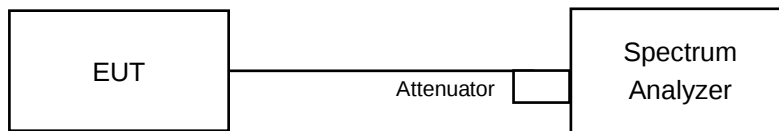
Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	12.54	12.92	37.535	15.74
6	2437	14.89	15.42	65.666	18.17
9	2452	11.47	11.86	29.374	14.68

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm in any 3 kHz.

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

- a. Set analyzer center frequency to DTS channel center frequency.
- b. Set the span to 1.5 times the DTS bandwidth.
- c. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- d. Set the VBW $\geq 3 \times \text{RBW}$.
- e. Detector = peak.
- f. Sweep time = auto couple.
- g. Trace mode = max hold.
- h. Allow trace to fully stabilize.
- i. Use the peak marker function to determine the maximum amplitude level within the RBW.

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/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-3.88	3.01	-0.87	8.00	Pass
	6	2437	-2.96	3.01	0.05	8.00	Pass
	11	2462	-4.50	3.01	-1.49	8.00	Pass
1	1	2412	-3.55	3.01	-0.54	8.00	Pass
	6	2437	-4.38	3.01	-1.37	8.00	Pass
	11	2462	-4.56	3.01	-1.55	8.00	Pass

Note: 1. Directional gain = 3.52 < 6dBi , so the power density limit shall not be reduced.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-9.44	3.01	-6.43	8.00	Pass
	6	2437	-5.65	3.01	-2.64	8.00	Pass
	11	2462	-9.86	3.01	-6.85	8.00	Pass
1	1	2412	-9.47	3.01	-6.46	8.00	Pass
	6	2437	-5.95	3.01	-2.94	8.00	Pass
	11	2462	-11.51	3.01	-8.50	8.00	Pass

Note: 1. Directional gain = 3.52 < 6dBi , so the power density limit shall not be reduced.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-9.47	3.01	-6.46	8.00	Pass
	6	2437	-5.83	3.01	-2.82	8.00	Pass
	11	2462	-11.04	3.01	-8.03	8.00	Pass
1	1	2412	-9.85	3.01	-6.84	8.00	Pass
	6	2437	-6.70	3.01	-3.69	8.00	Pass
	11	2462	-10.48	3.01	-7.47	8.00	Pass

Note: 1. Directional gain = 3.52 < 6dBi , so the power density limit shall not be reduced.

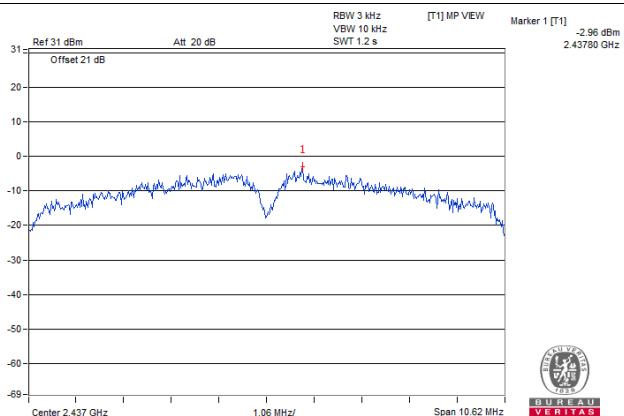
802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-13.79	3.01	-10.78	8.00	Pass
	6	2437	-12.87	3.01	-9.86	8.00	Pass
	11	2462	-14.89	3.01	-11.88	8.00	Pass
1	1	2412	-14.54	3.01	-11.53	8.00	Pass
	6	2437	-12.47	3.01	-9.46	8.00	Pass
	11	2462	-15.28	3.01	-12.27	8.00	Pass

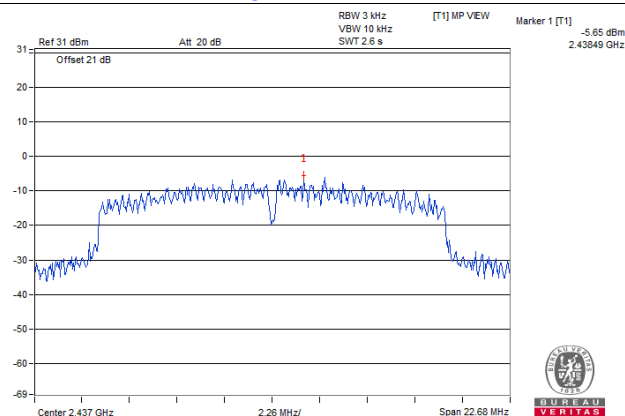
Note: 1. Directional gain = 3.52 < 6dBi , so the power density limit shall not be reduced.

Spectrum Plot of Worst Value

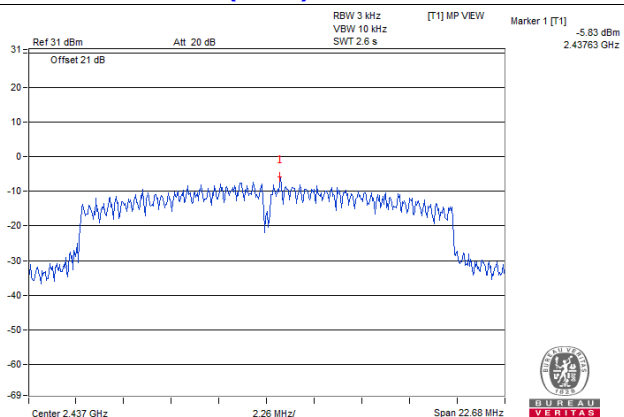
802.11b / Chain 0: CH6



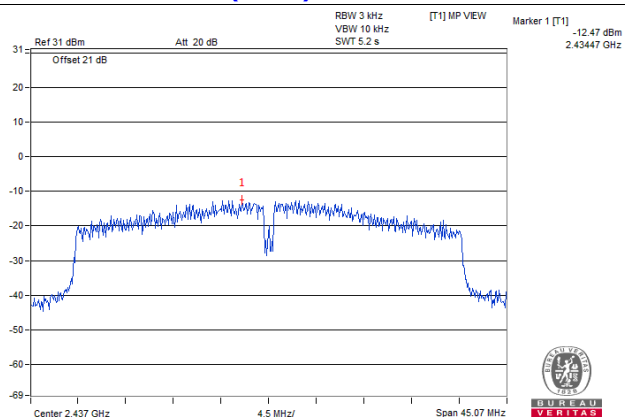
802.11g / Chain 0 : CH6



802.11n (HT20) / Chain 0: CH6



802.11n (HT40) / Chain 1: CH6

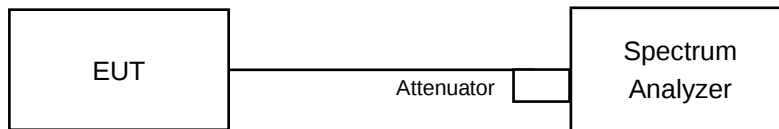


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below -20dB 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 $\geq$ 300 kHz.
3. Detector = peak.
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 OOB

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 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

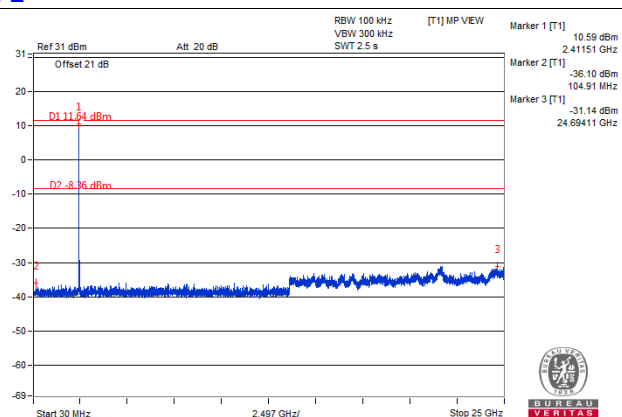
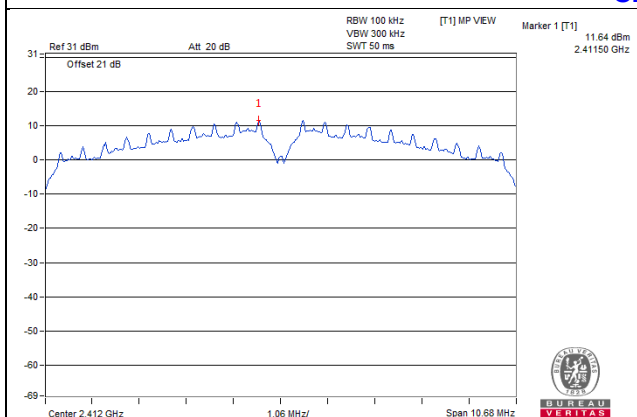
Same as Item 4.3.6

4.6.7 Test Results

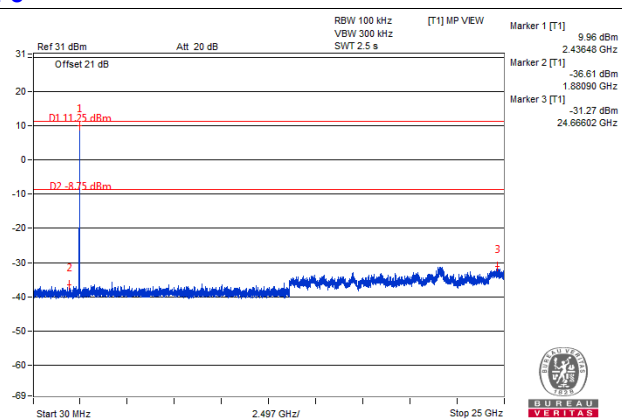
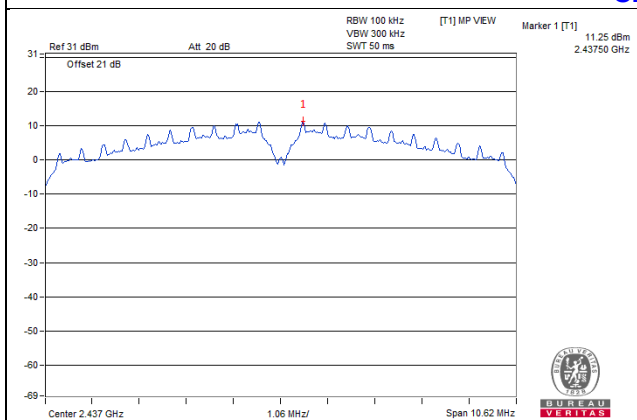
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11b - Chain 0

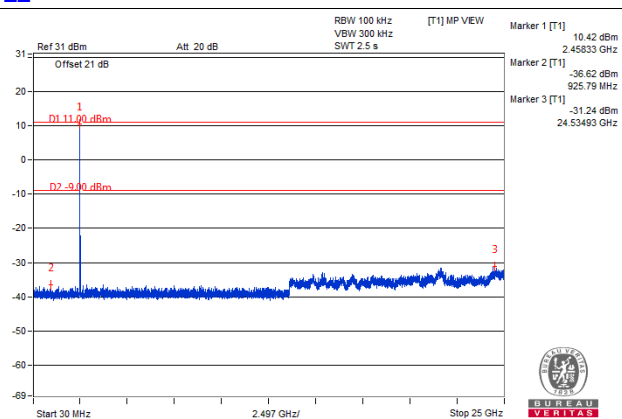
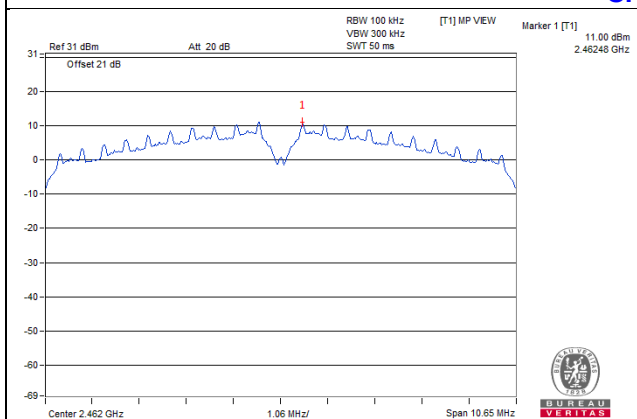
CH 1



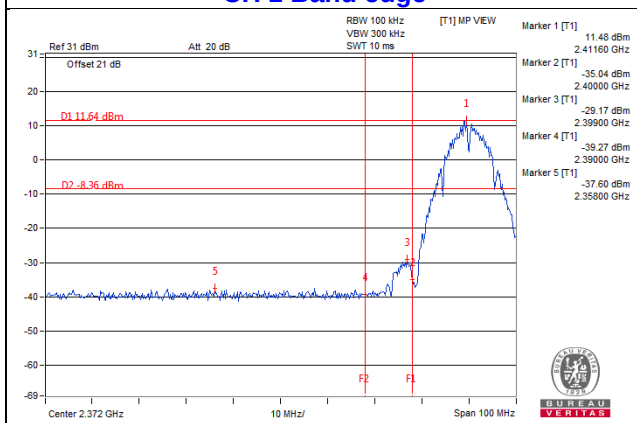
CH 6



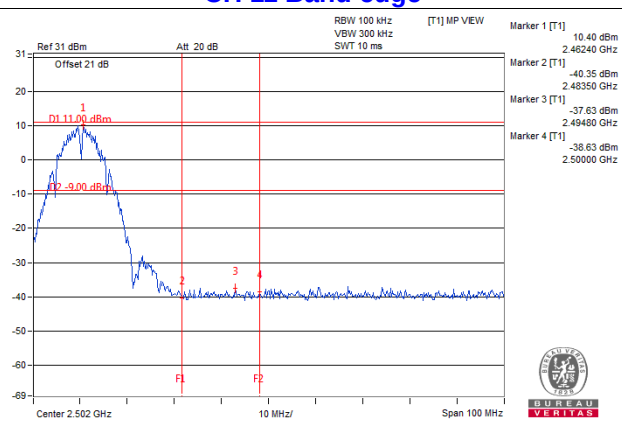
CH 11



CH 1 Band edge

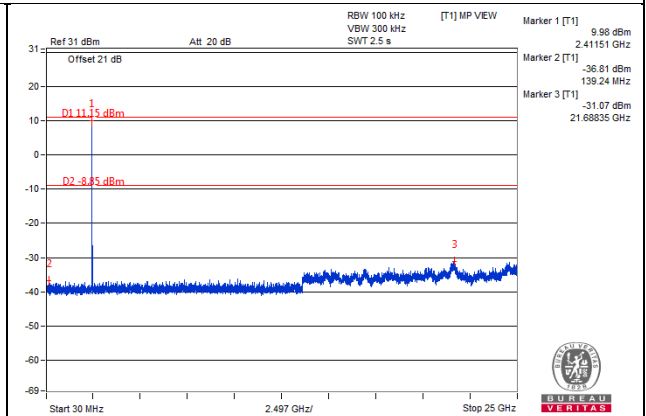
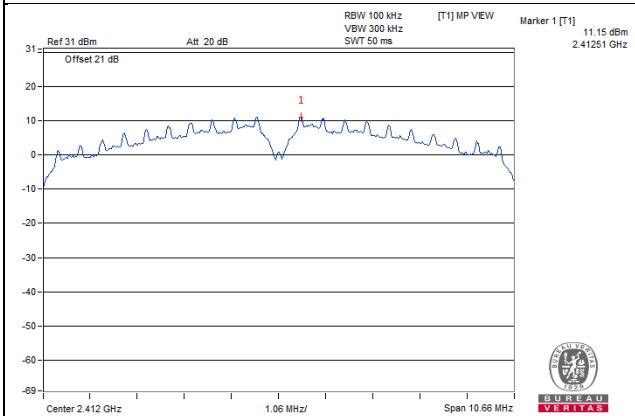


CH 11 Band edge

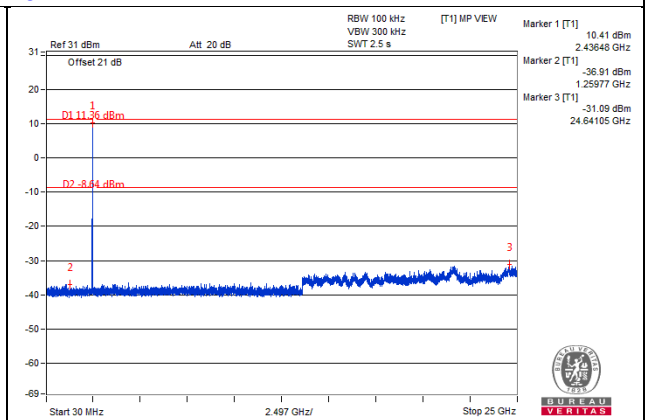
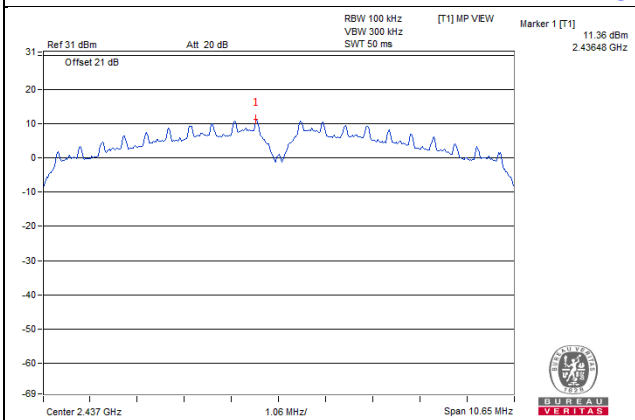


Chain 1

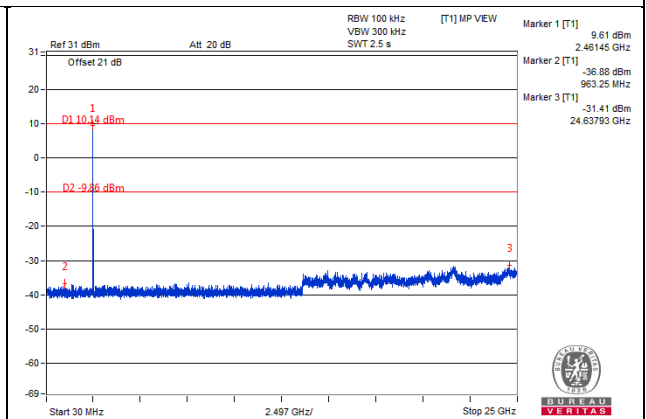
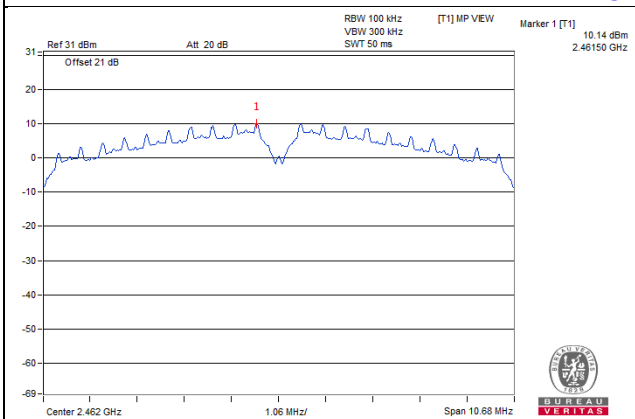
CH 1



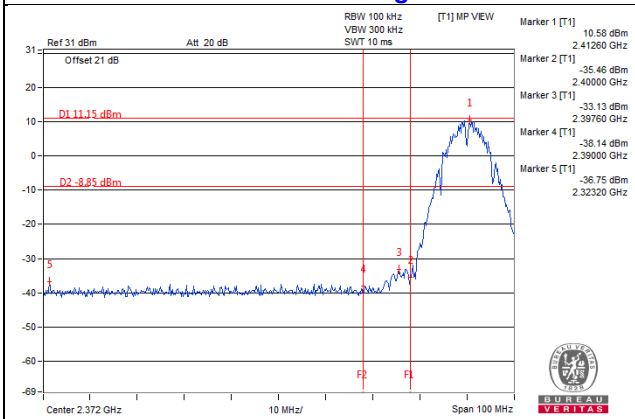
CH 6



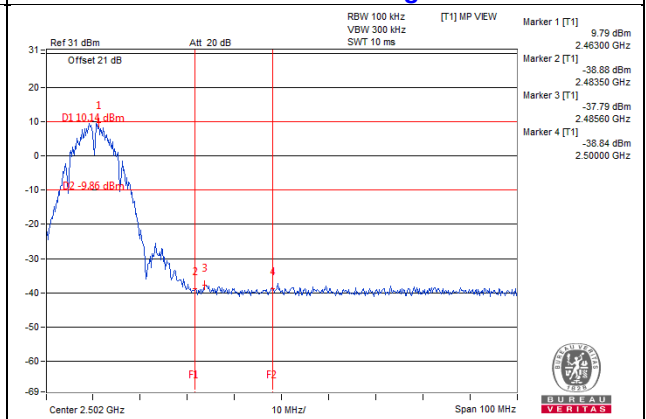
CH 11



CH 1 Band edge

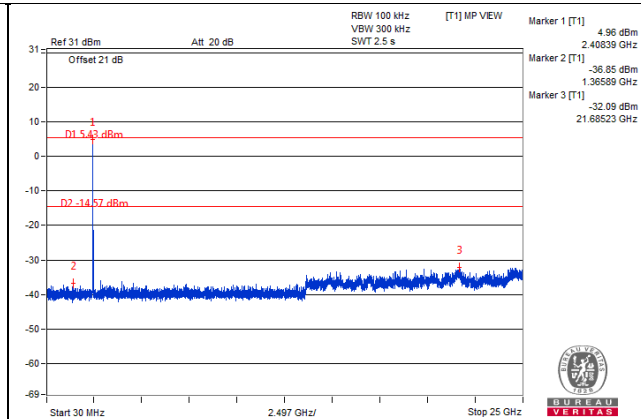
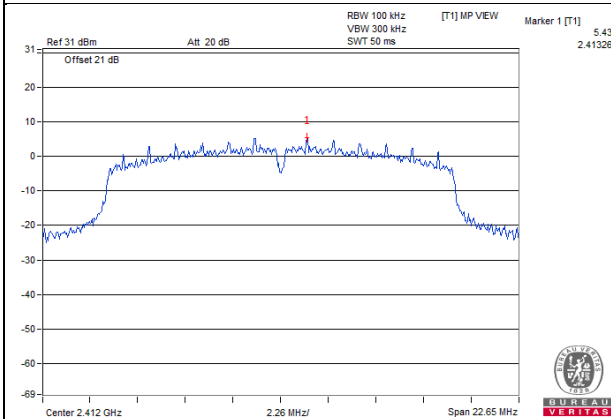


CH 11 Band edge

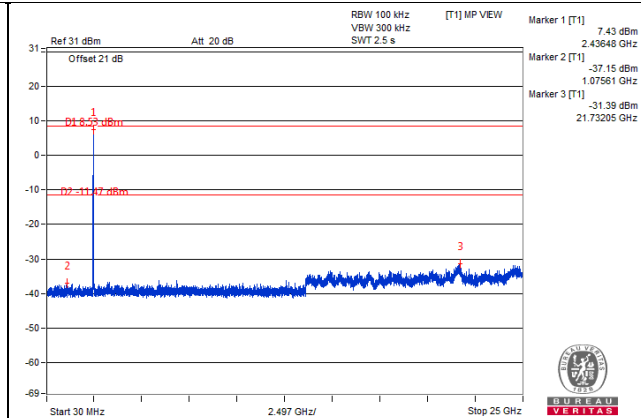
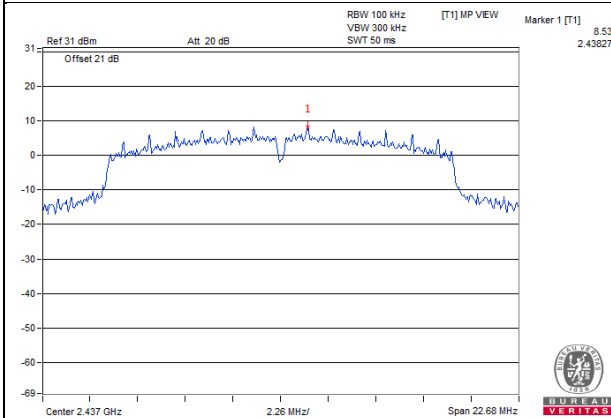


802.11g - Chain 0

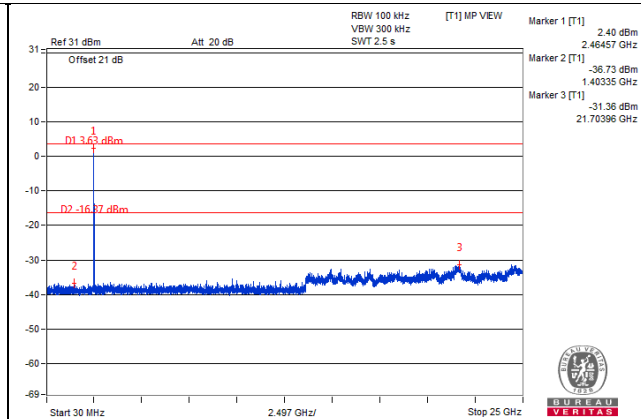
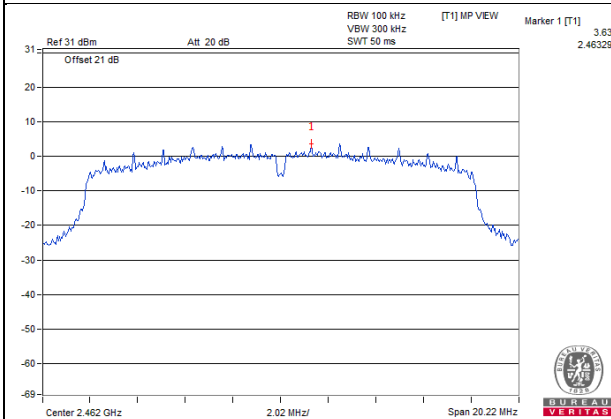
CH 1



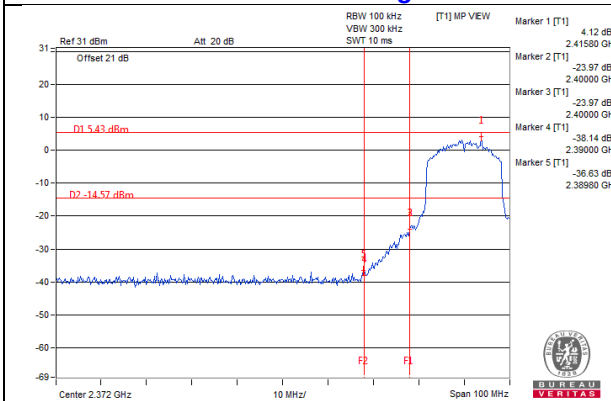
CH 6



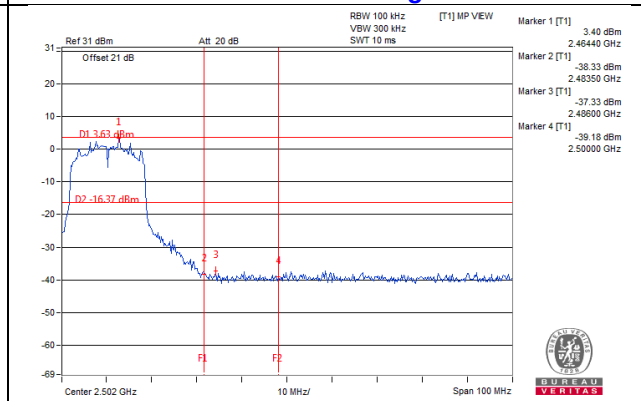
CH 11



CH 1 Band edge

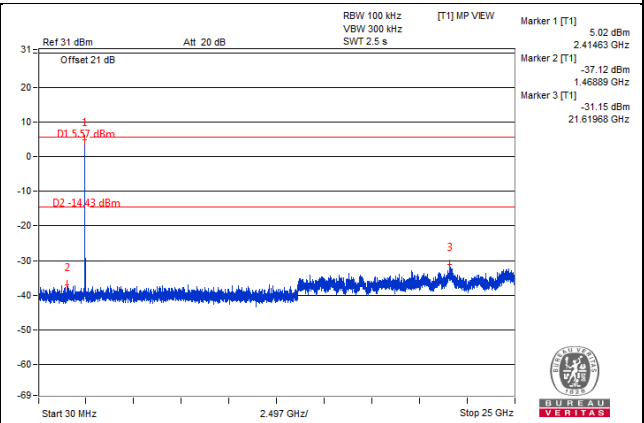
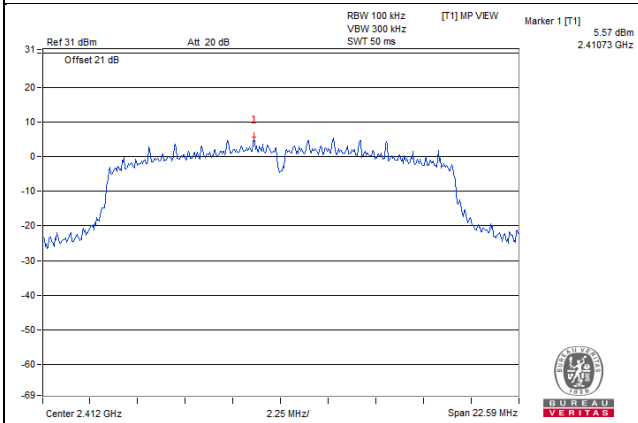


CH 11 Band edge

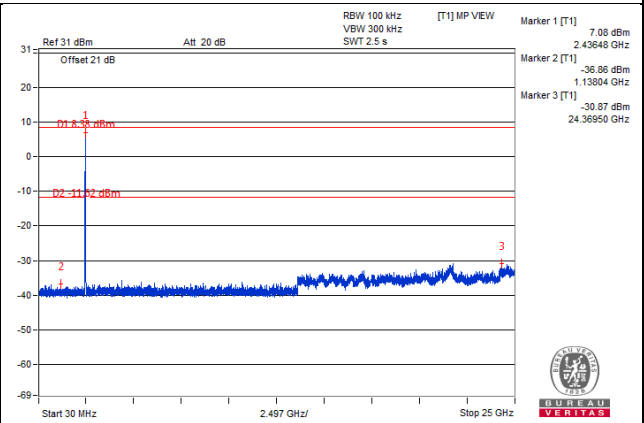
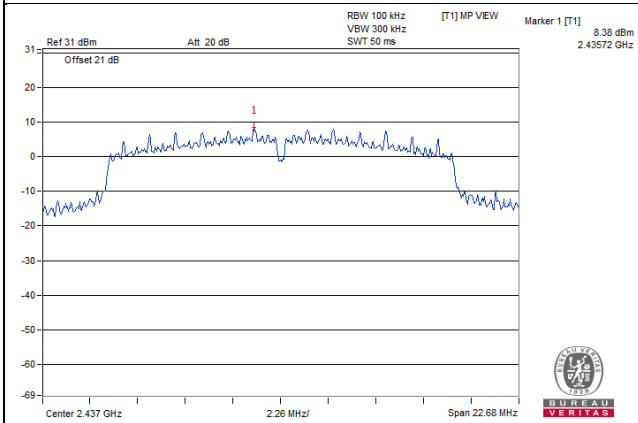


Chain 1

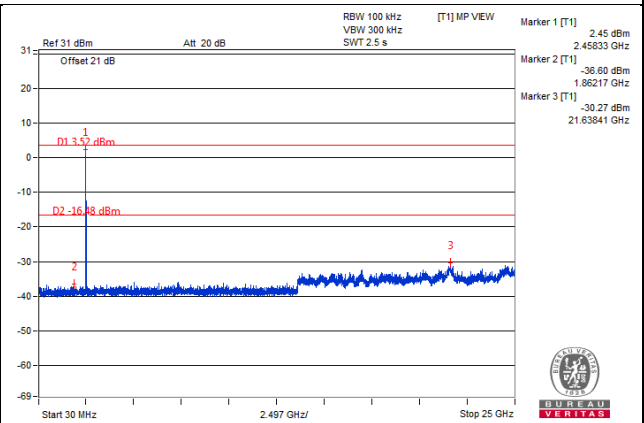
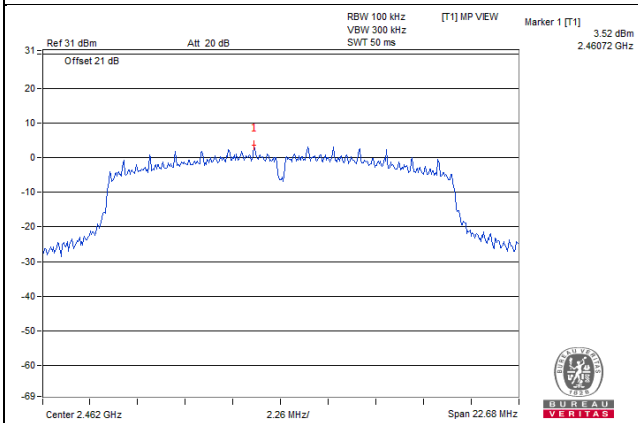
CH 1



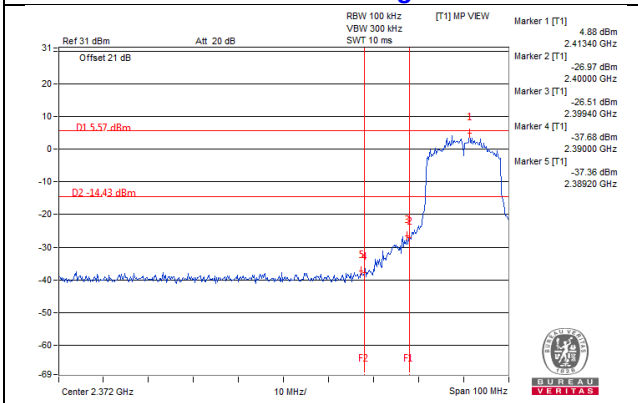
CH 6



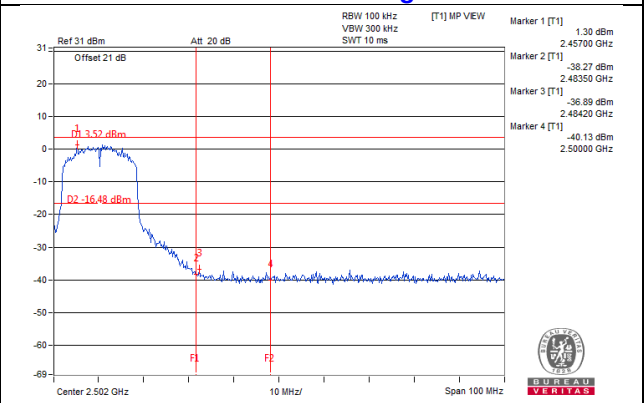
CH 11



CH 1 Band edge

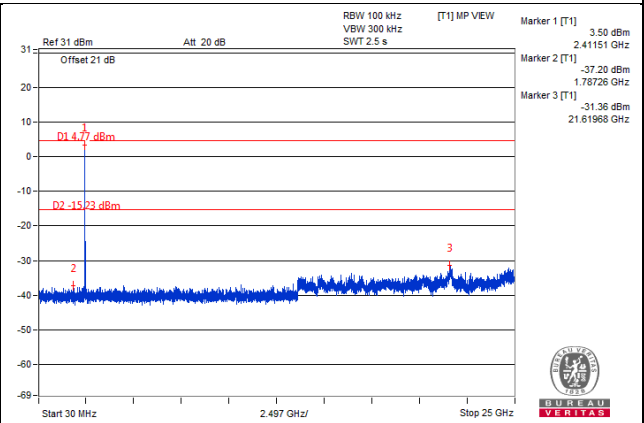
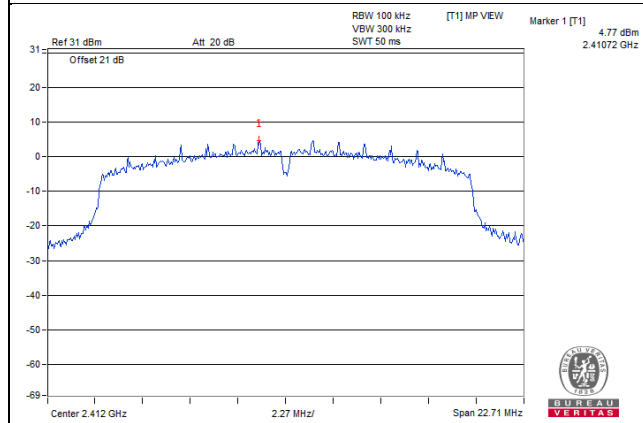


CH 11 Band edge

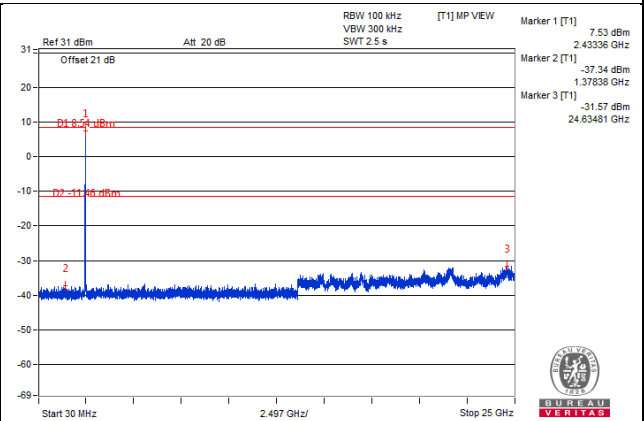
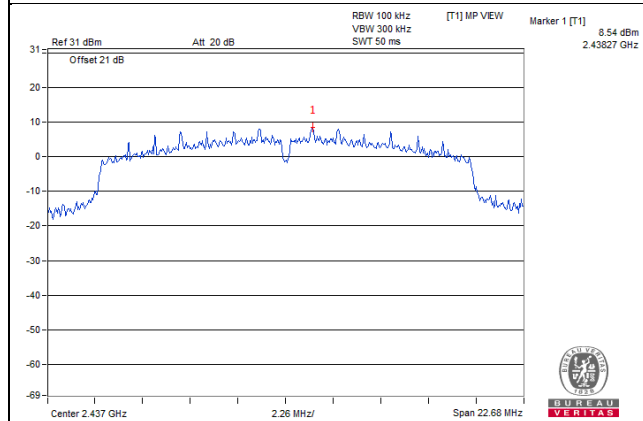


802.11n (HT20) - Chain 0

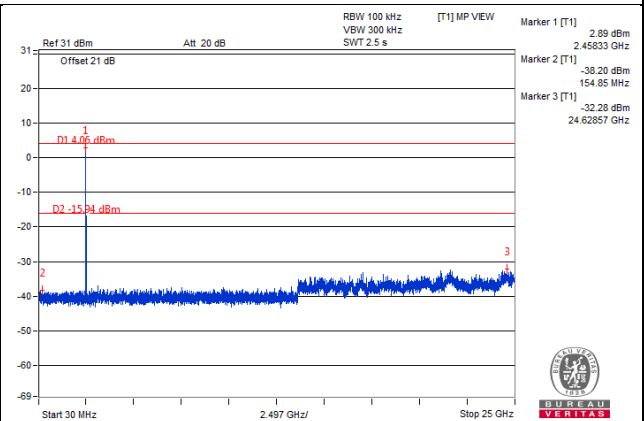
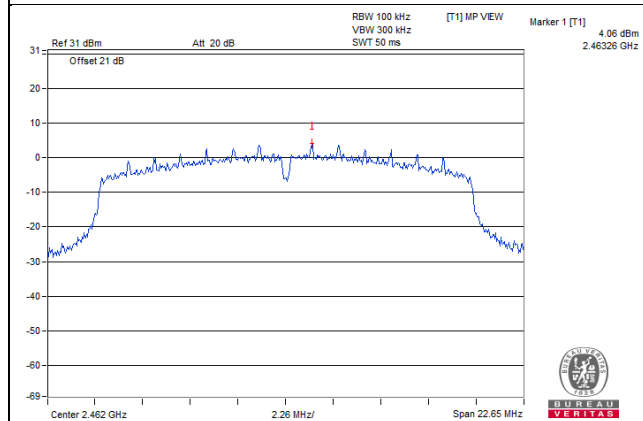
CH 1



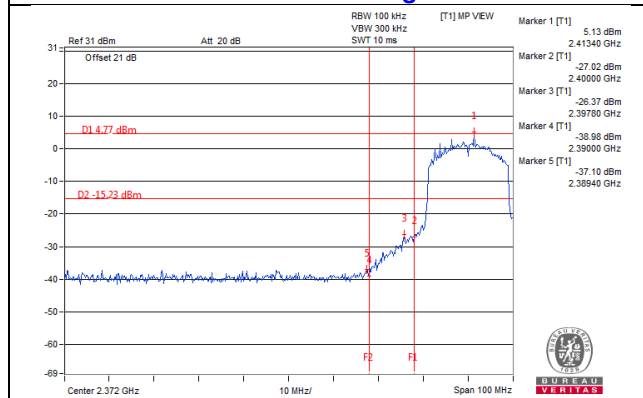
CH 6



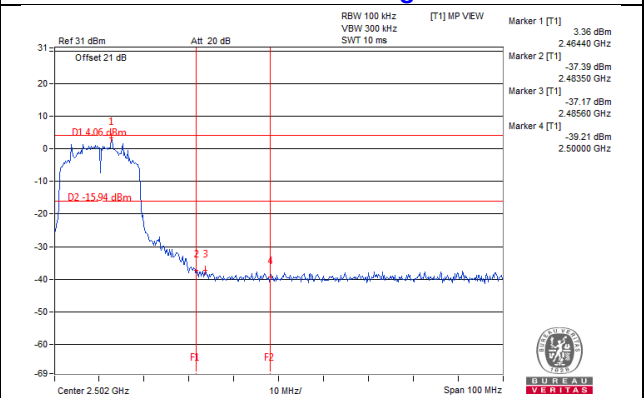
CH 11



CH 1 Band edge

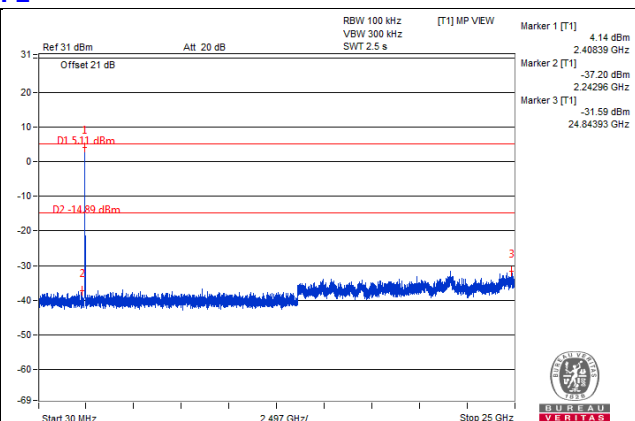
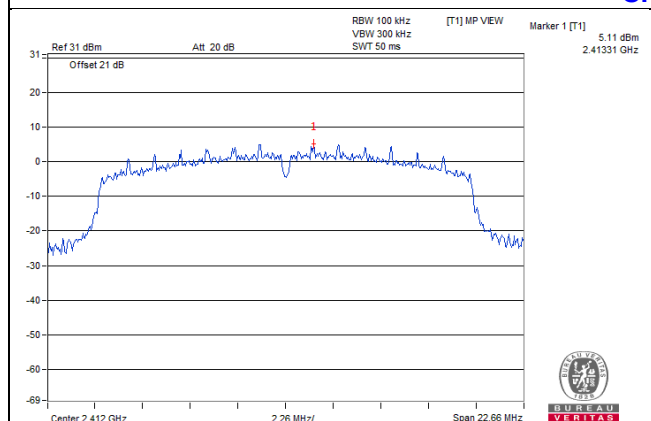


CH 11 Band edge

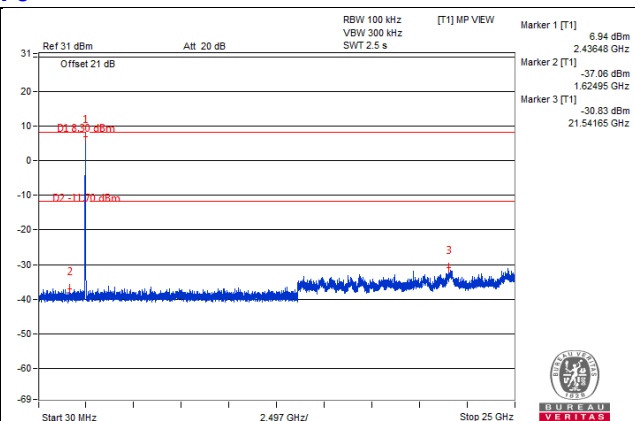
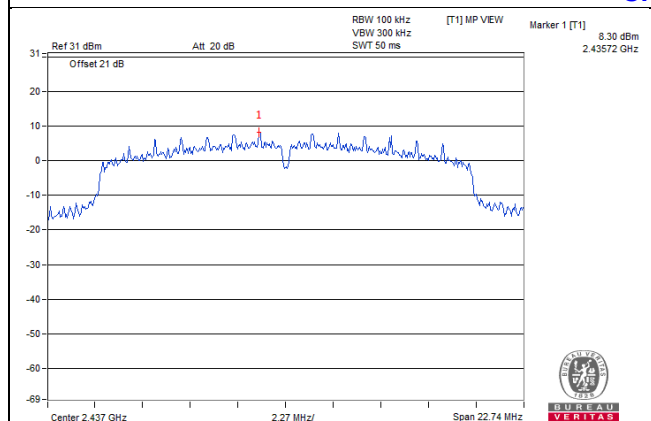


Chain 1

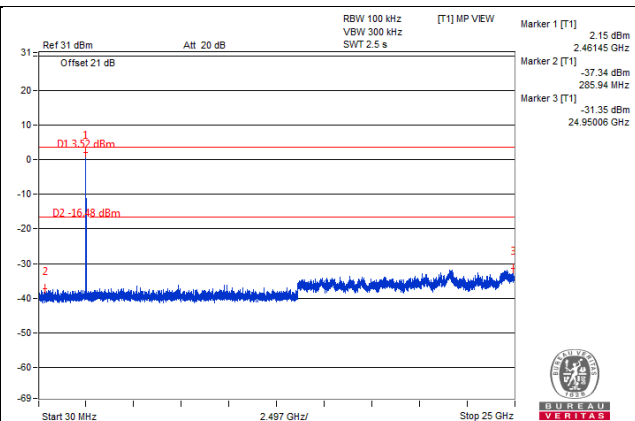
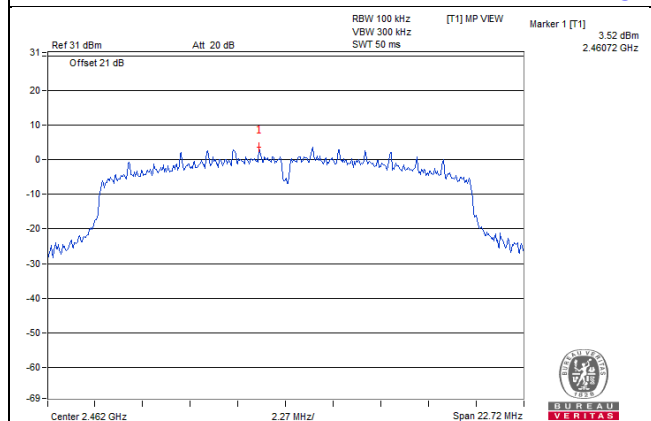
CH 1



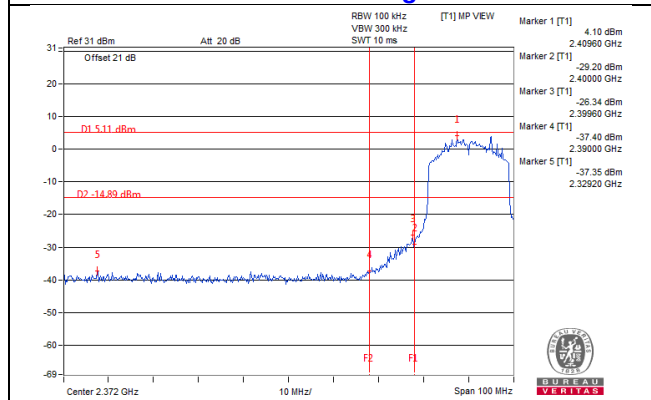
CH 6



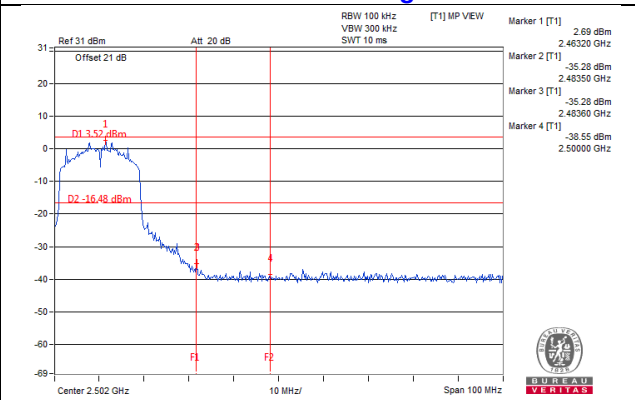
CH 11



CH 1 Band edge

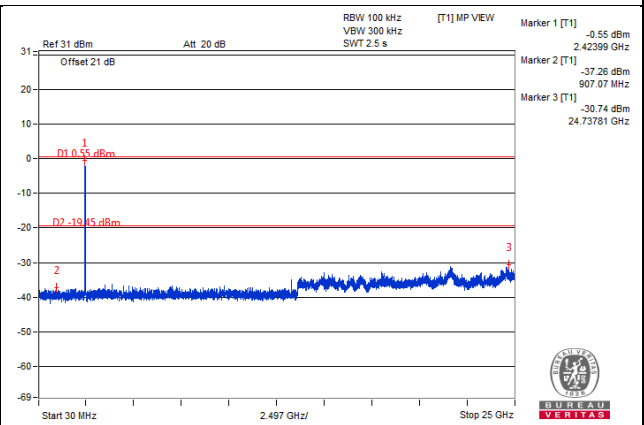
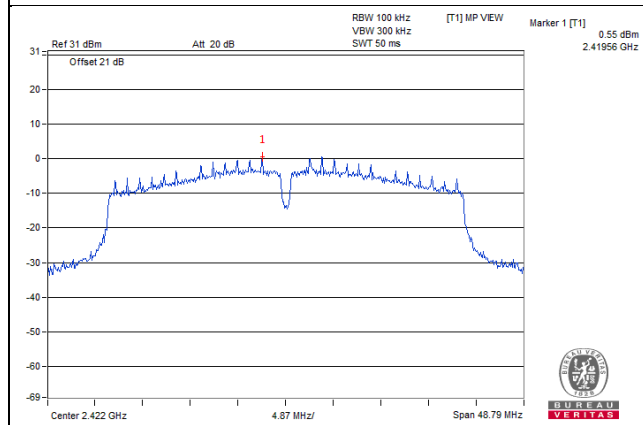


CH 11 Band edge

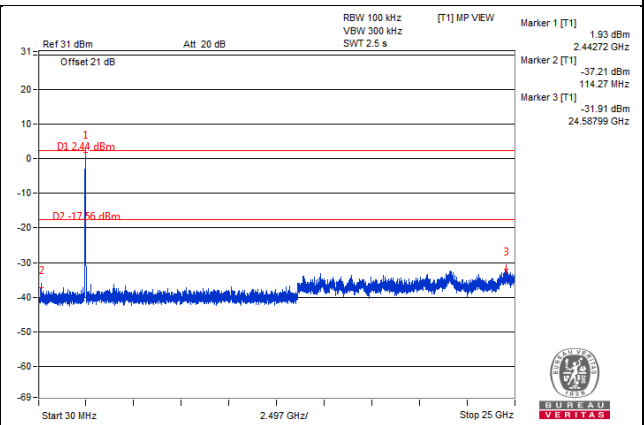
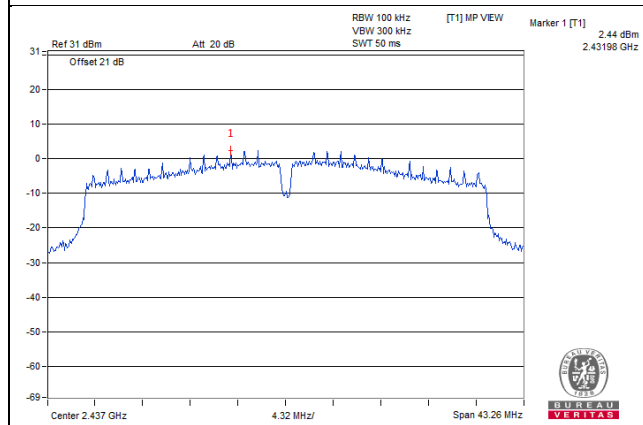


802.11n (HT40) - Chain 0

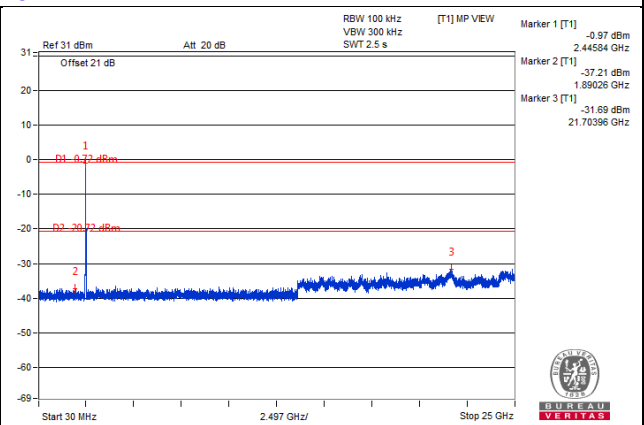
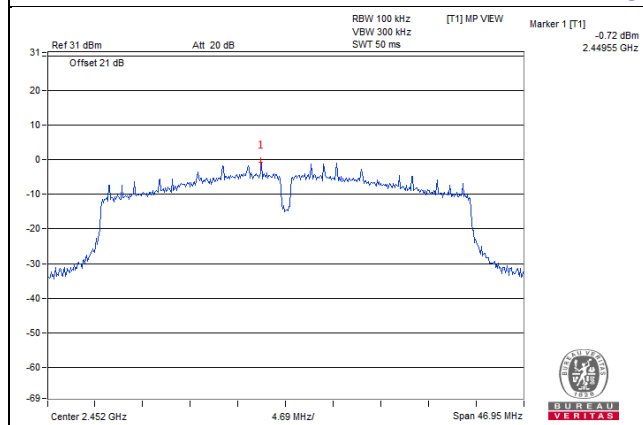
CH 3



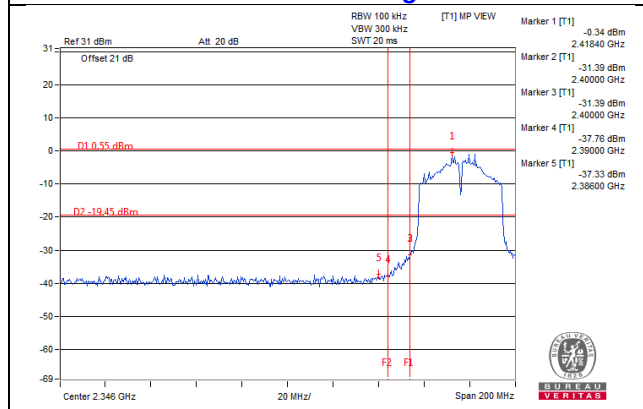
CH 6



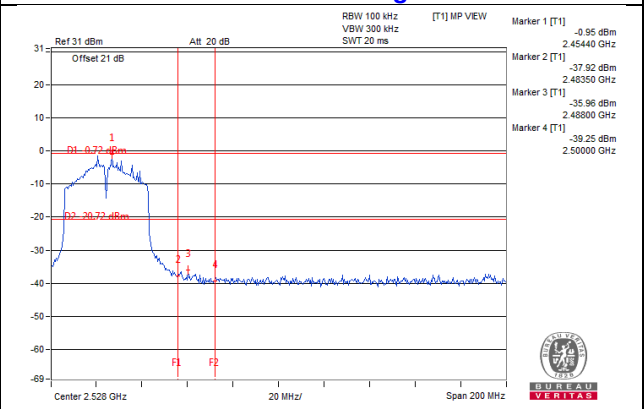
CH 9



CH 3 Band edge

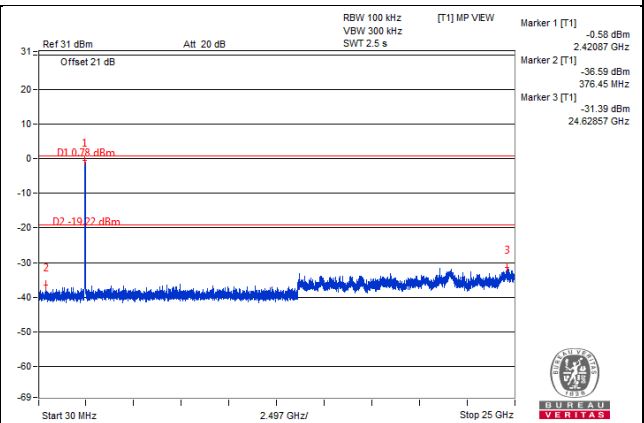
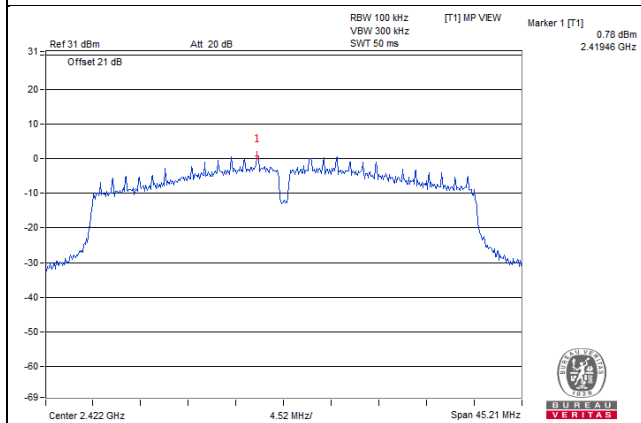


CH 9 Band edge

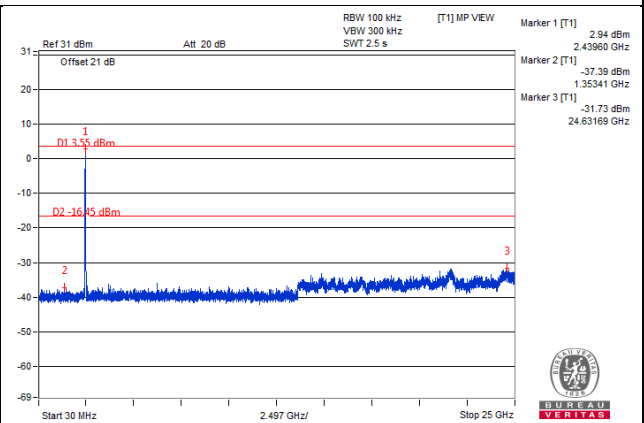
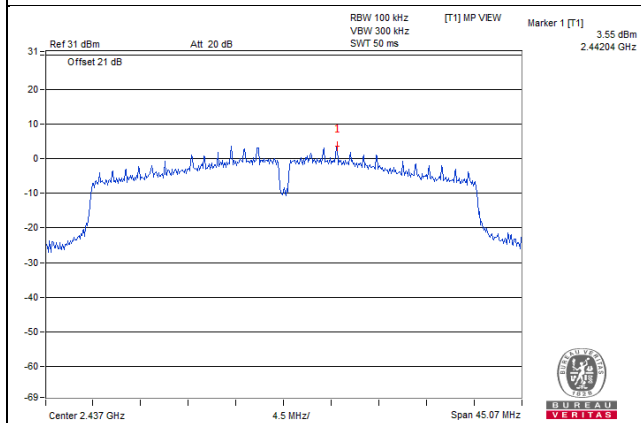


Chain 1

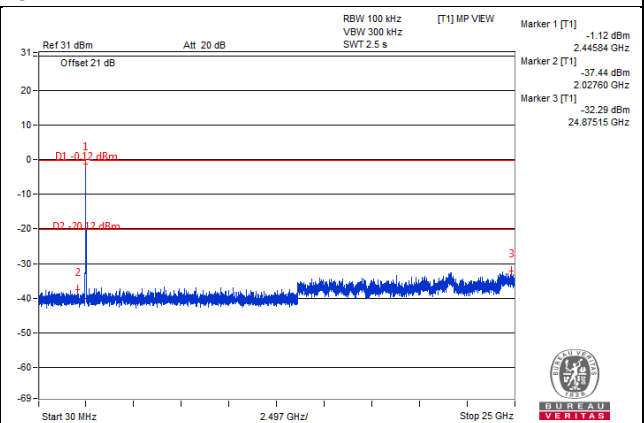
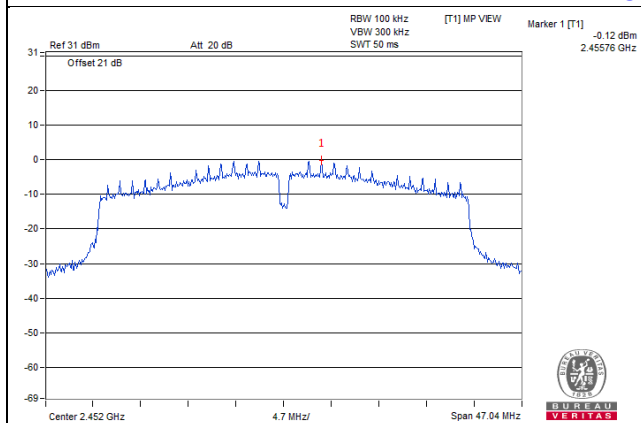
CH 3



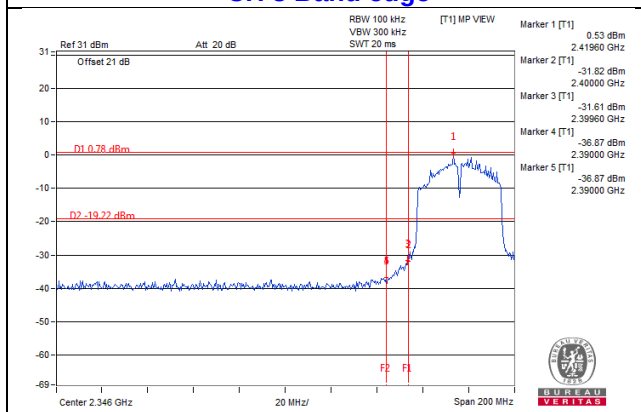
CH 6



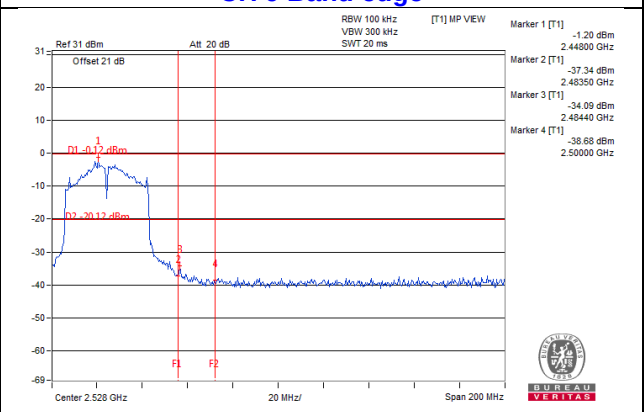
CH 9



CH 3 Band edge



CH 9 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information of 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 according to ISO/IEC 17025.

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

Linkou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

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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