

TEST REPORT

Applicant	TP-Link Technologies Co., Ltd.
Address	Building 24(floors1,3,4,5) and 28(floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China

Manufacturer or Supplier	TP-Link Technologies Co., Ltd.
Address	Building 24(floors1,3,4,5) and 28(floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China
Product	Smart Wi-Fi Power Strip, 6-Outlet
Brand Name	tp-link
Model	HS300
Additional Model & Model Difference	N/A
Date of tests	Mar. 29, 2018 ~ April. 24, 2018

The tests have been carried out according to the requirements of the following standard:

☒ **FCC Part 15, Subpart C, Section 15.247**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Harry Li Project Engineer/ EMC Department	Approved by Glyn He Supervisor / EMC Department
	

Date: April. 24, 2018

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**BUREAU
VERITAS**

Test Report No.: RF180129N023

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF180129N023	Original release	April. 24, 2018



1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted Output power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used

2 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	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.70dB
Radiated emissions	9KHz ~ 30MHz	2.90dB
	30MHz ~ 1GMHz	3.83dB
	1GHz ~ 18GHz	4.93dB
	18GHz ~ 40GHz	4.80dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Smart Wi-Fi Power Strip, 6-Outlet
MODEL NO.	HS300
FCC ID	TE7HS300
NOMINAL VOLTAGE	AC 100-125 50/60Hz
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n(HT20) 2422-2452MHz for 11n(HT40)
OUTPUT POWER	19.32dBm (Maximum Average Power)
ANTENNA TYPE	PIFA antenna; 1.90dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A

NOTE:

1. The EUT incorporates a SISO function. Physically, the EUT provides one transmitter and one receiver.

MODULATION MODE	FUNCTION
802.11b	1TX/1RX
802.11g	1TX/1RX
802.11n (HT20)	1TX/1RX
802.11n (HT40)	1TX/1RX

2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
4. Please refer to the EUT photo document (Reference No.: 180129N023) for detailed product photo.



3.2 DESCRIPTION OF TEST MODES

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

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):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		



3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Please see section 5 photographs of the test configuration for reference.

3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports.

The worst case was found when positioned on X axis for radiated emission. Following test modes were selected for the final test, and the final worst case is marked in boldface and recorded in the report:

EUT CONFIGURE MODE	APPLICABLE TO				MODE
	RE<1G	RE≥1G	PLC	APCM	
A	√	√	√	√	Powered by AC 120V with WIFI function

Where

RE<1G: Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

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	TESTED CONDITION
-	WIFI (2.4G) Link

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, XYZ axis 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)	AXIS
802.11b	1 to 11	1	DSSS	DBPSK	1.0	X



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, XYZ axis 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)	AXIS
802.11b	1 to 11	1, 2, 6, ,10,11	DSSS	DBPSK	1.0	X
802.11g	1 to 11	1, 2, 6, ,10,11	OFDM	BPSK	6.0	X
802.11n HT20	1 to 11	1, 2, 6, ,10,11	OFDM	BPSK	6.5	X
802.11n HT40	3 to 9	3, 4, 6, 8, 9	OFDM	BPSK	13.5	X

BANDEDGE MEASUREMENT:

☒ 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, 11	DSSS	DBPSK	1.0
802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
802.11n HT20	1 to 11	1, 11	OFDM	BPSK	6.5
802.11n HT40	3 to 9	3, 9	OFDM	BPSK	13.5

**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	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
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	TEST VOLTAGE	TESTED BY
RE<1G	25deg. C, 55%RH	AC 120V 60Hz	Tank
RE≥1G	25deg. C, 55%RH	AC 120V 60Hz	Tank
PLC	20deg. C, 56%RH	AC 120V 60Hz	Dragon
APCM	20deg. C, 55%RH	AC 120V 60Hz	Robert Cheng



DUTY CYCLE OF SIGNAL

802.11b: Duty cycle of test signal >98%, duty cycle factor is not required.

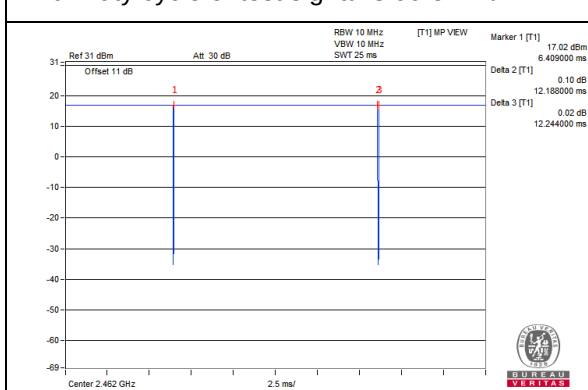
802.11g/n20/n40: Duty cycle of test signal <98%, duty cycle factor was required and add in the conducted power.

802.11g: Duty cycle =97.1648%, Duty factor = $10 \cdot \log(1/0.96838)=0.1249\text{dB}$.

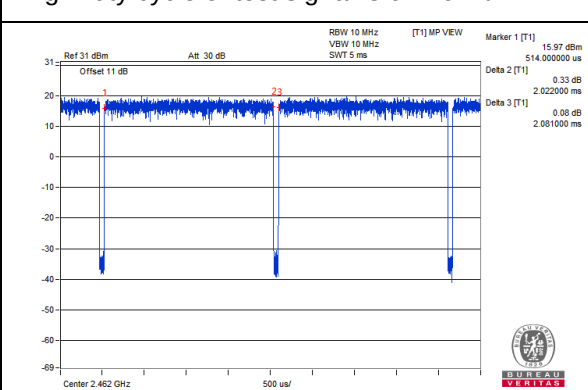
802.11n20: Duty cycle =96.918%, Duty factor = $10 \cdot \log(1/0.96967)=0.1359\text{dB}$.

802.11n40: Duty cycle =94.099%, Duty factor = $10 \cdot \log(1/0.93630)=0.2641\text{dB}$.

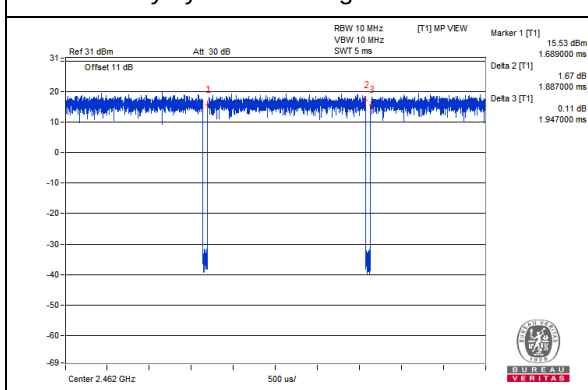
11b: Duty cycle of test signal is 99.542%



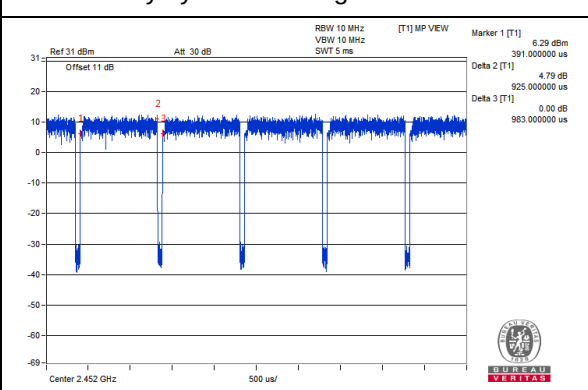
11g: Duty cycle of test signal is 97.164%



11n20: Duty cycle of test signal is 96.918%



11n40: Duty cycle of test signal is 94.099%





POWER SETTING VALUE:

Test mode	Test Frequency (MHz)	Power setting	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
11b	2412	95	CCK	DBPSK	1.0
	2417	95	CCK	DBPSK	1.0
	2437	97	CCK	DBPSK	1.0
	2457	96	CCK	DBPSK	1.0
	2462	96	CCK	DBPSK	1.0
11g	2412	94	OFDM	BPSK	6.0
	2417	99	OFDM	BPSK	6.0
	2437	104	OFDM	BPSK	6.0
	2457	100	OFDM	BPSK	6.0
	2462	96	OFDM	BPSK	6.0
11n HT20	2412	94	OFDM	BPSK	MCS0
	2417	97	OFDM	BPSK	MCS0
	2437	99	OFDM	BPSK	MCS0
	2457	98	OFDM	BPSK	MCS0
	2462	95	OFDM	BPSK	MCS0
11n HT40	2422	93	OFDM	BPSK	MCS0
	2427	96	OFDM	BPSK	MCS0
	2437	97	OFDM	BPSK	MCS0
	2447	95	OFDM	BPSK	MCS0
	2452	91	OFDM	BPSK	MCS0



3.3 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, Section 15.247

558074 D01 DTS Meas Guidance v04

ANSI C63.10-2013

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

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.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	N/A	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A

Note: The Voltage Electrical load connected the AC output plug of the UUT.



4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	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.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Mar. 21,18	Mar. 20,19
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Mar. 03,18	Mar. 02,19
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Apr. 11,18	Apr. 10,19
Voltage probe	SCHWARZBEC K	TK 9421	TK 9421-176	Jan. 17,18	Jan. 16,19
Test software	ADT	ADT_Conc_V 7.3.7	N/A	N/A	N/A

- NOTE:**
1. The test was performed in shielded room 553.
2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.



4.1.3 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) were not recorded.

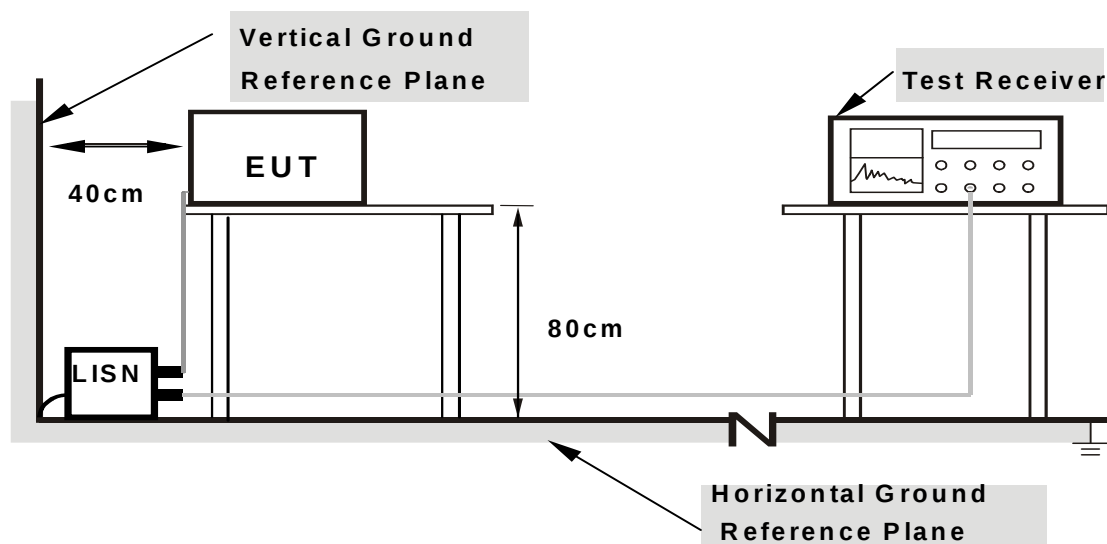
NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.



4.1.5 TEST SETUP



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

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.1.6 EUT OPERATING CONDITIONS

- a. Turned on the power and connected of all equipment.
- b. EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.



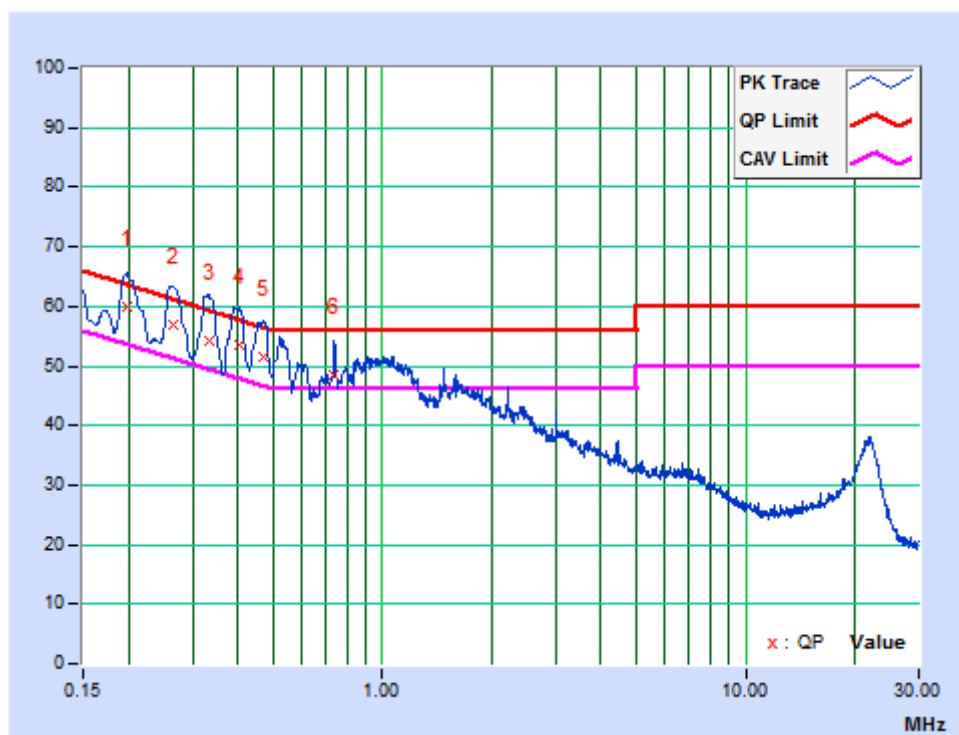
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: WIFI LINK

PHASE	Line	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19721	10.22	49.65	42.50	59.87	52.72	63.73	53.73	-3.86	-1.01
2	0.26437	10.22	46.60	39.60	56.82	49.82	61.29	51.29	-4.47	-1.47
3	0.33440	10.22	43.93	36.84	54.15	47.06	59.34	49.34	-5.19	-2.28
4	0.40200	10.22	43.18	34.51	53.40	44.73	57.81	47.81	-4.41	-3.08
5	0.46950	10.23	41.33	31.97	51.56	42.20	56.52	46.52	-4.97	-4.33
6	0.73725	10.22	38.19	28.80	48.41	39.02	56.00	46.00	-7.59	-6.98

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.

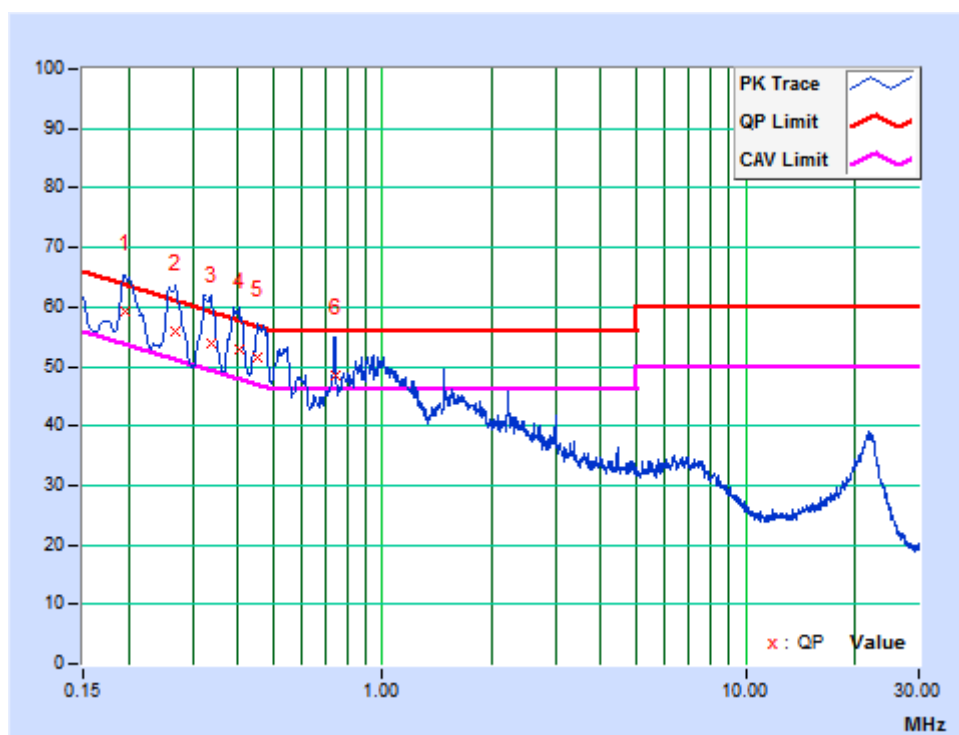




PHASE	Neutral	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19514	10.01	49.22	42.30	59.23	52.31	63.81	53.81	-4.58	-1.50
2	0.26930	10.01	46.00	39.50	56.01	49.51	61.14	51.14	-5.13	-1.63
3	0.33617	10.02	43.77	36.87	53.79	46.89	59.30	49.30	-5.51	-2.41
4	0.40425	10.02	42.94	34.16	52.96	44.18	57.77	47.77	-4.80	-3.58
5	0.45375	10.03	41.35	30.89	51.38	40.92	56.81	46.81	-5.43	-5.89
6	0.73950	10.02	38.63	28.50	48.65	38.52	56.00	46.00	-7.35	-7.48

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.





4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

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. As shown in 15.35(b), 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.



4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 21,18	Mar. 20,19
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Active Loop Antenna (9KHz -30MHz)	SCHWARZBECK	FMZB 1519B	1519B-045	May 31,17	May 30,18
Amplifier (9KHz -1GHz)	Burgeon	BPA-530	100210	Apr. 01,18	Apr. 02,19
Bilog Antenna (20MHz -2GHz)	Teseq	CBL 6111D	30643	Jul. 28, 17	Jul. 27, 18
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 19,17	May 18,18
Horn Antenna (18GHz -40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170242	Jul. 02,17	Jul. 01,18
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Mar. 06,18	Mar. 05,19
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	Mar. 06,18	Mar. 05,19
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 08,17	Nov. 07,18
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A

NOTE:

1. The test was performed in 966 Chamber.
2. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 749762.



4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters semi-anechoic chamber. 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 antenna is a broadband antenna, and its height 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes, the worst-case test configuration was reported on the file test setup photo.

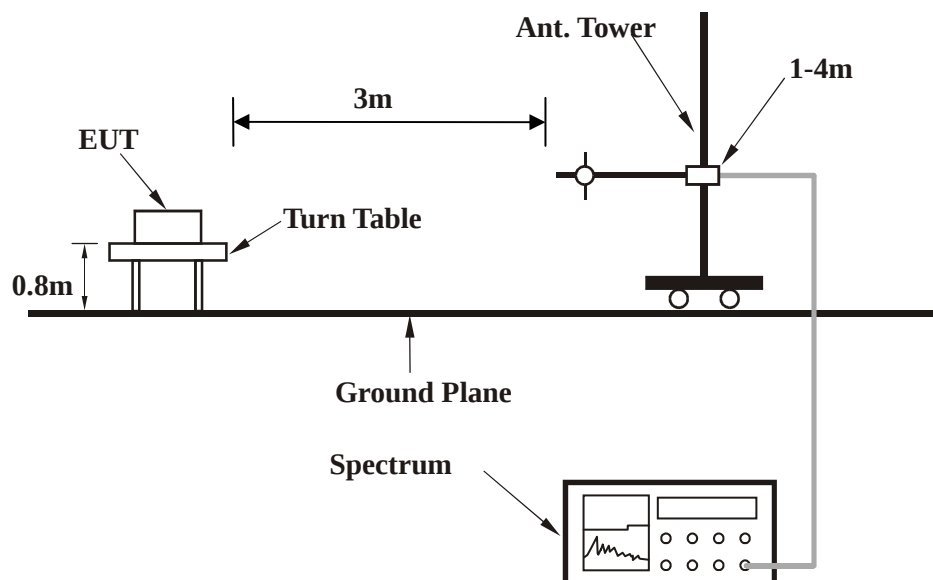
4.2.4 DEVIATION FROM TEST STANDARD

No deviation.



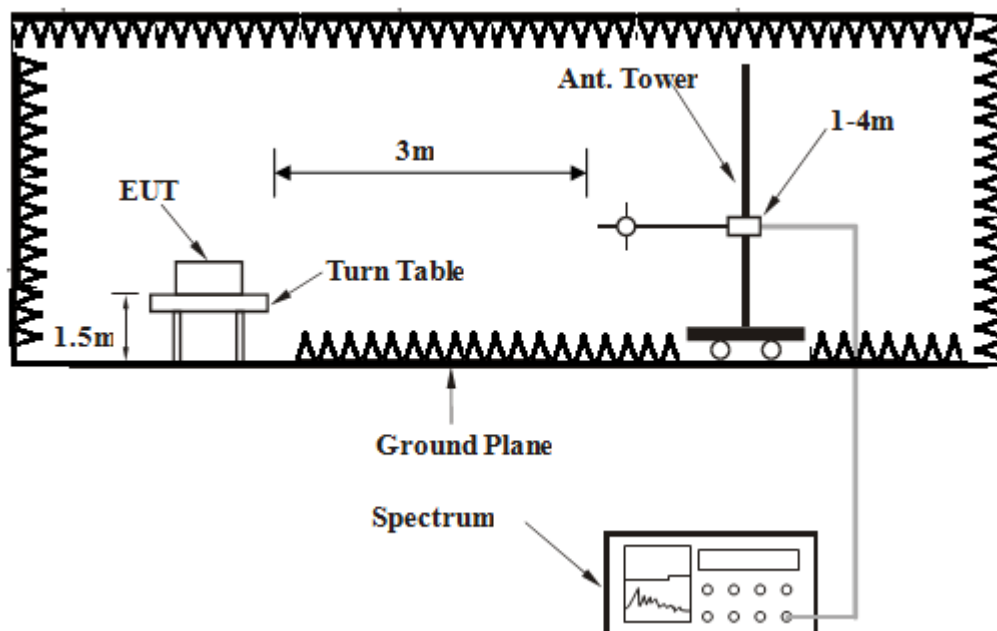
4.2.5 TEST SETUP

Below 1GHz test setup



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

Above 1GHz test setup



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



Test Report No.: RF180129N023

4.2.6 EUT OPERATING CONDITIONS

- a. Set the EUT placed on a testing table.
- b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- c. The necessary accessories enable the EUT in full functions.



4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA:

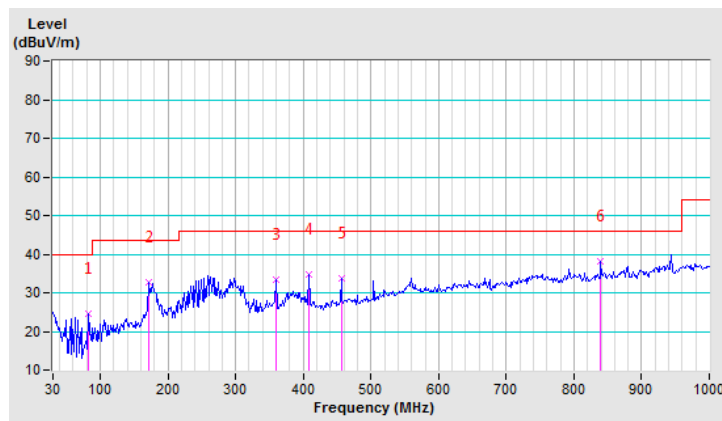
802.11b

CHANNEL	Channel 1	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	82.85	24.71 QP	40.00	-15.29	2.00 H	0	40.18	-15.47
2	171.46	32.87 QP	43.50	-10.63	2.00 H	0	44.80	-11.93
3	359.55	33.53 QP	46.00	-12.47	2.00 H	0	37.71	-4.18
4	407.74	34.72 QP	46.00	-11.28	2.00 H	0	36.79	-2.07
5	455.93	33.71 QP	46.00	-12.29	2.00 H	0	35.44	-1.73
6	839.89	38.13 QP	46.00	-7.87	2.00 H	0	32.86	5.27

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.



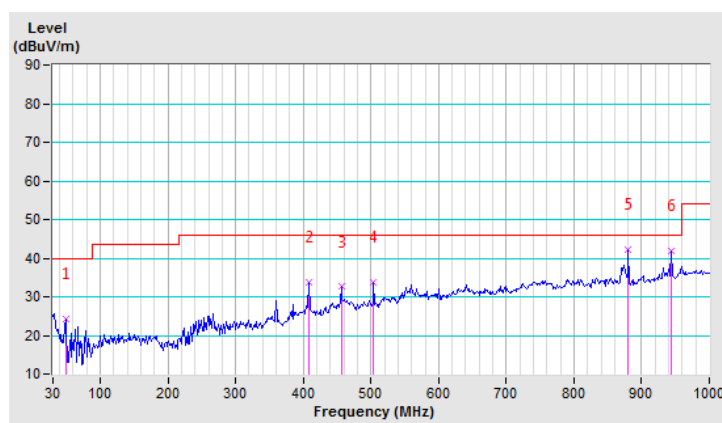


CHANNEL	Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.65	24.23 QP	40.00	-15.77	1.00 V	0	39.86	-15.63
2	407.74	33.80 QP	46.00	-12.20	1.00 V	0	35.87	-2.07
3	455.93	32.55 QP	46.00	-13.45	1.00 V	0	34.28	-1.73
4	504.12	33.68 QP	46.00	-12.32	1.00 V	0	34.42	-0.74
5	880.30	42.30 QP	46.00	-3.70	1.00 V	0	36.84	5.46
6	944.04	41.78 QP	46.00	-4.22	1.00 V	0	34.97	6.81

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.





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	59.39 PK	74.00	-14.61	1.68 H	356	21.35	38.04
2	2390.00	52.88 AV	54.00	-1.12	1.68 H	356	14.84	38.04
3	*2412.00	111.69 PK			1.68 H	355	73.58	38.11
4	*2412.00	108.89 AV			1.68 H	355	70.78	38.11
5	4824.00	57.62 PK	74.00	-16.38	1.00 H	264	51.52	6.10
6	4824.00	51.90 AV	54.00	-2.10	1.00 H	264	45.80	6.10
7	#7236.00	56.98 PK	74.00	-17.02	1.35 H	249	45.47	11.51
8	#7236.00	46.89 AV	54.00	-7.11	1.35 H	249	35.38	11.51
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	58.29 PK	74.00	-15.71	1.58 V	268	20.25	38.04
2	2390.00	47.96 AV	54.00	-6.04	1.58 V	268	9.92	38.04
3	*2412.00	108.77 PK			1.35 V	268	70.66	38.11
4	*2412.00	105.86 AV			1.35 V	268	67.75	38.11
5	4824.00	56.69 PK	74.00	-17.31	1.30 V	246	50.59	6.10
6	4824.00	49.19 AV	54.00	-4.81	1.30 V	246	43.09	6.10
7	#7236.00	56.78 PK	74.00	-17.22	1.35 V	130	45.27	11.51
8	#7236.00	46.61 AV	54.00	-7.39	1.35 V	130	35.10	11.51

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



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	55.38 PK	74.00	-18.62	1.20 H	146	17.34	38.04
2	2390.00	44.14 AV	54.00	-9.86	1.20 H	146	6.10	38.04
3	*2437.00	111.28 PK			1.56 H	355	73.08	38.20
4	*2437.00	108.28 AV			1.56 H	355	70.08	38.20
5	2483.50	56.90 PK	74.00	-17.10	1.30 H	198	18.54	38.36
6	2483.50	43.23 AV	54.00	-10.77	1.30 H	198	4.87	38.36
7	4874.00	56.62 PK	74.00	-17.38	1.03 H	260	50.42	6.20
8	4874.00	53.23 AV	54.00	-0.77	1.03 H	260	47.03	6.20
9	7311.00	54.67 PK	74.00	-19.33	1.25 H	162	42.95	11.72
10	7311.00	45.23 AV	54.00	-8.77	1.25 H	162	33.51	11.72
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	56.66 PK	74.00	-17.34	1.35 V	254	18.62	38.04
2	2390.00	43.27 AV	54.00	-10.73	1.35 V	254	5.23	38.04
3	*2437.00	109.75 PK			1.69 V	276	71.55	38.20
4	*2437.00	104.87 AV			1.69 V	276	66.67	38.20
5	2483.50	56.63 PK	74.00	-17.37	1.25 V	321	18.27	38.36
6	2483.50	42.75 AV	54.00	-11.25	1.25 V	321	4.39	38.36
7	4874.00	55.68 PK	74.00	-18.32	1.35 V	319	49.48	6.20
8	4874.00	51.46 AV	54.00	-2.54	1.35 V	319	45.26	6.20
9	7311.00	56.56 PK	74.00	-17.44	1.25 V	131	44.84	11.72
10	7311.00	46.35 AV	54.00	-7.65	1.25 V	131	34.63	11.72

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).
3. The emission levels of other frequencies were less than 20dB margin 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	110.02 PK			1.57 H	340	71.73	38.29
2	*2462.00	106.49 AV			1.57 H	340	68.20	38.29
3	2483.50	58.42 PK	74.00	-15.58	1.56 H	340	20.06	38.36
4	2483.50	52.10 AV	54.00	-1.90	1.56 H	340	13.74	38.36
5	4924.00	56.98 PK	74.00	-17.02	1.30 H	157	50.67	6.31
6	4924.00	50.46 AV	54.00	-3.54	1.30 H	157	44.15	6.31
7	7386.00	55.48 PK	74.00	-18.52	1.20 H	147	43.55	11.93
8	7386.00	45.27 AV	54.00	-8.73	1.20 H	147	33.34	11.93
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	109.03 PK			1.68 V	275	70.74	38.29
2	*2462.00	104.87 AV			1.68 V	275	66.58	38.29
3	2483.50	58.67 PK	74.00	-15.33	1.25 V	134	20.31	38.36
4	2483.50	49.30 AV	54.00	-8.70	1.25 V	134	10.94	38.36
5	4924.00	57.85 PK	74.00	-16.15	1.20 V	146	51.54	6.31
6	4924.00	50.59 AV	54.00	-3.41	1.20 V	146	44.28	6.31
7	7386.00	56.84 PK	74.00	-17.16	1.35 V	249	44.91	11.93
8	7386.00	46.89 AV	54.00	-7.11	1.35 V	249	34.96	11.93

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).
3. The emission levels of other frequencies were less than 20dB margin 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	68.62 PK	74.00	-5.38	1.68 H	334	30.58	38.04
2	2390.00	53.95 AV	54.00	-0.05	1.68 H	334	15.91	38.04
3	*2412.00	111.56 PK			1.58 H	358	73.45	38.11
4	*2412.00	100.41 AV			1.58 H	358	62.30	38.11
5	4824.00	50.28 PK	74.00	-23.72	1.35 H	248	44.18	6.10
6	4824.00	45.69 AV	54.00	-8.31	1.35 H	248	39.59	6.10
7	#7236.00	55.69 PK	74.00	-18.31	1.30 H	149	44.18	11.51
8	#7236.00	46.98 AV	54.00	-7.02	1.30 H	149	35.47	11.51
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	68.79 PK	74.00	-5.21	1.00 V	271	30.75	38.04
2	2390.00	52.91 AV	54.00	-1.09	1.00 V	271	14.87	38.04
3	*2412.00	108.72 PK			1.68 V	273	70.61	38.11
4	*2412.00	99.78 AV			1.68 V	273	61.67	38.11
5	4824.00	55.98 PK	74.00	-18.02	1.30 V	198	49.88	6.10
6	4824.00	42.37 AV	54.00	-11.63	1.30 V	198	36.27	6.10
7	#7236.00	56.25 PK	74.00	-17.75	1.25 V	138	44.74	11.51
8	#7236.00	44.26 AV	54.00	-9.74	1.25 V	138	32.75	11.51

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



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	56.73 PK	74.00	-17.27	1.35 H	321	18.69	38.04
2	2390.00	43.72 AV	54.00	-10.28	1.35 H	321	5.68	38.04
3	*2437.00	111.31 PK			1.20 H	339	73.11	38.20
4	*2437.00	101.53 AV			1.20 H	339	63.33	38.20
5	2483.50	58.04 PK	74.00	-15.96	1.20 H	158	19.68	38.36
6	2483.50	42.94 AV	54.00	-11.06	1.20 H	158	4.58	38.36
7	4874.00	51.26 PK	74.00	-22.74	1.25 H	149	45.06	6.20
8	4874.00	42.09 AV	54.00	-11.91	1.25 H	149	35.89	6.20
9	7311.00	57.84 PK	74.00	-16.16	1.35 H	249	46.12	11.72
10	7311.00	43.69 AV	54.00	-10.31	1.35 H	249	31.97	11.72
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	56.28 PK	74.00	-17.72	1.30 V	269	18.24	38.04
2	2390.00	42.63 AV	54.00	-11.37	1.30 V	269	4.59	38.04
3	*2437.00	109.78 PK			1.68 V	276	71.58	38.20
4	*2437.00	100.58 AV			1.68 V	276	62.38	38.20
5	2483.50	56.95 PK	74.00	-17.05	1.30 V	147	18.59	38.36
6	2483.50	45.94 AV	54.00	-8.06	1.30 V	147	7.58	38.36
7	4874.00	56.87 PK	74.00	-17.13	1.35 V	320	50.67	6.20
8	4874.00	43.21 AV	54.00	-10.79	1.35 V	320	37.01	6.20
9	7311.00	56.35 PK	74.00	-17.65	1.30 V	210	44.63	11.72
10	7311.00	43.02 AV	54.00	-10.98	1.30 V	210	31.30	11.72

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).
3. The emission levels of other frequencies were less than 20dB margin 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	109.82 PK			1.35 H	341	71.53	38.29
2	*2462.00	100.08 AV			1.35 H	341	61.79	38.29
3	2483.50	70.90 PK	74.00	-3.10	1.30 H	358	32.54	38.36
4	2483.50	53.23 AV	54.00	-0.77	1.30 H	358	14.87	38.36
5	4924.00	54.98 PK	74.00	-19.02	1.35 H	216	48.67	6.31
6	4924.00	43.26 AV	54.00	-10.74	1.35 H	216	36.95	6.31
7	7386.00	56.18 PK	74.00	-17.82	1.35 H	219	44.25	11.93
8	7386.00	43.68 AV	54.00	-10.32	1.35 H	219	31.75	11.93
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	110.30 PK			1.32 V	256	72.01	38.29
2	*2462.00	98.57 AV			1.32 V	256	60.28	38.29
3	2483.50	65.44 PK	74.00	-8.56	1.35 V	293	27.08	38.36
4	2483.50	50.20 AV	54.00	-3.80	1.35 V	293	11.84	38.36
5	4924.00	56.38 PK	74.00	-17.62	1.35 V	216	50.07	6.31
6	4924.00	42.79 AV	54.00	-11.21	1.35 V	216	36.48	6.31
7	7386.00	56.38 PK	74.00	-17.62	1.30 V	258	44.45	11.93
8	7386.00	43.59 AV	54.00	-10.41	1.30 V	258	31.66	11.93

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).
3. The emission levels of other frequencies were less than 20dB margin 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	65.73 PK	74.00	-8.27	1.30 H	332	27.69	38.04
2	2390.00	52.89 AV	54.00	-1.11	1.30 H	332	14.85	38.04
3	*2412.00	109.72 PK			1.24 H	358	71.61	38.11
4	*2412.00	99.60 AV			1.24 H	358	61.49	38.11
5	4824.00	55.28 PK	74.00	-18.72	1.35 H	249	49.18	6.10
6	4824.00	42.09 AV	54.00	-11.91	1.35 H	249	35.99	6.10
7	#7236.00	56.89 PK	74.00	-17.11	1.36 H	259	45.38	11.51
8	#7236.00	44.08 AV	54.00	-9.92	1.36 H	259	32.57	11.51
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	63.35 PK	74.00	-10.65	1.30 V	148	25.31	38.04
2	2390.00	49.29 AV	54.00	-4.71	1.30 V	148	11.25	38.04
3	*2412.00	107.27 PK			1.35 V	274	69.16	38.11
4	*2412.00	97.44 AV			1.35 V	274	59.33	38.11
5	4824.00	53.25 PK	74.00	-20.75	1.25 V	130	47.15	6.10
6	4824.00	42.08 AV	54.00	-11.92	1.25 V	130	35.98	6.10
7	#7236.00	56.02 PK	74.00	-17.98	1.30 V	326	44.51	11.51
8	#7236.00	43.69 AV	54.00	-10.31	1.30 V	326	32.18	11.51

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



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	57.43 PK	74.00	-16.57	1.54 H	305	19.39	38.04
2	2390.00	43.72 AV	54.00	-10.28	1.54 H	305	5.68	38.04
3	*2437.00	110.69 PK			1.25 H	359	72.49	38.20
4	*2437.00	100.52 AV			1.25 H	359	62.32	38.20
5	2483.50	57.40 PK	74.00	-16.60	1.42 H	289	19.04	38.36
6	2483.50	44.30 AV	54.00	-9.70	1.42 H	289	5.94	38.36
7	4874.00	56.94 PK	74.00	-17.06	1.45 H	302	50.74	6.20
8	4874.00	44.02 AV	54.00	-9.98	1.45 H	302	37.82	6.20
9	7311.00	56.28 PK	74.00	-17.72	1.65 H	246	44.56	11.72
10	7311.00	43.29 AV	54.00	-10.71	1.65 H	246	31.57	11.72
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	56.73 PK	74.00	-17.27	1.58 V	249	18.69	38.04
2	2390.00	43.43 AV	54.00	-10.57	1.58 V	249	5.39	38.04
3	*2437.00	108.41 PK			1.58 V	276	70.21	38.20
4	*2437.00	99.28 AV			1.58 V	276	61.08	38.20
5	2483.50	57.10 PK	74.00	-16.90	1.30 V	259	18.74	38.36
6	2483.50	43.94 AV	54.00	-10.06	1.30 V	259	5.58	38.36
7	4874.00	57.02 PK	74.00	-16.98	1.30 V	250	50.82	6.20
8	4874.00	44.08 AV	54.00	-9.92	1.30 V	250	37.88	6.20
9	7311.00	57.87 PK	74.00	-16.13	1.00 V	198	46.15	11.72
10	7311.00	43.69 AV	54.00	-10.31	1.00 V	198	31.97	11.72

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).
3. The emission levels of other frequencies were less than 20dB margin 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	108.78 PK			1.25 H	340	70.49	38.29
2	*2462.00	99.32 AV			1.25 H	340	61.03	38.29
3	2483.50	67.40 PK	74.00	-6.60	1.35 H	268	29.04	38.36
4	2483.50	52.62 AV	54.00	-1.38	1.35 H	268	14.26	38.36
5	4924.00	55.25 PK	74.00	-18.75	1.54 H	356	48.94	6.31
6	4924.00	42.98 AV	54.00	-11.02	1.54 H	356	36.67	6.31
7	7386.00	57.26 PK	74.00	-16.74	1.30 H	216	45.33	11.93
8	7386.00	44.02 AV	54.00	-9.98	1.30 H	216	32.09	11.93
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	108.78 PK			1.25 H	340	70.49	38.29
2	*2462.00	99.32 AV			1.25 H	340	61.03	38.29
3	2483.50	67.40 PK	74.00	-6.60	1.35 H	268	29.04	38.36
4	2483.50	52.62 AV	54.00	-1.38	1.35 H	268	14.26	38.36
5	4924.00	56.39 PK	74.00	-17.61	1.35 V	216	50.08	6.31
6	4924.00	42.25 AV	54.00	-11.75	1.35 V	216	35.94	6.31
7	7386.00	57.28 PK	74.00	-16.72	1.30 V	269	45.35	11.93
8	7386.00	43.29 AV	54.00	-10.71	1.30 V	269	31.36	11.93

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).
3. The emission levels of other frequencies were less than 20dB margin 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	56.63 PK	74.00	-17.37	1.38 H	249	18.59	38.04
2	2390.00	43.96 AV	54.00	-10.04	1.38 H	249	5.92	38.04
3	*2422.00	107.72 PK			1.35 H	298	69.57	38.15
4	*2422.00	99.73 AV			1.35 H	298	61.58	38.15
5	4844.00	53.25 PK	74.00	-20.75	1.30 H	268	47.11	6.14
6	4844.00	42.01 AV	54.00	-11.99	1.30 H	268	35.87	6.14
7	7266.00	56.36 PK	74.00	-17.64	1.58 H	167	44.77	11.59
8	7266.00	41.39 AV	54.00	-12.61	1.58 H	167	29.80	11.59
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	56.63 PK	74.00	-17.37	1.32 V	298	18.59	38.04
2	2390.00	43.40 AV	54.00	-10.60	1.32 V	298	5.36	38.04
3	*2422.00	110.41 PK			1.25 V	256	72.26	38.15
4	*2422.00	99.17 AV			1.25 V	256	61.02	38.15
5	4844.00	56.28 PK	74.00	-17.72	1.30 V	219	50.14	6.14
6	4844.00	41.02 AV	54.00	-12.98	1.30 V	219	34.88	6.14
7	7266.00	56.25 PK	74.00	-17.75	1.30 V	216	44.66	11.59
8	7266.00	43.01 AV	54.00	-10.99	1.30 V	216	31.42	11.59

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).
3. The emission levels of other frequencies were less than 20dB margin 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	56.06 PK	74.00	-17.94	1.35 H	268	18.02	38.04
2	2390.00	42.73 AV	54.00	-11.27	1.35 H	268	4.69	38.04
3	*2437.00	109.49 PK			1.35 H	276	71.29	38.20
4	*2437.00	98.49 AV			1.35 H	276	60.29	38.20
5	2483.50	56.90 PK	74.00	-17.10	1.35 H	269	18.54	38.36
6	2483.50	43.99 AV	54.00	-10.01	1.35 H	269	5.63	38.36
7	4874.00	54.58 PK	74.00	-19.42	1.30 H	219	48.38	6.20
8	4874.00	41.38 AV	54.00	-12.62	1.30 H	219	35.18	6.20
9	7311.00	57.28 PK	74.00	-16.72	1.35 H	219	45.56	11.72
10	7311.00	44.03 AV	54.00	-9.97	1.35 H	219	32.31	11.72
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	55.33 PK	74.00	-18.67	1.35 V	321	17.29	38.04
2	2390.00	42.84 AV	54.00	-11.16	1.35 V	321	4.80	38.04
3	*2437.00	111.30 PK			1.25 V	278	73.10	38.20
4	*2437.00	96.46 AV			1.25 V	278	58.26	38.20
5	2483.50	56.60 PK	74.00	-17.40	1.30 V	258	18.24	38.36
6	2483.50	46.05 AV	54.00	-7.95	1.30 V	258	7.69	38.36
7	4874.00	54.28 PK	74.00	-19.72	1.30 V	197	48.08	6.20
8	4874.00	41.27 AV	54.00	-12.73	1.30 V	197	35.07	6.20
9	7311.00	56.33 PK	74.00	-17.67	1.30 V	149	44.61	11.72
10	7311.00	43.58 AV	54.00	-10.42	1.30 V	149	31.86	11.72

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).
3. The emission levels of other frequencies were less than 20dB margin 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	109.42 PK			1.35 H	249	71.17	38.25
2	*2452.00	99.84 AV			1.35 H	249	61.59	38.25
3	2483.50	56.95 PK	74.00	-17.05	1.35 H	249	18.59	38.36
4	2483.50	44.28 AV	54.00	-9.72	1.35 H	249	5.92	38.36
5	4904.00	55.24 PK	74.00	-18.76	1.25 H	321	48.97	6.27
6	4904.00	41.28 AV	54.00	-12.72	1.25 H	321	35.01	6.27
7	7356.00	57.85 PK	74.00	-16.15	1.25 H	298	46.01	11.84
8	7356.00	44.14 AV	54.00	-9.86	1.25 H	298	32.30	11.84
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	110.05 PK			1.25 V	268	71.80	38.25
2	*2452.00	97.28 AV			1.25 V	268	59.03	38.25
3	2483.50	57.38 PK	74.00	-16.62	1.24 V	260	19.02	38.36
4	2483.50	43.63 AV	54.00	-10.37	1.24 V	260	5.27	38.36
5	4904.00	55.87 PK	74.00	-18.13	1.55 V	262	49.60	6.27
6	4904.00	43.25 AV	54.00	-10.75	1.55 V	262	36.98	6.27
7	7356.00	54.58 PK	74.00	-19.42	1.35 V	219	42.74	11.84
8	7356.00	42.58 AV	54.00	-11.42	1.35 V	219	30.74	11.84

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.



Additional test for other channel of radiated emission

ABOVE 1GHz DATA

802.11g

CHANNEL		TX Channel 2			DETECTOR FUNCTION		Peak (PK)	
FREQUENCY RANGE		2417MHz					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	66.64 PK	74.00	-7.36	1.35 H	249	28.60	38.04
2	2390.00	53.12 AV	54.00	-0.88	1.35 H	249	15.08	38.04
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	66.54 PK	74.00	-7.46	1.00 V	198	28.50	38.04
2	2390.00	52.89 AV	54.00	-1.11	1.00 V	198	14.85	38.04

CHANNEL		TX Channel 10			DETECTOR FUNCTION		Peak (PK)	
FREQUENCY RANGE		2457MHz					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	2483.50	68.40 PK	74.00	-5.60	1.52 H	97	30.04	38.36
2	2483.50	53.62 AV	54.00	-0.38	1.52 H	97	15.26	38.36
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	2483.50	63.58 PK	74.00	-10.42	1.35 V	249	25.22	38.36
2	2483.50	49.22 AV	54.00	-4.78	1.35 V	249	10.86	38.36

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.



802.11n (HT20)

CHANNEL		TX Channel 2			DETECTOR FUNCTION		Peak (PK)	
FREQUENCY RANGE		2417MHz					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	67.49 PK	74.00	-6.51	2.58 H	89	29.45	38.04
2	2390.00	53.50 AV	54.00	-0.50	2.58 H	89	15.46	38.04
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	60.20 PK	74.00	-13.80	1.25 V	149	22.16	38.04
2	2390.00	47.94 AV	54.00	-6.06	1.25 V	149	9.90	38.04

CHANNEL		TX Channel 10			DETECTOR FUNCTION		Peak (PK)	
FREQUENCY RANGE		2457MHz					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	2483.50	68.31 PK	74.00	-5.69	1.25 H	149	29.95	38.36
2	2483.50	53.68 AV	54.00	-0.32	1.25 H	149	15.32	38.36
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	2483.50	61.62 PK	74.00	-12.38	1.58 V	258	23.26	38.36
2	2483.50	48.75 AV	54.00	-5.25	1.58 V	258	10.39	38.36

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.



802.11n (HT40)

CHANNEL		TX Channel 4			DETECTOR FUNCTION		Peak (PK)	
FREQUENCY RANGE		2427MHz					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	60.47 PK	74.00	-13.53	1.45 H	90	22.43	38.04
2	2390.00	48.06 AV	54.00	-5.94	1.45 H	90	10.02	38.04
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	56.27 PK	74.00	-17.73	1.54 V	149	18.23	38.04
2	2390.00	43.58 AV	54.00	-10.42	1.54 V	149	5.54	38.04

CHANNEL		TX Channel 8			DETECTOR FUNCTION		Peak (PK)	
FREQUENCY RANGE		2447MHz					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	2483.50	64.22 PK	74.00	-9.78	1.35 H	249	25.86	38.36
2	2483.50	49.72 AV	54.00	-4.28	1.35 H	249	11.36	38.36
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	2483.50	59.04 PK	74.00	-14.96	1.30 V	216	20.68	38.36
2	2483.50	45.59 AV	54.00	-8.41	1.30 V	216	7.23	38.36

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit 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 INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	May 19,17	May 18,18
Power Sensor	Keysight	U2021XA	MY55060018	May 19,17	May 18,18
Power Meter	Anritsu	ML2495A	1139001	Nov. 04,17	Nov. 03,18
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 21, 17	Oct.20, 18
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.05,17	Sep. 04,18
Oscilloscope	Agilent	DSO9254A	MY51260160	Nov. 08,17	Nov. 07,18
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19
Agile Signal Generator	Agilent	8645A	Agilent	Sep.01, 17	Aug.31, 18
Spectrum Analyzer	Keysight	N9020A	MY55400499	Apr. 10,17	Apr. 09,18
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Jan. 02,18	Jan. 01,19
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug.10, 17	Aug.09, 18
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A	N/A
DC Source	Keysight	E3642A	MY56146098	N/A	N/A

NOTE:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

4.3.3 TEST PROCEDURE

Refer to "KDB 558074 D01 DTS Meas Guidance v04" 8.1 Option 1

Refer to "ANSI C63.10-2013 " 11.8.2 Option 1

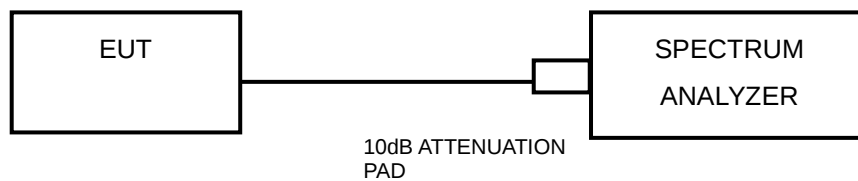
1. Set resolution bandwidth (RBW) = 100KHz
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.



4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

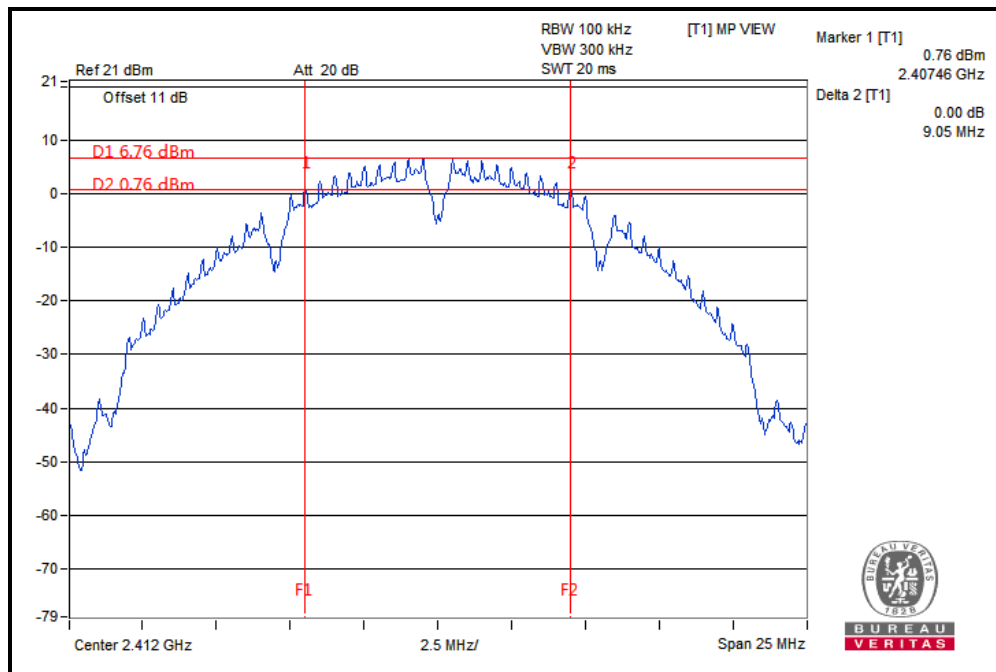
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



4.3.7 TEST RESULTS

802.11b

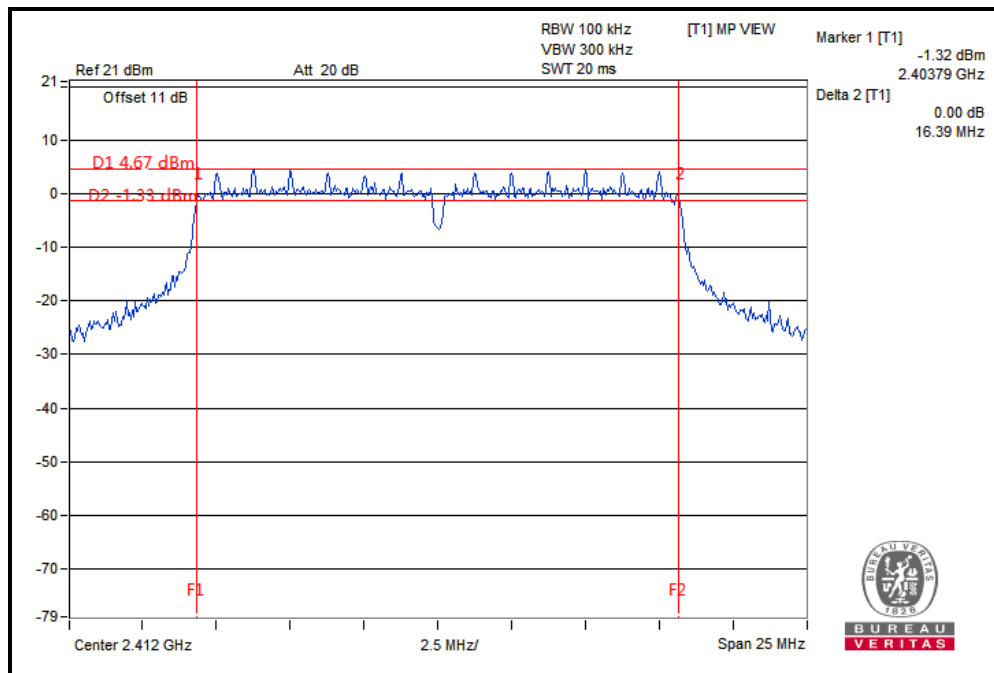
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	9.05	0.5	PASS
6	2437	8.59	0.5	PASS
11	2462	8.59	0.5	PASS





802.11g

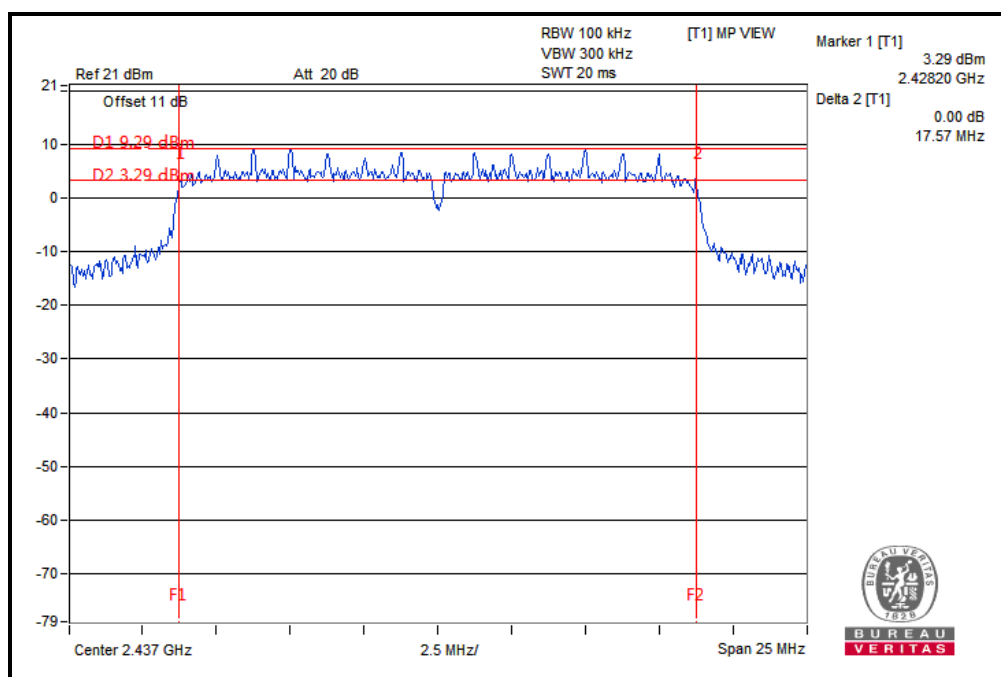
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.39	0.5	PASS
6	2437	16.38	0.5	PASS
11	2462	16.38	0.5	PASS





802.11n (HT20)

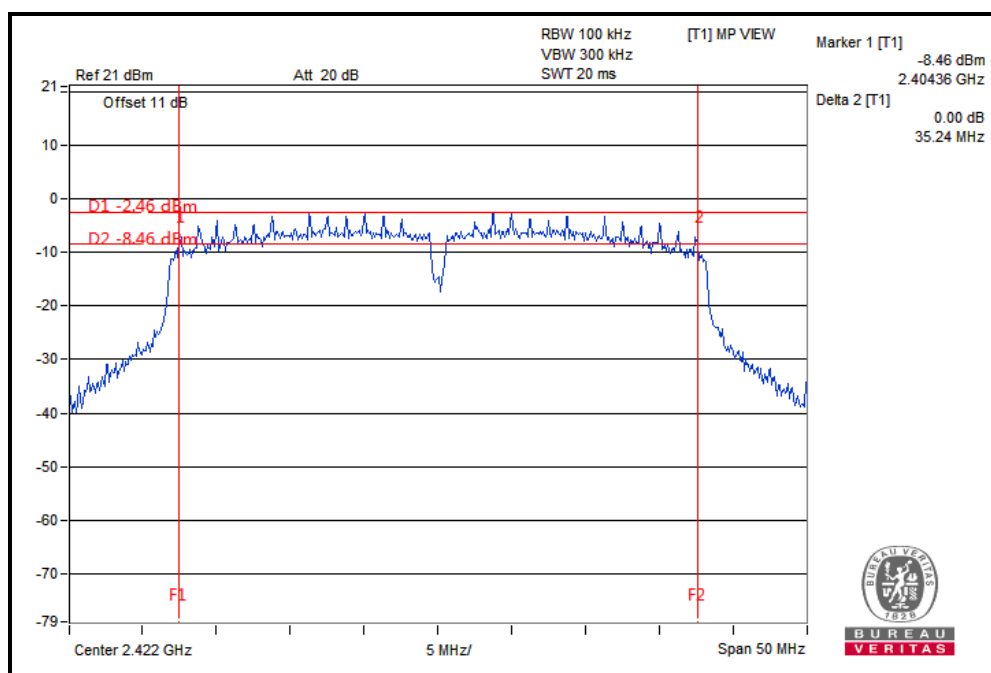
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.32	0.5	PASS
6	2437	17.57	0.5	PASS
11	2462	17.07	0.5	PASS





802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	35.24	0.5	PASS
6	2437	35.19	0.5	PASS
9	2452	35.20	0.5	PASS



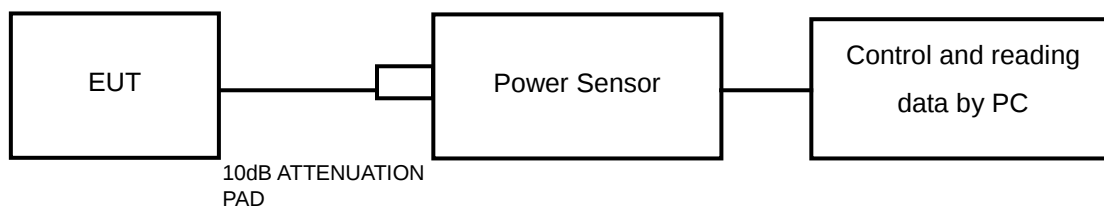


4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	May 19,17	May 18,18
Power Sensor	Keysight	U2021XA	MY55060018	May 19,17	May 18,18
Power Meter	Anritsu	ML2495A	1139001	Nov. 04,17	Nov. 03,18
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 21, 17	Oct.20, 18
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.05,17	Sep. 04,18
Oscilloscope	Agilent	DSO9254A	MY51260160	Nov. 08,17	Nov. 07,18
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19
Agile Signal Generator	Agilent	8645A	Agilent	Sep.01, 17	Aug.31, 18
Spectrum Analyzer	Keysight	N9020A	MY55400499	Apr. 10,17	Apr. 09,18
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Jan. 02,18	Jan. 01,19
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug.10, 17	Aug.09, 18
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A	N/A
DC Source	Keysight	E3642A	MY56146098	N/A	N/A

NOTE:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GREGT/CHINA and NIM/CHINA.



4.4.4 TEST PROCEDURES

An average power sensor was used on the output port of the EUT. The test software was installed in PC used to read the response of the average power sensor. Record the average power level. The Maximum Conducted Output Power was tested based on KDB 558074 D01 DTS Meas Guidance v04 "Chapter 9.2.3.1 and "ANSI C63.10-2013" Chapter 11.9.2.3.1

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

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



4.4.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)
1	2412	18.55	71.614
6	2437	19.29	84.918
11	2462	18.37	68.707

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)
1	2412	15.78	37.844
6	2437	19.32	85.507
11	2462	15.57	36.058

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)
1	2412	15.39	34.594
6	2437	17.58	57.280
11	2462	15.26	33.574

802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)
3	2422	14.82	30.339
6	2437	17.33	54.075
9	2452	14.27	26.730

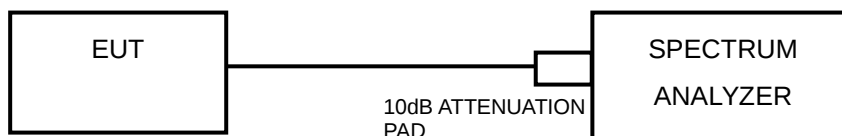


4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.3.2 to get information of above instrument.

4.5.4 TEST PROCEDURE

Refer to KDB 558074 D01 DTS Meas Guidance v04 Chapter 10.2

Refer to ANSI C63.10-2013 Chapter 11.10.2

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to $1.5 \times \text{DTS bandwidth}$.
- 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.
- j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Test Report No.: RF180129N023

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

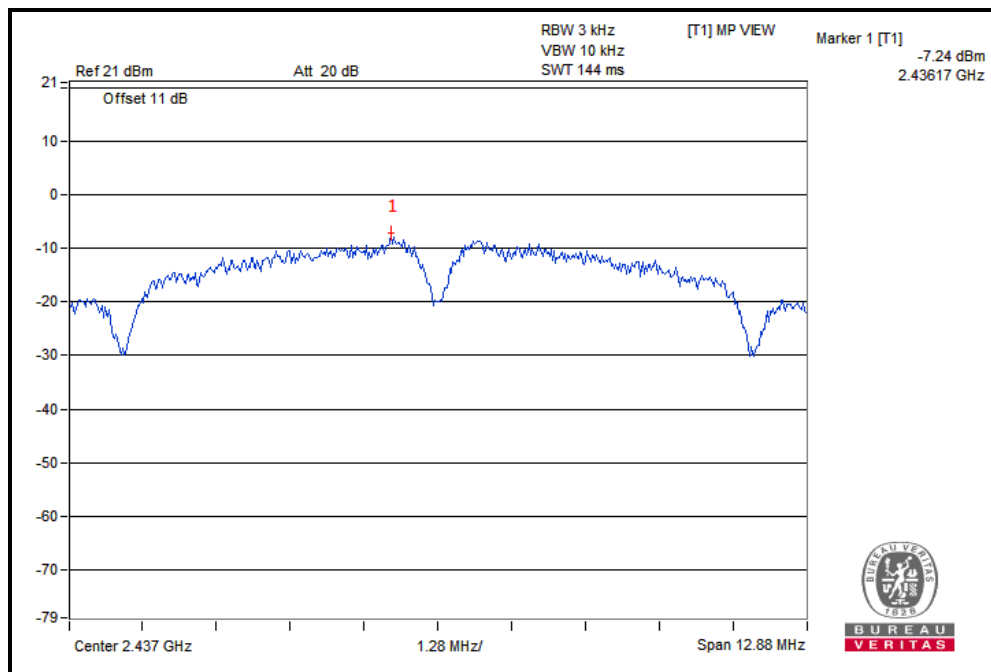
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4.5.7 TEST RESULTS

802.11b

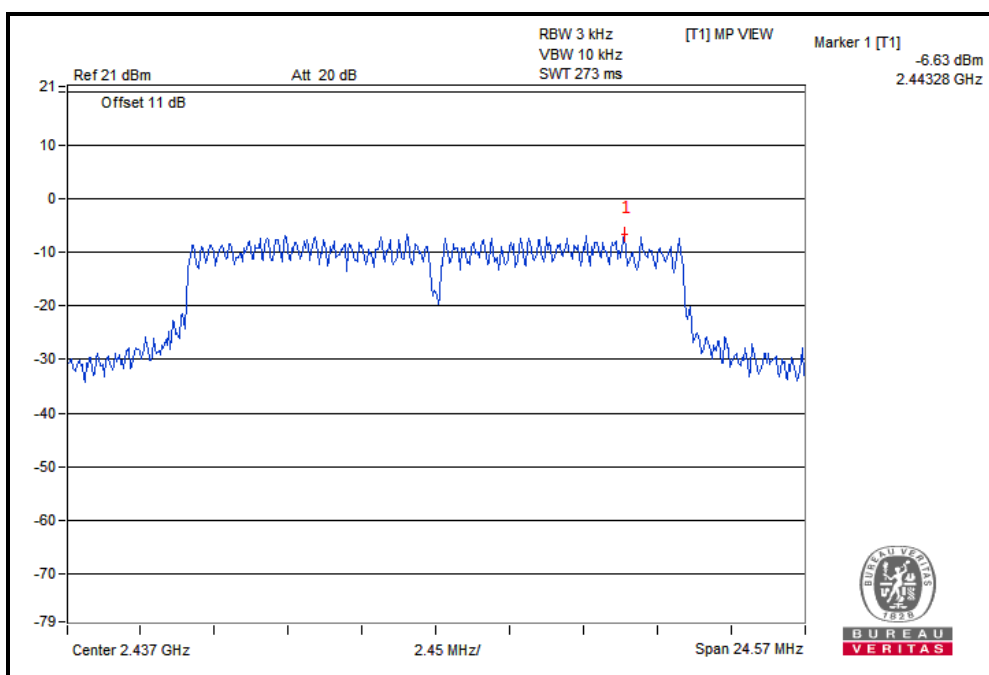
Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-7.59	8	PASS
6	2437	-7.24	8	PASS
11	2462	-7.43	8	PASS





802.11g

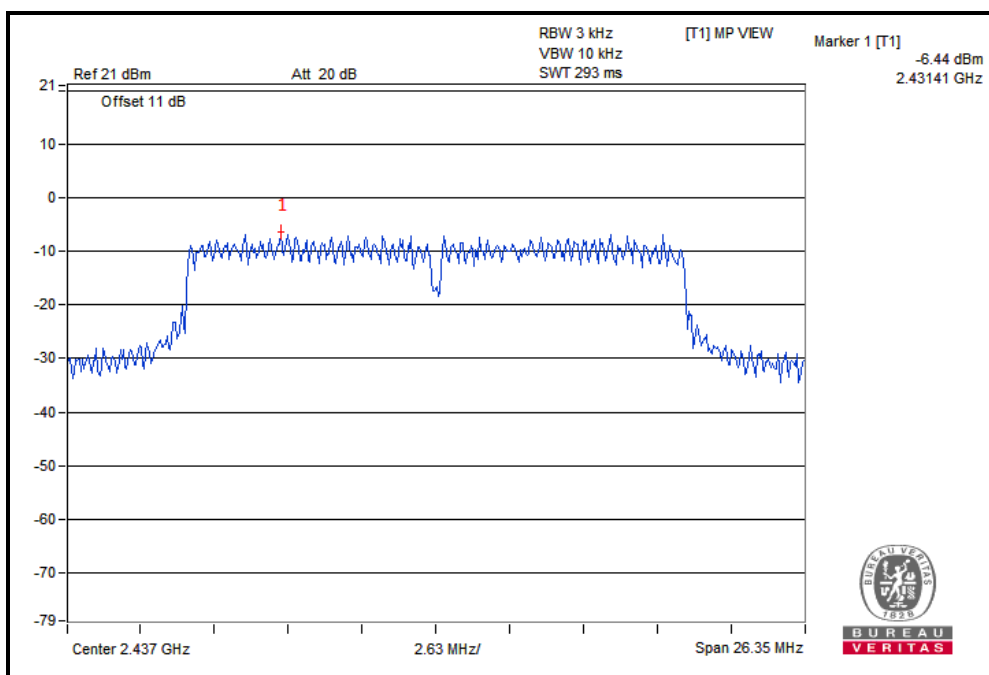
Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-9.30	8	PASS
6	2437	-6.63	8	PASS
11	2462	-9.51	8	PASS





802.11n (HT20)

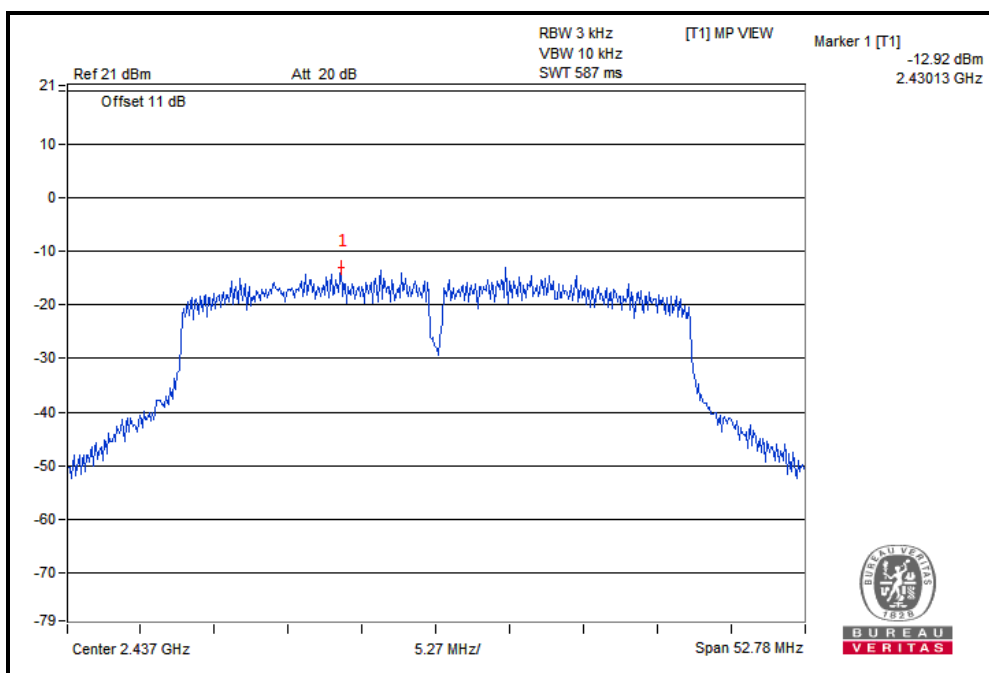
Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-11.41	8	PASS
6	2437	-6.44	8	PASS
11	2462	-10.38	8	PASS





802.11n (HT40)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-16.99	8	PASS
6	2437	-12.92	8	PASS
9	2452	-18.89	8	PASS



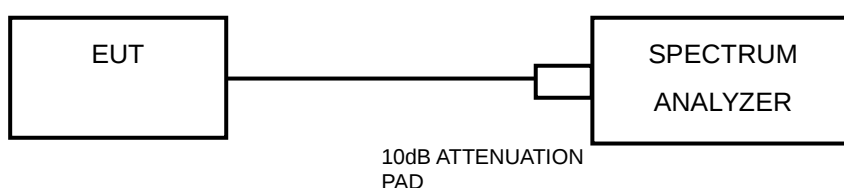


4.6 OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF 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 4.3.2 to get information of above instrument.

4.6.4 TEST PROCEDURE

Measurement Procedure - Reference Level

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 –Unwanted Emission Level

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Same as item 4.3.6



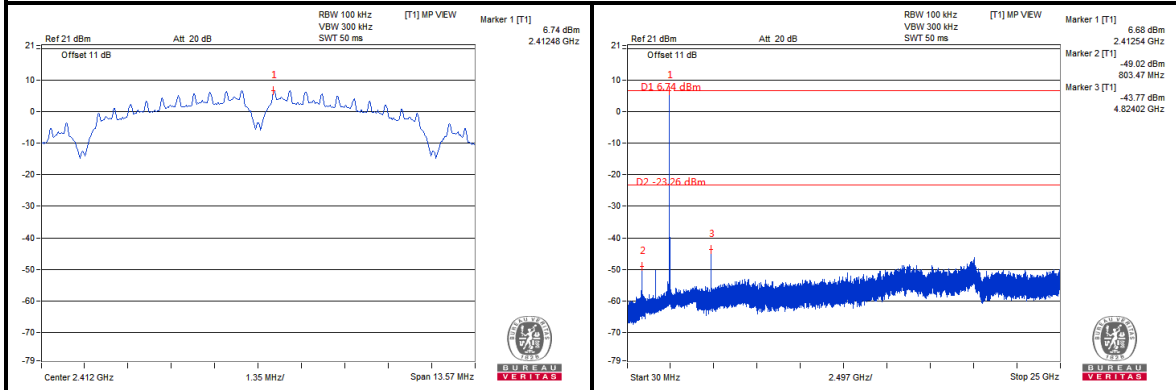
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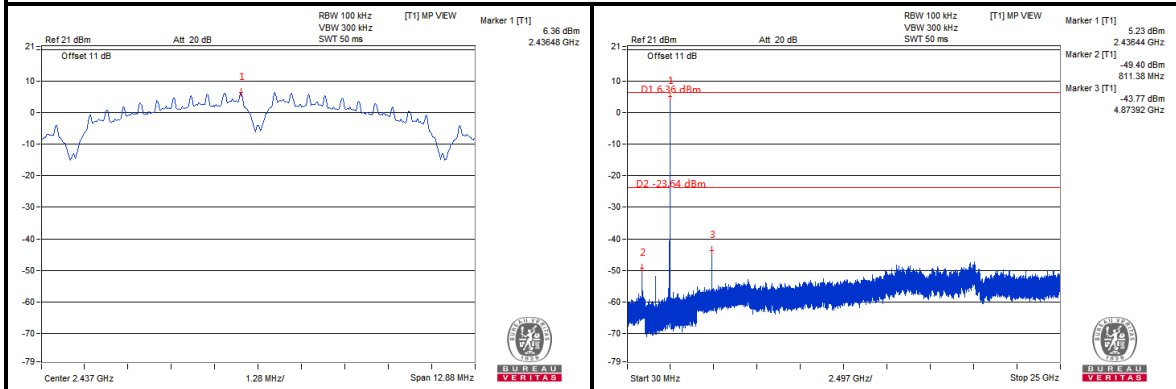
4.6.7 TEST RESULTS

802.11b

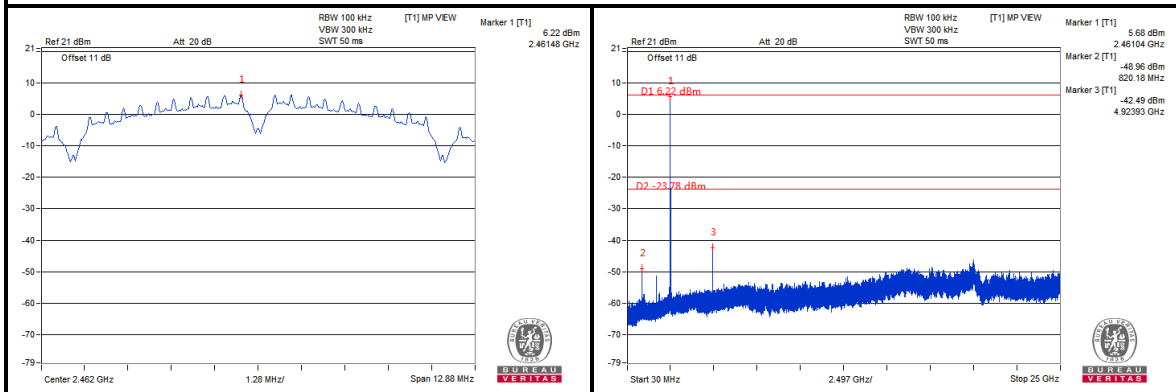
CH 1



CH 6



CH 11



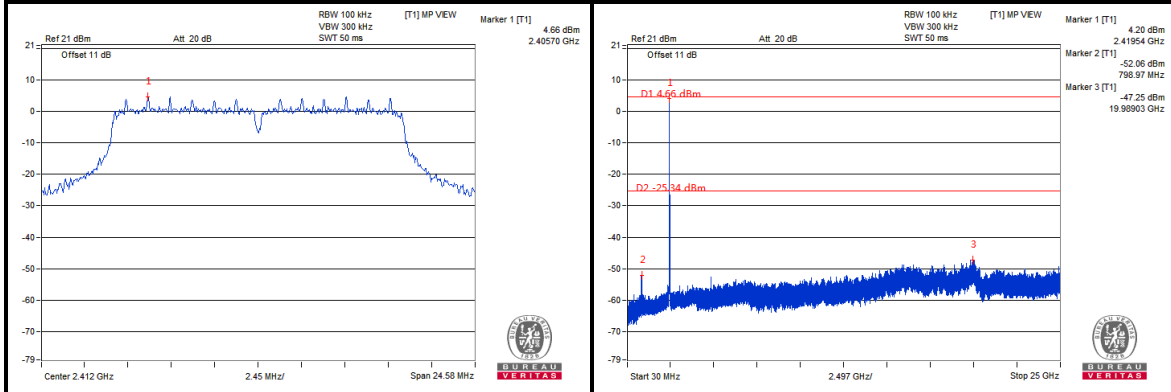


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VERITAS

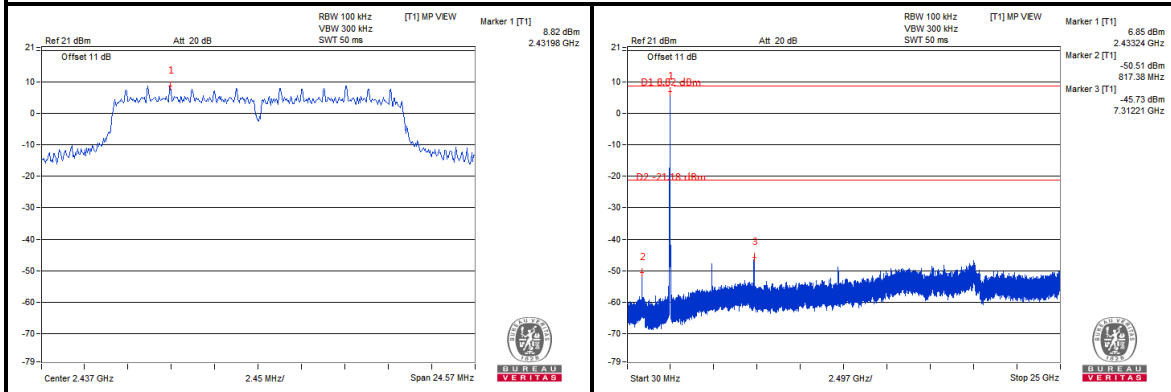
Test Report No.: RF180129N023

802.11g

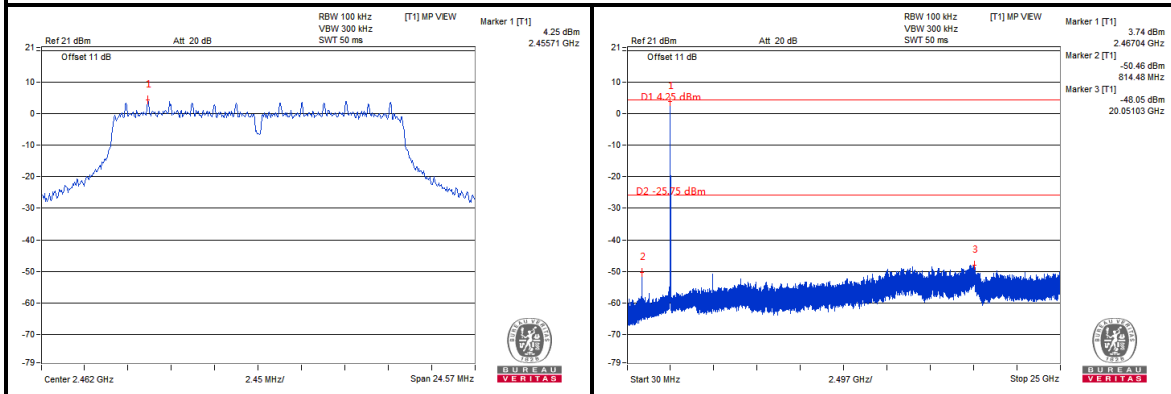
CH 1



CH 6



CH 11



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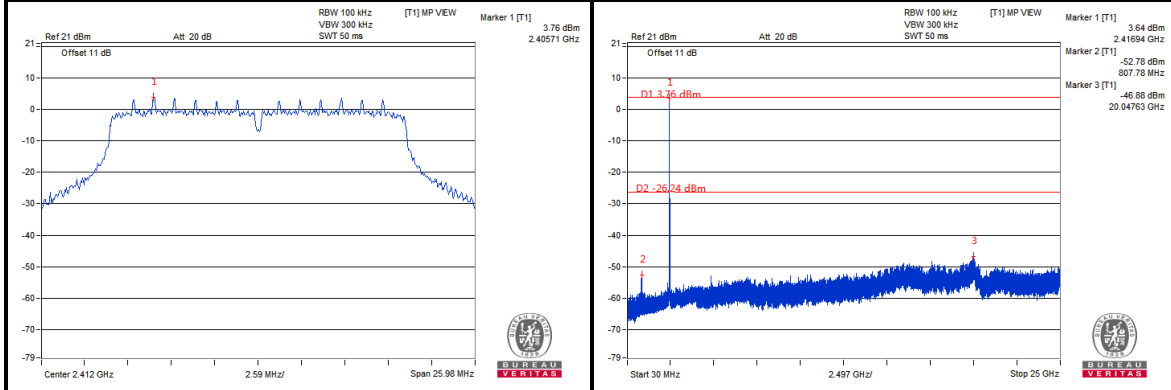


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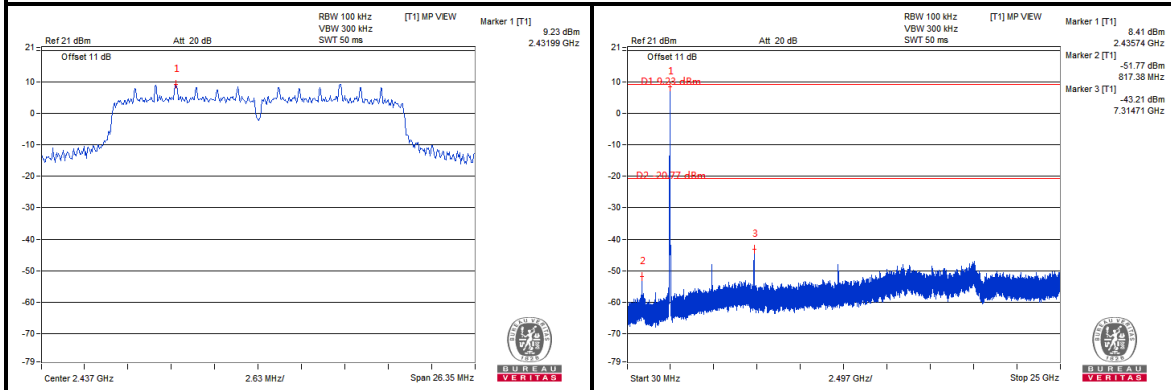
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802.11n (HT20)

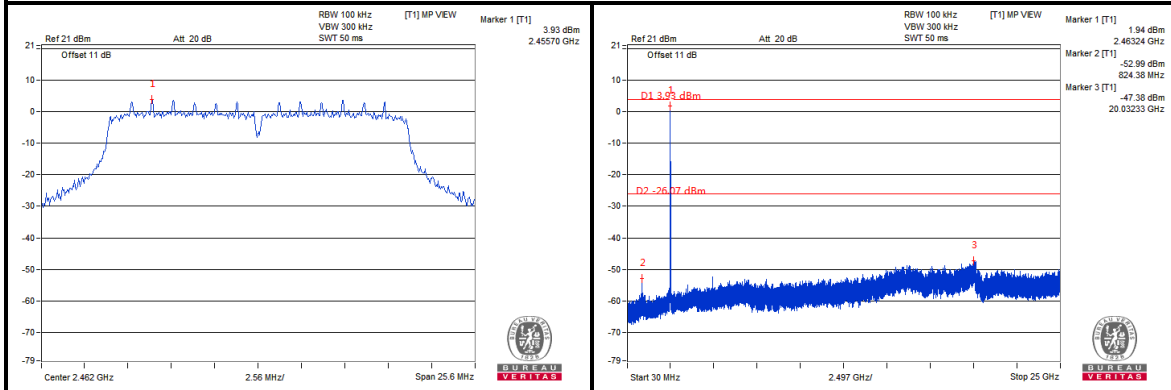
CH 1



CH 6



CH 11



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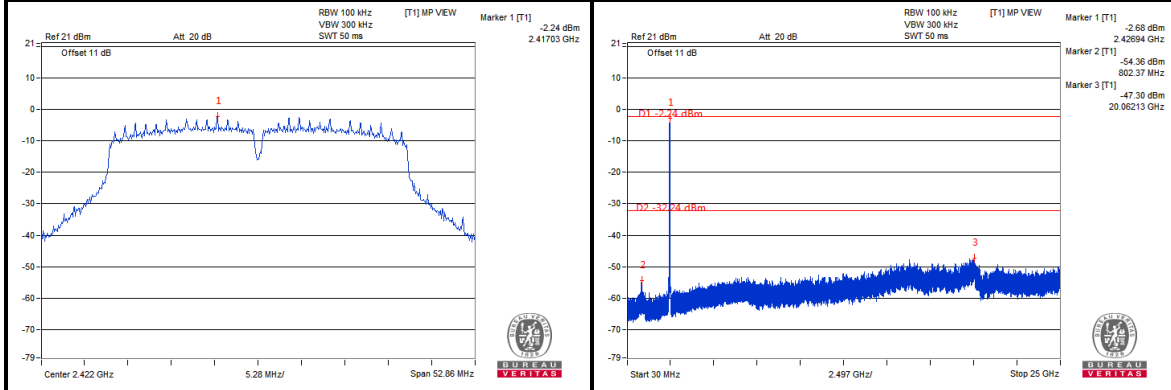


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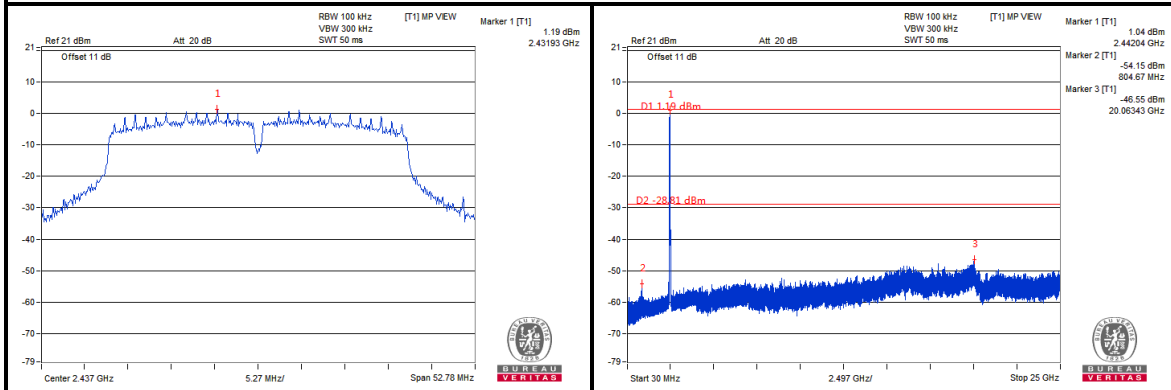
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802.11n (HT40)

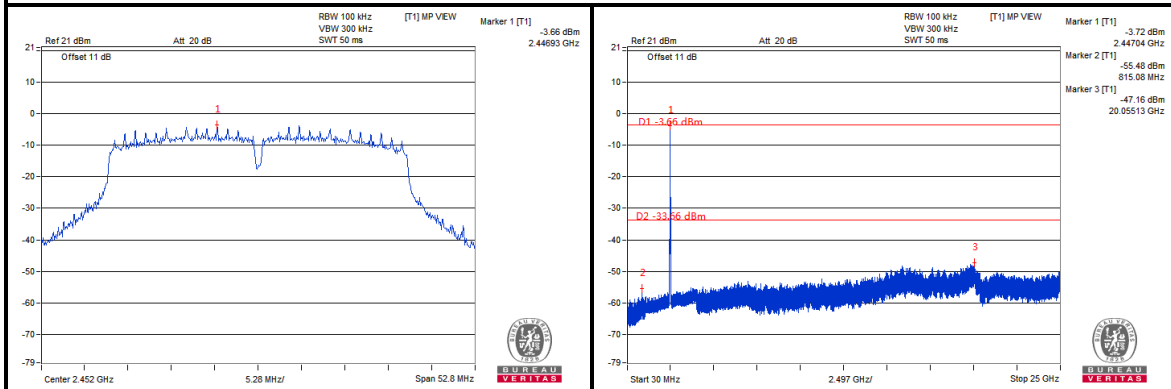
CH 3



CH 6



CH 9



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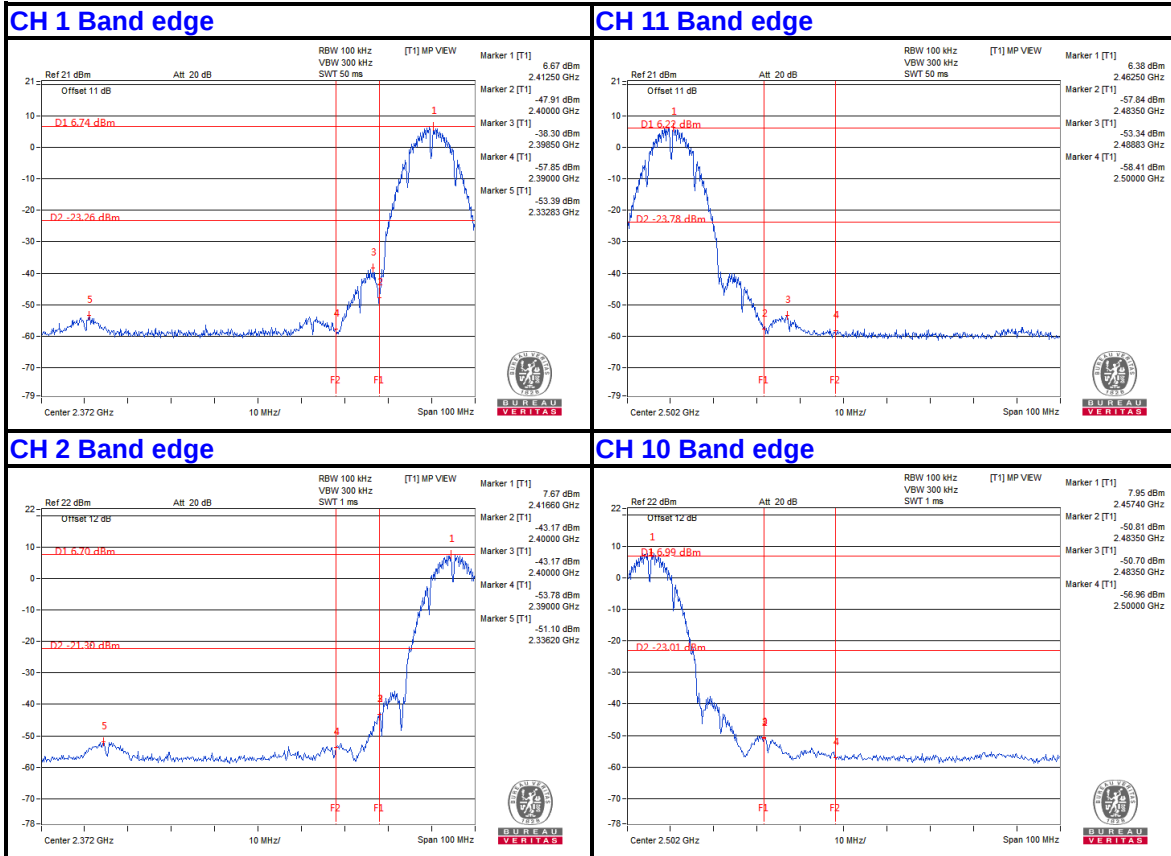
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802.11b



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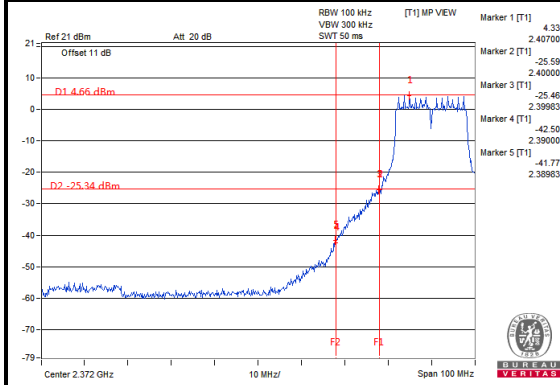


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VERITAS

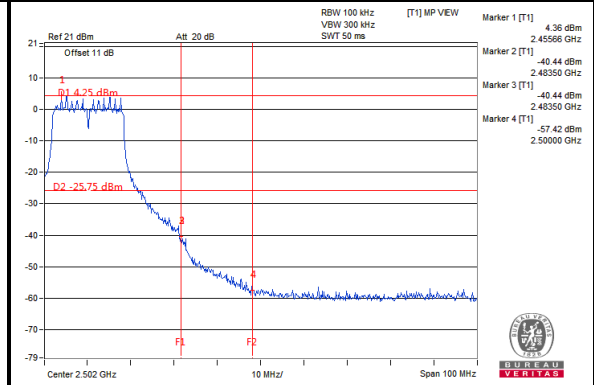
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802.11g

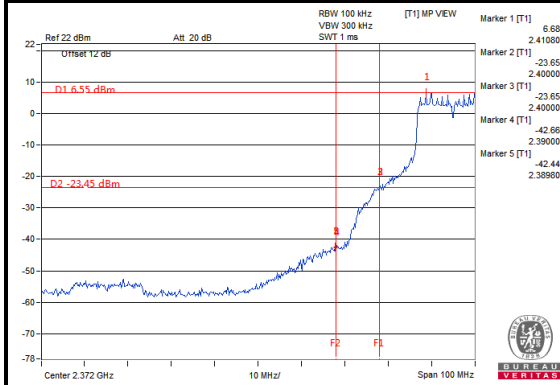
CH 1 Band edge



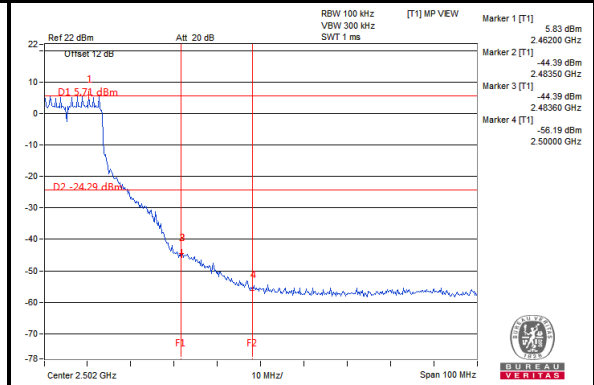
CH 11 Band edge



CH 2 Band edge



CH 10 Band edge



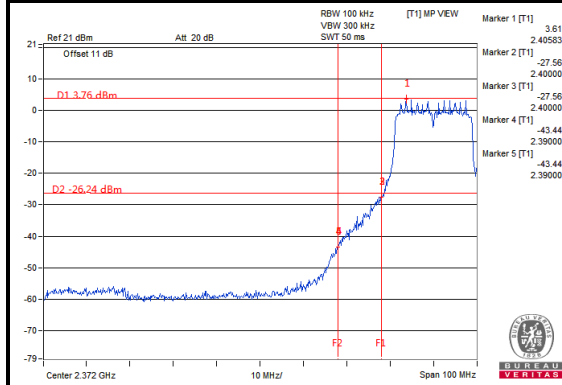


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VERITAS

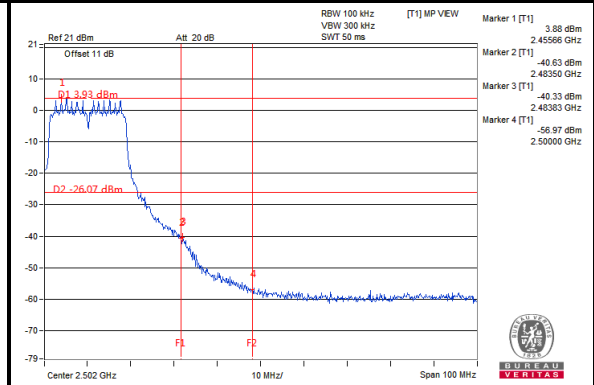
Test Report No.: RF180129N023

802.11n (HT20)

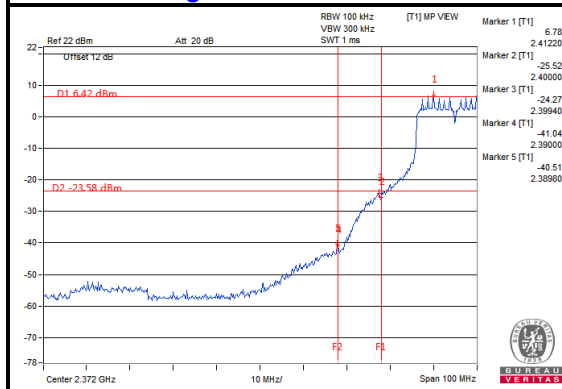
CH 1 Band edge



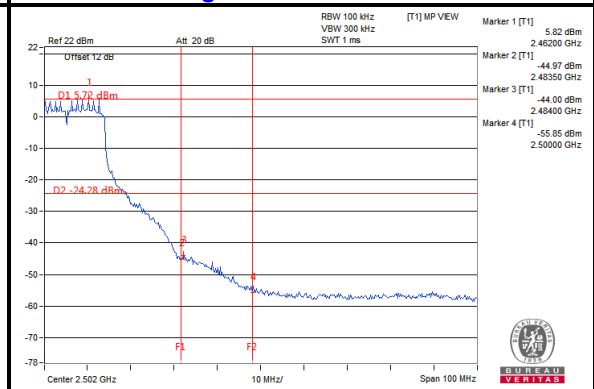
CH 11 Band edge



CH 2 Band edge



CH 10 Band edge



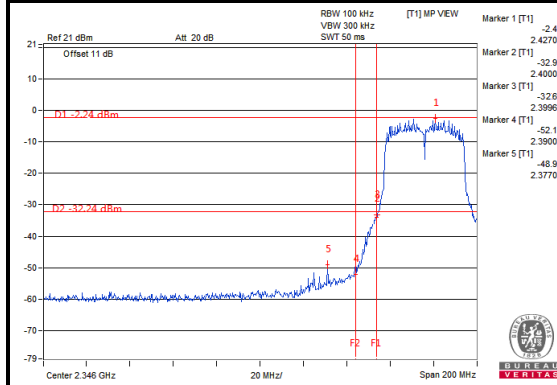


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VERITAS

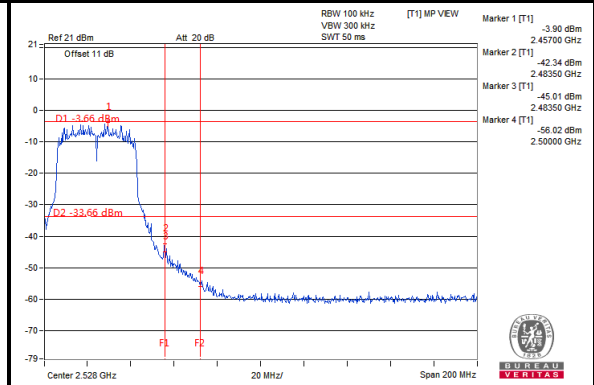
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802.11n (HT40)

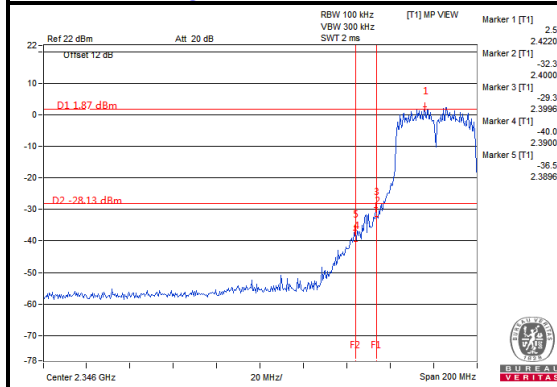
CH 3 Band edge



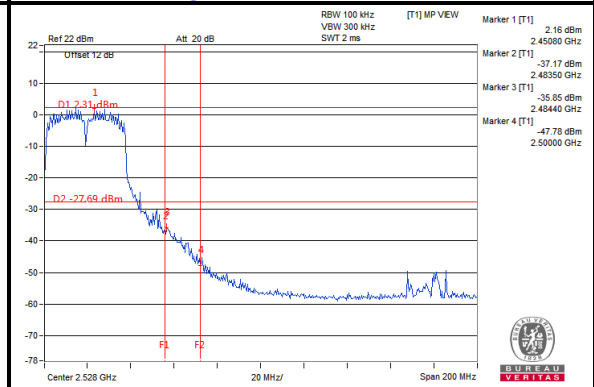
CH 9 Band edge



CH 4 Band edge



CH 8 Band edge





Test Report No.: RF180129N023

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



6 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

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

---END---