

FCC Test Report

Report No.: RF200713E04

FCC ID: KA2AP2622A1

Test Model: DAP-2622

Received Date: July 13, 2020

Test Date: July 29 to Sep. 14, 2020

Issued Date: Dec. 04, 2020

Applicant: D-Link Corporation

Address: 17595 Mt. Herrmann Street Fountain Valley, CA92708 USA

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

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



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Release Control Record

Issue No.	Description	Date Issued
RF200713E04	Original release.	Dec. 04, 2020

1 Certificate of Conformity

Product: Nuclias Connect AC1200 Wave 2 Wall-Plated Access Point

Brand: D-Link

Test Model: DAP-2622

Sample Status: ENGINEERING SAMPLE

Applicant: D-Link Corporation

Test Date: July 29 to Sep. 14, 2020

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 : Phoenix Huang , **Date:** Dec. 04, 2020
Phoenix Huang / Specialist

Approved by : Clark Lin , **Date:** Dec. 04, 2020
Clark Lin / Technical 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 -10.53 dB at 0.20859 MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1 dB at 2390.00 MHz.
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.
-	Occupied Bandwidth Measurement	-	Reference only

Note:

- For 2.4 GHz band compliance with rule 15.247(d) of the band-edge items, the test plots were recorded in Annex A.
- 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) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.9 dB
Conducted emissions	-	2.5 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.4 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Nuclias Connect AC1200 Wave 2 Wall-Plated Access Point
Brand	D-Link
Test Model	DAP-2622
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	54Vdc from POE
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 11 Mbps 802.11a/g: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 866.7 Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462 GHz 5GHz: 5.18~ 5.24 GHz, 5.745 ~ 5.825 GHz
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	CDD Mode: 2.412 ~ 2.462 GHz: 781.654 mW 5.18 ~ 5.24 GHz: 503.477 mW 5.745 ~ 5.825 GHz: 545.899 mW Beamforming Mode: 5.18 ~ 5.24 GHz: 488.629 mW 5.745 ~ 5.825 GHz: 545.899 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. Simultaneously transmission condition.

Condition	Technology
1	WLAN (2.4GHz) + WLAN (5GHz)

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

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

Antenna No.	RF Chain No.	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
1	0	3	2.4~2.4835	PCB	i-pex(MHF)	55
		4.5	5.15~5.85			
2	1	2.8	2.4~2.4835	PCB	i-pex(MHF)	35
		4.1	5.15~5.85			

3. 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 band and 802.11a modulation mode.

4. 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.

5. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

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

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

7 channels are provided for 802.11n (HT40):

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

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)
802.11b	1 to 11	6	DSSS	DBPSK	1

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)
802.11b	1 to 11	6	DSSS	DBPSK	1

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 (System)	TESTED BY
RE \geq 1G	25deg. C, 65%RH	120Vac, 60Hz	Aubrey Chang
RE<1G	23deg. C, 66%RH	120Vac, 60Hz	Ryan Du
PLC	25deg. C, 75%RH	120Vac, 60Hz	Spempson Chen
APCM	25deg. C, 60%RH	120Vac, 60Hz	Kevin Ko

3.3 Duty Cycle of Test Signal

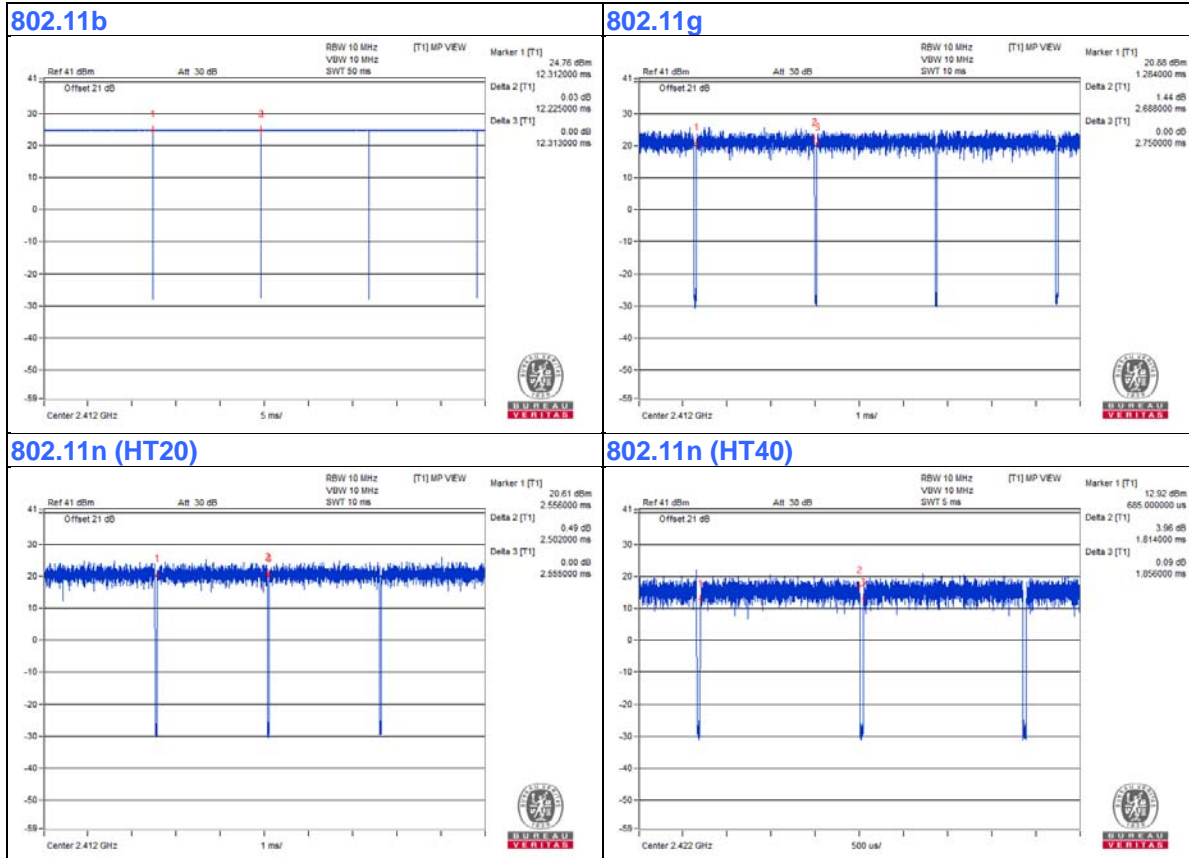
If duty cycle of test signal is $\geq 98\%$, duty factor is not required.
 If duty cycle of test signal is $< 98\%$, duty factor shall be considered.

802.11b: Duty cycle = $12.413 \text{ ms} / 12.438 \text{ ms} = 0.998$

802.11g: Duty cycle = $2.688 \text{ ms} / 2.75 \text{ ms} = 0.977$, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.1 \text{ dB}$

802.11n (HT20): Duty cycle = $2.502 \text{ ms} / 2.555 \text{ ms} = 0.979$, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.09 \text{ dB}$

802.11n (HT40): Duty cycle = $1.814 \text{ ms} / 1.856 \text{ ms} = 0.977$, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.1 \text{ dB}$



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.	POE	Bullet	BPI100-GH	D814C A00 APCC	NA	Supplied by client
B.	Laptop	DELL	P88G	G1WJL42	PD93165NG	Provided by Lab
C.	HUB	ZyXEL	GS1100-16	S150H44000046	FCC DoC	Provided by Lab

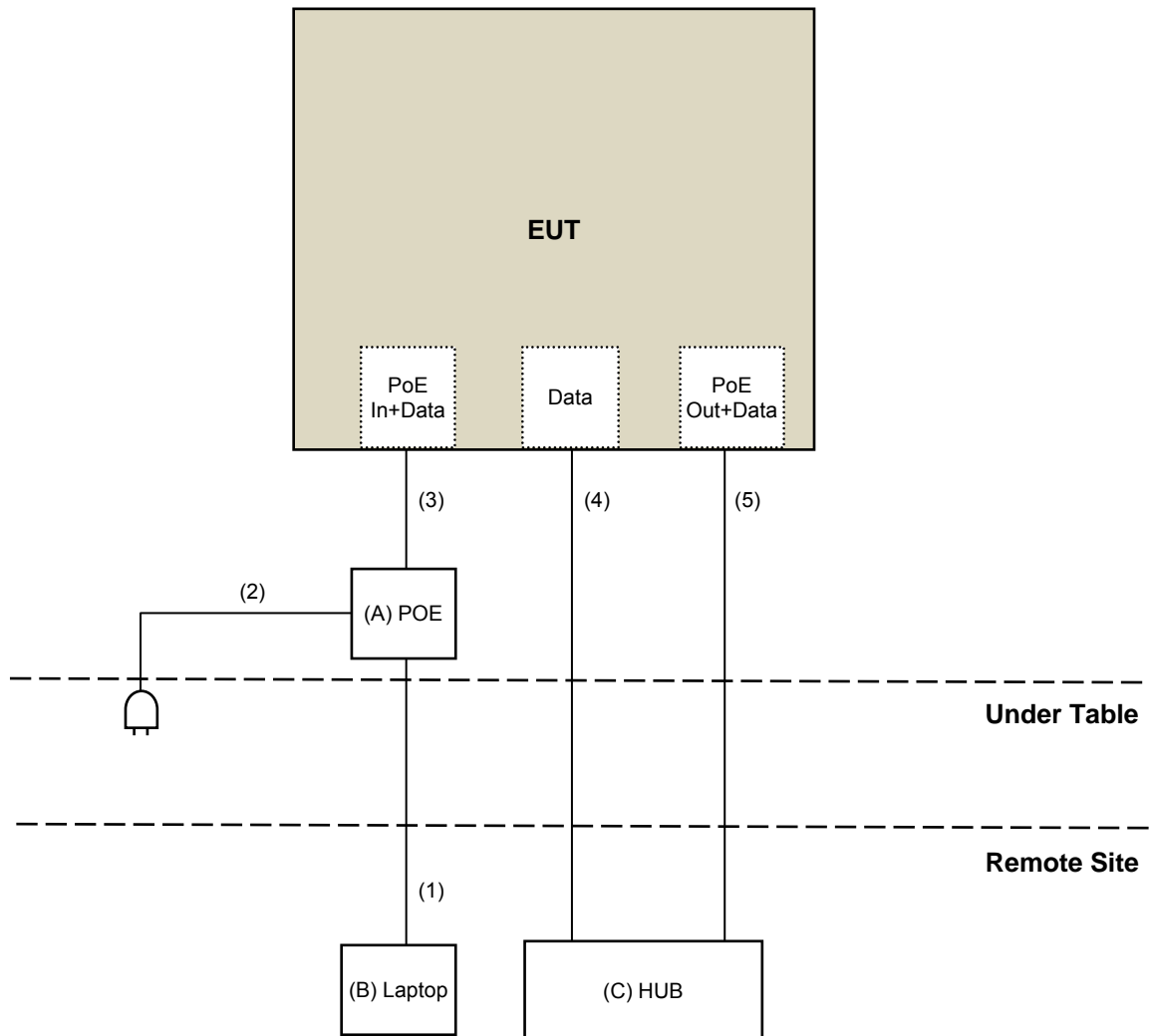
Note:

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

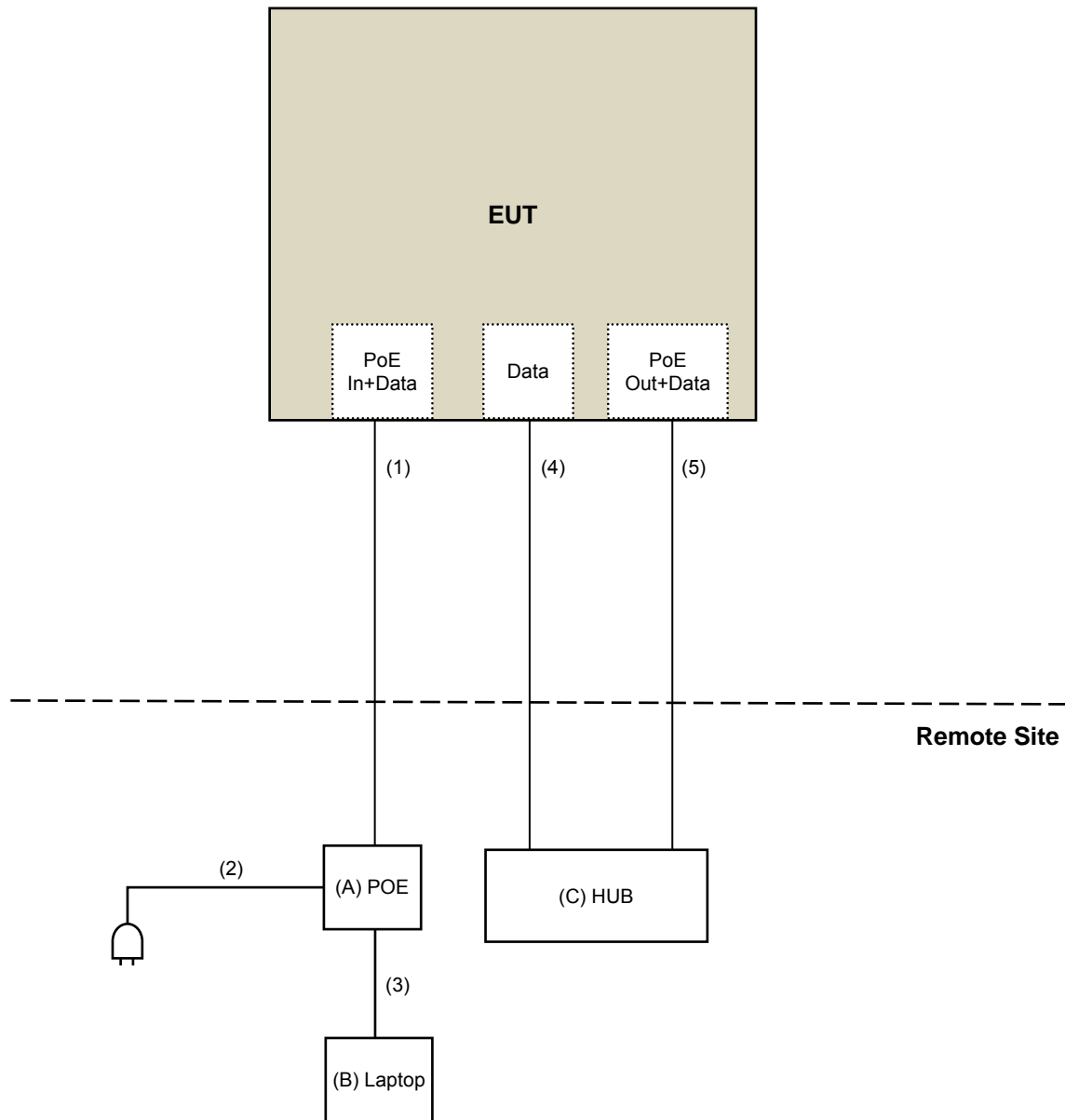
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	AC Cable	1	1.7	No	0	Provided by Lab
3.	RJ-45 Cable	1	1.8	No	0	Provided by Lab
4.	RJ-45 Cable	1	10	No	0	Provided by Lab
5.	RJ-45 Cable	1	10	No	0	Provided by Lab

3.4.1 Configuration of System under Test

For AC Power Conducted Emission test



For Radiated Emission test



3.5 General Description of Applied Standards and References

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

Test Standard:

FCC Part 15, Subpart C (15.247)

ANSI C63.10-2013

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

References Test Guidance:

KDB 558074 D01 15.247 Meas Guidance v05r02

KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

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

For Radiated Emission test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 06, 2020	July 05, 2021
Pre-Amplifier EMCI	EMC001340	980142	May 25, 2020	May 24, 2021
Loop Antenna Electro-Metrics	EM-6879	264	Feb. 18, 2020	Feb. 17, 2021
RF Cable	NA	LOOPCAB-001	Jan. 08, 2020	Jan. 07, 2021
RF Cable	NA	LOOPCAB-002	Jan. 08, 2020	Jan. 07, 2021
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	Apr. 28, 2020	Apr. 27, 2021
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 11, 2019	Nov. 10, 2020
RF Cable	8D	966-3-1	Mar. 17, 2020	Mar. 16, 2021
RF Cable	8D	966-3-2	Mar. 17, 2020	Mar. 16, 2021
RF Cable	8D	966-3-3	Mar. 17, 2020	Mar. 16, 2021
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Sep. 26, 2019	Sep. 25, 2020
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-1200	160922	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-2000	180601	June 09, 2020	June 08, 2021
RF Cable	EMC104-SM-SM-6000	180602	June 09, 2020	June 08, 2021
Spectrum Analyzer Keysight	N9030A	MY54490679	July 13, 2020	July 12, 2021
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC-KM-KM-4000	200214	Mar. 11, 2020	Mar. 10, 2021
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 3.
3. Tested Date: July 29 to Sep. 09, 2020

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Power meter Anritsu	ML2495A	1529002	July 22, 2020	July 21, 2021
Power sensor Anritsu	MA2411B	1339443	July 22, 2020	July 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

- NOTE:**
1. The test was performed in Oven room 2.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: Sep. 09, 2020

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:

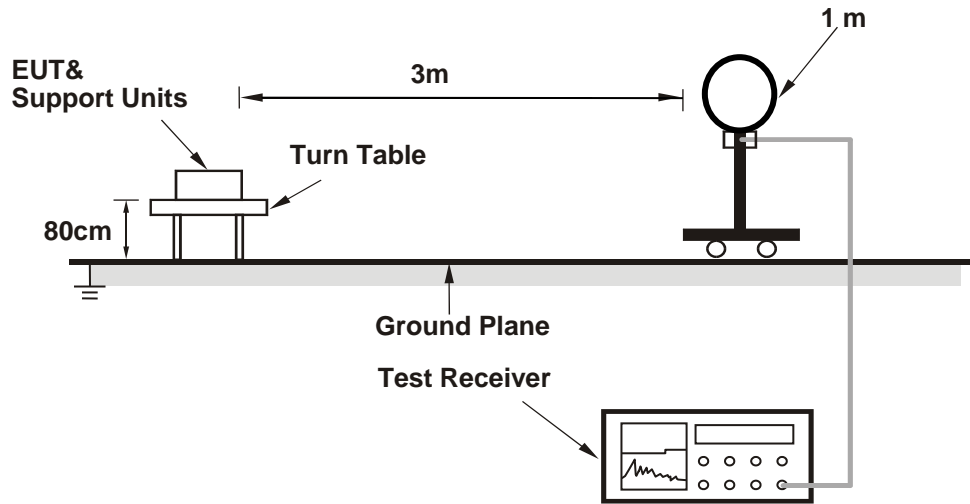
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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

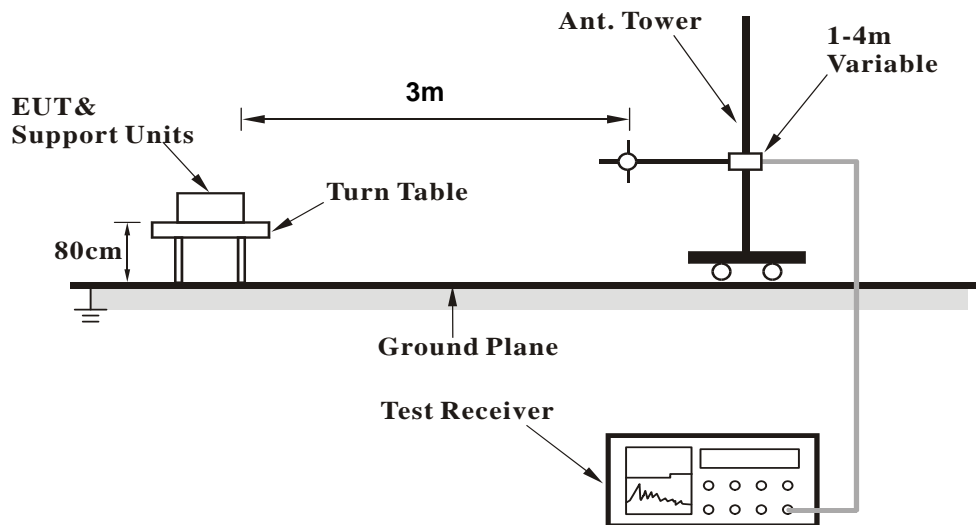
No deviation.

4.1.5 Test Setup

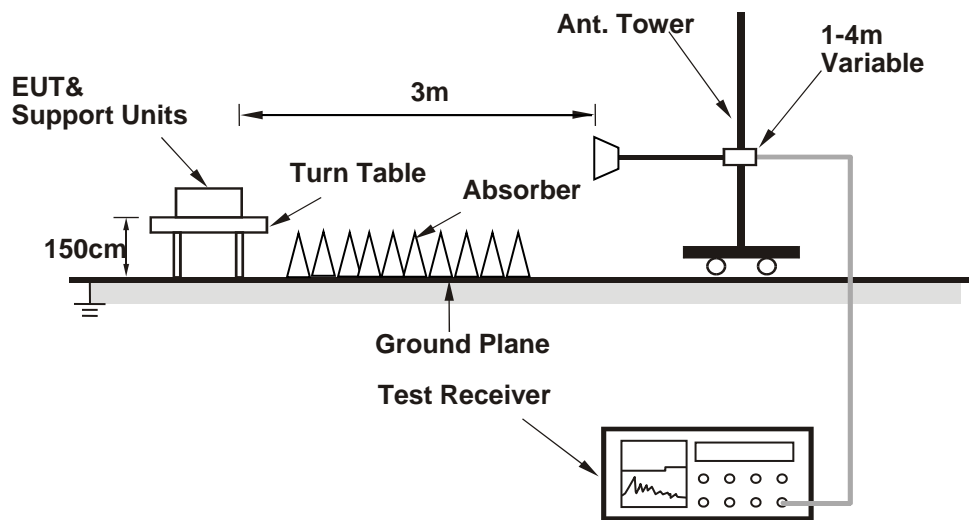
For Radiated emission below 30MHz



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

- a. Placed the EUT on the testing table.
- b. Controlling software (vcredist_x64) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

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	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2388.72	59.8 PK	74.0	-14.2	2.46 H	306	61.4	-1.6
2	2388.72	53.6 AV	54.0	-0.4	2.46 H	306	55.2	-1.6
3	*2412.00	112.4 PK			2.46 H	306	114.0	-1.6
4	*2412.00	110.3 AV			2.46 H	306	111.9	-1.6
5	4824.00	44.8 PK	74.0	-29.2	2.27 H	240	41.6	3.2
6	4824.00	41.0 AV	54.0	-13.0	2.27 H	240	37.8	3.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2388.66	58.1 PK	74.0	-15.9	1.47 V	205	59.7	-1.6
2	2388.66	50.2 AV	54.0	-3.8	1.47 V	205	51.8	-1.6
3	*2412.00	110.5 PK			1.47 V	205	112.1	-1.6
4	*2412.00	108.1 AV			1.47 V	205	109.7	-1.6
5	4824.00	43.7 PK	74.0	-30.3	2.12 V	180	40.5	3.2
6	4824.00	39.8 AV	54.0	-14.2	2.12 V	180	36.6	3.2

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	Frequency (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	62.4 PK	74.0	-11.6	2.25 H	309	64.0	-1.6
2	2390.00	46.2 AV	54.0	-7.8	2.25 H	309	47.8	-1.6
3	*2437.00	115.2 PK			2.25 H	309	116.8	-1.6
4	*2437.00	113.3 AV			2.25 H	309	114.9	-1.6
5	2483.50	57.7 PK	74.0	-16.3	2.25 H	309	59.3	-1.6
6	2483.50	45.0 AV	54.0	-9.0	2.25 H	309	46.6	-1.6
7	4874.00	50.2 PK	74.0	-23.8	2.19 H	243	47.0	3.2
8	4874.00	45.8 AV	54.0	-8.2	2.19 H	243	42.6	3.2
9	7311.00	54.3 PK	74.0	-19.7	1.99 H	200	44.9	9.4
10	7311.00	50.2 AV	54.0	-3.8	1.99 H	200	40.8	9.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (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	54.5 PK	74.0	-19.5	1.46 V	202	56.1	-1.6
2	2390.00	42.9 AV	54.0	-11.1	1.46 V	202	44.5	-1.6
3	*2437.00	112.9 PK			1.46 V	202	114.5	-1.6
4	*2437.00	100.8 AV			1.46 V	202	102.4	-1.6
5	2483.50	54.3 PK	74.0	-19.7	1.46 V	202	55.9	-1.6
6	2483.50	42.8 AV	54.0	-11.2	1.46 V	202	44.4	-1.6
7	4874.00	54.4 PK	74.0	-19.6	1.99 V	172	51.2	3.2
8	4874.00	52.9 AV	54.0	-1.1	1.99 V	172	49.7	3.2
9	7311.00	55.5 PK	74.0	-18.5	2.23 V	231	46.1	9.4
10	7311.00	52.4 AV	54.0	-1.6	2.23 V	231	43.0	9.4

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	113.1 PK			1.62 H	48	114.7	-1.6
2	*2462.00	110.9 AV			1.62 H	48	112.5	-1.6
3	2484.76	61.4 PK	74.0	-12.6	1.62 H	48	63.0	-1.6
4	2484.76	53.8 AV	54.0	-0.2	1.62 H	48	55.4	-1.6
5	4924.00	44.7 PK	74.0	-29.3	2.23 H	234	41.6	3.1
6	4924.00	40.9 AV	54.0	-13.1	2.23 H	234	37.8	3.1
7	7386.00	53.2 PK	74.0	-20.8	2.00 H	201	43.5	9.7
8	7386.00	49.5 AV	54.0	-4.5	2.00 H	201	39.8	9.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (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	108.4 PK			1.55 V	188	110.0	-1.6
2	*2462.00	106.1 AV			1.55 V	188	107.7	-1.6
3	2484.73	56.2 PK	74.0	-17.8	1.55 V	188	57.8	-1.6
4	2484.73	48.0 AV	54.0	-6.0	1.55 V	188	49.6	-1.6
5	4924.00	47.5 PK	74.0	-26.5	1.96 V	176	44.4	3.1
6	4924.00	44.0 AV	54.0	-10.0	1.96 V	176	40.9	3.1
7	7386.00	54.6 PK	74.0	-19.4	2.31 V	223	44.9	9.7
8	7386.00	50.9 AV	54.0	-3.1	2.31 V	223	41.2	9.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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Channel	TX Channel 1	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 25GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	66.9 PK	74.0	-7.1	1.46 H	297	68.5	-1.6
2	2390.00	53.9 AV	54.0	-0.1	1.46 H	297	55.5	-1.6
3	*2412.00	110.2 PK			1.46 H	297	111.8	-1.6
4	*2412.00	100.3 AV			1.46 H	297	101.9	-1.6
5	4824.00	37.5 PK	74.0	-36.5	2.24 H	237	34.3	3.2
6	4824.00	25.4 AV	54.0	-28.6	2.24 H	237	22.2	3.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	60.8 PK	74.0	-13.2	1.75 V	226	62.4	-1.6
2	2390.00	50.1 AV	54.0	-3.9	1.75 V	226	51.7	-1.6
3	*2412.00	108.3 PK			1.75 V	226	109.9	-1.6
4	*2412.00	99.5 AV			1.75 V	226	101.1	-1.6
5	4824.00	40.1 PK	74.0	-33.9	2.13 V	172	36.9	3.2
6	4824.00	28.0 AV	54.0	-26.0	2.13 V	172	24.8	3.2

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	Frequency (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	67.2 PK	74.0	-6.8	2.16 H	300	68.8	-1.6
2	2390.00	53.6 AV	54.0	-0.4	2.16 H	300	55.2	-1.6
3	*2437.00	117.4 PK			2.16 H	300	119.0	-1.6
4	*2437.00	107.9 AV			2.16 H	300	109.5	-1.6
5	2483.50	65.7 PK	74.0	-8.3	2.16 H	300	67.3	-1.6
6	2483.50	50.3 AV	54.0	-3.7	2.16 H	300	51.9	-1.6
7	4874.00	44.7 PK	74.0	-29.3	2.22 H	235	41.5	3.2
8	4874.00	40.6 AV	54.0	-13.4	2.22 H	235	37.4	3.2
9	7311.00	53.8 PK	74.0	-20.2	2.00 H	216	44.4	9.4
10	7311.00	41.6 AV	54.0	-12.4	2.00 H	216	32.2	9.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (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	63.8 PK	74.0	-10.2	1.42 V	200	65.4	-1.6
2	2390.00	50.2 AV	54.0	-3.8	1.42 V	200	51.8	-1.6
3	*2437.00	114.2 PK			1.42 V	200	115.8	-1.6
4	*2437.00	104.3 AV			1.42 V	200	105.9	-1.6
5	2483.50	61.6 PK	74.0	-12.4	1.42 V	200	63.2	-1.6
6	2483.50	48.1 AV	54.0	-5.9	1.42 V	200	49.7	-1.6
7	4874.00	47.7 PK	74.0	-26.3	2.07 V	176	44.5	3.2
8	4874.00	36.5 AV	54.0	-17.5	2.07 V	176	33.3	3.2
9	7311.00	54.6 PK	74.0	-19.4	2.07 V	176	45.2	9.4
10	7311.00	42.8 AV	54.0	-11.2	2.07 V	176	33.4	9.4

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	Frequency (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	109.4 PK			1.00 H	303	111.0	-1.6
2	*2462.00	99.7 AV			1.00 H	303	101.3	-1.6
3	2483.50	65.4 PK	74.0	-8.6	1.00 H	303	67.0	-1.6
4	2483.50	53.5 AV	54.0	-0.5	1.00 H	303	55.1	-1.6
5	4924.00	37.4 PK	74.0	-36.6	2.22 H	225	34.3	3.1
6	4924.00	25.3 AV	54.0	-28.7	2.22 H	225	22.2	3.1
7	7386.00	47.8 PK	74.0	-26.2	2.03 H	221	38.1	9.7
8	7386.00	44.3 AV	54.0	-9.7	2.03 H	221	34.6	9.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (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	107.7 PK			1.67 V	212	109.3	-1.6
2	*2462.00	98.6 AV			1.67 V	212	100.2	-1.6
3	2483.50	59.9 PK	74.0	-14.1	1.67 V	212	61.5	-1.6
4	2483.50	50.5 AV	54.0	-3.5	1.67 V	212	52.1	-1.6
5	4924.00	40.2 PK	74.0	-33.8	2.15 V	175	37.1	3.1
6	4924.00	28.0 AV	54.0	-26.0	2.15 V	175	24.9	3.1
7	7386.00	51.7 PK	74.0	-22.3	1.00 V	225	42.0	9.7
8	7386.00	40.1 AV	54.0	-13.9	1.00 V	225	30.4	9.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	64.2 PK	74.0	-9.8	1.13 H	303	65.8	-1.6
2	2390.00	53.9 AV	54.0	-0.1	1.13 H	303	55.5	-1.6
3	*2412.00	109.7 PK			1.13 H	303	111.3	-1.6
4	*2412.00	99.5 AV			1.13 H	303	101.1	-1.6
5	4824.00	32.4 PK	74.0	-41.6	2.25 H	232	29.2	3.2
6	4824.00	25.0 AV	54.0	-29.0	2.25 H	232	21.8	3.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	62.3 PK	74.0	-11.7	1.56 V	200	63.9	-1.6
2	2390.00	52.2 AV	54.0	-1.8	1.56 V	200	53.8	-1.6
3	*2412.00	107.6 PK			1.56 V	200	109.2	-1.6
4	*2412.00	98.3 AV			1.56 V	200	99.9	-1.6
5	4824.00	37.9 PK	74.0	-36.1	2.02 V	194	34.7	3.2
6	4824.00	26.4 AV	54.0	-27.6	2.02 V	194	23.2	3.2

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	Frequency (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	66.4 PK	74.0	-7.6	2.45 H	60	68.0	-1.6
2	2390.00	51.7 AV	54.0	-2.3	2.45 H	60	53.3	-1.6
3	*2437.00	115.3 PK			2.45 H	60	116.9	-1.6
4	*2437.00	106.7 AV			2.45 H	60	108.3	-1.6
5	2483.50	67.4 PK	74.0	-6.6	2.45 H	60	69.0	-1.6
6	2483.50	51.6 AV	54.0	-2.4	2.45 H	60	53.2	-1.6
7	4874.00	36.1 PK	74.0	-37.9	2.18 H	218	32.9	3.2
8	4874.00	24.8 AV	54.0	-29.2	2.18 H	218	21.6	3.2
9	7311.00	53.9 PK	74.0	-20.1	1.96 H	230	44.5	9.4
10	7311.00	41.9 AV	54.0	-12.1	1.96 H	230	32.5	9.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	61.9 PK	74.0	-12.1	1.47 V	208	63.5	-1.6
2	2390.00	48.2 AV	54.0	-5.8	1.47 V	208	49.8	-1.6
3	*2437.00	112.4 PK			1.47 V	208	114.0	-1.6
4	*2437.00	103.2 AV			1.47 V	208	104.8	-1.6
5	2483.50	61.4 PK	74.0	-12.6	1.47 V	208	63.0	-1.6
6	2483.50	47.9 AV	54.0	-6.1	1.47 V	208	49.5	-1.6
7	4874.00	42.7 PK	74.0	-31.3	1.00 V	325	39.5	3.2
8	4874.00	31.2 AV	54.0	-22.8	1.00 V	325	28.0	3.2
9	7311.00	54.7 PK	74.0	-19.3	1.00 V	228	45.3	9.4
10	7311.00	42.3 AV	54.0	-11.7	1.00 V	228	32.9	9.4

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	Frequency (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	110.0 PK			1.03 H	306	111.6	-1.6
2	*2462.00	99.3 AV			1.03 H	306	100.9	-1.6
3	2483.50	65.5 PK	74.0	-8.5	1.03 H	306	67.1	-1.6
4	2483.50	53.6 AV	54.0	-0.4	1.03 H	306	55.2	-1.6
5	4924.00	32.3 PK	74.0	-41.7	2.30 H	241	29.2	3.1
6	4924.00	25.1 AV	54.0	-28.9	2.30 H	241	22.0	3.1
7	7386.00	35.9 PK	74.0	-38.1	2.23 H	231	26.2	9.7
8	7386.00	24.9 AV	54.0	-29.1	2.23 H	231	15.2	9.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (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	108.2 PK			1.72 V	213	109.8	-1.6
2	*2462.00	98.5 AV			1.72 V	213	100.1	-1.6
3	2483.50	60.4 PK	74.0	-13.6	1.72 V	213	62.0	-1.6
4	2483.50	49.0 AV	54.0	-5.0	1.72 V	213	50.6	-1.6
5	4924.00	37.4 PK	74.0	-36.6	1.07 V	132	34.3	3.1
6	4924.00	25.6 AV	54.0	-28.4	1.07 V	132	22.5	3.1
7	7386.00	42.9 PK	74.0	-31.1	2.03 V	44	33.2	9.7
8	7386.00	30.8 AV	54.0	-23.2	2.03 V	44	21.1	9.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	Frequency (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	63.6 PK	74.0	-10.4	1.01 H	304	65.2	-1.6
2	2390.00	53.7 AV	54.0	-0.3	1.01 H	304	55.3	-1.6
3	*2422.00	105.8 PK			1.01 H	304	107.4	-1.6
4	*2422.00	94.4 AV			1.01 H	304	96.0	-1.6
5	4844.00	31.9 PK	74.0	-42.1	2.24 H	227	28.6	3.3
6	4844.00	24.7 AV	54.0	-29.3	2.24 H	227	21.4	3.3
7	7266.00	35.6 PK	74.0	-38.4	2.19 H	222	26.3	9.3
8	7266.00	24.8 AV	54.0	-29.2	2.19 H	222	15.5	9.3

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (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	63.0 PK	74.0	-11.0	1.53 V	208	64.6	-1.6
2	2390.00	51.9 AV	54.0	-2.1	1.53 V	208	53.5	-1.6
3	*2422.00	104.1 PK			1.53 V	208	105.7	-1.6
4	*2422.00	92.8 AV			1.53 V	208	94.4	-1.6
5	4844.00	36.7 PK	74.0	-37.3	1.44 V	67	33.4	3.3
6	4844.00	26.0 AV	54.0	-28.0	1.44 V	67	22.7	3.3
7	7266.00	42.2 PK	74.0	-31.8	1.24 V	134	32.9	9.3
8	7266.00	31.1 AV	54.0	-22.9	1.24 V	134	21.8	9.3

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	Frequency (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	2.42 H	300	67.2	-1.6
2	2390.00	53.3 AV	54.0	-0.7	2.42 H	300	54.9	-1.6
3	*2437.00	106.3 PK			2.42 H	300	107.9	-1.6
4	*2437.00	97.3 AV			2.42 H	300	98.9	-1.6
5	2483.50	66.2 PK	74.0	-7.8	2.42 H	300	67.8	-1.6
6	2483.50	52.4 AV	54.0	-1.6	2.42 H	300	54.0	-1.6
7	4874.00	32.4 PK	74.0	-41.6	2.25 H	237	29.2	3.2
8	4874.00	25.3 AV	54.0	-28.7	2.25 H	237	22.1	3.2
9	7311.00	35.6 PK	74.0	-38.4	2.17 H	222	26.2	9.4
10	7311.00	24.7 AV	54.0	-29.3	2.17 H	222	15.3	9.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	61.7 PK	74.0	-12.3	1.41 V	206	63.3	-1.6
2	2390.00	49.3 AV	54.0	-4.7	1.41 V	206	50.9	-1.6
3	*2437.00	102.7 PK			1.41 V	206	104.3	-1.6
4	*2437.00	93.9 AV			1.41 V	206	95.5	-1.6
5	2483.50	60.5 PK	74.0	-13.5	1.41 V	206	62.1	-1.6
6	2483.50	48.2 AV	54.0	-5.8	1.41 V	206	49.8	-1.6
7	4874.00	39.6 PK	74.0	-34.4	3.99 V	360	36.4	3.2
8	4874.00	27.1 AV	54.0	-26.9	3.99 V	360	23.9	3.2
9	7311.00	42.5 PK	74.0	-31.5	2.52 V	255	33.1	9.4
10	7311.00	31.3 AV	54.0	-22.7	2.52 V	255	21.9	9.4

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	Frequency (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	105.7 PK			1.50 H	304	107.3	-1.6
2	*2452.00	94.8 AV			1.50 H	304	96.4	-1.6
3	2483.50	65.4 PK	74.0	-8.6	1.50 H	304	67.0	-1.6
4	2483.50	53.8 AV	54.0	-0.2	1.50 H	304	55.4	-1.6
5	4904.00	31.7 PK	74.0	-42.3	2.23 H	236	28.6	3.1
6	4904.00	24.6 AV	54.0	-29.4	2.23 H	236	21.5	3.1
7	7356.00	35.5 PK	74.0	-38.5	2.14 H	229	26.0	9.5
8	7356.00	24.8 AV	54.0	-29.2	2.14 H	229	15.3	9.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (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	104.6 PK			1.58 V	202	106.2	-1.6
2	*2452.00	93.1 AV			1.58 V	202	94.7	-1.6
3	2483.50	60.2 PK	74.0	-13.8	1.58 V	202	61.8	-1.6
4	2483.50	49.7 AV	54.0	-4.3	1.58 V	202	51.3	-1.6
5	4904.00	32.1 PK	74.0	-41.9	2.45 V	155	29.0	3.1
6	4904.00	24.6 AV	54.0	-29.4	2.45 V	155	21.5	3.1
7	7356.00	43.9 PK	74.0	-30.1	3.71 V	41	34.4	9.5
8	7356.00	35.9 AV	54.0	-18.1	3.71 V	41	26.4	9.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

Below 1GHz Data:

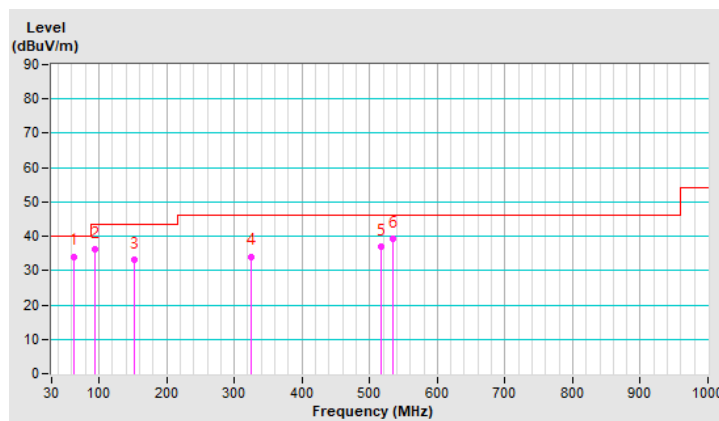
802.11b

Channel	TX Channel 6	Detector Function	Quasi-Peak (QP)
Frequency Range	9kHz ~ 1GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	63.59	34.1 QP	40.0	-5.9	1.00 H	89	42.7	-8.6
2	94.70	36.3 QP	43.5	-7.2	1.50 H	254	49.0	-12.7
3	151.69	33.1 QP	43.5	-10.4	1.00 H	267	40.0	-6.9
4	324.98	34.1 QP	46.0	-11.9	1.50 H	356	39.1	-5.0
5	516.67	37.1 QP	46.0	-8.9	2.00 H	360	37.1	0.0
6	535.10	39.1 QP	46.0	-6.9	1.50 H	222	38.9	0.2

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. 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.



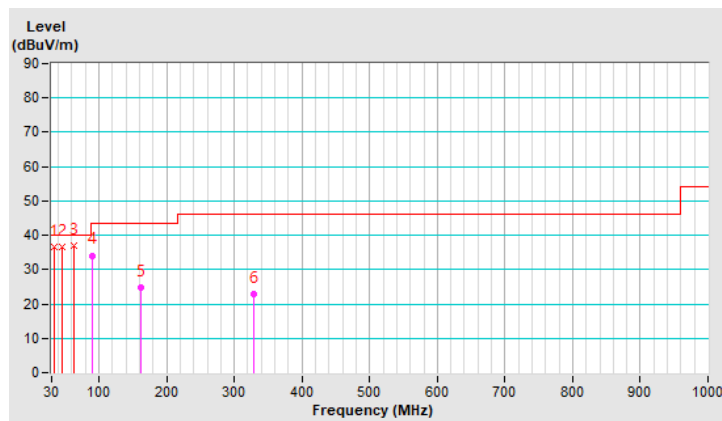
Channel	TX Channel 6	Detector Function	Quasi-Peak (QP)
Frequency Range	9kHz ~ 1GHz		

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.86	36.7 QP	40.0	-3.3	1.23 V	308	45.4	-8.7
2	45.81	36.6 QP	40.0	-3.4	1.29 V	310	44.2	-7.6
3	62.88	36.9 QP	40.0	-3.1	1.50 V	171	45.5	-8.6
4	89.68	34.1 QP	43.5	-9.4	1.00 V	217	47.3	-13.2
5	161.41	24.9 QP	43.5	-18.6	1.00 V	207	31.8	-6.9
6	329.66	23.0 QP	46.0	-23.0	1.50 V	66	27.7	-4.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. 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. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 19, 2020	Mar. 18, 2021
50 ohms Terminator	50	3	Oct. 23, 2019	Oct. 22, 2020
RF Cable	5D-FB	COCCAB-001	Sep. 27, 2019	Sep. 26, 2020
Fixed attenuator EMCI	STI02-2200-10	005	Aug. 29, 2020	Aug. 28, 2021
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: Sep. 14, 2020

4.2.3 Test Procedures

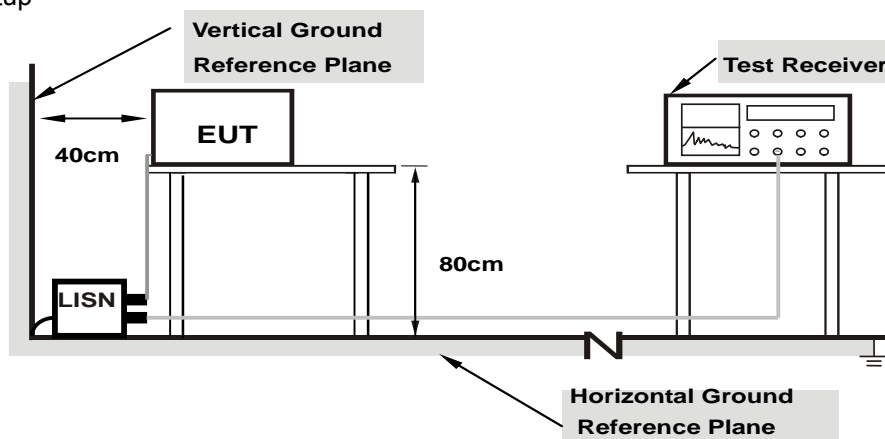
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

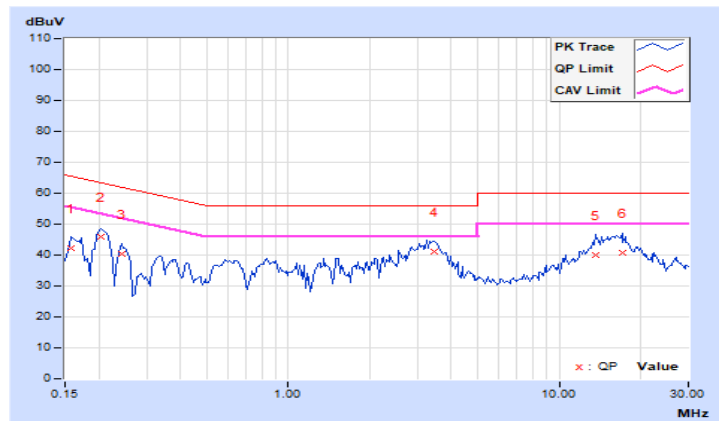
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.91	32.36	17.04	42.27	26.95	65.58	55.58	-23.31	-28.63
2	0.20469	9.93	35.94	29.86	45.87	39.79	63.42	53.42	-17.55	-13.63
3	0.24375	9.93	30.26	25.13	40.19	35.06	61.97	51.97	-21.78	-16.91
4	3.45313	10.10	30.84	22.94	40.94	33.04	56.00	46.00	-15.06	-12.96
5	13.66406	10.65	29.48	23.89	40.13	34.54	60.00	50.00	-19.87	-15.46
6	17.11328	10.85	29.80	23.77	40.65	34.62	60.00	50.00	-19.35	-15.38

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

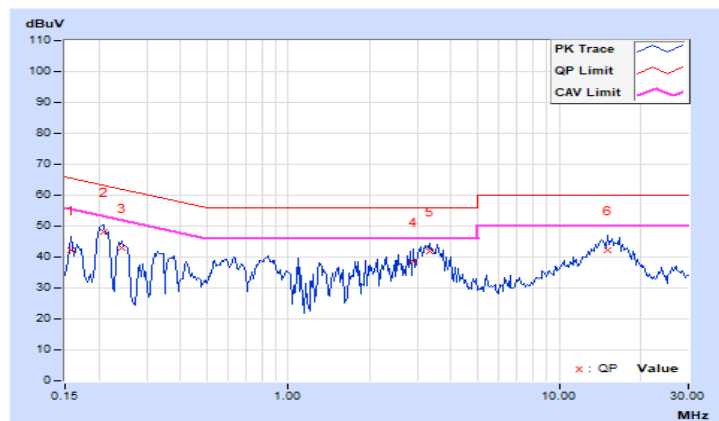


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.91	32.26	17.48	42.17	27.39	65.58	55.58	-23.41	-28.19
2	0.20859	9.93	38.40	32.80	48.33	42.73	63.26	53.26	-14.93	-10.53
3	0.24375	9.93	33.19	27.91	43.12	37.84	61.97	51.97	-18.85	-14.13
4	2.89063	10.06	28.37	20.03	38.43	30.09	56.00	46.00	-17.57	-15.91
5	3.31641	10.07	31.84	23.99	41.91	34.06	56.00	46.00	-14.09	-11.94
6	15.14453	10.57	31.59	26.03	42.16	36.60	60.00	50.00	-17.84	-13.40

Remarks:

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

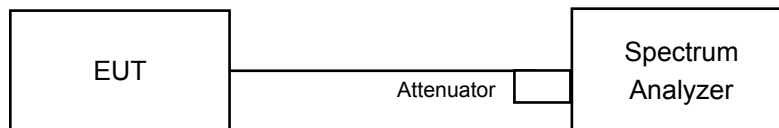


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation 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	7.09	7.1	0.5	Pass
6	2437	6.64	7.15	0.5	Pass
11	2462	6.6	7.08	0.5	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.19	15.18	0.5	Pass
6	2437	15.76	15.16	0.5	Pass
11	2462	15.34	15.19	0.5	Pass

802.11n (HT20)

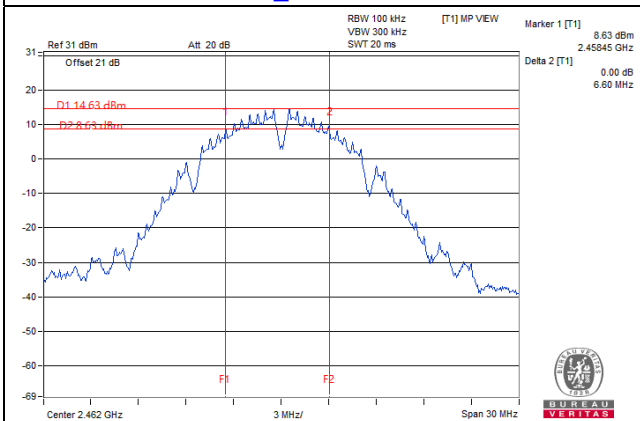
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.16	15.18	0.5	Pass
6	2437	15.18	15.19	0.5	Pass
11	2462	15.19	15.19	0.5	Pass

802.11n (HT40)

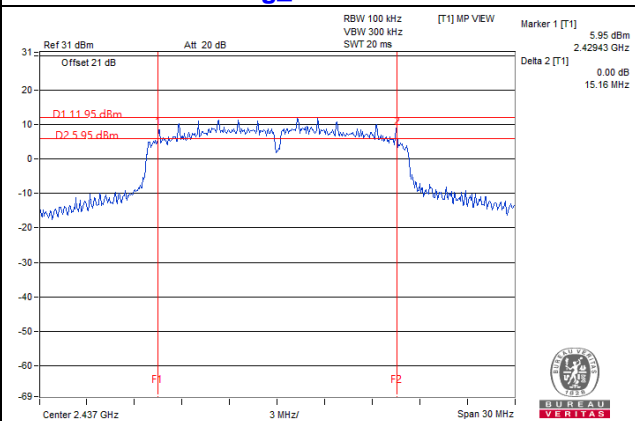
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.05	33.73	0.5	Pass
6	2437	33.85	35.09	0.5	Pass
9	2452	32.62	33.87	0.5	Pass

Spectrum Plot of Worst Value

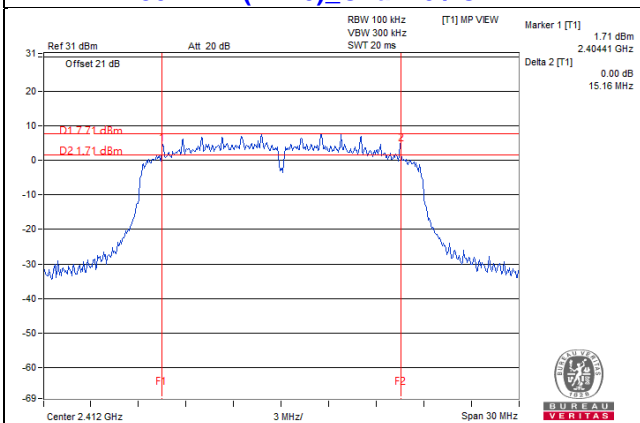
802.11b_Chain 0 / CH11



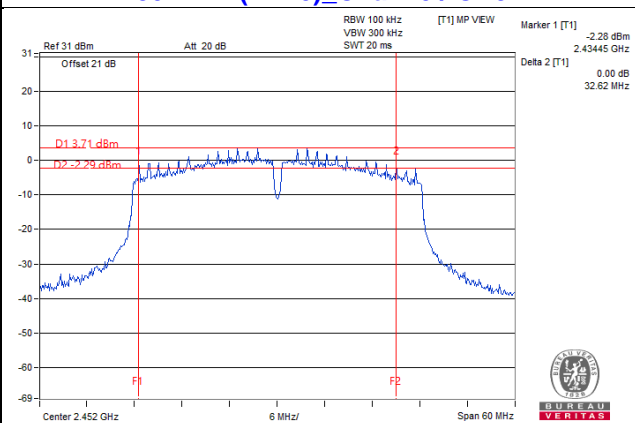
802.11g_Chain 1 / CH6



802.11n (HT20)_Chain 0 / CH1

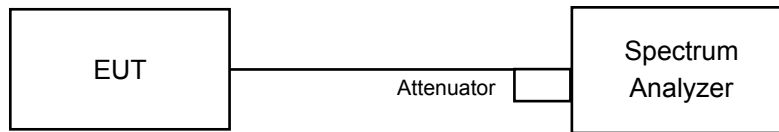


802.11n (HT40)_Chain 0 / CH9



4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

4.4.4 Deviation from Test Standard

No deviation.

4.4.5 EUT Operating Conditions

Same as Item 4.3.6.

4.4.6 Test Results

802.11b

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
1	2412	11.4	12
6	2437	14.04	13.44
11	2462	11.64	11.64

802.11g

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
1	2412	16.32	16.32
6	2437	22.32	17.52
11	2462	16.20	16.20

802.11n (HT20)

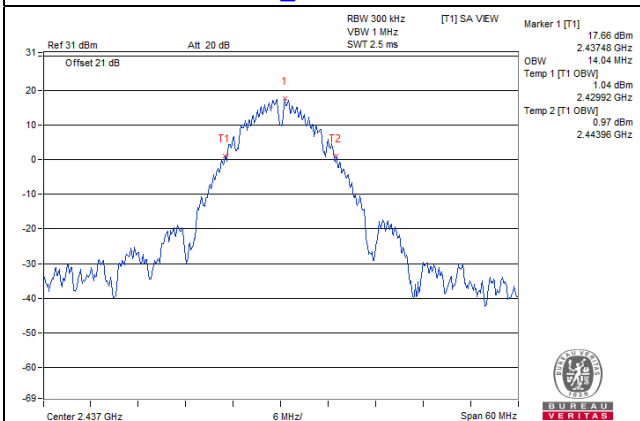
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
1	2412	17.40	17.40
6	2437	22.44	18.00
11	2462	17.40	17.40

802.11n (HT40)

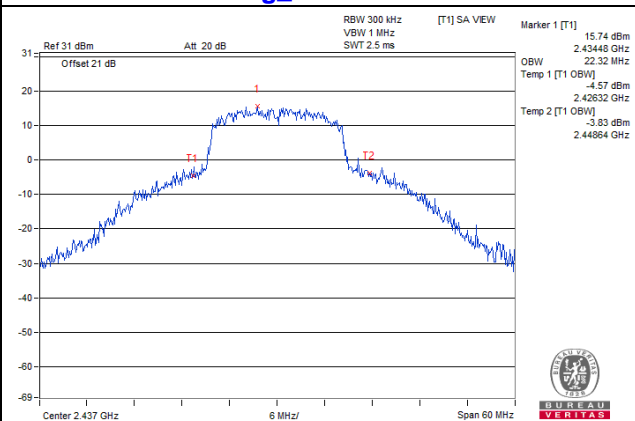
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
3	2422	36.00	36.00
6	2437	36.00	36.24
9	2452	35.76	36.00

Spectrum Plot of Max Value

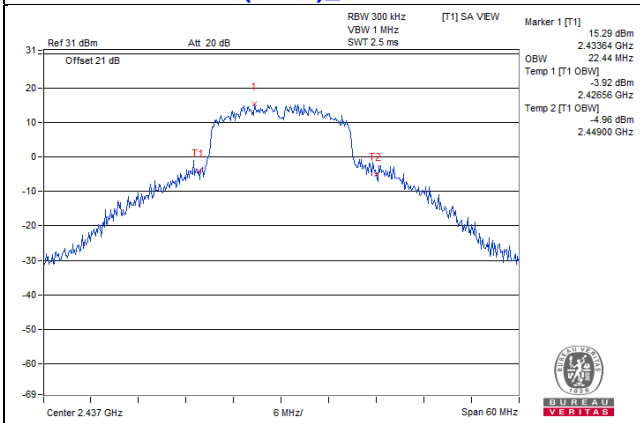
802.11b_Chain 0 / CH6



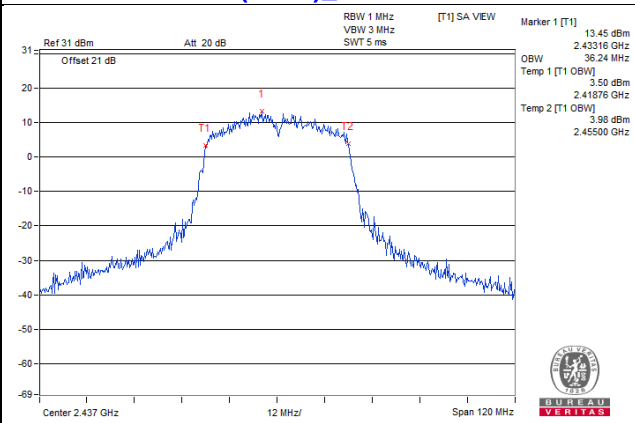
802.11g_Chain 0 / CH6



802.11n (HT20)_Chain 0 / CH6



802.11n (HT40)_Chain 1 / CH6



4.5 Conducted Output Power Measurement

4.5.1 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,

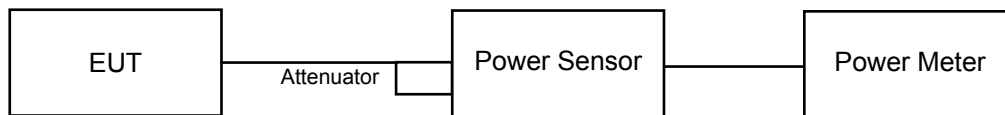
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test 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.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as Item 4.3.6.

4.5.7 Test Results

FOR PEAK POWER

802.11b

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	24.63	24.16	551.018	27.41	30.00	Pass
6	2437	26.16	25.25	748.013	28.74	30.00	Pass
11	2462	24.38	24.02	526.505	27.21	30.00	Pass

802.11g

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	24.92	24.75	608.994	27.85	30.00	Pass
6	2437	26.36	25.43	781.654	28.93	30.00	Pass
11	2462	25.11	24.49	605.53	27.82	30.00	Pass

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	24.78	24.47	580.506	27.64	30.00	Pass
6	2437	26.34	25.42	778.864	28.91	30.00	Pass
11	2462	24.61	24.54	573.514	27.59	30.00	Pass

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	22.39	22.95	370.623	25.69	30.00	Pass
6	2437	25.15	24.79	628.641	27.98	30.00	Pass
9	2452	24.14	24.29	527.952	27.23	30.00	Pass

FOR AVERAGE POWER

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	21.78	21.56	293.879	24.68
6	2437	24.05	23.34	469.872	26.72
11	2462	21.44	21.29	273.902	24.38

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	18.14	18.38	134.028	21.27
6	2437	23.06	22.60	384.272	25.85
11	2462	17.82	17.89	122.052	20.87

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	17.51	17.81	116.759	20.67
6	2437	22.94	22.48	373.8	25.73
11	2462	17.33	17.62	111.885	20.49

802.11n (HT40)

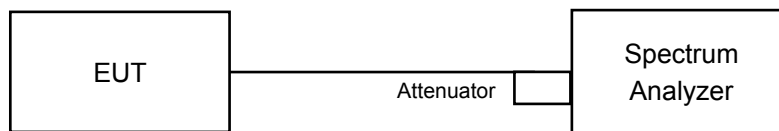
Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
3	2422	14.43	15.39	62.327	17.95
6	2437	18.27	18.36	135.692	21.33
9	2452	16.58	17.28	98.955	19.95

4.6 Power Spectral Density Measurement

4.6.1 Limits of Power Spectral Density Measurement

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

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

- 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.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Same as Item 4.3.6

4.6.7 Test Results

802.11b

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1			
1	2412	-0.23	0.58	3.20	8.00	Pass
6	2437	3.20	2.15	5.72	8.00	Pass
11	2462	0.06	-0.25	2.92	8.00	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20}) / 2] = 5.91 \text{dBi} < 6 \text{dBi}$, so the power density limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1			
1	2412	-5.80	-5.14	-2.45	8.00	Pass
6	2437	-0.73	-3.15	1.24	8.00	Pass
11	2462	-6.80	-7.18	-3.98	8.00	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20}) / 2] = 5.91 \text{dBi} < 6 \text{dBi}$, so the power density limit shall not be reduced.

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1			
1	2412	-6.52	-7.04	-3.76	8.00	Pass
6	2437	-1.51	-1.94	1.29	8.00	Pass
11	2462	-6.74	-9.02	-4.72	8.00	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20}) / 2] = 5.91 \text{dBi} < 6 \text{dBi}$, so the power density limit shall not be reduced.

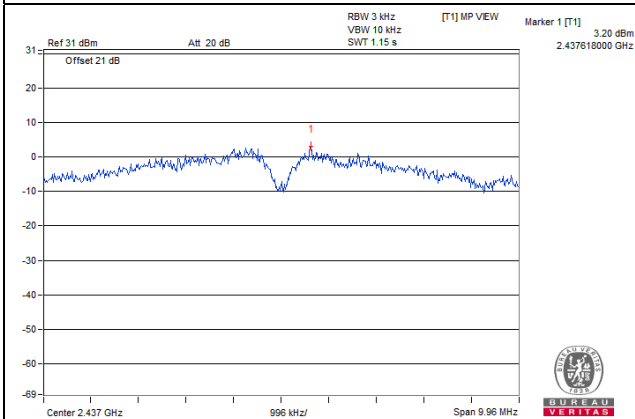
802.11n (HT40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1			
3	2422	-12.68	-10.10	-8.19	8.00	Pass
6	2437	-7.96	-9.11	-5.49	8.00	Pass
9	2452	-11.64	-9.20	-7.24	8.00	Pass

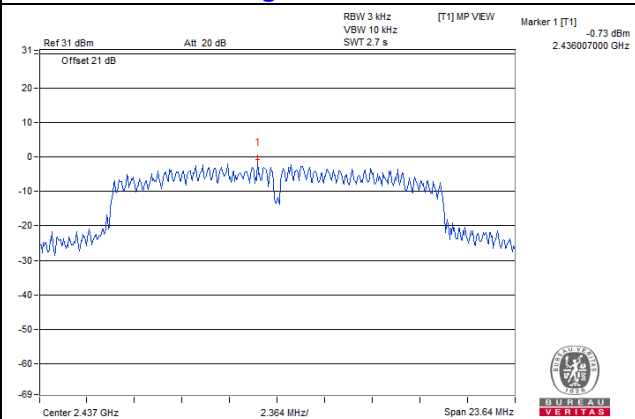
Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20}) / 2] = 5.91 \text{dBi} < 6 \text{dBi}$, so the power density limit shall not be reduced.

Spectrum Plot of Worst Value

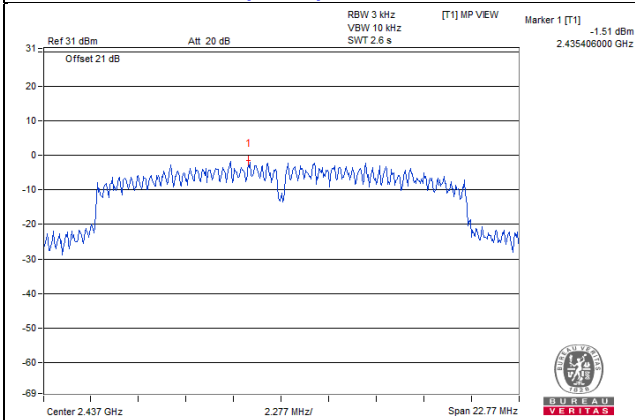
802.11b_Chain 0 / CH6



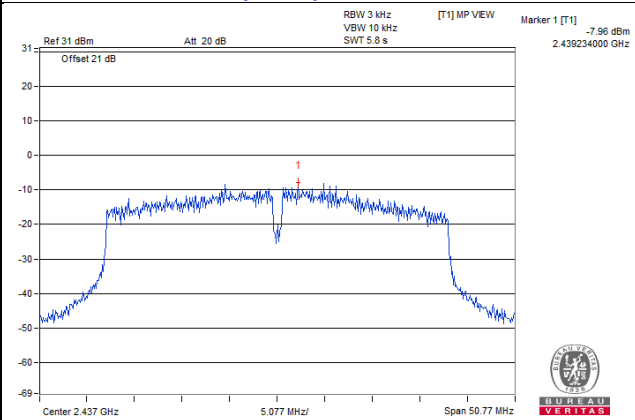
802.11g_Chain 0 / CH6



802.11n (HT20)_Chain 0 / CH6



802.11n (HT40)_Chain 0 / CH6

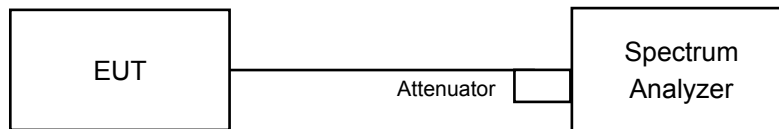


4.7 Conducted Out of Band Emission Measurement

4.7.1 Limits of Conducted Out of Band Emission Measurement

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

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 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.

4.7.5 Deviation from Test Standard

No deviation.

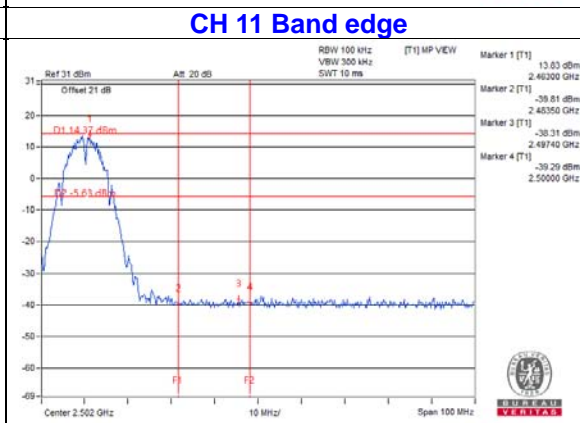
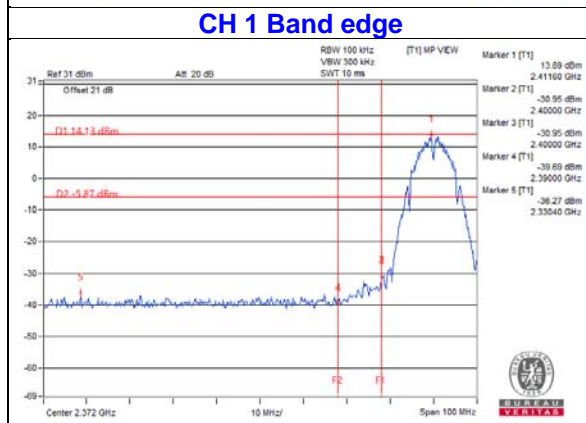
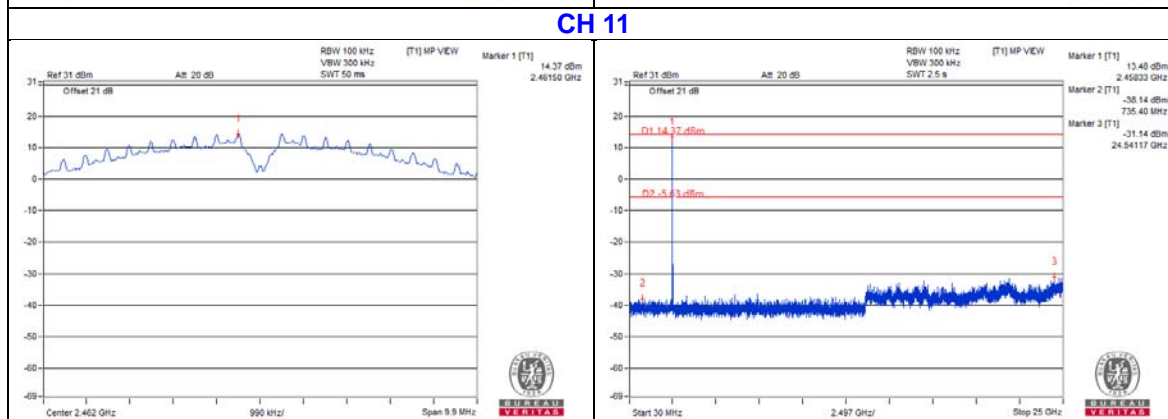
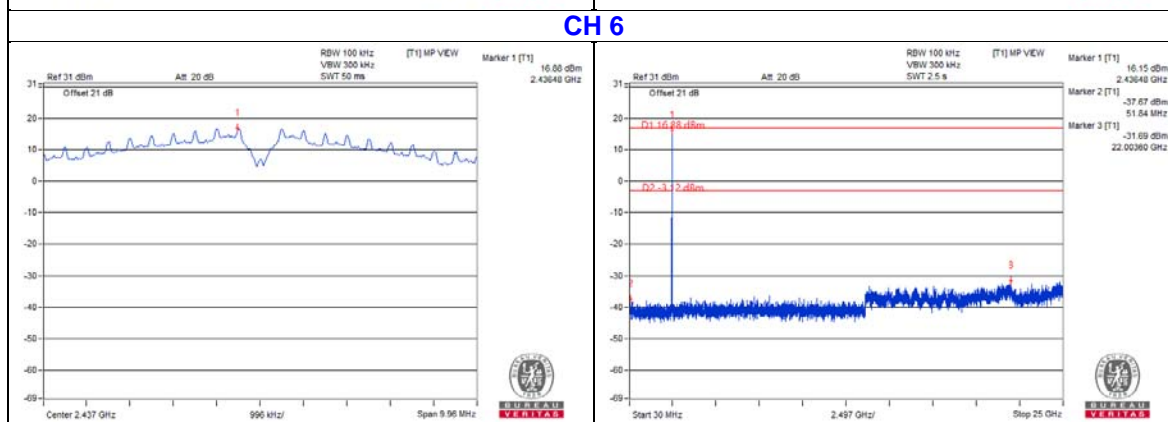
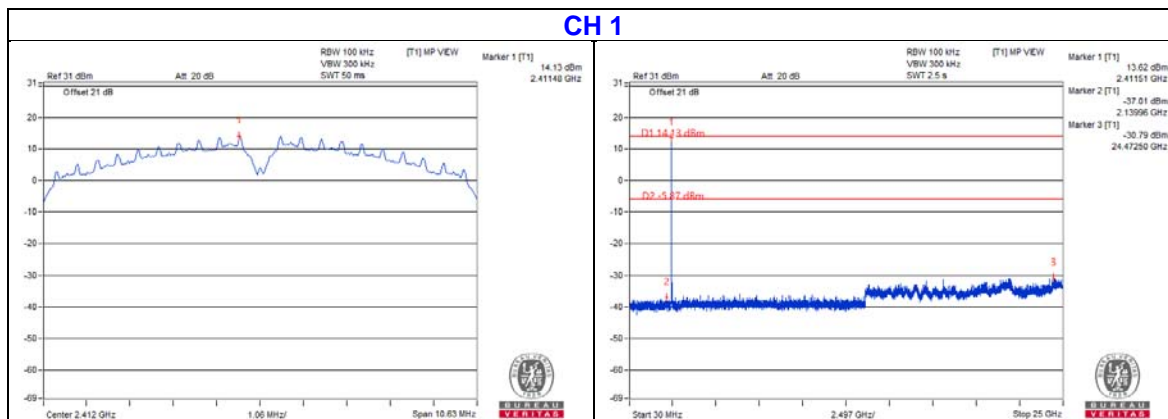
4.7.6 EUT Operating Condition

Same as Item 4.3.6

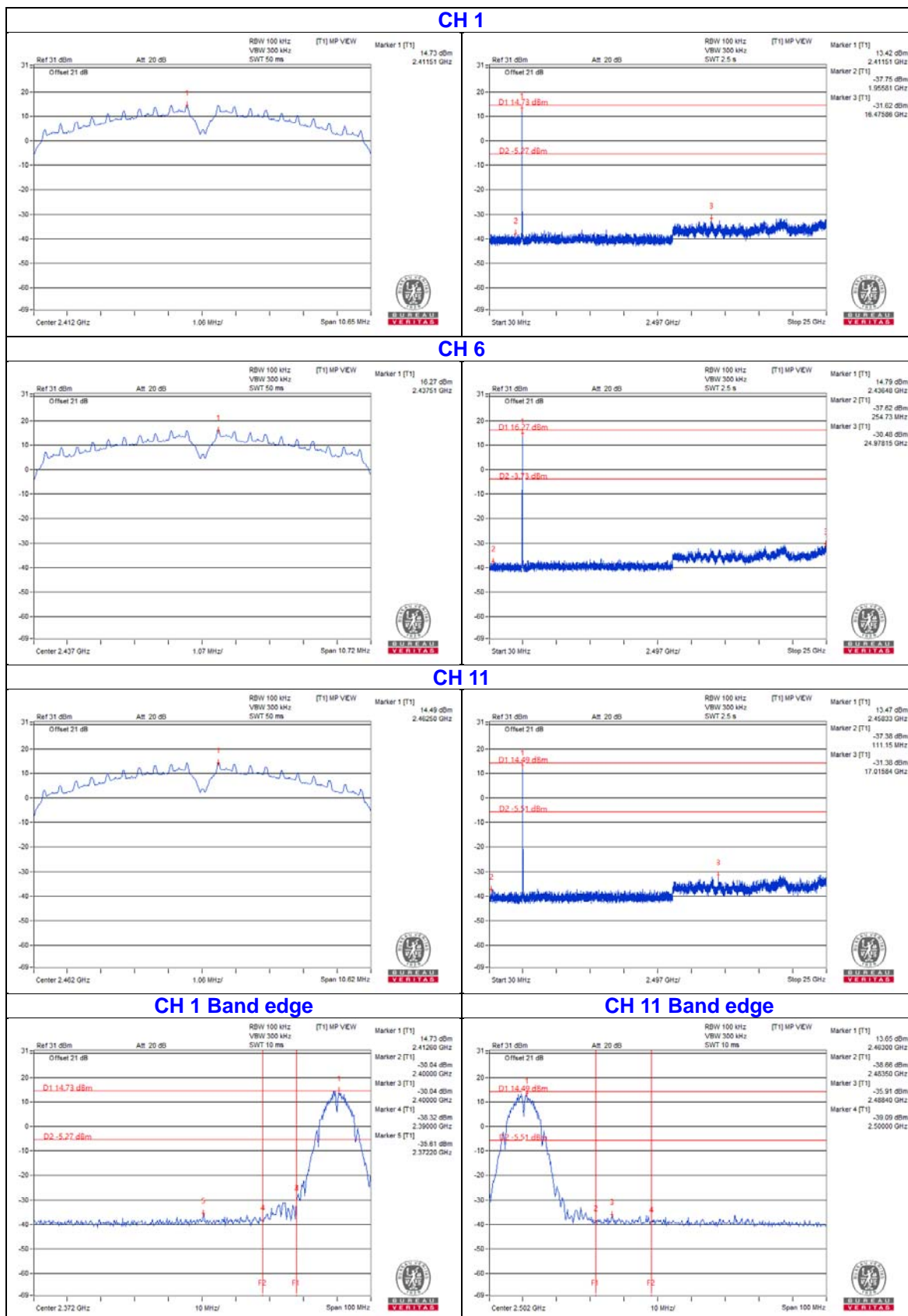
4.7.7 Test Results

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.

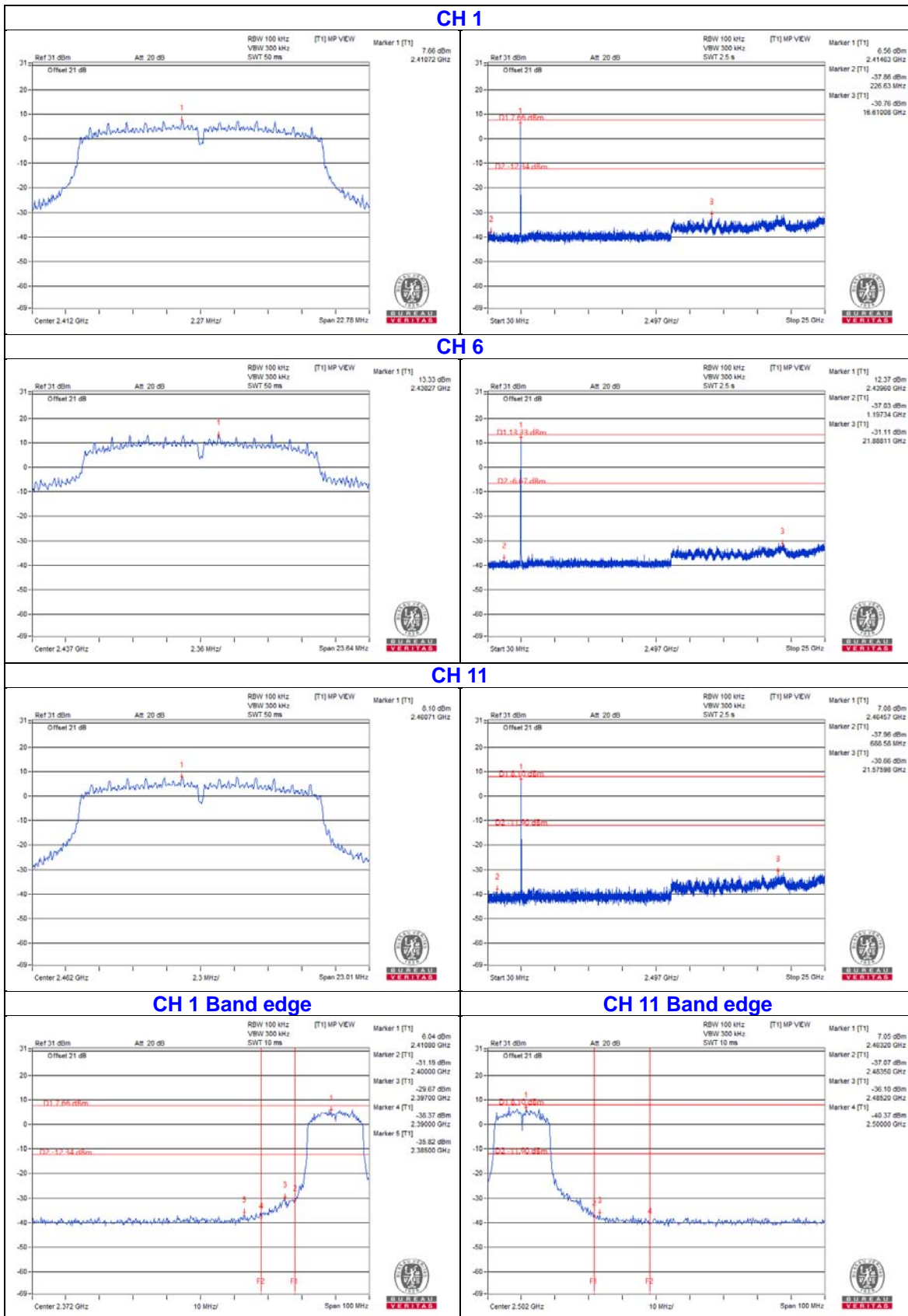
802.11b
Chain 0



Chain 1

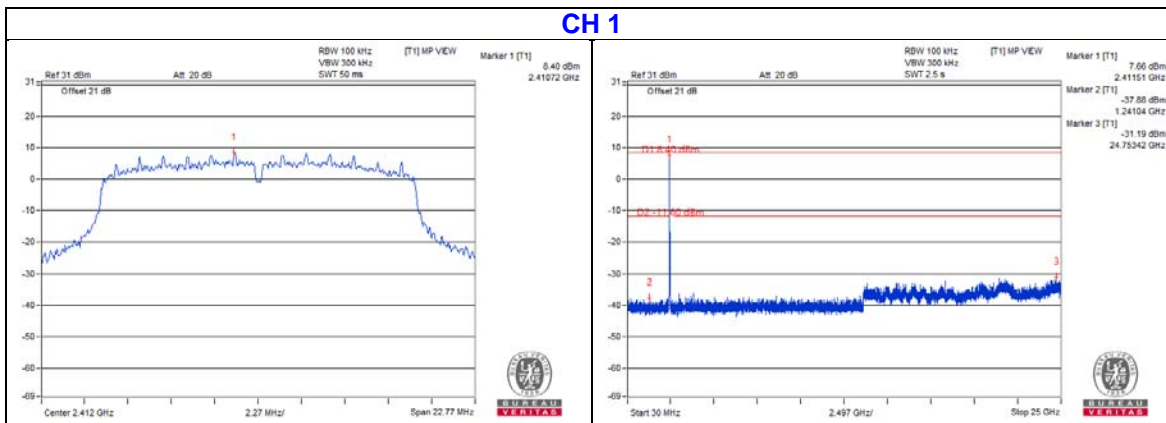


802.11g
Chain 0

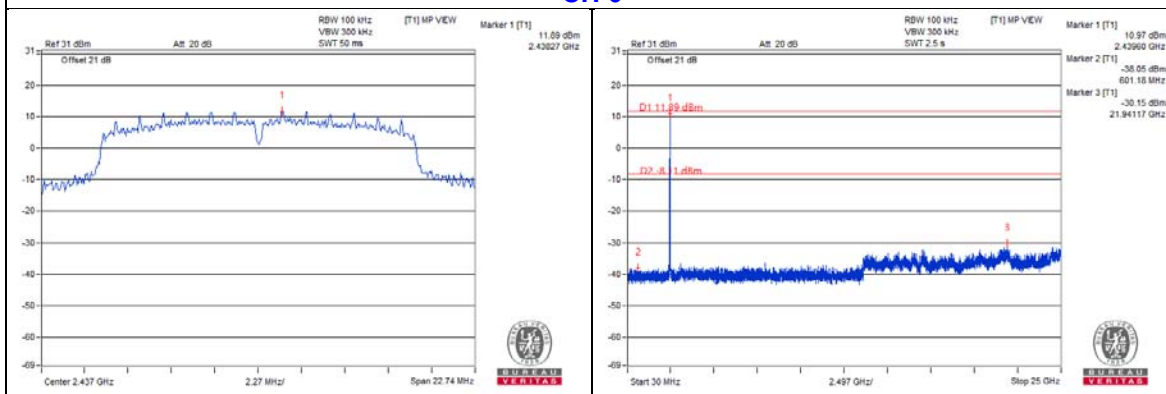


Chain 1

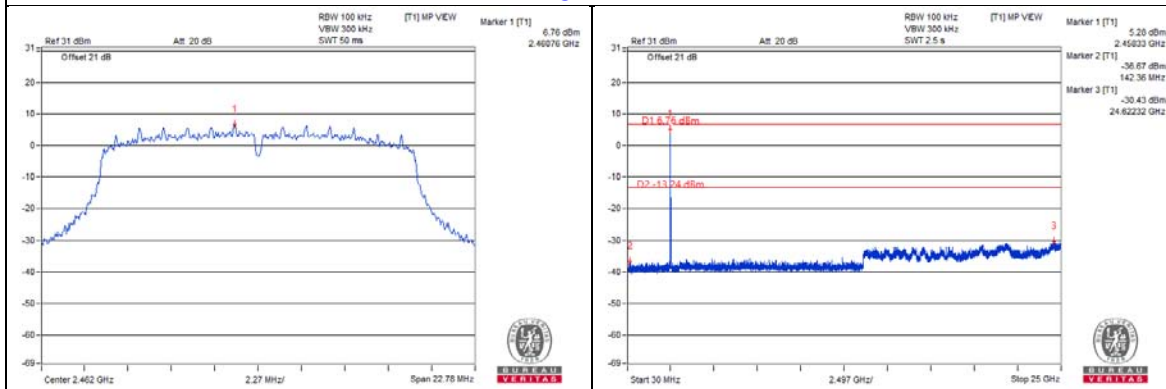
CH 1



CH 6

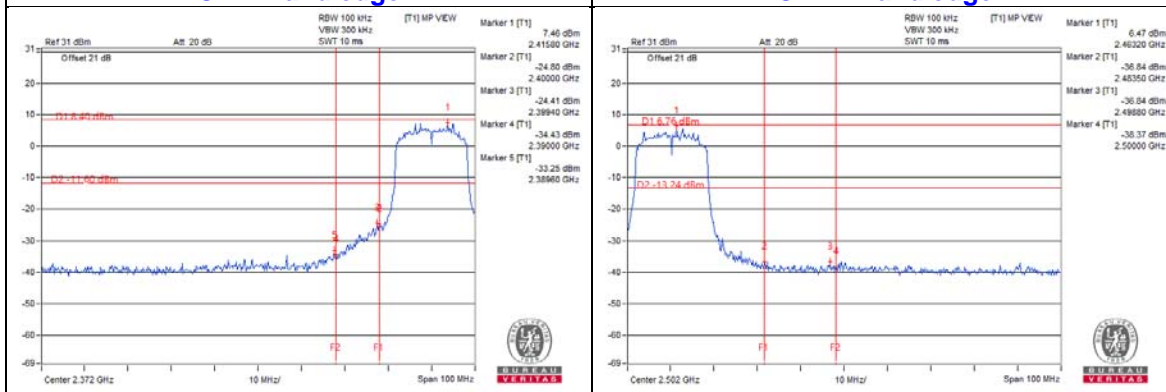


CH 11

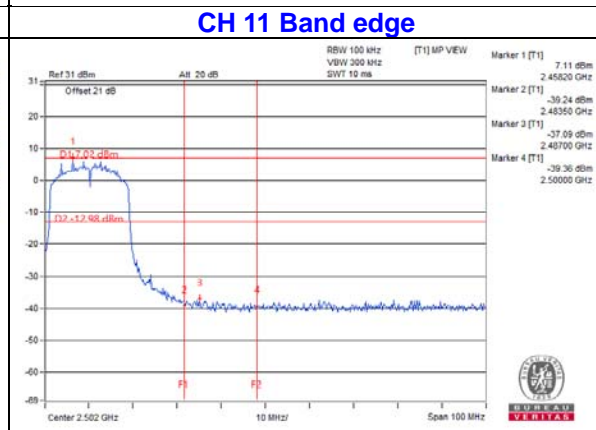
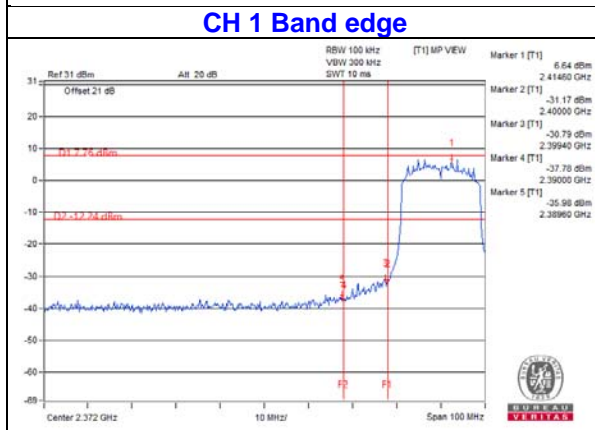
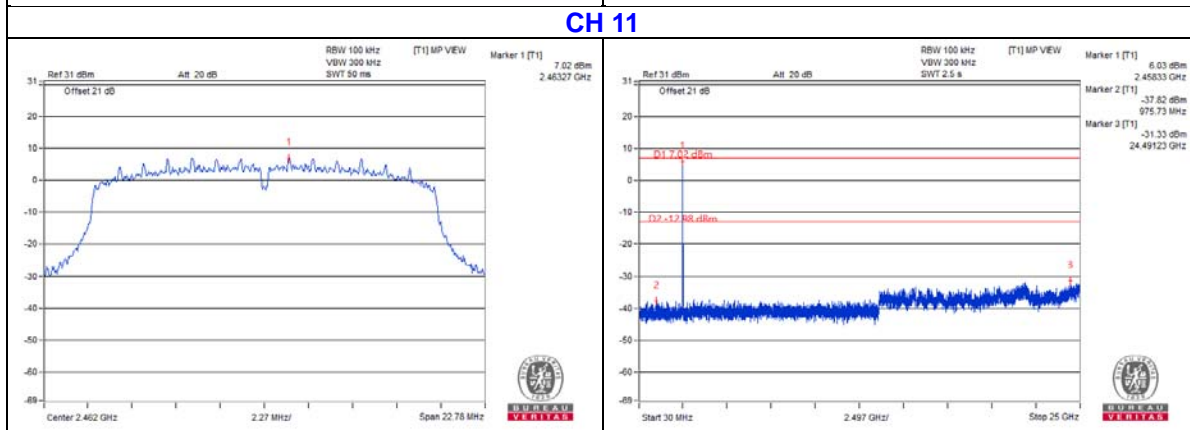
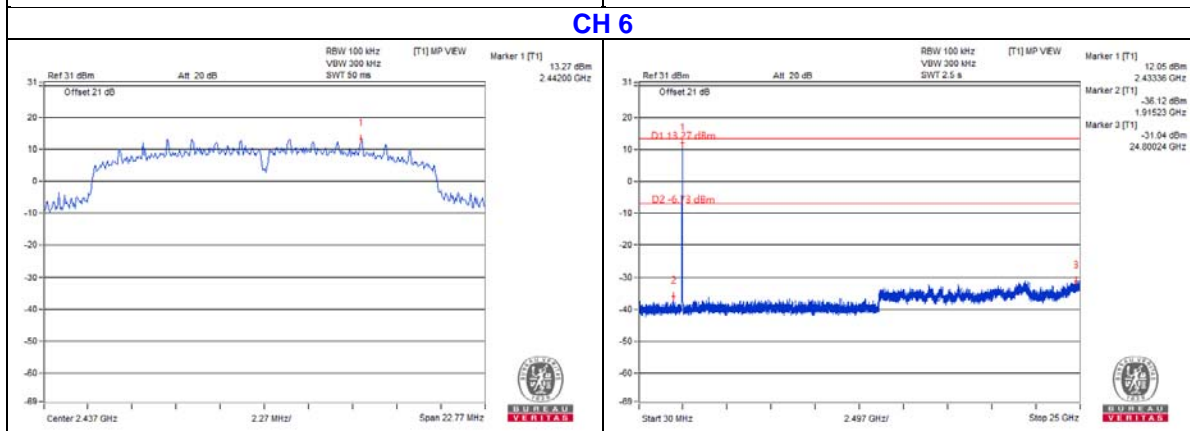
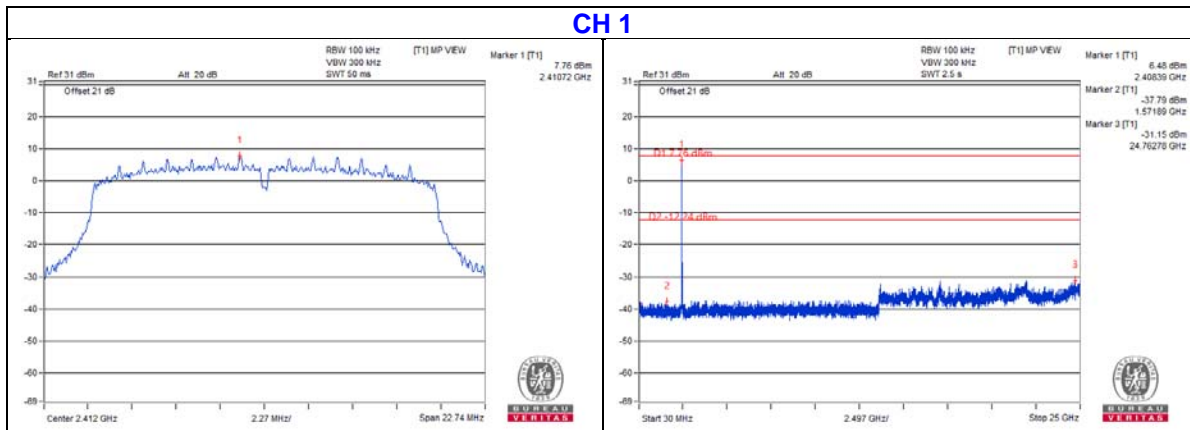


CH 1 Band edge

CH 11 Band edge

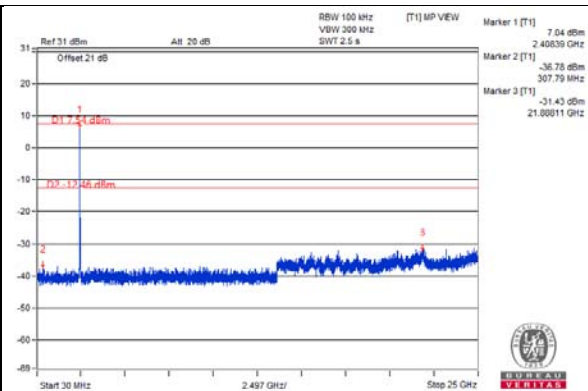
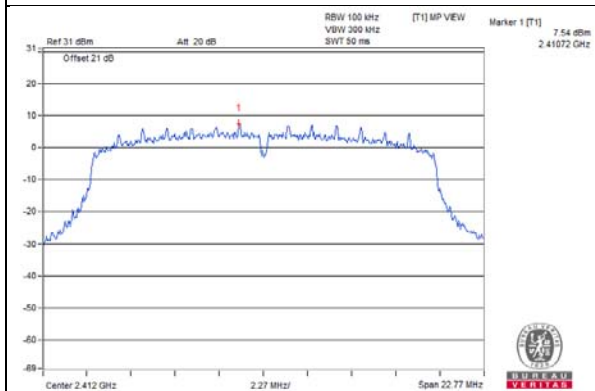


802.11n (HT20)
Chain 0

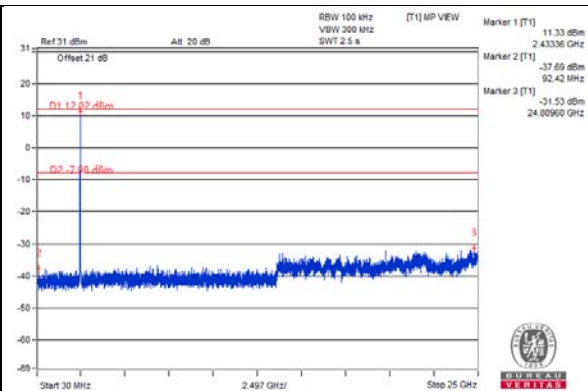
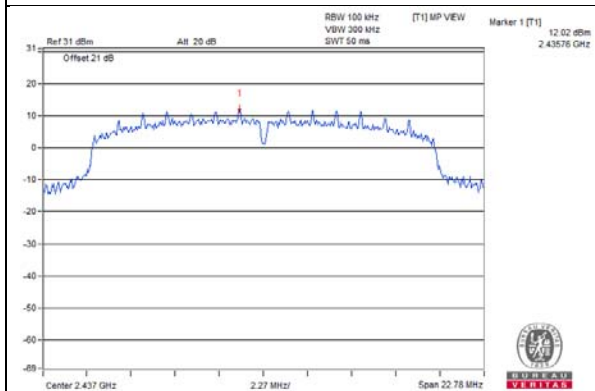


Chain 1

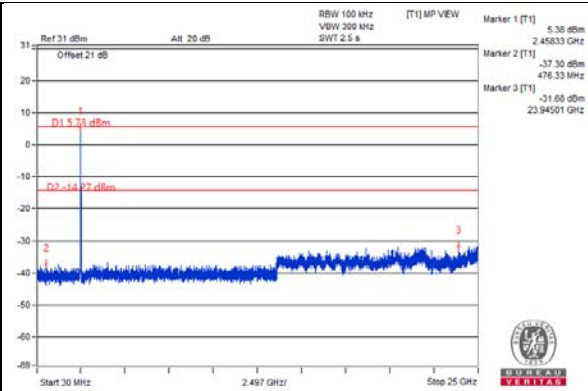
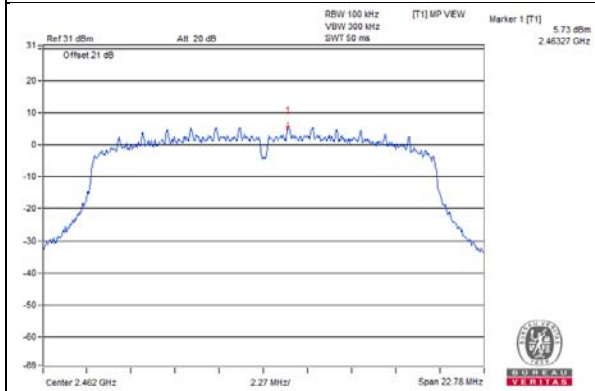
CH 1



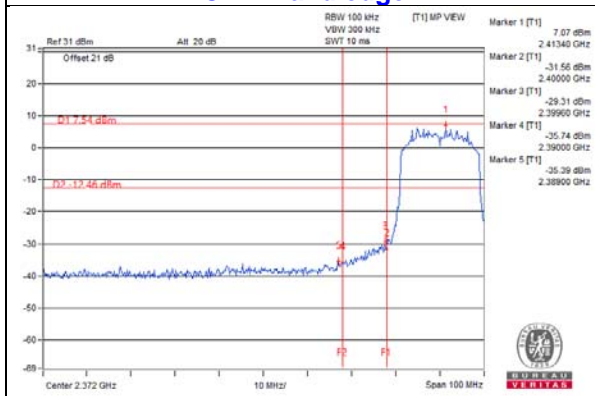
CH 6



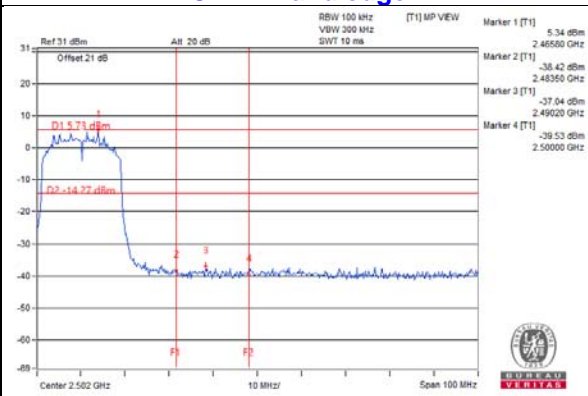
CH 11



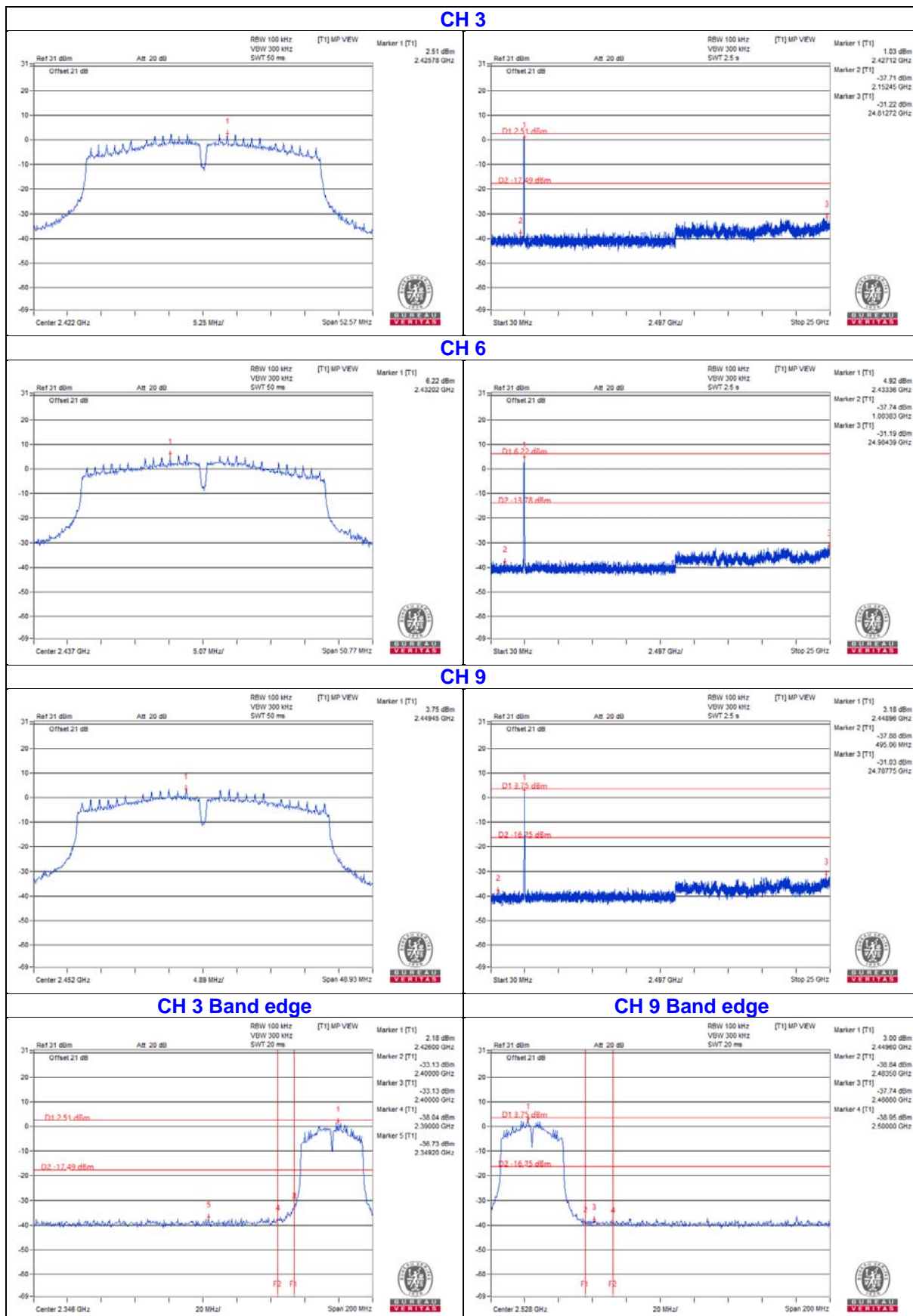
CH 1 Band edge



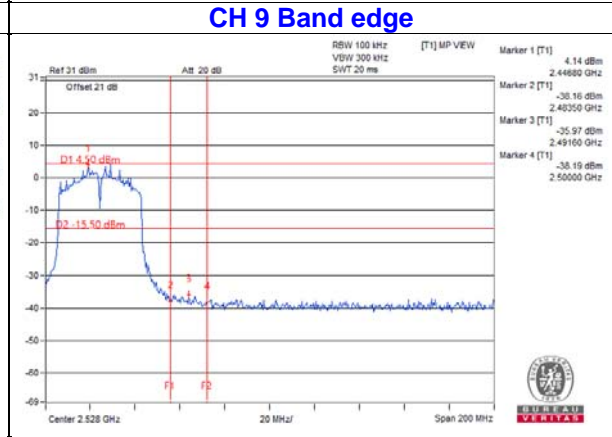
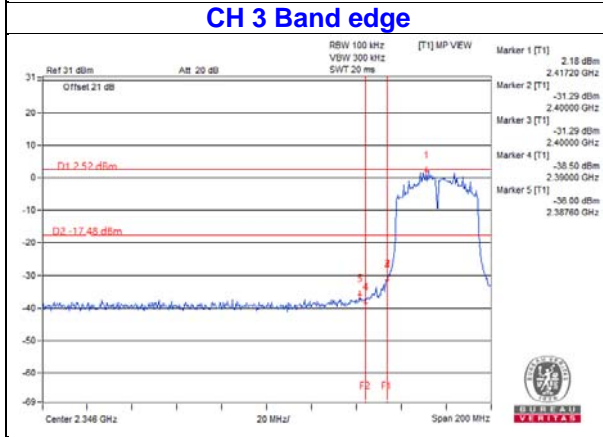
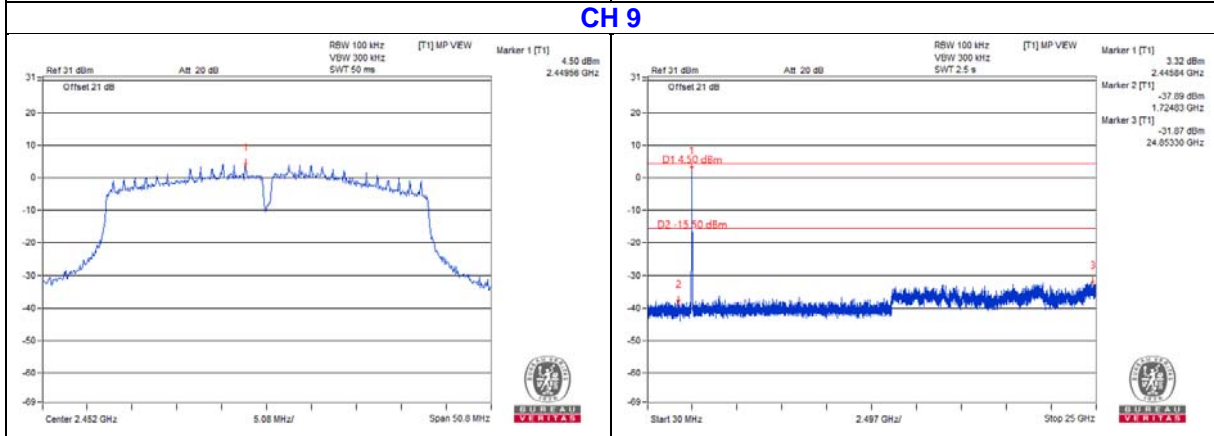
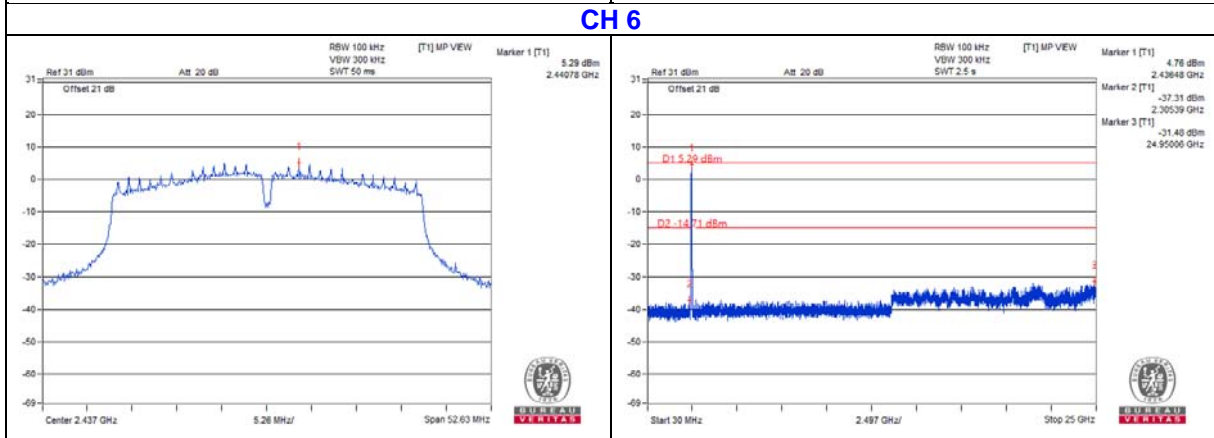
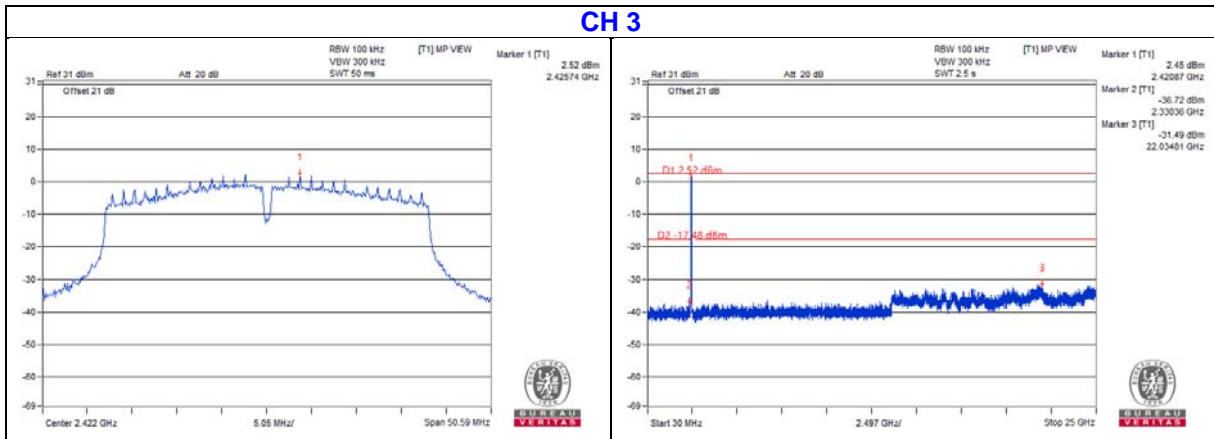
CH 11 Band edge



802.11n (HT40)
Chain 0



Chain 1

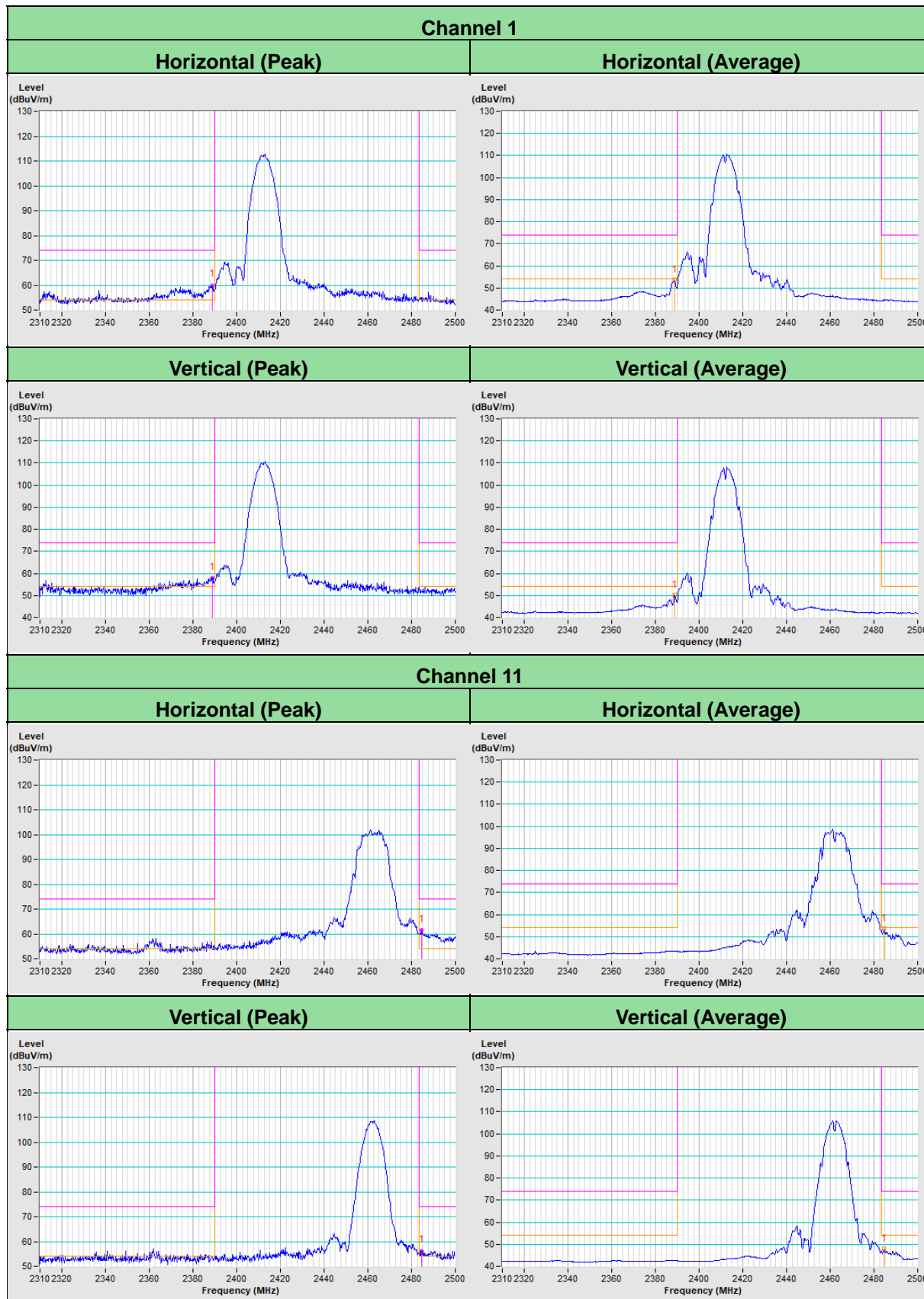


5 Pictures of Test Arrangements

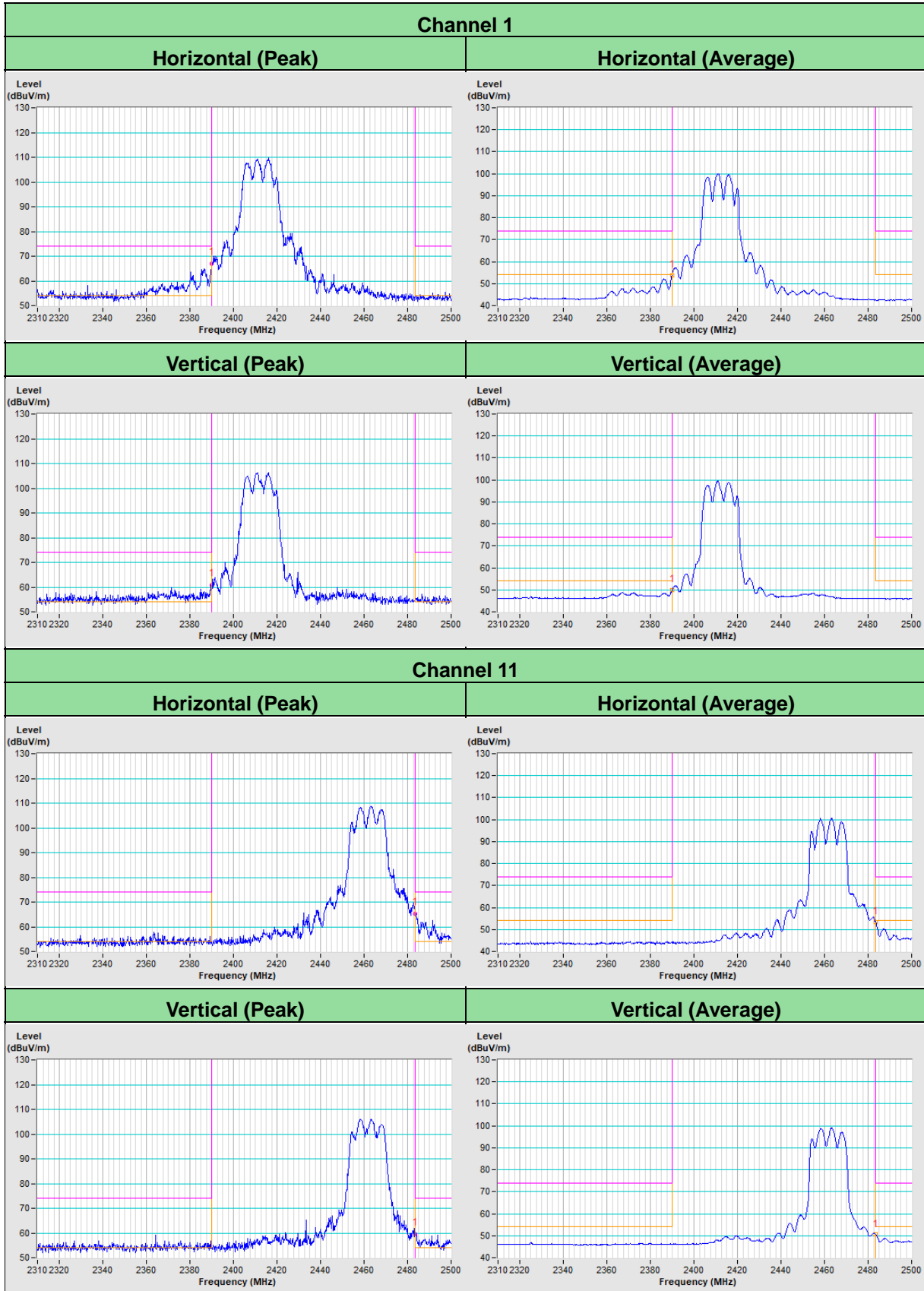
Please refer to the attached file (Test Setup Photo).

Annex A - Band-Edge Measurement

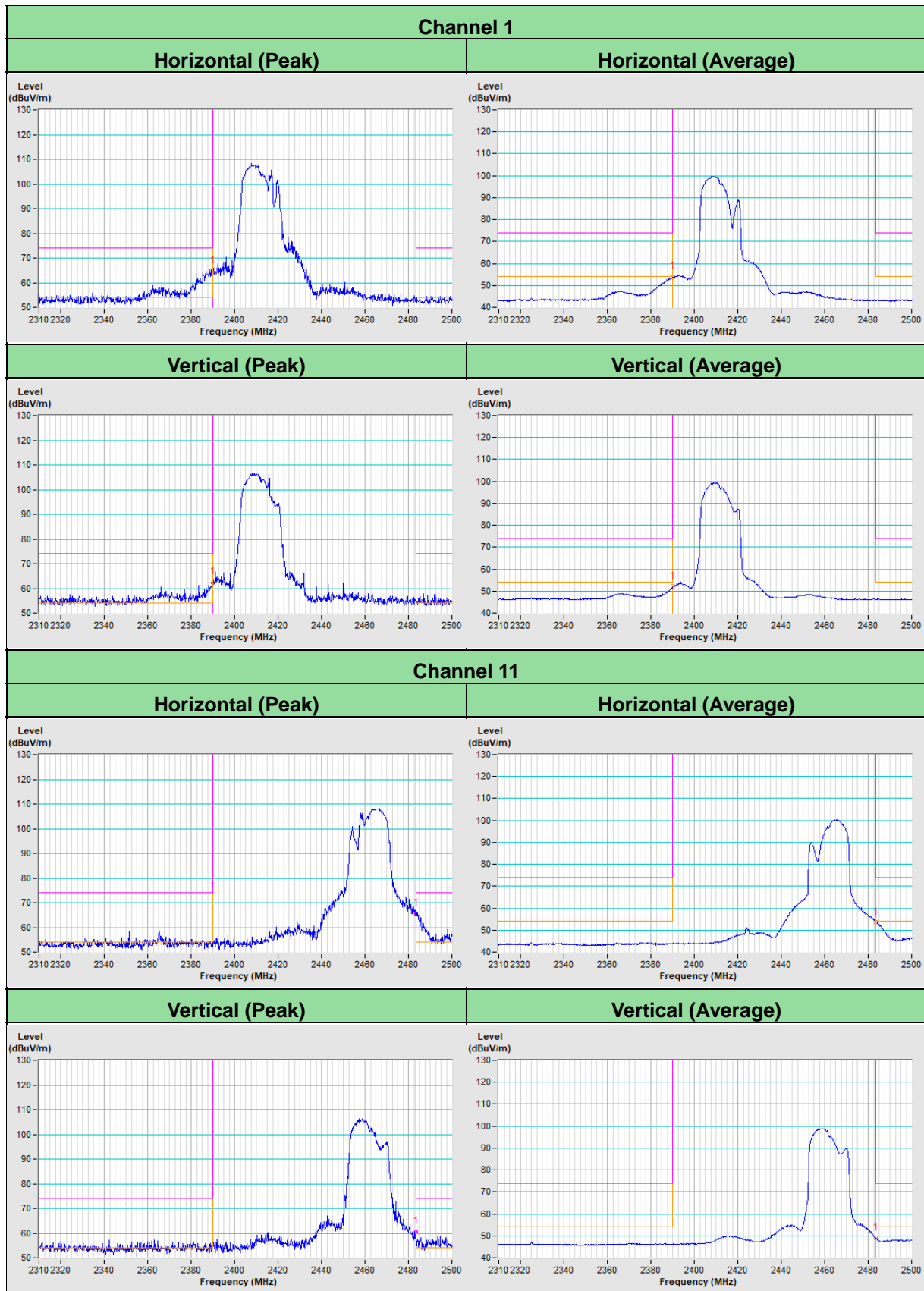
802.11b



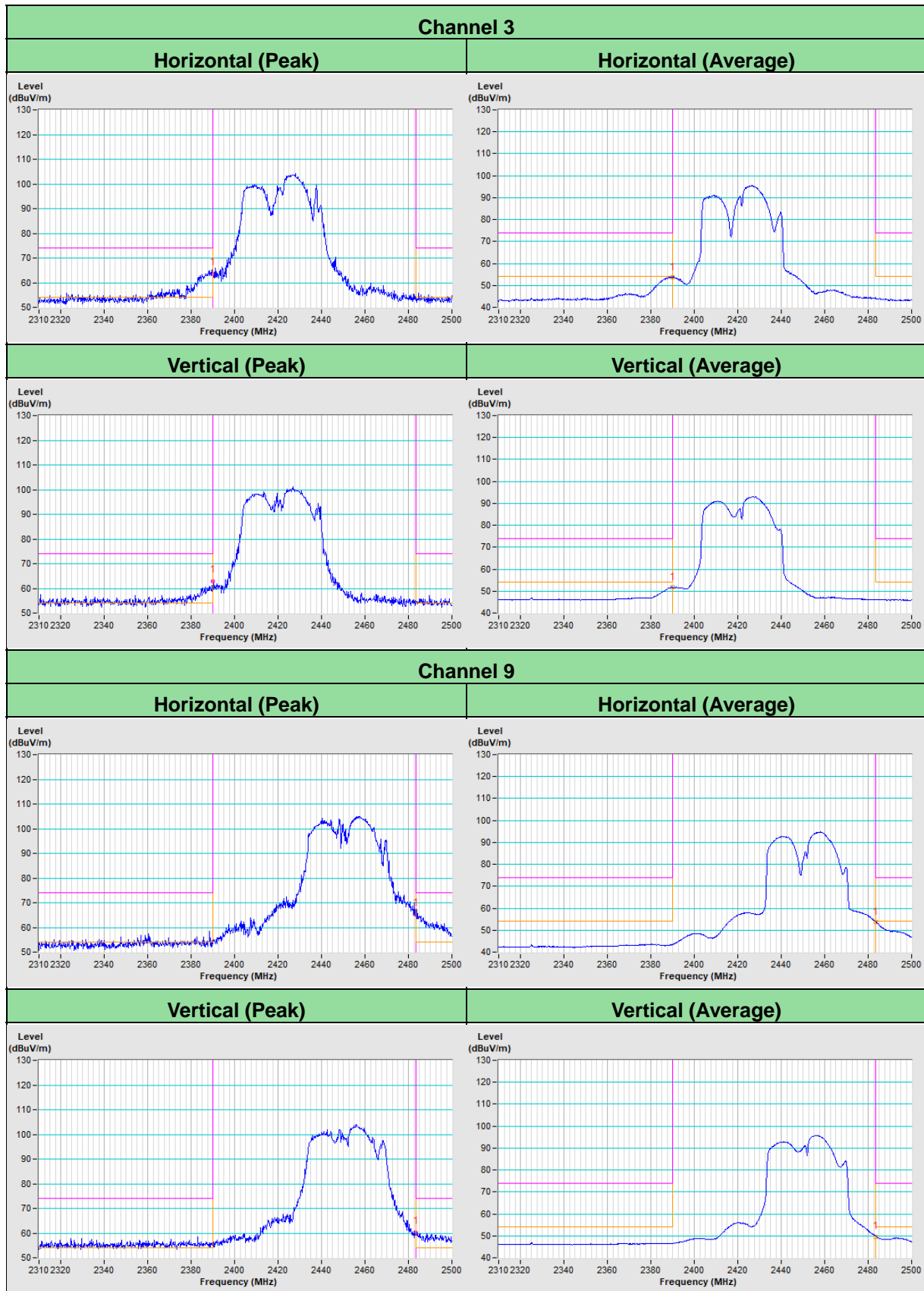
802.11g



802.11n (HT20)



802.11n (HT40)



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:

Lin Kou 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

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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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