

FCC Test Report (WLAN)

Report No.: RF200505E03

FCC ID: I88LTE7485-S905

Test Model: LTE7485-S905

Received Date: May 11, 2020

Test Date: May 29 to June 22, 2020

Issued Date: July 09, 2020

Applicant: Zyxel Communications Corporation

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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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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Table of Contents

Release Control Record	4
1 Certificate of Conformity.....	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Modification Record	6
3 General Information.....	7
3.1 General Description of EUT (WLAN)	7
3.2 Description of Test Modes	9
3.2.1 Test Mode Applicability and Tested Channel Detail	10
3.3 Duty Cycle of Test Signal	12
3.4 Description of Support Units	13
3.4.1 Configuration of System under Test	14
3.5 General Description of Applied Standards and references	15
4 Test Types and Results	16
4.1 Radiated Emission and Bandedge Measurement.....	16
4.1.1 Limits of Radiated Emission and Bandedge Measurement	16
4.1.2 Test Instruments	17
4.1.3 Test Procedures.....	19
4.1.4 Deviation from Test Standard	20
4.1.5 Test Setup.....	20
4.1.6 EUT Operating Conditions.....	21
4.1.7 Test Results	22
4.2 Conducted Emission Measurement	36
4.2.1 Limits of Conducted Emission Measurement	36
4.2.2 Test Instruments	36
4.2.3 Test Procedures.....	37
4.2.4 Deviation from Test Standard	37
4.2.5 Test Setup.....	37
4.2.6 EUT Operating Conditions.....	37
4.2.7 Test Results	38
4.3 6dB Bandwidth Measurement	40
4.3.1 Limits of 6dB Bandwidth Measurement	40
4.3.2 Test Setup.....	40
4.3.3 Test Instruments	40
4.3.4 Test Procedure	40
4.3.5 Deviation from Test Standard	40
4.3.6 EUT Operating Conditions.....	40
4.3.7 Test Result.....	41
4.4 Conducted Output Power Measurement.....	43
4.4.1 Limits of Conducted Output Power Measurement	43
4.4.2 Test Setup.....	43
4.4.3 Test Instruments	43
4.4.4 Test Procedures.....	43
4.4.5 Deviation from Test Standard	43
4.4.6 EUT Operating Conditions.....	43
4.4.7 Test Results	44
4.5 Power Spectral Density Measurement.....	46
4.5.1 Limits of Power Spectral Density Measurement	46
4.5.2 Test Setup.....	46
4.5.3 Test Instruments	46
4.5.4 Test Procedure	46
4.5.5 Deviation from Test Standard	46
4.5.6 EUT Operating Condition	46

4.5.7 Test Results	47
4.6 Conducted Out of Band Emission Measurement	49
4.6.1 Limits of Conducted Out of Band Emission Measurement.....	49
4.6.2 Test Setup.....	49
4.6.3 Test Instruments	49
4.6.4 Test Procedure	49
4.6.5 Deviation from Test Standard	49
4.6.6 EUT Operating Condition	49
4.6.7 Test Results	49
5 Pictures of Test Arrangements.....	56
Annex A - Band-Edge Measurement.....	57
Appendix – Information of the Testing Laboratories	61

Release Control Record

Issue No.	Description	Date Issued
RF200505E03	Original release.	July 09, 2020

1 Certificate of Conformity

Product: 4G LTE-A Outdoor Router

Brand: ZYXEL

Test Model: LTE7485-S905

Sample Status: ENGINEERING SAMPLE

Applicant: Zyxel Communications Corporation

Test Date: May 29 to June 22, 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 :


Joyce Kuo / Specialist

Date:

July 09, 2020

Approved by :


Clark Lin / Technical Manager

Date:

July 09, 2020

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -9.52dB at 0.29844MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.6dB at 2483.50MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is iPEX not a standard connector.

Note:

- For 2.4GHz band compliance with rule 15.247(d) of the band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.9 dB
Conducted emissions	-	2.5 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.1 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.1 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 (WLAN)

Product	4G LTE-A Outdoor Router
Brand	ZYXEL
Test Model	LTE7485-S905
CPU Model No.	MT7621AT
RF Chip Model No.	WiFi: MT7603EN LTE: EG16-AC
FW	1.00(ABVN.0)C0
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	Refer to Note 3
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n: up to 300Mbps
Operating Frequency	2.412 ~ 2.462GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7
Output Power	287.101 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter (POE) x1
Data Cable Supplied	RJ45 Cable x 1 (Unshielded, 1.8m)

Note:

1. The EUT has two radios as following table:

Radio 1	Radio 2
WLAN (2.4GHz)	WWAN

2. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4GHz)	WWAN

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

3. The EUT must be supplied with an Adapter (POE), please refer to the following table:

Brand	Model	Spec.
RISUNIC	RP020-4800500USG	Input: 100-240Vac, 0.7A, 50/60Hz Output: 48Vdc, 0.5A

4. The antenna provided to the EUT, please refer to the following table:

RF Chain NO	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type
WLAN-ANT0	6	2.4~2.4835GHz	PIFA	iPEX
WLAN-ANT1	5	2.4~2.4835GHz	PIFA	iPEX
WWAN_0(TX&RX)	13	3550 MHz to 3700 MHz	Dipole	iPEX
WWAN_1(RX only)	13	3550 MHz to 3700 MHz	Dipole	iPEX
WWAN_2(RX only)	13	3550 MHz to 3700 MHz	Dipole	iPEX
WWAN_3(RX only)	13	3550 MHz to 3700 MHz	Dipole	iPEX

5. The EUT incorporates a MIMO function:

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	1TX Fixed Chain 0	2RX
802.11g	1TX Fixed Chain 0	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX

Note: MIMO function support CDD mode, but doesn't support beamforming mode.

6. The power setting are list as below:

802.11b		802.11g		802.11n (HT20)		802.11n (HT40)	
Freq. (MHz)	Power Setting	Freq. (MHz)	Power Setting	Freq. (MHz)	Power Setting	Freq. (MHz)	Power Setting
2412	21	2412	19	2412	1A	2422	14
2437	22	2437	1E	2437	1C	2437	1A
2462	23	2462	1A	2462	17	2452	12

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

3.2 Description of Test Modes

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

Channel	Frequency (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≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

Note: Pre-Scan has been conducted to determine the worst-case configuration from all possible combinations between 0 degree, Vertical +30 degree, Vertical -30 degree, 0 degree clockwise 45 degree and 0 degree counterclockwise 45 degree. The worst-case was found when positioned on 0 degree.

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)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

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)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

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
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	19deg. C, 67%RH	120Vac, 60Hz	Nick Lo
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
PLC	25deg. C, 66%RH	120Vac, 60Hz	Nick Lo
APCM	23deg. C, 74%RH	120Vac, 60Hz	Anderson Chen

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.

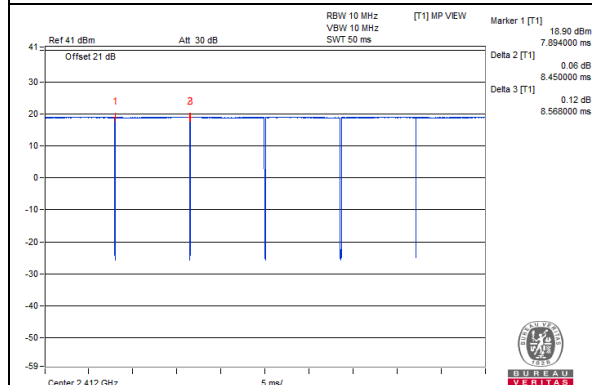
802.11b: Duty cycle = $8.45/8.568 = 0.986$

802.11g: Duty cycle = $1.396/1.503 = 0.929$, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.32\text{dB}$

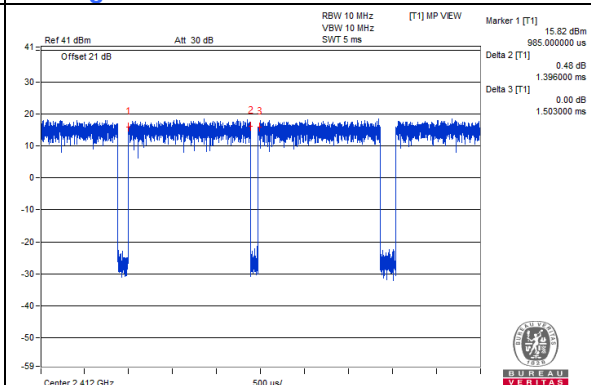
802.11n (HT20): Duty cycle = $1.307/1.424 = 0.918$, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.37\text{dB}$

802.11n (HT40): Duty cycle = $0.648/0.755 = 0.858$, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.66\text{dB}$

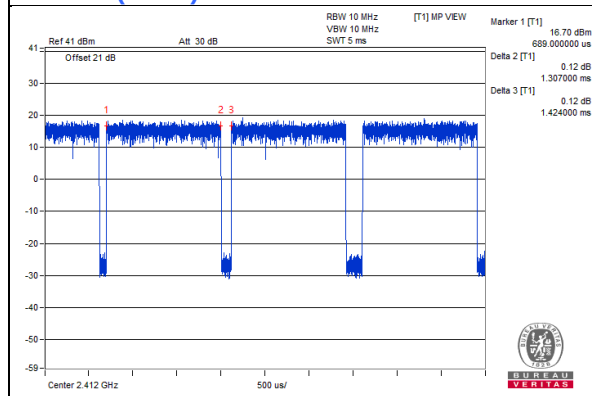
802.11b



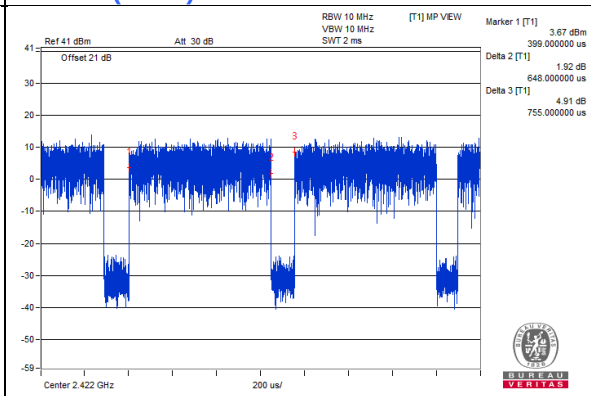
802.11g



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

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

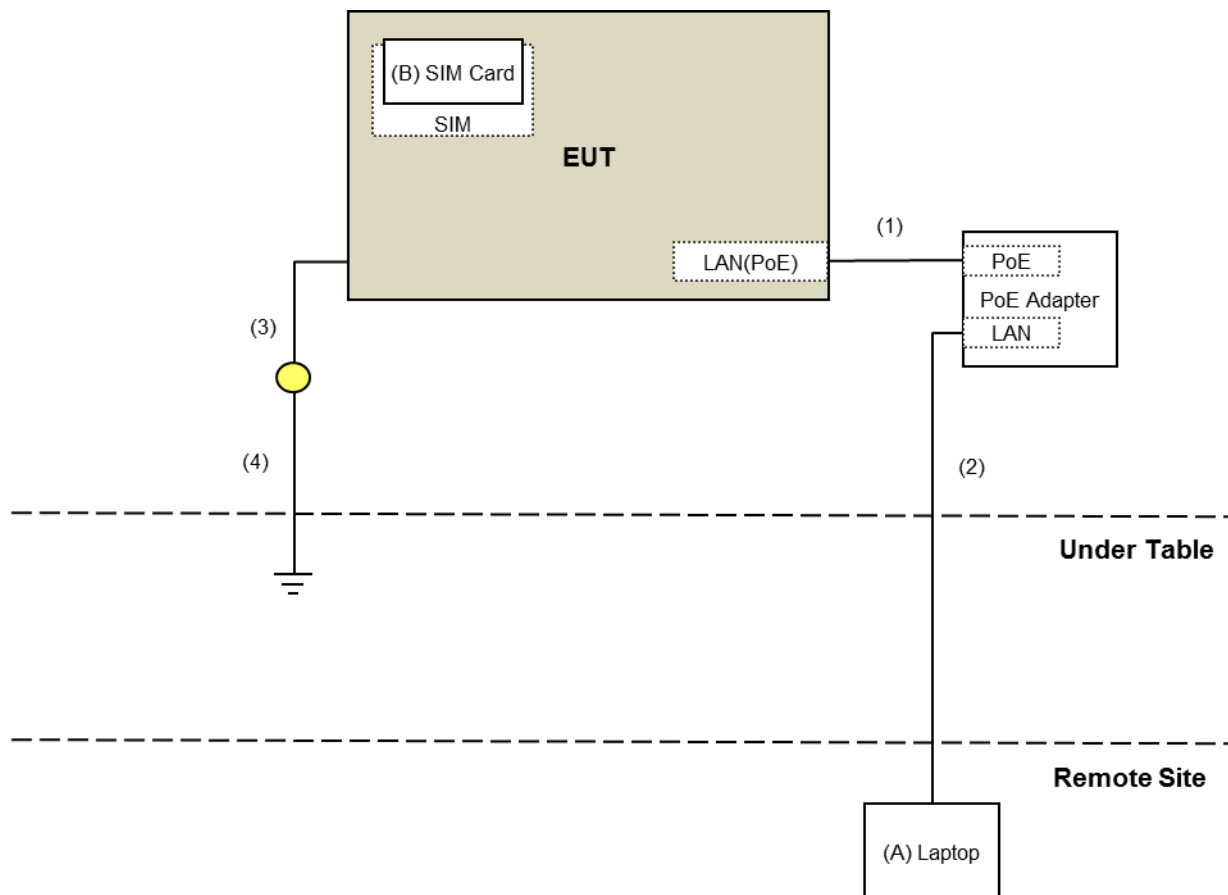
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E5430	GM1SKV1	FCC DoC	Provided by Lab
B.	SIM Card	KeysSight	E7515-10910	NA	NA	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	1.8	No	0	Supplied by client
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	GND cable	1	1	No	0	Supplied by client
4.	GND cable	1	1.9	No	0	Provided by Lab

3.4.1 Configuration of System under 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 R&S	ESR7	102026	Apr. 22, 2020	Apr. 21, 2021
Spectrum Analyzer Keysight	N9030B	MY57141948	May 22, 2020	May 21, 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 EMCi	EMC330N	980538	Apr. 28, 2020	Apr. 27, 2021
Trilog Broadband Antenna SCHWARZBECK	VULB9168	9168-0842	Nov. 08, 2019	Nov. 07, 2020
RF Cable	8D	966-5-1	Apr. 29, 2020	Apr. 28, 2021
RF Cable	8D	966-5-2	Apr. 29, 2020	Apr. 28, 2021
RF Cable	8D	966-5-3	Apr. 29, 2020	Apr. 28, 2021
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	Jan. 14, 2020	Jan. 13, 2021
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-1819	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCi	EMC12630SE	980509	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCi	EMC104-SM-SM-1500	180503	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCi	EMC104-SM-SM-2000	180501	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCi	EMC104-SM-SM-6000	180506	Apr. 29, 2020	Apr. 28, 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
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	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. 5.
3. Tested Date: May 29 to June 22, 2020

For other test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Spectrum Analyzer Keysight	N9030A	MY54490679	July 17, 2019	July 16, 2020
Power meter Anritsu	ML2495A	1529002	July 26, 2019	July 25, 2020
Power sensor Anritsu	MA2411B	1339443	July 26, 2019	July 25, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
Mech Switch Absorptive Mini-Circuits	MSP4TA-18+	0140	Feb. 10, 2020	Feb. 09, 2021
FXD ATTEN Mini-Circuits	BW-S3W2+	MN71981	Feb. 10, 2020	Feb. 09, 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: June 15, 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:

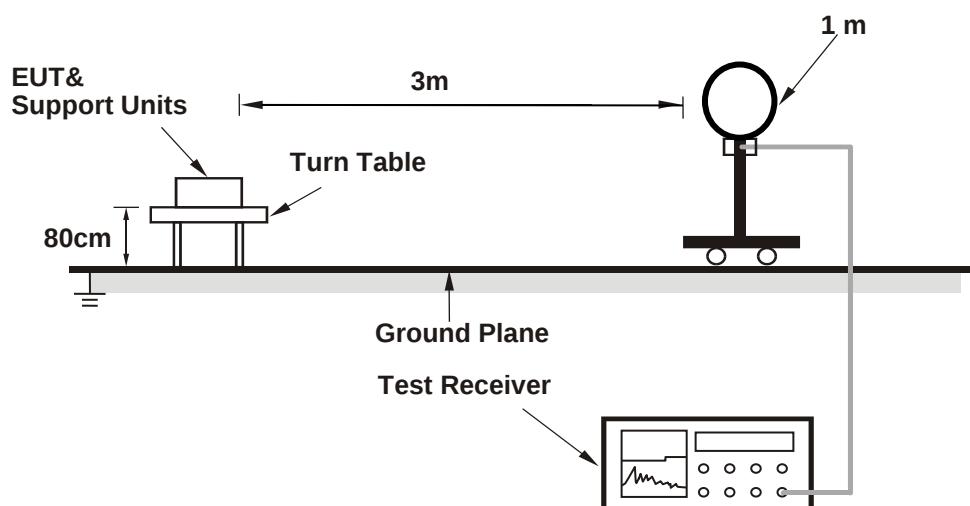
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

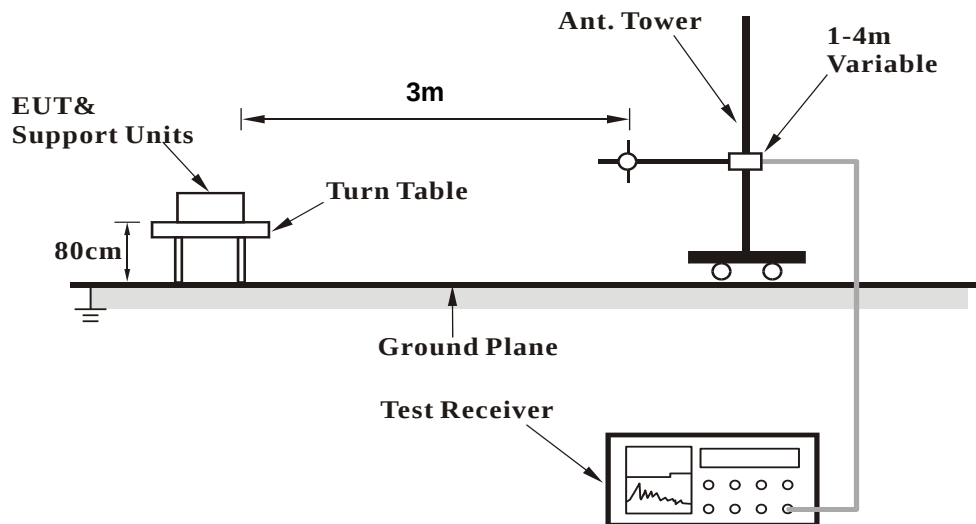
No deviation.

4.1.5 Test Setup

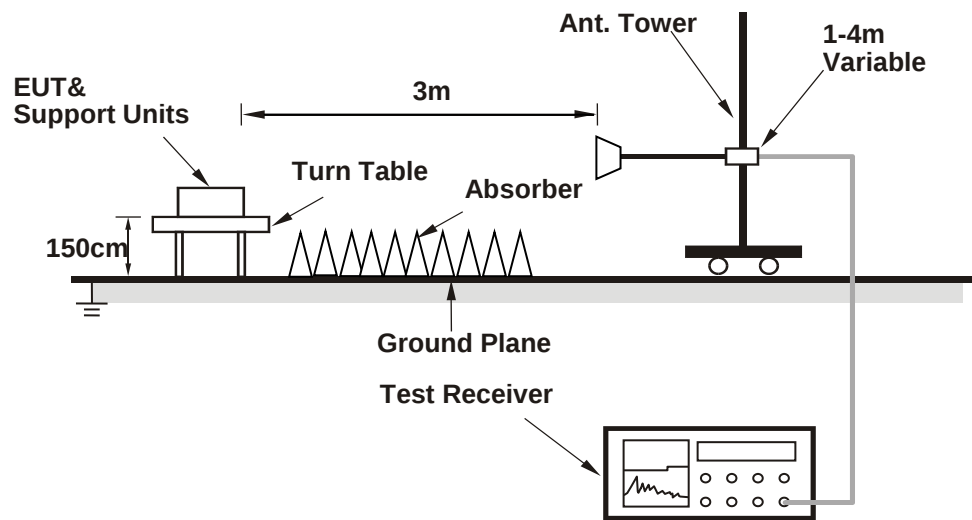
For Radiated emission below 30MHz



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

- Connected the EUT with the Laptop which is placed on remote site.
- Controlling software (QAToll_Dbg 0.0.1.85) has been activated to set the EUT under transmission condition continuously.

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	2387.43	59.4 PK	74.0	-14.6	1.66 H	291	62.5	-3.1
2	2387.43	49.6 AV	54.0	-4.4	1.66 H	291	52.7	-3.1
3	*2412.00	103.6 PK			1.66 H	291	106.6	-3.0
4	*2412.00	99.7 AV			1.66 H	291	102.7	-3.0
5	4824.00	52.5 PK	74.0	-21.5	1.47 H	140	51.5	1.0
6	4824.00	51.3 AV	54.0	-2.7	1.47 H	140	50.3	1.0

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	2388.01	59.9 PK	74.0	-14.1	2.82 V	338	63.0	-3.1
2	2388.01	51.6 AV	54.0	-2.4	2.82 V	338	54.7	-3.1
3	*2412.00	108.4 PK			2.82 V	338	111.4	-3.0
4	*2412.00	104.5 AV			2.82 V	338	107.5	-3.0
5	4824.00	51.3 PK	74.0	-22.7	2.38 V	274	50.3	1.0
6	4824.00	50.2 AV	54.0	-3.8	2.38 V	274	49.2	1.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	56.4 PK	74.0	-17.6	1.30 H	62	59.5	-3.1
2	2390.00	42.5 AV	54.0	-11.5	1.30 H	62	45.6	-3.1
3	*2437.00	104.6 PK			1.30 H	62	107.6	-3.0
4	*2437.00	101.3 AV			1.30 H	62	104.3	-3.0
5	2483.50	57.0 PK	74.0	-17.0	1.30 H	62	60.1	-3.1
6	2483.50	44.1 AV	54.0	-9.9	1.30 H	62	47.2	-3.1
7	4874.00	54.3 PK	74.0	-19.7	1.50 H	19	53.4	0.9
8	4874.00	53.2 AV	54.0	-0.8	1.50 H	19	52.3	0.9
9	7311.00	41.4 PK	74.0	-32.6	1.75 H	108	34.4	7.0
10	7311.00	34.4 AV	54.0	-19.6	1.75 H	108	27.4	7.0

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	57.8 PK	74.0	-16.2	3.17 V	325	60.9	-3.1
2	2390.00	43.9 AV	54.0	-10.1	3.17 V	325	47.0	-3.1
3	*2437.00	107.3 PK			3.17 V	325	110.3	-3.0
4	*2437.00	103.6 AV			3.17 V	325	106.6	-3.0
5	2483.50	57.8 PK	74.0	-16.2	3.17 V	325	60.9	-3.1
6	2483.50	45.1 AV	54.0	-8.9	3.17 V	325	48.2	-3.1
7	4874.00	50.9 PK	74.0	-23.1	1.00 V	18	50.0	0.9
8	4874.00	43.8 AV	54.0	-10.2	1.00 V	18	42.9	0.9
9	7311.00	37.5 PK	74.0	-36.5	2.34 V	188	30.5	7.0
10	7311.00	28.7 AV	54.0	-25.3	2.34 V	188	21.7	7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	104.2 PK			1.67 H	297	107.3	-3.1
2	*2462.00	100.8 AV			1.67 H	297	103.9	-3.1
3	2483.50	59.4 PK	74.0	-14.6	1.67 H	296	62.5	-3.1
4	2483.50	49.4 AV	54.0	-4.6	1.67 H	296	52.5	-3.1
5	4924.00	52.0 PK	74.0	-22.0	1.53 H	20	51.0	1.0
6	4924.00	51.2 AV	54.0	-2.8	1.53 H	20	50.2	1.0
7	7386.00	46.8 PK	74.0	-27.2	1.19 H	60	39.7	7.1
8	7386.00	42.2 AV	54.0	-11.8	1.19 H	60	35.1	7.1
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	108.9 PK			3.02 V	337	112.0	-3.1
2	*2462.00	105.5 AV			3.02 V	337	108.6	-3.1
3	2483.50	59.0 PK	74.0	-15.0	3.02 V	337	62.1	-3.1
4	2483.50	52.1 AV	54.0	-1.9	3.02 V	337	55.2	-3.1
5	4924.00	50.4 PK	74.0	-23.6	1.60 V	89	49.4	1.0
6	4924.00	49.0 AV	54.0	-5.0	1.60 V	89	48.0	1.0
7	7386.00	43.4 PK	74.0	-30.6	1.60 V	271	36.3	7.1
8	7386.00	37.5 AV	54.0	-16.5	1.60 V	271	30.4	7.1

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	69.9 PK	74.0	-4.1	1.02 H	61	73.0	-3.1
2	2390.00	52.9 AV	54.0	-1.1	1.02 H	61	56.0	-3.1
3	*2412.00	107.7 PK			1.02 H	61	110.7	-3.0
4	*2412.00	98.0 AV			1.02 H	61	101.0	-3.0
5	4824.00	51.6 PK	74.0	-22.4	1.00 H	21	50.6	1.0
6	4824.00	44.3 AV	54.0	-9.7	1.00 H	21	43.3	1.0
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	2386.95	62.1 PK	74.0	-11.9	2.79 V	346	65.2	-3.1
2	2386.95	46.6 AV	54.0	-7.4	2.79 V	346	49.7	-3.1
3	*2412.00	104.8 PK			2.79 V	346	107.8	-3.0
4	*2412.00	94.7 AV			2.79 V	346	97.7	-3.0
5	4824.00	51.2 PK	74.0	-22.8	1.02 V	3	50.2	1.0
6	4824.00	43.8 AV	54.0	-10.2	1.02 V	3	42.8	1.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	58.1 PK	74.0	-15.9	1.01 H	51	61.2	-3.1
2	2390.00	44.6 AV	54.0	-9.4	1.01 H	51	47.7	-3.1
3	*2437.00	108.4 PK			1.01 H	51	111.4	-3.0
4	*2437.00	98.2 AV			1.01 H	51	101.2	-3.0
5	2483.50	57.5 PK	74.0	-16.5	1.01 H	51	60.6	-3.1
6	2483.50	44.9 AV	54.0	-9.1	1.01 H	51	48.0	-3.1
7	4874.00	48.1 PK	74.0	-25.9	1.47 H	25	47.2	0.9
8	4874.00	36.2 AV	54.0	-17.8	1.47 H	25	35.3	0.9
9	7311.00	34.7 PK	74.0	-39.3	1.68 H	130	27.7	7.0
10	7311.00	31.9 AV	54.0	-22.1	1.68 H	130	24.9	7.0

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	57.3 PK	74.0	-16.7	3.05 V	338	60.4	-3.1
2	2390.00	44.7 AV	54.0	-9.3	3.05 V	338	47.8	-3.1
3	*2437.00	107.1 PK			3.05 V	338	110.1	-3.0
4	*2437.00	97.4 AV			3.05 V	338	100.4	-3.0
5	2483.50	57.0 PK	74.0	-17.0	3.05 V	338	60.1	-3.1
6	2483.50	44.7 AV	54.0	-9.3	3.05 V	338	47.8	-3.1
7	4874.00	51.0 PK	74.0	-23.0	1.00 V	5	50.1	0.9
8	4874.00	43.8 AV	54.0	-10.2	1.00 V	5	42.9	0.9
9	7311.00	37.7 PK	74.0	-36.3	2.30 V	202	30.7	7.0
10	7311.00	28.7 AV	54.0	-25.3	2.30 V	202	21.7	7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	109.3 PK			1.06 H	59	112.4	-3.1
2	*2462.00	99.4 AV			1.06 H	59	102.5	-3.1
3	2484.33	71.3 PK	74.0	-2.7	1.06 H	59	74.4	-3.1
4	2484.33	53.2 AV	54.0	-0.8	1.06 H	59	56.3	-3.1
5	4924.00	50.7 PK	74.0	-23.3	1.00 H	25	49.7	1.0
6	4924.00	43.4 AV	54.0	-10.6	1.00 H	25	42.4	1.0
7	7386.00	37.4 PK	74.0	-36.6	2.39 H	175	30.3	7.1
8	7386.00	28.8 AV	54.0	-25.2	2.39 H	175	21.7	7.1
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	107.2 PK			3.26 V	346	110.3	-3.1
2	*2462.00	97.5 AV			3.26 V	346	100.6	-3.1
3	2483.50	68.4 PK	74.0	-5.6	3.26 V	346	71.5	-3.1
4	2483.50	51.8 AV	54.0	-2.2	3.26 V	346	54.9	-3.1
5	4924.00	50.9 PK	74.0	-23.1	1.00 V	2	49.9	1.0
6	4924.00	44.0 AV	54.0	-10.0	1.00 V	2	43.0	1.0
7	7386.00	37.5 PK	74.0	-36.5	2.34 V	177	30.4	7.1
8	7386.00	28.8 AV	54.0	-25.2	2.34 V	177	21.7	7.1

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	69.7 PK	74.0	-4.3	1.02 H	62	72.8	-3.1
2	2390.00	53.3 AV	54.0	-0.7	1.02 H	62	56.4	-3.1
3	*2412.00	107.0 PK			1.02 H	62	110.0	-3.0
4	*2412.00	97.1 AV			1.02 H	62	100.1	-3.0
5	4824.00	50.5 PK	74.0	-23.5	1.01 H	19	49.5	1.0
6	4824.00	43.4 AV	54.0	-10.6	1.01 H	19	42.4	1.0

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	67.4 PK	74.0	-6.6	3.00 V	346	70.5	-3.1
2	2390.00	52.9 AV	54.0	-1.1	3.00 V	346	56.0	-3.1
3	*2412.00	103.7 PK			3.00 V	346	106.7	-3.0
4	*2412.00	93.7 AV			3.00 V	346	96.7	-3.0
5	4824.00	50.7 PK	74.0	-23.3	1.00 V	5	49.7	1.0
6	4824.00	43.4 AV	54.0	-10.6	1.00 V	5	42.4	1.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	57.6 PK	74.0	-16.4	1.06 H	60	60.7	-3.1
2	2390.00	44.7 AV	54.0	-9.3	1.06 H	60	47.8	-3.1
3	*2437.00	106.3 PK			1.06 H	60	109.3	-3.0
4	*2437.00	96.9 AV			1.06 H	60	99.9	-3.0
5	2483.50	57.9 PK	74.0	-16.1	1.06 H	60	61.0	-3.1
6	2483.50	44.9 AV	54.0	-9.1	1.06 H	60	48.0	-3.1
7	4874.00	51.4 PK	74.0	-22.6	1.06 H	30	50.5	0.9
8	4874.00	44.1 AV	54.0	-9.9	1.06 H	30	43.2	0.9
9	7311.00	36.8 PK	74.0	-37.2	2.29 H	182	29.8	7.0
10	7311.00	28.2 AV	54.0	-25.8	2.29 H	182	21.2	7.0

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	57.2 PK	74.0	-16.8	3.09 V	346	60.3	-3.1
2	2390.00	44.6 AV	54.0	-9.4	3.09 V	346	47.7	-3.1
3	*2437.00	104.7 PK			3.09 V	346	107.7	-3.0
4	*2437.00	95.1 AV			3.09 V	346	98.1	-3.0
5	2483.50	57.3 PK	74.0	-16.7	3.09 V	346	60.4	-3.1
6	2483.50	44.5 AV	54.0	-9.5	3.09 V	346	47.6	-3.1
7	4874.00	51.4 PK	74.0	-22.6	1.02 V	22	50.5	0.9
8	4874.00	44.2 AV	54.0	-9.8	1.02 V	22	43.3	0.9
9	7311.00	38.1 PK	74.0	-35.9	2.35 V	186	31.1	7.0
10	7311.00	29.2 AV	54.0	-24.8	2.35 V	186	22.2	7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	106.9 PK			1.11 H	54	110.0	-3.1
2	*2462.00	97.3 AV			1.11 H	54	100.4	-3.1
3	2483.50	68.2 PK	74.0	-5.8	1.11 H	54	71.3	-3.1
4	2483.50	53.1 AV	54.0	-0.9	1.11 H	54	56.2	-3.1
5	4924.00	50.9 PK	74.0	-23.1	1.00 H	25	49.9	1.0
6	4924.00	43.8 AV	54.0	-10.2	1.00 H	25	42.8	1.0
7	7386.00	36.7 PK	74.0	-37.3	2.30 H	176	29.6	7.1
8	7386.00	28.2 AV	54.0	-25.8	2.30 H	176	21.1	7.1
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	104.2 PK			3.32 V	348	107.3	-3.1
2	*2462.00	94.9 AV			3.32 V	348	98.0	-3.1
3	2483.50	68.5 PK	74.0	-5.5	3.32 V	348	71.6	-3.1
4	2483.50	51.5 AV	54.0	-2.5	3.32 V	348	54.6	-3.1
5	4924.00	50.5 PK	74.0	-23.5	1.01 V	20	49.5	1.0
6	4924.00	43.3 AV	54.0	-10.7	1.01 V	20	42.3	1.0
7	7386.00	36.9 PK	74.0	-37.1	2.33 V	177	29.8	7.1
8	7386.00	28.2 AV	54.0	-25.8	2.33 V	177	21.1	7.1

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	68.4 PK	74.0	-5.6	1.53 H	56	71.5	-3.1
2	2390.00	52.8 AV	54.0	-1.2	1.53 H	56	55.9	-3.1
3	*2422.00	101.5 PK			1.53 H	56	104.5	-3.0
4	*2422.00	92.9 AV			1.53 H	56	95.9	-3.0
5	4844.00	50.8 PK	74.0	-23.2	1.02 H	32	49.8	1.0
6	4844.00	43.5 AV	54.0	-10.5	1.02 H	32	42.5	1.0
7	7266.00	38.1 PK	74.0	-35.9	2.39 H	177	31.1	7.0
8	7266.00	29.1 AV	54.0	-24.9	2.39 H	177	22.1	7.0
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	65.1 PK	74.0	-8.9	2.98 V	348	68.2	-3.1
2	2390.00	51.7 AV	54.0	-2.3	2.98 V	348	54.8	-3.1
3	*2422.00	100.2 PK			2.98 V	348	103.2	-3.0
4	*2422.00	91.1 AV			2.98 V	348	94.1	-3.0
5	4844.00	51.0 PK	74.0	-23.0	1.00 V	10	50.0	1.0
6	4844.00	44.0 AV	54.0	-10.0	1.00 V	10	43.0	1.0
7	7266.00	36.8 PK	74.0	-37.2	2.32 V	200	29.8	7.0
8	7266.00	28.3 AV	54.0	-25.7	2.32 V	200	21.3	7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	62.7 PK	74.0	-11.3	1.04 H	66	65.8	-3.1
2	2390.00	49.9 AV	54.0	-4.1	1.04 H	66	53.0	-3.1
3	*2437.00	105.7 PK			1.04 H	66	108.7	-3.0
4	*2437.00	96.2 AV			1.04 H	66	99.2	-3.0
5	2483.50	69.2 PK	74.0	-4.8	1.04 H	66	72.3	-3.1
6	2483.50	53.4 AV	54.0	-0.6	1.04 H	66	56.5	-3.1
7	4874.00	50.8 PK	74.0	-23.2	1.00 H	31	49.9	0.9
8	4874.00	44.0 AV	54.0	-10.0	1.00 H	31	43.1	0.9
9	7311.00	37.0 PK	74.0	-37.0	2.29 H	175	30.0	7.0
10	7311.00	28.3 AV	54.0	-25.7	2.29 H	175	21.3	7.0

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	60.0 PK	74.0	-14.0	3.15 V	341	63.1	-3.1
2	2390.00	47.7 AV	54.0	-6.3	3.15 V	341	50.8	-3.1
3	*2437.00	104.4 PK			3.15 V	341	107.4	-3.0
4	*2437.00	94.7 AV			3.15 V	341	97.7	-3.0
5	2483.50	68.5 PK	74.0	-5.5	3.15 V	341	71.6	-3.1
6	2483.50	53.2 AV	54.0	-0.8	3.15 V	341	56.3	-3.1
7	4874.00	51.6 PK	74.0	-22.4	1.03 V	27	50.7	0.9
8	4874.00	44.2 AV	54.0	-9.8	1.03 V	27	43.3	0.9
9	7311.00	37.4 PK	74.0	-36.6	2.30 V	193	30.4	7.0
10	7311.00	28.7 AV	54.0	-25.3	2.30 V	193	21.7	7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	103.0 PK			1.14 H	54	106.1	-3.1
2	*2452.00	93.8 AV			1.14 H	54	96.9	-3.1
3	2483.50	66.6 PK	74.0	-7.4	1.14 H	54	69.7	-3.1
4	2483.50	52.0 AV	54.0	-2.0	1.14 H	54	55.1	-3.1
5	4904.00	50.1 PK	74.0	-23.9	1.01 H	29	49.1	1.0
6	4904.00	43.3 AV	54.0	-10.7	1.01 H	29	42.3	1.0
7	7356.00	37.6 PK	74.0	-36.4	2.30 H	194	30.5	7.1
8	7356.00	28.7 AV	54.0	-25.3	2.30 H	194	21.6	7.1
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	101.4 PK			3.30 V	344	104.5	-3.1
2	*2452.00	91.9 AV			3.30 V	344	95.0	-3.1
3	2484.66	67.7 PK	74.0	-6.3	3.30 V	344	70.8	-3.1
4	2484.66	51.2 AV	54.0	-2.8	3.30 V	344	54.3	-3.1
5	4904.00	50.4 PK	74.0	-23.6	1.00 V	18	49.4	1.0
6	4904.00	43.5 AV	54.0	-10.5	1.00 V	18	42.5	1.0
7	7356.00	37.4 PK	74.0	-36.6	2.38 V	182	30.3	7.1
8	7356.00	28.4 AV	54.0	-25.6	2.38 V	182	21.3	7.1

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:

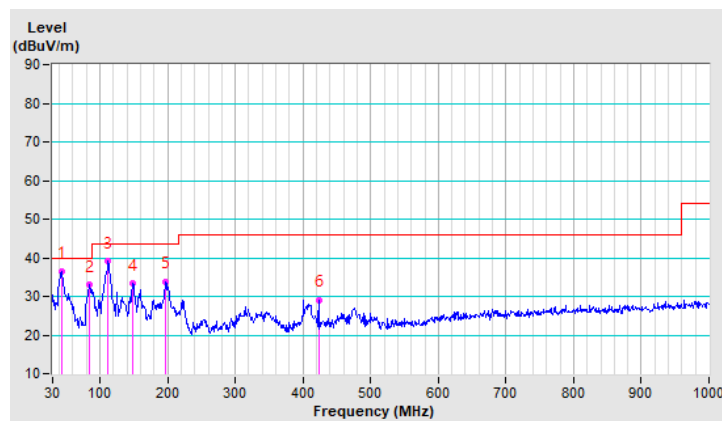
802.11n (HT20)

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	42.95	36.4 QP	40.0	-3.6	1.00 H	98	49.2	-12.8
2	84.52	32.9 QP	40.0	-7.1	2.00 H	134	51.0	-18.1
3	111.68	39.0 QP	43.5	-4.5	4.00 H	358	54.6	-15.6
4	148.98	33.3 QP	43.5	-10.2	2.00 H	49	45.8	-12.5
5	196.99	33.8 QP	43.5	-9.7	1.00 H	59	49.7	-15.9
6	423.69	29.1 QP	46.0	-16.9	3.00 H	72	37.9	-8.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.



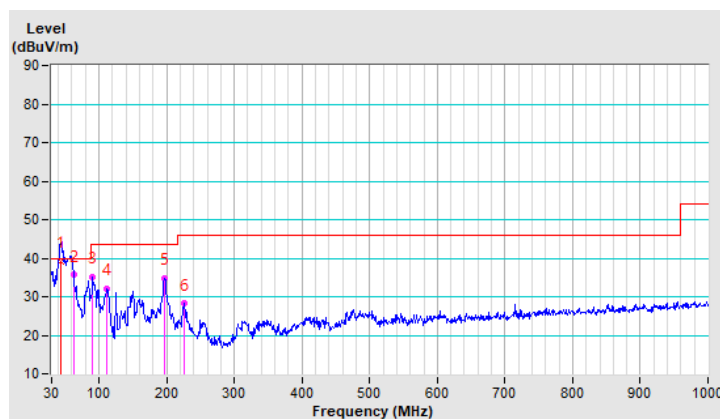
Note: Blue line is "PK trace", mark point is "QP value".

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	44.32	39.2 QP	40.0	-0.8	1.00 V	355	51.9	-12.7
2	62.45	35.6 QP	40.0	-4.4	1.00 V	118	49.1	-13.5
3	90.73	35.2 QP	43.5	-8.3	1.00 V	105	53.6	-18.4
4	111.97	32.1 QP	43.5	-11.4	1.00 V	133	47.6	-15.5
5	196.51	34.8 QP	43.5	-8.7	2.00 V	88	50.7	-15.9
6	225.42	28.1 QP	46.0	-17.9	1.00 V	130	43.7	-15.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.



Note: Blue line is "PK trace", mark point is "QP value".

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	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. 30, 2019	Aug. 29, 2020
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: June 10, 2020

4.2.3 Test Procedures

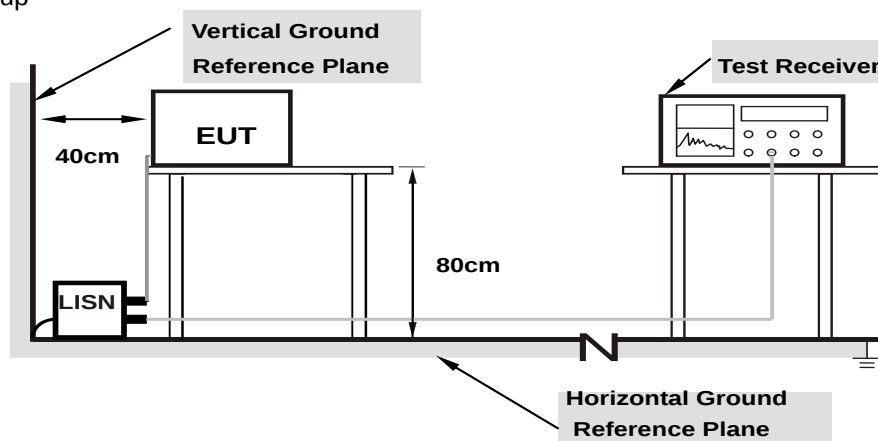
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

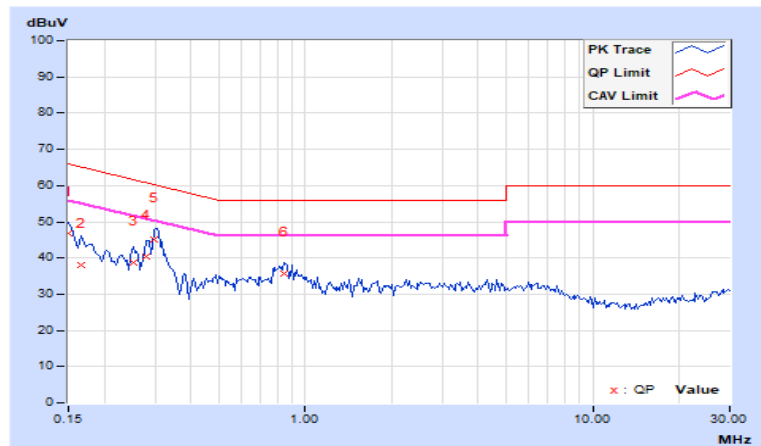
4.2.7 Test Results

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	0.15000	10.03	36.87	24.29	46.90	34.32	66.00	56.00	-19.10	-21.68
2	0.16562	10.03	28.04	9.16	38.07	19.19	65.18	55.18	-27.11	-35.99
3	0.25156	10.04	28.54	26.44	38.58	36.48	61.71	51.71	-23.13	-15.23
4	0.27891	10.04	30.28	28.27	40.32	38.31	60.85	50.85	-20.53	-12.54
5	0.29844	10.04	34.96	29.28	45.00	39.32	60.29	50.29	-15.29	-10.97
6	0.84922	10.09	25.46	18.65	35.55	28.74	56.00	46.00	-20.45	-17.26

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

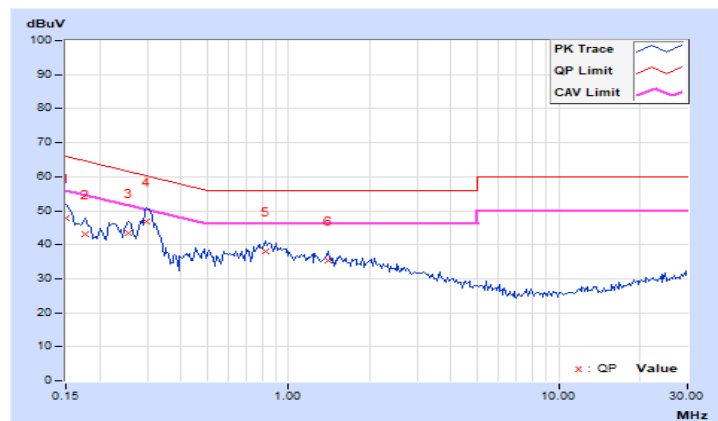


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.02	37.83	25.63	47.85	35.65	66.00	56.00	-18.15	-20.35
2	0.17734	10.03	33.13	21.82	43.16	31.85	64.61	54.61	-21.45	-22.76
3	0.25547	10.03	33.50	31.15	43.53	41.18	61.58	51.58	-18.05	-10.40
4	0.29844	10.03	36.69	30.74	46.72	40.77	60.29	50.29	-13.57	-9.52
5	0.82188	10.08	27.88	22.06	37.96	32.14	56.00	46.00	-18.04	-13.86
6	1.39844	10.12	25.14	19.60	35.26	29.72	56.00	46.00	-20.74	-16.28

Remarks:

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

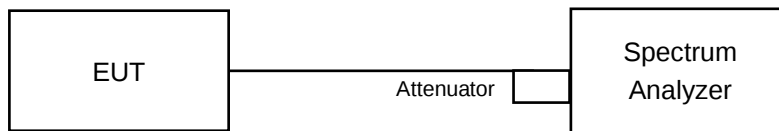


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	9.65	0.5	Pass
6	2437	9.61	0.5	Pass
11	2462	9.58	0.5	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	15.82	0.5	Pass
6	2437	16.12	0.5	Pass
11	2462	15.78	0.5	Pass

802.11n (HT20)

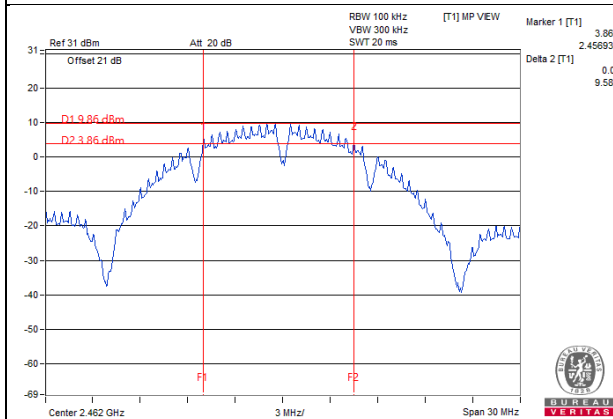
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17	16.44	0.5	Pass
6	2437	17.22	16.38	0.5	Pass
11	2462	16.42	16.42	0.5	Pass

802.11n (HT40)

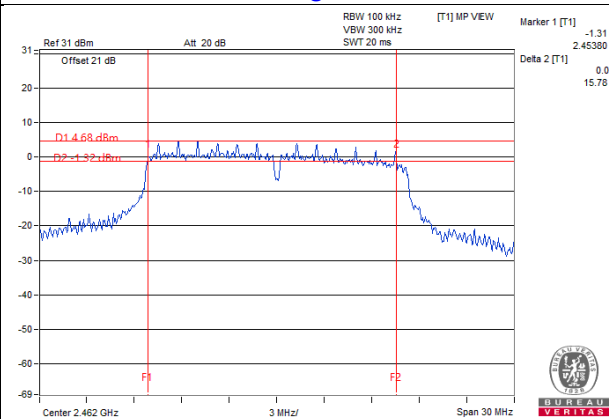
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	36.44	36.46	0.5	Pass
6	2437	35.49	35.38	0.5	Pass
9	2452	35.36	35.28	0.5	Pass

Spectrum Plot of Worst Value

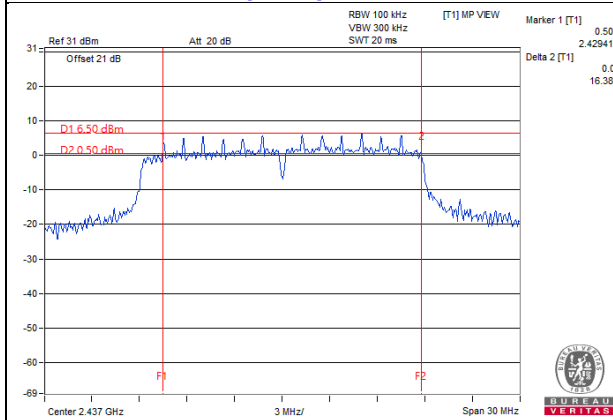
802.11b / CH11



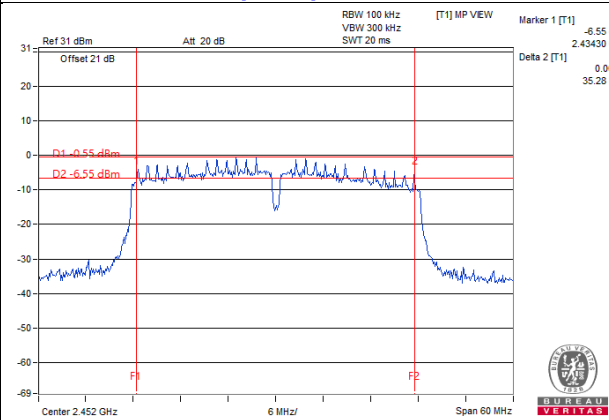
802.11g / CH11



802.11n (HT20) / Chain 1: CH6



802.11n (HT40) / Chain 1: CH9

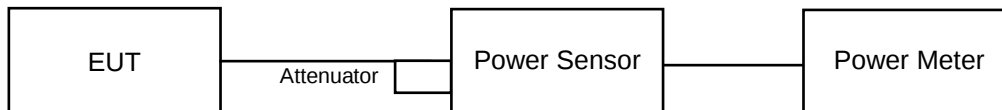


4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

FOR PEAK POWER

802.11b

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	77.804	18.91	30	Pass
6	2437	116.95	20.68	30	Pass
11	2462	108.143	20.34	30	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	88.308	19.46	30	Pass
6	2437	155.597	21.92	30	Pass
11	2462	119.399	20.77	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	19.82	19.98	195.481	22.91	30	Pass
6	2437	21.59	21.55	287.101	24.58	30	Pass
11	2462	20.14	20.24	208.958	23.20	30	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	19.09	19.48	169.812	22.30	30	Pass
6	2437	20.89	20.76	241.868	23.84	30	Pass
9	2452	19.13	19.30	166.96	22.23	30	Pass

FOR AVERAGE POWER

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	58.479	17.67
6	2437	82.224	19.15
11	2462	79.433	19.00

802.11g

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	25.527	14.07
6	2437	49.204	16.92
11	2462	31.405	14.97

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	14.49	14.75	57.973	17.63
6	2437	16.05	16.08	80.823	19.08
11	2462	13.41	13.37	43.655	16.40

802.11n (HT40)

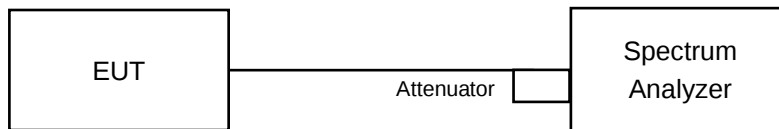
Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	12.21	12.54	34.581	15.39
6	2437	14.38	14.59	56.19	17.50
9	2452	11.63	11.38	28.295	14.52

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6

4.5.7 Test Results

802.11b

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
1	2412	-6.54	8.00	PASS
6	2437	-4.14	8.00	PASS
11	2462	-4.60	8.00	PASS

802.11g

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
1	2412	-12.77	8.00	PASS
6	2437	-9.87	8.00	PASS
11	2462	-11.92	8.00	PASS

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (mW/3kHz)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1				
1	2412	-11.01	-10.71	0.16406	-7.85	5.48	PASS
6	2437	-9.52	-11.05	0.19011	-7.21	5.48	PASS
11	2462	-11.21	-12.06	0.13804	-8.60	5.48	PASS

Note: 1. Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.52\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(8.52-6) = 5.48\text{dBm}$.

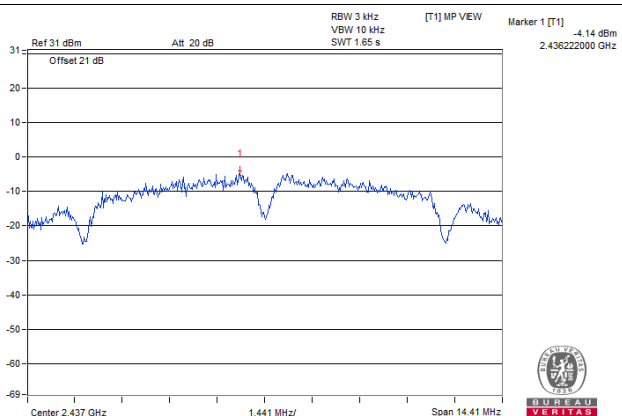
802.11n (HT40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (mW/3kHz)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1				
3	2422	-16.88	-16.69	0.04198	-13.77	5.48	PASS
6	2437	-14.07	-13.89	0.07998	-10.97	5.48	PASS
9	2452	-17.30	-16.39	0.04159	-13.81	5.48	PASS

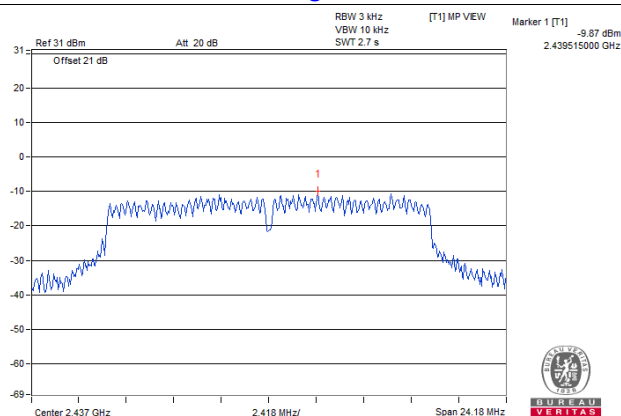
Note: 1. Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.52\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(8.52-6) = 5.48\text{dBm}$.

Spectrum Plot of Worst Value

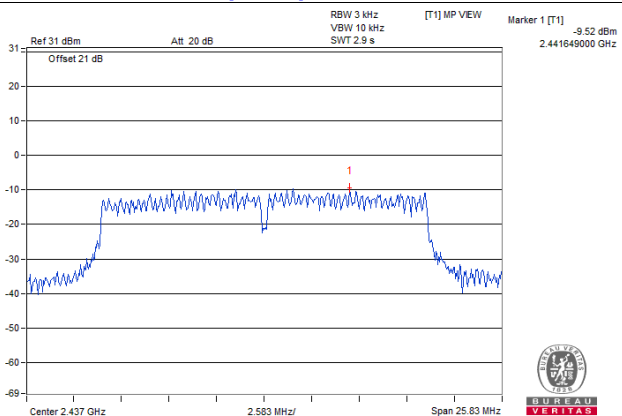
802.11b / CH6



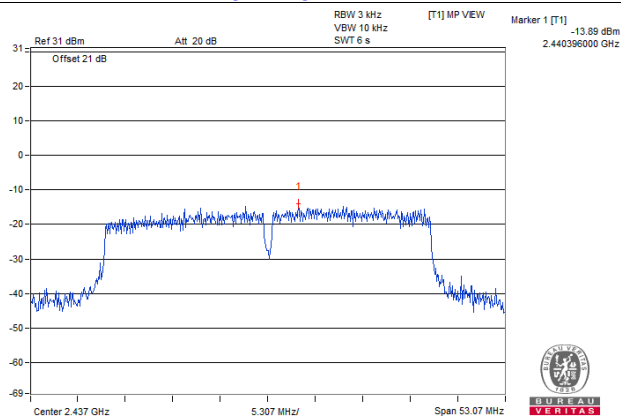
802.11g / CH6



802.11n (HT20) / Chain 0: CH6



802.11n (HT40) / Chain 1: CH6

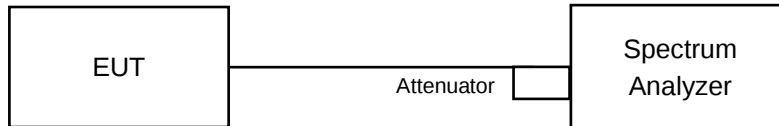


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOB

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

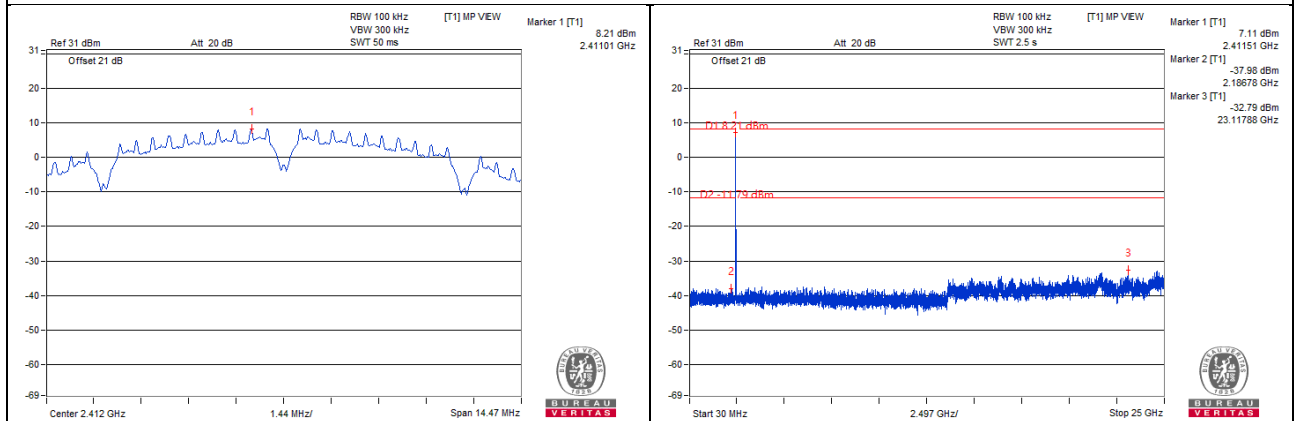
Same as Item 4.3.6

4.6.7 Test Results

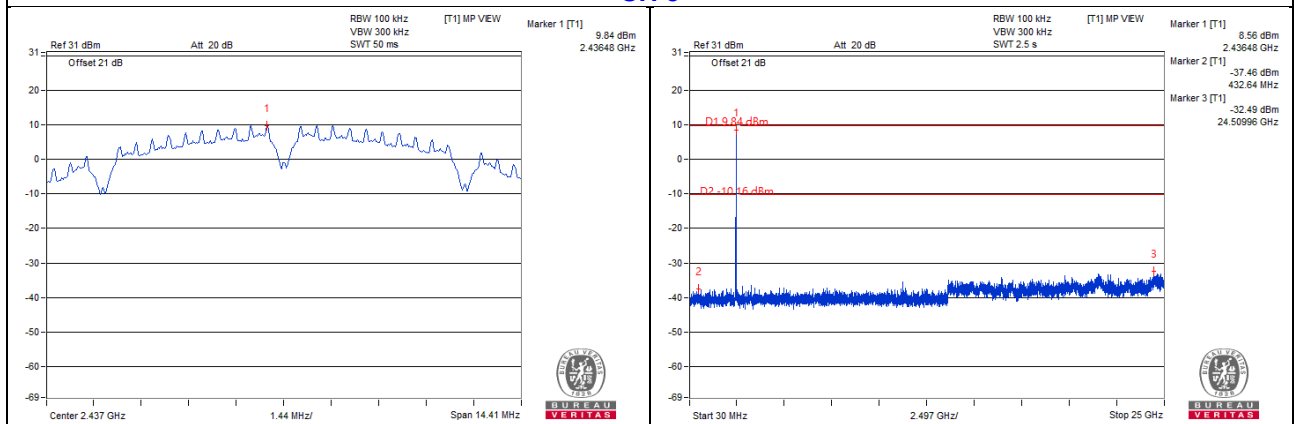
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11b

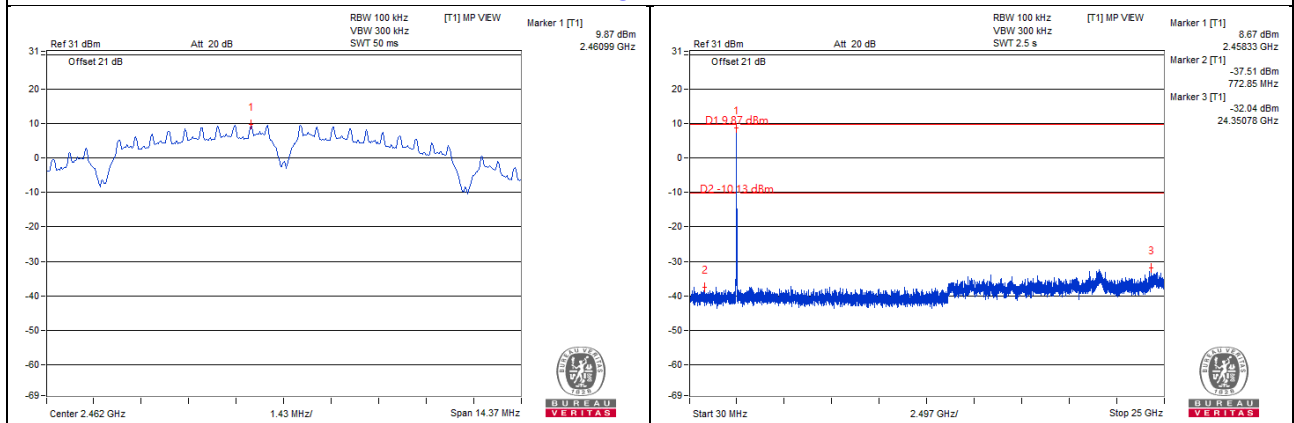
CH 1



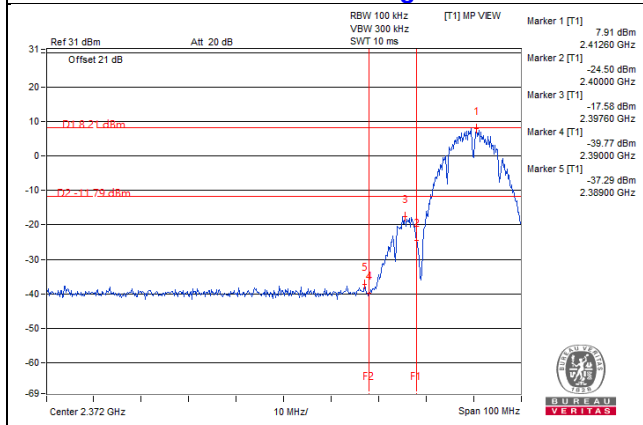
CH 6



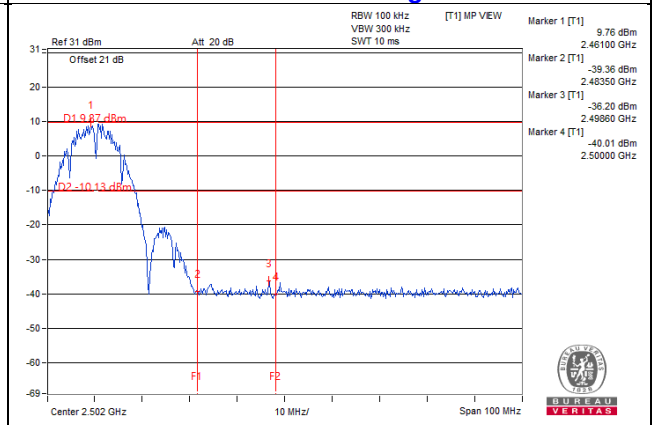
CH 11



CH 1 Band edge

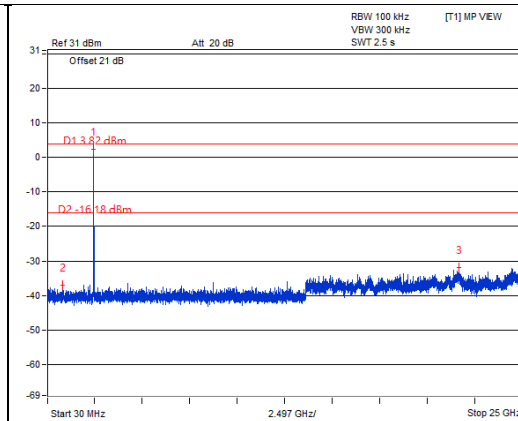
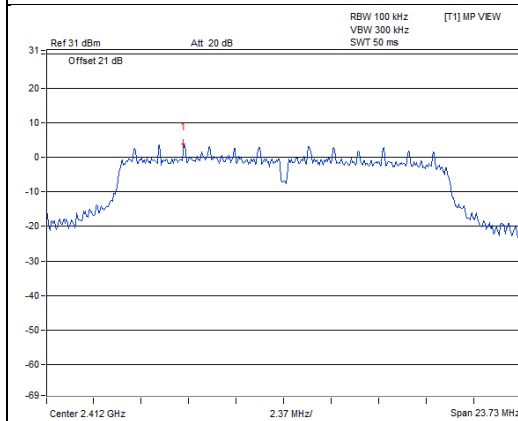


CH 11 Band edge

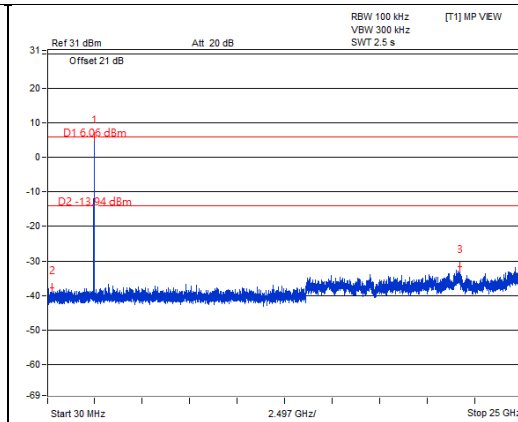
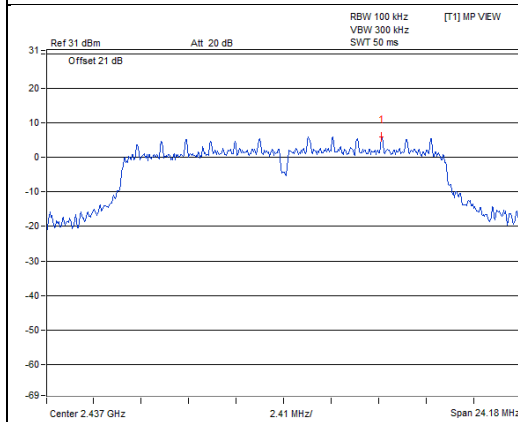


802.11g

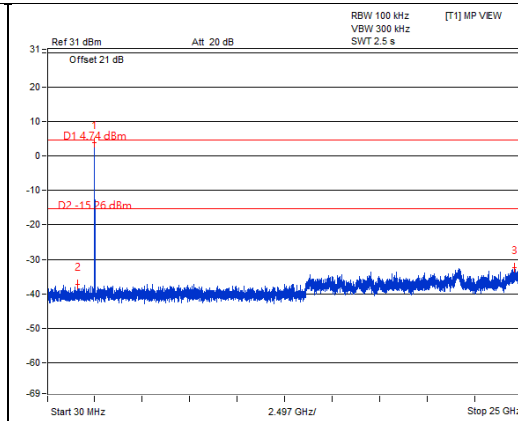
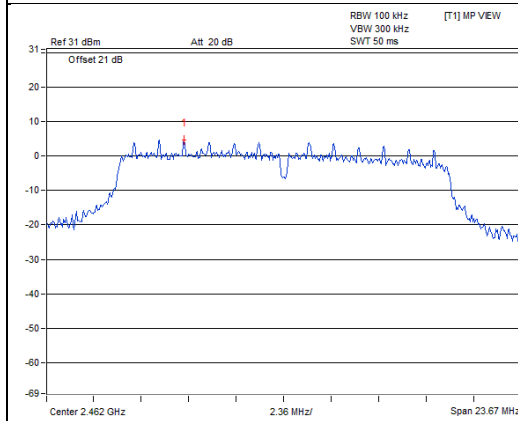
CH 1



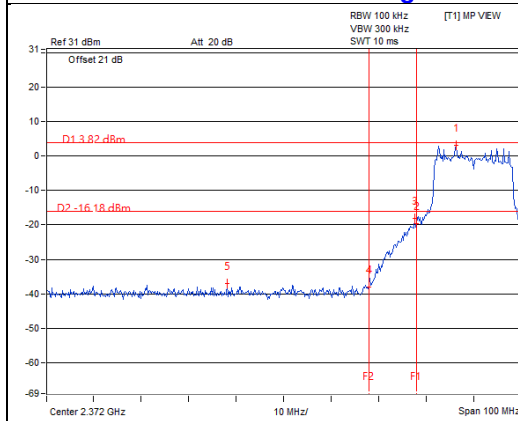
CH 6



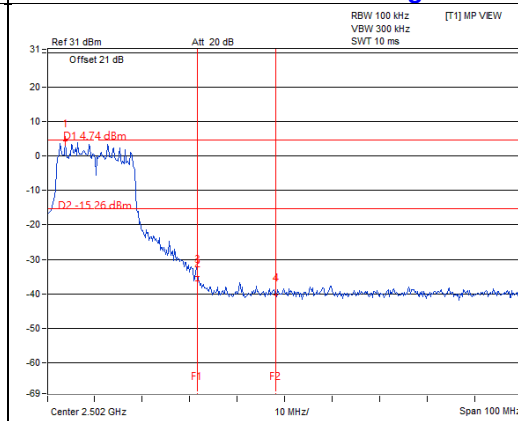
CH 11



CH 1 Band edge



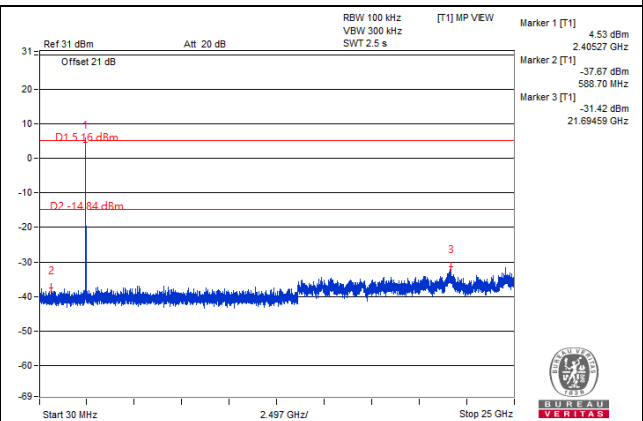
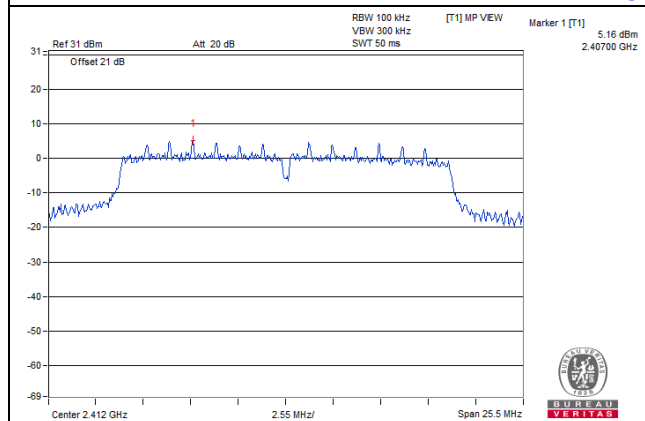
CH 11 Band edge



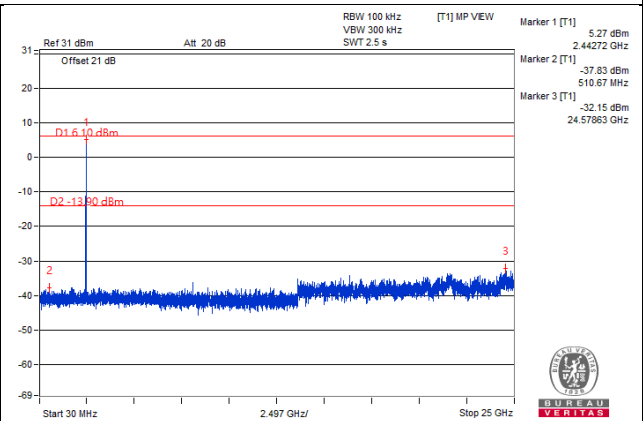
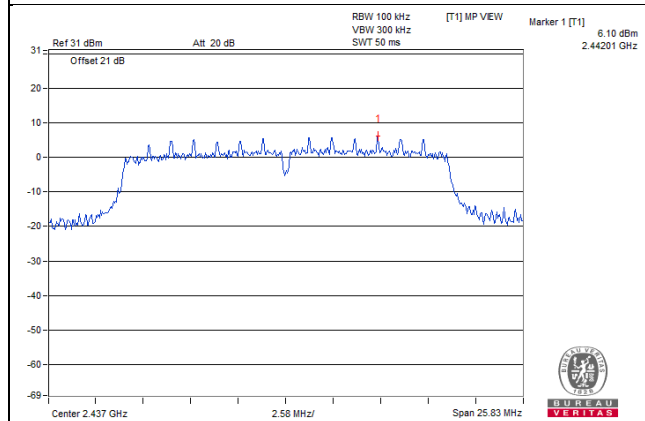
802.11n (HT20)

Chain 0

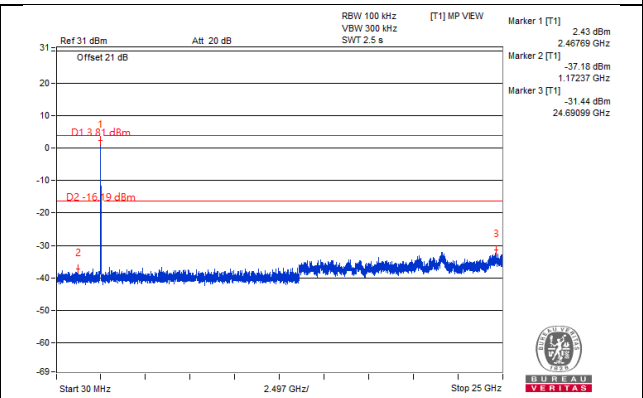
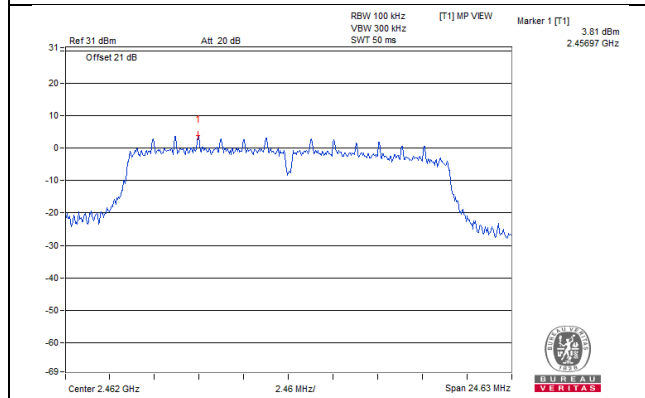
CH 1



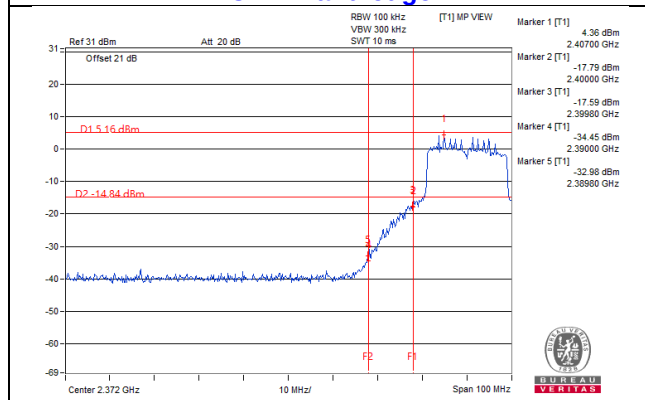
CH 6



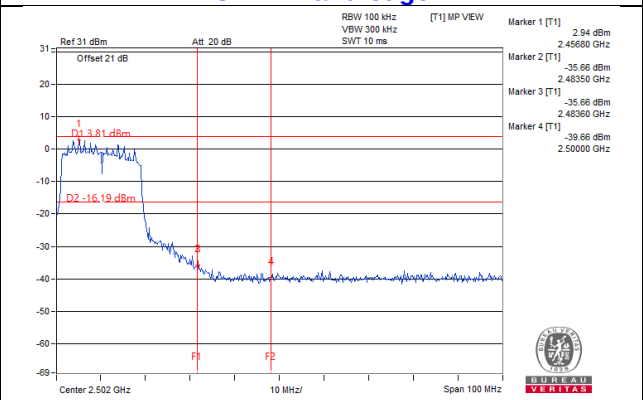
CH 11



CH 1 Band edge

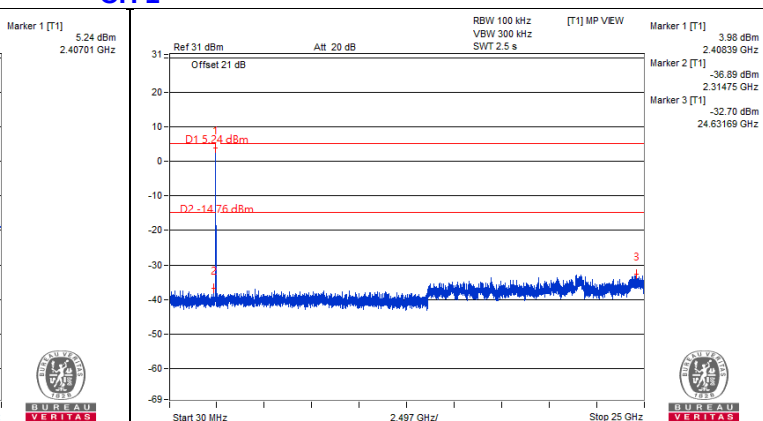
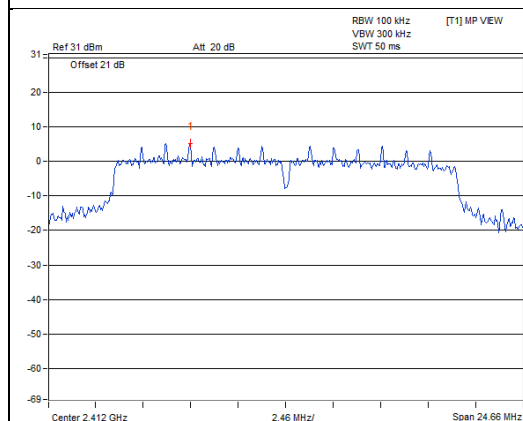


CH 11 Band edge

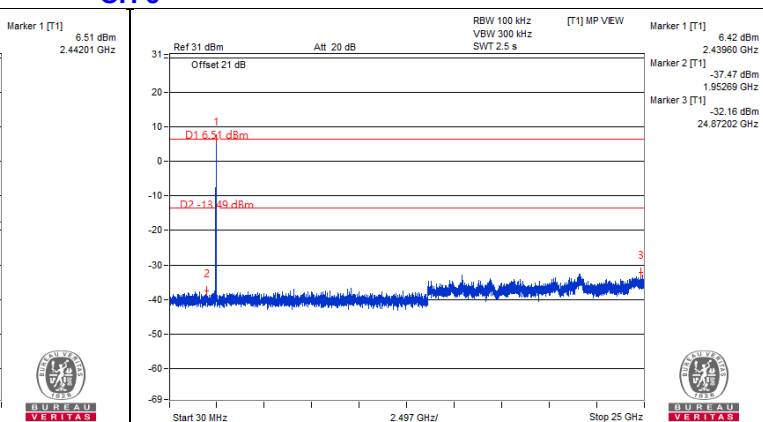
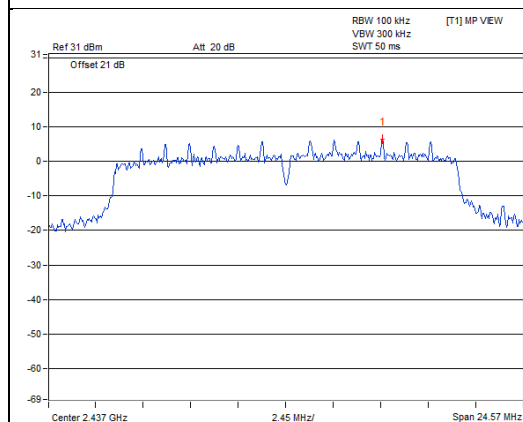


Chain 1

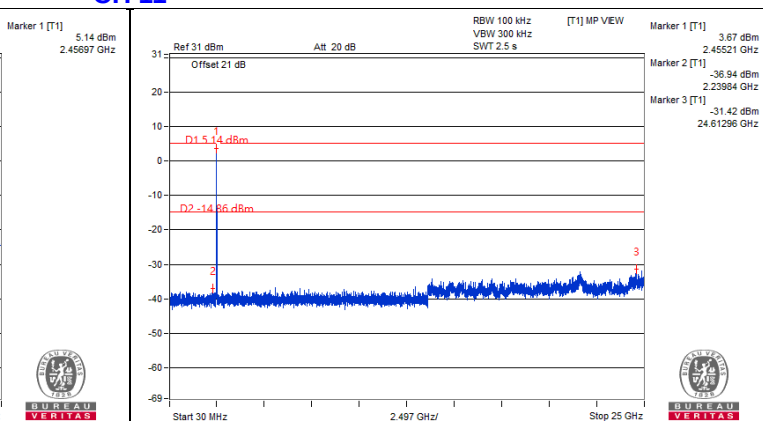
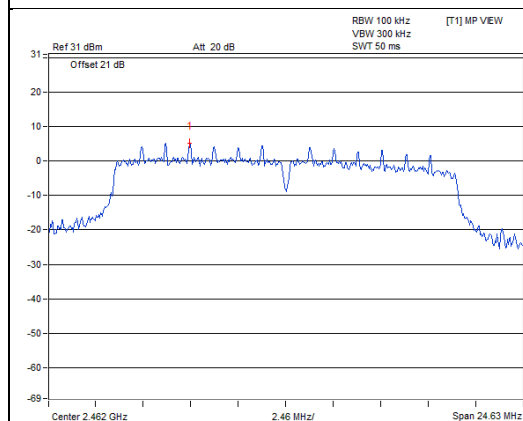
CH 1



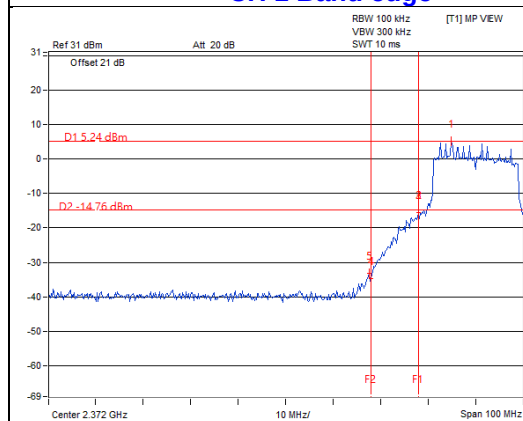
CH 6



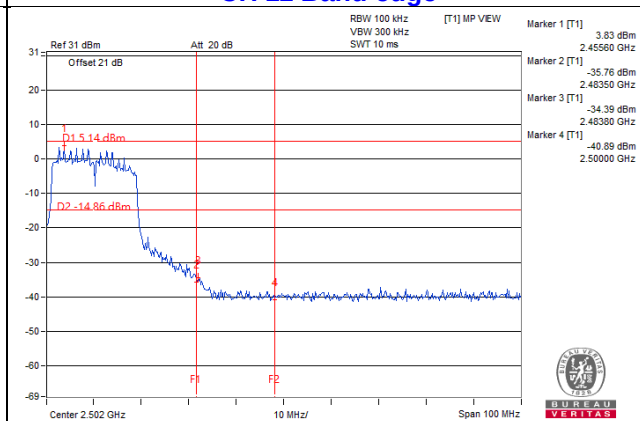
CH 11



CH 1 Band edge

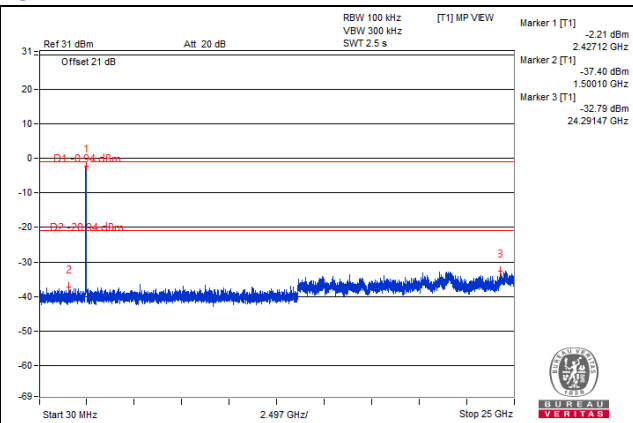
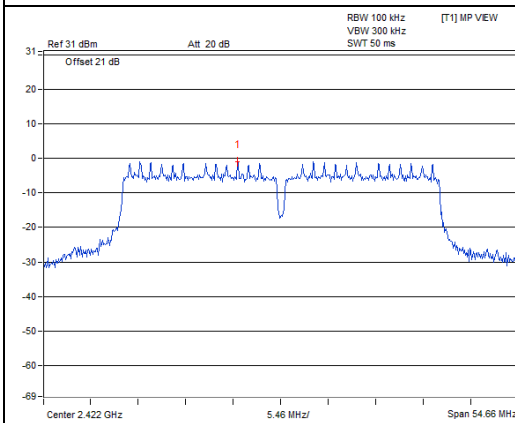


CH 11 Band edge

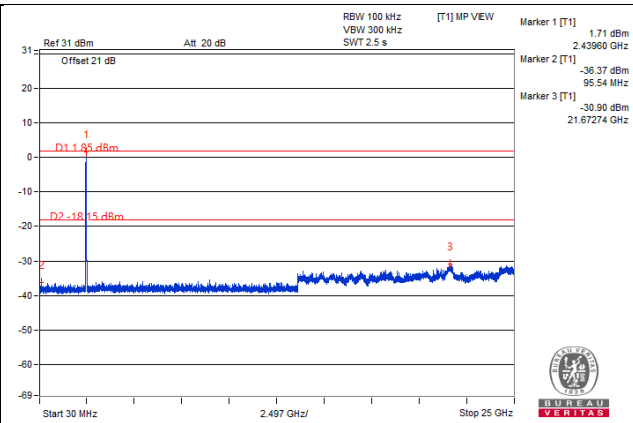
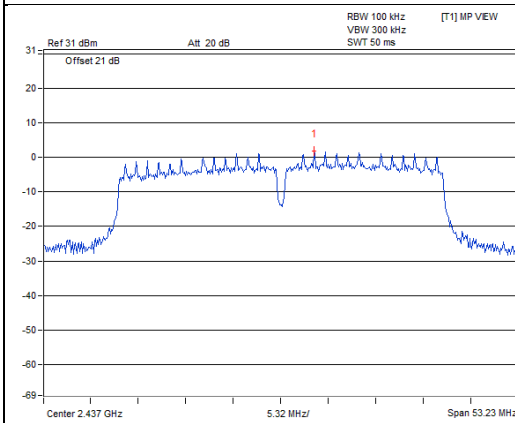


802.11n (HT40) Chain 0

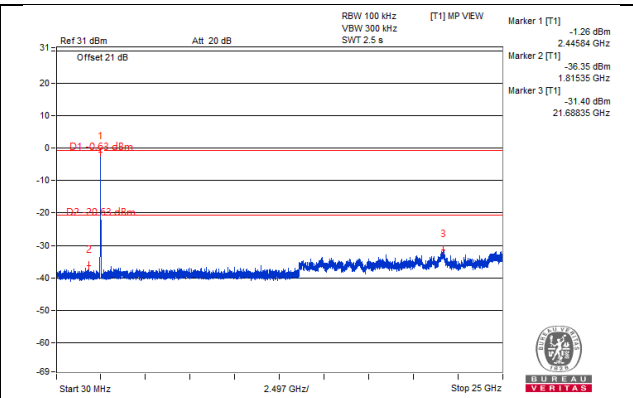
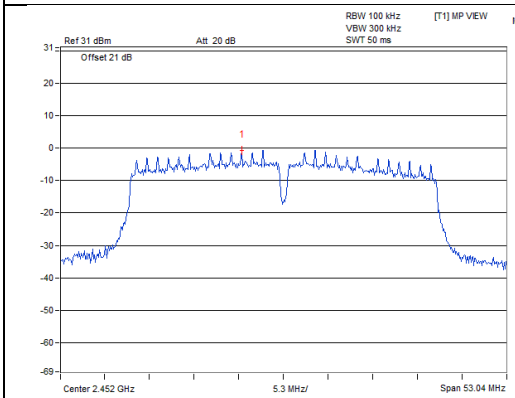
CH 3



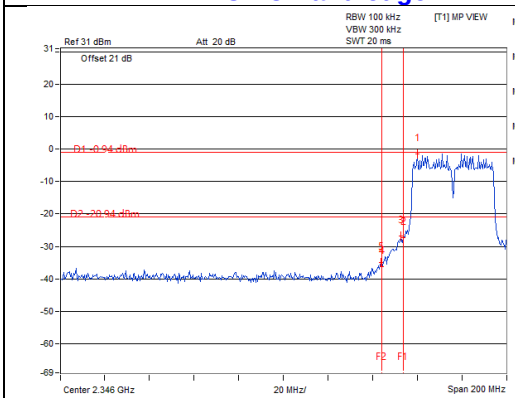
CH 6



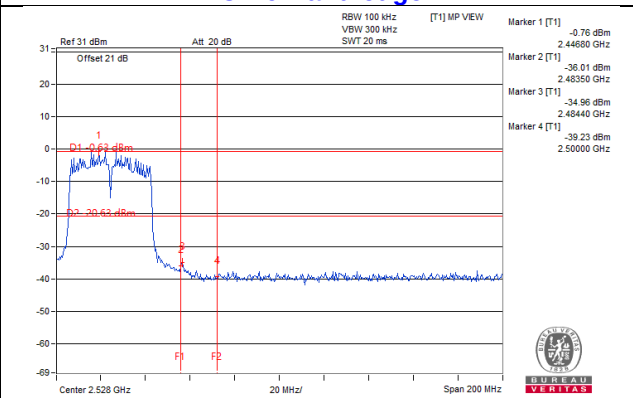
CH 9



CH 3 Band edge

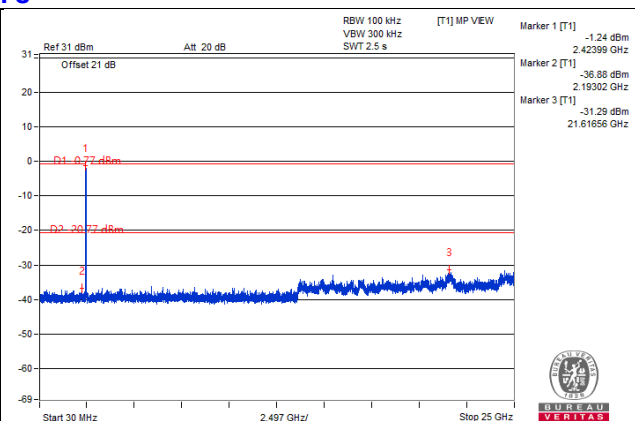
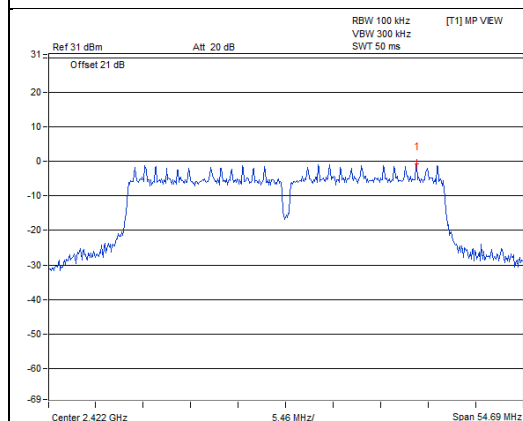


CH 9 Band edge

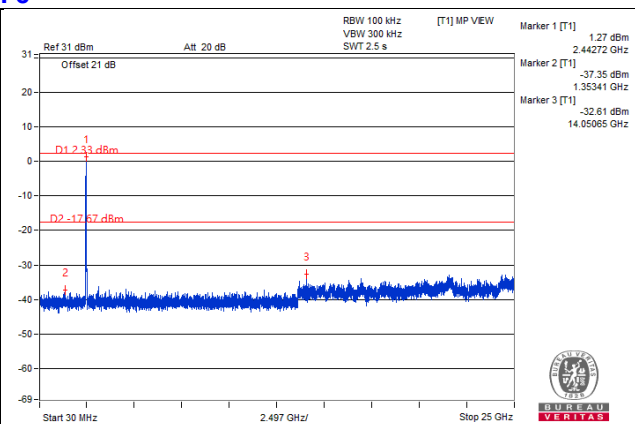
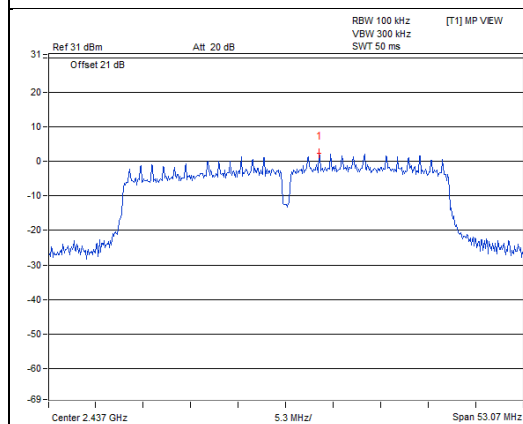


Chain 1

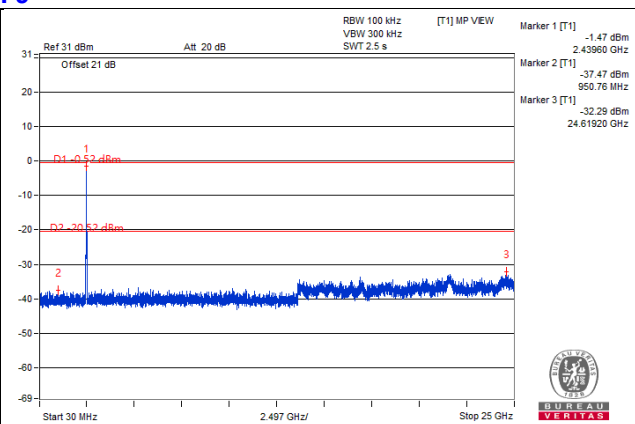
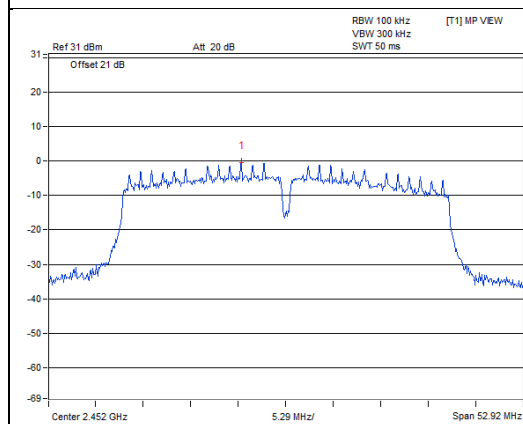
CH 3



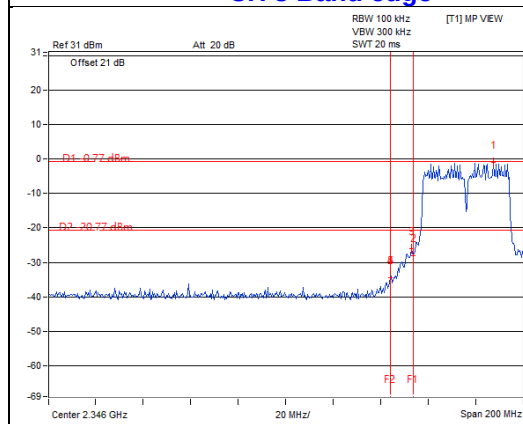
CH 6



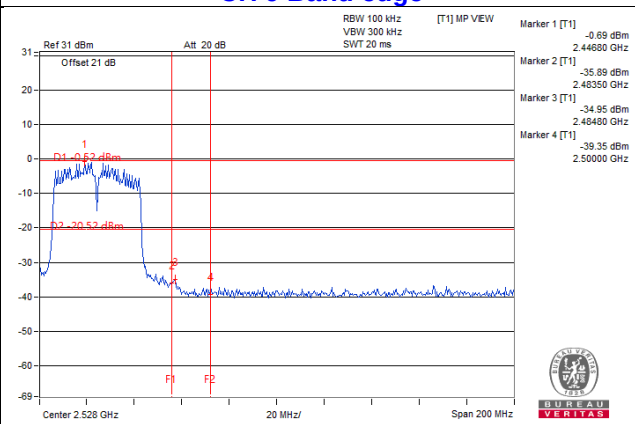
CH 9



CH 3 Band edge



CH 9 Band edge

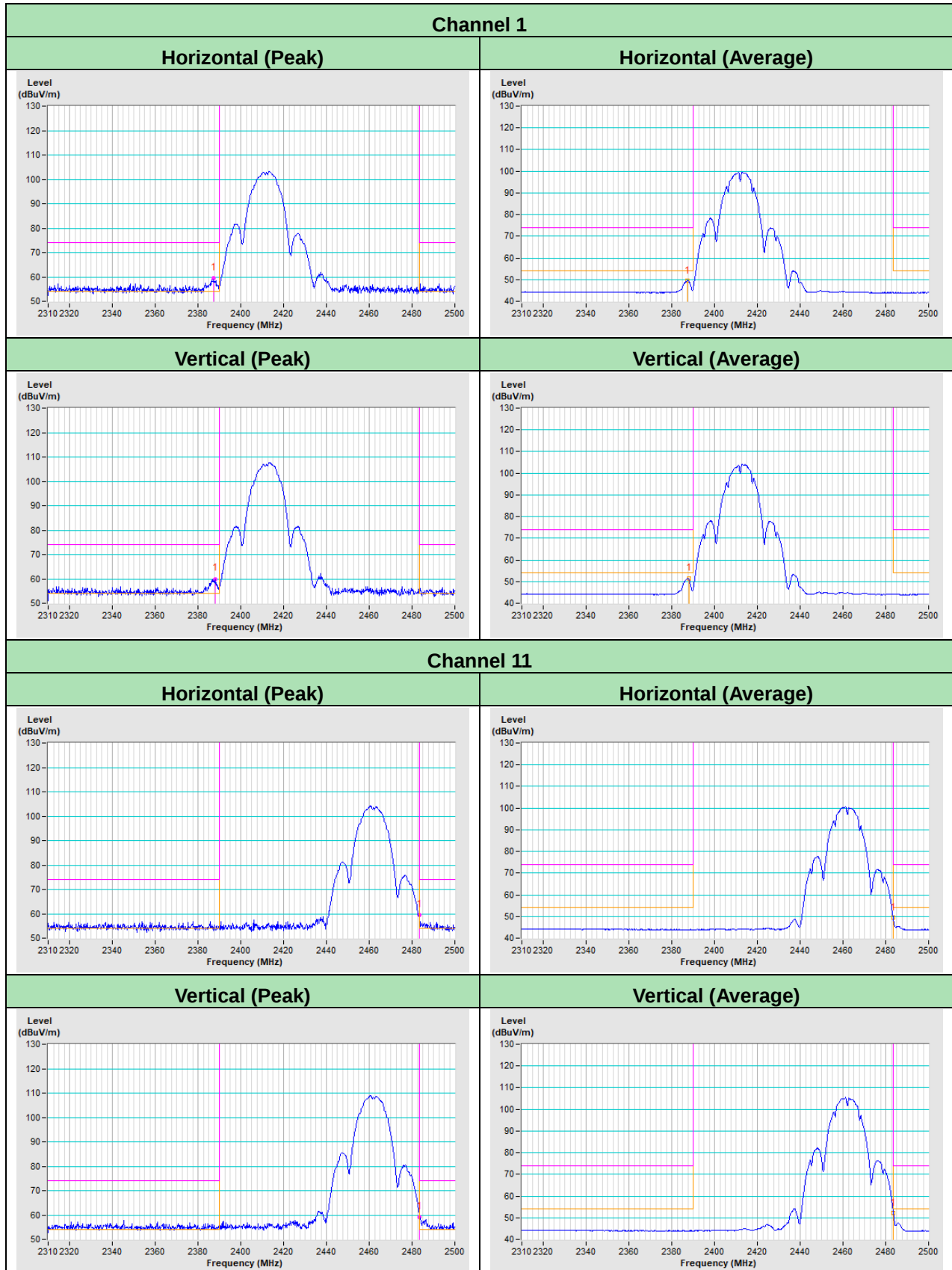


5 Pictures of Test Arrangements

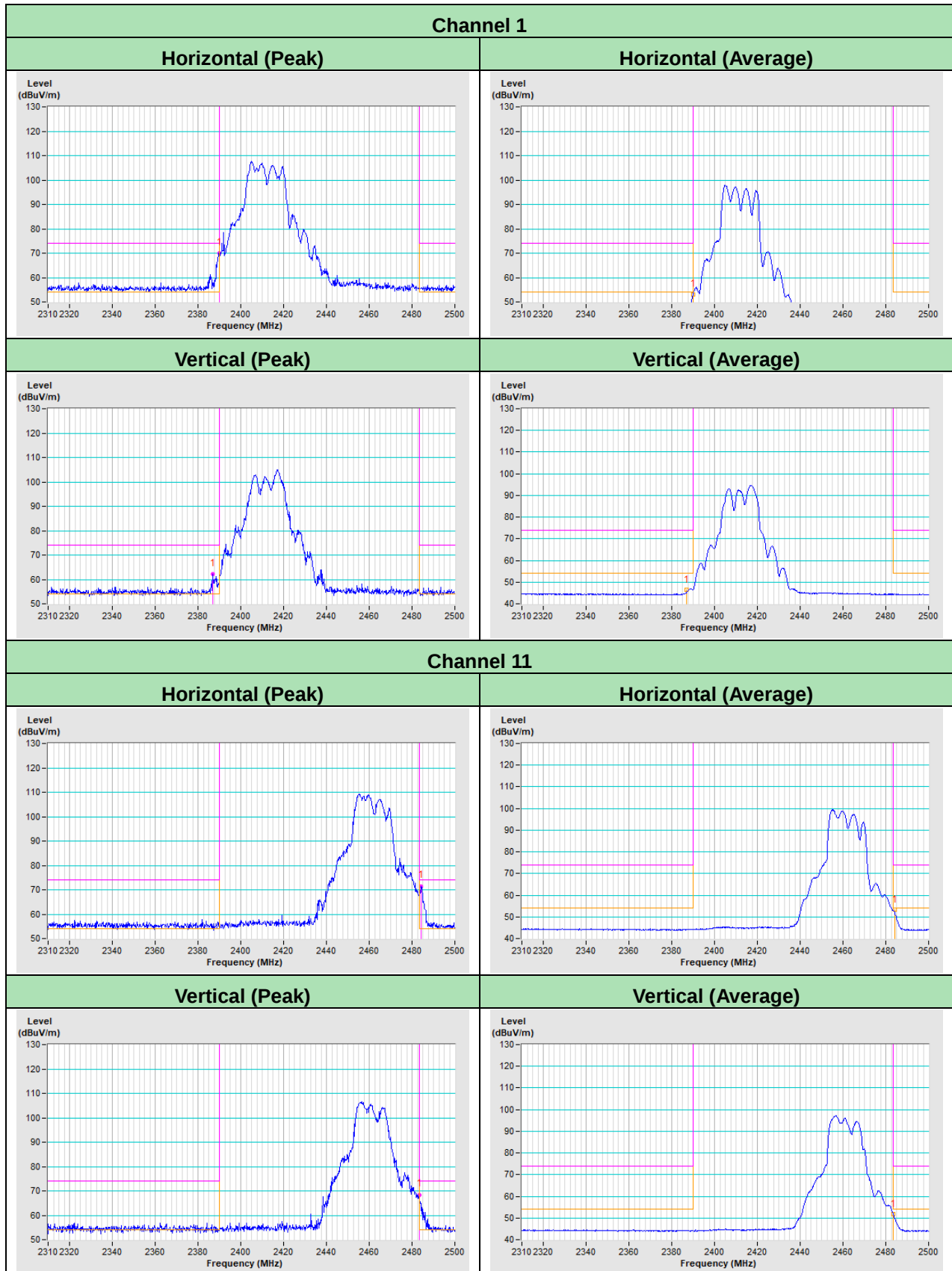
Please refer to the attached file (Test Setup Photo).

Annex A - Band-Edge Measurement

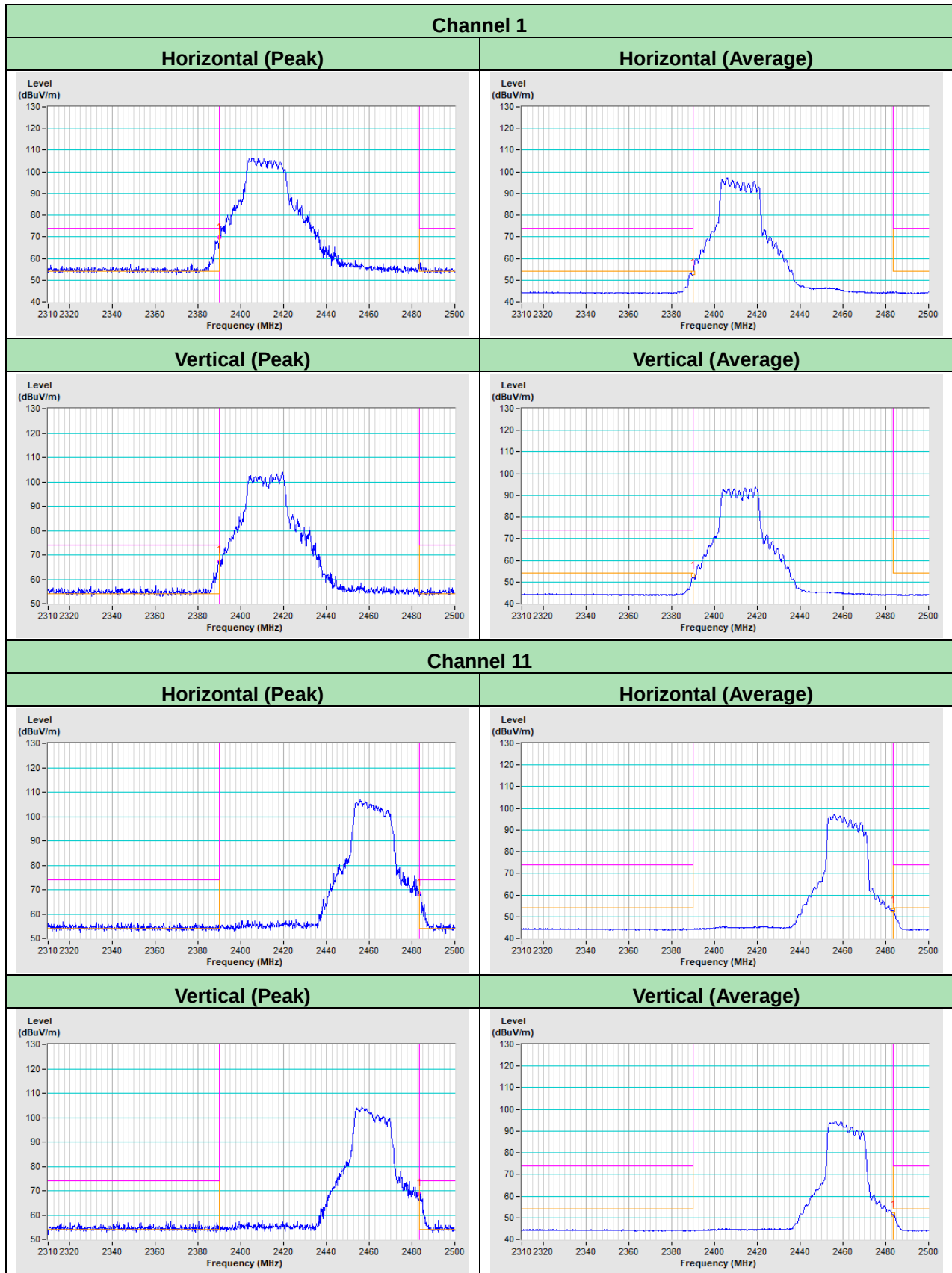
802.11b



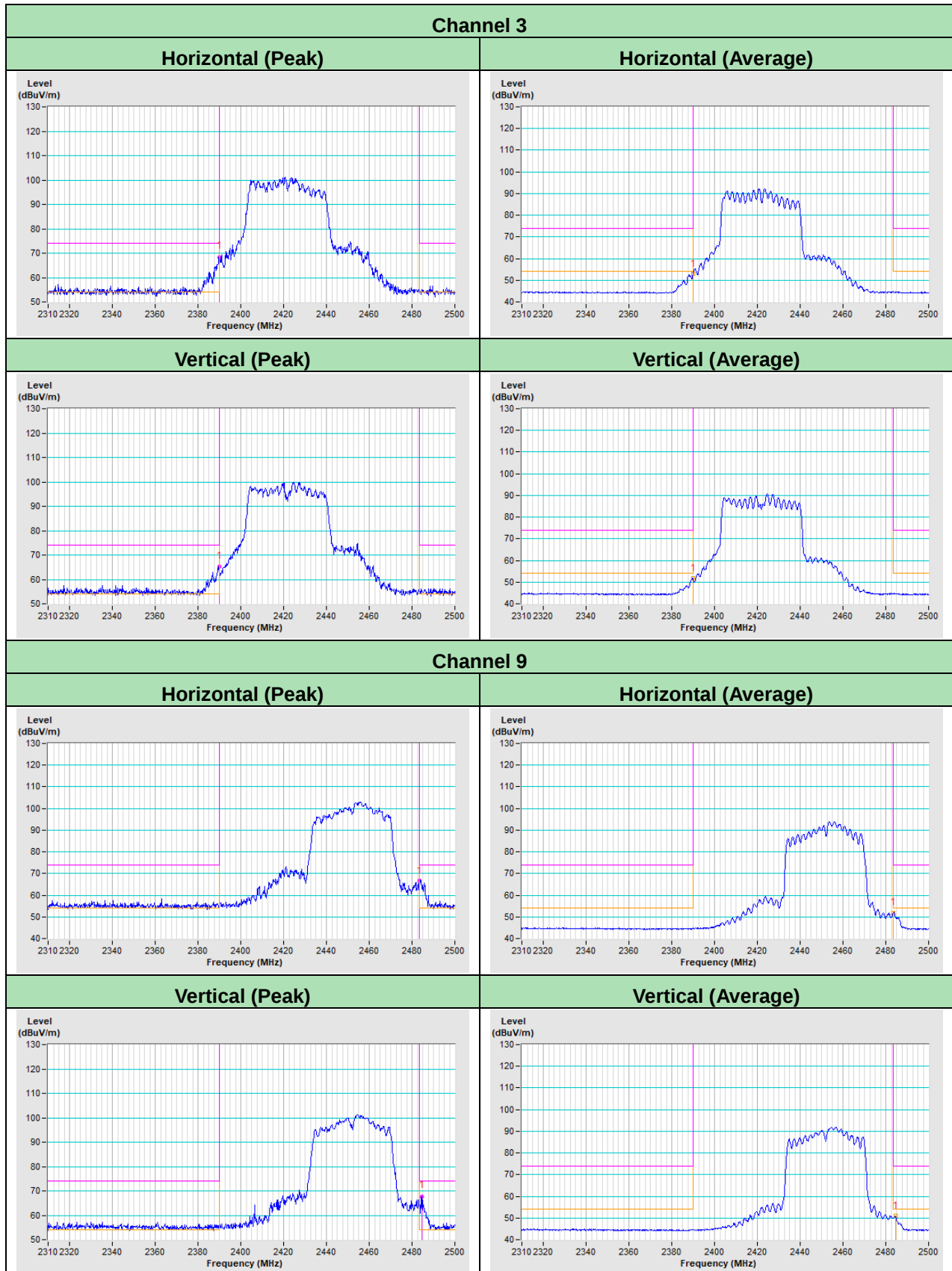
802.11g



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:

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Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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