TESTING
NVLAP LAB CODE 600118-0

FCC PART 15
ISED RSS-247
TEST REPORT
No. I21Z70032-EMC12

for

Samsung Electronics Co., Ltd.

Notebook PC

NP750XDA

with

FCC ID: ZCANP750XDA

ISED Number: 25314-NP750XDA

Hardware Version: REV1.0

Software Version: Windows10-Pro

Issued Date: 2021-03-29

Note:

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The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S.Government.

Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I21Z70032-EMC12	Rev.0	1st edition	2021-03-29

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1. TEST LATORATORY

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (ISED#: 24849). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Location 1:CTTL(Huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China100191

Location 2:CTTL(BDA)

Address: No.18A, Kangding Street, Beijing Economic-Technology Development Area, Beijing, P. R. China 100176

1.3. TestingEnvironment

Normal Temperature: 15-35℃

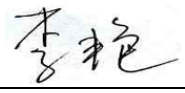
Relative Humidity: 20-75%

1.4. Project date

Testing Start Date: 2021-02-05

Testing End Date: 2021-03-25

1.5. Signature

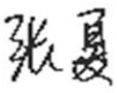


Li Yan

(Prepared this test report)

Zhang Ying

(Reviewed this test report)



Zhang Xia

Deputy Director of the laboratory

(Approved this test report)

2. CLIENT INFORMATION

2.1. Applicant Information

Company Name:	Samsung Electronics Co., Ltd.
Address:	19 Chapin Rd.,Building D Pine Brook, NJ 07058
Contact:	Jenni Chun
Email:	j1.chun@samsung.com
Telephone:	+1-201-937-4203
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2.2. Manufacturer Information

Company Name:	Samsung Electronics Co., Ltd.
Address:	Samsung R5, Maetan dong 129, Samsung ro Youngtong gu, Suwon city 443 742, Korea
Contact:	Sunghoon Cho
Email:	ggobi.cho@samsung.com
Telephone:	+82-10-2722-4159
Fax:	/

3. PRODUCT INFORMATION

3.1. About EUT

Description	Notebook PC
Model name	NP750XDA
FCC ID	ZCANP750XDA
ISED Number	25314-NP750XDA

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of T CTTL-Telecommunication Technology Labs, CAICT

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version
UT12a	2170032UT12a	REV1.0	Windows10-Pro
UT33a	2170032UT33a	REV1.0	Windows10-Pro

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description	SN	Remarks
AE1	AC Adapter	/	/
AE2	Travel Adapter	/	/
AE3	battery	/	/

AE1

Model	PD-65ABH
Manufacturer	Chicony Power Technology Co., Ltd.
Length of cable	/

AE2

Model	EP-TA865
Manufacturer	Dong Yang E & P Inc.
Length of cable	/

AE3

Model	AA-PBSN4AF
Manufacturer	SDI

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

The Equipment Under Test (EUT) was a Notebook Computer with Bluetooth, Bluetooth Low Energy and 802.11 a/b/g/n/ac/ax capabilities in the 2.4 GHz and 5 GHz bands.

Antenna information

Item	Spec.	Vendor	Vendor Model
Antenna	/	Inpaq	/
Antenna	/	Speed	/

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the Client.

3.5. Test Configuration

For 802.11a mode the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, but not simultaneously.

For 802.11n20 & 802.11ax20 (20 MHz channel bandwidth), 802.11n40 & 802.11ax40 (40MHz channel bandwidth) and 802.11ac80 & 802.11ax80 (80MHz channel bandwidth) modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, and also simultaneously.

The software DRTU provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

3.6. Interpretation of the Test Environment

For the test methods, the test environment uncertainty figures correspond to an expansion factor k=2.

Measurement Uncertainty

Parameter	Uncertainty
temperature	0.48°C
humidity	2 %
DC voltages	0.003V

4. REFERENCE DOCUMENTS

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C and E: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.407 General technical requirements	2019
ISED RSS - Gen	Spectrum Management and Telecommunications - Radio Standards Specification General Requirements and Information for the Certification of Radio communication Equipment	Issue 5 2019
ISED RSS-247	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices	Issue 2 2017
ANSI C63.10	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2013
UNII: KDB 789033 D02	General U-NII Test Procedures New Rules v02r01	2017-12

Note: The test methods have no deviation with standards.

5. SUMMARY OF TEST RESULTS

5.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15	Sub-clause of ISED	Verdict
Radiated Spurious Emission	15.407, 15.205, 15.209	RSS-247 6.2 RSS-Gen 8.9,8.10	**P**
AC Power line Conducted Emission	15.407, 15.207	RSS-Gen 8.8	**P**

Please refer to **ANNEX C** for detail.

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NP	Not Perform, The test was not performed by CTTL
BR	Re-use test data from basic model report.
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

5.2. Statements

The test cases as listed in section 5.1 of this report for the EUT specified in section 3 was performed by CTTL and according to the standards or reference documents listed in section 4.2 The EUT met all requirements of the standards or reference documents, and only the WLAN function was tested in this report.

5.3. Test Conditions

T nom	Normal Temperature
T min	Low Temperature
T max	High Temperature
V nom	Normal Voltage

For this report, if the test cases listed above are tested under normal temperature and normal voltage, and also under norm humidity, the specific condition is shown as follows:

Temperature	T nom	26℃
Voltage	V nom	4.0V
Humidity	H nom	20-75%

6. TEST EQUIPMENTS UTILIZED

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESU26	100376	R&S	1 year	2021-09-04
2	BiLog Antenna	VULB9163	9163-482	Schwarzbeck	1 year	2021-11-04
3	Dual-Ridge Waveguide Horn Antenna	3117	00139065	ETS-Lindgren	1 year	2021-10-11
4	Dual-Ridge Waveguide Horn Antenna	3116	2663	ETS-Lindgren	1 year	2021-08-05
5	Vector Signal Analyzer	FSV40	101047	R&S	1 year	2021-05-18
6	Loop Antenna	HFH2-Z2	829324/007	R&S	1 year	2021-12-10
7	Test Receiver	ESU26	100235	R&S	1 year	2022-02-23

AC Powerline Conducted Emission

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	LISN	ENV216	101459	R&S	1 year	2021-04-09
2	Test Receiver	ESCI	100766	R&S	1 year	2022-03-09

7. Measurement Uncertainty

Radiated Spurious Emission

(k=2)

Frequency Range	Uncertainty(dB)
9kHz-30MHz	/
30MHz ≤ f ≤ 1GHz	5.40
1GHz ≤ f ≤18GHz	4.32
18GHz ≤ f ≤40GHz	5.26

AC Power-line Conducted Emission

Measurement Uncertainty: 3.10dB,k=2

ANNEX A: EUT parameters

Disclaimer: the antenna gain provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

ANNEX B: Antenna Requirements

A ccording to FCC 47 CFR § 15.203, §15.407:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

(1) The antennas of the EUT are permanently attached.

(2) The EUT complies with the requirement of §15.203, §15.407.

ANNEX C: Detailed Test Results

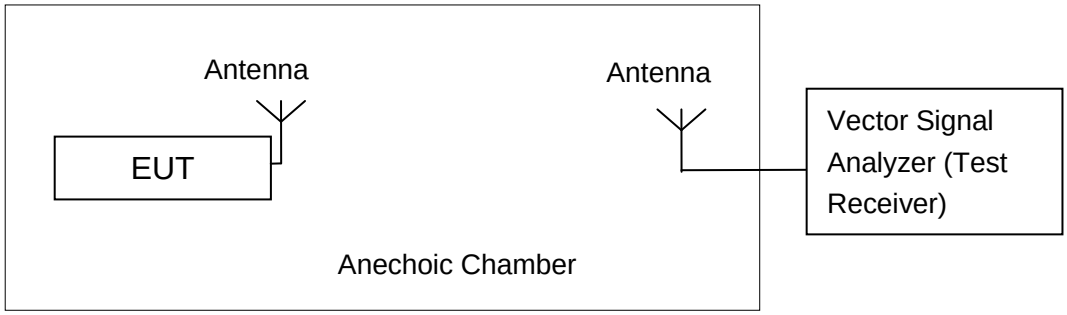
C.1. Radiated Spurious Emission

Specification Reference

FCC 47 CFR Part 15, Clause 15.407 (b) Clause 15.205 Clause 15.209
ISED RSS-247, Clause 6.2, ISED RSS-GEN, Clause 8.9, 8.10

Method of Measurement

Testing was performed in according with ANSI C63.10-2013 and KDB 789033.
The radiated emission test is performed in semi-anechoic chamber. The distance from the EUT to the reference point of measurement antenna is 3m. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result.



Note: Emission below 18GHz were measured at a 3 meter test distance while emission above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

Measurement Limit

Standard	Limit (dBm/MHz)	
FCC 47 CFR Part 15.407 RSS-247, 6.2	at the band edge	27
	at 5 MHz above or below the band edge	15.6
	at 25 MHz above or below the band edge	10
	at 75 MHz or more above or below the band edge	-27
	Note：Increasing linearly from point to point.	

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).
Limit in restricted band:

Frequency (MHz)	Field strength(μV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Frequency of emission (MHz)	Field strength(dBμV/m)	Measurement distance(m)
30-88	40.0	3
88-216	43.5	3
216-960	46.0	3
Above 960	54.0	3

Test settings

Frequency of emission (MHz)	RBW/VBW
30-1000	100KHz/300KHz
1000-4000	1MHz/3MHz
4000-18000	1MHz/3MHz
18000-26500	1MHz/3MHz
26500-40000	1MHz/3MHz

Sample Calculation

1. Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:
E=EIRP- 20log (*D)* +104.77
Where:
E is the field strength in dBμV/m
D is the measurement distance in meters
EIRP is the equivalent isotropically radiated power in dbm

2. The measurement results are obtained as described below:
Result=P_{Mea}+$A_{Rpl=}$ P_{Mea}+Cable Loss+Antenna Factor
A "reference path loss" is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.
P_{Mea} is the field strength recorded from the instrument.

Test Notes

1. The EUT is operating at its maximum duty cycle and its maximum power control level.
2. Investigation has been done on all channel, modes and modulations/data rates. Only the radiated emissions of the configurations that produced the worst case emissions are reported in this section.
3. The Measurements were performed separately in Chain A, Chain B, and MIMO (Chain A+B); only the worst cases are shown in this report.

C.1.1 Radiated Spurious Emission- above 1GHz

Speed

Average Results：

802.11a

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5418.900	38.7	-22.5	34.4	26.78	54.0	15.3	V	43
5439.650	38.7	-22.6	34.4	26.90	54.0	15.3	V	91
11490.400	31.9	-29.1	38.2	22.89	54.0	22.1	V	222
16157.600	36.4	-23.3	41.0	18.70	54.0	17.6	H	265
17739.200	38.0	-22.3	41.6	18.71	54.0	16.0	V	217
17916.000	38.1	-22.7	41.5	19.28	54.0	15.9	H	334

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5413.450	38.8	-22.4	34.4	26.84	54.0	15.2	V	282
5441.800	38.7	-22.6	34.4	27.01	54.0	15.3	V	287
11570.400	31.5	-29.2	38.3	22.45	54.0	22.5	H	87
16149.600	36.2	-23.3	40.9	18.57	54.0	17.8	V	48
17755.200	37.7	-22.3	41.5	18.42	54.0	16.3	H	87
17919.200	38.0	-22.7	41.5	19.16	54.0	16.0	V	70

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5447.925	38.5	-22.7	34.4	26.84	54.0	15.5	V	355
5455.975	38.5	-22.7	34.4	26.84	54.0	15.5	V	241
11650.400	31.7	-29.4	38.4	22.78	54.0	22.3	H	245
16144.800	36.2	-23.3	40.9	18.58	54.0	17.8	H	109
17755.200	37.7	-22.3	41.5	18.42	54.0	16.3	H	216
17910.400	38.0	-22.6	41.5	19.12	54.0	16.0	H	129

802.11n-HT20

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5454.925	40.0	-22.7	34.4	28.28	54.0	14	V	331
5458.428	39.9	-22.7	34.4	28.26	54.0	14.1	V	348
11490.400	31.8	-29.1	38.2	22.76	54.0	22.2	H	1
16155.200	36.1	-23.3	41.0	18.40	54.0	17.9	V	265
17743.200	37.7	-22.3	41.6	18.47	54.0	16.3	H	3
17912.000	38.1	-22.6	41.5	19.20	54.0	15.9	V	45

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5443.550	40.1	-22.7	34.4	28.37	54.0	13.9	V	69
5457.025	40.0	-22.7	34.4	28.29	54.0	14	V	108
11570.400	31.6	-29.2	38.3	22.57	54.0	22.4	H	65
16146.400	36.2	-23.3	40.9	18.61	54.0	17.8	V	133
17749.600	37.9	-22.3	41.5	18.60	54.0	16.1	V	287
17911.200	38.0	-22.6	41.5	19.14	54.0	16.0	V	4

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5437.950	39.1	-22.6	34.4	27.31	54.0	14.9	V	240
5450.200	38.8	-22.7	34.4	27.09	54.0	15.2	V	287
11650.400	31.9	-29.4	38.4	22.96	54.0	22.1	V	70
16155.200	36.4	-23.3	41.0	18.73	54.0	17.6	H	353
17743.200	38.0	-22.3	41.6	18.68	54.0	16.0	V	238
17910.400	38.1	-22.6	41.5	19.25	54.0	15.9	V	332

802.11n-HT40

Ch151

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5412.000	38.1	-22.4	34.4	26.17	54.0	15.9	V	128
5442.000	38.3	-22.6	34.4	26.55	54.0	15.7	V	1
11510.400	30.9	-29.1	38.2	21.82	54.0	23.1	H	246
17728.800	37.4	-22.2	41.6	18.05	54.0	16.6	V	246
17746.400	37.3	-22.3	41.6	17.99	54.0	16.7	V	129
17908.800	37.6	-22.6	41.5	18.70	54.0	16.4	V	1

Ch159

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5402.800	38.6	-22.3	34.4	26.56	54.0	15.4	V	156
5440.000	38.7	-22.6	34.4	26.91	54.0	15.3	V	239
11590.400	31.1	-29.3	38.3	22.07	54.0	22.9	H	282
17755.200	37.2	-22.3	41.5	17.94	54.0	16.8	H	334
17825.600	37.2	-22.5	41.5	18.14	54.0	16.8	V	238
17890.400	37.4	-22.6	41.5	18.49	54.0	16.6	H	156

802.11ax-HT20

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5448.625	40.1	-22.7	34.4	28.39	54.0	13.8	V	290
5454.925	40.1	-22.7	34.4	28.37	54.0	13.9	V	135
11490.400	30.8	-29.1	38.2	21.70	54.0	23.2	H	172
17705.600	37.1	-22.2	41.6	17.75	54.0	16.9	H	18
17719.200	37.1	-22.2	41.6	17.78	54.0	16.9	V	309
17740.000	37.2	-22.3	41.6	17.89	54.0	16.8	V	111

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5451.075	40.0	-22.7	34.4	28.34	54.0	14	V	246
5458.425	39.9	-22.7	34.4	28.23	54.0	14.1	V	283
11570.400	30.5	-29.2	38.3	21.51	54.0	23.5	V	3
17756.800	37.0	-22.3	41.5	17.81	54.0	17.0	V	177
17781.600	36.9	-22.4	41.5	17.75	54.0	17.1	H	241
17825.600	37.2	-22.5	41.5	18.09	54.0	16.8	H	200

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5445.650	38.6	-22.7	34.4	26.92	54.0	15.4	V	222
5454.750	38.7	-22.7	34.4	27.01	54.0	15.3	V	351
11650.400	30.7	-29.4	38.4	21.71	54.0	23.3	H	48
17836.800	37.1	-22.5	41.5	18.05	54.0	16.9	H	158
17864.000	36.9	-22.5	41.5	17.90	54.0	17.1	V	87
17884.800	37.2	-22.6	41.5	18.30	54.0	16.8	H	310

802.11ax-HT40

Ch151

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5382.400	38.7	-22.3	34.4	26.64	54.0	15.3	V	2
5438.000	38.6	-22.6	34.4	26.85	54.0	15.4	V	108
11510.400	31.2	-29.1	38.2	22.10	54.0	22.8	H	194
17724.800	37.5	-22.2	41.6	18.22	54.0	16.5	V	174
17749.600	37.5	-22.3	41.5	18.28	54.0	16.5	H	309
17918.400	37.8	-22.7	41.5	18.93	54.0	16.2	H	106

Ch159

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5377.200	38.6	-22.3	34.4	26.53	54.0	15.4	V	114
5437.600	38.5	-22.6	34.4	26.76	54.0	15.5	V	199
11590.400	31.4	-29.3	38.3	22.37	54.0	22.6	V	284
17729.600	37.4	-22.2	41.6	18.12	54.0	16.6	H	244
17757.600	37.4	-22.3	41.5	18.18	54.0	16.6	V	241
17828.800	37.5	-22.5	41.5	18.39	54.0	16.5	H	64

802.11ax-HT80

Ch155

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5352.000	39.2	-22.3	34.5	27.04	54.0	14.8	V	263
5390.000	39.3	-22.3	34.5	27.03	54.0	14.7	V	244
11550.400	30.5	-29.2	38.5	21.22	54.0	23.5	H	350
16168.000	35.3	-23.3	41.0	17.61	54.0	18.7	V	90
17324.800	36.1	-22.9	41.4	17.60	54.0	17.9	H	348
17939.200	37.2	-22.7	41.3	18.58	54.0	16.8	V	135

802.11ac-HT80

Ch155

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5359.600	39.3	-22.3	34.5	27.05	54.0	14.7	V	175
5392.000	39.3	-22.3	34.5	27.07	54.0	14.7	V	238
11550.400	31.3	-29.2	38.5	21.96	54.0	22.7	V	84
16083.200	35.7	-23.5	40.9	18.29	54.0	18.3	V	131
17324.800	36.4	-22.9	41.4	17.89	54.0	17.6	H	268
17913.600	37.8	-22.6	41.3	19.20	54.0	16.2	H	178

Peak Results：

802.11a

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.690	53.2	-22.8	34.7	41.41	68.7	15.5	H	44
5651.438	53.7	-22.8	34.7	41.82	69.3	15.6	H	88
11490.200	45.4	-29.1	38.2	36.37	74.0	28.6	H	220
17007.800	56.4	-23.0	42.2	37.27	68.3	11.9	H	264
17234.950	53.2	-22.8	41.9	34.12	68.3	15.1	H	220
17453.850	57.0	-23.2	41.7	38.51	68.3	11.3	V	330

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5746.400	53.7	-22.9	34.9	41.77	68.3	14.6	V	286
5815.400	55.1	-22.6	35.0	42.82	68.3	13.2	H	286
11569.950	46.0	-29.2	38.3	36.97	74.0	28.0	H	88
17280.600	56.7	-22.8	41.9	37.65	68.3	11.6	V	44
17354.850	53.6	-22.9	41.8	34.74	68.3	14.7	H	88
17595.200	56.9	-22.3	41.6	37.56	68.3	11.4	H	66

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5922.300	54.5	-22.2	35.2	41.54	70.2	15.7	H	352
5924.494	54.0	-22.2	35.2	41.01	68.6	14.6	V	242
11650.250	45.8	-29.4	38.4	36.84	74.0	28.2	V	242
16866.450	56.4	-23.0	42.0	37.38	68.3	11.9	V	110
17417.550	57.6	-23.1	41.7	38.94	68.3	10.7	V	220
17474.750	54.6	-23.1	41.6	36.05	68.3	13.7	H	132

802.11n-HT20

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.575	54.8	-22.8	34.7	43.00	68.6	13.8	V	330
5651.438	53.9	-22.8	34.7	42.06	69.3	15.4	V	352
11490.200	45.1	-29.1	38.2	36.06	74.0	28.9	H	0
16922.000	56.9	-23.0	42.1	37.84	68.3	11.4	V	264
17206.900	57.0	-22.9	41.9	37.98	68.3	11.3	H	0
17234.950	54.3	-22.8	41.9	35.18	68.3	14.0	H	44

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5732.400	54.0	-23.0	34.8	42.13	68.3	14.3	V	66
5843.400	54.2	-22.4	35.0	41.58	68.3	14.1	V	110
11569.950	45.7	-29.2	38.3	36.67	74.0	28.3	H	66
16890.100	56.4	-23.0	42.0	37.31	68.3	11.9	V	132
17354.850	54.0	-22.9	41.8	35.15	68.3	14.3	H	286
17596.850	57.0	-22.3	41.6	37.72	68.3	11.3	H	0

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5923.793	54.0	-22.2	35.2	41.05	69.1	15.1	H	242
5924.793	54.0	-22.2	35.2	41.02	68.4	14.4	H	286
11650.250	47.1	-29.4	38.4	38.16	68.3	21.2	H	66
16953.900	57.2	-23.0	42.1	38.11	68.3	11.1	H	352
17459.900	57.3	-23.2	41.6	38.77	68.3	11.0	V	242
17474.750	55.0	-23.1	41.6	36.48	68.3	13.3	H	330

802.11n-HT40

Ch151

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.069	53.7	0.0	0.0	53.74	68.3	14.5	V	132
5651.070	53.2	0.0	0.0	53.22	69.0	15.8	V	0
11510.000	45.0	-29.1	38.2	35.97	74.0	29.0	H	242
17265.200	54.1	-22.8	41.9	35.05	68.3	14.2	V	242
17342.750	55.6	-22.9	41.8	36.71	68.3	12.7	V	132
17506.100	54.5	-22.9	41.6	35.75	68.3	13.8	V	0

Ch159

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5923.252	54.3	-22.2	35.2	41.32	69.5	15.2	V	154
5924.494	54.8	-22.2	35.2	41.86	68.6	13.8	V	242
11589.750	45.8	-29.3	38.3	36.80	74.0	28.2	V	286
17385.100	53.8	-23.0	41.7	35.02	68.3	14.5	H	330
17472.550	55.8	-23.1	41.6	37.23	68.3	12.5	V	242
17523.150	55.8	-22.7	41.6	36.95	68.3	12.5	H	154

802.11ax-HT20

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5651.185	54.8	-22.8	34.7	42.95	69.1	14.3	H	286
5652.358	54.6	-22.8	34.7	42.74	69.9	15.4	V	132
11490.200	44.6	-29.1	38.2	35.58	74.0	29.4	H	176
17234.950	54.4	-22.8	41.9	35.31	68.3	13.9	V	22
17422.500	56.2	-23.1	41.7	37.62	68.3	12.1	V	308
17553.950	57.0	-22.5	41.6	37.94	68.3	11.3	V	110

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5721.000	54.8	-23.0	34.8	42.95	68.3	13.5	H	242
2536.200	55.9	-33.8	32.2	57.45	68.3	12.4	H	286
11569.950	45.5	-29.2	38.3	36.45	68.3	22.8	H	0
17354.850	54.2	-22.9	41.8	35.38	68.3	14.1	V	176
17489.050	56.6	-23.0	41.6	38.00	68.3	11.7	V	242
17604.000	56.3	-22.2	41.6	36.93	68.3	12.0	H	198

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5923.034	53.9	-22.2	35.2	40.98	69.7	15.7	H	220
5924.057	54.2	-22.2	35.2	41.24	68.9	14.7	V	352
11650.250	45.3	-29.4	38.4	36.38	74.0	28.7	H	44
17474.750	54.7	-23.1	41.6	36.14	68.3	13.6	V	154
17597.400	56.5	-22.3	41.6	37.20	68.3	11.8	H	88
17634.250	56.5	-22.0	41.6	36.93	68.3	11.8	V	308

802.11ax-HT40

Ch151

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.161	53.7	-22.8	34.7	41.85	68.3	14.6	V	0
5651.196	54.1	-22.8	34.7	42.24	69.1	15.0	H	110
11510.000	45.6	-29.1	38.2	36.51	74.0	28.4	H	198
17265.200	54.5	-22.8	41.9	35.44	68.3	13.8	H	176
17352.650	55.3	-22.9	41.8	36.44	68.3	13.0	V	308
17543.500	57.0	-22.6	41.6	38.06	68.3	11.3	V	110

Ch159

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5923.344	54.4	-22.2	35.2	41.45	69.4	15.0	V	110
5924.448	54.2	-22.2	35.2	41.24	68.6	14.4	V	198
11589.750	44.8	-29.3	38.3	35.82	68.3	23.5	V	286
17385.100	54.0	-23.0	41.7	35.22	68.3	14.3	V	242
17543.500	57.0	-22.6	41.6	38.06	68.3	11.3	V	242
17586.400	57.2	-22.3	41.6	37.97	68.3	11.1	V	66

802.11ax-HT80

Ch155

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.253	53.8	-22.8	34.8	41.81	68.3	14.5	V	264
5650.449	53.6	-22.8	34.8	41.68	68.3	14.7	H	242
11550.150	45.0	-29.2	38.5	35.70	74.0	29.0	V	352
17325.150	53.9	-22.9	41.4	35.37	68.3	14.4	H	88
17583.650	57.7	-22.3	41.2	38.87	68.3	10.6	V	352
17898.800	57.1	-22.6	41.3	38.39	74.0	16.9	V	132

802.11ac-HT80

Ch155

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.023	54.1	-22.8	34.8	42.13	68.3	14.2	V	176
5650.426	54.3	-22.8	34.8	42.39	68.3	14.0	V	242
11550.150	45.4	-29.2	38.5	36.03	68.3	22.9	V	88
17325.150	55.5	-22.9	41.4	37.01	68.3	12.8	V	132
17621.600	56.8	-22.1	41.2	37.64	68.3	11.5	V	264
17933.450	56.8	-22.7	41.3	38.16	68.3	11.5	V	176

Conclusion: pass

Note: the spurious emission above 18G is noise only

Inpaq:

Average Results:

802.11a

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5455.650	38.9	-32.7	34.4	37.22	54.0	15.1	V	129
5443.860	38.9	-32.7	34.4	37.18	54.0	15.1	V	91
11490.400	32.0	-29.1	38.2	22.94	54.0	22.0	V	262
17738.400	38.0	-22.3	41.6	18.72	54.0	16.0	H	260
17762.400	37.7	-22.3	41.5	18.48	54.0	16.3	V	150
17796.000	37.6	-22.4	41.5	18.44	54.0	16.4	H	265

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5438.600	39.0	-32.6	34.4	37.29	54.0	15.0	V	177
5433.860	38.9	-32.6	34.4	37.15	54.0	15.1	V	177
11570.400	31.8	-29.2	38.3	22.82	54.0	22.2	V	310
17744.000	37.8	-22.3	41.6	18.58	54.0	16.2	V	62
17766.400	37.6	-22.3	41.5	18.40	54.0	16.4	V	42
17800.800	37.5	-22.4	41.5	18.33	54.0	16.5	H	246

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5428.000	38.8	-32.5	34.4	36.92	54.0	15.2	V	179
5417.890	38.9	-32.5	34.4	36.99	54.0	15.1	V	113
11650.400	32.0	-29.4	38.4	23.07	54.0	22.0	V	42
17752.800	37.8	-22.3	41.5	18.55	54.0	16.2	H	180
17829.600	37.9	-22.5	41.5	18.82	54.0	16.1	H	268
17916.000	38.2	-22.7	41.5	19.29	54.0	15.8	V	196

802.11n-HT20

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5404.800	38.9	-32.4	34.4	36.88	48.3	9.4	V	129
5419.600	38.9	-32.5	34.4	37.02	48.3	9.4	V	46
11490.400	32.0	-29.1	38.2	22.98	48.3	16.3	H	200
17707.000	37.9	-22.2	41.6	18.56	48.3	10.4	V	261
17728.800	37.9	-22.2	41.6	18.60	48.3	10.4	V	309
17743.200	38.2	-22.3	41.6	18.94	48.3	10.1	V	68

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5396.800	39.0	-32.3	34.4	36.90	54.0	15.0	V	304
5398.670	39.0	-32.3	34.4	36.92	54.0	15.0	V	331
11570.400	32.1	-29.2	38.3	23.03	54.0	21.9	H	201
17709.600	37.9	-22.2	41.6	18.55	54.0	16.1	V	331
17824.800	37.9	-22.5	41.5	18.81	54.0	16.1	V	267
17904.800	38.3	-22.6	41.5	19.36	54.0	15.7	H	217

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5361.500	38.9	-32.3	34.3	36.86	54.0	15.1	V	175
5379.800	38.8	-32.3	34.4	36.76	54.0	15.2	V	87
11650.400	32.1	-29.4	38.4	23.19	54.0	21.9	V	311
17723.200	37.8	-22.2	41.6	18.52	54.0	16.2	H	287
17836.000	37.9	-22.5	41.5	18.90	54.0	16.1	V	133
17918.400	38.2	-22.7	41.5	19.36	54.0	15.8	V	109

802.11n-HT40

Ch151

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5362.000	38.9	-32.3	34.3	36.81	48.3	9.4	V	42
5377.000	38.7	-32.3	34.4	36.61	48.3	9.6	V	246
11510.400	31.9	-29.1	38.2	22.79	48.3	16.4	V	239
17905.600	38.3	-22.6	41.5	19.38	48.3	10.0	H	64
17913.600	38.3	-22.6	41.5	19.42	48.3	10.0	V	222
17932.000	38.2	-22.7	41.5	19.36	48.3	10.1	H	112

Ch159

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5380.000	38.7	-32.3	34.4	36.65	54.0	15.3	V	306
5404.400	38.8	-32.3	34.4	36.82	54.0	15.2	V	238
11590.400	32.2	-29.3	38.3	23.20	54.0	21.8	H	155
17710.400	37.9	-22.2	41.6	18.55	54.0	16.1	V	194
17749.600	38.0	-22.3	41.5	18.69	54.0	16.0	H	109
17832.000	37.9	-22.5	41.5	18.89	54.0	16.1	V	239

802.11ax-HT20

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5358.600	40.2	-32.3	34.3	38.15	54.0	13.8	V	63
5383.800	40.3	-32.3	34.4	38.21	54.0	13.7	V	351
11490.400	32.1	-29.1	38.2	23.06	54.0	21.9	H	128
17745.600	37.9	-22.3	41.6	18.66	54.0	16.1	H	42
17832.000	38.0	-22.5	41.5	18.95	54.0	16.0	V	284
17927.200	38.1	-22.7	41.5	19.28	54.0	15.9	H	91

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5393.800	40.3	-32.3	34.4	38.19	54.0	13.7	V	70
5450.000	40.0	-32.7	34.4	38.32	54.0	14.0	V	196
11570.400	32.0	-29.2	38.3	22.94	54.0	22.0	H	354
17722.400	38.0	-22.2	41.6	18.64	54.0	16.0	H	332
17780.000	37.7	-22.4	41.5	18.48	54.0	16.3	H	312
17935.000	38.1	-22.7	41.5	19.27	54.0	15.9	V	23

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5418.300	40.2	-32.5	34.4	38.28	54.0	13.8	V	282
5399.860	40.1	-32.3	34.4	38.10	54.0	13.9	V	200
11650.400	32.1	-29.4	38.4	23.17	54.0	21.9	V	25
17822.400	37.8	-22.5	41.5	18.74	54.0	16.2	H	282
17904.000	38.2	-22.6	41.5	19.33	54.0	15.8	H	84
17976.000	38.0	-22.8	41.5	19.25	54.0	16.0	H	262

802.11ax-HT40

Ch151

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5353.400	38.6	-32.3	34.3	36.60	54.0	15.4	V	41
5360.200	38.6	-32.3	34.3	36.58	54.0	15.4	V	18
11510.400	32.0	-29.1	38.2	22.90	54.0	22.0	V	217
17713.600	37.9	-22.2	41.6	18.60	54.0	16.1	H	284
17832.200	38.0	-22.5	41.5	18.95	54.0	16.0	V	312
17914.400	38.3	-22.6	41.5	19.48	54.0	15.7	V	107

Ch159

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5358.200	38.8	-32.3	34.3	36.72	54.0	15.2	V	152
5365.800	38.7	-32.3	34.3	36.60	54.0	15.3	V	195
11590.400	32.2	-29.3	38.3	23.16	54.0	21.8	H	134
17735.200	37.9	-22.3	41.6	18.65	54.0	16.1	V	128
17892.800	38.2	-22.6	41.5	19.25	54.0	15.8	H	331
17936.800	38.2	-22.7	41.5	19.38	54.0	15.8	V	216

802.11ax-HT80

Ch155

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5354.400	39.2	-32.3	34.5	36.98	54.0	14.8	V	307
5358.800	39.2	-32.3	34.5	36.97	54.0	14.8	V	113
11550.400	32.2	-29.2	38.5	22.92	54.0	21.8	V	1
17843.200	37.8	-22.5	41.3	19.06	54.0	16.2	V	222
17904.000	38.3	-22.6	41.3	19.68	54.0	15.7	H	224
17919.200	38.3	-22.7	41.3	19.68	54.0	15.7	H	69

802.11ac-HT80

Ch155

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5356.400	39.1	-32.3	34.5	36.87	54.0	14.9	V	243
5381.400	39.0	-32.3	34.5	36.77	54.0	15.0	V	112
11550.400	32.2	-29.2	38.5	22.84	54.0	21.8	V	43
17733.600	38.0	-22.3	41.2	19.03	54.0	16.0	V	350
17831.200	38.0	-22.5	41.3	19.23	54.0	16.0	H	222
17913.600	38.4	-22.6	41.3	19.74	54.0	15.6	H	180

Peak Results：

802.11a

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.960	53.9	-32.8	34.7	52.03	68.9	15.0	V	132
5652.208	54.0	-32.8	34.7	52.11	69.8	15.9	V	88
11490.200	45.8	-29.1	38.2	36.80	68.3	22.5	H	264
17234.950	53.8	-22.8	41.9	34.74	68.3	14.5	H	264
17392.250	56.1	-23.0	41.7	37.41	68.3	12.2	H	154
17529.200	56.9	-22.7	41.6	38.02	68.3	11.4	V	264

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5744.500	54.0	-33.0	34.8	52.07	68.3	14.3	V	176
5856.400	55.6	-32.4	35.0	52.93	68.3	12.7	V	176
11569.950	45.9	-29.2	38.3	36.84	68.3	22.4	V	308
17354.850	55.0	-22.9	41.8	36.12	68.3	13.3	V	66
17512.150	56.3	-22.8	41.6	37.52	68.3	12.0	H	44
17577.600	56.3	-22.4	41.6	37.15	68.3	12.0	V	242

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5924.299	54.6	-32.2	35.2	51.63	68.7	14.1	H	176
5923.762	55.1	-32.2	35.2	52.14	69.1	14.0	V	110
11650.250	46.5	-29.4	38.4	37.51	68.3	21.8	V	44
17474.750	54.2	-23.1	41.6	35.66	68.3	14.1	V	176
17513.800	55.4	-22.8	41.6	36.62	68.3	12.9	V	264
17577.600	56.3	-22.4	41.6	37.15	68.3	12.0	V	198

802.11n-HT20

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5651.714	53.9	-32.8	34.7	52.02	69.5	15.6	H	132
5650.379	53.7	-32.8	34.7	51.85	68.5	14.8	V	44
11490.200	45.2	-29.1	38.2	36.16	68.3	23.1	V	198
17234.950	54.2	-22.8	41.9	35.11	68.3	14.1	H	264
17308.650	56.4	-22.8	41.8	37.36	68.3	11.9	V	308
17524.800	56.7	-22.7	41.6	37.86	68.3	11.6	V	66

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5643.280	54.8	-32.8	34.7	52.96	68.3	13.5	V	308
5882.860	54.3	-32.4	35.1	51.61	68.3	14.0	H	330
11569.950	45.7	-29.2	38.3	36.68	68.3	22.6	H	198
17354.850	53.4	-22.9	41.8	34.56	68.3	14.9	V	330
17487.950	55.7	-23.0	41.6	37.06	68.3	12.6	H	264
17560.000	56.4	-22.5	41.6	37.27	68.3	11.9	V	220

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5922.919	54.8	-32.2	35.2	51.81	69.7	15.0	H	176
5923.930	54.6	-32.2	35.2	51.63	69.0	14.4	V	88
11650.250	47.3	-29.4	38.4	38.38	74.0	26.7	H	308
17474.750	56.7	-23.1	41.6	38.16	68.3	11.6	V	286
17524.800	56.7	-22.7	41.6	37.86	68.3	11.6	H	132
17577.600	56.3	-22.4	41.6	37.06	68.3	12.0	H	110

802.11n-HT40

Ch151

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.633	54.5	-32.8	34.7	52.62	68.7	14.2	H	44
5655.152	55.3	-32.8	34.7	53.41	72.0	16.8	H	242
11510.000	46.9	-29.1	38.2	37.82	74.0	27.1	V	242
17265.200	56.2	-22.8	41.9	37.15	68.3	12.1	V	66
17412.600	55.5	-23.1	41.7	36.85	68.3	12.8	V	220
17590.250	56.4	-22.3	41.6	37.09	68.3	11.9	H	110

Ch159

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5922.804	54.7	-32.2	35.2	51.77	69.8	15.1	H	308
5924.575	54.9	-32.2	35.2	51.92	68.5	13.6	H	242
11589.750	45.9	-29.3	38.3	36.87	74.0	28.1	V	154
17385.100	53.6	-23.0	41.7	34.91	68.3	14.7	V	198
17481.900	55.8	-23.0	41.6	37.16	68.3	12.5	H	110
17560.000	55.9	-22.5	41.6	36.82	68.3	12.4	H	242

802.11ax-HT20

Ch149

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.989	53.9	-32.8	34.7	52.02	68.9	15.1	H	66
5651.506	54.0	-32.8	34.7	52.14	69.3	15.3	V	352
11490.200	45.7	-29.1	38.2	36.60	68.3	22.6	V	132
17234.950	54.0	-22.8	41.9	34.93	68.3	14.3	H	44
17288.300	55.5	-22.8	41.9	36.43	68.3	12.8	H	286
17360.350	55.5	-22.9	41.8	36.66	68.3	12.8	V	88

Ch157

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5721.450	54.5	-33.0	34.8	52.70	68.3	13.8	H	66
5839.500	55.6	-32.5	35.0	53.06	68.3	12.7	V	198
11569.950	46.4	-29.2	38.3	37.41	68.3	21.9	H	352
17354.850	53.7	-22.9	41.8	34.91	68.3	14.6	H	330
17428.000	56.1	-23.1	41.7	37.49	68.3	12.2	H	308
17554.500	57.3	-22.5	41.6	38.23	68.3	11.0	H	22

Ch165

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5921.423	55.5	-32.2	35.2	52.52	70.8	15.4	H	286
5923.885	55.0	-32.2	35.2	52.06	69.0	14.0	H	198
11650.250	47.2	-29.4	38.4	38.25	68.3	21.1	V	22
17474.750	54.9	-23.1	41.6	36.35	68.3	13.4	V	286
17512.700	56.4	-22.8	41.6	37.63	68.3	11.9	H	88
17602.900	56.7	-22.2	41.6	37.34	68.3	11.6	H	264

802.11ax-HT40

Ch151

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.575	53.8	-32.8	34.7	51.96	68.6	14.8	H	44
5651.829	54.0	-32.8	34.7	52.20	69.6	15.5	V	22
11510.000	45.9	-29.1	38.2	36.86	74.0	28.1	H	220
17265.200	54.2	-22.8	41.9	35.09	68.3	14.1	H	286
17409.300	55.7	-23.1	41.7	37.02	68.3	12.6	H	308
17560.320	56.3	-22.5	41.6	37.17	68.3	12.0	V	110

Ch159

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5923.333	54.4	-32.2	35.2	51.48	69.4	15.0	H	154
5924.600	53.9	-32.2	35.2	50.90	68.5	14.6	V	198
11589.750	45.6	-29.3	38.3	36.59	74.0	28.4	V	132
17385.100	54.0	-23.0	41.7	35.29	68.3	14.3	H	132
17449.450	56.9	-23.2	41.7	38.40	68.3	11.4	H	330
17549.550	56.1	-22.6	41.6	37.11	68.3	12.2	V	220

802.11ax-HT80

Ch155

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.598	54.1	-32.8	34.8	52.18	68.3	14.2	V	44
5651.771	54.9	-32.8	34.8	52.93	68.3	13.4	V	220
11550.150	46.5	-29.2	38.5	37.17	68.3	21.8	H	308
17325.150	54.6	-22.9	41.4	36.05	68.3	13.7	V	66
17550.100	56.0	-22.6	41.2	37.34	68.3	12.3	H	264
17585.850	57.3	-22.3	41.2	38.41	68.3	11.0	H	220

802.11ac-HT80

Ch155

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Turntable angle (deg)
5650.472	54.4	-32.8	34.8	52.45	68.3	13.9	H	242
5652.933	56.6	-32.8	34.8	54.66	68.3	11.7	V	110
11550.150	46.0	-29.2	38.5	36.65	68.3	22.3	H	44
17325.150	53.7	-22.9	41.4	35.18	68.3	14.6	V	352
17508.850	56.3	-22.8	41.2	37.91	68.3	12.0	H	220
17623.800	57.0	-22.1	41.2	37.91	68.3	11.3	V	176

Conclusion: pass

Note: the spurious emission above 18G is noise only

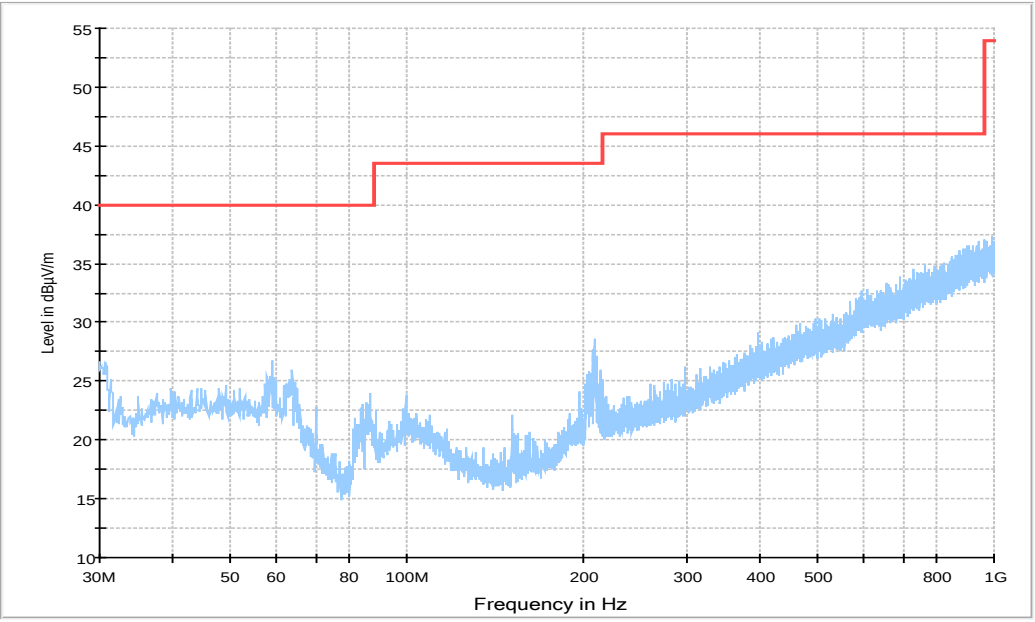
C.1.2 Radiated Spurious Emission- Below 1GHz

WOSRT CASE BELOW 1GHz

FCC Part 15C 30-1G Limit

Peak Preview Result

Final Result QPK



BELOW 30MHz

There are no emissions found below 30MHz with in 20dB of the limit.

C.1.3 Band Edges Compliance– Radiated

Measurement Result:

Speed:

Mode	Channel	Test Results	Conclusion
802.11a	5745 MHz(CH149)	Fig.1	P
	5825 MHz(CH165)	Fig.2	P
802.11n HT20	5745 MHz(CH149)	Fig.3	P
	5825 MHz(CH165)	Fig.4	P
802.11n HT40	5755 MHz(CH151)	Fig.5	P
	5795 MHz(CH159)	Fig.6	P
802.11ax HT20	5745 MHz(CH149)	Fig.7	P
	5825 MHz(CH165)	Fig.8	P
802.11ax HT40	5755 MHz(CH151)	Fig.9	P
	5795 MHz(CH159)	Fig.10	P
802.11ax HT80	5775 MHz(CH155)	Fig.11 Fig.12	P
802.11ac HT80	5775 MHz(CH155)	Fig.13 Fig.14	P

Conclusion: PASS

Inpaq:

Mode	Channel	Test Results	Conclusion
802.11a	5745 MHz(CH149)	Fig.15	P
	5825 MHz(CH165)	Fig.16	P
802.11n HT20	5745 MHz(CH149)	Fig.17	P
	5825 MHz(CH165)	Fig.18	P
802.11n HT40	5755 MHz(CH151)	Fig.19	P
	5795 MHz(CH159)	Fig.20	P
802.11ax HT20	5745 MHz(CH149)	Fig.21	P
	5825 MHz(CH165)	Fig.22	P
802.11ax HT40	5755 MHz(CH151)	Fig.23	P
	5795 MHz(CH159)	Fig.24	P
802.11ax HT80	5775 MHz(CH155)	Fig.25 Fig.26	P
802.11ac HT80	5775 MHz(CH155)	Fig.27 Fig.28	P

Conclusion: PASS

Test graphs as below:

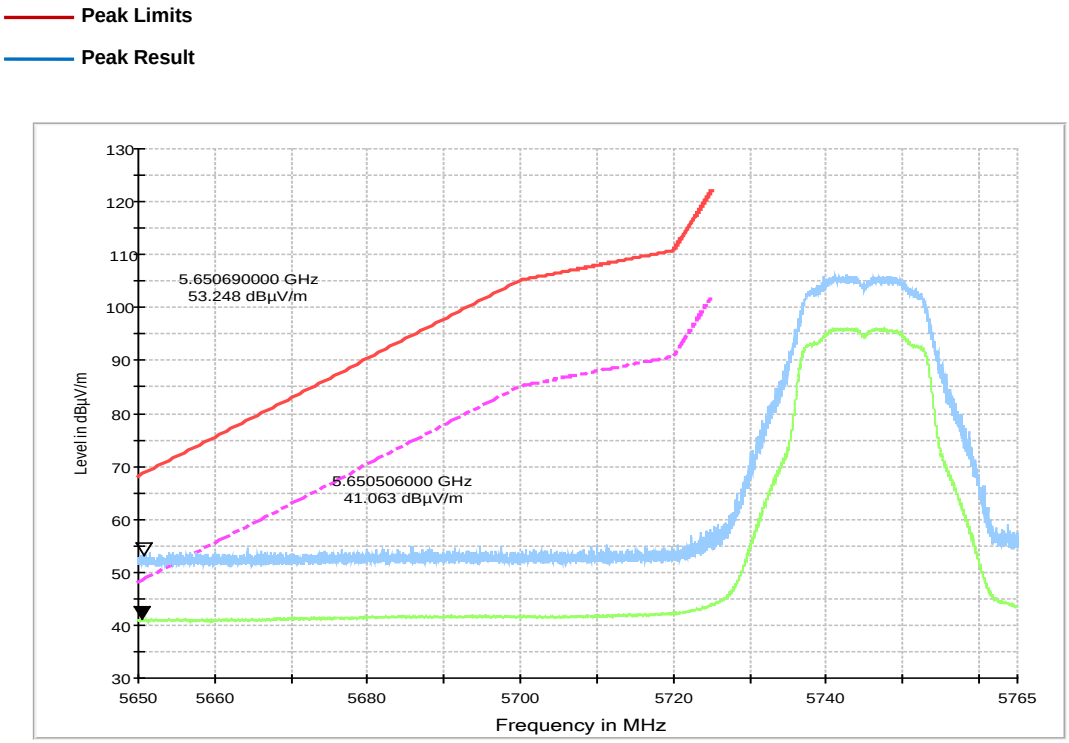


Fig. 1 Band Edges (802.11a,CH149, 5745MHz)

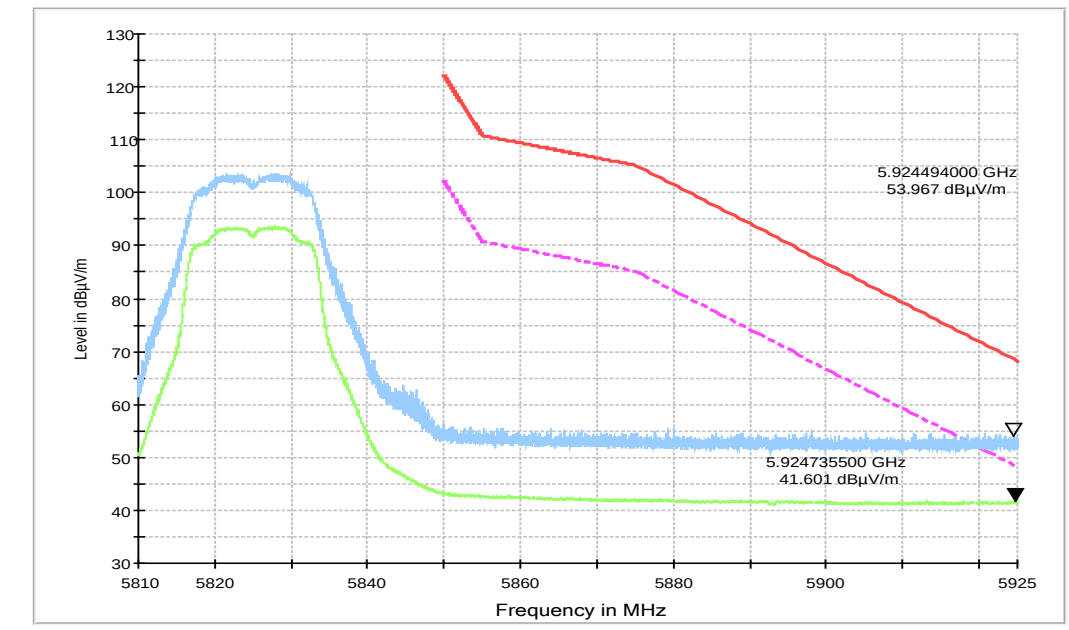


Fig. 2 Band Edges (802.11a, CH165, 5825MHz)

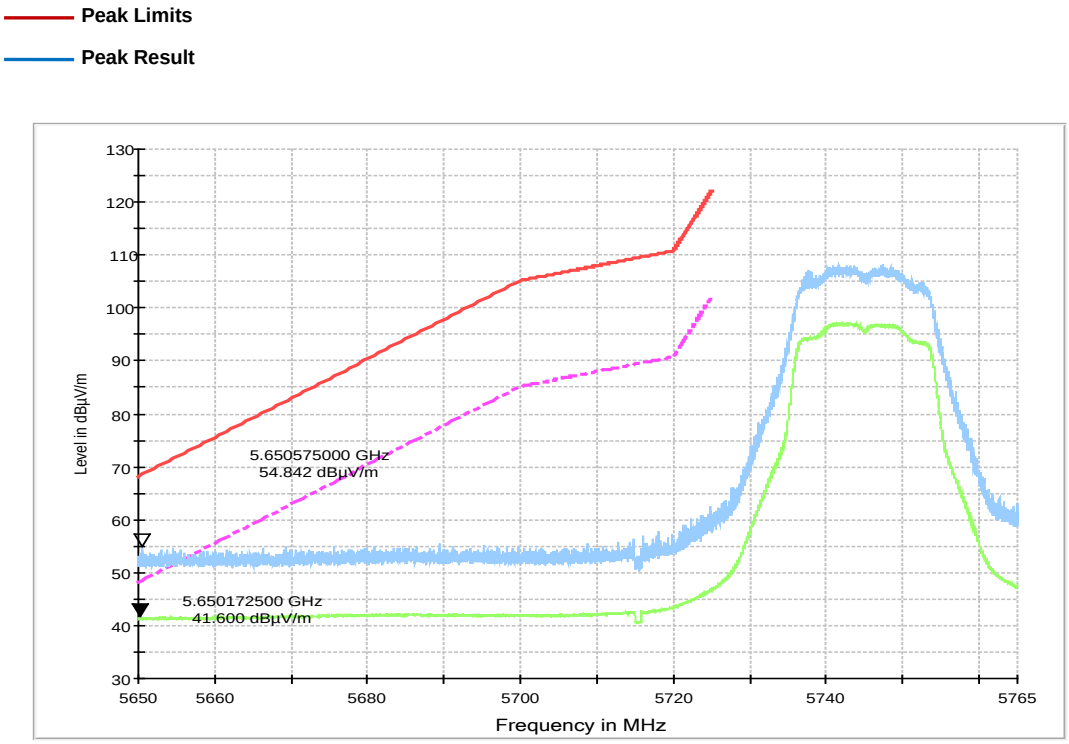


Fig. 3 Band Edges (802.11n-HT20, CH149, 5745MHz)

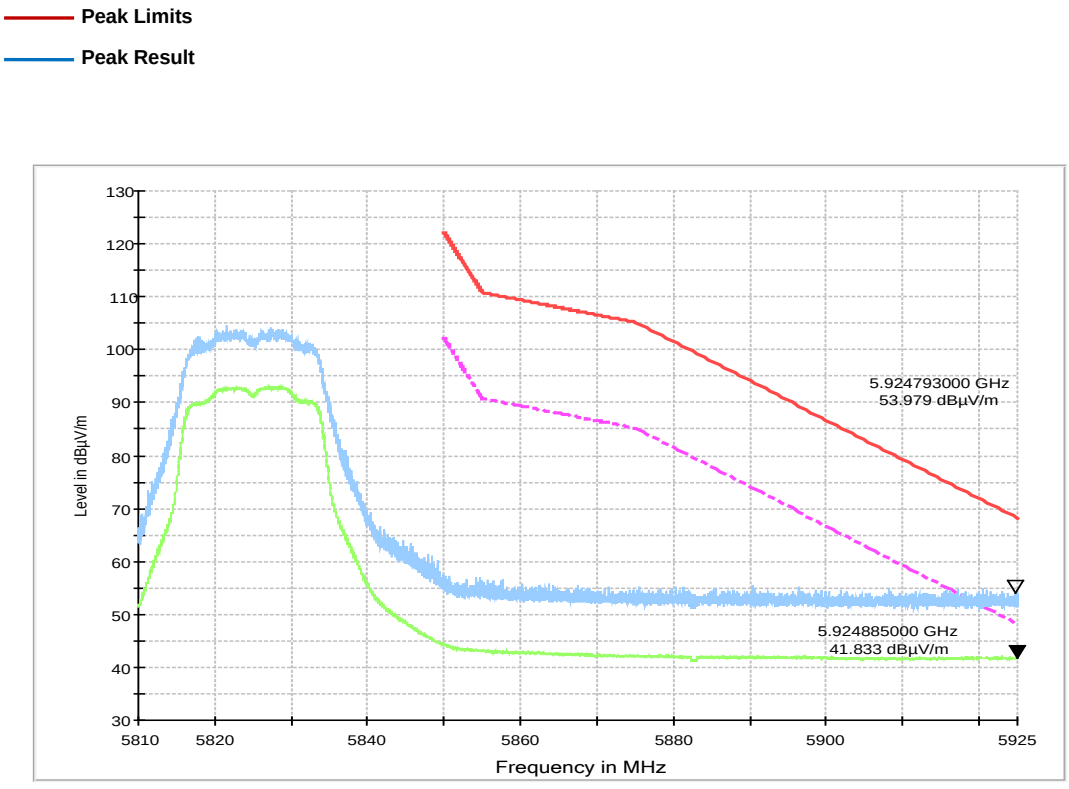


Fig. 4 Band Edges (802.11n-HT20, CH165, 5825MHz)

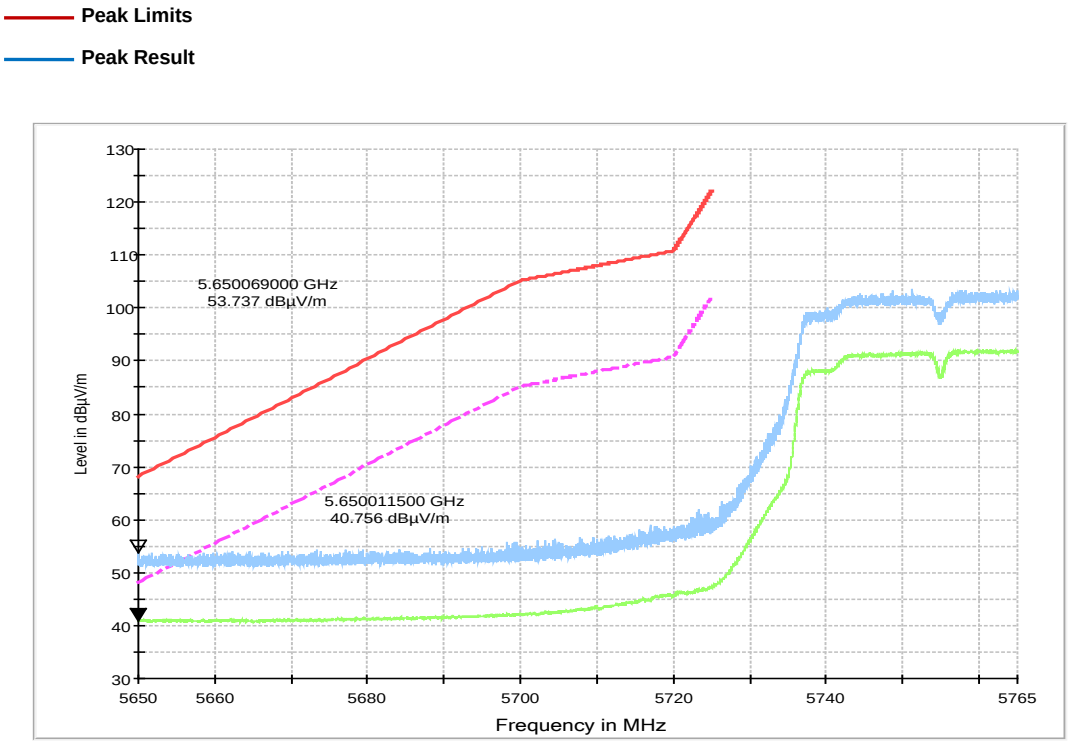


Fig. 5 Band Edges (802.11n-HT40, CH151, 5755MHz)

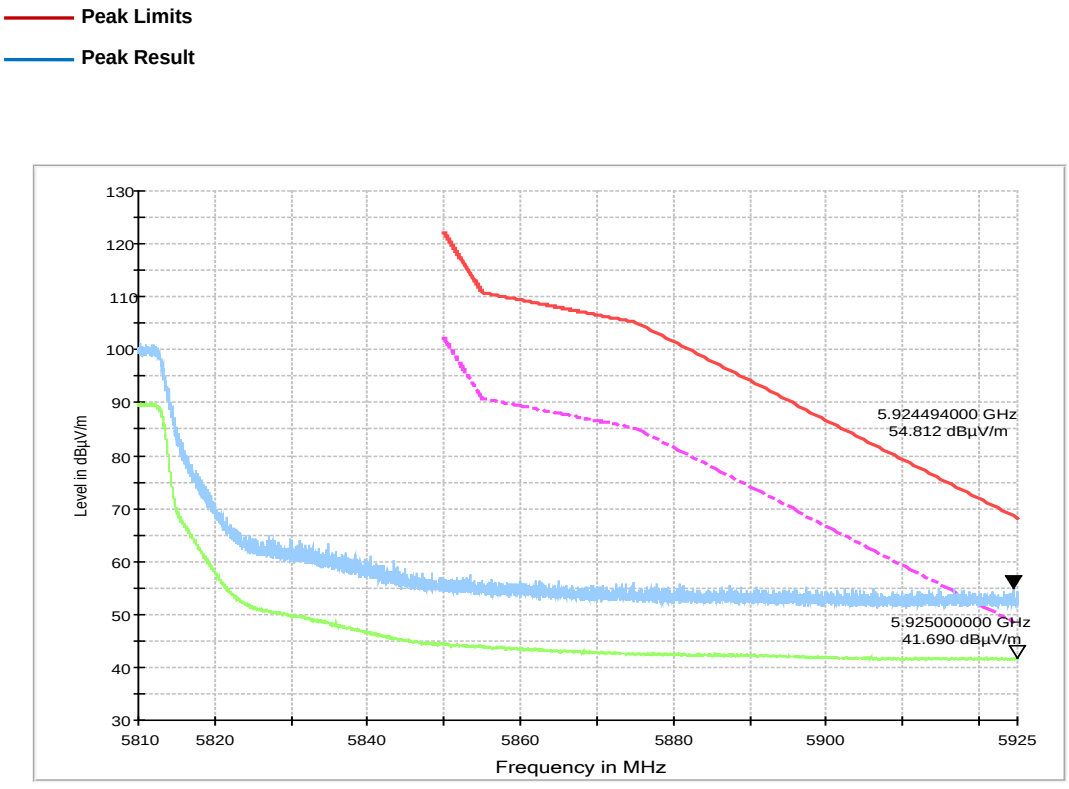


Fig. 6 Band Edges (802.11n-HT40, CH159, 5795MHz)

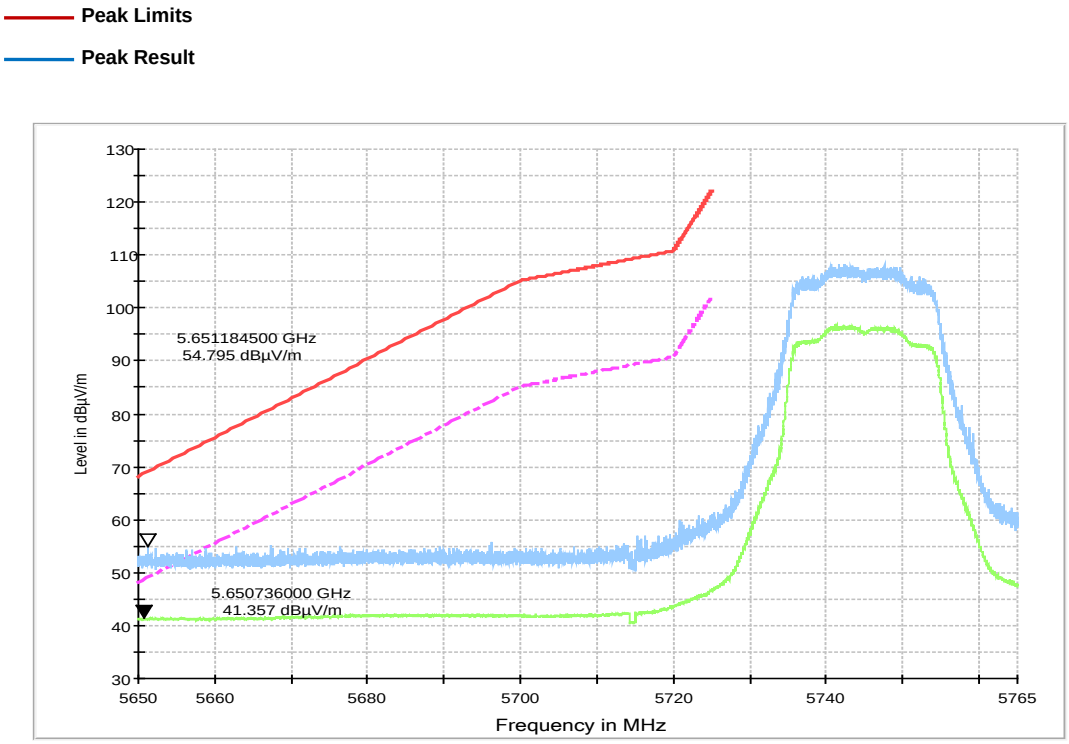


Fig. 7 Band Edges (802.11ax-HT20, CH149, 5745MHz)

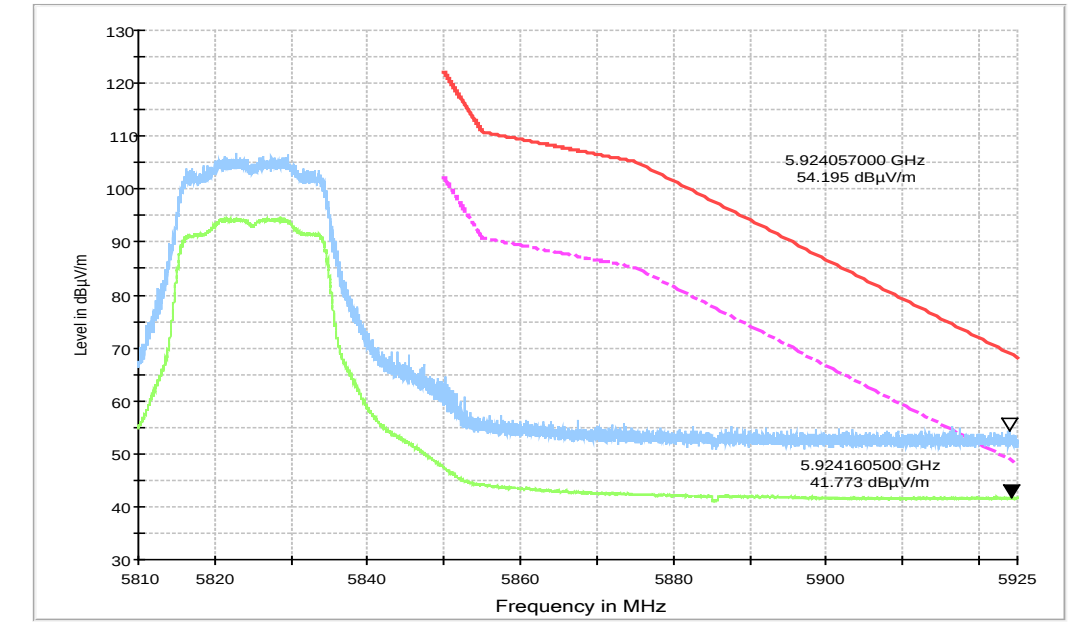


Fig. 8 Band Edges (802.11ax-HT20, CH165, 5825MHz)

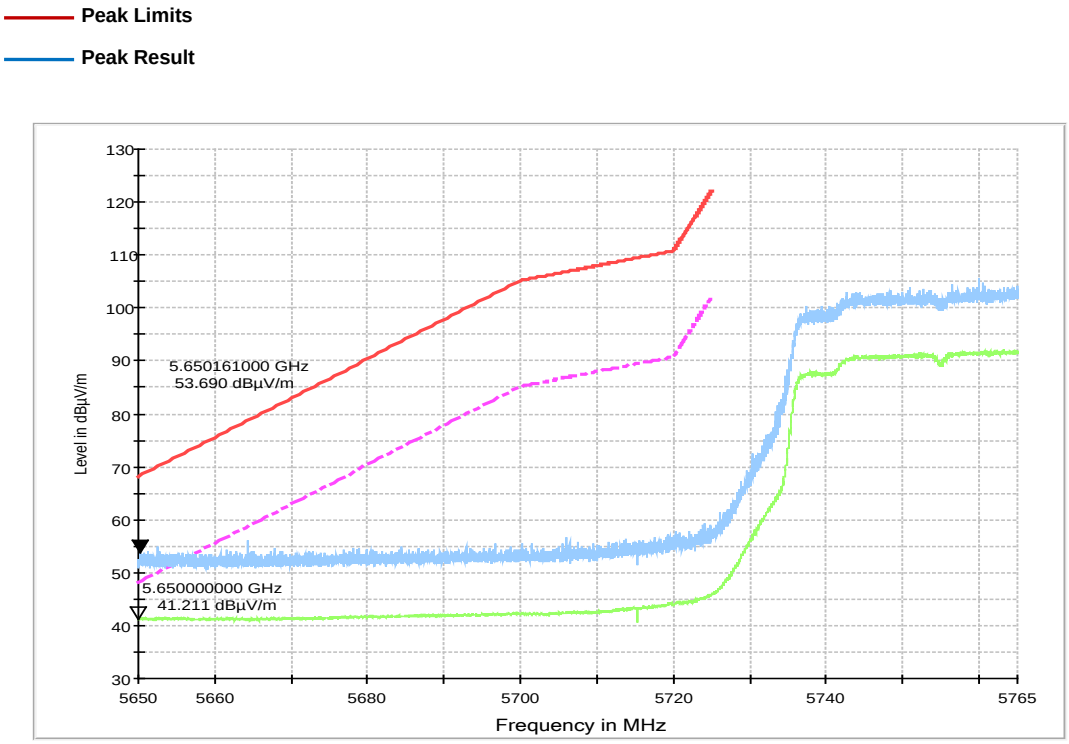


Fig. 9 Band Edges (802.11ax-HT40,CH151, 5755MHz)

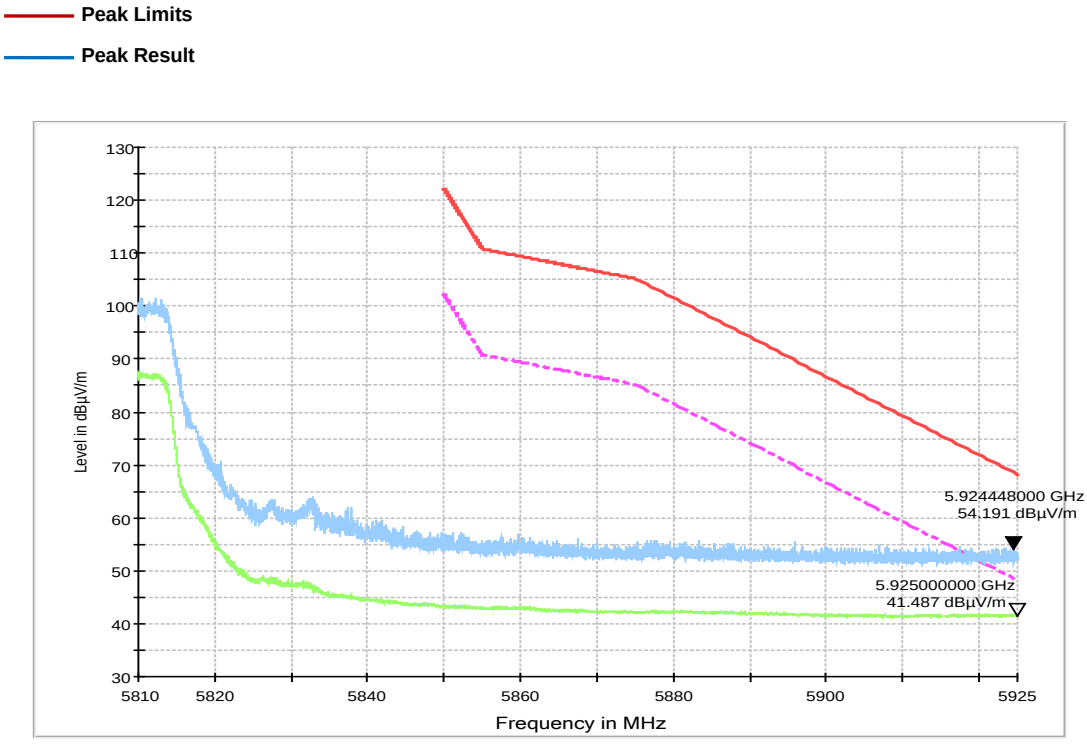


Fig. 10 Band Edges (802.11ax-HT40,CH159, 5795MHz)

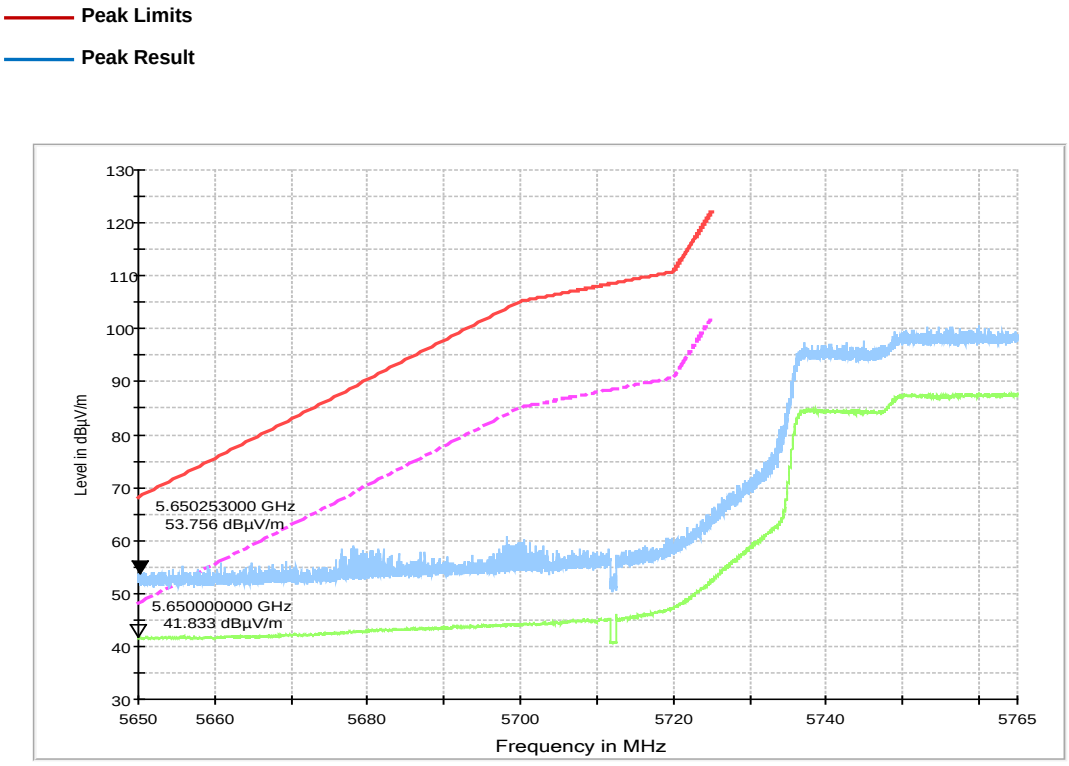


Fig. 11 Band Edges (802.11ax-HT80, CH155, 5775MHz)

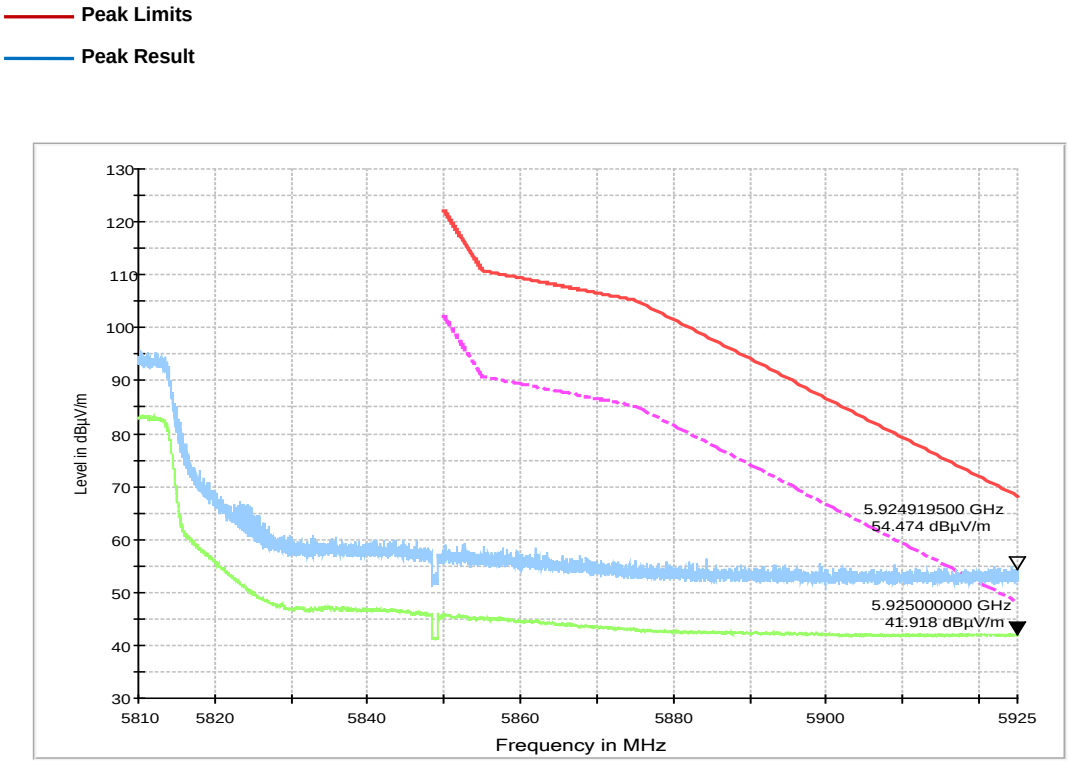


Fig. 12 Band Edges (802.11ax-HT80, CH155, 5775MHz)

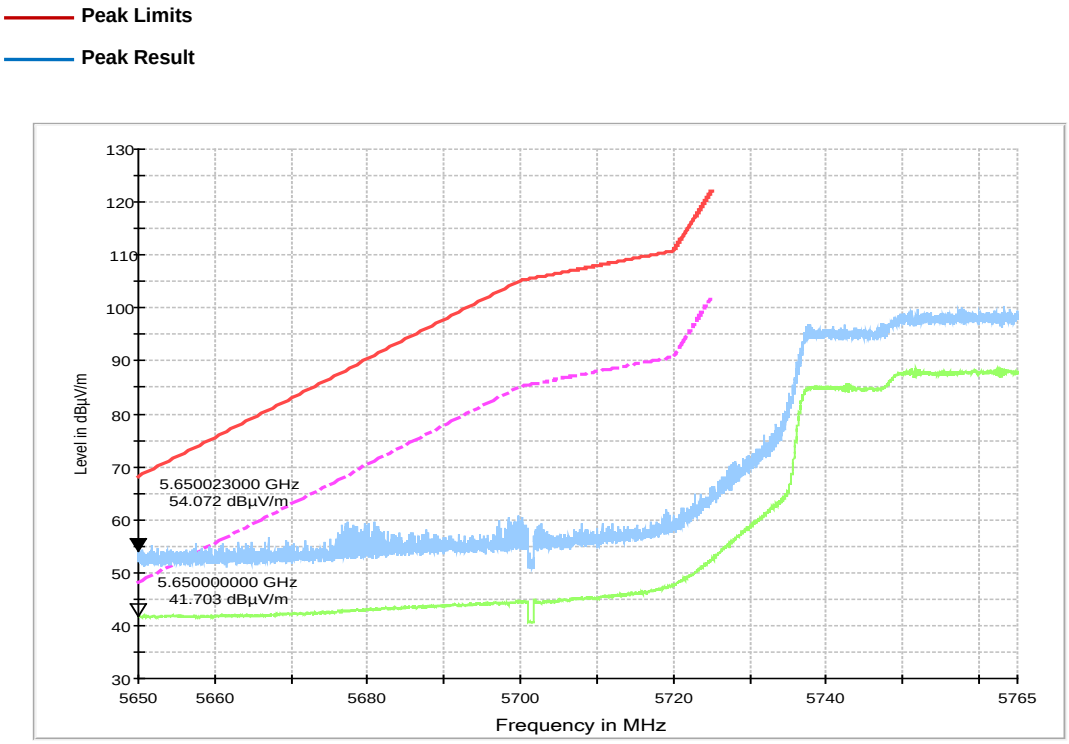


Fig. 13 Band Edges (802.11ac-HT80, CH155, 5775MHz)

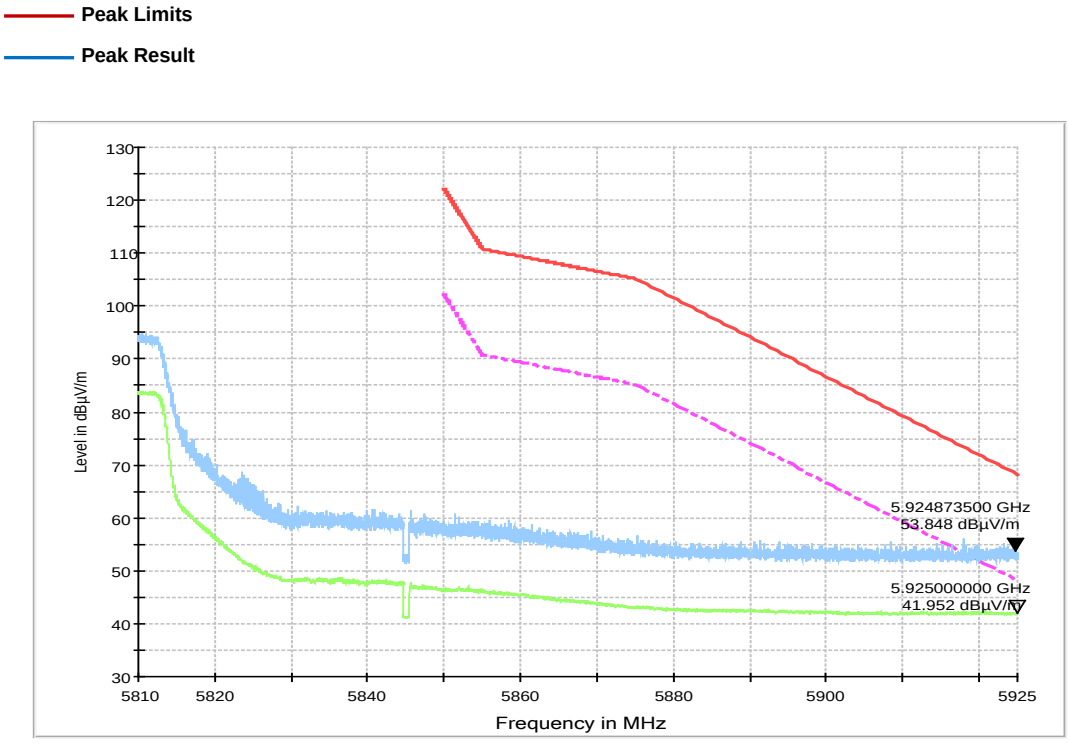


Fig. 14 Band Edges (802.11ax-HT80, CH155, 5775MHz)

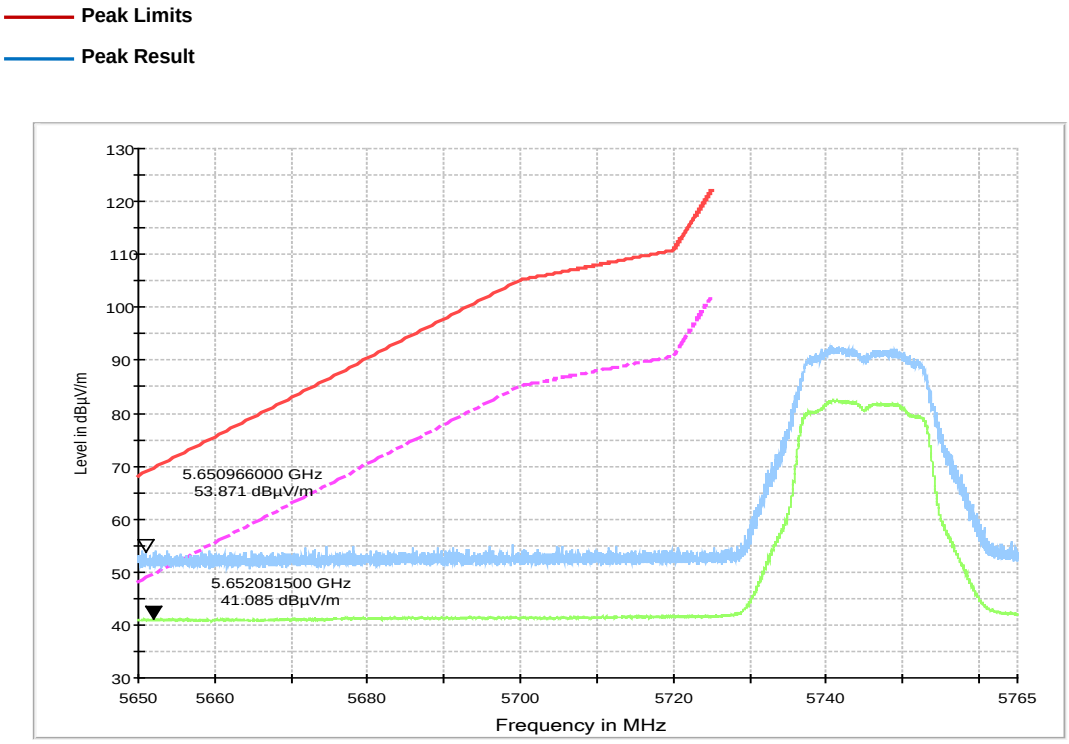


Fig. 15 Band Edges (802.11a,CH149, 5745MHz)

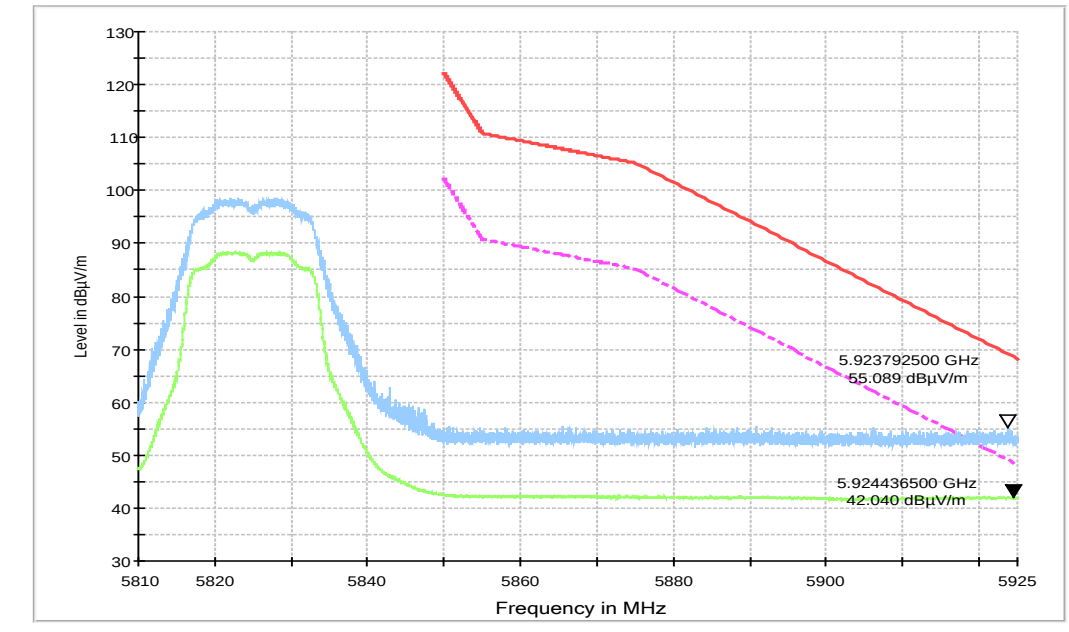


Fig. 16 Band Edges (802.11a, CH165, 5825MHz)

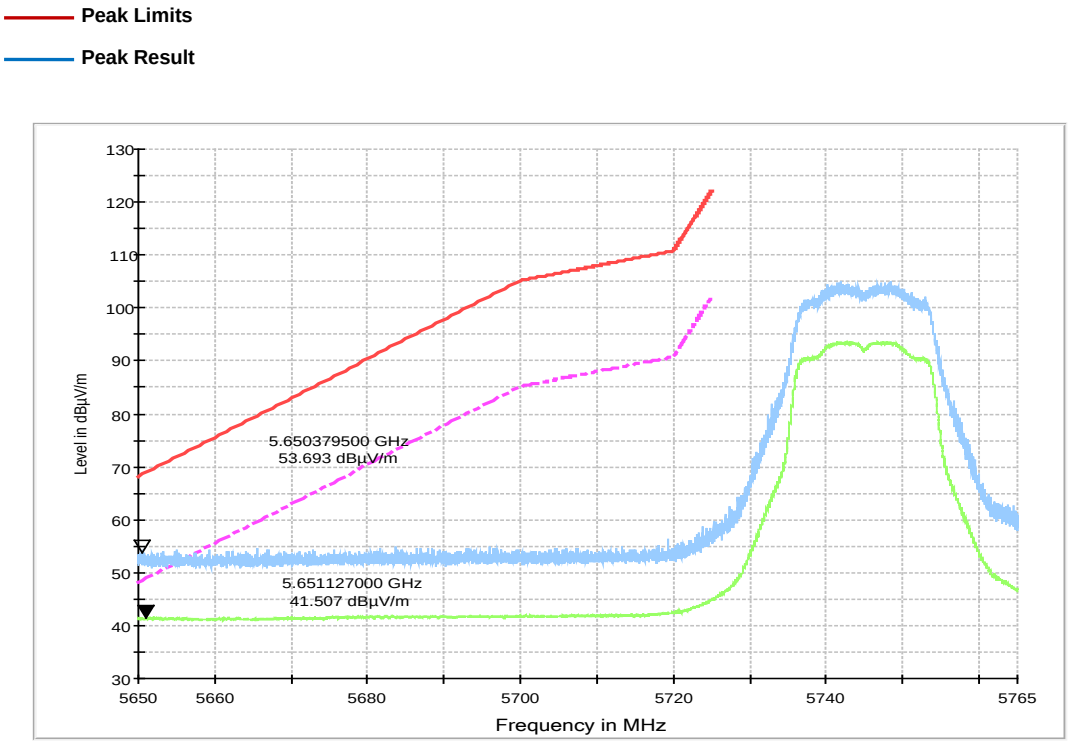


Fig. 17 Band Edges (802.11n-HT20, CH149, 5745MHz)

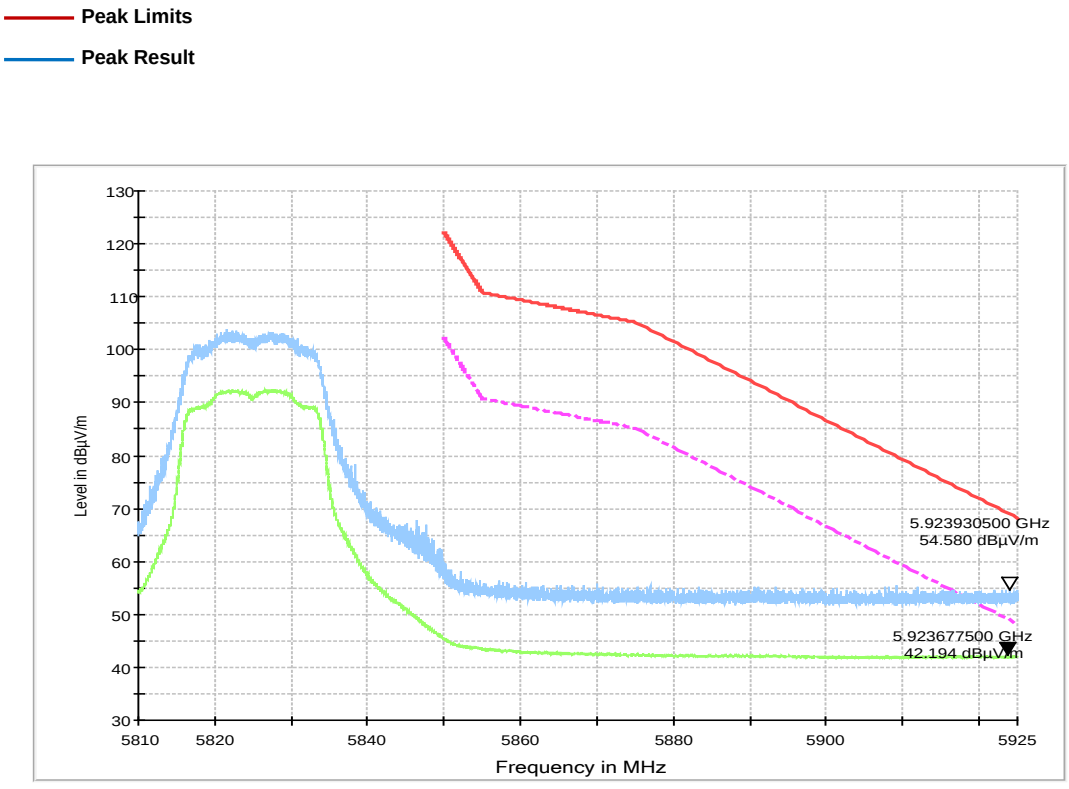


Fig. 18 Band Edges (802.11n-HT20, CH165, 5825MHz)

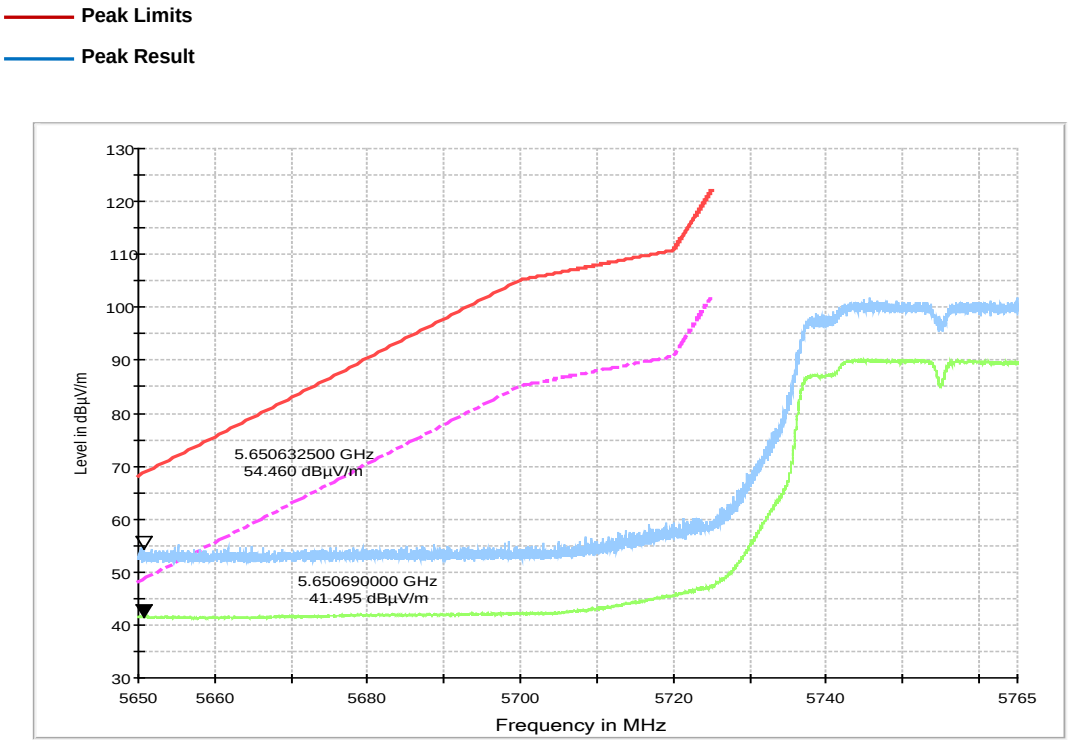


Fig. 19 Band Edges (802.11n-HT40, CH151, 5755MHz)

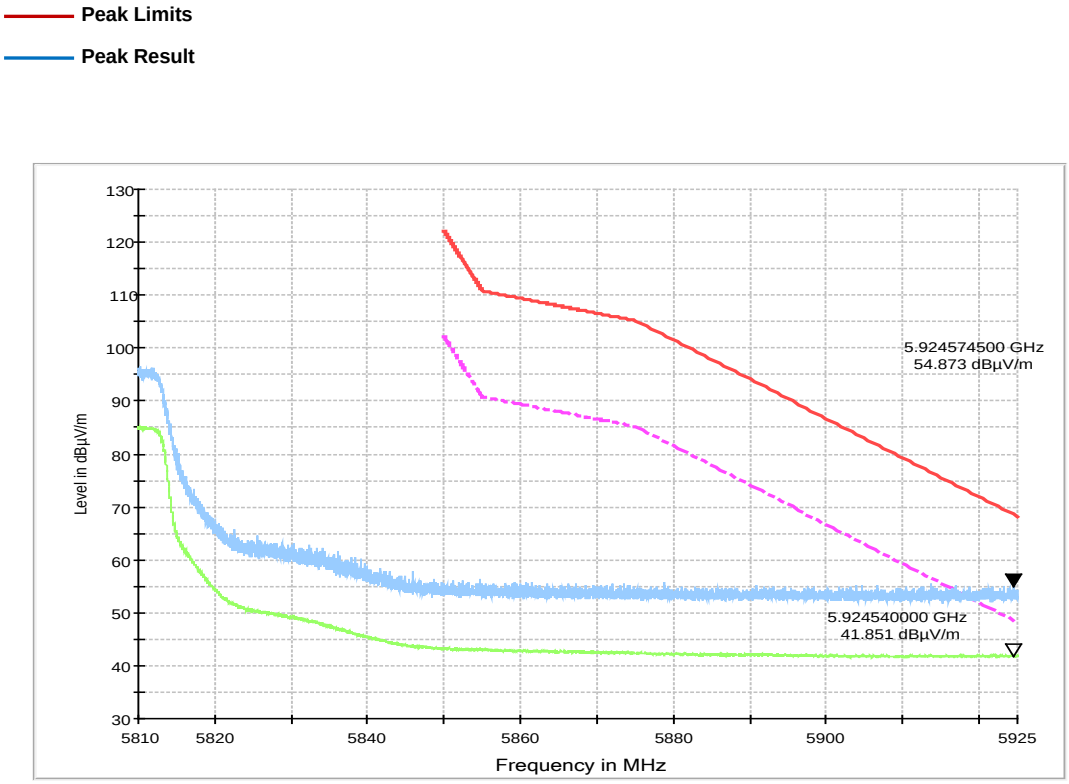


Fig. 20 Band Edges (802.11n-HT40, CH159, 5795MHz)

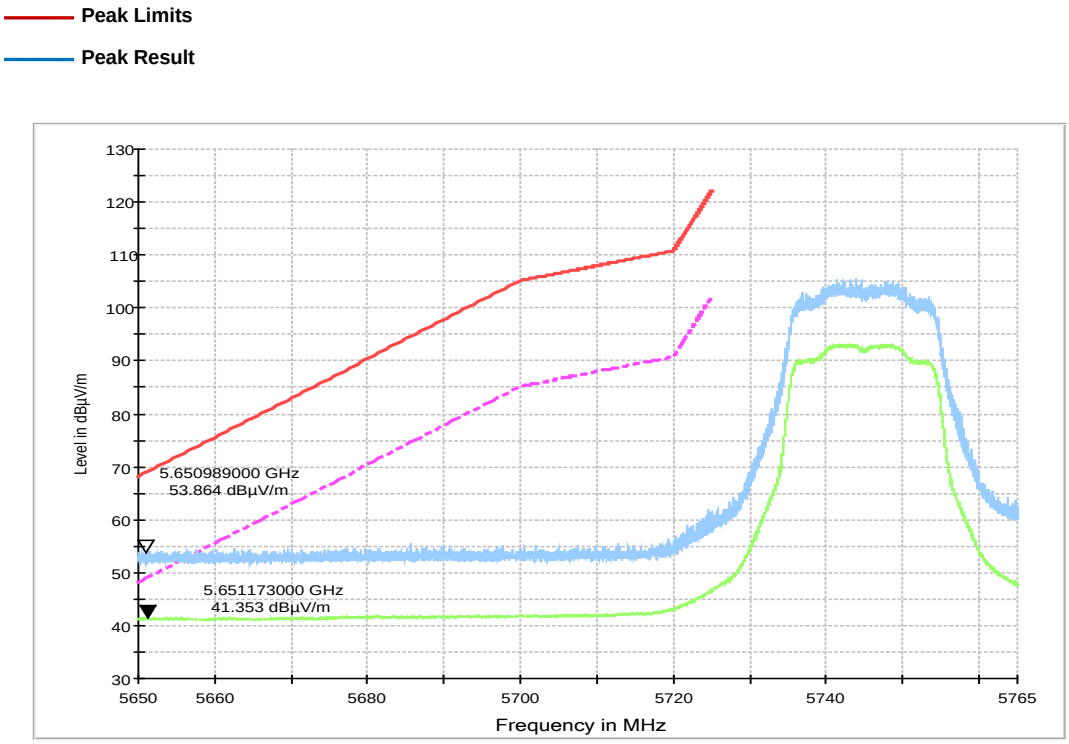


Fig. 21 Band Edges (802.11ax-HT20, CH149, 5745MHz)

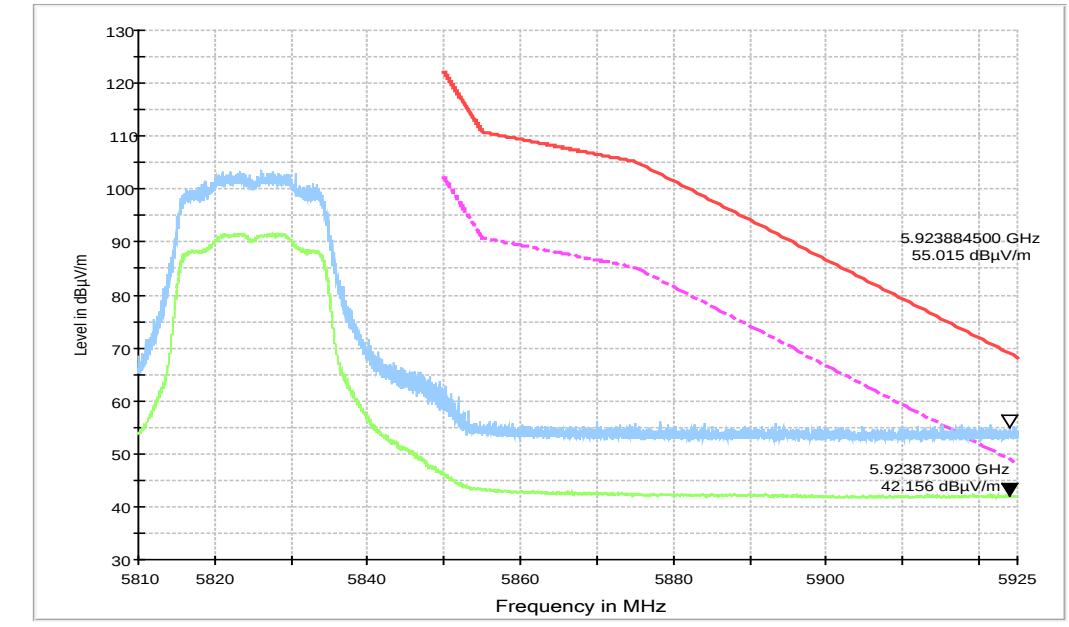


Fig. 22 Band Edges (802.11ax-HT20, CH165, 5825MHz)

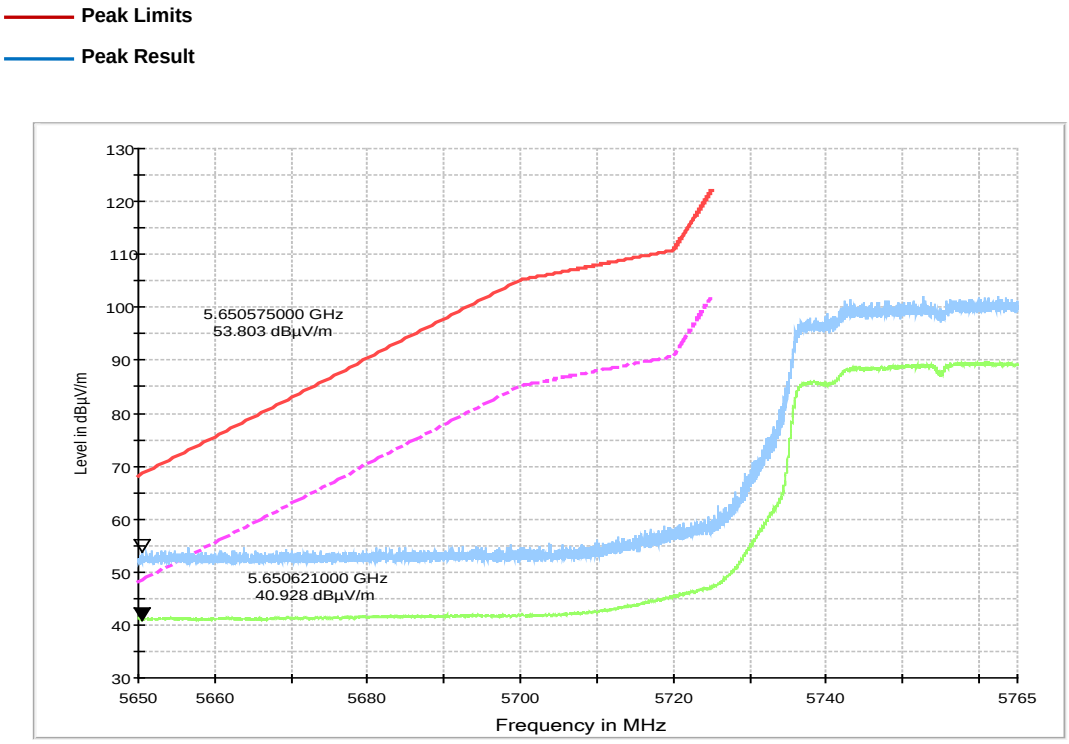


Fig. 23 Band Edges (802.11ax-HT40,CH151, 5755MHz)

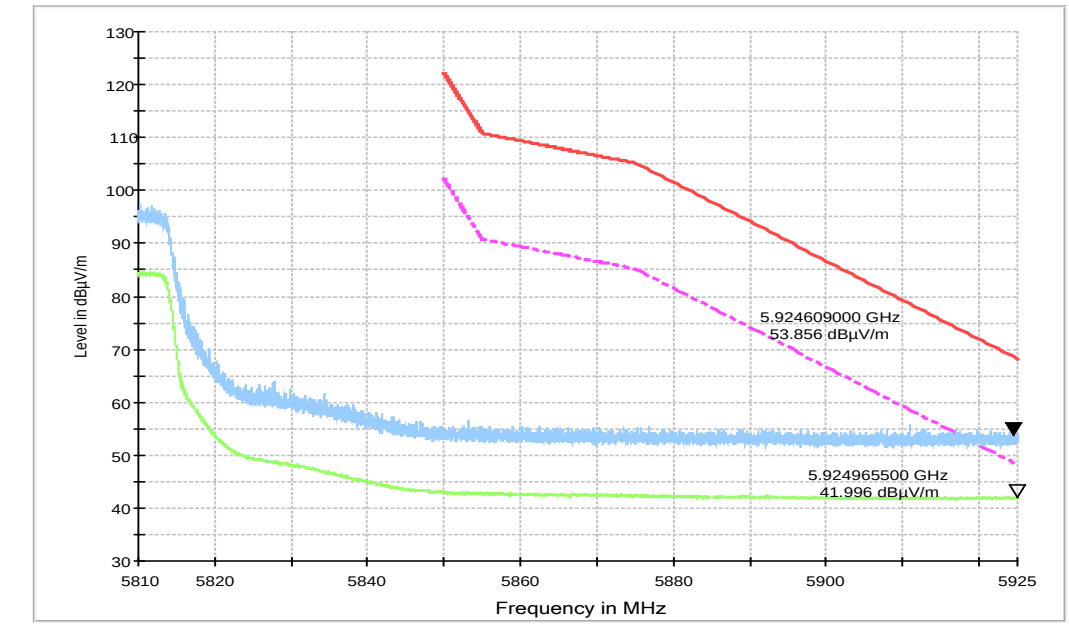


Fig. 24 Band Edges (802.11ax-HT40,CH159, 5795MHz)

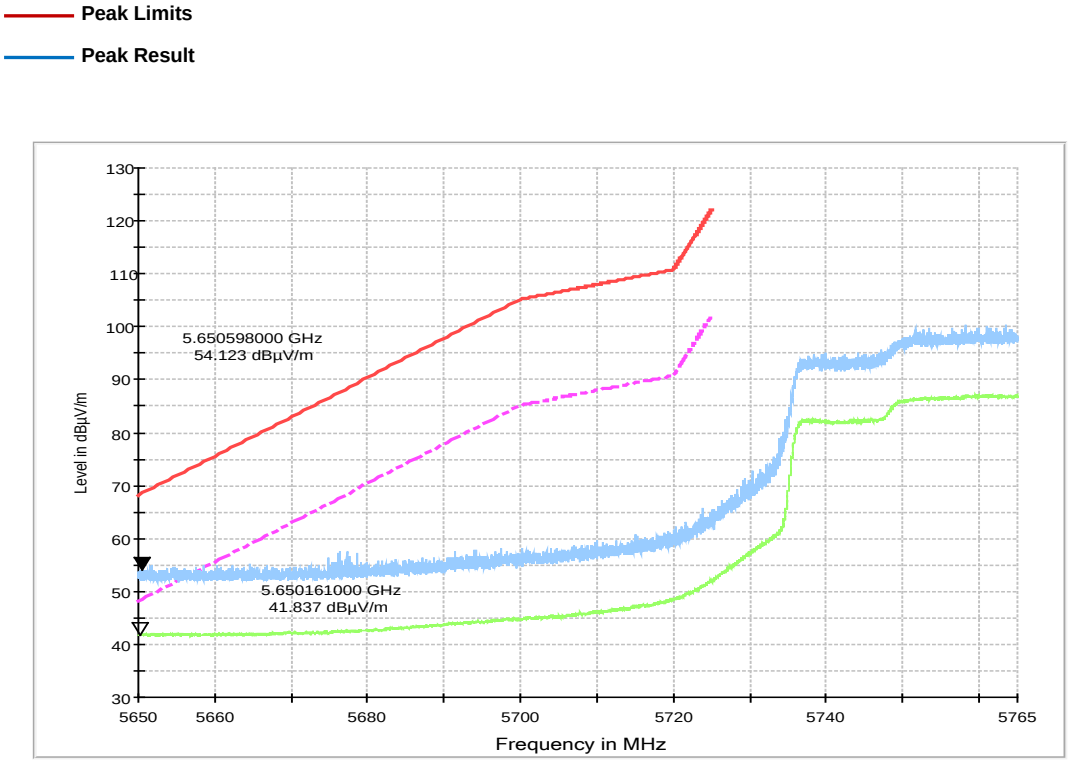


Fig. 25 Band Edges (802.11ax-HT80, CH155, 5775MHz)

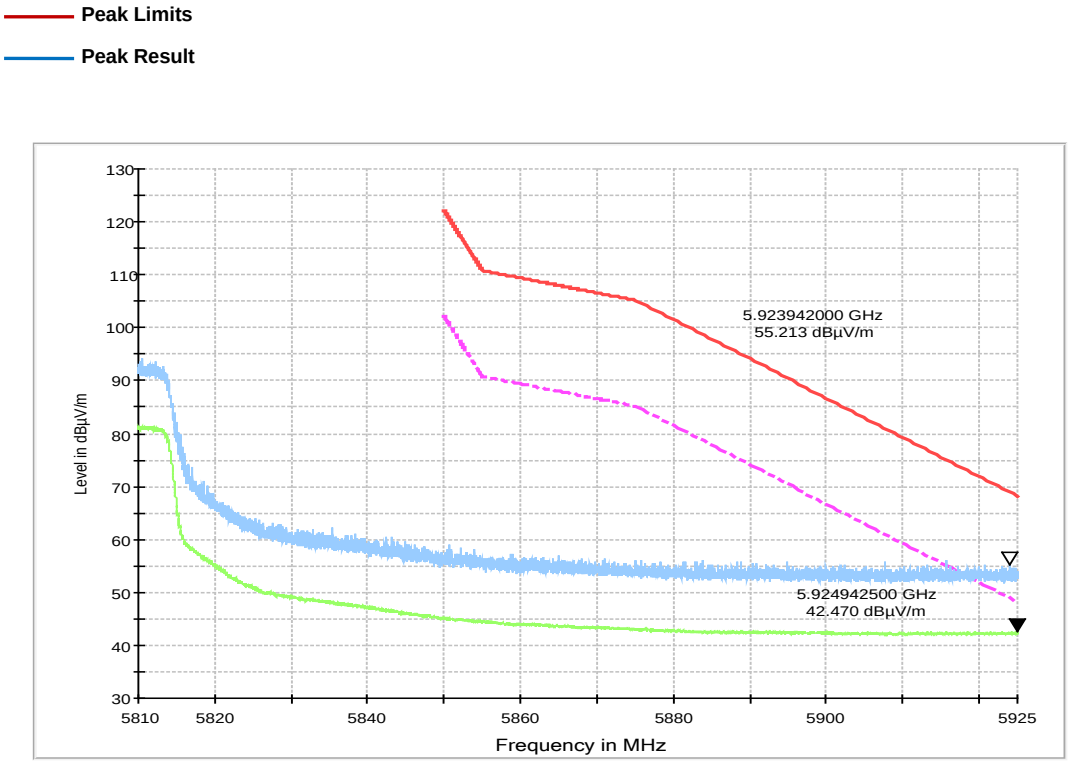


Fig. 26 Band Edges (802.11ax-HT80, CH155, 5775MHz)

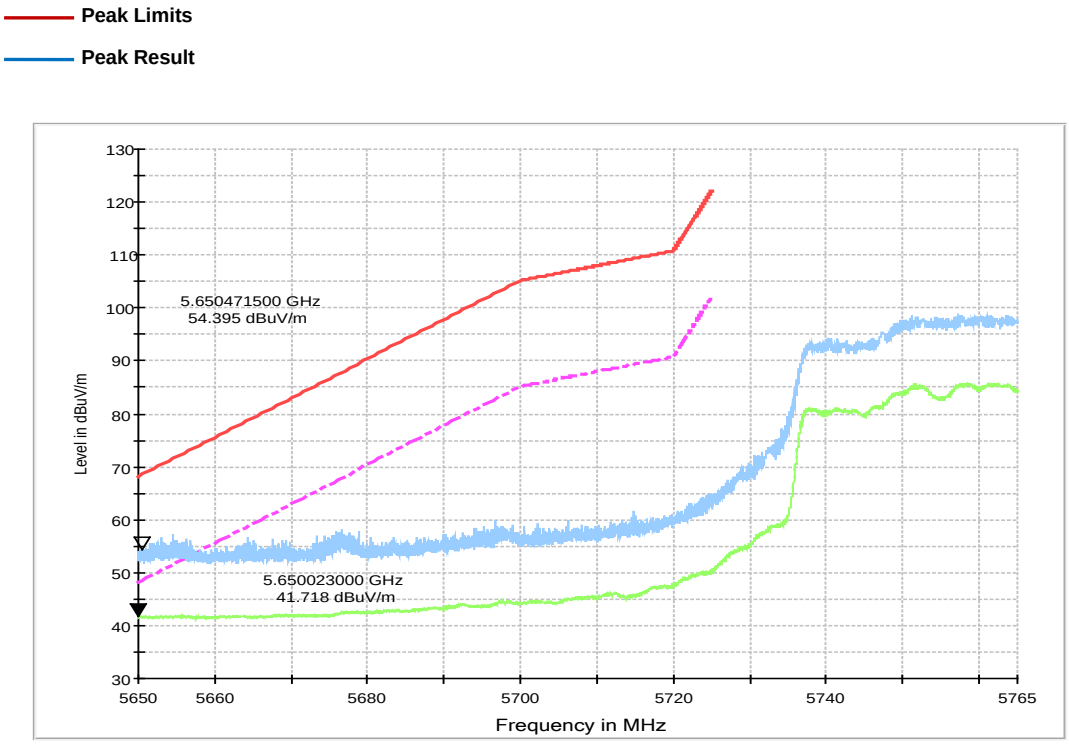


Fig. 27 Band Edges (802.11ac-HT80, CH155, 5775MHz)

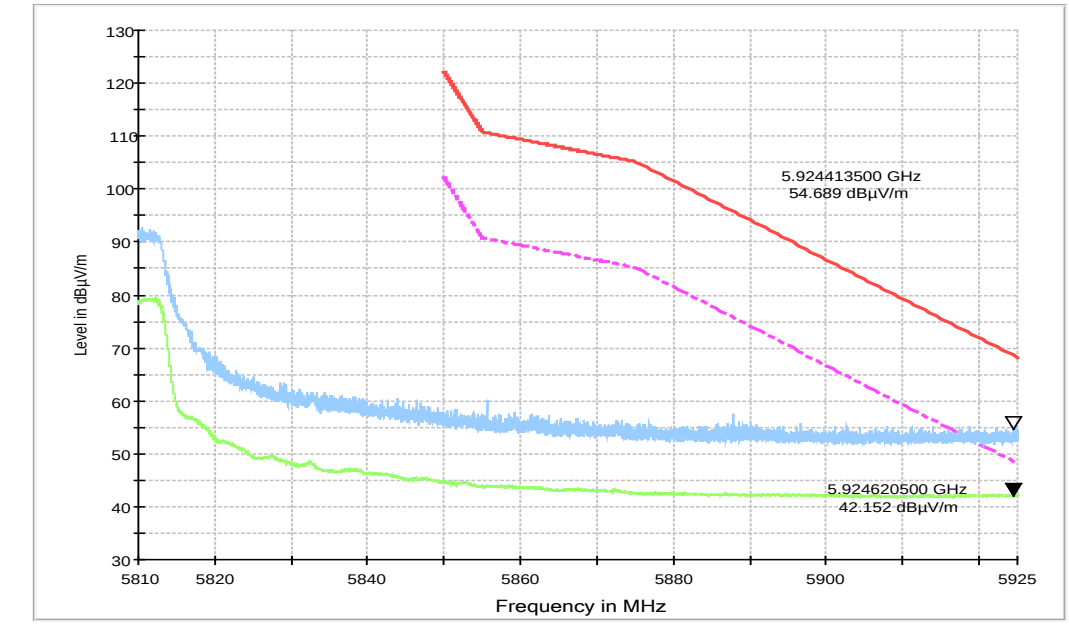


Fig. 28 Band Edges (802.11ax-HT80, CH155, 5775MHz)

C.2. AC Power-line Conducted Emission

Reference

FCC 47 CFR Part 15, Clause 15.407 Clause 15.207

ISED RSS-GEN, Clause 8.8

Method of Measurement:

See Clause 6.2 of ANSI C63.10-2013 specifically.

See Clause 4 and Clause 5 of ANSI C63.10-2013 generally.

The conducted emissions from the AC port of the EUT are measured in a shielding room. The EUT is connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection was performed. The measurements were performed with a quasi-peak detector and if required, an average detector.

The conducted emission measurements were made with the following detector of the test receiver: Quasi-Peak / Average Detector.

The measurement bandwidth is:

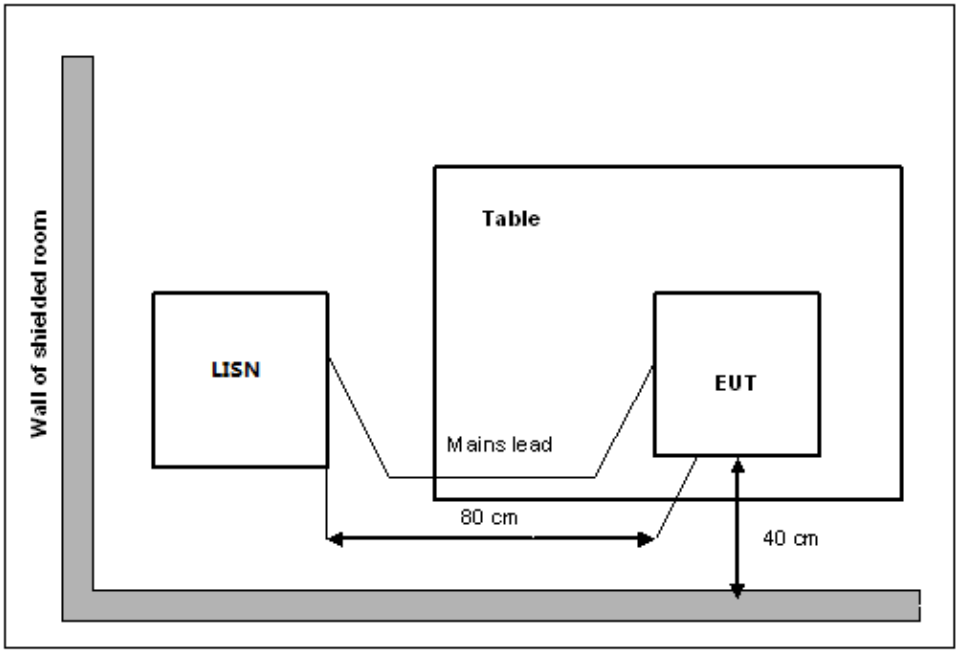
Measurement Bandwidth

Frequency of Emission (MHz)	RBW/VBW
0.15-30	9kHz

Test Condition:

Voltage（V）	Frequency（Hz）
120	60

Measurement Setup



EUT Operating Mode and Test Conditions

The measurement of EUT is carried out under the transmit state.

The EUT is powered by an AC/travel adapter.

Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11a	Idle	
0.15 to 0.5	66 to 56	Fig.C.2.1	Fig.C.2.2	P
0.5 to 5	56			
5 to 30	60			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11a	Idle	
0.15 to 0.5	56 to 46	Fig.C.2.1	Fig.C.2.2	P
0.5 to 5	46			
5 to 30	50			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

Note: all modes have been tested and the worst results shown here.

Conclusion: Pass

Test graphs as below:

Traffic:

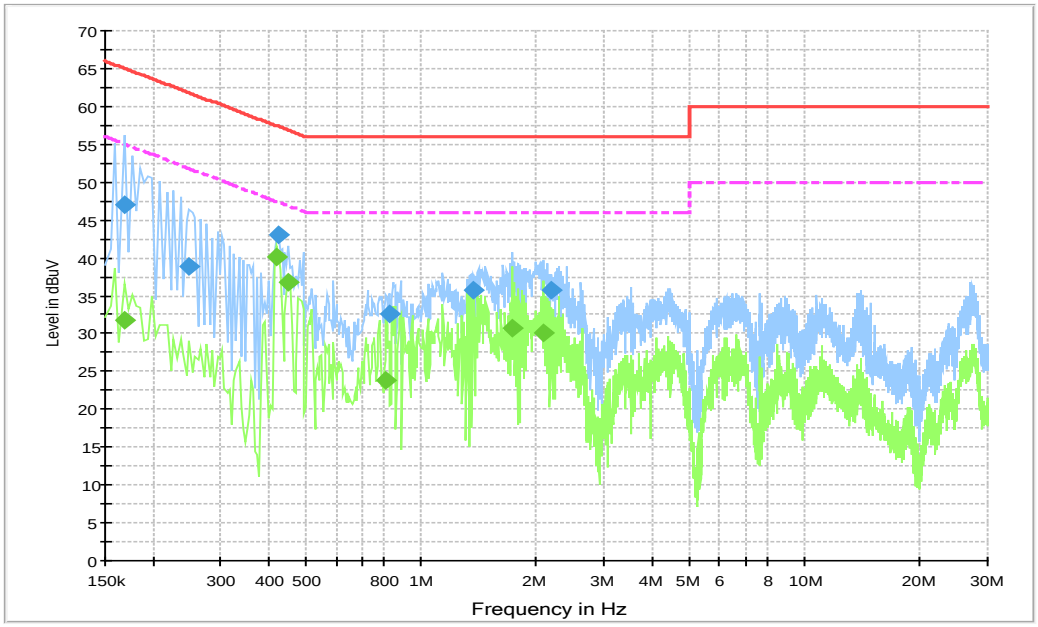


Fig.C.2.1 AC Powerline Conducted Emission-802.11b

Note1: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.168000	47.0	1000.	9.000	N	20.1	18.0	65.1
0.249000	38.8	1000.	9.000	N	19.9	23.0	61.8
0.424500	43.1	1000.	9.000	N	19.9	14.2	57.4
0.825000	32.5	1000.	9.000	N	19.8	23.5	56.0
1.369500	35.8	1000.	9.000	L1	19.7	20.2	56.0
2.193000	35.8	1000.	9.000	L1	19.6	20.2	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.168000	31.8	1000.0	9.000	L1	20.1	23.2	55.1
0.420000	40.2	1000.0	9.000	N	19.9	7.3	47.4
0.451500	36.7	1000.0	9.000	L1	19.9	10.1	46.8
0.811500	23.8	1000.0	9.000	L1	19.8	22.2	46.0
1.729500	30.7	1000.0	9.000	L1	19.7	15.3	46.0
2.085000	30.1	1000.0	9.000	L1	19.7	15.9	46.0

Idle:

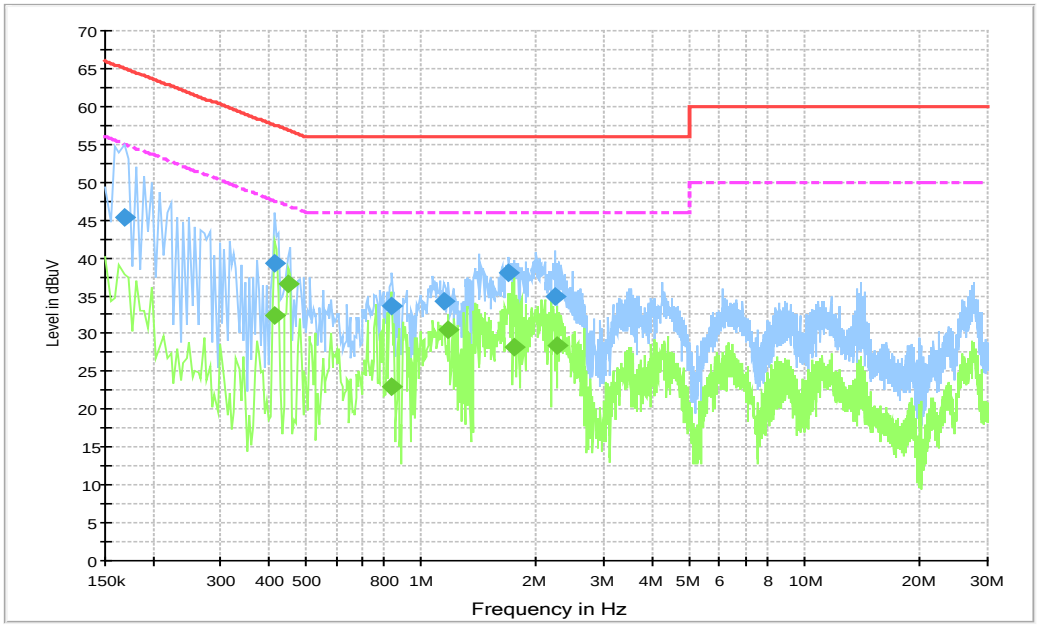


Fig.C.2.2 AC Powerline Conducted Emission-Idle

Note1: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.168000	45.4	1000.	9.000	N	20.1	19.7	65.1
0.415500	39.3	1000.	9.000	N	19.9	18.2	57.5
0.838500	33.7	1000.	9.000	L1	19.8	22.3	56.0
1.144500	34.3	1000.	9.000	L1	19.7	21.7	56.0
1.698000	38.0	1000.	9.000	L1	19.7	18.0	56.0
2.233500	35.0	1000.	9.000	L1	19.6	21.0	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.415500	32.3	1000.0	9.000	N	19.9	15.2	47.5
0.451500	36.6	1000.0	9.000	L1	19.9	10.2	46.8
0.834000	23.0	1000.0	9.000	L1	19.8	23.0	46.0
1.180500	30.4	1000.0	9.000	L1	19.7	15.6	46.0
1.752000	28.2	1000.0	9.000	L1	19.7	17.8	46.0
2.256000	28.4	1000.0	9.000	L1	19.6	17.6	46.0

***** END OF REPORT BODY *****