

Report No.: File Reference No.:	TW2109319-04E 2021-11-02
Applicant:	Shenzhen Jingwah Information Technology Co., Ltd.
Product:	Portable Notebook
Model No.:	NP153GK-X, N15550
Trademark:	Packard bell
Test Standards:	FCC Part 15 Subpart E, Paragraph 15.407
Test Result:	It is herewith confirmed and found to comply with the requirements set up by ANSI C63.10, FCC Part 15 Subpart C, Paragraph 15.247 for the evaluation of electromagnetic compatibility
Approved By John Jack Chung	

Manager

Dated: November 02, 2021

Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TESTING LABORATORIES

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAL. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 744189

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 744189.

Industry Canada (IC) — Registration No.: 5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

A2LA (Certification Number:5013.01)

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

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1.0 **General Details**

1.1	Test Lab Deta	ls			
	Name :	SHENZHEN TIMEWAY TESTING LABORATORIES.			
	Address:	Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le			
		Village, Nanshan District, Shenzhen, China			
	Telephone:	(755) 83448688			
	Fax:	(755) 83442996			
	Site Listed with	h Federal Communications commission (FCC)			
	Registration N	umber:744189			
	For 3m Anech	oic Chamber			
	Site Listed with Industry Canada of Ottawa, Canada				
	Registration N	umber: IC: 5205A-02			
	For 3m Anech	oic Chamber			
1.2	Applicant Det	ails			
	Applicant:	Shenzhen Jingwah Information Technology Co., Ltd.			
	Address:	6F, Bldg.4, Jinghua Square, No. 168, Zhenzhong Rd., Fuqiang Community, Huaqiangbei, Futian			
		District, Shenzhen			
	Telephone:	elephone: 0755-84688843			
	Fax: 0755-84688843				
1.3	Description of	EUT			
	Product:	Portable Notebook			
	Manufacturer:	Shenzhen Jingwah Information Technology Co., Ltd.			
	Address:	6F, Bldg.4, Jinghua Square, No. 168, Zhenzhong Rd., Fuqiang Community,			
		Huaqiangbei, Futian District, Shenzhen			
	Trademark:	Packard bell			
	Additional Tra	demark: N/A			
	Model Numbe	r: NP153GK-X			
	Additional Mo	odel Number: N15550			
	Hardware Ver	sion: G142RA			
	Software Vers	ion: Window 11 home S mode 21H2 22000.194			
	Serial No.:	155502111000001~155502111003000			
	Type of Modu	lation IEEE 802.11a/n (HT20/HT40): OFDM (64QAM, 16QAM, QPSK, BPSK);			
		IEEE 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM			
	Frequency	Band 1: 5180MHz-5240MHz;			
		Band 4: 5745MHz-5825MHz			
	Channel Separ	ation 802.11a/802.11n20:20MHz, 802.11n40:40MHz, 802.11ac: 80MHz			
	Air Data Rate	IEEE 802.11a: 54, 48,36, 24, 18, 12, 9, 6 Mbps			
		IEEE 802.11n/HT20: mcs0-mcs7			
		IEEE 802.11n/HT40: mcs0-mcs7			

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	IEEE 802.11ac: NSSI mcs0-mcs9
Antenna:	Two FPC antenna used. The gain of the antennas is 5.02dBi for each one (Get from the
	antenna specification provided the manufacturer)
Test Mode:	During testing, EUT was set up to 100% duty cycle. 6Mbps air data rate was the worst
	case for 802.11a mode; mcs0 air data rate was the worst case for 802.11n mode;
	23.9Mbps air data rate was the worst case for 802.11ac mode.
Frequency Selection	By software
Power Supply:	Model: SAW30A-120-200J
	Input: 100-240V~, 50/60Hz, 0.8A; Output: DC12V, 2000mA
Rating:	DC12V, 2A
Battery:	7.6V, 5000mAh, 38Wh

Each Channel Operation Frequency

Band 1					
802.11a / 11n HT2	20 / 802.11ac VHT20	802.11n HT4	0 / 802.11acVHT40	802.11ac VHT80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	38	5190 MHz	42	5210 MHz
40	5200 MHz	46	5230 MHz		
44	5220 MHz				
48	5240 MHz				
		В	and 4		
802.11a / 11n HT2	20 / 802.11ac VHT20	802.11n HT40 / 802.11acVHT40 802.11ac VH		ac VHT80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745 MHz	151	5755 MHz	155	5775 MHz
153	5765 MHz	159	5795 MHz		
157	5785 MHz				
161	5825 MHz				

The selected test channels as follows:

Band 1						
802.11a /	11n HT20	802.11n HT40		802.11	802.11ac VHT80	
Channel	Frequency	Channel	Channel Frequency		Frequency	
36	5180 MHz	38	5190 MHz	42	5210 MHz	
40	5200 MHz	46	5230 MHz			
48	5240 MHz					
Band 4						
802.11a / 11n HT20		802.11n HT40		802.11ac VHT80		
Channel	Frequency	Channel	Frequency	Channel	Frequency	
149	5745 MHz	151	5755 MHz	155	5775 MHz	

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153	5765 MHz	159	5795 MHz	
165	5825 MHz			

Note: 802.11ac VHT20/VHT40 is similar with 802.11n HT20/HT40.

- 1.4 Submitted Sample: 2 Samples
- 1.5 Test Duration 2021-09-30 to 2021-11-02
- 1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB Radiated Emissions below 1GHz Uncertainty =4.7dB Radiated Emissions above 1GHz Uncertainty =6.0dB Conducted Power Uncertainty =6.0dB Occupied Channel Bandwidth Uncertainty =5% Note: The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

1.7 Test Engineer

Terry Tang

The sample tested by

Print Name: Terry Tang

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2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2021-06-18	2022-06-17
TWO	R&S	E7112 75	100204	2021 06 19	2022 06 17
Line-V-NETW		ЕДПЭ-ДЭ	100294	2021-00-18	2022-00-17
TWO	R&S	E7U2 75	100252	2021 06 19	2022 06 17
Line-V-NETW		EZH3-Z3	100233	2021-00-18	2022-00-17
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2021-06-18	2022-06-17
Loop Antenna	EMCO	6507	00078608	2021-06-18	2022-06-17
Spectrum	R&S	FSIQ26	100292	2021-06-18	2022-06-17
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2021-06-18	2022-06-17
Horn Antenna	R&S	BBHA 9120D	9120D-631	2021-07-02	2024-07-01
Power meter	Anritsu	ML2487A	6K00003613	2021-06-18	2022-06-17
Power sensor	Anritsu	MA2491A	32263	2021-06-18	2022-06-17
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2021-07-02	2024-07-01
9*6*6 Anechoic			N/A	2021-07-02	2022-07-01
EMI Test Receiver	RS	ESVB	826156/011	2021-06-18	2022-06-17
EMI Test Receiver	RS	ESH3	860904/006	2021-06-18	2022-06-17
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2021-06-18	2022-06-17
Spectrum	HP/Agilent	E4407B	MY50441392	2021-06-18	2022-06-17
Spectrum	RS	FSP	1164.4391.38	2021-01-15	2022-01-14
	71 1	ZT26-NJ-NJ-8M/F		2021.06.10	2022 06 17
RF Cable	Znengdi	А		2021-06-18	2022-06-17
RF Cable	Zhengdi	7m		2021-06-18	2022-06-17
RF Switch	EM	EMSW18	060391	2021-06-18	2022-06-17
Pre-Amplifier	Schwarebeck	BBV9743	#218	2021-06-18	2022-06-17
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2021-06-18	2022-06-17
LISN	SCHAFFNER	NNB42	00012	2021-01-15	2022-01-14

2.2 Automation Test Software

For Conducted Emission Test

Name	Version	
EZ-EMC	Ver.EMC-CON 3A1.1	

For Radiated Emissions

Name	Version
EMI Test Software BL410-EV18.91	V18.905
EMI Test Software BL410-EV18.806 High Frequency	V18.06

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3.0 **Technical Details**

3.1 Summary of test results

The EUT has been tested according to the following specifications:			
Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.107 & 15.407	Conducted Emission Test	Pass	Complies
FCC Part 15 Subpart E Paragraph 15.407 (b)(1) and (b)(4)(i), Part 15.205 and Part 15.209	Undesirable Emission and Restrict band	Pass	Complies
FCC Part 15, Paragraph 15.407 (a)(1)(iv) and (a)(3)(iii)	Peak Transmit Power	Pass	Complies
FCC Part 15, Paragraph 15.407 (a)(1)(iv) and (a)(3)(iii)	Peak Power Spectral Density	Pass	Complies
FCC Part 15, Paragraph 15.407 (e)	Emission Bandwidth	Pass	Complies
FCC Part 15, Paragraph 15.407(g)	Frequency Stability	Pass	Complies

3.2 **Test Standards**

FCC Part 15 Subpart & Subpart C, Paragraph 15.247, ANSI C63.10 :2013, ANSI C63.4 :2014 789033 D02 General UNII Test Procedures New Rules v01r04

4.0 **EUT Modification**

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES.

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5. Power Line Conducted Emission Test

5.1 Schematics of the test



EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2009. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.10–2013. Test Voltage: 120V~, 60Hz

Block diagram of Test setup



5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

A.	EUT			
Device	Manufacturer	Model	FCC ID	
Portable Notabook	Shenzhen Jingwah Information	NP153GK-X,	PRD ND152CK	
ronable Notebook	Technology Co., Ltd.	N15550	KDD-NF1550K	

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B. Internal Device

Device	Manufacturer	Model	Rating

C. Peripherals

Device	Manufacturer	Model	Rating
N/A			

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10 -2013.

A Setup the EUT and simulators as shown on follow

B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency	Limits (dB µ V)				
(MHz)	Quasi-pea Level	Average Level			
$0.15~\sim~0.50$	66.0~5 .0*	56.0~46.0*			
$0.50~\sim~5.00$	56.0	46.0			
$5.00~\sim~30.00$	60.0	50.0			

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The tighter limit shall apply at the transition frequencies

5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

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Ρ

Ρ

Ρ

Ρ

Ρ

Ρ

QP

AVG

QP

AVG

QP

AVG



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0.6102

0.6102

0.7857

0.7857

16.7670

16.7670

21.74

6.52

24.23

10.10

33.16

25.94

9.78

9.78

9.78

9.78

10.49

10.49

7

8

9

10

11

12

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31.52

16.30

34.01

19.88

43.65

36.43

56.00

46.00

56.00

46.00

60.00

50.00

-24.48

-29.70

-21.99

-26.12

-16.35

-13.57

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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1850	39.12	9.76	48.88	64.26	-15.38	QP	Р
2	0.1850	26.39	9.76	36.15	54.26	-18.11	AVG	Р
3	0.2904	30.34	9.76	40.10	60.51	-20.41	QP	Р
4	0.2904	18.98	9.76	28.74	50.51	-21.77	AVG	Р
5	0.3645	32.63	9.76	42.39	58.63	-16.24	QP	Р
6	0.3645	20.37	9.76	30.13	48.63	-18.50	AVG	Р
7	0.4893	31.40	9.77	41.17	56.18	-15.01	QP	Р
8	0.4893	16.75	9.77	26.52	46.18	-19.66	AVG	Р
9	1.2264	31.74	9.79	41.53	56.00	-14.47	QP	Р
10	1.2264	17.94	9.79	27.73	46.00	-18.27	AVG	Р
11	16.9464	32.26	10.50	42.76	60.00	-17.24	QP	Ρ
12	16.9464	25.27	10.50	35.77	50.00	-14.23	AVG	Ρ

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6 Undesirable Emission and Restrict band

- 6.1 Test Method and test Procedure:
- The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 30 MHz to 40 GHz was investigated. All readings from 30 MHz to 1 GHz are Quasi-peak values with a resolution bandwidth of 120 kHz. For measurement above 1GHz, peak values with RBW=1MHz, VBW=3MHz and PK detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "**QP**" in the data table.
- (6) The antenna polarization : Vertical polarization and Horizontal polarization.

Block diagram of Test setup

For radiated emissions from 9kHz to 30MHz



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For radiated emissions from 30MHz to1GHz



For radiated emissions above 1GHz



- 6.2 Configuration of The EUT Same as section 5.3 of this report
- 6.3 EUT Operating Condition Same as section 5.4 of this report.
- 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

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1	1	81
Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Frequencies in restricted band are complied to limit on Paragraph 15.209

(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27dBm/MHz

- (2) For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27dBm/MHz.
- Note: 1. RF Voltage $(dBuV) = 20 \log RF$ Voltage (uV)
 - 2. In the Above Table, the higher limit applies at the band edges.
 - 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

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Test result General Radiated Emission Data and Harmonics Radiated Emission Data

Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keeping WIFI Transmitting

Pass

Results:

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Test Figure:





No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(0)	(cm)		
1	147.583	21.57	-17.20	43.5	-21.93	Peak	196.00	200	Horizontal	Pass
2	212.314	36.57	-13.67	43.5	-6.93	Peak	33.00	100	Horizontal	Pass
3	280.925	34.28	-11.50	46.0	-11.72	Peak	258.00	100	Horizontal	Pass
4	350.990	36.33	-9.36	46.0	-9.67	Peak	270.00	100	Horizontal	Pass
5	414.266	38.47	-8.24	46.0	-7.53	Peak	199.00	100	Horizontal	Pass
6	799.988	40.79	-2.96	46.0	-5.21	Peak	137.00	200	Horizontal	Pass

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Test Figure:



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	55.214	26.08	-11.83	40.0	-13.92	Peak	334.00	100	Vertical	Pass
2	67.093	26.81	-14.32	40.0	-13.19	Peak	271.00	100	Vertical	Pass
3	234.376	35.91	-12.53	46.0	-10.09	Peak	316.00	100	Vertical	Pass
4	351.232	36.07	-9.38	46.0	-9.93	Peak	0.00	200	Vertical	Pass
5	495.726	36.36	-7.13	46.0	-9.64	Peak	0.00	200	Vertical	Pass
6	799.988	38.75	-2.96	46.0	-7.25	Peak	0.00	200	Vertical	Pass

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Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB µ V/m)
5180.00	95.43 (PK)	Н	Eurodomontol Enormon
5180.00	93.10 (PK)	V	Fundamental Frequency
10360	56.10 (PK)/ 48.89 (AV)	Н	74(Peak)/ 54(AV)
10360	50.57 (PK)	V	74(Peak)/ 54(AV)
15540		V	74(Peak)/ 54(AV)
20720		H/V	74(Peak)/ 54(AV)
25900		H/V	74(Peak)/ 54(AV)
31080		H/V	74(Peak)/ 54(AV)
36260		H/V	74(Peak)/ 54(AV

Operation Mode: Keeping Transmitting under CH36 for 11g at 6Mbps

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11a mode 6Mbps

Operation	Mode:	Keeping	Transmitting	under CH40	for 11g at 6Mbps
- p					

Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB µ V/m)
5200.00	98.18 (PK)	Н	Fundamental Fuerum
5200.00	95.92 (PK)	V	Fundamental Frequency
10400	59.69 (PK) / 48.35 (AV)	Н	74(Peak)/ 54(AV)
10400	56.52 (PK) / 49.85 (AV)	V	74(Peak)/ 54(AV)
15600		H/V	74(Peak)/ 54(AV)
20800		H/V	74(Peak)/ 54(AV)
26000		H/V	74(Peak)/ 54(AV)
31200		H/V	74(Peak)/ 54(AV)
36400		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11a mode 6Mbps

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_			-
Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB µ V/m)
5240.00	99.15 (PK)	Н	Fundamental Fusayanay
5240.00	93.44 (PK)	V	rundamental Frequency
10480	59.83 (PK) / 48.25 (AV)	Н	74(Peak)/ 54(AV)
15720	53.69 (PK) / 47.67 (AV)	V	74(Peak)/ 54(AV)
20960		H/V	74(Peak)/ 54(AV)
26200		H/V	74(Peak)/ 54(AV)
31440		H/V	74(Peak)/ 54(AV)
36680		H/V	74(Peak)/ 54(AV)

Operation Mode: Keeping Transmitting under CH48 for 11g at 6Mbps

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11a mode 6Mbps

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adopt any other remedies which may be appropriate.



Please refer to the following test plots for details: CH36 for 11a at 6Mbps: Vertical



CH36 for 11a at 6Mbps: Horizontal



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CH40 for 11a at 6Mbps: Horizontal



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CH48 for 11g at 6Mbps: Horizontal



Note: 1. For radiated Emissions from 18-40GHz and below 30MHz, it is only the floor noise. 2. 802.11a is the worst case.

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Restricted band Measurement							
EUT	Portable Notebook		Test Mode:	Channel 36 (5180MHz)-11a			
Mode	Keeping Transmitting		Input Voltage	DC7.6V			
Temperature	24 deg. C,		Humidity	56% RH			
Test Result:		Pass	Detector	РК			
5150	PK (dBµV/m)	50.72 (PK)	T · ·/				
	EIRP (dBm)	-44.48	Limit	-2/dBm/MHZ			
Polarity	Horizontal						

Remark: 1. According to KDB 789033 v01r03 section H) d) (iii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows: $EIRP[dBm] = E[dB\mu V/m] - 95.2$ For Example, if $E[dB\mu V/m] = 50.72 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 50.72 - 95.2 = -44.48dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Portabl	le Notebook	Test Mode:	Channel 36 (5180MHz)-11a
Mode	Keeping	Transmitting	Input Voltage	DC7.6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	РК
5150	PK (dBµV/m)	44.85 (PK)	T :	27.10/\
	EIRP (dBm)	-50.35	Limit	-2/dBm/MHZ
Polarity	Vertical			
Test Figure				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 44.85$ dB $\mu V/m$,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 {=} 44.85 {-} 95.2 {=} {-} 50.35 dBm$

2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement					
EUT	Portable Notebook		Test Mode:	Channel 48 (5240MHz)-11a	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5250	PK (dBµV/m)	59.62 (PK)	T · · ·		
	EIRP (dBm) -35.58		Limit	-2/dBm/MHZ	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 59.62 \ dB\mu V/m$,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 59.62 - 95.2 = -35.58 dBm$

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Portable Notebook		Test Mode:	Channel 48 (5240MHz)-11a
Mode	Keeping Transmitting		Input Voltage	DC7.6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	РК
5250	PK (dBµV/m) 55.73 (PK)		T • •	
	EIRP (dBm)	-39.47 IRP (dBm)		-2/dBm/MHZ
Polarity	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 55.73 \ dB\mu V/m$,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 55.73 - 95.2 = -39.47 dBm$

2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement					
EUT	Portab	le Notebook	Test Mode:	Channel 36	
				(5180MHz)-11n/HT20	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5150	PK (dBµV/m)	48.96 (PK)	T · ·/		
	EIRP (dBm)	-46.24	Limit	-2/dBm/MHZ	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 48.96dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 48.96 - 95.2 = -46.24 dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Portab	le Notebook	Test Mode:	Channel 36
				(5180MHz)-11n/HT20
Mode	Keeping Transmitting		Input Voltage	DC7.6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:		Pass	Detector	РК
5150	PK ($dB\mu V/m$)	43.36 (PK)	T · · ·	
	EIRP (dBm)	-51.84	Limit	-2/dBm/MHZ
Polarity	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 43.36 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 43.36 - 95.2 = -51.84 dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement					
EUT	Portab	le Notebook	Test Mode:	Channel 48 (5240MHz)-	
				11n/HT20	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5250	PK (dBµV/m)	56.69(PK)	T: :/		
	EIRP (dBm)	-38.51	Limit	-2/dBm/MHZ	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 56.69 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 56.69 - 95.2 = -38.51 dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement					
EUT	Portable Notebook		Test Mode:	Channel 48 (5240MHz)-	
				11n/HT20	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	РК	
5250	PK ($dB\mu V/m$)	50.18(PK)	T · · ·		
	EIRP (dBm)	-45.02	Limit	-2/dBm/MHZ	
Polarity	Vertical				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 50.18 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2=50.18-95.2= -45.02 dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement					
EUT	Portab	le Notebook	Test Mode:	Channel 38	
				(5190MHz)-11n/HT40	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	РК	
5150	PK (dBµV/m)	52.20 (PK)	T · · ·		
	EIRP (dBm)	-43.00	Limit	-2/dBm/MHZ	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 52.20 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 52.20 - 95.2 = -43.00 dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Portable Notebook		Test Mode:	Channel 38
				(5190MHz)-11n/HT40
Mode	Keeping Transmitting		Input Voltage	DC7.6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:		Pass	Detector	РК
5150	PK ($dB\mu V/m$)	48.77 (PK)	T · · ·	
	EIRP (dBm)	-46.43	Limit	-2/dBm/MHZ
Polarity	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 48.77 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 48.77 - 95.2 = -46.43 dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement					
EUT	Portab	le Notebook	Test Mode:	Channel 46 (5230MHz)-	
				11n/HT40	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5250	PK (dBµV/m)	57.18(PK)	т: :/		
	EIRP (dBm)	-38.02	Limit	-2/dBm/MHZ	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m]=57.18dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 57.18 - 95.2 = -38.02dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement					
EUT	Portab	le Notebook	Test Mode:	Channel 46 (5230MHz)-	
				11n/HT40	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5250	PK ($dB\mu V/m$)	54.31(PK)	T · · ·		
	EIRP (dBm)	-40.89	Limit	-2/dBm/MHZ	
Polarity	Vertical				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 54.31 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 54.31 - 95.2 = -40.89dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement					
EUT	Portab	le Notebook	Test Mode:	Channel 36	
				(5180MHz)-11ac/VHT20	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5150	PK (dBµV/m)	49.51 (PK)	T · · ·		
	EIRP (dBm)	-45.69	Limit	-2/dBm/MHZ	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 49.51 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 49.51 - 95.2 = -45.69dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Portable Notebook		Test Mode:	Channel 36
				(5180MHz)-11ac/VHT20
Mode	Keeping Transmitting		Input Voltage	DC7.6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	РК
5150	PK ($dB\mu V/m$)	44.72 (PK)	T · · ·	
	EIRP (dBm) -50.48		Limit	-2/dBm/MHZ
Polarity	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 44.72 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 44.72 - 95.2 = -50.48dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement					
EUT	Portab	le Notebook	Test Mode:	Channel 48 (5240MHz)-	
				11ac/VHT20	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5250	PK (dBµV/m)	52.88 (PK)	T: :/		
	EIRP (dBm)	-42.32	Limit	-2/dBm/MHZ	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 52.88 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 52.88 - 95.2 = -42.32dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Portab	le Notebook	Test Mode:	Channel 48 (5240MHz)-
				11ac/VHT20
Mode	Keeping Transmitting		Input Voltage	DC7.6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:		Pass	Detector	РК
5250	PK (dBµV/m)	49.85(PK)	T · · ·	
	EIRP (dBm) -45.35		Limit	-2/dBm/MHZ
Polarity	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 49.85 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 49.85 - 95.2 = -45.35 dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement					
EUT	Portab	le Notebook	Test Mode:	Channel 38	
				(5190MHz)-11ac/VHT40	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5150	PK (dBµV/m)	53.20 (PK)	T · ·/		
	EIRP (dBm) -42.00		Limit	-2/dBm/MHZ	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 53.20 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 53.20 - 95.2 = -42.00dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Portable Notebook		Test Mode:	Channel 38
				(5190MHz)-11ac/VHT40
Mode	Keeping Transmitting		Input Voltage	DC7.6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	РК
5150	PK ($dB\mu V/m$)	50.21 (PK)	T · · ·	
	EIRP (dBm) -44.99		Limit	-2/dBm/MHZ
Polarity	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 50.21 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 50.21 - 95.2 = -44.99dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement					
EUT	Portable Notebook		Test Mode:	Channel 46 (5230MHz)-	
				11ac/VHT40	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5250	PK (dBµV/m)	57.68(PK)	T : :/		
	EIRP (dBm)	-37.52	Limit	-2/dBm/MHZ	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m]=57.68dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 57.68 - 95.2 = -37.52dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Portab	le Notebook	Test Mode:	Channel 46 (5230MHz)-
				11ac/VHT40
Mode	Keeping Transmitting		Input Voltage	DC7.6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	РК
5250	PK ($dB\mu V/m$)	54.17(PK)	T · · ·	
	EIRP (dBm)	-41.03		-2/dBm/MHZ
Polarity	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 5417 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 54.17 - 95.2 = -41.03 dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement					
EUT	Portab	le Notebook	Test Mode:	Channel 42	
				(5210MHz)-11ac/VHT80	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5150	PK (dBµV/m)	57.78 (PK)	T · ·/		
	EIRP (dBm) -37.42		Limit	-2/dBm/MHZ	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 57.78 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 57.78 - 95.2 = -37.42dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement					
EUT	Portab	le Notebook	Test Mode:	Channel 42 (5210MHz)-	
				11ac/VHT80	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5150	PK (dBµV/m)	53.12 (PK)	T · · ·		
	EIRP (dBm) -42.08		Limit	-2/dBm/MHZ	
Polarity	Vertical				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m]=53.12 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 53.12 - 95.2 = -42.08 dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement					
EUT	Portable Notebook		Test Mode:	Channel 149 (5745MHz)-11a	
Mode	Keeping Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
5725	PK (dBµV/m)	53.86 (PK)	.		
	EIRP (dBm) -41.34		Limit	-1/dBm/MHZ	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 53.86 dB\mu V/m$,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=53.86-95.2=-41.34 dBm$

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Portable Notebook		Test Mode:	Channel 149 (5745MHz)-11a
Mode	Keeping Transmitting		Input Voltage	DC7.6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	РК
5725	PK (dBµV/m) 52.72 (PK)		T • •/	
	EIRP (dBm) -42.48		Limit	-1/dBm/MHZ
Polarity	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 52.72$ dB $\mu V/m$,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=52.72 - 95.2= -42.48dBm$

2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement				
EUT	Portable Notebook		Test Mode:	Channel 165 (5825MHz)-11a
Mode	Keeping Transmitting		Input Voltage	DC7.6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	РК
5850	PK (dBµV/m) 52.62 (PK)		T · · ·	
	EIRP (dBm) -42.58		Limit	-1/dBm/MHZ
Polarity	Horizontal			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 52.62 dB\mu V/m$,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=52.62 - 95.2= -42.58dBm$

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Portable Notebook		Test Mode:	Channel 165 (5825MHz)-11a
Mode	Keeping Transmitting		Input Voltage	DC7.6V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	РК
5850	PK ($dB\mu V/m$)	50.13 (PK)	T insid	
	EIRP (dBm)	-45.07	Limit	-1/dBm/MHZ
Polarity	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 50.13 dB\mu V/m$,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 50.13 - 95.2 = -45.07 dBm$

2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement								
EUT	Portab	le Notebook	Test Mode:	Channel 149 (5745MHz)-				
				11n/HT20				
Mode	Keeping	g Transmitting	Input Voltage	DC7.6V				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:		Pass	Detector	РК				
5725	PK (dBµV/m)	53.94 (PK)	T · ·/	-17dBm/MHz				
	EIRP (dBm)	-41.26	Limit					
Polarity	Horizontal							

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 53.94 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 53.94 - 95.2 = -41.26dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement								
EUT	Portab	le Notebook	Test Mode:	Channel 149 (5745MHz)-				
				11n/HT20				
Mode	Keeping	g Transmitting	Input Voltage	DC7.6V				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:		Pass	Detector	РК				
5725	PK ($dB\mu V/m$)	50.57 (PK)	T · · ·					
	EIRP (dBm)	-44.63	Limit	-1/dBm/MHZ				
Polarity	V	/ertical						

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 50.57 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 50.57 - 95.2 = -44.63 dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement								
EUT	Portab	le Notebook	Test Mode:	Channel 165 (5825MHz)-				
				11n/HT20				
Mode	Keeping	g Transmitting	Input Voltage	DC7.6V				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:		Pass	Detector	РК				
5850	PK (dBµV/m)	54.91 (PK)	T · ·/	-17dBm/MHz				
	EIRP (dBm)	-40.29	Limit					
Polarity	Horizontal							

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 54.91 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 54.91 - 95.2 = -40.29 dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement								
EUT	Portab	le Notebook	Test Mode:	Channel 165 (5825MHz)-				
				11n/HT20				
Mode	Keeping	g Transmitting	Input Voltage	DC7.6V				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:		Pass	Detector	РК				
5850	PK ($dB\mu V/m$)	51.63 (PK)	T · · ·					
	EIRP (dBm)	-43.57	Limit	-1/dBm/MHZ				
Polarity	V	/ertical						

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 51.63 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 51.63 - 95.2 = -43.57 dBm$ 2. RBW=1MHz, VBW=3MHz

The report refers only to the sample tested and does not apply to the bulk.

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Restricted band Measurement								
EUT	Portab	le Notebook	Test Mode:	Channel 151 (5755MHz)-				
				11n/HT40				
Mode	Keeping	g Transmitting	Input Voltage	DC7.6V				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:		Pass	Detector	РК				
5725	PK (dBµV/m)	53.56 (PK)	т: :,	-17dBm/MHz				
	EIRP (dBm)	-47.64	Limit					
Polarity	Horizontal							

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 53.56 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 53.56 - 95.2 = -41.64dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement								
EUT	Portab	le Notebook	Test Mode:	Channel 151 (5755MHz)-				
				11n/HT40				
Mode	Keeping	g Transmitting	Input Voltage	DC7.6V				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:		Pass	Detector	РК				
5725	PK ($dB\mu V/m$)	51.15 (PK)	T · · ·					
	EIRP (dBm)	-44.05	Limit	-1/dBm/MHZ				
Polarity	V	/ertical						

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 51.15 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 51.15 - 95.2 = -44.05 dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement								
EUT	Portab	le Notebook	Test Mode:	Channel 159 (5795MHz)-				
				11n/HT40				
Mode	Keeping	g Transmitting	Input Voltage	DC7.6V				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:		Pass	Detector	РК				
5850	PK (dBµV/m)	53.32 (PK)	T · ·/	-17dBm/MHz				
	EIRP (dBm)	-41.88	Limit					
Polarity	Horizontal							

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 53.32 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2=53.32-95.2= -41.88 dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement								
EUT	Portab	le Notebook	Test Mode:	Channel 159 (5795MHz)-				
				11n/HT40				
Mode	Keeping	g Transmitting	Input Voltage	DC7.6V				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:		Pass	Detector	РК				
5850	PK ($dB\mu V/m$)	51.83 (PK)	T · · ·					
	EIRP (dBm)	-43.37	Limit	-1/dBm/MHZ				
Polarity	V	/ertical						

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 51.83 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 51.83 - 95.2 = -43.37 dBm$ 2. RBW=1MHz, VBW=3MHz

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Restricted band Measurement								
EUT	Portab	le Notebook	Test Mode:	Channel 155 (5775MHz)-				
				11ac/VHT80				
Mode	Keeping	g Transmitting	Input Voltage	DC7.6V				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:		Pass	Detector	РК				
5850	PK (dBµV/m)	55.71 (PK)	T · ·/	-17dBm/MHz				
	EIRP (dBm)	-39.49	Limit					
Polarity	Horizontal							

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 55.71 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 55.71 - 95.2 = -39.49 dBm$ 2. RBW=1MHz, VBW=3MHz

Restricted band Measurement								
EUT	Portab	le Notebook	Test Mode:	Channel 157 (5775MHz)-				
				11ac/VHT80				
Mode	Keeping	g Transmitting	Input Voltage	DC7.6V				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:		Pass	Detector	РК				
5850	PK ($dB\mu V/m$)	52.30 (PK)	т,					
	EIRP (dBm)	-42.9	Limit	-1/dBm/MHZ				
Polarity	V	/ertical						

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$

For Example, if $E[dB\mu V/m] = 53.30 dB\mu V/m$, $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 52.30 - 95.2 = -42.9 dBm$ 2. RBW=1MHz, VBW=3MHz

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7.0 Emission Bandwidth

7.1 Test Setup



7.3 Test Procedure for Emission Bandwidth

- 1. Set RBW = approximately 1% of the emission bandwidth.
- 2. Set VBW> RBW
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission.

Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

7.4 Test Procedure for Minimum Bandwidth for the Band 5725-5850MHz

- 1. Set RBW = 100 kHz.
- 2. Set VBW \geq 3 \times RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.5 Test Procedure for 99% Bandwidth

- 1. Set center frequency to the nominal EUT channel center frequency
- 2. Set span = 1.5 times to 5.0 times OBW
- 3. Set RBW= 1% TO 5% of the OBW
- 4. Set VBW \geq 3 \times RBW

5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Other, peak detection and max mode (until trace stabilizes) shall be used.

6. Use the 99% power bandwidth function of the instrument

Note: Two antennas were tested and only the worst cased was recorded in the test report. The Main antenna was the worst case.

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7.6 Test Result

EUT		Portab	ole Noteboo	ok	Model		N	P153GK-X	
Mode		802.11a		802.11a Input Voltage		802.11a Input Voltag		DC7.6V	
Temperat	ure	24	4 deg. C,		Humidity	r		56% RH	
Channel	Chann	el Frequency (MHz)	Data Transfer Rate (Mbps)	Bandwidth Mir (MHz)		Minimum Limit (MHz)		Pass/ Fail	
26dB Bar	ndwidth								
36		5180	6	22	22.67			Pass	
40		5200	6	25	25.61			Pass	
48		5240	6	24	24.23			Pass	
99% Ban	dwidth								
36		5180	6	16	16.89			Pass	
40		5200	6	16.95				Pass	
48		5240	6	16	.89			Pass	

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Test Figure:

26dB Bandwidth

Channel 36



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Channel 40



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Channel 48



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Test Figure:

99% Bandwidth

Channel 36



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Channel 40



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Channel 48



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EUT		Portal	ole Noteboo	k	Model		NP153GK-X				
Mode		8	802.11a Input Voltage		802.11a Input Voltage DC7.4		Input Voltage		02.11a Input Voltage DO		DC7.6V
Temperat	ure	24	4 deg. C,	Humidity		r		56% RH			
Channel	Chann	el Frequency (MHz)	Data Transfer Rate (Mbps)	Band (M	width Minimu Hz) (M		num Limit MHz)	Pass/ Fail			
26dB Bar	ndwidth										
149		5745	6	22	.30			Pass			
153		5765	6	22	22.97			Pass			
165		5825	6	24.59				Pass			
6dB Ban	dwidth										
149		5745	6	15	.72		0.5	Pass			
153		5765	6	15	.86		0.5	Pass			
165		5825	6	16	.04		0.5	Pass			
99% Ban	99% Bandwidth										
149		5745	6	16	.83			Pass			
153		5765	6	16	16.83			Pass			
165		5825	6	17	.01			Pass			

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Test Figure:

26dB Bandwidth

Channel 149



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Channel 153



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Channel 165



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Test Figure:

6dB Bandwidth

Channel 149



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Channel 153



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Channel 165



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Test Figure:

99% Bandwidth

Channel 149



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Channel 153



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Channel 165



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EUT		Portal	Model		NP153GK-X						
Mode		802.11n HT20			Input Voltage		DC7.6V				
Temperature		24 deg. C,			Humidity			56% RH			
Channel	Channel Frequency (MHz)		Data Transfer Rate (Mbps)	Band (M	width Hz)	Minimum Limit (MHz)		Pass/ Fail			
26dB Bandwidth											
36	5180		mcs0	23.87				Pass			
40	5200		mcs0	25.07				Pass			
48	5240		mcs0	26.03				Pass			
99% Bandwidth											
36	5180		mcs0	17.98				Pass			
40		5200	mcs0	18	04			Pass			
48		5240	mcs0	18	.10			Pass			

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Test Configure

26dB Bandwidth

Channel 36



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Channel 40



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Channel 48



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Test Configure

99% Bandwidth

Channel 36



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Channel 48



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EUT		Portable Notebook			Model		NP153GK-X					
Mode		802.11n HT20			Input Voltage		DC7.6V					
Temperature		24 deg. C,			Humidity		56% RH					
Channel	Channel Frequency (MHz)		Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail				
26dB Bandwidth												
149	5745		6	23.09				Pass				
153	5765		6	23.69				Pass				
165	5825		6	26.21				Pass				
6dB Bandwidth												
149	5745		6	16.82		0.5		Pass				
153		5765	6	16	16.82		0.5	Pass				
165		5825	6	16	.83	0.5		Pass				
99% Bandwidth												
149		5745	6	17	.92			Pass				
153		5765	6	17	17.92			Pass				
165		5825	6	18	18.16			Pass				

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Test Configure

26dB Bandwidth

Channel 149



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Channel 153



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Channel 165



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Test Configure

6dB Bandwidth

Channel 149



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Channel 153



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Channel 165



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Test Configure

99% Bandwidth

Channel 149



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Channel 153



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Channel 165



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EUT		Portable Notebook			Model		NP153GK-X		
Mode		802.11n HT40			Input Voltage		DC7.6V		
Temperature		24 deg. C,			Humidity		56% RH		
Channel	Channel Frequency (MHz)		Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail	
26dB Bandwidth									
38	5190		mcs0	42.93				Pass	
46	5230		mcs0	43.41				Pass	
99% Bandwidth									
38		5190	mcs0	36	36.43			Pass	
46		5230	mcs0	36	.79			Pass	

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Test Configure

26dB Bandwidth

Channel 38



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Channel 46



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Test Configure

99% Bandwidth

Channel 38



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Channel 46



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EUT		Portable Notebook			Model		NP153GK-X		
Mode		802.11n HT40			Input Voltage		DC7.6V		
Temperature		24 deg. C,			Humidity	Humidity		56% RH	
Channel	nel Channel Frequency (MHz)		Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail	
26dB Bar	ndwidth								
151	5755		mcs0	42.44				Pass	
159		5795	mcs0) 44.73				Pass	
6dB Ban	dwidth								
151	1 5755		mcs0	35.27		0.5		Pass	
159		5795	mcs0	35.23		0.5		Pass	
99% Bandwidth									
151		5755	mcs0	36.43				Pass	
159		5795	mcs0	36.43				Pass	

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Test Configure

26dB Bandwidth

Channel 151



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Channel 159



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Test Configure

6dB Bandwidth

Channel 151



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Channel 159



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Test Configure

99% Bandwidth

Channel 151



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Channel 159



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EUT		Portab	Model		NP153GK-X			
Mode		802.1	Input Voltage		DC7.6V			
Temperature		24 deg. C,			Humidity		56% RH	
Channel	Channel Frequency (MHz)		Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail
26dB Bar	ndwidth							
36	5180		mcs0	23.39				Pass
40	5200		mcs0	26.93				Pass
48	5240		mcs0	24.65				Pass
99% Bandwidth								
36	5180		mcs0	17.98				Pass
40		5200	mcs0	18	.04			Pass
48	5240 mcs0 17		.98			Pass		

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Test Configure

26dB Bandwidth

Channel 36



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Channel 40



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Channel 48



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Test Configure

99% Bandwidth

Channel 36



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EUT		Portable Notebook			Model		NP153GK-X		
Mode		802.11ac VHT20			Input Voltage		DC7.6V		
Temperature		24	4 deg. C,		Humidity		56% RH		
Channel	Channel Frequency (MHz)		Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail	
26dB Bandwidth									
149	149 5745		6	23.15				Pass	
153	5765		6	22	.73			Pass	
165	5825		6	24.35				Pass	
6dB Bandwidth									
149	5745		6	16.94		0.5		Pass	
153		5765	6 16.74		.74	0.5		Pass	
165		5825 6 16		16	77 0.5		Pass		
99% Bandwidth									
149		5745	6	17.92				Pass	
153	5765 6 17		.86			Pass			
165		5825	6	18	.04			Pass	

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Test Configure

26dB Bandwidth

Channel 149



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Channel 153



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Channel 165



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Test Configure

6dB Bandwidth

Channel 149



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Channel 153



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Channel 165



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Test Configure

99% Bandwidth

Channel 149



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Channel 165



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EUT		Portable Notebook			Model		NP153GK-X		
Mode		802.11ac VHT40			Input Voltage		DC7.6V		
Temperature		24 deg. C,			Humidity		56% RH		
Channel	Channel Frequency (MHz)		Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail	
26dB Bandwidth									
38	5190		mcs0	43.65				Pass	
46	5230		mcs0	42.81				Pass	
99% Bandwidth									
38		5190	mcs0	36.55				Pass	
46		5230	mcs0	37.03				Pass	

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Test Configure

26dB Bandwidth

Channel 38



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Page 108 of 171

Channel 46



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Test Configure

99% Bandwidth

Channel 38



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Channel 46



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EUT		Portab	ole Noteboo	ok	Model N			P153GK-X	
Mode		802.1	1ac VHT4	0	Input Voltage			DC7.6V	
Temperat	ure	24	4 deg. C,		Humidity			56% RH	
Channel	Chann	el Frequency (MHz)	Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail	
26dB Bar	ndwidth								
151		5755	mcs0	42	.93			Pass	
159		5795	mcs0	44.25				Pass	
6dB Ban	dwidth								
151		5755	mcs0	35.27		0.5		Pass	
159		5795	mcs0	35	.23	0.5		Pass	
99% Ban	dwidth								
151		5755	mcs0	36.43				Pass	
159		5795	mcs0	36	.43			Pass	

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Test Configure

26dB Bandwidth

Channel 151



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Channel 159



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Test Configure

6dB Bandwidth

Channel 151



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Page 115 of 171

Channel 159



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Test Configure

99% Bandwidth

Channel 151



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Channel 159



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EUT		Portab	ole Noteboo	k	Model		NP153GK-X	
Mode		802.1	lac VHT8)	Input Voltage		DC7.6V	
Temperat	ure	24	4 deg. C,		Humidity			56% RH
Channel	nnel Channel Frequency (MHz)		Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minir (num Limit MHz)	Pass/ Fail
26dB Bar	ndwidth							
42		5210 mcs0		93.79				Pass
99% Bandwidth								
42		5210	mcs0	75	.99		Pass	

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Test Configure

26dB Bandwidth

Channel 42



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Page 120 of 171

Test Configure

99% Bandwidth

Channel 42



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EUT		Portab	ole Noteboo	ok	Model			NP153GK-X	
Mode		802.1	lac VHT8	0	Input Voltage			DC7.6V	
Temperat	ure	24	4 deg. C,		Humidity		56% RH		
Channel	Chann	el Frequency (MHz)	Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail	
26dB Bar	ndwidth								
155		5775	mcs0	86.33				Pass	
6dB Ban	dwidth								
155		5775	mcs0	75	.27		0.5	Pass	
99% Bandwidth									
155		5775	mcs0	75	.75			Pass	

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Test Configure

26dB Bandwidth

Channel 155



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6dB Bandwidth

Channel 155





18:16:59

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Test Configure

99% Bandwidth

Channel 155



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8.0 Peak Transmit Power Measurement

8.1 Test Setup



8.2 Limits of Peak Transmit Power Measurement

For client devices in the 5.15-5.25 GHz band	250mW (24 dBm)			
For devices in the 5.725-5.85 GHz band	1W (30 dBm)			

8.3 Test Procedure

The average power output was measured with a Spectrum analyzer connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

Note: the average power was measured

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adopt any other remedies which may be appropriate.



8.4Test Results

EU	Т		Portable Notebook	Model		NP153GK-X			
Moo	le	802.11a		Test Voltage	DC7.6V				
Temperature			24 deg. C,	Humidity	56% RH				
Channel	Freque	ncy	Main ANT Power	AUX ANT F	ower	Total	Limit	Pass/ Fail	
	(MIII	Z)	dBm	dBm		(dBm)	(dBm)		
36	5180		1.64	1.52		4.59	24	Pass	
40	5200		2.59	2.43		5.52	24	Pass	
48	524	0	2.85	2.71		5.79	24	Pass	
149	5745 2.85 2.72			5.80	30	Pass			
153	5765 3.51 3.46			6.50	30	Pass			
165	582:	5	2.43	2.40		5.43	30	Pass	

Note: 1. At finial test to get the worst-case emission at 6Mbps for CH36, CH40, CH48, CH149, CH153 and CH165

2. The result basic equation calculation as follow:

Average Power Output = AV Power Reading + Cable loss + Attenuator

3. The worse case was recorded

The report refers only to the sample tested and does not apply to the bulk.

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adopt any other remedies which may be appropriate.



EU	Т		Portable Notebook	Model		NP1	53GK-X	
Moo	de	802.11n HT20		Test Voltage	DC7.6V			
Temperature			24 deg. C,	Humidity	56% RH			
Channel	Freque	ncy	Main ANT Power	AUX ANT P	ower	Total	Limit	Pass/ Fail
	(MH	z) dBm		dBm		(dBm)	(dBm)	
36	5180		1.43	1.32		4.39	24	Pass
40	5200		2.35	2.20		5.29	24	Pass
48	524	0	2.68	2.49		5.60	24	Pass
149	5745		2.73	2.65		5.70	30	Pass
153	153 5765		2.79	2.66		5.74	30	Pass
165	582:	5	2.47	2.31		5.40	30	Pass

Note: 1. At finial test to get the worst-case emission at mcs0 for CH36, CH40, CH48, CH149, CH153 and CH165

2. The result basic equation calculation as follow:

Average Power Output = AV Power Reading + Cable loss + Attenuator

3. The worse case was recorded

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adopt any other remedies which may be appropriate.



EUT			Portable Notebook	Model		NP153GK-X			
Mode		802.11n HT40		Test Voltage	DC7.6V				
Temper	ature	24 deg. C,		Humidity	56% RH				
Channel	Freque	ncy	Main ANT Power	AUX ANT F	ower	Total	Limit	Pass/ Fail	
	(MHZ)		dBm	dBm		(dBm)	(dBm)		
38	519	0	0.04	0.01		3.04	24	Pass	
46	523	0	3.90	3.81		6.87	24	Pass	
151	5755		3.55	3.42		6.50	30	Pass	
159	579:	5	3.55	3.38		6.48	30	Pass	

Note: 1. At finial test to get the worst-case emission at mcs0 for CH38, CH46, CH151, CH159 and CH165

2. The result basic equation calculation as follow:

Average Power Output = AV Power Reading + Cable loss + Attenuator

3. The worse case was recorded

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EU	Т		Portable Notebook	Model		NP153GK-X		
Moo	le	802.11ac VHT20		Test Voltage	DC7.6V			
Temperature			24 deg. C,	Humidity	56% RH			
Channel	Freque	ncy	Main ANT Power	AUX ANT P	ower	Total	Limit	Pass/ Fail
	(MH	Z)	dBm	dBm dBm		Power (dBm)	(dBm)	
36	5180		1.53	1.42		4.49	24	Pass
40	5200		2.45	2.31		5.39	24	Pass
48	524	0	2.77	2.66		5.73	24	Pass
149	5745		2.73	2.59		5.67	30	Pass
153	153 5765		2.81	2.73		5.78	30	Pass
165	582:	5	2.09	1.98		5.05	30	Pass

Note: 1. At finial test to get the worst-case emission at mcs0 for CH36, CH40, CH48, CH149, CH153 and CH165

2. The result basic equation calculation as follow:

Average Power Output = AV Power Reading + Cable loss + Attenuator

3. The worse case was recorded

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EU	Т		Portable Notebook	Model		NP153GK-X			
Mode		802.11ac VHT40		Test Voltage	DC7.6V				
Temper	ature	24 deg. C,		Humidity	56% RH				
Channel	Freque	ncy	Main ANT Power	AUX ANT P	ower	Total	Limit	Pass/ Fail	
	(MHZ)		dBm	dBm		(dBm)	(dBm)		
38	519	0	0.45	0.31		3.39	24	Pass	
46	523	0	3.85	3.72		6.80	24	Pass	
151	5755		3.59	3.43		6.52	30	Pass	
159	579:	5	3.60	3.50		6.56	30	Pass	

Note: 1. At finial test to get the worst-case emission at mcs0 for CH38, CH46, CH151, CH159 and CH165

2. The result basic equation calculation as follow:

Average Power Output = AV Power Reading + Cable loss + Attenuator

3. The worse case was recorded

EUT			Portable Notebook	Model		NP153GK-X			
Mode		802.11ac VHT80		Test Voltage	DC7.6V				
Temperature		24 deg. C,		Humidity	56% RH				
Channel	inel Frequenc		Main ANT Power	AUX ANT F	ower	Total	Limit	Pass/ Fail	
	(MH	dBm		dBm		(dBm)	(dBm)		
42	5210		1.79 1.6			4.73	24	Pass	
155	577:	5	3.75	3.59		6.68	30	Pass	

Note: 1. At finial test to get the worst-case emission at mcs0 s for CH42 and CH155

2. The result basic equation calculation as follow:

Average Power Output = AV Power Reading + Cable loss + Attenuator

3. The worse case was recorded

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9. Power Spectral Density Measurement

9.1 Test Setup



9.2 Limits of Power Spectral Density Measurement

Operation Band	Limit
U-NII-1	11dBm/MHz
U-NII-3	30dBm/500kHz

9.3 Test Procedure

- 1. The EUT was directly connected to the spectrum analyzer
- 2. Set the RBW = 1MHz.
- 3. Set the VBW =3MHz.
- 4. Set the span to encompass the entire emissions bandwidth (EBW) of the signal
- 5. Detector = RMS
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.

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9.4Test Result

EUT		-	Portable Notebook	Mod	lel	NP153GK-X		
Mode			802.11a 6Mbps	Test Vo	ltage	DC7.6V		
Temperat	ture		24 deg. C,	Humi	dity		56% RH	
Channel	Free	quency	Power Spectral	Factor	Total Sp	pectral Density	Limit	Pass/ Fail
	(N	/Hz)	Density(dBm/MHz)		(dl	Bm/MHz)	(dBm)	
36	5	180	-6.88	3.01		-3.87	11	Pass
40	5	200	-5.32	3.01		-2.31	11	Pass
48	5	240	-5.74	3.01		-2.73	11	Pass
Channel	Free	quency	Power Spectral	Factor	Total Sp	pectral Density	Limit	Pass/ Fail
	(N	/Hz)	Density(dBm/500kHz)		(dB	m/500kHz)	(dBm)	
149	5	745	-6.30	3.01	-3.29		30	Pass
153	5	765	-6.43	3.01		-3.42	30	Pass
165	5	825	-7.09	3.01		-4.08	30	Pass

Note: Two antennas were tested and only the worst cased was recorded in the test report. The Main antenna was the worst case.

The report refers only to the sample tested and does not apply to the bulk.

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9.5 Plots of Power Spectral Density Measurement

1.802.11a at 6Mbps of CH36





14.OCT.2021 15:44:07

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2.802.11a at 6Mbps of CH40



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3.802.11a at 6Mbps of CH48



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4.802.11a at 6Mbps of CH149



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5.802.11a at 6Mbps of CH153



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6.802.11a at 6Mbps of CH165



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EUT		Portable Notebook		Model		NP153GK-X		
Mode		8	302.11n HT20 mcs0	Test Voltage		DC7.6V		
Temperature		24 deg. C,		Humidity		56% RH		
Channel	Frequency		Power Spectral	Factor	Total Spectral		Limit	Pass/ Fail
	(MHz)		Density(dBm/MHz)		Density		(dBm/MHz)	
					(dBm/MHz)			
36	5180		-7.58	3.01	-4.57		11	Pass
40	5200		-6.40	3.01	-3.39		11	Pass
48	5240		-6.26	3.01	-3.25		11	Pass
Channel	Frequency		Power Spectral	Factor	Total Spectral		Limit	Pass/ Fail
	(MHz)		Density(dBm/500kHz)		Density		(dBm/500kHz)	
					(dBr	n/500kHz)		
149	5745		-7.23	3.01	-4.22		30	Pass
153	5	765	-7.18	3.01		-4.17	30	Pass
165	5825		-7.37	3.01		-4.36	30	Pass

Note: Two antennas were tested and only the worst cased was recorded in the test report. The Main antenna was the worst case.

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Test Plots 1.802.11n at mcs0 of CH36



Date:

14.0CT.2021 16:48:53

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2.802.11n at mcs0 of CH40



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3.802.11n at mcs0 of CH48



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4.802.11n at mcs0 of CH149



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5.802.11n at mcs0 of CH153



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6.802.11n at mcs0 of CH165



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EUT		Portable Notebook		Model		NP153GK-X		
Mode		802.11n HT40 mcs0		Test Voltage		DC7.6V		
Temperature		24 deg. C,		Humi	dity	56% RH		
Channel	Frequency		Power Spectral	Factor	Total Spectral		Limit	Pass/
	(MHz)		Density(dBm/MHz)		Density		(dBm/MHz)	Fail
					(dBm/MHz)			
38	5190		-11.93	3.01	-8.92		11	Pass
46	5230		-8.13	3.01	-5.12		11	Pass
Channel	Frequency		Power Spectral	Factor	Total Spectral		Limit	Pass/
	(MHz)		Density(dBm/500kHz)		Density		(dBm/500kHz)	Fail
					(dBm/500kHz)			
151	57	755	-10.20	3.01	-7.19		30	Pass
159	5795		-9.54	3.01	-6.53		30	Pass

Note: Two antennas were tested and only the worst cased was recorded in the test report. The Main antenna was the worst case.

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Test Plots

1.802.11n HT40 at mcs0 of CH38



Date: 15.OCT.2021 10:27:10

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2.802.11n HT40 at mcs0 of CH46



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3.802.11n HT40 at mcs0 of CH151



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4.802.11n HT40 at mcs0 of CH159



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EUT		Portable Notebook		Model		NP153GK-X		
Mode	;	802.11ac VHT20		Test Voltage		DC7.6V		
Temperat	ture	24 deg. C,		Humidity		56% RH		
Channel	Frequency	Power Spectral	Factor	Total Spectral		Limit	Pass/ Fail	
	(MHz)	Density(dBm/MHz)		Density		(dBm/MHz)		
				(dBm/MHz)				
36	5180	-6.99	3.01	-3.98		11	Pass	
40	5200	-6.88	3.01	-3.87		11	Pass	
48	5240	-6.83	3.01	-3.82		11	Pass	
Channel	Frequency	Power Spectral	Factor	Total Spectral		Limit	Pass/ Fail	
	(MHz)	Density(dBm/500kHz)		Density		(dBm/500kHz)		
				(dBm/	500kHz)			
149	5745	-6.70	3.01	-3.69		30	Pass	
153	5765	-7.76	3.01	-4.75		30	Pass	
165	5825	-7.96	3.01	-4.95		30	Pass	

Note: Two antennas were tested and only the worst cased was recorded in the test report. The Main antenna was the worst case.

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Test Plots 1.802.11ac at mcs0 of CH36



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2.802.11ac at mcs0 of CH40



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3.802.11ac at mcs0 of CH48



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4.802.11ac at mcs0 of CH149



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5.802.11ac at mcs0 of CH153



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6.802.11ac at mcs0 of CH165



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EUT		Portable Notebook		Mod	Model		NP153GK-X		
Mode		802.11ac VHT40		Test Voltage		DC7.6V			
Temperature		24 deg. C,		Humi	Humidity		56% RH		
Channel	Frequency		Power Spectral	Factor	Total Spectral		Limit	Pass/ Fail	
	(MHz)		Density(dBm/MHz)		Density		(dBm/MHz)		
					(dBm/MHz)				
38	5190		-11.61	3.01	-0.94		11	Pass	
46	5230		-8.78	3.01	-1.28		11	Pass	
Channel	Frequency		Power Spectral	Factor	Total Spectral		Limit	Pass/ Fail	
	(MHz)		Density(dBm/500kHz)		Density		(dBm/500kHz)		
					(dBm/500kHz)				
151	5755		-16.03	3.01	-13.02		30	Pass	
159	5795		-16.92	3.01	-1	3.91	30	Pass	

Note: Two antennas were tested and only the worst cased was recorded in the test report. The Main antenna was the worst case.

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Test Plots

1.802.11ac at mcs0 of CH38



Date: 15.OCT.2021 10:53:11

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2.802.11ac at mcs0 of CH46



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3.802.11ac at mcs0 of CH151



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4.802.11ac at mcs0 of CH159



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EUT		Portable Notebook		Model		NP153GK-X		
Mode		802.11ac VHT80 mcs0Mbps		Test Voltage		DC7.6V		
Temperature		24 deg. C,		Humi	dity	56% RH		
Channel	Frequency		Power Spectral	Factor	Total Spectral		Limit	Pass/ Fail
	(MHz)		Density(dBm/MHz)		Density		(dBm/MHz)	
					(dBm/MHz)			
42	5210		-12.78	3.01	-9.77		11	Pass
Channel	Frequency		Power Spectral	Factor	Total Spectral		Limit	Pass/ Fail
	(MHz)		Density(dBm/500kHz)		Density		(dBm/500kHz)	
					(dBm/500kHz)			
155	5775		-12.33	3.01	-9.32		30	Pass

Note: Two antennas were tested and only the worst cased was recorded in the test report. The Main antenna was the worst case.

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Test Plots

1.802.11ac at mcs0Mbps of CH42



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2.802.11ac at mcs0Mbps of CH155



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10.0 Frequency Stability

10.1 Limits of Frequency Stability Measurement

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.02\%$ of the operating frequency over a temperature variation of -30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees

10.2 Test Procedure

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.

- 2. Turn the EUT on and couple its output to a spectrum analyzer.
- 3. Turn the EUT off and set the chamber to the highest temperature specified.

4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.

5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.

6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

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10.3 Test Result

Channel 36 (5180MHz)

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
DC7.6V	5179.9836
DC8.4V	5179.9852
DC6.6V	5179.9861
Max. Deviation (MHz)	0.0164
Max. Deviation (ppm)	3.17

Rated working voltage: DC7.6V

Temperature vs. Frequency Stability

Temperature (°C)	Measurement Frequency (MHz)
-30	5179.9870
-20	5179.9853
-10	5179.9865
0	5179.9851
10	5179.9837
20	5179.9849
30	5179.9853
40	5179.9834
50	5179.9862
Max. Deviation (MHz)	0.0166
Max. Deviation (ppm)	3.20

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11.0 Antenna Requirement

11.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

11.2 Antenna Connected construction

Two FPC antenna used. The gain of the antennas is 5.02dBi for each one (Get from the antenna specification provided the manufacturer)

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12.0 FCC Label

FCC ID: RBD-NP153GK

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



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13.0 Photo of testing

Conducted Emission Test Setup:



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Radiated Emission Test Setup:



Photographs – EUT Please refer test report TW2109319-01E

End of the report

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