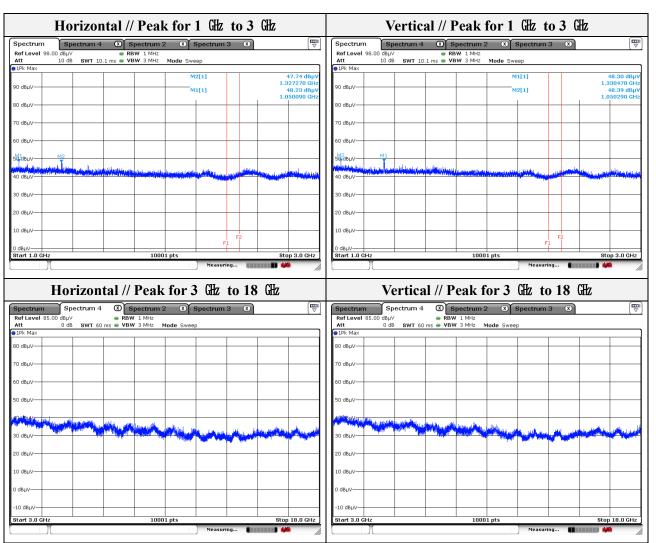


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Note.

1. No spurious emission were detected above 3 GHz.



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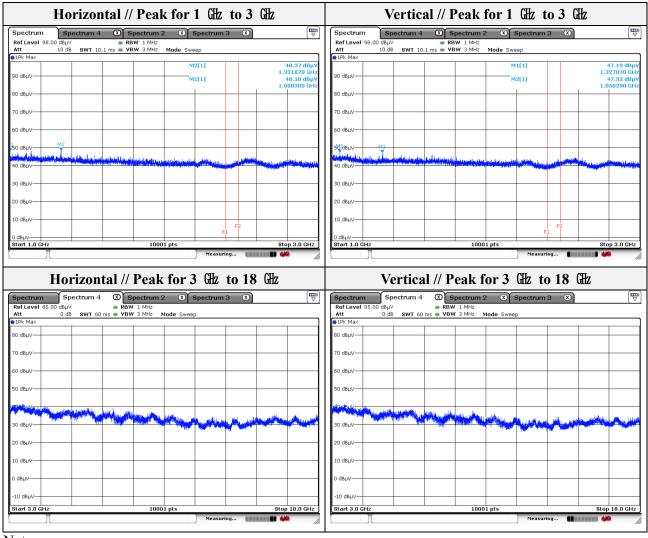
Test report No .: KES-RF-23T0069 Page (27) of (45)

Mode:	802.11g (6 Mbps)
Channel	06

~ . 06

Distance of measurement: 3 meter

Frequency (Mz)	Level (dBµV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
1 000.30	48.10	Peak	Н	-9.97	-	38.13	74.00	35.87
1 050.29	47.33	Peak	V	-9.64	-	37.69	74.00	36.31
1 327.07	47.19	Peak	V	-7.58	-	39.61	74.00	34.39
1 331.87	48.37	Peak	Н	-7.54	-	40.83	74.00	33.17



Note.

1. No spurious emission were detected above 3 GHz.

2. Average test would be performed if the peak result were greater than the average limit.



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Mode:	802.11g (6 Mbps)
Channel	11

Distance of measurement: 3 meter

- Spurious

Frequency (Mbz)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
1 000.10	48.04	Peak	Н	-9.97	-	38.07	74.00	35.93
1 050.29	48.12	Peak	V	-9.64	-	38.48	74.00	35.52
1 328.07	47.60	Peak	V	-7.57	-	40.03	74.00	33.97
1 331.67	49.41	Peak	Н	-7.54	-	41.87	74.00	32.13

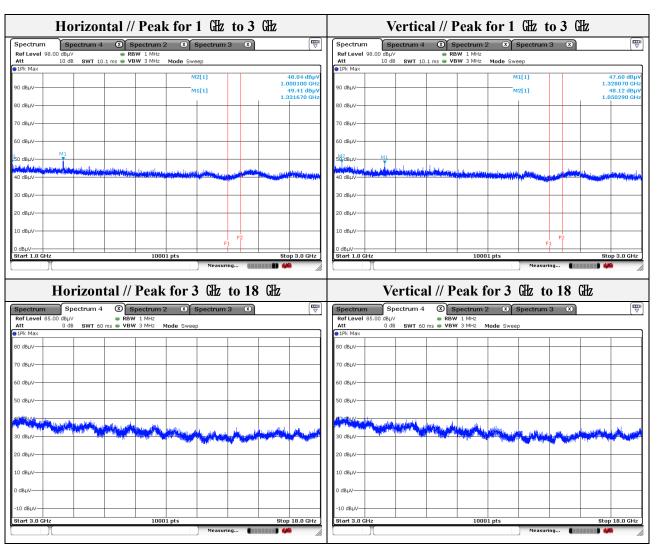
- Band edge

Frequency (Mbz)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
2 488.69	46.17	Peak	V	-1.65	-	45.19	74.00	28.81
2 490.29	46.21	Peak	Н	-1.65	-	44.56	74.00	29.44

Restricted band // Horizontal // Peak	Restricted band // Vertical // Peak
Spectrum Spectrum 4 CD Ref Level 90.00 GB/V 	Imp Spectrum Spectrum 4 Imp Ref Level 90.00 dBµV • RBW 1 MHz • Imp Att 0.dB SWT 10.1 ms • VBW 3 MHz Mode Sween
M1[1] 46. 2.49028	6.21 dBµV
90 dBµV 70 dBµV	
60 dBµV	60 dBµv
50 dBµV	50 dBµ/ H1 40 dBµ/ 141 km
30 dBµV	30 dBµv
20 dBµV	20 dBµV
0 dBµV	
F1 Start 2.462 GHz Stop 2. Versuring Measuring Measuring	2.51 GHz F1 Start 2.462 GHz 10001 pts Stop 2.51 GHz



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Note.

1. No spurious emission were detected above 3 GHz.



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Channel

01

Distance of measurement: 3 meter

Spurious _

Frequency (Mbz)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
1 000.10	47.45	Peak	Н	-9.97	-	37.48	74.00	36.52
1 050.29	47.30	Peak	V	-9.64	-	37.66	74.00	36.34
1 331.87	48.74	Peak	Н	-7.54	-	41.20	74.00	32.80
1 333.07	47.61	Peak	V	-7.53	-	40.08	74.00	33.92

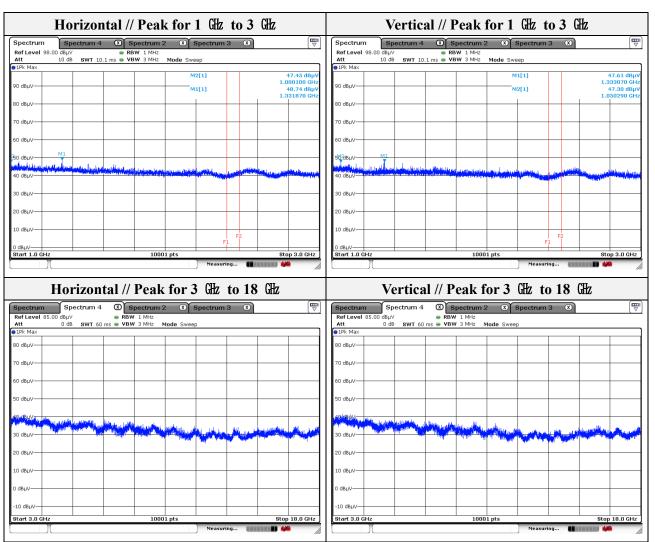
Band edge

Frequency (Mb)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
2 358.11	44.90	Peak	V	-1.87	-	43.03	74.00	30.97
2 377.46	44.07	Peak	Н	-1.87	-	42.20	74.00	31.80

Restricted band // Horizo	ontal // Peak	Restricted band // Vertical // Peak
Spectrum Spectrum 4 🛞		Spectrum Spectrum 4 🛞
Ref Level 88.00 dBµV ■ RBW 1 MHz Att 0 dB SWT 10.1 ms VBW 3 MHz Mode Sweep		Ref Level 88.00 dBµV ■ RBW 1 MHz Att 0 dB SWT 10.1 ms ■ VBW 3 MHz Mode Sweep
Pk Max		1Pk Max
M1[1]	2 2774520120	80 dBuV 80 dBu
70 dBµV		70 dBµV-
60 dBµV		60 dBµV
50 dBµV	MJ	
30 dBµV		30 dBµV
20 dBµV		20 dBµV-
10 dBµV		10 dBµV-
0 dBµV	F2	0 d8µV
-10 dBµV	Stop 2.412 GHz	F1 -10 dBµV Start 2,3 GHz 10001 pts Stop 2.412 GH2
	Measuring	Start 2.5 Grz 10001 pts Start 2.5 Grz Measuring Measuring ##



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Note.

1. No spurious emission were detected above 3 GHz.



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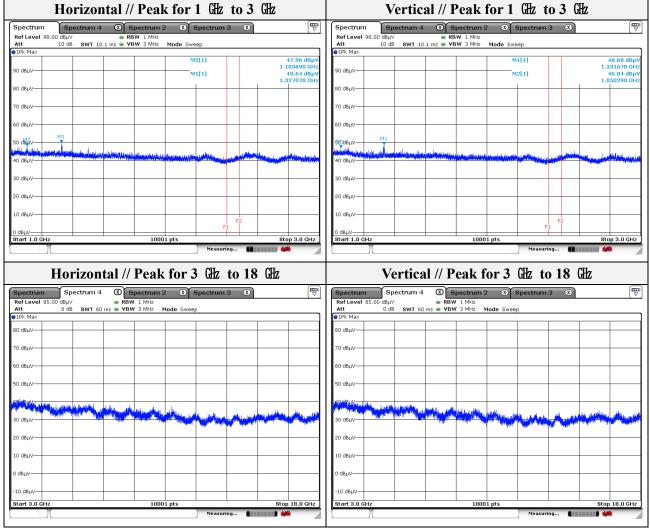
Channel

06

Distance of measurement: 3 meter

|--|

Frequency (Mbz)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
1 050.29	46.84	Peak	V	-9.64	-	37.20	74.00	36.80
1 103.69	47.96	Peak	Н	-9.28	-	38.68	74.00	35.32
1 327.07	49.64	Peak	Н	-7.58	-	42.06	74.00	31.94
1 331.67	48.68	Peak	V	-7.54	-	41.14	74.00	32.86



Note.

1. No spurious emission were detected above 3 GHz.

2. Average test would be performed if the peak result were greater than the average limit.

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Mode:	802.11n_HT20 (MCS0)
Channel	11

Distance of measurement: 3 meter

- Spurious

Frequency (Mz)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
1 000.10	47.70	Peak	Н	-9.97	-	37.73	74.00	36.27
1 050.29	47.07	Peak	V	-9.64	-	37.43	74.00	36.57
1 330.27	49.05	Peak	V	-7.55	-	41.50	74.00	32.50
1 332.67	48.71	Peak	Н	-7.53	-	41.18	74.00	32.82

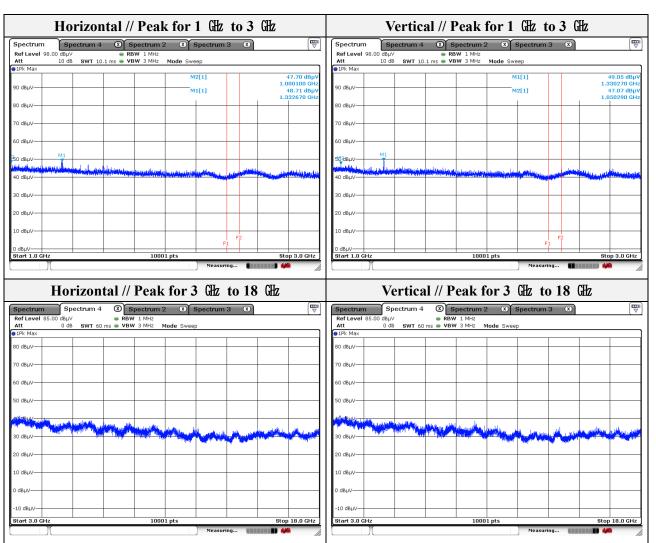
- Band edge

Frequency (Mb)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
2 489.35	47.00	Peak	V	-1.65	-	46.02	74.00	27.98
2 489.61	46.44	Peak	Н	-1.65	-	44.79	74.00	29.21

Spectrum Spectrum 4	×		E	Spectrum	Spectrum 4	×				ſ
Ref Level 96.00 dBµ∀	RBW 1 MHz		(*)	Ref Level 9	91.00 dBµ∨	RBW	1 MHz			(
	1 ms 🖷 VBW 3 MHz 🛛 Md	ode Sweep		Att	0 dB SWT 1	0.1 ms 👄 VBW	3 MHz	Mode Sweep		
1Pk Max		M1[1]	46.44 dBuV	1Pk Max	- and the second se		-	M1[1]		47.00 dB
Capp		MILI	2.48960830 GHz					MILLI		2.48934920 G
				80 dBµV	\		_		I II	
) dBµV					N					
				70 dBµV	<u>\</u>		_			
) dBµV										
				60 dBµV	V	+ +				
I dBµV										
				50 dBµV		and the second of		M1		
O dBµV	Au	M1				and the second sec	Not the second			and the second se
	line in the second second second second second	and the second second second second second	la de une a la collecte de la la la collecte de la collecte	40 dBµV						
0 dBµV										
10 dBuV				30 dBµV						
IO OBDV				20 dBuV						
0 dBuV				20 UBUV						
o dopy				10 dBuV						
LO dBuV										
			F2	0 dBuV					F2	
I dBµV	F1						F1		'Ì	
Start 2.462 GHz	10001 pt		Stop 2.51 GHz	Start 2.462	011-		1000	1 ptc		Stop 2.51 GH



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Note.

1. No spurious emission were detected above 3 GHz.



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Channel

03

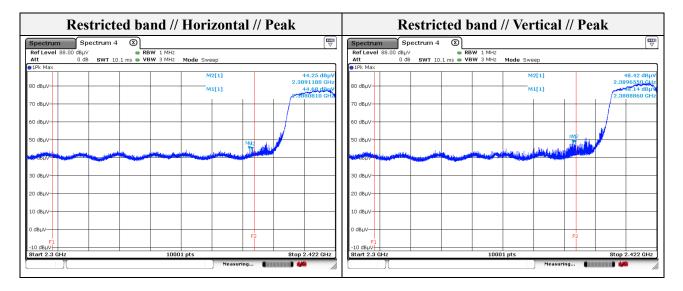
Distance of measurement: 3 meter

-	Spurious	

Frequency (Mbz)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
1 000.10	49.21	Peak	Н	-9.97	-	39.24	74.00	34.76
1 050.29	47.82	Peak	V	-9.64	-	38.18	74.00	35.82
1 328.47	48.72	Peak	V	-7.57	-	41.15	74.00	32.85
1 330.47	49.51	Peak	Н	-7.55	-	41.96	74.00	32.04

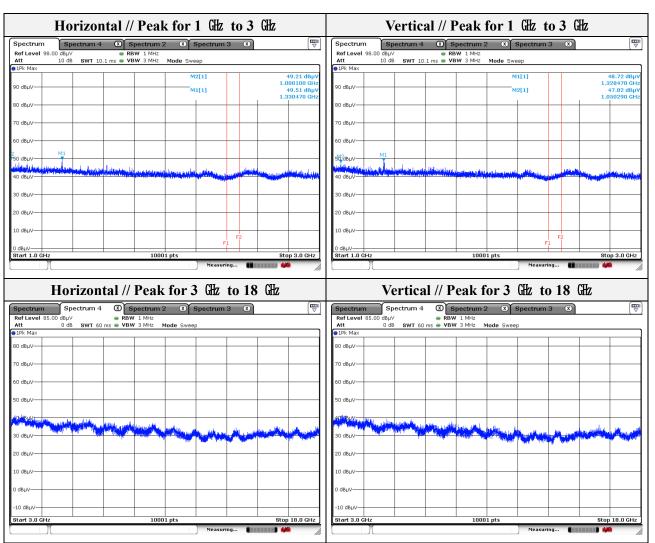
Band edge

Frequency (Mb)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
2 388.08	44.68	Peak	Н	-1.86	-	42.82	74.00	31.18
2 388.89	48.14	Peak	V	-1.86	-	46.28	74.00	27.72
2 389.12	44.25	Peak	Н	-1.86	-	42.39	74.00	31.61
2 389.66	48.42	Peak	V	-1.86	-	46.56	74.00	27.44





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Note.

1. No spurious emission were detected above 3 GHz.



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Mode: 802.11n_HT40 (MCS0)

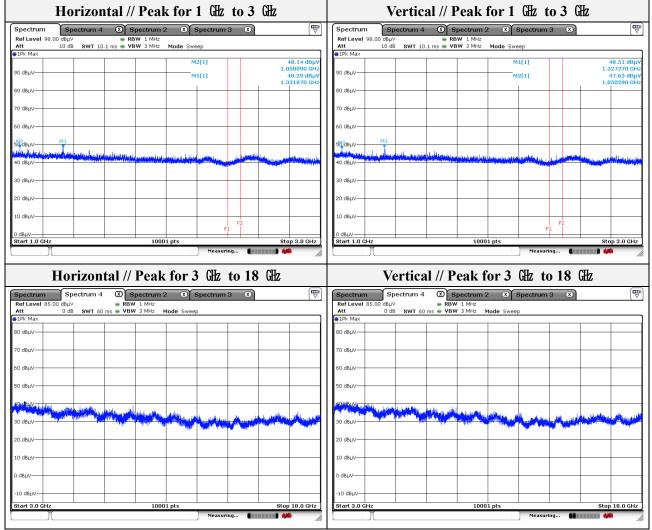
Channel

06

Distance of measurement: 3 meter

- Spurious	5
------------	---

Frequency (Mbz)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
1 050.09	48.14	Peak	Н	-9.64	-	38.50	74.00	35.50
1 050.29	47.63	Peak	V	-9.64	-	37.99	74.00	36.01
1 327.27	48.51	Peak	V	-7.58	-	40.93	74.00	33.07
1 331.87	48.29	Peak	Н	-7.54	-	40.75	74.00	33.25



Note.

1. No spurious emission were detected above 3 GHz.

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Mode:	802.11n_HT40 (MCS0)		
Channel	09		

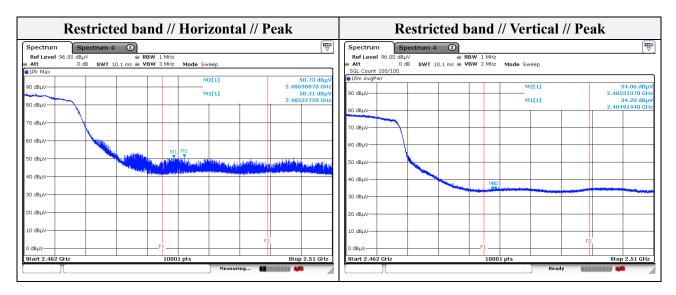
Distance of measurement: 3 meter

- Spurious

Frequency (Mz)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
1 000.30	48.65	Peak	Н	-9.97	-	38.68	74.00	35.32
1 050.29	47.95	Peak	V	-9.64	-	38.31	74.00	35.69
1 327.27	49.56	Peak	V	-7.58	-	41.98	74.00	32.02
1 328.07	49.83	Peak	Н	-7.57	-	42.26	74.00	31.74

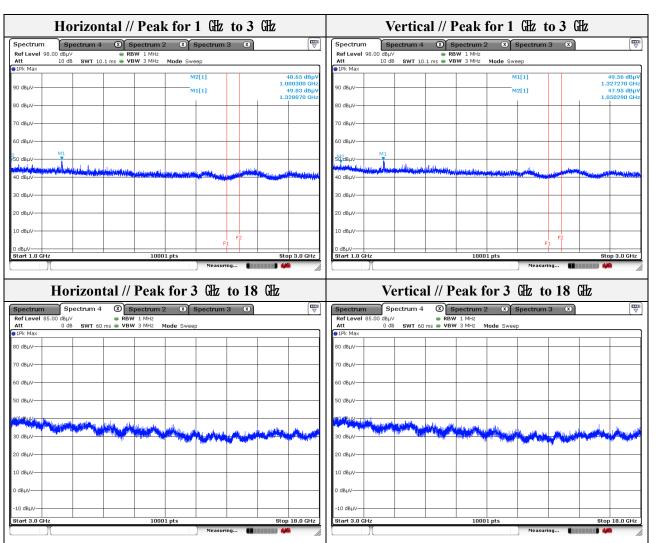
- Band edge

Frequency (Mb)	Level (dBµN)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBµV/m)	Limit (dBµN/m)	Margin (dB)
2 484.91	55.10	Peak	V	-1.66	-	53.44	74.00	20.56
2 485.31	54.89	Peak	V	-1.66	-	53.23	74.00	20.77
2 485.33	50.31	Peak	Н	-1.66	-	48.65	74.00	25.35
2 486.99	50.73	Peak	Н	-1.65	-	49.08	74.00	24.92





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Note.

1. No spurious emission were detected above 3 GHz.



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Test results (18 GHz to 30	GHz)
Mode:	802.11b (1 Mbps)
Channel	01 (Worst case)

Distance of measurement: 3 meter

Horizontal	Vertical
	Spectrum Spectrum 4 S Spectrum 2 S Spectrum 3 S
Ref Level 85.00 dBµV ● RBW 1 MHz Att 0 dB SWT 48 ms ● VBW 3 MHz Mode Sweep	RefLevel 85.00 dBµV ● RBW 1 MHz Att 0 dB SWT 48 ms ● VBW 3 MHz Mode Sweep
1Pk Max	P1Pk Max
80 dBµV	80 dBµV
70 d8µV	70 d8µv
60 d8µV	60 dBµV
50 d8µV	50 dBµV
40 d8µV	40 dBµV
	20 dBµV
10 dBuV	10 dBuV
0 d8µV	0 deµv
-10 dBµV	-10 dBµV
Start 18.0 GHz 10001 pts Stop 30.0 G	Start 18.0 GHz 10001 pts Stop 30.0 GHz
Measuring 🗰	Measuring

Note.

1. No spurious emission were detected above 18 GHz.



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3.3. AC conducted emissions

Limit

According to 15.207(a), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50uH/50 ohm line impedance stabilization network (LISN). Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequencies ranges.

Frequency of Emission (MR)	Conducted limit (dBµN)			
Frequency of Emission (Mz)	Quasi-peak	Average		
0.15 - 0.50	66 - 56*	56 - 46*		
0.50 - 5.00	56	46		
5.00 - 30.0	60	50		

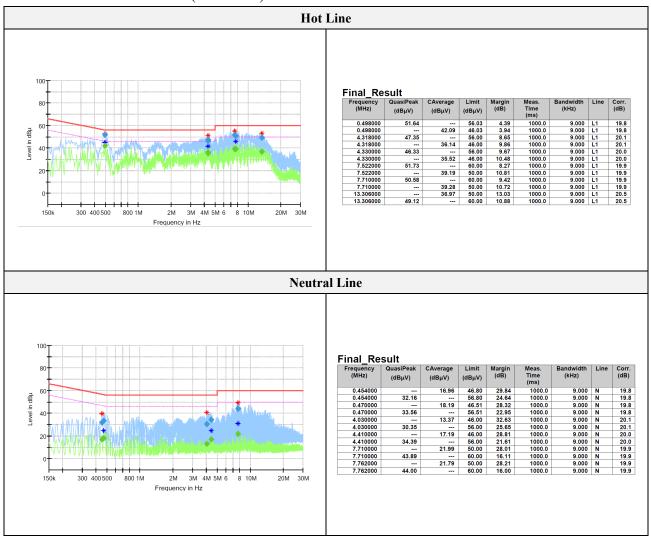


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Test results Mode:

Channel

802.11b (1 Mbps) 01 (Worst case)





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3.4. Antenna Requirement

According to 15.207(a), 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. 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.



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Appendix A. Measurement equipment

Equipment	Manufacturer	Model	Serial No.	Calibration interval	Calibration due.
Spectrum analyzer	R&S	FSV3044	101272	1 year	2024.03.16
Spectrum analyzer	R&S	FSV40	101725	1 year	2023.06.16
MXG Vector SIGNAL GENERATOR	Agilent	N5182A	MY50143829	1 year	2024.01.12
SIGNAL GENERATOR	Anritsu	68369B	002118	1 year	2023.05.13 2024.05.12
BAND REJECT FILTER	MICRO-TRONICS	BRM50702	G272	1 year	2024.01.12
BAND REJECT FILTER	MICRO-TRONICS	BRM50716	G199	1 year	2024.01.12
Attenuator	Mini-Circuits	BW-S10-2W263+	3	1 year	2024.01.13
Attenuator	HUBER+SUHNER	6806.17.A	-	1 year	2024.03.21
Power Meter	Anritsu	ML2495A	2010001	1 year	2023.04.27 2024.04.19
Pulse Power Sensor	Anritsu	MA2411B	1911111	1 year	2023.04.27 2024.04.18
Loop Antenna	Schwarzbeck	FMZB1513	1513-257	2 years	2025.01.16
BILOG ANTENNA	Schwarzbeck	VULB 9168	9168-461	2 years	2024.04.27
Horn Antenna	A.H	SAS-571	414	1 year	2024.01.16
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA 9170550	1 year	2024.01.16
Amplifier	SONOMA INSTRUMENT	310N	401123	1 year	2023.06.02
PREAMPLIFIER	HP	8449B	3008A00538	1 year	2023.06.02
BROADBAND AMPLIFIER	SCHWARZBECK	BBV9721	PS9721-003	1 year	2024.01.16
DC POWER SUPPLY	SORENSEN	DCS40-75E	1408A02745	1 year	2024.01.12
EMI Test Receiver	R&S	ESU26	100517	1 year	2023.08.01
EMI Test Receiver	R&S	ESR3	101783	1 year	2023.11.11
PULSE LIMITER	R&S	ESH2-Z2	101915	1 year	2023.11.10
LISN	R&S	ENV216	101787	1 year	2023.11.10

Peripheral devices

Device	Manufacturer	Model No.	Serial No.	
Notebook computer LG Electronics Inc.,		LGS53	306QCZP560949	



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Appendix B. Test setup photos



The end of test report.

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