RF EXPOSURE EVALUATION REPORT

FCC ID	:	**PY322300575**
Equipment	:	**Netgear 5G MHS Travel Router**
Brand Name	:	**Netgear**
Model Name	:	**MR6550**
Applicant	:	**Netgear Inc. 350 E. Plumeria Drive, San Jose, CA 95134, United States**
Standard	:	**47 CFR Part 2.1091**

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part 1.1310, 1.1307 and Part 2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

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Cona Huang

Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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History of this test report

Report No.	Version	Description	Issued Date
FA190614-06D	Rev. 01	Initial issue of report	Nov. 01, 2022

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Netgear 5G MHS Travel Router
Brand Name	Netgear
Model Name	MR6550
FCC ID	PY322300575
Wireless Technology and Frequency Range	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz 5G NR n260: 37GHz ~ 40GHz 5G NR n261: 27.5GHz ~ 28.35GHz WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2 GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3 GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6 GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8 GHz Band: 5725 MHz ~ 5850 MHz WLAN 6E: 5925 MHz ~ 6425 MHz, 6425 MHz ~ 6525 MHz, 6525 MHz ~ 6875 MHz, 6875 MHz ~ 7125 MHz
Mode	LTE: QPSK, 16QAM, 64QAM, 256QAM 5G FR1: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM WLAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160
EUT Stage	Identical Prototype

Reviewed by: Jason Wang

Report Producer: Carlie Tsai

2. Maximum RF average output power among production units

Radio Tech	Band Number	Antenna name	Maximum Transmit Power Level_Pmax (dBm)
LTE	B2	ANT1	23.5
LTE	B5	ANT1	24
LTE	B12	ANT1	24
LTE	B13	ANT1	24
LTE	B14	ANT1	24
LTE	B26	ANT1	24
LTE	B48	ANT1	23
LTE	B66	ANT1	24
LTE	B71	ANT1	24
5G FR1	N2	ANT1	23.5
5G FR1	N5	ANT1	24
5G FR1	N12	ANT1	24
5G FR1	N14	ANT1	24
5G FR1	N25	ANT1	24
5G FR1	N48	ANT1	23
5G FR1	N66	ANT1	24
5G FR1	N71	ANT1	24
5G FR1	N77	ANT1	23
5G FR1	N77_HPUE	ANT1	26
LTE	B2	ANT2	24
LTE	B7	ANT2	23.5
LTE	B25	ANT2	24
LTE	B30	ANT2	23
LTE	B41	ANT2	24
LTE	B4/66	ANT2	24
5G FR1	N2	ANT2	24
5G FR1	N5	ANT2	24
5G FR1	N25	ANT2	24
5G FR1	N30	ANT2	23
5G FR1	N41	ANT2	23.5
5G FR1	N48	ANT2	23
5G FR1	N66	ANT2	24
5G FR1	N77	ANT2	23
5G FR1	N77_HPUE	ANT2	26
5G FR1	N77	ANT5	21.5
5G FR1	N77_HPUE	ANT5	26
5G FR1	N77	ANT6	20.5
5G FR1	N77_HPUE	ANT6	26

FR2	Maximum EIRP power(dBm)	
	n260	32.63
	n261	30.55

Mode		Maximum Average Power (dBm)	
		Ant 3	Ant 4
WLAN	WLAN 2.4GHz	20	20
	WLAN 5GHz	18	18
	WLAN 6GHz	16.5	16.5

3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:
S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Band	Transmit Antenna	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
LTE Band 2	1	0.67	23.50	24.17	0.26	261.22	0.052	1.000	0.052
LTE Band 5	1	-0.88	24.00	23.12	0.21	205.12	0.041	0.549	0.074
LTE Band 12	1	-0.83	24.00	23.17	0.21	207.49	0.041	0.466	0.089
LTE Band 13	1	-0.83	24.00	23.17	0.21	207.49	0.041	0.518	0.080
LTE Band 14	1	-0.83	24.00	23.17	0.21	207.49	0.041	0.525	0.079
LTE Band 26	1	-0.88	24.00	23.12	0.21	205.12	0.041	0.543	0.075
LTE Band 48	1	0.17	23.00	23.17	0.21	207.49	0.041	1.000	0.041
LTE Band 66	1	0.67	24.00	24.67	0.29	293.09	0.058	1.000	0.058
LTE Band 71	1	-0.83	24.00	23.17	0.21	207.49	0.041	0.442	0.093
n2	1	0.67	23.50	24.17	0.26	261.22	0.052	1.000	0.052
n5	1	-0.88	24.00	23.12	0.21	205.12	0.041	0.549	0.074
n12	1	-0.83	24.00	23.17	0.21	207.49	0.041	0.466	0.089
n14	1	-0.83	24.00	23.17	0.21	207.49	0.041	0.525	0.079
n25	1	0.67	24.00	24.67	0.29	293.09	0.058	1.000	0.058
n48	1	0.17	23.00	23.17	0.21	207.49	0.041	1.000	0.041
n66	1	0.67	24.00	24.67	0.29	293.09	0.058	1.000	0.058
n71	1	-0.83	24.00	23.17	0.21	207.49	0.041	0.442	0.093
n77	1	0.17	26.00	26.17	0.41	414.00	0.082	1.000	0.082
LTE Band 2	2	0.45	24.00	24.45	0.28	278.61	0.055	1.000	0.055
LTE Band 7	2	-0.53	23.50	22.97	0.20	198.15	0.039	1.000	0.039
LTE Band 25	2	0.45	24.00	24.45	0.28	278.61	0.055	1.000	0.055
LTE Band 30	2	1.05	23.00	24.05	0.25	254.10	0.051	1.000	0.051
LTE Band 41	2	-0.53	24.00	23.47	0.22	222.33	0.044	1.000	0.044
LTE Band 4/66	2	0.54	24.00	24.54	0.28	284.45	0.057	1.000	0.057
n2	2	0.45	24.00	24.45	0.28	278.61	0.055	1.000	0.055
n5	2	-1.60	24.00	22.40	0.17	173.78	0.035	0.549	0.063
n25	2	0.45	24.00	24.45	0.28	278.61	0.055	1.000	0.055
n30	2	1.05	23.00	24.05	0.25	254.10	0.051	1.000	0.051
n41	2	-0.53	23.50	22.97	0.20	198.15	0.039	1.000	0.039
n48	2	0.47	23.00	23.47	0.22	222.33	0.044	1.000	0.044
n66	2	0.54	24.00	24.54	0.28	284.45	0.057	1.000	0.057
n77	2	1.66	26.00	27.66	0.58	583.45	0.116	1.000	0.116
n77(SRS)	5	0.98	26.00	26.98	0.50	498.88	0.099	1.000	0.099
n77(SRS)	6	3.31	26.00	29.31	0.85	853.10	0.170	1.000	0.170
n260	0/1			32.63	1.83	1832.31	0.365	1.000	0.365
n261	0/1			30.55	1.14	1135.01	0.226	1.000	0.226
2.4GHz WLAN	3	2.63	20.00	22.63	0.18	183.23	0.036	1.000	0.036
2.4GHz WLAN	4	2.15	20.00	22.15	0.16	164.06	0.033	1.000	0.033
5GHz WLAN	3	3.29	18.00	21.29	0.13	134.59	0.027	1.000	0.027
5GHz WLAN	4	2.59	18.00	20.59	0.11	114.55	0.023	1.000	0.023
6GHz WLAN	3	3.40	16.50	19.9	0.10	97.72	0.019	1.000	0.019
6GHz WLAN	4	1.54	16.50	18.0	0.06	63.68	0.013	1.000	0.013

4.2. External Antenna Gain

Band	Transmit Antenna	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
LTE Band 2	1	4.00	23.50	27.50	0.56	562.34	0.112	1.000	0.112
LTE Band 5	1	4.00	24.00	28.00	0.63	630.96	0.126	0.549	0.229
LTE Band 12	1	4.00	24.00	28.00	0.63	630.96	0.126	0.466	0.270
LTE Band 13	1	4.00	24.00	28.00	0.63	630.96	0.126	0.518	0.242
LTE Band 14	1	4.00	24.00	28.00	0.63	630.96	0.126	0.525	0.239
LTE Band 26	1	4.00	24.00	28.00	0.63	630.96	0.126	0.543	0.231
LTE Band 48	1	0.17	23.00	23.17	0.21	207.49	0.041	1.000	0.041
LTE Band 66	1	4.00	24.00	28.00	0.63	630.96	0.126	1.000	0.126
LTE Band 71	1	4.00	24.00	28.00	0.63	630.96	0.126	0.442	0.284
n2	1	4.00	23.50	27.50	0.56	562.34	0.112	1.000	0.112
n5	1	4.00	24.00	28.00	0.63	630.96	0.126	0.549	0.229
n12	1	4.00	24.00	28.00	0.63	630.96	0.126	0.466	0.270
n14	1	4.00	24.00	28.00	0.63	630.96	0.126	0.525	0.239
n25	1	4.00	24.00	28.00	0.63	630.96	0.126	1.000	0.126
n48	1	0.17	23.00	23.17	0.21	207.49	0.041	1.000	0.041
n66	1	4.00	24.00	28.00	0.63	630.96	0.126	1.000	0.126
n71	1	4.00	24.00	28.00	0.63	630.96	0.126	0.442	0.284
n77	1	4.00	26.00	30.00	1.00	1000.00	0.199	1.000	0.199
LTE Band 2	2	4.00	24.00	28.00	0.63	630.96	0.126	1.000	0.126
LTE Band 7	2	4.00	23.50	27.50	0.56	562.34	0.112	1.000	0.112
LTE Band 25	2	4.00	24.00	28.00	0.63	630.96	0.126	1.000	0.126
LTE Band 30	2	1.05	23.00	24.05	0.25	254.10	0.051	1.000	0.051
LTE Band 41	2	4.00	24.00	28.00	0.63	630.96	0.126	1.000	0.126
LTE Band 4/66	2	4.00	24.00	28.00	0.63	630.96	0.126	1.000	0.126
n2	2	4.00	24.00	28.00	0.63	630.96	0.126	1.000	0.126
n5	2	4.00	24.00	28.00	0.63	630.96	0.126	0.549	0.229
n25	2	4.00	24.00	28.00	0.63	630.96	0.126	1.000	0.126
n30	2	1.05	23.00	24.05	0.25	254.10	0.051	1.000	0.051
n41	2	4.00	23.50	27.50	0.56	562.34	0.112	1.000	0.112
n48	2	0.17	23.00	23.17	0.21	207.49	0.041	1.000	0.041
n66	2	4.00	24.00	28.00	0.63	630.96	0.126	1.000	0.126
n77	2	4.00	26.00	30.00	1.00	1000.00	0.199	1.000	0.199
n77(SRS)	5	4.00	26.00	30.00	1.00	1000.00	0.199	1.000	0.199
n77(SRS)	6	4.00	26.00	30.00	1.00	1000.00	0.199	1.000	0.199
n260	0/1			32.63	1.83	1832.31	0.365	1.000	0.365
n261	0/1			30.55	1.14	1135.01	0.226	1.000	0.226
2.4GHz WLAN	3	2.63	20.00	22.63	0.18	183.23	0.036	1.000	0.036
2.4GHz WLAN	4	2.15	20.00	22.15	0.16	164.06	0.033	1.000	0.033
5GHz WLAN	3	3.29	18.00	21.29	0.13	134.59	0.027	1.000	0.027
5GHz WLAN	4	2.59	18.00	20.59	0.11	114.55	0.023	1.000	0.023
6GHz WLAN	3	3.40	16.50	19.9	0.10	97.72	0.019	1.000	0.019
6GHz WLAN	4	1.54	16.50	18.0	0.06	63.68	0.013	1.000	0.013

4.3. Sim-Tx analysis

Exposure condition	NO.	Simultaneous Transmission Configurations	Support
Body condition	1	WWAN + 2.4GHz Ant3 + 2.4GHz Ant4	V
	2	WWAN + 5GHz Ant3 + 5GHz Ant4	V
	3	WWAN + 2.4GHz Ant3 + 5GHz Ant4	V
	4	WWAN + 2.4GHz Ant4 + 5GHz Ant3	V
	5	LTE + FR1 + 2.4GHz Ant3 + 2.4GHz Ant4	V
	6	LTE + FR1+ 5GHz Ant3 + 5GHz Ant4	V
	7	LTE + FR1+ 2.4GHz Ant3 + 5GHz Ant4	V
	8	LTE + FR1+ 2.4GHz Ant4 + 5GHz Ant3	V
	9	LTE + FR2 + 2.4GHz Ant3 + 2.4GHz Ant4	V
	10	LTE + FR2 + 5GHz Ant3 + 5GHz Ant4	V
	11	LTE + FR2+ 2.4GHz Ant3 + 5GHz Ant4	V
	12	LTE + FR2+ 2.4GHz Ant4 + 5GHz Ant3	V
	13(1)	WWAN + 6GHz Ant3 + 6GHz Ant4	V
	14(1)	WWAN + 2.4GHz Ant3 + 6GHz Ant4	V
	15(1)	WWAN + 2.4GHz Ant4 + 6GHz Ant3	V
	16(1)	LTE + FR1+ 6GHz Ant3 + 6GHz Ant4	V
	17(1)	LTE + FR1+ 2.4GHz Ant3 + 6GHz Ant4	V
	18(1)	LTE + FR1+ 2.4GHz Ant4 + 6GHz Ant3	V
	19(1)	LTE + FR2 + 2.4GHz Ant3 + 2.4GHz Ant4	V
	20(1)	LTE + FR2 + 6GHz Ant3 + 6GHz Ant4	V
	21(1)	LTE + FR2+ 2.4GHz Ant3 + 6GHz Ant4	V
	22(1)	LTE + FR2+ 2.4GHz Ant4 + 6GHz Ant3	V
	23(3)	2.4GHz Ant3 (client) + 5GHz Ant4(AP)	V
	24(3)	5GHz Ant3 (Client) + 2.4GHz Ant4 (AP)	V
	25(2,3)	6GHz Ant3 (Client) + 2.4GHz Ant4 (AP)	V

Maximum WWAN Power Density / Limit	Maximum WLAN Ant3 Power Density / Limit	Maximum WLAN Ant4 Power Density / Limit	∑(Power Density / Limit) of LTE + WLAN Ant3 + WLAN Ant4
0.365	0.036	0.033	0.434

Note:

1. WiFi 6E AP mode is enabled only when it's connected to AC mains, the compliance is justified in MPE test report.
2. When device is connected to the PC, 2.4GHz and 6GHz simultaneous transmission is possible while the device supports AP mode in 2.4GHz and client mode in WiFi 6E.
3. When the device connects to the PC and enable WiFi to offload WWAN traffics, WiFi 2.4GHz/5GHz/6GHz at antenna 3 acts as the client, and WiFi 2.4GHz/5GHz at antenna 4 acts as the AP.
4. ∑(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)].
5. In simultaneous transmission for this device, 5G NR and LTE transmission are managed and controlled by Qualcomm® Smart Transmit, while the RF exposure from WLAN radios is managed using legacy approach, therefore simultaneous transmission compliance can be assessed on LTE+ WLAN Ant 3 + WLAN Ant 4 or NR + WLAN Ant 3 + WLAN Ant 4.
6. Considering all of the EIRP performance listed in the table above was consider wrost antenna combination for WWAN + WLAN Ant 3 + WLAN ant 4, the aggregated (power density /limit) is smaller than 1.

Conclusion:

According to 47 CFR §1.1307, the RF exposure analysis concludes that the RF Exposure is FCC compliant.