FCC ID : 2AL9D-SR3000

1. RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b).

Limits for Maximum Permissible Exposure (MPE).

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm^2)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	**--**	**--**	**F/300**	**6**
1500-100000	**--**	**--**	**5**	**6**
(B) Limits for General Population/Uncontrol Exposures				
300-1500	**--**	**--**	**F/1500**	**6**
1500-100000	**--**	**--**	**1**	**30**

Friis transmission formula: Pd= (Pout*G)\ ($4*pi*R^2$)

Where

Pd= Power density in mW/cm^2.

Pout=output power to antenna in mW.

G= Numeric gain of the antenna relative to isotropic antenna.

Pi=3.1416.

R= distance between observation point and center of the radiator in 20cm.

Pd the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the nd total. power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

2. EUT TECHNICAL DESCRIPTION

Characteristics	Description
Product	Wireless Router
Model Number	SR3000, SR3000-lite, SR3000-5G, SR3000-5G-lite (Note: All models are identical in circuitry and electrical, mechanical and physical construction; the difference are appearance and model for trading purpose.Mode SR3000 was Chosen final test.)
Power Supply	DC 12V from Adapter
Temperature Range	0°C ~ +50°C
Adapter:	Model:GQ24-120200-AX Input: AC100-240V, 50Hz/60Hz 1.0A Max. Ooutput:12.0V, 2.0A, 24.0W
Testing Voltage	AC 120V/60Hz

IEEE 802.11 WLAN Mode Supported	802.11b 802.11g 802.11n/ax(20MHz channel bandwidth) 802.11n/ax(40MHz channel bandwidth)
Modulation	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n; OFDM with BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM for 802.11ax;
Operating Frequency Range	2412-2462MHz for 802.11b/g/n(HT20)/ax(HE20); 2422-2452MHz for 802.11n(HT40)/ax(HE40);
Number of Channels	11 channels for 802.11b/g/n(HT20)/ax(HE20); 7 Channels for 802.11n(HT40)/ax(HE40);
Antenna Type	PCB Antenna
Antenna Gain	Antenna 1: 4.9 dBi Antenna 2: 2.8 dBi

Wifi Type	Wifi 5G with 5150MHz-5250MHz Band Wifi 5G with 5250MHz-5350MHz Band Wifi 5G with 5470MHz-5725MHz Band Wifi 5G with 5725MHz-5850MHz Band
WLAN Supported	802.11a/n/ac/ax
Data Rate :	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: MCS0-MCS15 802.11ac: MCS0-MCS9 802.11ax: MCS0-MCS11
Modulation:	OFDM with BPSK/QPSK/16QAM/64QAM for 802.11a/n OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11ac OFDM with BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM for 802.11ax
Frequency Range:	UNII-1: 5150MHz-5250MHz Band 5180-5240MHz for 802.11a/n(HT20)/ac(VHT20)/ax(HE20) 5190-5230MHz for 802.11n(HT40)/ac(VHT40)/ax(HE40)

	5210MHz for 802.11ac(VHT80)/ax(HE80)
	UNII-2A: 5250MHz-5350MHz Band 5260-5320MHz for 802.11a/n(HT20)/ac(VHT20)/ax(HE20) 5270-5310MHz for 802.11n(HT40)/ac(VHT40)/ax(HE40) 5290MHz for 802.11ac(VHT80)/ax(HE80) 5250MHz for 802.11ac(VHT160)/ax(HE160)
	UNII-2C: 5470MHz-5725MHz Band 5500-5700MHz for 802.11a/n(HT20)/ac(VHT20)/ax(HE20) 5510-5670MHz for 802.11n(HT40)/ac(VHT40)/ax(HE40) 5530MHz for 802.11ac(VHT80)/ax(HE80) 5570MHz for 802.11ac(VHT160)/ax(HE160)
	UNII-3 with 5725MHz-5850MHz Band 5745-5825MHz for 802.11a/n(HT20)/ac(VHT20)/ax(HE20) 5755-5795MHz for 802.11n(HT40)/ac(VHT40)/ax(HE40) 5775MHz for 802.11ac(VHT80)/ax(HE80);
TPC Function	Not Applicable
Antenna Type	PCB Antenna
Antenna Gain	ANT 3: 5.20 dBi ANT 4: 5.00 dBi

3. Measurement Result

Below mode can transmit simultaneously.

Mode	Max Conducted Power (dBm)	Antenna gain (dBi)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
2.4G WIFI	16.84	4.9	3.09	0.02970	1
5G WIFI	18.73	5.2	3.31	0.04917	1

Max RF Exposure evaluation.

WIFI2.4G (mW/cm2)	WIFI5G (mW/cm2)	Summation of Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
0.02970	0.04917	0.07887	1

Note: All the modes are tested, only the worst data are described in the table.

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