



Maximum Permissible Exposure Evaluation

FCC ID: 2AW68-NE6037

1. Client Information

Applicant	:	Shenzhen SDMC Technology Co., Ltd.
Address	:	Room 1022, Floor 10, Building A, Customs Building, No. 2, Xin'an 3rd Road, Dalang Community, Xin'an Street, Bao'an District, Shenzhen, China
Manufacturer	:	Shenzhen SDMC Technology Co., Ltd.
Address	:	Room 1022, Floor 10, Building A, Customs Building, No. 2, Xin'an 3rd Road, Dalang Community, Xin'an Street, Bao'an District, Shenzhen, China

2. General Description of EUT

EUT Name	:	DOCSIS 3.1 Cable Modem DOCSIS 3.1 EMTA AX6000 DOCSIS 3.1 Cable Modem
Models No.	:	NE6037, NE6037W, NE6037A, NE6037B
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, And the product has two structures, which are identical except for the network port and IC FU1. One uses 2.5G network port and the other uses 1G network port. And difference is model name and product name.
Brand Name	:	SDMC
Sample ID	:	202301-0038-4-2#
Operation Frequency	:	U-NII-1: 5180MHz~5240MHz; U-NII-2A: 5250MHz~5320MHz U-NII-2C: 5500MHz~5720MHz; U-NII-3: 5745MHz~5825MHz 2.4G Wi-Fi: 2412MHz~2462MHz
Modulation Type:	:	802.11a: OFDM (QPSK, BPSK, 16QAM, 64QAM) 802.11b: DSSS (DQPSK, DBPSK, CCK) 802.11g: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11n: OFDM (QPSK, BPSK, 16QAM, 64QAM) 802.11ac: OFDM (QPSK, BPSK, 16QAM, 64QAM, 256QAM) 802.11ax: OFDMA (QPSK, BPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Power Rating	:	AC Adapter (Model:F42L1-120350SPAU(FRECOM)) Input: 100-240V~50/60Hz 1.4A Output: 12.0V=3.5A 42.0W
Software Version	:	7.6.1.0.2
Hardware Version	:	150.11
Remark:		
(1) The adapter provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.		
(2) Antenna information from antenna specification.		

Method of Measurement for FCC

1. Max. Antenna Gain:

Band	Antenna Type	Antenna Gain(dBi)			
		Ant. 1	Ant. 2	Ant. 3	Ant. 4
2.4G WiFi	PCB	3.98	4.35	4.16	4.24
5G U-NII-1		4.33	4.49	4.56	4.08
5G U-NII-2A		4.12	4.82	4.63	4.04
5G U-NII-2C		4.12	4.82	4.63	4.04
5G U-NII-3		4.24	4.44	4.60	4.24

2. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=(PG)/4\pi R^2$$

Where

S: power density

P: power input to the antenna

G: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna

Simultaneous transmission MPE Considerations

According to KDB447498: All transmitters and antennas in the host must be either evaluated for MPE compliance, by measurement or computational modeling, or qualify for the standalone MPE test exclusion in section 7.1. Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is ≤ 1.0 .

This means that:

$$\sum \text{ of MPE ratios } \leq 1.0$$



4. Test Result:

2.4G Wi-Fi MPE Result									
Test Mode	Ant.	Channel	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm ²) [S]	Limit (mW/ cm ²)
11B	Ant1	2412	25.16	25±1	26	3.98	20	0.1980	1
	Ant2	2412	27.27	27±1	28	4.35	20	0.3418	1
	Ant3	2412	26.85	27±1	28	4.16	20	0.3271	1
	Ant4	2412	27.19	27±1	28	4.24	20	0.3332	1
	Ant1	2437	25.02	25±1	26	3.98	20	0.1980	1
	Ant2	2437	27.02	27±1	28	4.35	20	0.3418	1
	Ant3	2437	26.55	27±1	28	4.16	20	0.3271	1
	Ant4	2437	26.91	27±1	28	4.24	20	0.3332	1
	Ant1	2462	24.40	19±1	19	3.98	20	0.0395	1
	Ant2	2462	25.40	25±1	26	4.35	20	0.2156	1
	Ant3	2462	25.87	25±1	26	4.16	20	0.2064	1
	Ant4	2462	26.58	26±1	27	4.24	20	0.2647	1
11G	Ant1	2412	21.74	21±1	22	3.98	20	0.0788	1
	Ant2	2412	21.64	21±1	22	4.35	20	0.0859	1
	Ant3	2412	21.16	21±1	22	4.16	20	0.0822	1
	Ant4	2412	21.60	21±1	22	4.24	20	0.0837	1
	Ant1	2437	21.30	21±1	22	3.98	20	0.0788	1
	Ant2	2437	21.04	21±1	22	4.35	20	0.0859	1
	Ant3	2437	20.73	21±1	22	4.16	20	0.0822	1
	Ant4	2437	21.47	21±1	22	4.24	20	0.0837	1
	Ant1	2462	21.27	21±1	22	3.98	20	0.0788	1
	Ant2	2462	20.95	21±1	22	4.35	20	0.0859	1
	Ant3	2462	20.48	21±1	22	4.16	20	0.0822	1
	Ant4	2462	21.15	21±1	22	4.24	20	0.0837	1
11N20	Ant1	2412	17.43	17±1	18	3.98	20	0.0314	1
	Ant2	2412	17.46	17±1	18	4.35	20	0.0342	1
	Ant3	2412	19.03	19±1	20	4.16	20	0.0518	1
	Ant4	2412	17.83	17±1	18	4.24	20	0.0333	1
	Ant1	2437	16.94	17±1	18	3.98	20	0.0314	1
	Ant2	2437	16.99	17±1	18	4.35	20	0.0342	1
	Ant3	2437	18.55	18±1	19	4.16	20	0.0412	1
	Ant4	2437	17.57	17±1	18	4.24	20	0.0333	1
	Ant1	2462	16.60	17±1	18	3.98	20	0.0314	1
	Ant2	2462	16.58	17±1	18	4.35	20	0.0342	1
	Ant3	2462	18.40	18±1	19	4.16	20	0.0412	1
	Ant4	2462	17.22	17±1	18	4.24	20	0.0333	1
11N40	Ant1	2422	16.65	17±1	18	3.98	20	0.0314	1
	Ant2	2422	16.05	17±1	18	4.35	20	0.0342	1
	Ant3	2422	17.80	17±1	18	4.16	20	0.0327	1
	Ant4	2422	16.17	17±1	18	4.24	20	0.0333	1
	Ant1	2437	16.52	17±1	18	3.98	20	0.0314	1
	Ant2	2437	16.11	17±1	18	4.35	20	0.0342	1
	Ant3	2437	17.58	17±1	18	4.16	20	0.0327	1
	Ant4	2437	16.04	17±1	18	4.24	20	0.0333	1
	Ant1	2452	16.25	17±1	18	3.98	20	0.0314	1
	Ant2	2452	15.89	15±1	16	4.35	20	0.0216	1
	Ant3	2452	17.33	17±1	18	4.16	20	0.0327	1
	Ant4	2452	15.82	15±1	16	4.24	20	0.0210	1
11AX20	Ant1	2412	17.01	17±1	18	3.98	20	0.0314	1
	Ant2	2412	16.04	17±1	18	4.35	20	0.0342	1
	Ant3	2412	18.27	18±1	19	4.16	20	0.0412	1
	Ant4	2412	16.90	17±1	18	4.24	20	0.0333	1
	Ant1	2437	16.81	17±1	18	3.98	20	0.0314	1
	Ant2	2437	15.99	16±1	17	4.35	20	0.0271	1
	Ant3	2437	17.91	17±1	18	4.16	20	0.0327	1
	Ant4	2437	16.66	17±1	18	4.24	20	0.0333	1
	Ant1	2462	16.54	17±1	18	3.98	20	0.0314	1
	Ant2	2462	15.59	16±1	17	4.35	20	0.0271	1
	Ant3	2462	17.50	17±1	18	4.16	20	0.0327	1
	Ant4	2462	16.34	17±1	18	4.24	20	0.0333	1



11AX40	Ant1	2422	16.91	17±1	18	3.98	20	0.0314	1
	Ant2	2422	16.30	17±1	18	4.35	20	0.0342	1
	Ant3	2422	18.24	18±1	19	4.16	20	0.0412	1
	Ant4	2422	16.41	17±1	18	4.24	20	0.0333	1
	Ant1	2437	16.75	17±1	18	3.98	20	0.0314	1
	Ant2	2437	16.41	17±1	18	4.35	20	0.0342	1
	Ant3	2437	18.01	18±1	19	4.16	20	0.0412	1
	Ant4	2437	16.27	17±1	18	4.24	20	0.0333	1
	Ant1	2452	16.58	17±1	18	3.98	20	0.0314	1
	Ant2	2452	16.19	17±1	18	4.35	20	0.0342	1
	Ant3	2452	17.78	17±1	18	4.16	20	0.0327	1
	Ant4	2452	16.09	17±1	18	4.24	20	0.0333	1



5G Wi-Fi Worst MPE Result								
Test Mode	Antenna	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm)[P]	ANT Gain (dBi)[G]	Distance (cm) [R]	Power Density (mW/ cm ²) [S]	Limit (mW/ cm ²)
5G a	Ant1	25.95	26±1	27	4.24	20	0.2647	1
	Ant2	26.20	26±1	27	4.44	20	0.2772	1
	Ant3	25.68	26±1	27	4.60	20	0.2876	1
	Ant4	25.99	26±1	27	4.24	20	0.2647	1
5G n20	Ant1	17.39	18±1	19	4.33	20	0.0428	1
	Ant2	18.01	18±1	19	4.49	20	0.0444	1
	Ant3	17.75	18±1	19	4.56	20	0.0452	1
	Ant4	17.36	18±1	19	4.08	20	0.0404	1
5G n40	Ant1	17.32	18±1	19	4.33	20	0.0428	1
	Ant2	17.94	18±1	19	4.49	20	0.0444	1
	Ant3	17.73	18±1	19	4.56	20	0.0452	1
	Ant4	17.85	18±1	19	4.08	20	0.0404	1
5G ac20	Ant1	17.32	18±1	19	4.33	20	0.0428	1
	Ant2	18.08	18±1	19	4.49	20	0.0444	1
	Ant3	17.11	18±1	19	4.56	20	0.0452	1
	Ant4	17.47	18±1	19	4.08	20	0.0404	1
5G ac40	Ant1	17.88	18±1	19	4.33	20	0.0428	1
	Ant2	18.46	18±1	19	4.49	20	0.0444	1
	Ant3	18.18	18±1	19	4.56	20	0.0452	1
	Ant4	18.73	18±1	19	4.08	20	0.0404	1
5G ac80	Ant1	18.57	18±1	19	4.24	20	0.0420	1
	Ant2	19.13	19±1	20	4.44	20	0.0553	1
	Ant3	18.48	18±1	19	4.60	20	0.0456	1
	Ant4	18.17	18±1	19	4.24	20	0.0420	1
5G ac160	Ant1	13.51	13±1	14	4.12	20	0.0129	1
	Ant2	13.31	13±1	14	4.82	20	0.0152	1
	Ant3	12.97	13±1	14	4.63	20	0.0145	1
	Ant4	13.80	13±1	14	4.04	20	0.0127	1
5G ax20	Ant1	17.56	18±1	19	4.33	20	0.0428	1
	Ant2	18.25	18±1	19	4.49	20	0.0444	1
	Ant3	18.04	18±1	19	4.56	20	0.0452	1
	Ant4	17.86	18±1	19	4.08	20	0.0404	1
5G ax40 Mode	Ant1	17.87	18±1	19	4.33	20	0.0428	1
	Ant2	18.48	18±1	19	4.49	20	0.0444	1
	Ant3	17.74	18±1	19	4.56	20	0.0452	1
	Ant4	18.27	18±1	19	4.08	20	0.0404	1
5G ax80	Ant1	18.48	18±1	19	4.24	20	0.0420	1
	Ant2	18.62	18±1	19	4.44	20	0.0439	1
	Ant3	18.42	18±1	19	4.60	20	0.0456	1
	Ant4	17.91	18±1	19	4.24	20	0.0420	1
5G ax160	Ant1	13.55	13±1	14	4.12	20	0.0129	1
	Ant2	12.95	13±1	14	4.82	20	0.0152	1
	Ant3	13.01	13±1	14	4.63	20	0.0145	1
	Ant4	13.28	13±1	14	4.04	20	0.0127	1



5. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Power density (mW/ cm ²)
300-1,500	F/1500
1,500-100,000	1.0

For: 2.4G&5G

MPE limit S: 1mW/cm²

The worst MPE is calculated as **0.3418mW / cm² < limit 1mW / cm²**.

6. Summary simultaneous transmission information

Modulation Type	Work Frequency Band	Transmit Antenna				Antenna 1&2&3&4 Synchronization Transmit
		Ant. 1	Ant.2	Ant.3	Ant.4	
IEEE 802.11a	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes	Yes	No
IEEE 802.11b	2.4GHz	Yes	Yes	Yes	Yes	No
IEEE 802.11g	2.4GHz	Yes	Yes	Yes	Yes	No
IEEE 802.11n HT20	2.4GHz	Yes	Yes	Yes	Yes	Yes
IEEE 802.11n HT40	2.4GHz	Yes	Yes	Yes	Yes	Yes
IEEE 802.11ax HE20	2.4GHz	Yes	Yes	Yes	Yes	Yes
IEEE 802.11ax HE40	2.4GHz	Yes	Yes	Yes	Yes	Yes
IEEE 802.11n HT20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes	Yes	Yes
IEEE 802.11n HT40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes	Yes	Yes
IEEE 802.11ac VHT20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes	Yes	Yes
IEEE 802.11ac VHT40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes	Yes	Yes
IEEE 802.11ac VHT80	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes	Yes	Yes
IEEE 802.11ac VHT160	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes	Yes	Yes
IEEE 802.11ax HE20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes	Yes	Yes
IEEE 802.11ax HE40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes	Yes	Yes
IEEE 802.11ax HE80	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes	Yes	Yes
IEEE 802.11ax HE160	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes	Yes	Yes



7. Summary simultaneous transmission results

Antenna 1&2&3&4 for 2.4G WLAN

Modulation Type	MPE Antenna 1 (mW/cm ²)	MPE Antenna 2 (mW/cm ²)	MPE Antenna 3 (mW/cm ²)	MPE Antenna 4 (mW/cm ²)	ΣMPE ratios	Limit	Results
IEEE 802.11b	0.1980	0.3418	0.3271	0.3332	/	1.0	PASS
IEEE 802.11g	0.0788	0.0859	0.0822	0.0837	/	1.0	PASS
IEEE 802.11n HT20	0.0314	0.0342	0.0518	0.0333	0.1507	1.0	PASS
IEEE 802.11n HT40	0.0314	0.0342	0.0327	0.0333	0.1316	1.0	PASS
IEEE 802.11ax HE20	0.0314	0.0342	0.0412	0.0333	0.1401	1.0	PASS
IEEE 802.11ax HE40	0.0314	0.0342	0.0412	0.0333	0.1401	1.0	PASS

Antenna 1&2&3&4 for 5G RLAN

Modulation Type	MPE Antenna 1 (mW/cm ²)	MPE Antenna 2 (mW/cm ²)	MPE Antenna 3 (mW/cm ²)	MPE Antenna 4 (mW/cm ²)	ΣMPE ratios	Limit	Results
IEEE 802.11a	0.2647	0.2772	0.2876	0.2647	/	1.0	PASS
IEEE 802.11n HT20	0.0428	0.0444	0.0452	0.0404	0.1728	1.0	PASS
IEEE 802.11n HT40	0.0428	0.0444	0.0452	0.0404	0.1728	1.0	PASS
IEEE 802.11ac VHT20	0.0428	0.0444	0.0452	0.0404	0.1728	1.0	PASS
IEEE 802.11ac VHT40	0.0428	0.0444	0.0452	0.0404	0.1728	1.0	PASS
IEEE 802.11ac VHT80	0.0428	0.0420	0.0553	0.0404	0.1805	1.0	PASS
IEEE 802.11ac VHT160	0.0129	0.0152	0.0145	0.0127	0.0553	1.0	PASS
IEEE 802.11ax HE20	0.0428	0.0444	0.0452	0.0404	0.1728	1.0	PASS
IEEE 802.11ax HE40	0.0428	0.0444	0.0452	0.0404	0.1728	1.0	PASS
IEEE 802.11ax HE80	0.0420	0.0439	0.0456	0.0420	0.1735	1.0	PASS
IEEE 802.11ax HE160	0.0129	0.0152	0.0145	0.0127	0.0553	1.0	PASS

WiFi support Synchronization transmit the

Maximum MPE ratio 2.4GWiFi	Maximum MPE ratio 5GWiFi	ΣMPE ratios	Limit	Results
0.3418	0.2878	0.6296	1	PASS

So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR 2.1091 (b). The RF Exposure Information page from the manual is included here for reference.

-----END OF REPORT-----

