

Maximum Permissible Exposure Evaluation

FCC ID: 2AW68-NM1217C

1. Client Information

Applicant	:	Shenzhen SDMC Technology Co.,Ltd.
Address	:	19/F, Changhong Technology Building, No.18, Keji South 12th Road, High-tech Industrial Park, Nanshan District, Shenzhen, China, 518022
Manufacturer	:	Shenzhen SDMC Technology Co.,Ltd.
Address	:	19/F, Changhong Technology Building, No.18, Keji South 12th Road, High-tech Industrial Park, Nanshan District, Shenzhen, China, 518022

2. General Description of EUT

EUT Name	:	AC1200 Dual Band Mesh Router Dual Band Whole Home Mesh WiFi System AC1200 Dual Band WiFi Repeater
Models No.	:	NM1217C, DR1200M, DR1202C
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, The only difference is model name, product name and brand name.
Sample ID	:	20210719-04-1#& 20210719-04-2#
Product Description	:	Operation Frequency: 802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz U-NII-1: 5180MHz~5240MHz, U-NII-2A: 5260MHz~5320MHz U-NII-2C: 5500MHz~5700MHz U-NII-3: 5745MHz~5825MHz
Power Rating	:	Adapter 1#(DCT12W120100US-A0): Input: 100-240V~, 50/60Hz, 0.3A Output: DC 12V1.0A Adapter 2#(SA12BV-120100U): Input: 100-240V~, 50/60Hz, 0.4A Output: DC 12V1.0A Adapter 3#(PSA126-120100U): Input: 100-240V~, 50/60Hz, 0.4A Output: DC 12V1.0A
Software Version	:	N/A
Hardware Version	:	N/A

MPE Calculations

1. Antenna Gain:

Antenna	Brand	Model Name	Type	2.4G/5G Antenna Gain(dBi)
ANT. 1	N/A	N/A	PCB	3
ANT. 2	N/A	N/A	PCB	3

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

4. 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:

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

5. Standalone MPE Evaluation:

Mode	Antenna	Channel	Conducted power[dBm]	Turn-up Power Tolerance(dBm)
11A-CDD	Ant1	5180	8.33	8±1
	Ant2	5180	8.23	8±1
	Ant1	5200	8.34	8±1
	Ant2	5200	8.44	8±1
	Ant1	5240	8.40	8±1
	Ant2	5240	8.53	8±1
	Ant1	5260	8.06	8±1
	Ant2	5260	8.25	8±1
	Ant1	5280	8.71	8±1
	Ant2	5280	7.30	7±1
	Ant1	5320	8.01	8±1
	Ant2	5320	7.59	7±1
	Ant1	5500	8.13	8±1
	Ant2	5500	7.99	7±1
	Ant1	5580	7.63	7±1
	Ant2	5580	8.56	8±1
	Ant1	5700	8.36	8±1
	Ant2	5700	9.13	9±1
	Ant1	5745	7.66	7±1
	Ant2	5745	8.88	8±1
Ant1	5785	8.05	8±1	
Ant2	5785	8.76	8±1	
Ant1	5825	7.96	7±1	
Ant2	5825	9.24	9±1	
11N20MIMO	Ant1	5180	7.87	7±1
	Ant2	5180	8.85	8±1
	Ant1	5200	7.90	7±1
	Ant2	5200	8.16	8±1
	Ant1	5240	8.16	8±1
	Ant2	5240	8.30	8±1
	Ant1	5260	8.36	8±1
	Ant2	5260	8.93	8±1
	Ant1	5280	7.92	7±1
	Ant2	5280	8.21	8±1
	Ant1	5320	7.92	7±1
	Ant2	5320	8.68	8±1
	Ant1	5500	8.23	8±1
	Ant2	5500	8.29	8±1
	Ant1	5580	8.31	8±1
	Ant2	5580	8.29	8±1
	Ant1	5700	8.09	8±1
	Ant2	5700	7.92	7±1
	Ant1	5745	8.61	8±1
	Ant2	5745	7.64	7±1
Ant1	5785	8.33	8±1	
Ant2	5785	8.12	8±1	
Ant1	5825	7.96	7±1	
Ant2	5825	8.28	8±1	
11N40MIMO	Ant1	5190	11.06	11±1
	Ant2	5190	10.52	10±1
	Ant1	5230	12.48	12±1
	Ant2	5230	11.96	11±1
	Ant1	5270	11.42	11±1
	Ant2	5270	10.27	10±1
	Ant1	5310	12.07	12±1
	Ant2	5310	10.47	10±1
Ant1	5510	12.34	12±1	

	Ant2	5510	11.59	11±1
	Ant1	5550	11.45	11±1
	Ant2	5550	11.47	11±1
	Ant1	5670	11.81	11±1
	Ant2	5670	10.71	10±1
	Ant1	5755	14.45	14±1
	Ant2	5755	13.29	13±1
	Ant1	5795	14.34	14±1
	Ant2	5795	13.60	13±1
11AC20MIMO	Ant1	5180	7.93	7±1
	Ant2	5180	8.19	8±1
	Ant1	5200	8.45	8±1
	Ant2	5200	8.16	8±1
	Ant1	5240	8.08	8±1
	Ant2	5240	8.58	8±1
	Ant1	5260	8.22	8±1
	Ant2	5260	8.31	8±1
	Ant1	5280	8.01	8±1
	Ant2	5280	8.17	8±1
	Ant1	5320	8.54	8±1
	Ant2	5320	8.37	8±1
	Ant1	5500	8.45	8±1
	Ant2	5500	8.19	8±1
	Ant1	5580	8.09	8±1
	Ant2	5580	7.99	7±1
	Ant1	5700	8.91	8±1
	Ant2	5700	7.85	7±1
	Ant1	5745	7.95	7±1
	Ant2	5745	8.57	8±1
	Ant1	5785	8.49	8±1
	Ant2	5785	7.96	7±1
	Ant1	5825	8.20	8±1
	Ant2	5825	8.17	8±1
11AC40MIMO	Ant1	5190	10.90	10±1
	Ant2	5190	10.27	10±1
	Ant1	5230	12.32	12±1
	Ant2	5230	11.81	11±1
	Ant1	5270	10.50	10±1
	Ant2	5270	9.28	9±1
	Ant1	5310	10.67	10±1
	Ant2	5310	9.11	9±1
	Ant1	5510	11.21	11±1
	Ant2	5510	10.61	10±1
	Ant1	5550	10.34	10±1
	Ant2	5550	10.35	10±1
	Ant1	5670	11.52	11±1
	Ant2	5670	10.57	10±1
	Ant1	5755	14.07	14±1
	Ant2	5755	12.86	12±1
	Ant1	5795	14.37	14±1
	Ant2	5795	13.58	13±1
11AC80MIMO	Ant1	5210	12.87	12±1
	Ant2	5210	9.90	9±1
	Ant1	5290	9.35	9±1
	Ant2	5290	7.96	7±1
	Ant1	5530	9.11	9±1
	Ant2	5530	8.11	8±1
	Ant1	5610	8.82	8±1
	Ant2	5610	7.16	7±1
	Ant1	5775	14.79	14±1
Ant2	5775	13.65	13±1	

[2.4GHz WLAN]

Mode	Channel	Frequency	Peak Conducted Output Power (dBm)		Turn-up Power Tolerance(dBm)	
			Ant.1	Ant.2	Ant.1	Ant.2
IEEE 802.11b	1	2412	15.22	12.74	15±1	12±1
	6	2437	10.98	14.00	10±1	14±1
	11	2462	11.94	14.03	11±1	14±1
IEEE 802.11g	1	2412	15.46	12.64	15±1	12±1
	6	2437	11.69	16.67	11±1	16±1
	11	2462	12.90	15.57	12±1	15±1
IEEE 802.11n HT20	1	2412	15.16	12.63	15±1	12±1
	6	2437	14.39	11.92	14±1	11±1
	11	2462	11.89	14.34	11±1	14±1
IEEE 802.11n HT40	3	2422	12.52	12.92	12±1	12±1
	6	2437	9.82	14.99	9±1	14±1
	9	2452	8.92	14.73	8±1	14±1

2.4GHz WLAN ANT. 1

Modulation Type	Output power (Turn-up Procedure)		Antenna Gain (dBi)	Antenna Gain (Numeric)	Distance (cm) [R]	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW					
IEEE 802.11b	16	39.81	3	1.9952	20	0.0158	1.0000
IEEE 802.11g	16	39.81	3	1.9952	20	0.0158	1.0000
IEEE 802.11n HT20	16	39.81	3	1.9952	20	0.0158	1.0000
IEEE 802.11n HT40	13	19.95	3	1.9952	20	0.0079	1.0000

2.4GHz WLAN ANT. 2

Modulation Type	Output power (Turn-up Procedure)		Antenna Gain (dBi)	Antenna Gain (Numeric)	Distance (cm) [R]	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW					
IEEE 802.11b	15	31.62	3	1.9952	20	0.0126	1.0000
IEEE 802.11g	17	50.12	3	1.9952	20	0.0199	1.0000
IEEE 802.11n HT20	15	31.62	3	1.9952	20	0.0126	1.0000
IEEE 802.11n HT40	15	31.62	3	1.9952	20	0.0126	1.0000

5GHz WLAN U-NII-1 ANT. 1

Modulation Type	Output power (Turn-up Procedure)		Antenna Gain (dBi)	Antenna Gain (Numeric)	Distance (cm) [R]	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW					
IEEE 802.11a	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11ac VHT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT40	13	19.95	3	1.9952	20	0.0079	1.0000
IEEE 802.11ac VHT40	13	19.95	3	1.9952	20	0.0079	1.0000
IEEE 802.11ac VHT80	13	19.95	3	1.9952	20	0.0079	1.0000

5GHz WLAN U-NII-1 ANT. 2

Modulation Type	Output power (Turn-up Procedure)		Antenna Gain (dBi)	Antenna Gain (Numeric)	Distance (cm) [R]	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW					
IEEE 802.11a	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11ac VHT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT40	12	15.85	3	1.9952	20	0.0063	1.0000
IEEE 802.11ac VHT40	12	15.85	3	1.9952	20	0.0063	1.0000
IEEE 802.11ac VHT80	10	10.00	3	1.9952	20	0.0040	1.0000

5GHz WLAN U-NII-2A ANT. 1

Modulation Type	Output power (Turn-up Procedure)		Antenna Gain (dBi)	Antenna Gain (Numeric)	Distance (cm) [R]	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW					
IEEE 802.11a	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11ac VHT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT40	13	19.95	3	1.9952	20	0.0079	1.0000
IEEE 802.11ac VHT40	11	12.59	3	1.9952	20	0.0050	1.0000
IEEE 802.11ac VHT80	10	10.00	3	1.9952	20	0.0040	1.0000

5GHz WLAN U-NII-2A ANT. 2

Modulation Type	Output power (Turn-up Procedure)		Antenna Gain (dBi)	Antenna Gain (Numeric)	Distance (cm) [R]	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW					
IEEE 802.11a	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11ac VHT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT40	11	12.59	3	1.9952	20	0.0050	1.0000
IEEE 802.11ac VHT40	10	10.00	3	1.9952	20	0.0040	1.0000
IEEE 802.11ac VHT80	8	6.31	3	1.9952	20	0.0025	1.0000

5GHz WLAN U-NII-2C ANT. 1

Modulation Type	Output power (Turn-up Procedure)		Antenna Gain (dBi)	Antenna Gain (Numeric)	Distance (cm) [R]	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW					
IEEE 802.11a	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11ac VHT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT40	12	15.85	3	1.9952	20	0.0063	1.0000
IEEE 802.11ac VHT40	12	15.85	3	1.9952	20	0.0063	1.0000
IEEE 802.11ac VHT80	10	10.00	3	1.9952	20	0.0040	1.0000

5GHz WLAN U-NII-2C ANT. 2

Modulation Type	Output power (Turn-up Procedure)		Antenna Gain (dBi)	Antenna Gain (Numeric)	Distance (cm) [R]	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW					
IEEE 802.11a	10	10.00	3	1.9952	20	0.0040	1.0000
IEEE 802.11n HT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11ac VHT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT40	12	15.85	3	1.9952	20	0.0063	1.0000
IEEE 802.11ac VHT40	11	12.59	3	1.9952	20	0.0050	1.0000
IEEE 802.11ac VHT80	9	7.94	3	1.9952	20	0.0032	1.0000

5GHz WLAN U-NII-3 ANT. 1

Modulation Type	Output power (Turn-up Procedure)		Antenna Gain (dBi)	Antenna Gain (Numeric)	Distance (cm) [R]	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW					
IEEE 802.11a	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11ac VHT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT40	15	31.62	3	1.9952	20	0.0126	1.0000
IEEE 802.11ac VHT40	15	31.62	3	1.9952	20	0.0126	1.0000
IEEE 802.11ac VHT80	15	31.62	3	1.9952	20	0.0126	1.0000

5GHz WLAN U-NII-3 ANT. 2

Modulation Type	Output power (Turn-up Procedure)		Antenna Gain (dBi)	Antenna Gain (Numeric)	Distance (cm) [R]	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW					
IEEE 802.11a	10	10.00	3	1.9952	20	0.0040	1.0000
IEEE 802.11n HT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11ac VHT20	9	7.94	3	1.9952	20	0.0032	1.0000
IEEE 802.11n HT40	14	25.12	3	1.9952	20	0.0100	1.0000
IEEE 802.11ac VHT40	14	25.12	3	1.9952	20	0.0100	1.0000
IEEE 802.11ac VHT80	14	25.12	3	1.9952	20	0.0100	1.0000

Remark:

1. Output power (Average) including turn-up tolerance;
2. Output power was adjust to duty cycle at 100% if measured duty cycle less than 98%;
3. MPE evaluate distance is 20cm from user manual provide by manufacturer.

6. Summary simultaneous transmission information

Modulation Type	Work Frequency Band	Transmit Antenna		Antenna 1 Antenna 2 Synchronization Transmit
		Antenna 1	Antenna 2	
IEEE 802.11a	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11b	2.4GHz	Yes	Yes	Yes
IEEE 802.11g	2.4GHz	Yes	Yes	Yes
IEEE 802.11n HT20	2.4GHz	Yes	Yes	Yes
IEEE 802.11n HT20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11n HT40	2.4GHz	Yes	Yes	Yes
IEEE 802.11n HT40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT80	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes

7. Summary simultaneous transmission results

Antenna 1 and Antenna 2 for 2.4GWLAN

Modulation Type	MPE Antenna 1 (mW/cm ²)	MPE Antenna 2 (mW/cm ²)	ΣMPE ratios	Limit	Results
IEEE 802.11b	0.0158	0.0126	0.0284	1.0	PASS
IEEE 802.11g	0.0158	0.0199	0.0357	1.0	PASS
IEEE 802.11n HT20	0.0158	0.0126	0.0284	1.0	PASS
IEEE 802.11n HT40	0.0079	0.0126	0.0205	1.0	PASS

Antenna 1 and Antenna 2 for 5GWLAN U-NII-1

Modulation Type	MPE Antenna 1 (mW/cm ²)	MPE Antenna 2 (mW/cm ²)	ΣMPE ratios	Limit	Results
IEEE 802.11a	0.0032	0.0032	0.0032	1.0	PASS
IEEE 802.11n HT20	0.0032	0.0032	0.0032	1.0	PASS
IEEE 802.11ac VHT20	0.0032	0.0032	0.0032	1.0	PASS
IEEE 802.11n HT40	0.0079	0.0063	0.0079	1.0	PASS
IEEE 802.11ac VHT40	0.0079	0.0063	0.0079	1.0	PASS
IEEE 802.11ac VHT80	0.0079	0.0040	0.0079	1.0	PASS

Antenna 1 and Antenna 2 for 5GWLAN U-NII-2A

Modulation Type	MPE Antenna 1 (mW/cm ²)	MPE Antenna 2 (mW/cm ²)	ΣMPE ratios	Limit	Results
IEEE 802.11a	0.0032	0.0032	0.0064	1.0	PASS
IEEE 802.11n HT20	0.0032	0.0032	0.0064	1.0	PASS
IEEE 802.11ac VHT20	0.0032	0.0032	0.0064	1.0	PASS
IEEE 802.11n HT40	0.0079	0.0050	0.0129	1.0	PASS
IEEE 802.11ac VHT40	0.0050	0.0040	0.0090	1.0	PASS
IEEE 802.11ac VHT80	0.0040	0.0025	0.0065	1.0	PASS

Antenna 1 and Antenna 2 for 5GWLAN U-NII-2C

Modulation Type	MPE Antenna 1 (mW/cm ²)	MPE Antenna 2 (mW/cm ²)	ΣMPE ratios	Limit	Results
IEEE 802.11a	0.0032	0.0040	0.0072	1.0	PASS
IEEE 802.11n HT20	0.0032	0.0032	0.0064	1.0	PASS
IEEE 802.11ac VHT20	0.0032	0.0032	0.0064	1.0	PASS
IEEE 802.11n HT40	0.0063	0.0063	0.0126	1.0	PASS
IEEE 802.11ac VHT40	0.0063	0.0050	0.0113	1.0	PASS
IEEE 802.11ac VHT80	0.0040	0.0032	0.0072	1.0	PASS

Antenna 1 and Antenna 2 for 5GWLAN U-NII-3

Modulation Type	MPE Antenna 1 (mW/cm ²)	MPE Antenna 2 (mW/cm ²)	ΣMPE ratios	Limit	Results
IEEE 802.11a	0.0032	0.0040	0.0072	1.0	PASS
IEEE 802.11n HT20	0.0032	0.0032	0.0064	1.0	PASS
IEEE 802.11ac VHT20	0.0032	0.0032	0.0064	1.0	PASS
IEEE 802.11n HT40	0.0126	0.0100	0.0226	1.0	PASS
IEEE 802.11ac VHT40	0.0126	0.0100	0.0226	1.0	PASS
IEEE 802.11ac VHT80	0.0126	0.0100	0.0226	1.0	PASS

Maximum Simultaneous transmission MPE Ratios for 2.4GHz WLAN and 5G WLAN

Maximum MPE ratio 2.4GWLAN	Maximum MPE ratio 5GWLAN	ΣMPE ratios	Limit	Results
0.0357	0.0226	0.0583	1.0	PASS

8. Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

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