

Report No.: SEWM2307000264RG05
 Rev.: 01
 Page: 1 of 12

TEST REPORT

Application No.: SEWM2307000264RG
Applicant: Senwa Global International S.A. de C.V.
Address of Applicant: Carretera Mexico-Toluca No. 5324 PB, Colonia El Yaqui Del. Cuajimalpa de Morelos, C.P. 05320 Ciudad de Mexico, Mexico
Manufacturer: Senwa Global International S.A. de C.V.
Address of Manufacturer: Carretera Mexico-Toluca No. 5324 PB, Colonia El Yaqui Del. Cuajimalpa de Morelos, C.P. 05320 Ciudad de Mexico, Mexico
EUT Description: 5G CPE
Model No.: RT5
Trade Mark: Senwa
FCC ID: 2AZYA-RT5
Standards: 47 CFR Part 2.1091
 FCC KDB 447498 D01 v06
Date of Receipt: 2023/06/08
Date of Issue: 2023/07/14

Test Result:	PASS*
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* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Well Wei
 Wireless Laboratory Manager



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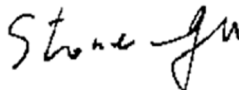
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1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2023/07/14		Original

Prepared By		 <hr/> (Nick Hu) / Test Engineer
Checked By		 <hr/> (Stone Gu) / Reviewer



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Remark:

This test report (Report No.: SEWM2307000264RG05 issue on 2023/07/14) is based on the original test report (Report No.: SEWM2306000193RG05 issued on 2023/06/30).

Review this report and original report, this report just changing the parts according to the declaration letter from client.

Therefore in this report all items do not need to recalculated and all test data in this report are based on the previous report with report number SEWM2306000193RG05 issued on 2023/06/30.



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2 General Information

2.1 Client Information

Applicant:	Senwa Global International S.A. de C.V.
Address of Applicant:	Carretera Mexico-Toluca No. 5324 PB, Colonia El Yaqui Del. Cuajimalpa de Morelos, C.P. 05320 Ciudad de Mexico, Mexico
Manufacturer:	Senwa Global International S.A. de C.V.
Address of Manufacturer:	Carretera Mexico-Toluca No. 5324 PB, Colonia El Yaqui Del. Cuajimalpa de Morelos, C.P. 05320 Ciudad de Mexico, Mexico

2.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

• **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 717327



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2.3 General Description of EUT

EUT Description:	5G CPE	
Model No.:	RT5	
Trade Mark:	Senwa	
Hardware Version:	SEWNA_RT5_5G_CPE_01	
Software Version:	SEWNA_RT5_Ver01	
Antenna Type:	<input type="checkbox"/> External, <input checked="" type="checkbox"/> Integrated	
Antenna Gain:	LTE Band 2:	-0.34dBi(Ant0) 1.15dBi(Ant3)
	LTE Band 4:	-0.60dBi(Ant0) -0.29dBi(Ant3)
	LTE Band 5:	-2.08dBi(Ant0)
	LTE Band 7:	2.00dBi(Ant0) 0.75dBi(Ant3)
	LTE Band 25:	-0.34dBi(Ant0) 1.15dBi(Ant3)
	LTE Band 26:	-2.08dBi(Ant0)
	LTE Band 38:	1.84dBi(Ant0) -0.54dBi(Ant3)
	LTE Band 41:	2.00dBi(Ant0) 0.75dBi(Ant3)
	LTE Band 42:	2.23dBi(Ant2) 2.23dBi(Ant4)
	LTE Band 43:	2.26dBi(Ant2) 2.18dBi(Ant4)
	LTE Band 66:	-0.60dBi(Ant0) -0.13dBi(Ant3)
	LTE CA_2C:	-0.34dBi(Ant0) 1.15dBi(Ant3)
	LTE CA_5B:	-2.08dBi(Ant0)
	LTE CA_7C:	2.00dBi(Ant0) 0.75dBi(Ant3)
	LTE CA_41C:	2.00dBi(Ant0) 0.75dBi(Ant3)
	LTE CA_42C:	2.23dBi(Ant2) 2.23dBi(Ant4)
	LTE CA_66B:	-0.60dBi(Ant0) -0.13dBi(Ant3)
	LTE CA_66C:	-0.60dBi(Ant0) -0.13dBi(Ant3)
	NR Band n2:	-0.34dBi(Ant0) 1.15dBi(Ant3)
	NR Band n5:	-2.08dBi(Ant0)
	NR Band n7:	2.00dBi(Ant0) 0.75dBi(Ant3)
NR Band n25:	-0.34dBi(Ant0) 1.15dBi(Ant3)	
NR Band n26:	-2.08dBi(Ant0)	
NR Band n38:	1.84dBi(Ant0) -0.54dBi(Ant3)	
NR Band n41:	2.00dBi(Ant0) 0.75dBi(Ant3)	
NR Band n66:	-0.60dBi(Ant0) -0.13dBi(Ant3)	
NR Band n77:	2.26dBi(Ant2) 2.23dBi(Ant4)	



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	NR Band n78:	2.26dBi(Ant2)	2.23dBi(Ant4)
	LTE CA:	LTE UL CA_2C; LTE UL CA_5B; LTE UL CA_7C; LTE UL CA_41C; LTE UL CA_42C; LTE UL CA_66B; LTE UL CA_66C; LTE UL CA_2A-4A; LTE UL CA_2A-5A; LTE UL CA_2A-7A; LTE UL CA_2A-26A; LTE UL CA_2A-66A; LTE UL CA_4A-5A; LTE UL CA_4A-7A; LTE UL CA_5A-7A; LTE UL CA_5A-66A; LTE UL CA_7A-66A; LTE UL CA_25A-66A; LTE UL CA_41A-42A; LTE UL CA_26A-66A; LTE UL CA_7A-26A; ENDC: DC_4A_n2A; DC_5A_n2A; DC_7A_n2A ; DC_66A_n2A; DC_2A_n5A; DC_7A_n5A; DC_66A_n5A; DC_2A_n7A; DC_4A_n7A; DC_5A_n7A; DC_66A_n7A; DC_2A_n38A; DC_66A_n38A; DC_2A_n41A; DC_4A_n41A; DC_5A_n41A; DC_25A_n41A; DC_66A_n41A; DC_2A_n66A; DC_5A_n66A; DC_7A_n66A; DC_2A_n77A; DC_5A_n77A; DC_7A_n77A; DC_41A_n77A; DC_66A_n77A; DC_2A_n78A; DC_4A_n78A; DC_5A_n78A; DC_7A_n78A; DC_26A_n78A; DC_41A_n78A; DC_66A_n78A.	
	WIFI 2.4G:	0.88dBi(Ant0)	0.88dBi(Ant1)
	5G WIFI(U-NII-I):	1.75dBi(Ant0);	1.88dBi(Ant1);
	5G WIFI(U-NII-IIA):	1.81dBi(Ant0);	1.27dBi(Ant1);
	5G WIFI(U-NII-IIC):	1.62dBi(Ant0);	1.59dBi(Ant1);
	5G WIFI(U-NII-III):	1.53dBi(Ant0);	1.95dBi(Ant1);
	Note:	The antenna gain are derived from the gain information report provided by the manufacturer.	
	Remark:	As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.	



3 RF Exposure Evaluation

3.1 RF Exposure Compliance Requirement

3.1.1 Limits

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/f ²)	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/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz
 *=Plane-wave equivalent power density
 RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula

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

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

Pd is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



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3.1.2 Test Procedure

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

3.1.3 EUT RF Exposure Evaluation

Output Power Into Antenna & RF Exposure Evaluation Distance:

This confirmed that the device comply with MPE limit.

Operating Band	Frequency (MHz)	Antenna Gain (dBi)	Max Conducted Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm2)	Limit (mW/cm2)	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
LTE/CA Band 2	1850.7	1.15	24.50	25.65	33.00	0.0731	1.0000	8.50	12.51	8.50	Pass
LTE Band 4	1710.7	0.55	24.50	25.05	30.00	0.0636	1.0000	5.50	12.51	5.50	Pass
LTE/CA Band 5	824.7	-1.19	24.50	21.16	38.45	0.0426	0.5498	16.10	9.91	9.91	Pass
LTE/CA Band 7	2502.5	2.00	24.50	26.50	33.00	0.0889	1.0000	8.50	12.51	8.50	Pass
LTE Band 25	1850.7	1.15	24.50	25.65	33.00	0.0731	1.0000	8.50	12.51	8.50	Pass
LTE Band 26 (814-824)	814.7	-1.19	24.50	21.16	NA	0.0426	0.5431	NA	9.86	9.86	Pass
LTE Band 26 (824-849)	824.7	-1.19	24.50	21.16	38.45	0.0426	0.5498	16.10	9.91	9.91	Pass
LTE Band 38	2572.5	1.84	24.50	26.34	33.00	0.0857	1.0000	8.50	12.51	8.50	Pass
LTE/CA Band 41	2498.5	2.00	24.50	26.50	33.00	0.0889	1.0000	8.50	12.51	8.50	Pass
LTE/CA Band 42	3452.5	2.25	24.50	26.75	30.00	0.0941	1.0000	5.50	12.51	5.50	Pass
LTE Band 43	3702.5	2.26	24.50	26.76	30.00	0.0943	1.0000	5.50	12.51	5.50	Pass
LTE Band 66/CA Band 66B/CA Band 66C	1710.7	0.90	24.50	25.40	30.00	0.0690	1.0000	5.50	12.51	5.50	Pass
NR Band n2	1852.5	1.15	24.50	25.65	33.00	0.0731	1.0000	8.50	12.51	8.50	Pass
NR Band n5	826.5	-1.19	24.50	21.16	38.45	0.0426	0.5510	16.10	9.92	9.92	Pass
NR Band n7	2502.5	2.00	24.50	26.50	33.00	0.0889	1.0000	8.50	12.51	8.50	Pass
NR Band n25	1852.5	1.15	24.50	25.65	33.00	0.0731	1.0000	8.50	12.51	8.50	Pass
NR Band n26 (814-824)	816.5	-1.19	24.50	21.16	NA	0.0426	0.5443	NA	9.87	9.87	Pass
NR Band n26 (824-849)	826.5	-1.19	24.50	21.16	38.45	0.0426	0.5510	16.10	9.92	9.92	Pass
NR Band n66	1712.5	0.90	24.50	25.40	30.00	0.0690	1.0000	5.50	12.51	5.50	Pass



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 中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南楼 邮编: 215000 t (86-512) 62992980 sgs.china@sgs.com

Operating Band	Frequency (MHz)	Antenna Gain (dBi)	MMO Directional gain	Max Conducted Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
NR Band n38	2575.0	1.84	NA	24.50	26.34	33.00	0.0857	1.0000	8.50	12.51	8.50	Pass
NR Band n38(PC2)	2575.0	1.84	NA	27.50	29.34	33.00	0.1709	1.0000	5.50	9.51	5.50	Pass
NR Band n38(MIMO)	2575.0	1.84	0.81	27.50	29.34	33.00	0.1709	1.0000	5.50	9.51	5.50	Pass
NR Band n41	2506.0	2.00	NA	24.50	26.50	33.00	0.0889	1.0000	8.50	12.51	8.50	Pass
NR Band n41(PC2)	2506.0	2.00	NA	27.50	29.50	33.00	0.1773	1.0000	5.50	9.51	5.50	Pass
NR Band n41(MIMO)	2506.0	2.00	1.42	27.50	29.50	33.00	0.1773	1.0000	5.50	9.51	5.50	Pass
NR Band n77 (3450-3550)	3455.0	2.28	NA	25.50	27.78	30.00	0.1193	1.0000	4.50	11.51	4.50	Pass
NR Band n77 (3450-3550)(PC2)	3455.0	2.28	NA	27.50	29.78	30.00	0.1891	1.0000	2.50	9.51	2.50	Pass
NR Band n77 (3450-3550)(MIMO)	3455.0	2.28	2.25	27.50	29.78	30.00	0.1891	1.0000	2.50	9.51	2.50	Pass
NR Band n77 (3700-3980)	3707.5	2.28	NA	25.50	27.78	30.00	0.1193	1.0000	4.50	11.51	4.50	Pass
NR Band n77 (3700-3980)(PC2)	3707.5	2.28	NA	27.50	29.78	30.00	0.1891	1.0000	2.50	9.51	2.50	Pass
NR Band n77 (3700-3980)(MIMO)	3707.5	2.28	2.25	27.50	29.78	30.00	0.1891	1.0000	2.50	9.51	2.50	Pass
NR Band n78 (3450-3550)	3455.0	2.27	NA	27.50	29.77	30.00	0.1887	1.0000	2.50	9.51	2.50	Pass
NR Band n78 (3450-3550)(PC2)	3455.0	2.27	NA	27.50	29.77	30.00	0.1887	1.0000	2.50	9.51	2.50	Pass
NR Band n78 (3450-3550)(MIMO)	3455.0	2.27	2.25	27.50	29.77	30.00	0.1887	1.0000	2.50	9.51	2.50	Pass
NR Band n78 (3700-3800)	3705.0	2.27	NA	27.50	29.77	30.00	0.1887	1.0000	2.50	9.51	2.50	Pass
NR Band n78 (3700-3800)(PC2)	3705.0	2.27	NA	27.50	29.77	30.00	0.1887	1.0000	2.50	9.51	2.50	Pass
NR Band n78 (3700-3800)(MIMO)	3705.0	2.27	2.25	27.50	29.77	30.00	0.1887	1.0000	2.50	9.51	2.50	Pass
2.4GWIFI(MIMO)	2412.0	0.88	0.88	23.00	23.88	30.00	0.0486	1.0000	NA	NA	NA	Pass
5GWIFI(MIMO)	5320.0	1.95	1.95	23.00	24.95	30.00	0.0622	1.0000	NA	NA	NA	Pass



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Due to the EUT support NR ENDC and CA:

Both LTE and NR/LTE band can transmit simultaneously, the formula of the calculated the MPE is:

NOTE The corresponding MEs must be expressed in terms of power density in the above summation

Therefore, the worst-case(DC_7A_n77A) situation is $0.089+0.189=0.278$, which is less than "1",

$$\sum_{i=1}^n \frac{S_{E_i} (duty\ factor)}{MPE_{E_i}} < 1$$

this confirmed that the device comply with MPE limit.



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3.1.4 Exposure calculations for multiple sources

When a number of sources at different frequencies, and/or broadband sources, contribute to the total exposure, it becomes necessary to weigh each contribution relative to the MPE in accordance with the provisions of Table(A) and Table(B). To comply with the MPE, the fraction of the MPE in terms of E2, H2 (or power density) incurred within each frequency interval should be determined and the sum of all such fractions should not exceed unity.

In order to ensure compliance with the MPE for a controlled environment, the sum of the ratios of the power density to the corresponding MPE should not exceed unity. That is

$$\sum_{i=1}^n \frac{S_i}{MPE_i} \leq 1$$

The product also has multiple transmitters The Simultaneous Transmission Possibilities are as below:

Simultaneous Tx Combination	Configuration
1	WWAN + WiFi 2.4G + WiFi 5G

No.	Mode	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)	Result Ratio	Total Ratio	Limit	Result
1	NR Band n77(MIMO)	0.1891	1.0000	0.1891	0.2999	1.0000	Pass
	WiFi 2.4G	0.0486	1.0000	0.0486			
	WiFi 5G	0.0622	1.0000	0.0622			

Remark: This WWAN Band was recalculated on worst Band.

---End of Report---



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