

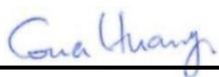
RF EXPOSURE EVALUATION REPORT

FCC ID : GKRCMCN3
Equipment : LCC Module
Brand Name : COMPAL
Model Name : CMC-N3
Applicant : Compal Electronics, Inc.
No.581 & 581-1, Ruiguang Rd., Neihu District,
Taipei, (114) Taiwan
Manufacturer : Compal Electronics, Inc.
No.581 & 581-1, Ruiguang Rd., Neihu District,
Taipei, (114) Taiwan
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 3786) and the FCC designation No. TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

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Approved by: Cona Huang / Deputy Manager



SPORTON INTERNATIONAL INC. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan



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History of this test report

Report No.	Version	Description	Issued Date
FA531227-02	Rev. 01	Initial issue of report	Apr. 30, 2025



1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	LCC Module
Brand Name	COMPAL
Model Name	CMC-N3
FCC ID	GKRCMCN3
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 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3400 MHz ~ 3550 MHz, 3550 MHz ~ 3600 MHz LTE Band 43: 3600 MHz ~ 3700 MHz, 3700 MHz ~ 3800 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR RedCap n2 : 1850 MHz ~ 1910 MHz 5G NR RedCap n5 : 824 MHz ~ 849 MHz 5G NR RedCap n7 : 2500 MHz ~ 2570 MHz 5G NR RedCap n12 : 699 MHz ~ 716 MHz 5G NR RedCap n13: 777 MHz ~ 787 MHz 5G NR RedCap n14 : 788 MHz ~ 798 MHz 5G NR RedCap n25 : 1850 MHz ~ 1915 MHz 5G NR RedCap n26 : 814 MHz ~ 849 MHz 5G NR RedCap n30 : 2305 MHz ~ 2315 MHz 5G NR RedCap n38 : 2570 MHz ~ 2620 MHz 5G NR RedCap n41 : 2496 MHz ~ 2690 MHz 5G NR n48 / RedCap n48 : 3550 MHz ~ 3700 MHz 5G NR RedCap n66 : 1710 MHz ~ 1780 MHz 5G NR RedCap n71 : 663 MHz ~ 698 MHz 5G NR RedCap n77: 3450MHz ~ 3550MHz, 3700 MHz ~ 3980 MHz 5G NR RedCap n78: 3450MHz ~ 3550MHz, 3700 MHz ~ 3800 MHz
Mode	LTE: QPSK, 16QAM 5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM

Reviewed by: Jason Wang

Report Producer: Paula Chen

2. Maximum RF average output power among production units

	Mode	Maximum Average power(dBm)
LTE	LTE B2	24.5
	LTE B4	24.5
	LTE B5	24.5
	LTE B7	24.5
	LTE B12	24.5
	LTE B13	24.5
	LTE B14	24.5
	LTE B17	24.5
	LTE B25	24.5
	LTE B26	24.5
	LTE B30	24
	LTE B38	24.5
	LTE B41_HPUE	27
	LTE B42_Part 27Q	23
	LTE B42_Part 96	23
	LTE B43_Part 96	23
	LTE B43_Part 27O	23
	LTE B48	23
	LTE B66	24.5
	LTE B71	24.5
5G NR RedCap	5G NR RedCap n2	24.5
	5G NR RedCap n5	24.5
	5G NR RedCap n7	24.5
	5G NR RedCap n12	24.5
	5G NR RedCap n13	24.5
	5G NR RedCap n14	24.5
	5G NR RedCap n25	24.5
	5G NR RedCap n26	24.5
	5G NR RedCap n30	24
	5G NR RedCap n38	24.5
	5G NR RedCap n41	24.5
	5G NR n48 / RedCap n48	23
	5G NR RedCap n66	24.5
	5G NR RedCap n71	24.5
	5G NR RedCap n77_Part 27O	24.5
	5G NR RedCap n77_Part 27Q	24.5
	5G NR RedCap n78_Part 27O	24.5
	5G NR RedCap n78_Part 27Q	24.5

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/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

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	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum ERP (dBm)	Maximum ERP (W)	Maximum EIRP (dBm)	Maximum EIRP (W)	Maximum ERP/EIRP Limit (W)	Maximum PG (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
LTE Band 2	8.5	24.50	30.850	1.22	33.000	2.00	2.00	1995.262	0.397	1.000
LTE Band 4	5.5	24.50	27.850	0.61	30.000	1.00	1.00	1000.000	0.199	1.000
LTE Band 5	9.9	24.50	32.250	1.68	34.400	2.75	7.00	2754.229	0.548	0.549
LTE Band 7	8.5	24.50	30.850	1.22	33.000	2.00	2.00	1995.262	0.397	1.000
LTE Band 12	9.1	24.50	31.450	1.40	33.600	2.29	3.00	2290.868	0.456	0.466
LTE Band 13	9.6	24.50	31.950	1.57	34.100	2.57	3.00	2570.396	0.512	0.518
LTE Band 14	9.7	24.50	32.050	1.60	34.200	2.63	3.00	2630.268	0.524	0.525
LTE Band 17	9.1	24.50	31.450	1.40	33.600	2.29	3.00	2290.868	0.456	0.469
LTE Band 25	8.5	24.50	30.850	1.22	33.000	2.00	2.00	1995.262	0.397	1.000
LTE Band 26	9.9	24.50	32.250	1.68	34.400	2.75	7.00	2754.229	0.548	0.549
LTE Band 30	0.0	24.00	21.850	0.15	24.000	0.25	0.25	251.189	0.050	1.000
LTE Band 38	6.0	24.50	28.350	0.68	30.500	1.12	2.00	1122.018	0.223	1.000
LTE Band 41_HPUE	6.0	27.00	30.850	1.22	33.000	2.00	2.00	1995.262	0.397	1.000
LTE Band 42_Part 27Q	7.0	23.00	27.850	0.61	30.000	1.00	1.00	1000.000	0.199	1.000
LTE Band 42_Part 96	0.0	23.00	20.850	0.12	23.000	0.20	0.20	199.526	0.040	1.000
LTE Band 43_Part 96	0.0	23.00	20.850	0.12	23.000	0.20	0.20	199.526	0.040	1.000
LTE Band 43_Part 27O	7.0	23.00	27.850	0.61	30.000	1.00	1.00	1000.000	0.199	1.000
LTE Band 48	0.0	23.00	20.850	0.12	23.000	0.20	0.20	199.526	0.040	1.000
LTE Band 66	5.5	24.50	27.850	0.61	30.000	1.00	1.00	1000.000	0.199	1.000
LTE Band 71	8.9	24.50	31.250	1.33	33.400	2.19	3.00	2187.762	0.435	0.442
5G NR RedCap n2	8.5	24.50	30.850	1.22	33.000	2.00	2.00	1995.262	0.397	1.000
5G NR RedCap n5	9.9	24.50	32.250	1.68	34.400	2.75	7.00	2754.229	0.548	0.549
5G NR RedCap n7	8.5	24.50	30.850	1.22	33.000	2.00	2.00	1995.262	0.397	1.000
5G NR RedCap n12	9.1	24.50	31.450	1.40	33.600	2.29	3.00	2290.868	0.456	0.466
5G NR RedCap n13	9.6	24.50	31.950	1.57	34.100	2.57	3.00	2570.396	0.512	0.518
5G NR RedCap n14	9.7	24.50	32.050	1.60	34.200	2.63	3.00	2630.268	0.524	0.525
5G NR RedCap n25	8.5	24.50	30.850	1.22	33.000	2.00	2.00	1995.262	0.397	1.000
5G NR RedCap n26	9.9	24.50	32.250	1.68	34.400	2.75	7.00	2754.229	0.548	0.549
5G NR RedCap n30	0.0	24.00	21.850	0.15	24.000	0.25	0.25	251.189	0.050	1.000
5G NR RedCap n38	6.0	24.50	28.350	0.68	30.500	1.12	2.00	1122.018	0.223	1.000
5G NR RedCap n41	6.0	24.50	28.350	0.68	30.500	1.12	2.00	1122.018	0.223	1.000
5G NR n48 / RedCap n48	0.0	23.00	20.850	0.12	23.000	0.20	0.20	199.526	0.040	1.000
5G NR RedCap n66	5.5	24.50	27.850	0.61	30.000	1.00	1.00	1000.000	0.199	1.000
5G NR RedCap n71	8.9	24.50	31.250	1.33	33.400	2.19	3.00	2187.762	0.435	0.442
5G NR RedCap n77_Part 27O	5.5	24.50	27.850	0.61	30.000	1.00	1.00	1000.000	0.199	1.000
5G NR RedCap n77_Part 27Q	5.5	24.50	27.850	0.61	30.000	1.00	1.00	1000.000	0.199	1.000
5G NR RedCap n78_Part 27O	5.5	24.50	27.850	0.61	30.000	1.00	1.00	1000.000	0.199	1.000
5G NR RedCap n78_Part 27Q	5.5	24.50	27.850	0.61	30.000	1.00	1.00	1000.000	0.199	1.000

4.2. Collocated Power Density Calculation

Note:

1. This MPE analysis is applicable to any collocated transmitters, with the maximum EIRP for WLAN assumed to be 30 dBm and the maximum EIRP for BT assumed to be 20 dBm.

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Maximum PG (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
LTE Band 2	8.5	24.50	33.0	2.00	1995.26	0.397	1.000	0.397
LTE Band 4	5.5	24.50	30.0	1.00	1000.00	0.199	1.000	0.199
LTE Band 5	8.6	24.50	33.1	2.04	2041.74	0.406	0.549	0.740
LTE Band 7	8.5	24.50	33.0	2.00	1995.26	0.397	1.000	0.397
LTE Band 12	7.8	24.50	32.3	1.70	1698.24	0.338	0.466	0.725
LTE Band 13	8.3	24.50	32.8	1.91	1905.46	0.379	0.518	0.732
LTE Band 14	8.4	24.50	32.9	1.95	1949.84	0.388	0.525	0.739
LTE Band 17	7.8	24.50	32.3	1.70	1698.24	0.338	0.469	0.720
LTE Band 25	8.5	24.50	33.0	2.00	1995.26	0.397	1.000	0.397
LTE Band 26	8.6	24.50	33.1	2.04	2041.74	0.406	0.549	0.740
LTE Band 30	0.0	24.00	24.0	0.25	251.19	0.050	1.000	0.050
LTE Band 38	6.0	24.50	30.5	1.12	1122.02	0.223	1.000	0.223
LTE Band 41_HPUE	6.0	27.00	33.0	2.00	1995.26	0.397	1.000	0.397
LTE Band 42_Part 27Q	7.0	23.00	30.0	1.00	1000.00	0.199	1.000	0.199
LTE Band 42_Part 96	0.0	23.00	23.0	0.20	199.53	0.040	1.000	0.040
LTE Band 43_Part 96	0.0	23.00	23.0	0.20	199.53	0.040	1.000	0.040
LTE Band 43_Part 27O	7.0	23.00	30.0	1.00	1000.00	0.199	1.000	0.199
LTE Band 48	0.0	23.00	23.0	0.20	199.53	0.040	1.000	0.040
LTE Band 66	5.5	24.50	30.0	1.00	1000.00	0.199	1.000	0.199
LTE Band 71	7.6	24.50	32.1	1.62	1621.81	0.323	0.442	0.730
5G NR RedCap n2	8.5	24.50	33.0	2.00	1995.26	0.397	1.000	0.397
5G NR RedCap n5	8.6	24.50	33.1	2.04	2041.74	0.406	0.549	0.740
5G NR RedCap n7	8.5	24.50	33.0	2.00	1995.26	0.397	1.000	0.397
5G NR RedCap n12	7.8	24.50	32.3	1.70	1698.24	0.338	0.466	0.725
5G NR RedCap n13	8.3	24.50	32.8	1.91	1905.46	0.379	0.518	0.732
5G NR RedCap n14	8.4	24.50	32.9	1.95	1949.84	0.388	0.525	0.739
5G NR RedCap n25	8.5	24.50	33.0	2.00	1995.26	0.397	1.000	0.397
5G NR RedCap n26	8.6	24.50	33.1	2.04	2041.74	0.406	0.549	0.740
5G NR RedCap n30	0.0	24.00	24.0	0.25	251.19	0.050	1.000	0.050
5G NR RedCap n38	6.0	24.50	30.5	1.12	1122.02	0.223	1.000	0.223
5G NR RedCap n41	6.0	24.50	30.5	1.12	1122.02	0.223	1.000	0.223
5G NR n48 / RedCap n48	0.0	23.00	23.0	0.20	199.53	0.040	1.000	0.040
5G NR RedCap n66	5.5	24.50	30.0	1.00	1000.00	0.199	1.000	0.199
5G NR RedCap n71	7.6	24.50	32.1	1.62	1621.81	0.323	0.442	0.730
5G NR RedCap n77_Part 27O	5.5	24.50	30.0	1.00	1000.00	0.199	1.000	0.199
5G NR RedCap n77_Part 27Q	5.5	24.50	30.0	1.00	1000.00	0.199	1.000	0.199
5G NR RedCap n78_Part 27O	5.5	24.50	30.0	1.00	1000.00	0.199	1.000	0.199
5G NR RedCap n78_Part 27Q	5.5	24.50	30.0	1.00	1000.00	0.199	1.000	0.199
WLAN2.4GHz Band			30.0	1.00	1000.00	0.199	1.000	0.199
WLAN5/6GHz Band			30.0	1.00	1000.00	0.199	1.000	0.199
Bluetooth			20.0	0.10	100.00	0.020	1.000	0.020

WWAN Power Density / Limit	WLAN Power Density / Limit	Bluetooth Power Density / Limit	Σ (Power Density / Limit) of WWAN+WLAN+Bluetooth
0.740	0.199	0.020	0.959

General Note:

1. The device support DPS (Dynamic Power Share) function to achieve higher uplink data rate keeping the total power unchanged in 5G NR NSA EN-DC mode according to 3GPP 38.213, when the equipment has a dynamic power sharing capability, it adjusts the LTE or NR transmission power so that the instantaneous total power does not exceed the specified value, when the maximum transmission power of NR (P_{LTE}, P_{NR}) and the specified total power (P_{total}) have been set and the instantaneous calculated total transmission power exceeds P_{total}, the NR transmission power is reduced so that the actual transmission power of the user equipment will not exceed P_{total} power. So, if the LTE and NR standalone SAR is testing at total power level, the EN -DC combine MPE(LTE+NR) will not higher than the each standalone LTE and NR MPE, therefore, the simultaneous transmission analysis is used standalone MPE at total power level to show compliance.
2. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN + Bluetooth.
3. Considering the WWAN module collocation with the WLAN and Bluetooth transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 3 collocated transmitters is compliant.

Conclusion:

Based on FCC 47 CFR §2.1901, the analysis concludes that this product when transmitting in standalone within a host device, is compliant with the FCC RF exposure requirements in mobile exposure condition, provided the conducted power and antenna gain do not exceed the limits for each given frequency band per wireless technology as follow table:

Device	Technology	Band	Maximum Conducted Power (dBm)	Standalone Maximum Antenna Gain (dBi)	Collocated Maximum Antenna Gain (dBi)
CMC-N3	LTE	LTE Band 2	24.5	8.5	8.5
		LTE Band 4	24.5	5.5	5.5
		LTE Band 5	24.5	9.9	8.6
		LTE Band 7	24.5	8.5	8.5
		LTE Band 12	24.5	9.1	7.8
		LTE Band 13	24.5	9.6	8.3
		LTE Band 14	24.5	9.7	8.4
		LTE Band 17	24.5	9.1	7.8
		LTE Band 25	24.5	8.5	8.5
		LTE Band 26	24.5	9.9	8.6
		LTE Band 30	24.0	0.0	0.0
		LTE Band 38	24.5	6.0	6.0
		LTE Band 41_HPUE	27.0	6.0	6.0
		LTE Band 42_Part 27Q	23.0	7.0	7.0
		LTE Band 42_Part 96	23.0	0.0	0.0
		LTE Band 43_Part 96	23.0	0.0	0.0
		LTE Band 43_Part 27O	23.0	7.0	7.0
		LTE Band 48	23.0	0.0	0.0
		LTE Band 66	24.5	5.5	5.5
		LTE Band 71	24.5	8.9	7.6
	NR	5G NR RedCap n2	24.5	8.5	8.5
		5G NR RedCap n5	24.5	9.9	8.6
		5G NR RedCap n7	24.5	8.5	8.5
		5G NR RedCap n12	24.5	9.1	7.8
		5G NR RedCap n13	24.5	9.6	8.3
		5G NR RedCap n14	24.5	9.7	8.4
		5G NR RedCap n25	24.5	8.5	8.5
		5G NR RedCap n26	24.5	9.9	8.6
		5G NR RedCap n30	24.0	0.0	0.0
		5G NR RedCap n38	24.5	6.0	6.0
		5G NR RedCap n41	24.5	6.0	6.0
		5G NR n48 / RedCap n48	23.0	0.0	0.0
		5G NR RedCap n66	24.5	5.5	5.5
		5G NR RedCap n71	24.5	8.9	7.6
		5G NR RedCap n77_Part 27O	24.5	5.5	5.5
		5G NR RedCap n77_Part 27Q	24.5	5.5	5.5
		5G NR RedCap n78_Part 27O	24.5	5.5	5.5
		5G NR RedCap n78_Part 27Q	24.5	5.5	5.5