

RF EXPOSURE EVALUATION REPORT

FCC ID : GKRRMMG4
Equipment : 5G Module
Brand Name : COMPAL
Model Name : RMM-G4
Applicant : Compal Electronics, Inc.
No.581 & 581-1, Ruiguang Rd., Neihu
District, Taipei city, (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



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History of this test report

Report No.	Version	Description	Issued Date
FA591004-02	Rev. 01	Initial issue of report	Dec. 12, 2025

**1. Description of Equipment Under Test (EUT)**

Product Feature & Specification	
Equipment Name	5G Module
Brand Name	COMPAL
Model Name	RMM-G4
FCC ID	GKRRMMG4
Wireless Technology and Frequency Range	UMTS Band 2: 1850 MHz ~ 1910 MHz UMTS Band 4: 1710 MHz ~ 1755 MHz UMTS Band 5: 824 MHz ~ 849 MHz 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 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n13: 777 MHz ~ 787 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n70 : 1695 MHz ~ 1710 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz 5G NR n78: 3700 MHz ~ 3800 MHz, 3450MHz ~ 3550MHz
Mode	UMTS: RMC12.2Kbps, HSDPA, HSUPA, 16QAM uplink LTE: QPSK, 16QAM, 64QAM, 256QAM 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

Band		Maximum Power (dBm)
WCDMA	Band 2	25.00
	Band 4	25.00
	Band 5	25.00
LTE	Band 2	25.00
	Band 4	25.00
	Band 5	25.00
	Band 7	25.00
	Band 12	25.00
	Band 13	25.00
	Band 14	25.00
	Band 17	25.00
	Band 25	25.00
	Band 26	25.00
	Band 30	23.00
	Band 38	25.00
	Band 41	25.00
	Band 48	22.00
	Band 66	25.00
	Band 71	25.00
FR1	n2	25.00
	n5	25.00
	n7	25.00
	n12	25.00
	n13	25.00
	n14	25.00
	n25	25.00
	n26	25.00
	n30	23.00
	n38	25.00
	n41 PC3	25.00
	n41 PC2	27.50
	n41 PC1.5	29.00
	n48	22.00
	n66	25.00
	n70	25.00
	n71	25.00
	n77 PC3	25.00
	n77 PC2	27.00
	n77 PC1.5	29.00
	n78 PC3	25.00
	n78 PC2	27.00
	n78 PC1.5	29.00

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)
WCDMA Band 2	8.00	25.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
WCDMA Band 4	5.00	25.00	27.850	0.610	30.000	1.000	1.00	1000.000	0.199	1.000
WCDMA Band 5	6.10	25.00	28.950	0.785	31.100	1.288	7.00	1288.250	0.256	0.549
LTE Band 2	8.00	25.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
LTE Band 4	5.00	25.00	27.850	0.610	30.000	1.000	1.00	1000.000	0.199	1.000
LTE Band 5	6.10	25.00	28.950	0.785	31.100	1.288	7.00	1288.250	0.256	0.549
LTE Band 7	8.00	25.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
LTE Band 12	5.60	25.00	28.450	0.700	30.600	1.148	3.00	1148.154	0.229	0.466
LTE Band 13	5.90	25.00	28.750	0.750	30.900	1.230	3.00	1230.269	0.245	0.518
LTE Band 14	5.90	25.00	28.750	0.750	30.900	1.230	3.00	1230.269	0.245	0.525
LTE Band 17	5.60	25.00	28.450	0.700	30.600	1.148	3.00	1148.154	0.229	0.469
LTE Band 25	8.00	25.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
LTE Band 26	6.10	25.00	28.950	0.785	31.100	1.288	7.00	1288.250	0.256	0.549
LTE Band 30	0.98	23.00	21.830	0.152	23.980	0.250	0.25	250.0	0.050	1.000
LTE Band 38	8.00	25.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
LTE Band 41	8.00	25.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
LTE Band 48	1.00	22.00	20.850	0.122	23.000	0.200	0.20	199.526	0.040	1.000
LTE Band 66	5.00	25.00	27.850	0.610	30.000	1.000	1.00	1000.000	0.199	1.000
LTE Band 71	5.40	25.00	28.250	0.668	30.400	1.096	3.00	1096.478	0.218	0.442
NR Band 2	8.00	25.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
NR Band 5	6.10	25.00	28.950	0.785	31.100	1.288	7.00	1288.250	0.256	0.549
NR Band 7	8.00	25.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
NR Band 12	5.60	25.00	28.450	0.700	30.600	1.148	3.00	1148.154	0.229	0.466
NR Band 13	5.90	25.00	28.750	0.750	30.900	1.230	3.00	1230.269	0.245	0.518
NR Band 14	5.90	25.00	28.750	0.750	30.900	1.230	3.00	1230.269	0.245	0.525
NR Band 25	8.00	25.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
NR Band 26	6.10	25.00	28.950	0.785	31.100	1.288	7.00	1288.250	0.256	0.549
NR Band 30	0.98	23.00	21.830	0.152	23.980	0.250	0.25	250.0	0.050	1.000
NR Band 38	8.00	25.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
NR Band 41_PC3	8.00	25.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
NR Band 41_PC2	5.50	27.50	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
NR Band 41_PC1.5	4.00	29.00	30.850	1.216	33.000	1.995	2.00	1995.262	0.397	1.000
NR Band 48	1.00	22.00	20.850	0.122	23.000	0.200	0.20	199.526	0.040	1.000
NR Band 66	5.00	25.00	27.850	0.610	30.000	1.000	1.00	1000.000	0.199	1.000
NR Band 70	5.00	25.00	27.850	0.610	30.000	1.000	1.00	1000.000	0.199	1.000
NR Band 71	5.40	25.00	28.250	0.668	30.400	1.096	3.00	1096.478	0.218	0.442
NR Band 77_PC3	5.00	25.00	27.850	0.610	30.000	1.000	1.00	1000.000	0.199	1.000
NR Band 77_PC2	3.00	27.00	27.850	0.610	30.000	1.000	1.00	1000.000	0.199	1.000
NR Band 77_PC1.5	1.00	29.00	27.850	0.610	30.000	1.000	1.00	1000.000	0.199	1.000
NR Band 78_PC3	5.00	25.00	27.850	0.610	30.000	1.000	1.00	1000.000	0.199	1.000
NR Band 78_PC2	3.00	27.00	27.850	0.610	30.000	1.000	1.00	1000.000	0.199	1.000
NR Band 78_PC1.5	1.00	29.00	27.850	0.610	30.000	1.000	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
WCDMA Band 2	6.10	25.00	31.1	1.29	1288.25	0.256	1.000	0.256
WCDMA Band 4	5.00	25.00	30.0	1.00	1000.00	0.199	1.000	0.199
WCDMA Band 5	3.70	25.00	28.7	0.74	741.31	0.148	0.549	0.269
LTE Band 2	6.10	25.00	31.1	1.29	1288.25	0.256	1.000	0.256
LTE Band 4	5.00	25.00	30.0	1.00	1000.00	0.199	1.000	0.199
LTE Band 5	3.70	25.00	28.7	0.74	741.31	0.148	0.549	0.269
LTE Band 7	7.00	25.00	32.0	1.58	1584.89	0.315	1.000	0.315
LTE Band 12	3.20	25.00	28.2	0.66	660.69	0.132	0.466	0.282
LTE Band 13	3.50	25.00	28.5	0.71	707.95	0.141	0.518	0.272
LTE Band 14	3.50	25.00	28.5	0.71	707.95	0.141	0.525	0.268
LTE Band 17	3.20	25.00	28.2	0.66	660.69	0.132	0.469	0.280
LTE Band 25	6.10	25.00	31.1	1.29	1288.25	0.256	1.000	0.256
LTE Band 26	3.70	25.00	28.7	0.74	741.31	0.148	0.549	0.269
LTE Band 30	0.98	23.00	23.98	0.25	250.03	0.050	1.000	0.050
LTE Band 38	7.00	25.00	32.0	1.58	1584.89	0.315	1.000	0.315
LTE Band 41	7.00	25.00	32.0	1.58	1584.89	0.315	1.000	0.315
LTE Band 48	1.00	22.00	23.0	0.20	199.53	0.040	1.000	0.040
LTE Band 66	5.00	25.00	30.0	1.00	1000.00	0.199	1.000	0.199
LTE Band 71	3.00	25.00	28.0	0.63	630.96	0.126	0.442	0.284
NR Band 2	6.10	25.00	31.1	1.29	1288.25	0.256	1.000	0.256
NR Band 5	3.70	25.00	28.7	0.74	741.31	0.148	0.549	0.269
NR Band 7	7.00	25.00	32.0	1.58	1584.89	0.315	1.000	0.315
NR Band 12	3.20	25.00	28.2	0.66	660.69	0.132	0.466	0.282
NR Band 13	3.50	25.00	28.5	0.71	707.95	0.141	0.518	0.272
NR Band 14	3.50	25.00	28.5	0.71	707.95	0.141	0.525	0.268
NR Band 25	6.10	25.00	31.1	1.29	1288.25	0.256	1.000	0.256
NR Band 26	3.70	25.00	28.7	0.74	741.31	0.148	0.549	0.269
NR Band 30	0.98	23.00	23.98	0.25	250.03	0.050	1.000	0.050
NR Band 38	7.00	25.00	32.0	1.58	1584.89	0.315	1.000	0.315
NR Band 41_PC3	7.00	25.00	32.0	1.58	1584.89	0.315	1.000	0.315
NR Band 41_PC2	4.50	27.50	32.0	1.58	1584.89	0.315	1.000	0.315
NR Band 41_PC1.5	3.00	29.00	32.0	1.58	1584.89	0.315	1.000	0.315
NR Band 48	1.00	22.00	23.0	0.20	199.53	0.040	1.000	0.040
NR Band 66	5.00	25.00	30.0	1.00	1000.00	0.199	1.000	0.199
NR Band 70	5.00	25.00	30.0	1.00	1000.00	0.199	1.000	0.199
NR Band 71	3.00	25.00	28.0	0.63	630.96	0.126	0.442	0.284
NR Band 77_PC3	5.00	25.00	30.0	1.00	1000.00	0.199	1.000	0.199
NR Band 77_PC2	3.00	27.00	30.0	1.00	1000.00	0.199	1.000	0.199
NR Band 77_PC1.5	1.00	29.00	30.0	1.00	1000.00	0.199	1.000	0.199
NR Band 78_PC3	5.00	25.00	30.0	1.00	1000.00	0.199	1.000	0.199
NR Band 78_PC2	3.00	27.00	30.0	1.00	1000.00	0.199	1.000	0.199
NR Band 78_PC1.5	1.00	29.00	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

Maximum WWAN Power Density / Limit	Maximum WLAN Power Density / Limit	Maximum Bluetooth Power Density / Limit	Σ (Power Density / Limit) of WWAN + WLAN + Bluetooth
0.315	0.199	0.020	0.534

Note:

1. The device implanted 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.
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 all 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)	Stanalone Maximum Antenna Gain (dBi)	Collocated Maximum Antenna Gain (dBi)
RMM-G4	UMTS	WCDMA Band 2	25.0	8.0	6.1
		WCDMA Band 4	25.0	5.0	5.0
		WCDMA Band 5	25.0	6.1	3.7
	LTE	LTE Band 2	25.0	8.0	6.1
		LTE Band 4	25.0	5.0	5.0
		LTE Band 5	25.0	6.1	3.7
		LTE Band 7	25.0	8.0	7.0
		LTE Band 12	25.0	5.6	3.2
		LTE Band 13	25.0	5.9	3.5
		LTE Band 14	25.0	5.9	3.5
		LTE Band 17	25.0	5.6	3.2
		LTE Band 25	25.0	8.0	6.1
		LTE Band 26	25.0	6.1	3.7
		LTE Band 30	23.0	0.98	0.98
		LTE Band 38	25.0	8.0	7.0
		LTE Band 41	25.0	8.0	7.0
		LTE Band 48	22.0	1.0	1.0
		LTE Band 66	25.0	5.0	5.0
		LTE Band 71	25.0	5.4	3.0
	NR	NR Band 2	25.0	8.0	6.1
		NR Band 5	25.0	6.1	3.7
		NR Band 7	25.0	8.0	7.0
		NR Band 12	25.0	5.6	3.2
		NR Band 13	25.0	5.9	3.5
		NR Band 14	25.0	5.9	3.5
		NR Band 25	25.0	8.0	6.1
		NR Band 26	25.0	6.1	3.7
		NR Band 30	23.0	0.98	0.98
		NR Band 38	25.0	8.0	7.0
		NR Band 41_PC3	25.0	8.0	7.0
		NR Band 41_PC2	27.5	5.5	4.5
		NR Band 41_PC1.5	29.0	4.0	3.0
		NR Band 48	22.0	1.0	1.0
		NR Band 66	25.0	5.0	5.0
		NR Band 70	25.0	5.0	5.0
		NR Band 71	25.0	5.4	3.0
		NR Band 77_PC3	25.0	5.0	5.0
		NR Band 77_PC2	27.0	3.0	3.0
		NR Band 77_PC1.5	29.0	1.0	1.0
		NR Band 78_PC3	25.0	5.0	5.0
		NR Band 78_PC2	27.0	3.0	3.0
		NR Band 78_PC1.5	29.0	1.0	1.0