

RF EXPOSURE EVALUATION REPORT

FCC ID : LHJ-FE4NA0210
Equipment : FE4NA0210
Brand Name : Continental
Model Name : FE4NA0210
Applicant : Continental Automotive Systems, Inc.
21440 W Lake Cook Rd.
Manufacturer : Continental Automotive Systems, Inc.
21440 W Lake Cook Rd.
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: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full



Approved by: Cona Huang / Deputy Manager



SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan



Table of Contents

1. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)	4
2. MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS	5
3. RF EXPOSURE LIMIT INTRODUCTION	6
4. RADIO FREQUENCY RADIATION EXPOSURE EVALUATION	7
4.1. Standalone Power Density Calculation	7



1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	FE4NA0210
Brand Name	Continental
Model Name	FE4NA0210
FCC ID	LHJ-FE4NA0210
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 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 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 66: 1710 MHz ~ 1780 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM, 64QAM
HW Version	P4
EUT Stage	Identical Prototype

Antenna Information	
Antenna type	external sharkfin antenna
Model name	85563011

Reviewed by: Jason Wang

Report Producer: Daisy Peng



2. Maximum RF average output power among production units

Mode		Maximum Average power(dBm)
WCDMA	Band II	24
	Band IV	24
	Band V	24
LTE	Band 2	24
	Band 4	24
	Band 5	24
	Band 12	24
	Band 13	24
	Band 14	24
	Band 66	24



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

External sharkfin antenna

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
WCDMA Band 2	8.10	24.00	32.1	1.62	1621.81	0.323	1.000	0.323
WCDMA Band 4	5.80	24.00	29.8	0.95	954.99	0.190	1.000	0.190
WCDMA Band 5	3.20	24.00	27.2	0.52	524.81	0.104	0.549	0.190
LTE Band 2	8.10	24.00	32.1	1.62	1621.81	0.323	1.000	0.323
LTE Band 4	5.80	24.00	29.8	0.95	954.99	0.190	1.000	0.190
LTE Band 5	3.20	24.00	27.2	0.52	524.81	0.104	0.549	0.190
LTE Band 12	2.50	24.00	26.5	0.45	446.68	0.089	0.466	0.191
LTE Band 13	2.80	24.00	26.8	0.48	478.63	0.095	0.518	0.184
LTE Band 14	2.60	24.00	26.6	0.46	457.09	0.091	0.525	0.173
LTE Band 66	6.10	24.00	30.1	1.02	1023.29	0.204	1.000	0.204

Conclusion:

According to 47 CFR §1.1307, the RF exposure analysis concludes that the RF Exposure is FCC compliant.