



Test Report No.: W7L-230201W001RF07



# VARIANT FCC RF TEST REPORT

Applicant:	Continental Automotive Systems, Inc.
Address:	21440 W Lake Cook Rd., Deer Park, IL 60010, USA

Manufacturer or Supplier:	Continental Automotive Systems, Inc.
Address:	21440 W Lake Cook Rd., Deer Park, IL 60010, USA
Product:	FE5NA0010, FE5NA0011
Brand Name:	Continental
Model Name:	FE5NA0010, FE5NA0011
FCC ID:	LHJ-FE5NA0010
Date of tests:	Jan. 19, 2023 ~ Feb. 23, 2023

The tests have been carried out according to the requirements of the following standard:

- FCC PART 22, Subpart H     FCC PART 24, Subpart E     FCC Part 27, Subpart C, M
- FCC Part 90, Subpart R, S     FCC Part 2
- ANSI/TIA/EIA-603-D     ANSI C63.26-2015
- ANSI/TIA/EIA-603-E

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
Date: Feb. 23, 2023	Date: Feb. 23, 2023

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-220214W001RF07	Original release	Aug. 08, 2022
W7L-230201W001RF05	Based on the original product changing the software version.	Feb. 23, 2023

# 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 22/24/27 & PART 2		
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT
§2.1046 §90.635(b)	Conducted Output Power (Band14)	See Note
§27.50(c)(10)	Equivalent Radiated Power (Band12)	See Note
§22.913(a)(5) §24.232(c)(2) §27.50(d)(4)	Equivalent Isotropically Radiated Power (Band2) (Band4) (Band5) (Band66)	See Note
§2.1055 §22.355 §24.235 §27.54 §90.213	Frequency Stability	See Note
§2.1049 §90.209	Occupied Bandwidth	See Note
§2.1051 §22.917(a) §24.238(a)(b) §27.53(g) §27.53(h) §90.691	Band Edge Measurements	See Note
§2.1051 §22.917(a) §24.238(a)(b) §27.53(g) §27.53(h) §90.691	Conducted Spurious Emissions	See Note

§2.1053 §22.917(a) §24.238(a)(b) §27.53(g) §27.53(h) §90.691	Radiated Spurious Emissions	See Note
§22.913(d) §24.232(d)	Peak-to-Average Ratio	See Note

**NOTE:** Please refer to the original report W7L-220214W001RF05.

## 1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions & Radiated Power (30MHz~1GHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (1GHz ~6GHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GHz ~18GHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GHz ~40GHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Band Edge Measurements	$\pm 4.70\text{dB}$

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .



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## 2 GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	FE5NA0010, FE5NA0011	
<b>BRAND NAME</b>	Continental	
<b>MODEL NAME</b>	FE5NA0010, FE5NA0011	
<b>NOMINAL VOLTAGE</b>	EUT 4.0V	
<b>MODULATION TECHNOLOGY</b>	<b>LTE</b>	QPSK, 16QAM, 64QAM
<b>SUPPORT ENDC COMBINE</b>	<b>Uplink CA Bands</b>	2A-5A
		2A-12A
		4A-12A
		2A-14A
		5A-66A
		12A-66A
		14A-66A
<b>FREQUENCY RANGE</b>	<b>LTE Band 2</b>	1850.7MHz ~ 1909.3MHz
	<b>LTE Band 4</b>	1710.7MHz ~ 1754.3MHz
	<b>LTE Band 5</b>	824.7MHz ~ 848.3MHz
	<b>LTE Band 12</b>	699.7MHz ~ 715.3MHz
	<b>LTE Band 14</b>	790.5MHz ~ 795.5MHz
	<b>LTE Band 66</b>	1710.7MHz ~ 1779.3MHz
<b>ANTENNA TYPE</b>	Monopole Antenna with 2.45 dBi gain for LTE B2 Monopole Antenna with 3.09 dBi gain for LTE B4/B66 Monopole Antenna with 0.58 dBi gain for LTE B5 Monopole Antenna with -1.88 dBi gain for LTE B12 Monopole Antenna with -1.88 dBi gain for LTE B14	
<b>HW VERSION</b>	FE5NA0010	P4.1
	FE5NA0011	P4.2
<b>SW VERSION</b>	MODEMSA515M_LE2.1_01.14.39	
<b>I/O PORTS</b>	Refer to user's manual	
<b>CABLE SUPPLIED</b>	N/A	
<b>EXTREME TEMPERATURE</b>	-40-85 °C	
<b>EXTREME VOLTAGE</b>	EUT 3.8V - EUT 4.2V	



**BUREAU  
VERITAS**

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**NOTE:**

1. For a more detailed features description, please refer to the manufacturer’s specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
LTE	1TX/4RX

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
4. Max ERP/EIRP is according to Max conducted power calculate for SA.
5. The N41-HPUE&N77C-HPUE induced N41&N77C.
6. According to the information provided by the manufacturer, The difference between FE5NA0010, FE5NA0011 is as follows:

TA-code	L2/L5 GNSS	Band Difference
FE5NA0010	support	/
FE5NA0011	not support	BOM change: depopulated passive components from the GNSS RF front-end

**2.2 GENERAL DESCRIPTION OF APPLIED STANDARDS**

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 22**

**FCC 47 CFR Part 24**

**FCC 47 CFR Part 27**

**FCC 47 CFR Part 90**

**KDB 971168 D01 Power Meas License Digital Systems v03r01**

**ANSI/TIA/EIA-603-D**

**ANSI/TIA/EIA-603-E**

**ANSI C63.26-2015**

**NOTE:** All test items have been performed and recorded as per the above standards.





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### 3 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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**Web Site:** [www.adt.com.tw](http://www.adt.com.tw)

The address and road map of all our labs can be found in our web site also.



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## 4 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---