VARIANT FCC TEST REPORT

(PART 24)

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 24, Subpart E** ☒ **FCC PART 2**
☒ **ANSI/TIA/EIA-603-D** ☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

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
Simon Wang Date: Feb. 23, 2023	Luke Lu Date: Feb. 23, 2023

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-220214W001RF02	Original release	Jul. 30, 2022
W7L-230201W001RF02	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 24 & Part 2		
STANDARD SECTION	**TEST TYPE**	**RESULT**
§2.1046	Coduncted Output Power	Compliance
§24.232(c)	Equivalent Isotropic Radiated Power	Compliance
§2.1055 §24.235	Frequency Stability	See Note
§2.1049	Occupied Bandwidth	See Note
§24.232(d)	Peak to average ratio	See Note
§24.238(a)(b)	Band Edge Measurements	See Note
§2.1051 §24.238(a)(b)	Conducted Spurious Emissions	See Note
§2.1053 §24.238(a)(b)	Radiated Spurious Emissions	See Note

NOTE: Please refer to the original report W7L-220214W001RF02.

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	±76.97Hz
Radiated emissions & Radiated Power (30MHz~1GHz)	±4.98dB
Radiated emissions & Radiated Power (1GHz ~6GHz)	±4.70dB
Radiated emissions (6GHz ~18GHz)	±4.60dB
Radiated emissions (18GHz ~40GHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Band Edge Measurements	±4.70dB
Peak to average ratio	±0.76dB

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

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	FE5NA0010, FE5NA0011	
BRAND NAME	Continental	
MODEL NAME	FE5NA0010, FE5NA0011	
NOMINAL VOLTAGE	EUT 4.0V	
MODULATION TYPE	**WCDMA:** BPSK,QPSK **LTE Band 2:** QPSK, 16QAM, 64QAM	
FREQUENCY RANGE	**WCDMA**	1852.4MHz ~ 1907.6MHz
	LTE Band 2 **Channel Bandwidth: 1.4MHz**	1850.7MHz ~ 1909.3MHz
	LTE Band 2 **Channel Bandwidth: 3MHz**	1851.5MHz ~ 1908.5MHz
	LTE Band 2 **Channel Bandwidth: 5MHz**	1852.5MHz ~ 1907.5MHz
	LTE Band 2 **Channel Bandwidth: 10MHz**	1855.0MHz ~ 1905.0MHz
	LTE Band 2 **Channel Bandwidth: 15MHz**	1857.5MHz ~ 1902.5MHz
	LTE Band 2 **Channel Bandwidth: 20MHz**	1860.0MHz ~ 1900.0MHz
MAX. EIRP POWER	**WCDMA**	417.83mW
	LTE Band 2 **Channel Bandwidth: 1.4MHz**	374.117mW
	LTE Band 2 **Channel Bandwidth: 3MHz**	373.25mW
	LTE Band 2 **Channel Bandwidth: 5MHz**	373.25mW
	LTE Band 2 **Channel Bandwidth: 10MHz**	369.83mW
	LTE Band 2 **Channel Bandwidth: 15MHz**	374.11mW
	LTE Band 2 **Channel Bandwidth: 20MHz**	374.97mW

EMISSION DESIGNATOR	**WCDMA**	4M16F9W
	LTE Band 2 Channel Bandwidth: 1.4MHz	QPSK: 1M09G7D
		16QAM: 1M09W7D
		64QAM: 1M09W7D
	LTE Band 2 Channel Bandwidth: 3MHz	QPSK: 2M70G7D
		16QAM: 2M69W7D
		64QAM: 2M69W7D
	LTE Band 2 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M50W7D
		64QAM: 4M50W7D
	LTE Band 2 Channel Bandwidth: 10MHz	QPSK: 8M97G7D
		16QAM: 8M97W7D
		64QAM: 8M96W7D
	LTE Band 2 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
	LTE Band 2 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 18M0W7D
		64QAM: 18M0W7D
ANTENNA TYPE	Monopole Antenna with 2.45dBi gain for WCDMA II/LTE B2	
HW VERSION	FE5NA0010	P4.1
	FE5NA0011	P4.2
SW VERSION	MODEMSA515M_LE2.1_01.14.39	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	
EXTREME TEMPERATURE	-40-85 ℃	
EXTREME VOLTAGE	EUT 3.8V - EUT 4.2V	

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
WCDMA	1TX/2RX
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. 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 24

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.

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

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.

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