TCT 通测检测 TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID. ..... :	NBGFS197R
Test Report No..... :	TCT231226E025
Date of issue..... :	Feb. 05, 2024
Testing laboratory ..... :	SHENZHEN TONGCE TESTING LAB
Testing location/ address:	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China
Applicant's name..... :	HELLA GmbH & Co. KGaA
Address..... :	Rixbecker Strasse 75, Lippstadt D-59552, Germany
Manufacturer's name ... :	HELLA GmbH & Co. KGaA
Address..... :	Rixbecker Strasse 75, Lippstadt D-59552, Germany
Factory's name ..... :	HELLA GmbH & Co. KGaA
Address..... :	Römerstraße 66 59075 Hamm Germany
Standard(s) ..... :	KDB 447498 D04 Interim General RF Exposure Guidance v01
Product Name..... :	Passive Entry-Passive Start Radio Identification Device
Trade Mark ..... :	HELLA
Model/Type reference..... :	FS197R
Rating(s)..... :	DC 3V
Date of receipt of test item ..... :	Dec. 26, 2023
Date (s) of performance of test..... :	Dec. 26, 2023 - Feb. 05, 2024
Tested by (+signature) ... :	Brews XU
Check by (+signature).... :	Beryl ZHAO
Approved by (+signature):	Tomsin

General disclaimer:

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Table of Contents

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

1. General Product Information

1.1. EUT description

Product Name.....:	Passive Entry-Passive Start Radio Identification Device
Model/Type reference.....:	FS197R
Sample Number.....:	TCT231226E009-0101
Operation Frequency.....:	UWB: 6988.8MHz, 7488MHz UHF: 433.46MHz, 433.92MHz, 434.36MHz
Modulation Type.....:	UWB: BPM-BPSK UHF:FSK
Antenna Type.....:	UWB: PCB Integrated Monopole Antenna UHF: Integrated PCB loop Antenna
Antenna Gain.....:	UWB: 0dBi UHF: -23dBi
Rating(s).....:	DC 3V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

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2. General Information

2.1. Test environment and mode

Item	Normal condition
Temperature	+25ºC
Voltage	DC 3V
Humidity	56%
Atmospheric Pressure:	1008 mbar
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel

2.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3. For conducted measurements (Output Power, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

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3. Facilities and Accreditations

3.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

  SHENZHEN TONGCE TESTING LAB

  Designation Number: CN1205

  The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

  SHENZHEN TONGCE TESTING LAB

  CAB identifier: CN0031

  The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

3.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

4. Test Results and Measurement Data

4.1. Requirements

For single RF sources (*i.e.,* any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if the available maximum time-averaged power is no more than 1 mW, regardless of separation distance.

4.2. Test Result

UHF PKE mode

Frequency (MHz)	Electric field strength (dBuV/m)@3m	Max. Power (dBm)	Tune up Power (dBm)	Max. Tune up Power (dBm)	Max. Tune up Power (mW)	Test Exemption limit(mW)
433.46	80.57	-19.36	-20±1	-19	0.01	1.0
433.92	80.61	-19.32	-20±1	-19	0.01	
434.36	80.71	-19.22	-20±1	-19	0.01	

UHF RKE mode

Frequency (MHz)	Electric field strength (dBuV/m)@3m	Max. Power (dBm)	Tune up Power (dBm)	Max. Tune up Power (dBm)	Max. Tune up Power (mW)	Test Exemption limit(mW)
433.46	80.59	-19.34	-20±1	-19	0.01	1.0
433.92	80.77	-19.16	-20±1	-19	0.01	
434.36	80.59	-19.34	-20±1	-19	0.01	

UWB

Frequency (MHz)	Electric field strength (dBuV/m)@3m	Max. Power (dBm)	Tune up Power (dBm)	Max. Tune up Power (dBm)	Max. Tune up Power (mW)	Test Exemption limit(mW)
6988.8	85.26	-10.04	-10±1	-9	0.13	1.0
7488	88.56	-6.74	-7±1	-6	0.25	1.0

For simultaneous transmitting:

Simultaneous Transmitting Mode	Total Value	Test Exemption limit
PKE+UWB	0.26	1
RKE+UWB	0.26	

Note: Computational formula for below 1GHz
EIRP[dBm] = E[dBμV/m] + 20 log (d[m]) − 104.77;
Conducted Power = EIRP-4.7;
where
E is the electric field strength in V/m; d is the measurement distance in meters (m)
Computational formula for above 1GHz: EIRP(dBm) = E(dBμV/m) − 95.3

Result:

Because the max tune up power is less than the exemption limit, so No SAR measurement is required.

********END OF REPORT********

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