

Notified Body  
**TÜV Rheinland**  
**LGA Products GmbH**

Tillystraße 2  
90431 Nürnberg  
notified by the

Bundesnetzagentur für Elektrizität, Gas,  
Telekommunikation, Post und Eisenbahnen

**under No. 0197**

herewith issues an

**EU-Type Examination Certificate**

within the meaning of Annex III Module B of the 2014/53/EU Radio Equipment Directive (RED)  
for compliance with the essential requirements of this directive

Registration Number: RT 60167657 0001

Evaluation Report Nr.: CN237RUY 001

**Manufacturer:** Shenzhen Pudu Technology Co., Ltd.  
Rm. 501, Bld. A, Block 1,  
Phase 1, Shenzhen International  
Inno Valley, Dashi 1st Rd.,  
Nanshan District, Shenzhen,  
Guangdong  
P.R. China

**Product:** Radio Equipment  
(Versatile cleaning robot)

**Type Identification:** CCBC01  
(PUDU)

**Essential requirements:** 2014/53/EU (RED)  
Article 3.1a Health  
Article 3.1a Electrical Safety  
Article 3.1b EMC  
Article 3.2 Radio spectrum

The technical design of the assessed type has been verified based on the technical documentation presented by the manufacturer according to Annex III Module B of the Directive. As far as the essential requirements indicated, the Notified Body of TÜV Rheinland LGA Products GmbH confirms, that the technical design of the apparatus meets the essential requirements of the Directive 2014/53/EU Article 3.

This certificate consists of this page and Annex I.

Validity of the certificate is specified in the Annex I.

**Date** 13.01.2023



**Notified Body**

*S. Peng*  
**S. Peng**

## Equipment

**Product** : Versatile cleaning robot

**Trademark** : PUDU

**Identification** : CCBC01

**Product description** : The EUT is a versatile cleaning robot designed for small and medium-sized scenarios. It integrates sweeping, scrubbing, (carpet) vacuuming, and dust mopping and features auto-filling/draining and auto-charging functions.

### System description

Frequency band(s) of operation	: UTRA FDD Band I/VIII, E-UTRA Band 1/3/7/8/20/28/34/38/40, 2400 MHz to 2483,5 MHz, 5150 MHz to 5350 MHz, 5470 MHz to 5725 MHz, 5725 MHz to 5875 MHz
Operating frequency	: UTRA Band I/E-UTRA Band 1: Uplink: 1920-1980MHz, Downlink: 2110-2170MHz E-UTRA Band 3: Uplink: 1710-1785MHz, Downlink: 1805-1880MHz E-UTRA Band 7: Uplink: 2500-2570MHz, Downlink: 2620-2690MHz UTRA Band 8/E-UTRA Band 8: Uplink: 880-915MHz, Downlink: 925-960MHz E-UTRA Band 20: Uplink: 832-862MHz, Downlink: 791-821MHz E-UTRA Band 28: Uplink: 703-736MHz, Downlink: 758-791MHz E-UTRA Band 34: Uplink/Downlink: 2010-2025MHz E-UTRA Band 38: Uplink/Downlink: 2570-2620MHz E-UTRA Band 40: Uplink/Downlink: 2300-2400MHz Bluetooth: 2402-2480 MHz Wi-Fi: 2412-2472 MHz, 5180-5320 MHz, 5500-5700 MHz, 5745-5825 MHz
Channel spacing / bandwidth	: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz, 1 MHz, 2 MHz, 40 MHz, 80 MHz
RF output power	: Module - SIM7600G-H miniPCIE UTRA (WCDMA): Power Class 3, 24 dBm +1.7/-3.7 dB E-UTRA (LTE): Power Class 3, 23 dBm ±2 dB Module – FC80A Bluetooth: 2402-2480 MHz : 9.33 dBm (Max. e.i.r.p.) Wi-Fi: 2412-2472 MHz: 18.82 dBm (Max. e.i.r.p.) 5180-5320 MHz: 15.39 dBm (Max. e.i.r.p.) 5500-5700 MHz: 15.77 dBm (Max. e.i.r.p.) 5745-5825 MHz: 13.94 dBm (Max. e.i.r.p.) Module – ESP32-WROOM-32U Bluetooth: 2402-2480 MHz : 2.56 dBm (Max. e.i.r.p.) Wi-Fi: 2412-2472 MHz: 19.69 dBm (Max. e.i.r.p.)
Type of modulation	: QPSK, 16QAM, 64QAM, GFSK, $\pi/4$ -DQPSK, 8-DPSK, DSSS, OFDM
Type of antenna	: Integral antenna, FPC antenna
Mode of operation (simplex / duplex)	: Duplex
Duty cycle (access protocol, if applicable)	: Up to 100%
Hardware version	: B00
Software version	: 11.0.17.7
Other relevant information	: Contains the certified modules: Cellular module: SIM7600G-H miniPCIE manufactured by SIMCom Wireless Solutions Limited Wi-Fi and Bluetooth module: FC80A manufactured by Quectel Wireless Solutions Co., Ltd Wi-Fi and Bluetooth module: ESP32-WROOM-32U manufactured by ESPRESSIF SYSTEMS (SHANGHAI) CO., LTD.

## Documentation

User information and installation instructions	<input checked="" type="checkbox"/>
Block diagram	<input checked="" type="checkbox"/>
Circuit diagram	<input checked="" type="checkbox"/>
Part list	<input checked="" type="checkbox"/>
PCB layout	<input checked="" type="checkbox"/>
Photo documentation	<input checked="" type="checkbox"/>
Versions of firmware/software used	<input checked="" type="checkbox"/>
Statement of compliance with art. 10.2 it can be operated in at least one Member State without infringing applicable requirements on the use of radio spectrum.	<input checked="" type="checkbox"/>
Risk Analysis	<input checked="" type="checkbox"/>

## Conformity Assessment

Applied harmonised standards (Referred to the publication of harmonised standards in the official Journal of the EU at the time of issuance)			
Article	Standard	Test Report No.	Issued by
3.1a Health:	--	--	--
3.1a Safety:	--	--	--
3.1b EMC:	--	--	--
3.2 Radio:	EN 301 908-1 V15.1.1 (2021-09) EN 301 908-2 V13.1.1 (2020-06) EN 301 908-13 V13.1.1 (2019-11) EN 300 328 V2.2.2 (2019-07) EN 301 893 V2.1.1 (2017-05)	CN22EDPK 001	TÜV Rheinland (Shenzhen) Co., Ltd.
3.3 Others:	--	--	--

Applied non-harmonised standards			
Article	Standard	Test Report No.	Issued by
3.1a Health:	EN IEC 62311:2020 EN 62233:2008	CN22EDPK 003 CN22MUF5 001	TÜV Rheinland (Shenzhen) Co., Ltd.
3.1a Safety:	EN 60335-1: 2012+A11+A13+A14+A15 EN 60335-2-69:2012	CN22MUF5 001	TÜV Rheinland (Shenzhen) Co., Ltd.
3.1b EMC:	EN 301 489-1 V2.2.3 (2019-11) Final Draft EN 301 489-3 V2.2.0 (2021-11) EN 301 489-17 V3.2.4 (2020-09) EN 301 489-52 V1.2.1 (2021-11) EN IEC 55014-1:2021 EN IEC 55014-2:2021 EN IEC 61000-3-2:2019+A1:2021 EN 61000-3-3:2013+A2:2021	CN22EDPK 002	TÜV Rheinland (Shenzhen) Co., Ltd.
3.2 Radio:	EN 300 440 V2.2.1 (2018-07)	CN22EDPK 001	TÜV Rheinland (Shenzhen) Co., Ltd.

## Rationale for applied non-harmonised standards or other solutions:

- EN IEC 62311 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz); EN 62233 Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure
- EN 60335-1 Household and similar electrical appliances - Safety - Part 1: General requirements; EN 60335-2-69 Household and similar electrical appliances - Safety - Part 2-69: Particular requirements for wet and dry vacuum cleaners, including power brush for commercial use

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- EN 301 489-1 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard for ElectroMagnetic Compatibility; EN 301 489-3 Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU; EN 301 489-17 Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard for ElectroMagnetic Compatibility; EN 301 489-52 Part 52: Specific conditions for Cellular Communication User Equipment (UE) radio and ancillary equipment; Harmonised Standard for ElectroMagnetic Compatibility; EN IEC 55014-1 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission; EN IEC 55014-2 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity - Product family standard; EN IEC 61000-3-2 Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase); EN 61000-3-3 Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current  $\leq 16$  A per phase and not subject to conditional connection;
- EN 300 440 Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Harmonised Standard for access to radio spectrum

**Remarks:**

- This Type Examination Certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity.
- This Type Examination Certificate only relates to the assessment of technical documentation to verify that the technical design of radio equipment meets the essential requirements of the RED 2014/53/EU and will not show compliance with essential requirements of other possible applicable EU Directives.
- The manufacturer has declared in compliance with art. 10.2 that the Radio Equipment can be operated in at least one Member State without infringing applicable requirements on the use of radio spectrum.
- Validity of this Type Examination Certificate is limited to the versions of the applied standard. If versions of standards change or modifications are made to the product, this Certificate will be invalidated.