

# Approved Body Type Examination Certificate

Manufacturer company name:	VEGA Grieshaber KG
Manufacturer address:	Am Hohenstein 113, 77761 Schiltach Germany
Description of the radio equipment:	Level probing device with radio technology
Trade name/brand name:	VEGA
Model/type indication:	VEGAPULS Air 23
Software version:	Not provided
Hardware version:	Not provided
Technologies:	LoRa NFC NB-IoT FMCW Radar sensor GPS receiver
TD reference:	VEGA VEGAPULS Air 23
ACB project number:	ATCB028792
Certificate number:	ATCB028792

ACB, Inc. is designated as an Approved Body under the  
U.S.-UK Mutual Recognition Agreement (Telecommunications Equipment & EMC Annexes)

**ACB, Inc.**  
**Approved Body Number 1588**  
6731 Whittier Avenue, Suite C110  
McLean, VA 22101, USA

In the opinion of ACB, Inc., the examination of the technical documentation as drawn up by the manufacturer demonstrates that the essential requirements of Regulation 6 (1)(a), Regulation 6 (1)(b) and Regulation 6 (2) of the Radio Equipment Regulations 2017 (S.I. No. 1206) have been met. The conformity assessment on the radio equipment listed above and as described in Annex 1 to this type examination certificate has been carried out in accordance with Schedule 3, Module B, of the Radio Equipment Regulations 2017 (S.I. No. 1206). This type examination certificate relates only to the documents as provided to ACB, Inc. A list of documentation forming the basis for the type examination is provided in Annex 2 to this type examination certificate.

  
Notified Body: *Jarwei Wang*

28 June 2022, issue 1  
Date



The radio equipment as described and documented in the technical documentation as drawn up by the manufacturer is a Radar sensor for level measurement.

It supports FMCW Radar technology in the 80 GHz band.

It supports LoRa technology in 868 MHz band.

It supports LTE technology with Cat M1 and NB-IoT in the 700 MHz Band 28, 800 MHz Band 20, 900 MHz Band 8, 1800 MHz Band 3 and 2100 MHz Band 1.

It supports GPS Receivers in the 1.5 GHz band.

It contains NFC passive tag in 13.56 MHz

### Details of operation:

Description of service:	FMCW
Transmit frequency:	75 GHz to 83 GHz
Receive frequency:	75 GHz to 83 GHz
Modulation:	FMCW
Transmit power:	23.8 dBm, maximum peak power

Description of service:	LoRa
Transmit frequency:	863.1 MHz to 869.9 MHz
Receive frequency:	863.1 MHz to 869.9 MHz
Modulation:	GFSK
Transmit power:	12.18 dBm, e.r.p.

Description of service:	NFC Passive tag
Operating frequency:	13.56 MHz
Modulation:	ASK

Description of service:	GPS
Operating frequency:	None
Receive frequency:	1575.42 MHz

**Annex 1 to type examination certificate for the Radio Equipment Regulations 2017 (S.I. No. 1206)**

**Date of issue: 28 June 2022, issue 1 TD reference: VEGA VEGAPULS Air 23**

**ACB project number: ATCB028792**

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Description of service: NB-IoT Band 1  
Transmit frequency: 1920 MHz to 1980 MHz  
Receive frequency: 2110 MHz to 2170 MHz  
Modulation: BPSK, QPSK  
Power class: Class 3  
Transmit power: 23.0 dBm, rated

Description of service: NB-IoT Band 3  
Transmit frequency: 1710 MHz to 1785 MHz  
Receive frequency: 1805 MHz to 1880 MHz  
Modulation: BPSK, QPSK  
Power class: Class 3  
Transmit power: 23.0 dBm, rated

Description of service: NB-IoT LTE Band 8  
Transmit frequency: 880 MHz to 915 MHz  
Receive frequency: 925 MHz to 960 MHz  
Modulation: BPSK, QPSK  
Power class: Class 3  
Transmit power: 23.0 dBm, rated

Description of service: NB-IoT Band 20  
Transmit frequency: 832 MHz to 862 MHz  
Receive frequency: 791 MHz to 821 MHz  
Modulation: BPSK, QPSK  
Power class: Class 3  
Transmit power: 23.0 dBm, rated

Description of service: NB-IoT Band 28  
Transmit frequency: 703 MHz to 748 MHz  
Receive frequency: 758 MHz to 803 MHz  
Modulation: BPSK, QPSK  
Power class: Class 3  
Transmit power: 23.0 dBm, rated



Annex 2 to type examination certificate for the Radio Equipment Regulations 2017 (S.I. No. 1206)

Date of issue: 28 June 2022, issue 1

TD reference: VEGA VEGAPULS Air 23

ACB project number: ATCB028792

Certificate number: ATCB028792

1 Test report:	Report number:	Dated:
EMC	4-2_PULS Air23_F1_1	30 July 2020
EMC	4-3_PULS Air23_F1_1	24 July 2020
EMC	5-1_PULS Air42_F2_1	6 October 2021
Radio	64610RMV.001A1	13 April 2021
Radio	64610REM.001A1	25 August 2020
Radio	64610REM.002A1	25 August 2020
Radio	64610REM.001A2	24 January 2022
Radio	64610REM.002A2	24 January 2022
Radio	65459RRF.001	7 October 2020
Radio	MDE_VEGA_1905_RADIO_03_REV01	1 March 2022
Radio	MDE_VEGA_1905_RADIO_06_REV01	1 March 2022
Radio	MDE_VEGA_2002_RADIO_13	6 October 2021
Radio	MDE_VEGA_1902_RADIO_23	3 February 2022
Radio	MDE_VEGA_1905_RADIO_12_REV01	2 June 2022
Radio	SHEM170500269702	11 July 2017
RF safety	MDE_VEGA_1905_MPE_02	1 June 2022
Product safety	2-1_PULS Air23_F1_1	17 July 2020
Product safety	2-2_PULS Air23_F1_1	15 October 2020
Product safety	2-4_PULS Air23_F1_1	26 August 2020
Product safety	2-5_PULS Air23_F1_1	16 July 2020
Product safety	2-6_PULS Air23_F1_1	17 July 2020
Product safety	2-7_PULS Air23_F1_1	1 September 2020
Product safety	2-8_PULS Air23_F1_1	17 July 2020
Product safety	21HAM005049_0_48849	25 June 2021

2 Technical documentation provided:

Antenna details	Block diagram	Circuit diagram/schematics
External photographs	Internal photographs	Label drawing/location
Operational description	Parts list/bill of materials	PCB layout
Risk assessment	Test reports	Test setup photographs
User manual	Declaration of conformity	

Existing and valid EU-type examination certificate number: 222140074/AA/00

Issued by: *telefication bv*, Notified Body number: 0560

Date: 14 May 2022



**Annex 2 to type examination certificate for the Radio Equipment Regulations 2017 (S.I. No. 1206)**

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**3 Standards used to demonstrate conformity with the essential requirements of the Radio Equipment Regulations 2017 (S.I. No. 1206):**

Radio spectrum (Regulation 6 (2)):	EN 301 908-1 V13.1.1 EN 303 413 V1.1.1 EN 300 220-1 V3.1.1 EN 302 372 V2.1.1	EN 301 908-13 V13.1.1 EN 300 330 V2.1.1 EN 300 220-2 V3.2.1 EN 302 729 V2.1.1
EMC (Regulation 6 (1)(b)):	EN 301 489-1 V2.2.3 EN 301 489-19 V2.2.0 EN 301 489-52 V1.1.2	EN 301 489-3 V2.1.2 EN 301 489-33 V2.2.1 EN 61326-1: 2013
RF safety (Regulation 6 (1)(a)):	EN 62311: 2008	EN 62479: 2010
Product safety (Regulation 6 (1)(a)):	EN 62368-1: 2014 + AC: 2015 + A11: 2017 EN 61010-1: 2010/ A1: 2019	

**4 Additional information:**

Radio Equipment Regulations 2017 (S.I. No. 1206), Regulation 11: Manufacturers shall keep the technical documentation and the declaration of conformity for 10 years after the radio equipment has been placed on the market.

Radio Equipment Regulations 2017 (S.I. No. 1206), Regulation 12 (1): Manufacturers shall ensure that radio equipment which they have placed on the market bears a type, batch or serial number or other element allowing its identification, or, where the size or nature of the radio equipment does not allow it, that the required information is provided on the packaging, or in a document accompanying the radio equipment.

Radio Equipment Regulations 2017 (S.I. No. 1206), Regulation 12 (2)-(5): Manufacturers shall indicate on the radio equipment their name, registered trade name or registered trade mark and the postal address at which they can be contacted or, where the size or nature of radio equipment does not allow it, on its packaging, or in a document accompanying the radio equipment. The address shall indicate a single point at which the manufacturer can be contacted. The contact details shall be in a language easily understood by end-users and market surveillance authorities.

Radio Equipment Regulations 2017 (S.I. No. 1206), Regulation 13 (1): Manufacturers shall ensure that the radio equipment is accompanied by instructions and safety information in a language which can be easily understood by consumers and other end-users, as determined by the UK. Instructions shall include the information required to use radio equipment in accordance with its intended use. Such information shall include, where applicable, a description of accessories and components, including software, which allow the radio equipment to operate as intended. Such instructions and safety information, as well as any labelling, shall be clear, understandable and intelligible.



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Radio Equipment Regulations 2017 (S.I. No. 1206), Regulation 13 (2): The following information shall also be included in the case of radio equipment intentionally emitting radio waves:

- (a) frequency band(s) in which the radio equipment operates;
- (b) maximum radio-frequency power transmitted in the frequency band(s) in which the radio equipment operates.

Radio Equipment Regulations 2017 (S.I. No. 1206), Regulation 13 (3): Manufacturers shall ensure that each item of radio equipment is accompanied by a copy of the declaration of conformity or by a simplified declaration of conformity drawn up in accordance with regulation 43 (simplified declaration of conformity). Where a simplified declaration of conformity is provided, it shall contain the exact internet address where the full text of the declaration of conformity can be obtained.

Radio Equipment Regulations 2017 (S.I. No. 1206), Regulation 14: In cases of restrictions on putting into service or of requirements for authorization of use, information available on the packaging shall allow the identification of the geographical area within the UK where restrictions on putting into service or requirements for authorization of use exist. Such information shall be completed in the instructions accompanying the radio equipment.

Radio Equipment Regulations 2017 (S.I. No. 1206), Regulation 44 (1)-(2): The UK marking shall be affixed visibly, legibly and indelibly to the radio equipment or to its data plate, unless that is not possible or not warranted on account of the nature of radio equipment. The UK marking shall also be affixed visibly and legibly to the packaging.

Radio Equipment Regulations 2017 (S.I. No. 1206), Regulation 44 (3): On account of the nature of radio equipment, the height of the UK marking affixed to radio equipment may be lower than 5 mm, provided that it remains visible and legible.

Radio Equipment Regulations 2017 (S.I. No. 1206), Schedule 7 (2): The manufacturer shall inform the approved body that holds the technical documentation relating to the type examination certificate of all modifications to the approved type that may affect the conformity of the radio equipment with the essential requirements of the Radio Equipment Regulations 2017 (S.I. No. 1206) or the conditions for validity of that certificate. Such modifications shall require additional approval in the form of an addition to the original type examination certificate.

Non-designated standards were used to demonstrate conformity with parts of the essential requirements in Regulation 6 (1)(a), Regulation 6 (1)(b) and Regulation 6(2).

In accordance with Approved Body guidance; if there are no changes, an Approved Body type examination certificate has a validity of 10 years from the date of issue.

**5 Contact information:**

For contact with ACB or questions regarding this type examination certificate:

Web: [www.acbcert.com](http://www.acbcert.com)

<http://acbcert.com/contact>

Tel.: (+1) 703 847 4700

