1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **CSANe 25ATEX1029X** Issue: **0**

4 Equipment: **Kona Macro Ex Gateway Model: T000906x, T000907x**
See Schedule for more information

5 Applicant: **Tektelic Communications Inc.**

6 Address: 7657 10th Street NE
Calgary, Alberta T2E 8X2
Canada

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-11:2012 EN 60079-31:2014

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

II 2GD
Ex db [ia Ga] IIB+H2 T6 Gb
Ex tb [ia Da] IIIC T85 °C Db
IP66
-40 °C ≤ Tamb ≤ 60 °C

Signed:

M Halliwell
Title: Senior Director of Operations

PRODUCTS
RvA C 652

Project Number 80226567

SCHEDULE

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Issue 0

13 DESCRIPTION OF EQUIPMENT

Model numbers continued.

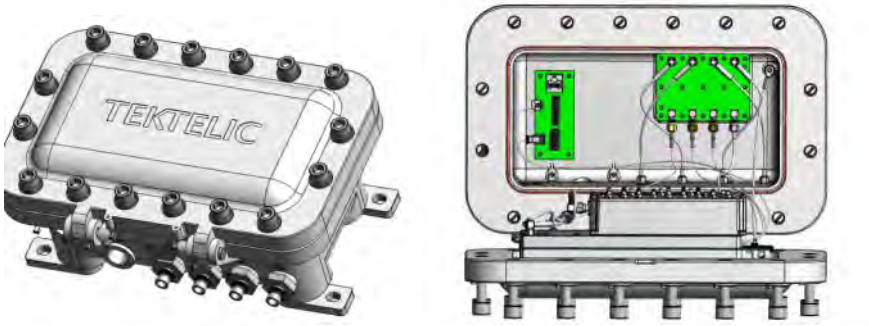
Kona Macro Ex Gateway Models	
Models	**Descriptions**
T0009060	North America 915 MHz FDD, Cellular, Geolocation
T0009061	Europe 868 MHz TDD, Cellular, Geolocation
T0009062	Australia 915 MHz TDD, Cellular, Geolocation
T0009063	Australia 923 MHz TDD, Cellular, Geolocation
T0009064	Brazil 915 MHz TDD, Cellular, Geolocation
T0009065	Singapore 923 MHz TDD, Cellular, Geolocation
T0009066 – T0009079	See note below
Note: The models numbers above can be shown as T000906x, T000907x. where x = 0 thru 9 are options on the Gateway PCBA in support of different geographic regions (RF frequencies, FDD/TDD operating modes, geolocation, etc.)	

The differences between models are limited to the internal Gateway PCBA with RF filter with respect to RF regions and functional capabilities.

The Kona Macro Ex Gateway is an outdoor LoRaWAN IoT gateway that supports the full range of LoRa WAN channels. It consists of Internal and Gateway PCB along with four RF channels PCB. The PCBs housed in a flameproof enclosure that allows it to be used in hazardous areas.

The RF PCB is an IS circuit which is separated from the non-IS circuit (Internal and Gateway) by creating galvanic isolation with the help of two blocking capacitors.

Figure 1 illustrates the overall external view of the Kona Macro Ex Gateway.



Specifications:

Attribute	Specifications
Dimensions	352 mm (13.86”) wide x 247 mm (9.72”) high x 158 mm (6.22”) deep (excluding mounting ears which add 10 mm (0.39”) to the depth)
Weight	15 kg (33 lbs)
Operating Temperature	-40 °C to 60 °C (-40 °F to 140 °F)

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Attribute	Specifications
Relative Humidity	10% to 100%
Operating Altitude	-60 m to 4,000 m (-197 ft to 13,123 ft)
Power Input, Direct DC	48 Vdc nominal, 37 to 57 Vdc operating range (after 42 V maximum start-up threshold). Positive or negative ground referenced feed. SELV or LPS source required. Maximum 10 A input overcurrent protection.
Power Input, PoE	IEEE 802.3at Mode A or Mode B or 4-pair mode
Power Consumption	20 W maximum

The details for the component certified stopping Plugs, RF connectors and Breather associated with the equipment are listed below:

Ex component	Model	Technical Specification	Certificate Number	Marking
Stopping Plug	U5.25.S.SC ALTERNATE U5.25.N.SC	Thread designation: M25 x 1.5, IP66 O-Ring: Silicone (-50 to +230C)	IECEx SIR 07.0048X & Sira 07ATEX1175X	IECEx & ATEX: Ex db IIC Gb & Ex eb IIC Gb & Ex tb IIIC Db
Stopping Plug	U5.34.S.SC ALTERNATE U5.34.N.SC	Thread designation: ¾" NPT, IP66 O-Ring: Silicone (-50 to +230C)	IECEx SIR 07.0048X & Sira07ATEX1175X	IECEx & ATEX: Ex db IIC Gb & Ex eb IIC Gb & Ex tb IIIC Db
Stopping Plug	U5.20.S.SC ALTERNATE U5.20.N.SC	Thread designation: M20 x 1.5, IP66 O-Ring: Silicone (-50 to +230C)	IECEx SIR 07.0048X & Sira07ATEX1175X	IECEx & ATEX: Ex db IIC Gb & Ex eb IIC Gb & Ex tb IIIC Db
RF connector	iSOLATE-CT-01	BULKHEAD, EXPLOSION PROOF, N-TYPE FEMALE TO SMA FEMALE Thread designation: M20 x 1.5 Ta: -60°C to 150°C	IECEx TRC 14.0024X & TRAC14ATEX0056X	IECEx & ATEX: Ex d IIC Gb Ex tb IIIC Db
Breather	Bd.20.S.SC ALTERNATE Bd.20.N.SC	Thread designation: M20 x 1.5, IP66 O-Ring: Silicone (-50 to +80C)	IECEx SIR 07.0045U & Sira 07ATEX1174U	IECEx & ATEX: Ex db IIC Gb & Ex tb IIIC Db

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 **Associated Reports and Certificate History**

Issue	Date	Report number	Comment
0	18 March 2025	R80226567A	The release of the prime certificate.

15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)

15.1 The equipment supply shall be powered with an approved ES1, PS2 Power over Ethernet (PoE) IEEE 802.3at (Type 2 Class 4) or ES1 (SELV), PS2 Limited Power Source (LPS) power adaptor or DC input source earthed suitable for use at altitude 4000m. This external power supply is not part of evaluation.

15.2 The Cable selection and provisioning along with required entry hardware such as cable glands, adapters, mating connector to RF connectors and conduit fittings are to be site selected and provided. All cables and hardware are not a part of certification and shall be suitably approved and shall be in compliance with IEC 60079-14 requirements, providing and maintaining a degree of protection of at least IP66.

15.3 The equipment shall be reliably earthed in final installation through a permanently connected Protective Earth (PE) Ground conductor. The Protective Earth Ground connection is made through a double hole lug to the termination point located on the side of the enclosure. The cable lug must have 6.35 mm ø holes on 16 mm centers (0.25" ø on 0.63" centers). The required ground cable gauge is #10 AWG (4 mm2) minimum. This ground connection to earth is always required. Follow steps from the Manual for Ground cable installation.

15.4 External fasteners used for securing flameproof joints shall have a minimum property class of A4-70.

15.5 The flameproof joints are not intended to be repaired.

15.6 The fixed installation equipment is coated with paint finish and may generate an ignition capable level of electrostatic charge under certain extreme conditions. The user shall ensure that the equipment is not installed in a location where it might be subjected to external conditions of high airflow rate that might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment shall be done only with damp cloth.

15.7 For the DC input power connector, the DC positive pin must be at a positive potential relative to the DC negative pin. If the polarity is reversed, the unit will not sustain damage but will not operate until the connection polarity is corrected.

15.8 The interfaces between the male thread of the Ex-component – Breather (Model: Bd.a.b.c.d) and Stopping Plug (Model: U5.a.b.c.d) and an associated enclosure and female thread of the products and the cable entry device cannot be defined. Therefore, it is the user's responsibility to ensure that the appropriate ingress protection level is maintained at these interfaces.

15.9 The threaded spigots of Type 'Bd' Breather Drains are not permitted to protrude into the associated enclosure to maintain their ingress protection ratings.

15.10 The threads of the internal plug of the Type 'Bd' Breather Drains must be fully tightened within the main body and not protrude above the body surface.

15.11 Type 'Bd' breather/drains are only suitable for bottom entry.

15.12 Stopping Plug (U5.a.b.c.d) is not to be used in conjunction with any other cable entry device.

15.13 If the Ex component RF Connector iSOLATE-CT-01 is installed with a suitable seal it must be ensured that at least 7 full threads are engaged.

15.14 End users may select their own antenna and it is end users' responsibility to choose the antenna that meets the requirement of Simple Apparatus as per Clause 5.7, IEC 60079-11, Edition 6

15.15 End users may select their own RF cable and it is end users' responsibility to choose cable with following limits:
Maximum RF cable length = 42 m
Maximum RF cable capacitance = 250 pF/m
Maximum RF cable inductance = 0.6 µH/m

15.16 The antenna shall be fed by a minimum 50 Ω source impendence.

15.17 Antenna also must provide isolation from earth when required and be installed according to the instructions provided in the manual. Additionally, the radio frequency threshold power (9 kHz to 60 GHz) must not exceed 2W, in compliance with Clause 6.6.2 of EN / IEC 0079-0:2017.

15.18 The Maximum Um shall not exceed 60Vdc.

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 **CONDITIONS OF MANUFACTURE**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.

17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.

17.3 Sample with NPT thread entries are not provided to measure the threads and engagement, and it is Tektelic's responsibility to comply with the NPT threads as per table 5 of IEC / EN 60079-1:2014.

17.4 As per Tektelic's declaration there is no capacitance element and maximum inductance of 5uH which meets the requirement. It is Tektelic's responsibility to maintain the capacitance and inductance values of the Antennas

Certificate Annexe

Certificate Number: **CSANe 25ATEX1029X**

Equipment: **Kona Macro Ex Gateway Model: T000906x, T000907x**
See Schedule for more information

Applicant: **Tektelic Communications Inc.**

Issue 0

Drawing	Sheets	Rev.	Date (Stamp)	Title
T0009060_SYSTEM_SCHEDULE	1 to 7	A2	13 Mar 25	KONA MACRO EX SYSTEM SCHEDULE
T0009060_ENCLOSURE_SCHEDULE	1 to 11	A8	13 Mar 25	KONA MACRO EX ENCLOSURE
T0009060_CABLE_SCHEDULE	1 to 4	A3	18 Feb 25	CABLE CONNECTION, KONA MACRO EX
T0009060_TORQUE_SCHEDULE	1 of 1	A1	14 Feb 25	KONA MACRO EX TORQUE SCHEDULE
T0009024_SF_SCHEDULE	1 to 4	B0	14 Feb 25	MACRO EX RFIB PCB
T0009036_SCHEDULE	1 of 1	A2	13 Mar 25	LABEL, SAFETY AND REGULATORY, KONA MACRO EX, EU