



AYYEKA

# Wavelet™ Ex

Intrinsically Safe  
Industrial IoT Edge Device



## Compatible

Connect any sensor to any software system

## Cost-effective

Save time and money with plug-and-play installation

## Cybersecure

Encryption, authentication and remote updates

## Comprehensive

Encompassing all required equipment and services

## DELIVERING DECISIONS FROM FIELD ASSETS DATA

Ayyeka's Wavelet™ Ex is an intrinsically safe ruggedized, battery-powered, wireless Industrial Internet of Things (IIoT) edge device. Seamlessly combined with powerful software, the Wavelet™ Ex offers continuous monitoring and situational awareness. Our end-to-end solution helps municipal and industrial operators increase efficiency, reduce downtime and failures, and improve compliance.

The Wavelet™ Ex is designed for compatibility and interoperability to connect decision-makers with their critical assets. The device generates and securely transmits sensor data to a software platform, where it can be managed and integrated into third-party applications, such as SCADA, data analytics, and GIS.

Through the creation and management of data from field assets, Ayyeka's solution transforms and adds intelligence to new and existing infrastructure networks alike.

## Data & Software

<b>Data hosting</b>	Cloud or on-premises
<b>Cyber-security</b>	TLS 1.2 protocol (AES-256)
<b>Software integration</b>	REST API, CSV
<b>SCADA integration</b>	CSV, DNP3, OPC-UA
<b>IoT software platform</b>	Web-based from desktop, tablet, and mobile
<b>AyyekaGo mobile app</b>	iOS, Android
<b>Data export options</b>	CSV, FTP
<b>Device memory</b>	8 GB
<b>Data communication</b>	Two-way authentication
<b>Alarm threshold</b>	Up to 4 per data stream
<b>Alert notification</b>	SMS, email, voice
<b>System health check</b>	Included

## Power

<b>Primary power supply</b>	Internal lithium battery (field-replaceable and non-rechargeable), 3.9 V DC 3A
<b>Internal battery capacity</b>	32Ah
<b>Battery life</b>	Up to 5+ years
<b>Battery life notifications</b>	Included
<b>External power</b>	6-12VDC automatic power source switching

## Sensors Input

<b>Sensor ports</b>	3 ports; each accepts serial, analog, and digital inputs
<b>Sensor connection</b>	Wired with M12 connectors
<b>Serial interfaces</b>	RS485, RS232
<b>Serial protocols</b>	Modbus RTU, ASCII, custom
<b>Serial channels</b>	16
<b>Analog channels</b>	3 (4-20 mA, 0-24 V)
<b>Digital input channels</b>	3 dry contact, open drain Pulse counting: up to 2 at 39Hz max pulse frequency
<b>Digital output channels</b>	3 at 0V/2.8V
<b>Sensor power supply</b>	12V, 350mA

## Connectivity

<b>Cellular</b>	4G/3G/2G
<b>SIM card(s)</b>	Dual SIM slots, 3FF
<b>Cellular roaming</b>	Global multi-network SIM(s); data plan included for up to 180+ countries
<b>Configuration</b>	Bluetooth Low Energy (BLE), remotely (over-the-air), USB connection
<b>Data transmission</b>	Periodic, data-dependent
<b>Antenna</b>	External antenna
<b>Built-in GPS</b>	Included

## Mechanical Enclosure

<b>Dimensions (W x H x D)</b>	13.2 cm x 16.5 cm x 7.3 cm (5.2 in. x 6.5 in. x 2.9 in.)
<b>Weight</b>	1.0 kg (2.2 lbs)
<b>Enclosure material</b>	Polycarbonate with ABS (UL 94V-0 and UV-resistant)
<b>Ingress protection</b>	IP 68 / NEMA 6P
<b>Operating temperature</b>	-40° to +68°C (-40° to 154°F)
<b>Storage temperature</b>	-40° to +80°C (-40° to 176°F)

## Certifications

<b>Ex approvals</b>	Class I Division 1 Zone 0 ATEX Zone 0 IECEX
<b>Safety</b>	EN 61010-1 2010 IEC 61010-1
<b>FCC</b>	FCC Part 15 Subpart B
<b>EMC</b>	EN 301 489-1 V2.1.1 2017 EN 301 489-7 V1.3.1 2005
<b>Spurious emissions</b>	EN 301 511 V12.5.1 2017
<b>Radiated emissions</b>	EN 301 908-1 V11.1.1 2016
<b>IP68 / NEMA6P</b>	EN 60529:1992+A2:2013 IEC 60529:1989/AM1:1999 Approved

CE



Class I Div 1, Groups C & D  
II 1G Ex ia IIB T4 Ga IP68  
IECEX Certificate No. IECEX ITL 18.0002X  
Tamb = -40 +68°C

<sup>1</sup> Actual battery lifetime depends on sensor power consumption as well as sampling and transmission frequency.

All statements concerning specifications and operating conditions of the Wavelet correspond to the best information available at the time of printing.

Subject to change without prior notice.