



# INTRODUCING THE WAVELET

**Ayyeka's Wavelet is an Industrial Internet of Things (IIoT) system, created in order to bring modularity and flexibility to the world of remote data acquisition.**

The Wavelet is an ultra low-power, fully-autonomous wireless telemetry device that operates best-of-breed, third-party sensors. The sampled sensor data is collected, transmitted securely, and then stored on Ayyeka's cloud-server or a customer's on-premises server. Wavelets are remotely configurable and data can be visualized and managed via Ayyeka's web-based IIoT Platform. Data can also be integrated into SCADA and other software systems.

With its introduction to the infrastructure market, the Wavelet is becoming a dominant IIoT solution for creating cyber-secure, plug-and-play, affordable smart infrastructure networks.



## SCADA & Software

From cloud-based hosting and an intuitive user-interface to secured and streamlined SCADA connectivity, the Wavelet delivers data directly where it is needed. Integrating with models, analytics, and business intelligence solutions has never been easier.



## Autonomous Operation & Redundant Communication

Low-power and predictive analysis algorithms result in up to 30% extended battery life. Redundant communication concurrently supports LTE (4G), 3G, 2G, LPWAN and Bluetooth connectivity.



## Rugged Design

Molded polycarbonate enclosure with IP 68 / NEMA 6P waterproofing rating allows for installation in the most corrosive and aggressive of environments, in both industrial and commercial applications.



## Cyber-Security & Alerts

Wavelet Kits are embedded in every layer from the ground up with the most advanced cyber-security technology, including sensor authentication and data encryption. Receive alerts in case of an urgent event.



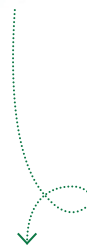
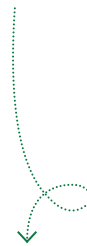
## Reduced Cost of Ownership

As an integrated, modular, and preconfigured solution that allows for plug-and-play installation and requires minimal maintenance, Wavelet Kits deliver an attractive total cost of ownership.



## Rapid Deployment & Scalability

Wavelet Kits are sensor-agnostic, utilizing various configurations of sensors and samplers. Easily installed and operating within minutes, Wavelet Kits can be used to build or extend smart networks.



# WAVELET SPECIFICATIONS

## Data & Software

<b>Data Hosting</b>	Private Cloud or On-Premises Server
<b>Cyber-Security</b>	TLS 1.2 Protocol (including AES-256 Encryption)
<b>Software Integration</b>	REST API, SOAP API
<b>SCADA Integration</b>	OPC-UA, DNP3, CSV
<b>Ayyeka IoT Platform Software</b>	Web-Based from Desktop, Tablet, Mobile
<b>AyyekaGo Mobile App</b>	iOS, Android
<b>Data Export Options</b>	CSV
<b>Device Memory</b>	8 GB
<b>Data Communication</b>	Bidirectional
<b>Alarm Notification</b>	SMS, Email, Voice
<b>Alarm Threshold</b>	Up to 4 per Data Stream
<b>System Health Check</b>	Included

## Power

<b>Primary Power Supply</b>	Internal Lithium Battery, 3.9 V DC 3A, Field-Replaceable and Military Grade
<b>Internal Battery Capacity</b>	32Ah
<b>Operational Run Time</b>	4+ Years*
<b>Battery Status Notifications</b>	Included
<b>External Power</b>	Solar and Line Power Compatibility, Automatic Power Source Switching
<b>Voltage Input</b>	5-28VDC

## Sensor Integration

<b>Sensor Ports</b>	3 Ports; Supports up to 10 Sensors Using Cable Splitters
<b>Sensor Position</b>	External Hard-Wired
<b>Serial Interfaces</b>	RS485, RS232, SDI-12
<b>Serial Protocols</b>	Modbus RTU, ASCII, Custom
<b>Serial Channels</b>	Up to 15
<b>Analog Channels</b>	Up to 4 (4-20 mA, 0-27.5 V)
<b>Discrete Channels</b>	Up to 3 Inputs, Up to 1 Output
<b>Power Supply Output</b>	350mA, 12V

## Connectivity

<b>Communication Network</b>	4G (LTE), 3G, 2G, LPWAN; Bluetooth Low-Energy
<b>SIM Card(s)</b>	Dual SIM Slots
<b>Cellular Roaming</b>	Multi-Network, Non-Steered SIM(s); Data Plan Included Supporting Over 140 Countries
<b>Configuration &amp; Upgrades</b>	Remotely (over-the-air), USB PC Connection
<b>Data Transmission</b>	Periodic, Data-Dependent
<b>Antenna</b>	External Antenna Support with Backup Internal Antenna
<b>Built-In GPS</b>	Included

## Mechanical Enclosure\*\*

<b>LED Indicator</b>	Included
<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>	0.9 kg (2.0 lbs)
<b>Enclosure Material</b>	Polycarbonate
<b>Ingress Protection</b>	IP 68 / NEMA 6P
<b>Operating Temperature</b>	-40°C to 80°C (-40°F to 176°F)
<b>Storage Temperature</b>	-40°C to 80°C (-40°F to 176°F)

## Intrinsic Safety (optional)\*\*

<b>Approvals</b>	ATEX Zone 0 Certified USA/Canada Class 1 Div I Zone 0 and IECEx Zone 0 (pending)
<b>External Power</b>	5-12VDC, 1.65 to 2.2A Current Limited
<b>Max. Ambient Temperature</b>	68°C (154°F)
<b>Sensor Ports</b>	3 Ports; no Cable Splitters Permitted
<b>Antenna</b>	External Antenna Support only
<b>Enclosure Material</b>	Polycarbonate/ABS Alloy
<b>Weight</b>	1.0 kg (2.2 lbs)

ATEX Marking:



**II 1G Ex ia IIA T3 Ga IP68**  
**Tamb = -40 +68°C**

\* Assumes operation of one pressure sensor sampling once every 15 minutes and transmission once every 4 hours.

\*\*Complies with: Radiated emission standards (ETSI EN 301 489-1/-17 Class B and CFR 47 FCC Part 15 Subpart B Class B), Immunity per ETSI EN 301 489 1/-17 EN 61000-4-2, 3, 4, 5, 6, RoHS, Directive 2002/95/EC and CE

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