

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 a discreet, robust device that autonomously operates best-of-breed, third-party sensors, using battery, solar power, or a permanent power source. The sampled sensor data is collected, transmitted securely, and then stored on Ayyeka's cloud-server and/or a customer's on-premises server. Data can be visualized and managed via Ayyeka's web-based graphical data management system, and integrated into SCADA and higher-level software analytic systems.

With its introduction to the infrastructure market, the Wavelet is becoming a dominant IIoT solution for setting up 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 2G, 3G, LTE (4G), CDMA, LPWAN, Bluetooth, and satellite 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

Data Hosting	Ayyeka Private Cloud and/or On-Premises Server
Cyber-Security	AES-256 Encryption
Software Integration	REST API , SOAP API
SCADA Integration	OPC-UA, OPC-UA-DA, OPC-HDA, DNP3, CSV
Ayyeka User Interface	Web-Based, Tablet, Mobile
Data Export Options	CSV, PDF
Device Memory	Up to 4 GB
Data Communication	Bidirectional
Alarm Notification	SMS, Email
Alarm Threshold	Up to 4 per Data Stream
System Health Check	Included

Power

Primary Power Supply	Field-Replaceable Internal Military-Grade Lithium Battery, 3.9V DC 3A
Battery Capacity	32Ah
Voltage Input	5 V – 28 V DC
Operational Run Time	3,500+ Transmissions per Battery Pack, 4+ Years*
Battery Status Notifications	Included
External Power	Solar and Permanent Power Compatibility, Automatic Power Source Switching

Sensor Integration

Sensor Ports	3 Ports; Supports up to 12 Sensors Using Cable Splitters
Sensor Position	External Hard-Wired
Serial Interfaces	RS485, SDI-12, RS232
Serial Protocols	Modbus RTU, ASCII, Custom
Serial Channels	Up to 16
Analog Channels	Up to 4 (4-20mA, 0-28V)
Discrete Channels	Up to 2
Sensor Power Supply Output	350mA, 12V

* 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.

Connectivity

Communication Network	Multi-Network Carrier: 2G, 3G, LTE (4G), LPWAN, Bluetooth Low-Energy and Satellite (pending)
SIM Card	Global SIM Card and Data Plan Included
Cellular Roaming	Global SIM Card Supports Over 140 Countries
Configuration & Upgrades	Remotely (over-the-air), USB PC Connection
Data Transmission Profile	Periodic, Data Dependent
Antenna	Internal or External
Built-In GPS	Included

Mechanical Enclosure**

LED Indicator	Included
Dimensions (W x H x D)	13.2 cm x 16.5 cm x 7.3 cm (5.2 in. x 6.5 in. x 2.9 in.)
Weight	0.7 kg (1.5 lbs)
Enclosure Material	Molded Polycarbonate
Waterproofing Rating	IP 68 / NEMA 6P
Hazardous Location	Class I Div 1, ATEX, IECEx Certifications (pending)
Operating Temperature	-20°C to 60°C (-4°F to 140°F)
Storage Temperature	-40°C to 80°C (-40°F to 176°F)



Installation of Wavelet Sewer Overflow Kit in San Francisco, CA

Ayyeka provides cyber-secure, plug-and-play, remote monitoring solutions designed for various markets. Ayyeka has an installed base in challenging locations and earned a reputation for excellent customer service. Bringing together a state-of-the-art hardware and cloud-based software package, Ayyeka's solutions are leading the infrastructure monitoring sector into the future.



For more information:

www.ayyeka.com

+1 (310) 876-8040

info@ayyeka.com

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