**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 IoT 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.

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

- **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.

- **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.

- **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.

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

Power

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

Sensor Integration

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

Connectivity

Communication | 4G (LTE), 3G, 2G, LPWAN; Bluetooth Low-Energy
Network | Dual SIM Slots
SIM Card(s) | Multi-Network, Non-Steered SIMs; Data Plan Included Supporting Over 140 Countries
Cellular Roaming | Remotely (over-the-air), USB PC Connection
Configuration & Upgrades | Data Transmission Periodic, Data-Dependent
Antenna | External Antenna Support with Backup Internal Antenna
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 | 0.9 kg (2.0 lbs)
Enclosure Material | Polycarbonate
Ingress Protection | IP 68 / NEMA 6P
Operating Temperature | -40°C to 80°C (-40°F to 176°F)
Storage Temperature | -40°C to 80°C (-40°F to 176°F)

Intrinsic Safety (optional)**

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

ATEX Marking:

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

* Assumesh 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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