Vision Metering — **LoRaWAN®**

Long Range, Open, Future Proof and Low Cost

Electric. Water, Gas & Streetlights

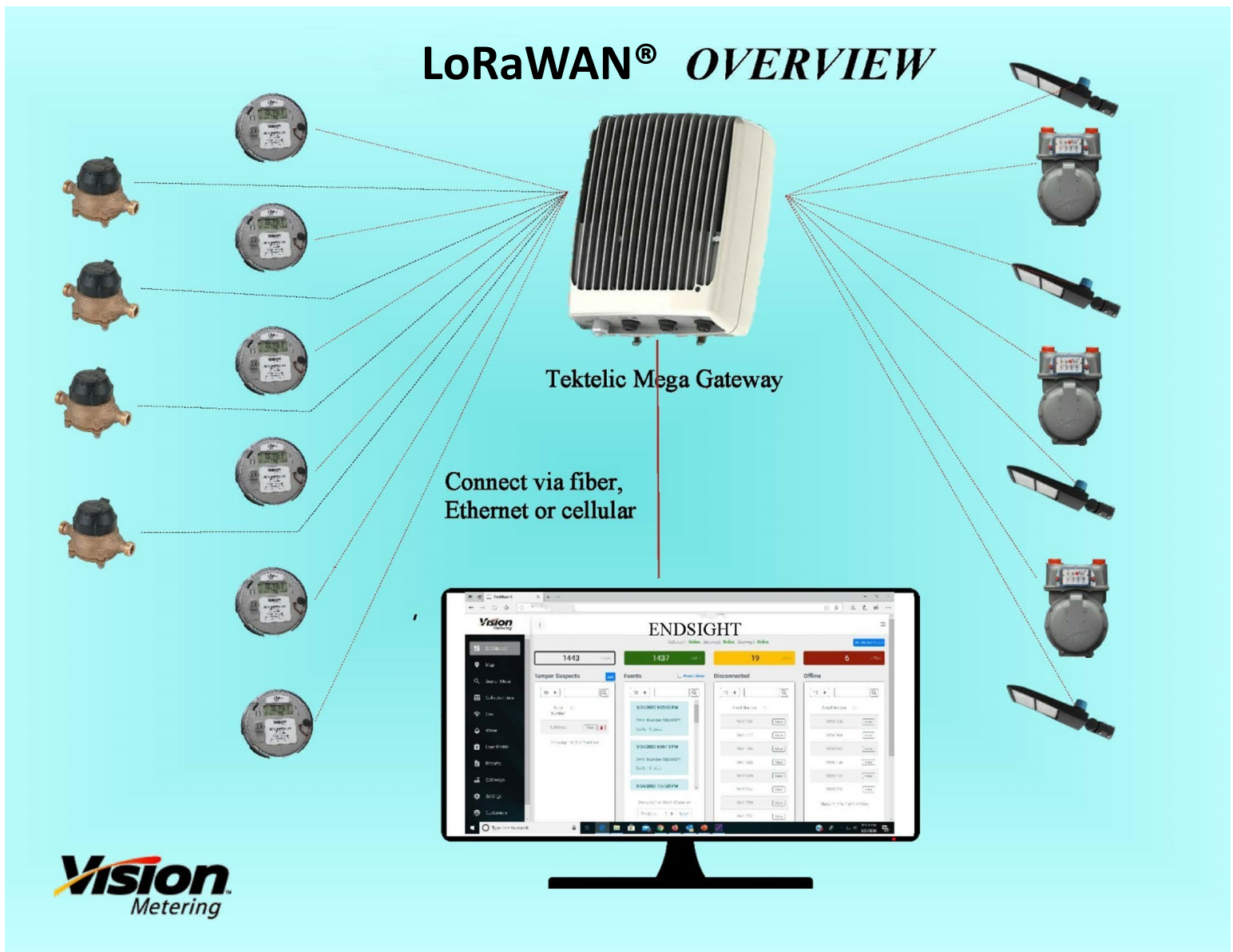LoRaWAN® is a mark used under license from the LoRa Alliance®.

LoRa AMI System

A very robust and flexible solid state meter with all functionality included at no extra charge. Assembled in the US with production since 2008.

- Forms 1S, 2S, 12/25S available with 200 amp switch.
- All meter forms are available.
- Switches for Class 320 available in 2023.
- Accuracy better than 0.2%.
- Last Gasp capacitors good for 20+ seconds.
- 400 Event Log.
- Time of Use.
- 12 Channels of Load Profile.
- Net Metering.
- 4 Quadrant Metering.
- Reactive & Demand.
- All LoRa meters are time synced at midnight and immediately after a power outage.
- Alerts and Alarms
- 32 digit security key
- Available with Cat M1 Modems on Verizon AT&T & T-Mobile
- 2020 programming software available with purchase of meters.
- 2 Year warranty on all meters
- ANSI C12.20, C12.18 & C12.19 Compliant

LoRa is the most Phenomenal AMI System Available

- **Communicate with end devices up to 20 miles away if gateway is mounted 100' high.**
- Completely open system - multiple vendors for every aspect.
- Standards based system controlled by the LoRa Alliance.
- Lowest cost infrastructure.
- Point to point/multipoint system (no mesh).
- Complete Plug & Play system. Very little prep work required.
- LoRa Security system uses AES 128 for end to end encryption.
- One page Dashboards to display systems health of Electric, Water and Gas
- Mapping System to show all meters location based on Electric, Water and Gas
- Data packets can be transmitted in intervals from 1 minute to 1 hour. Each packet can contain 13 to 14 variables and typically KWh delivered & received, KW, KVArh delivered and received, KVAr, Volts and Amps on all three phases, Power Factor, Meter Temperature, Frequency RSSI & SNR.
- 2 + channels of load profile are transmitted every 20 minutes and generally include 15 minute KWh and KVArh.
- Current limiting feature is available to control customer usage during cold weather.
- Prepaid options available in EndSight or third party software.
- Net Metering options include Delivered, Received, Delivered + Received (Secure) and Delivered - Received (Net)
- Demand can be manually or automatically reset from the Head End system based on Cycle Day
- Voltage Sag & Swell events programmable for magnitude and duration.
- Security and Theft of service notifications.
- Water Dashboard shows meters which have the number of meters online, meters not reported within 24 hours, Tamper suspects, Leaking and reverse flow.
- Gas Dashboard shows meters which have not reported within 24 hours, the number of meters online and the number of meters off-line.
- Gas Modules available for American, Rockwell/Sensus, Itron flat face and slant face and National.
- Water MIU functions with any water meter that has either a serial output using the Sensus UI 1203 or pulses.

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LoRaWAN® *OVERVIEW*

Tektelic Mega Gateway

Connect via fiber,
Ethernet or cellular
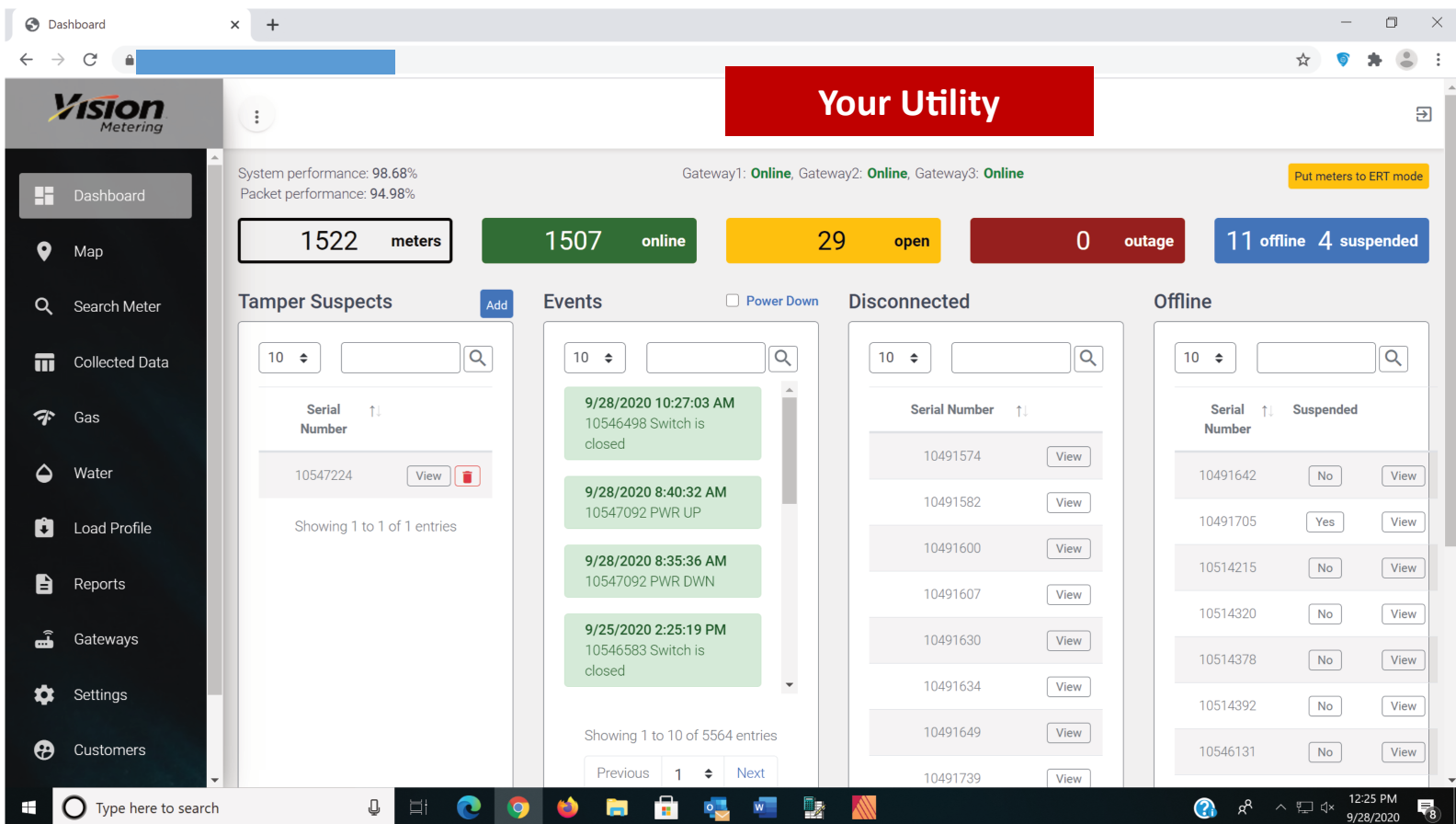
Vision Metering™

LoRa is a long range Internet of Things (IoT) system designed for the ever expanding IoT. It is an open system that allows anyone to manufacture devices which can communicate over a LoRaWAN network. The openness removes the hand-cuffs that restricts companies to a particular vendor. With LoRa, utilities can design their system to facilitate communicating with electric, water and gas meters all on the same network. Other devices like street light controllers, transformer temperature monitoring, load control devices and demand management system can all coexist within LoRa.

LoRa is designed for low power, long range applications which are well suited for AMI. It operates in the 900 Mhz ISM bands but the technology allows its signals to transmit above the noise in these bands. Vision's system transmits a maximum of 42 bytes at just under 400 ms using 1 watt of power (30dbm) radios. LoRa allows meters and other devices to communicate up to 20 miles.

The LoRa Alliance is comprised of over 500 companies all working in concert to develop the absolute best IoT system in the World. The technology deployed by LoRa is second to none and creates independence for its users. There are no monthly fees to the LoRa Alliance associated with data and no restrictions on the amount of data you can accumulate.

LoRa is scalable to the size of your requirement. You can choose from 8 to 64 channel gateways and can receive up to 12,000,000 messages per day with a 64 channel gateway. Gateways are available from several manufacturers.

Any system other than LoRa will handcuff you to a single vendor for 15 to 20 years. LoRa allows you to competitively source meters, infrastructure and software from the best and most competitive sources.

ENDSIGHT CAPABILITIES

- Simple Dashboard providing system health and operation at a glance.
- Open and Close switches
- Location map showing all meters and their current state, online, offline, power outage and switch status
- Outage Management System by distribution transformer and feeder
- Reporting Capabilities with more than 16 reports as well as the ability to custom design a report.
- Custom API for interfacing with billing software including MultiSpeak connectivity
- California Electric Metering Protocol available
- Transformer Loading Tools
- Dashboards for Electric, Water and Gas
- View collected data as received
- Outage and Alarm Notification sent by email or test as they occur
- Load Profile available on all meters and included at no additional charge
- Search database for devices by Account Number, Meter Serial Number and Address
- Power over Ethernet (PoE) monitoring
- Every packet delivered to the system includes KWh delivered and received, KW, KVARh, KVAR, volts and amps on all three phases, power factor, frequency and meter temperature.