



A PRODUCT SHEET OF NEPTUNE TECHNOLOGY GROUP

# R900<sup>®</sup> IoT Gateway

## Deploy a Smart Water AMI Network with LoRaWAN<sup>™</sup> IoT

Water utilities can quickly deploy and operate their own Smart Water AMI Network with a ruggedized LoRaWAN<sup>™</sup> gateway that employs the open-standards LoRaWAN protocol and network architecture. Leveraging the R900<sup>®</sup> System, utilities can easily view collected metering data to improve operations, quickly resolve customer questions and complaints, and optimize distribution system management.

## Deploy with Confidence

Get the most value from your current endpoint infrastructure and workforce through Neptune R900 Systems that allow you to migrate at your own pace from walk-by and mobile Automatic Meter Reading (AMR) to Advanced Metering Infrastructure (AMI). Providing fixed network functionality, the R900<sup>®</sup> IoT Gateway is easily integrated into the R900 System. You can choose the optimal reading solution as needed – without the requirement for special reprogramming of R900 endpoints. The R900 IoT Gateway supports the R900 System's 1-Watt LoRa<sup>®</sup> fixed network endpoint messaging, extending coverage while reducing AMI infrastructure costs.

## Ease of Deployment and Scalability

The R900 IoT Gateway and compatible LoRaWAN network provide a secure and scalable IoT network for Smart Water automation, incorporating the Neptune R900<sup>®</sup> endpoint. Support of AMI functionality can be achieved rapidly. The R900 IoT Gateway comes in a compact, ruggedized enclosure for easy deployment for wide-area-network (WAN) connectivity for Smart Water AMI applications. The gateway and R900 System provide a scalable IoT solution to support millions of messages per day using LoRa's adaptive data rate (ADR) technology to optimize data rates, connectivity, and capacity of the network.



## KEY BENEFITS

### Facilitates Migration to AMI with LoRa<sup>®</sup>

- Supports the LoRa 1-Watt fixed network messaging from R900<sup>®</sup> endpoints, extending coverage, reducing infrastructure costs, and supports a LoRa IoT deployment
- Migrate at your own pace – your R900 System can be read by any combination of walk-by, mobile, and fixed network reading systems
- No reprogramming of R900 endpoints required to migrate from mobile to fixed network AMI reading

### Supports LoRaWAN<sup>™</sup> Open-Standards Protocol

- Support for open-standards LoRaWAN network architecture
- The LoRaWAN network incorporates several standardized features and algorithms, including AES encryption, to ensure end-to-end security and confidentiality

## KEY BENEFITS (continued)

### Network Reliability, Capacity, and Security

- LoRa technology provides for long range communications and superior coverage
- LoRaWAN network architecture and ADR functionality provide broad scalability from rural to dense urban AMI applications
- LoRaWAN protocol and gateway provide for bi-directional end-to-end communications and encryption of meter reading data
- LoRa chirp spread-spectrum technology and gateway result in high immunity to interference

### Access to Powerful Data

- Daily leak, reverse flow, and days of no flow alerts from E-CODER® - or ProCoder™ - equipped meters

## Specifications

### LoRa® Radio Parameters

- 902 - 915 MHz (Rx)
- 923 - 928 MHz (Tx)
- 72 channels
- 1W (Tx Power)

### Installation Options

- Rooftop
- Pole 2" - 16" diameter (5cm - 40cm)
- Wall
- Water towers
- Street lights

### Power Supply

- 100 - 140 VAC
- 640W solar
- 880W solar

### Battery Backup

- UPS provides up to 18 hours of battery backup
- Solar power system provides up to seven days of battery backup

### Backhaul Options

- Multi-Carrier 4G LTE cellular modem
- Ethernet

### Environmental

- IP67 enclosure
- Operating temperature: -40°F to +131°F (-40°C to +55°C)
- 10 - 100% condensing operational humidity
- Weight 11 lbs (5 Kg)

