Non-intrusive Flow and Energy Metering With Wireless Solution

- **Located in Greater Boston Area. Wide connections to universities and high-tech companies**
- **Leader in design, development and production of flowmeters, water meters, BTU meters, AMR/AMI and wireless telemetry systems**

…A Global Leader in Flow & Energy Management Solutions…

ISO9001 Quality

- **Spire Metering has complete ISO9001 certification**
- **All Spire CMs (Contract Manufacturers) have complete ISO9001 certification**

TÜV USA
Member of TÜV NORD Group

CERTIFICATE

TUV USA Inc.

hereby certifies that

Spire Metering Technology LLC
14B Craig Road
Acton, MA 01720

has established and applies a quality system for the

Design, manufacture and sales of flow measurement technologies and instrumentation

Proof has been furnished that the requirements according to

ISO 9001:2008

are fulfilled.

Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2008 requirements may be obtained by consulting the organization.

Certificate Registration No.

10-1074

Effective: January 1, 2012

Expires: June 1, 2013

Jodi Esposal
Quality Systems Division
Salem, New Hampshire

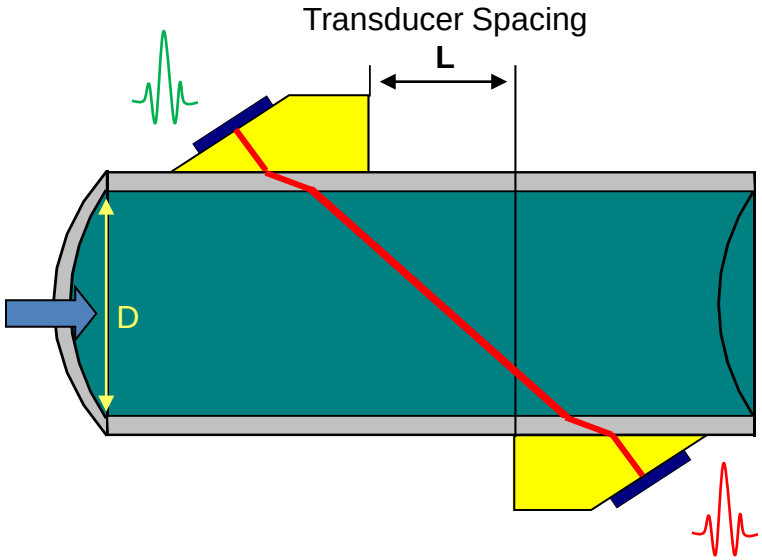
Date of Issue: August 30, 2011

Commitment to Total Quality!

We are proud to be the selected supplier for:

Ultrasonic Flow Measurement

Transit-time Technology

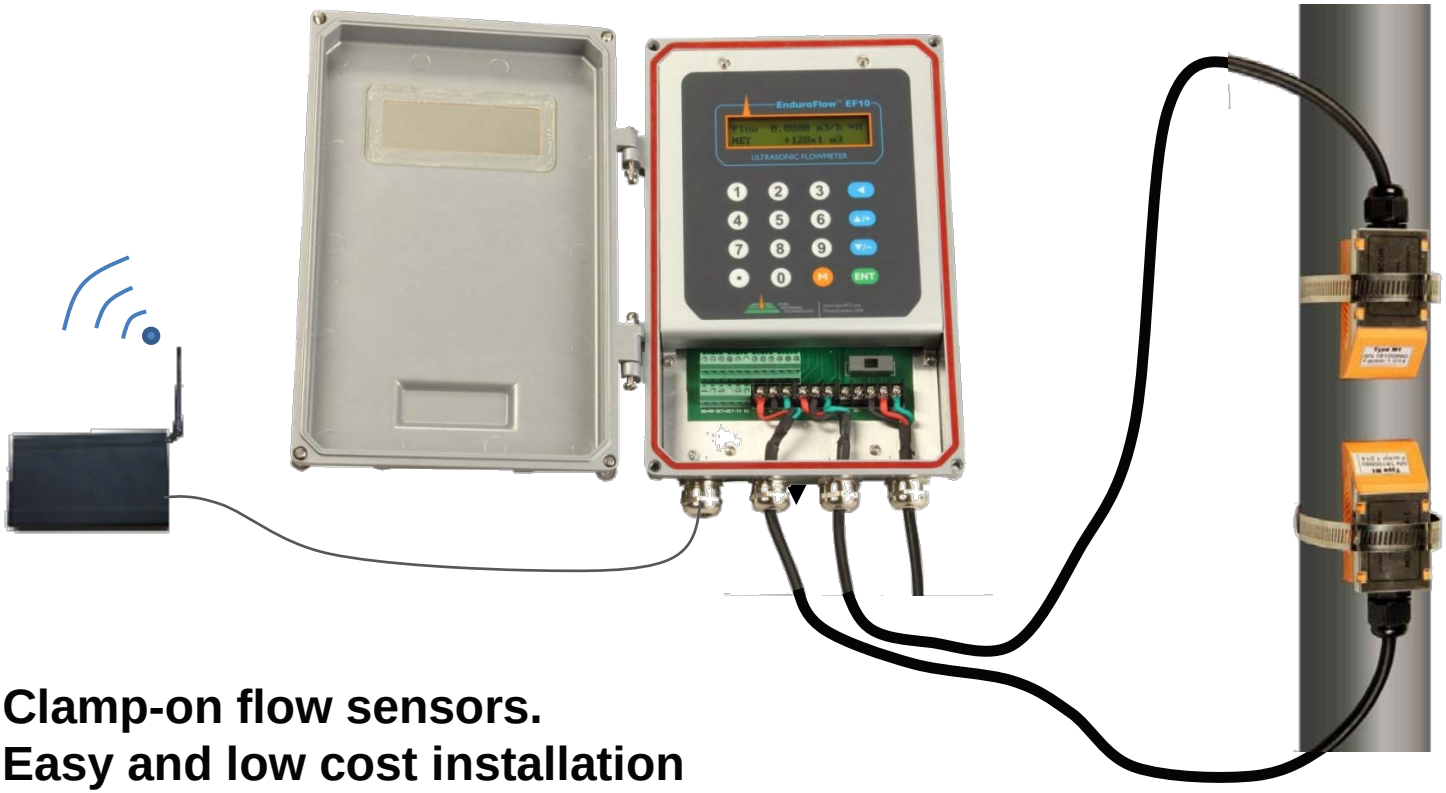


Each transducer sends a sound pulse towards another.

Sound pulse traveling along the flow is faster than the one traveling against the flow.

The transit-time difference of the two pulses are proportional to the flow rate.

Wireless Clamp-on Ultrasonic Flowmeter

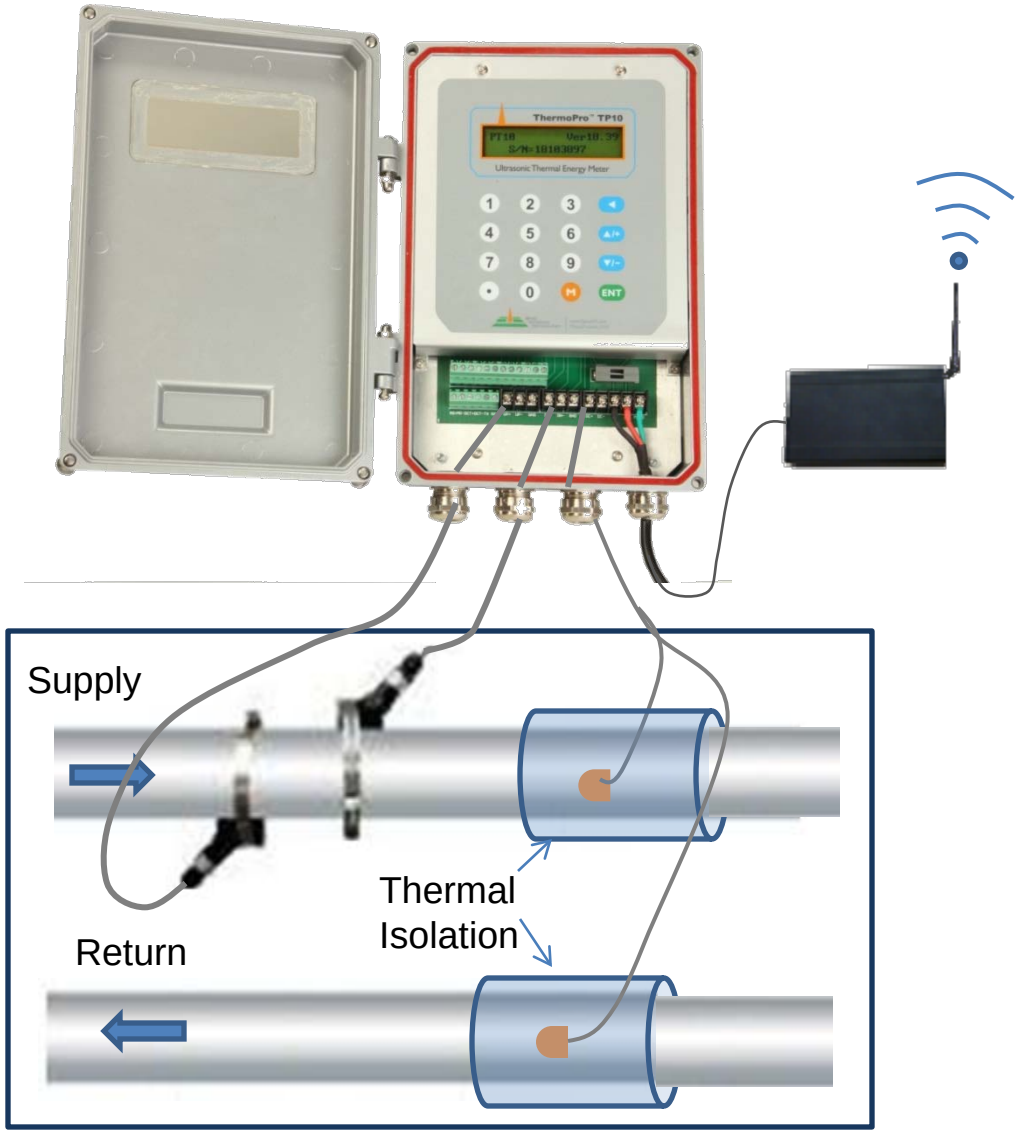


- **Clamp-on flow sensors.**
  Easy and low cost installation
- **Maintenance-free**
- **High performance. 1% accuracy**
- **Wireless, either RF 433MHz or GSM/GPRS cellular**

ThermoPro™ Series – TP10

Wireless Clamp-on Ultrasonic BTU Meter

- **Clamp-on flow and temperature sensors. Easy and low cost installation**
- **Maintenance-free**
- **Measure thermal energy accurately**
- **Wireless,**
  - **RF 433MHz**
  - **GSM/GPRS cellular**



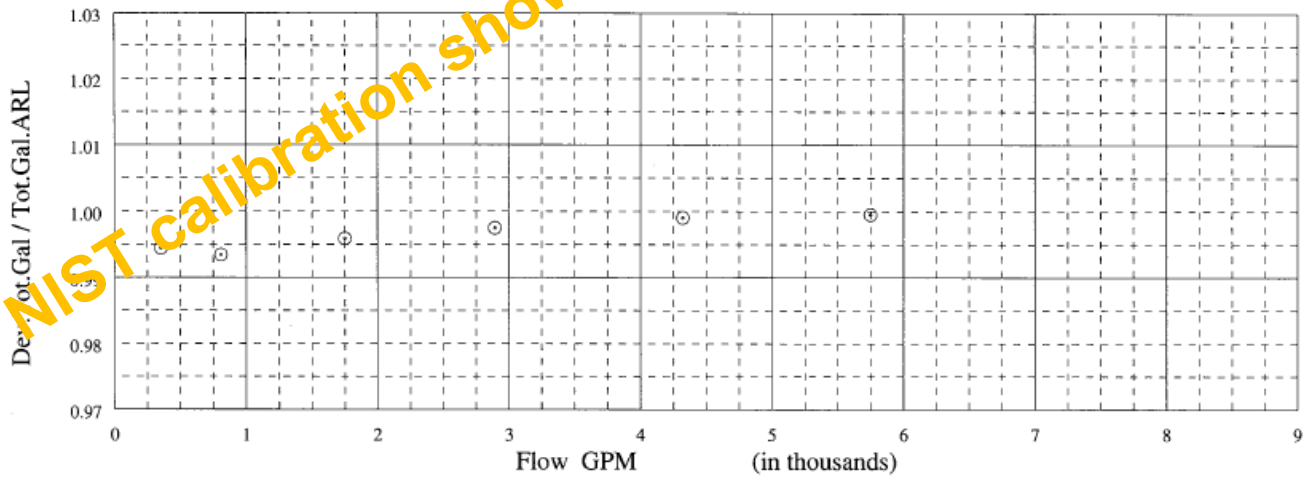
NIST Certified 1% Accuracy For Clamp-on Flowmeter

SHENITECH, LLC
Purchase Order Number: 123
SHENITECH STUF-300F ON 12" CS SCH 40 PIPE #12-141
UNIT S/N 12700113

CALIBRATION
DATE: September 4, 2008

AS LEFT, CALIBRATION FACTOR = 1.015

Run #	Line Temp Deg F	Net Weight lb.	Run Duration secs.	Flow GPM	Total Gallons ARL	Reading Device Gallons	Dev.Tot.Gal divided by Tot.Gal.ARL
9	70	44363	55.682	5745.	5332.	5330.	0.9995
10	70	12624	258.341	352.4	1517.	1509.	0.9944
11	70	24587	219.720	807.0	2955.	2936.	0.9935
12	69	45380	187.152	1748.	5454.	5432.	0.9959
13	69	44347	110.650	2890.	5330.	5317.	0.9975
14	69	44971	75.085	4319.	5405.	5400.	0.9990



NIST calibration shows 1% accuracy!

The data reported on herein was obtained by measuring equipment the calibration of which is traceable to NIST , following the installation and test procedures referenced in this report, resulting in a flow measurement uncertainty of +/- 0.25% or less.

CALIBRATED BY: THL
Witnessed by a company representative

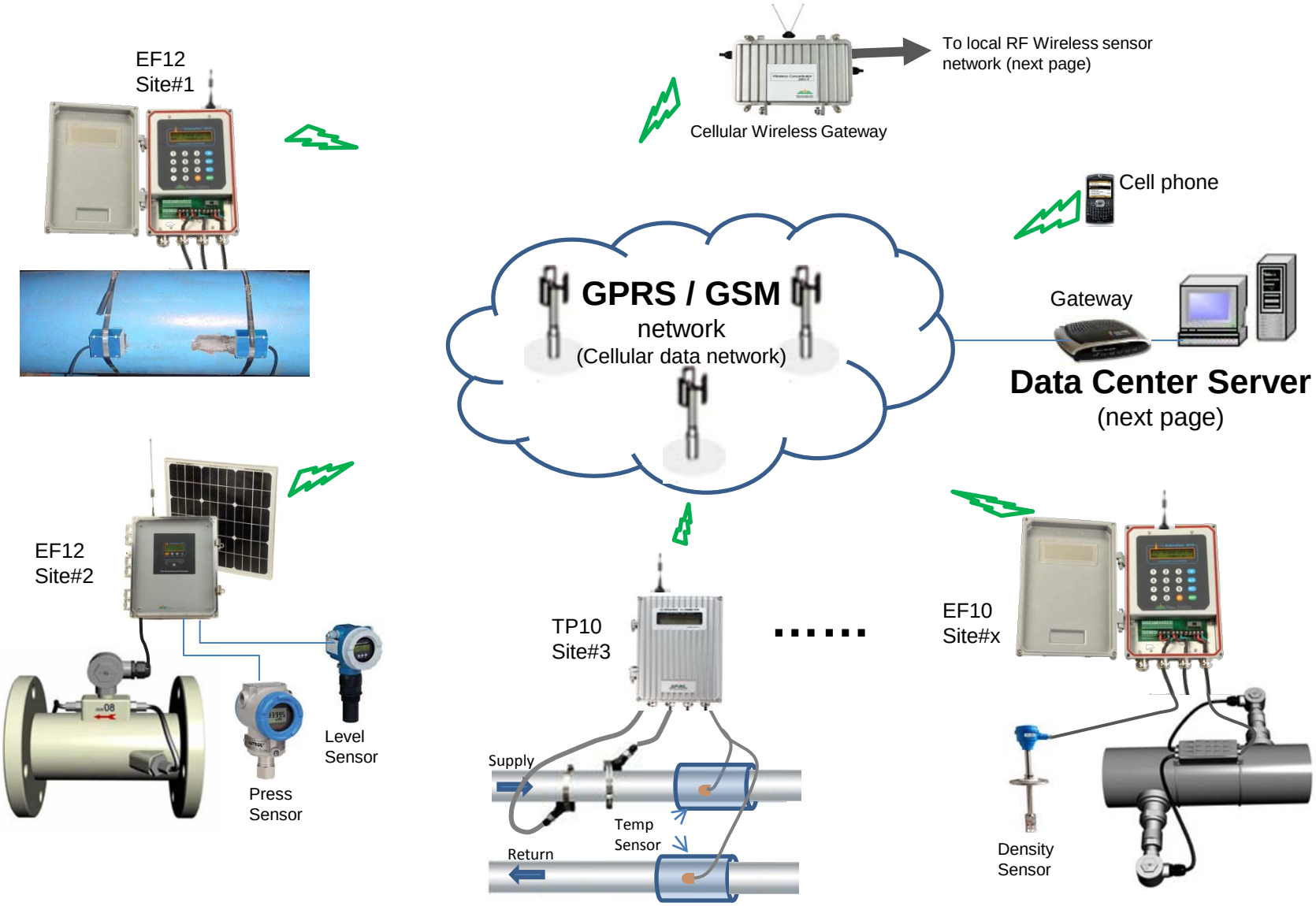
CERTIFIED BY:

ARL

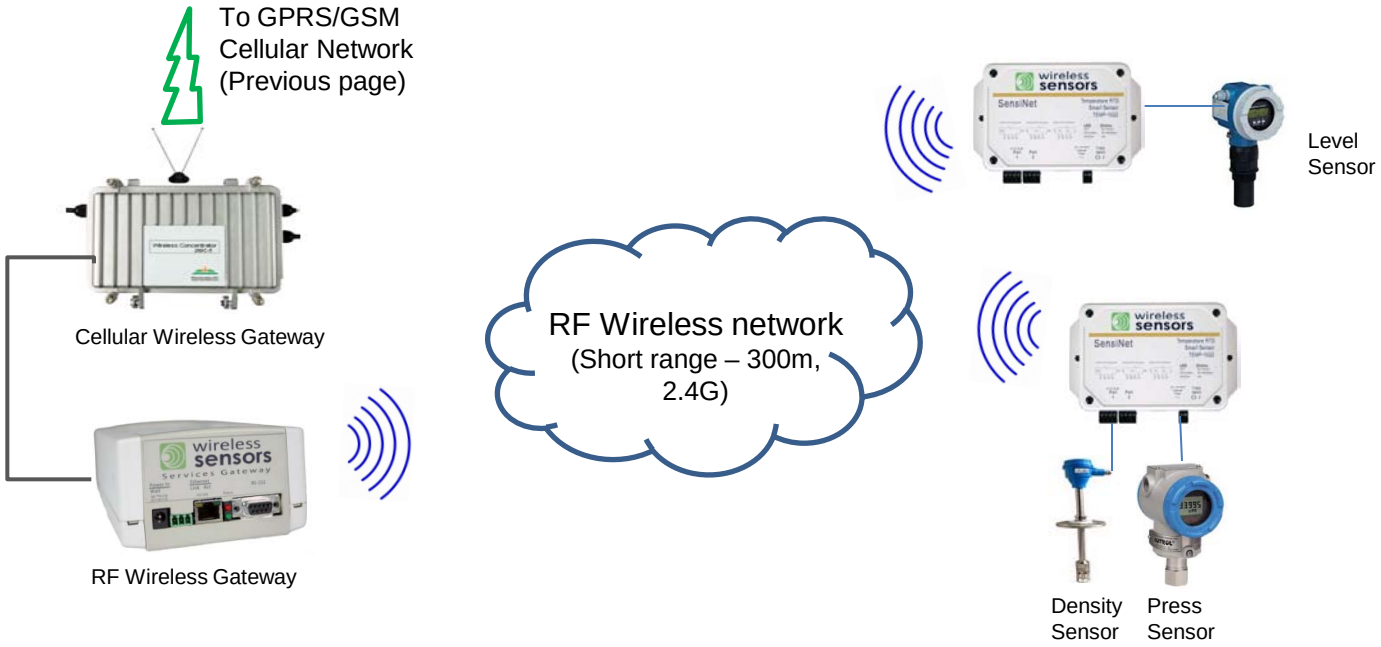
Spire Metering Product Advantages

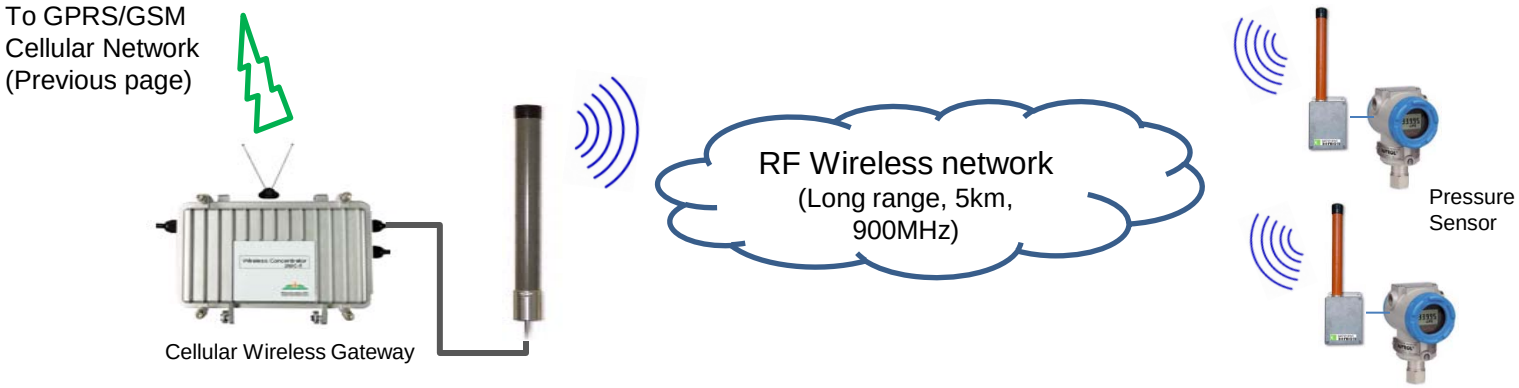
- Cost effective
- Simple to configure and easy to use
- Industry leading technologies, 50ps time resolution
- Increased robustness with patented signal processing technologies
- Transducer pairing for optimal performance
- Wet-calibration using NIST standard
- Strong technical support
- Industry's most comprehensive quality and extended 2 year satisfaction guarantee
- Proven record from more than 3,000 customers worldwide

uGalaxy™ Wireless Telemetry System



Local RF Wireless Sensor Network





HOW IT WORKS

- The telemetry system could consist a number of Spire Metering's wireless flow and BTU meters, such as EF10, TP10, 280W, 280T, and more.

- With EF10 and TP10 ultrasonic meters, you can measure the flow and BTU energy from outside of a pipe with high accuracy. EF10 and TP10 also provide 2 analog inputs so to manage additional transmitters such as pressure sensor and level sensor.

- The telemetry system can also include a number of local RF wireless sensor networks.

- Each local sensor network has a RF Wireless Gateway. The RF Wireless Gateway connects to a GPRS/GSM Cellular Wireless Gateway which brings all the sensors in the local sensor network to the large GPRS/GSM network.

HOW IT WORKS (continue)

- Each Flowmeter, BTU meter or Cellular wireless gateway has a GPRS/GSM modem already built in.
  The GPRS/GSM modem should have a SIM card provided by local cellular phone company with valid GPRS or GSM data service

- The data center (next 3 slides) polls data from each flow meter, BTU meter or other wireless sensor at a pre-scheduled interval. The data center receives and validates the data and saves the data in its database.

- The data center then publishes the data on website or through a client software on local computer

- The data center should have a static IP address if GPRS data service is used.

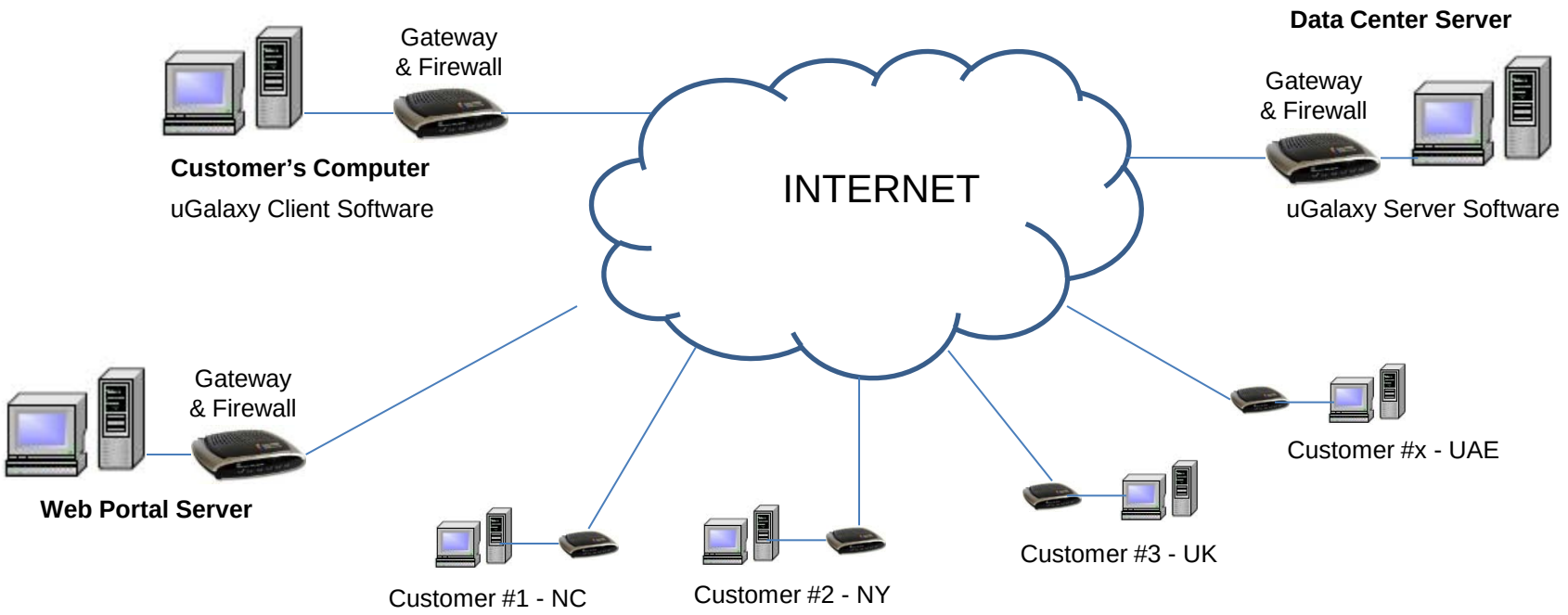
uGalaxy™ Software Platform

Complete telemetry management at your finger tips

- **We can provide turnkey solution for data service. Customers can get data from website directly. No need for data center software**
- **We can also provide data center software package so customers have flexibility and more control on their data**

Data Presentation

(for Turnkey Data Service only)

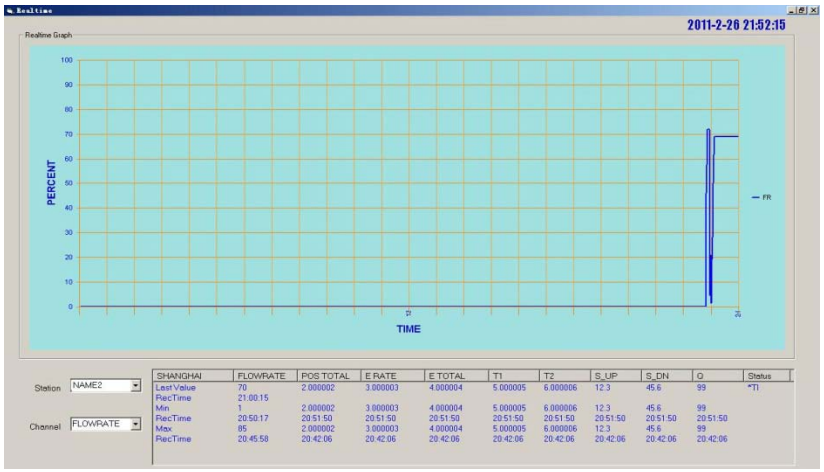


Access Sensor Data Anywhere, Anytime!
Turkey Solution for Data Service!

uGalaxy User Interface Software

uGalaxy Client software runs on the customer's computer. It communicates with the data center server through the Internet.

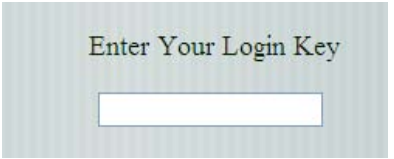
uGalaxy Client software fetches data from the data center server. It displays the data through the graphic interface, saves data to hard drive, prints the data, etc.



Web Portal

The data collected by the data center server will be presented on the web site.

Each registered customer can log into his/her own account using web browser. He/she can check the sensor data anytime and anywhere.



Success Stories

Installed in over 30 countries for more than 3,000 customers, in wide-ranging applications.

The following slides list a few of them.

ConocoPhillips Telemetry System

- Flow, temp & BTU energy monitoring for several large facilities
- More than 30 units of clamp-on wireless BTU meters
- Data sent to Spire server through GPRS wireless network
- Client views real-time data from website

Texas, USA

Chiller System Applications

- Large pharmaceutical facility
- 30 units of TP10 thermal energy systems installed
- Monitors and manages the efficiency of the heating and cooling production and distribution network

Non-intrusive Thermal Energy Measurement System
Honeywell-Pfizer, PA, USA

Fuel Efficiency Monitoring System

- Large furnace supplies heating for a landmark building
- Installs a high performance Spire Flowmeter system
- Measures accurately the inlet and outlet fuel flow rates
- Monitors the fuel efficiency

7th World Trade Center, New York, USA

Makkah Clock Tower
Utility Management System

- $2mil project
- 5000 tenants
- 5000 water meters
- 5000 BTU meters
- 5000 energy meters
- 150 concentrators
- High performance data center system
- AMR software platform
- Billing software platform

Makkah Tower – Bin Laden Group, KSA

Commercial Applications

Ultrasonic BTU meters have been widely installed in commercial buildings such as shopping malls.

Modern Shopping Mall -Siemens, India

References

NASA – USA

Monroe South Bend Canal Association – Utah, USA

7th Word Trade Center New York, USA

BHP Billiton - Australia

BT Applied Technology – Saudi Arabia

Al Gore's Green house Tennessee, USA

Army National Guard – New Hampshire, USA

GE Global Research

United States - India - China - Germany

St. Luke's HOSPITAL

India Institute of Technology – Bombay, India

Diplomat Engineering LLC - UAE

LOCKHEED MARTIN

We never forget who we're working for®

MAXIM DALLAS SEMICONDUCTOR

AIR PRODUCTS

THANK YOU!

Spire Metering Technology LLC.
Massachusetts, USA
www.SpireMT.com