

THE LEADER IN WIRELESS SUBMETERING  
**TAPWATCH**<sup>®</sup>

Collects water consumption data

Fully automated

Helps reduce water usage

Cost effective for retrofit and new construction



## HOW TAPWATCH WORKS



A water meter installed in each apartment is connected to an Inovonics Wireless transmitter.



The transmitter then converts the meter read into a digitized signal for transmission.



Repeaters may be placed at strategic site to receive signals from the transmitter and amplify the signal to peak power for transmission.

## DRAMATICALLY REDUCE OVERALL CONSUMPTION

Studies show that submetering with meters in individual apartments can help reduce overall water consumption by 30% or more. With TapWatch, your residents become more aware of their usage since they are required to pay for what they use. Residents work harder to conserve water, reduce waste, and report leaks in order to minimize their monthly utility bills. Unlike water allocation billing, (also called RUBS), each resident pays for their actual water consumption and not an amount calculated by a formula. Plus, submetering eliminates utility costs (such as water and sewer) from the rent equation, so the property owner can maintain a competitive edge while increasing net operating income.

Now you can take advantage of the first fully automatic wireless submetering system designed specifically for the multi-family housing market. TapWatch, the cost-effective 900 MHz solution from Inovonics Wireless, can reduce operating expense by fairly determining the water usage of each of your residents. Because it's wireless, TapWatch can be installed quickly with minimal disruption to your property. In addition to water submetering, TapWatch can also be used for gas and electric submetering.

## FIELD-PROVEN TECHNOLOGY

Already installed in over 600,000 apartments nationwide, TapWatch is based on proven wireless technology developed by Inovonics Wireless Corporation, a leading manufacturer of wireless products for the security industry. You'll find over two million of our transmitters, repeaters, and receivers in banks, hospitals, government buildings, and other sites throughout the world. The same 900 MHz technology that helps save lives can help improve your bottom line with TapWatch.

## A PRACTICAL WIRELESS SOLUTION

Because TapWatch transmitters automatically transmit read data several times each day, the system offers a practical and labor-saving alternative to touch-pad, walk-by, or other more intrusive forms of submetering. Water consumption can be tracked, viewed, or uploaded without visiting the property, yet billing records are easily updated to reflect resident moves, adds, or changes. Since TapWatch is a wireless system, it is ideal for retrofits and simplifies installation in new construction.



COMPATIBLE WITH VIRTUALLY ANY ELECTRIC, GAS, OR WATER METER EQUIPPED WITH A PULSE



Locations throughout the property, verify them, and transmit the data to the receiver.

The Data Concentrator and Communicator (DCC) decodes transmissions from the receiver and stores the data for retrieval by a billing company.

Qualified billing companies remotely access the DCC data via high-speed modem.

## PROVEN RELIABILITY

Based on Inovonics Wireless Frequency Agile® communication protocol, TapWatch offers superior performance in both small and large installations. Meter readings and meter IDs are transmitted to the receiver with a frequency hopping, spread spectrum radio link operating in the 902-928 MHz band. By duplicating data and broadcasting redundant signals on multiple frequencies, TapWatch minimizes the potential for interference and missed signals.

TapWatch also features sophisticated self-diagnostics to help ensure reliable operation. The system conducts a battery test every 36 hours and will provide you with two-weeks advance notice that battery replacement is required. If a transmitter malfunctions for any reason, TapWatch will automatically alert you of the loss of service.

## WHEN COMPARING WIRELESS SUBMETERING OPTIONS, TAPWATCH IS THE CLEAR LEADER!

### REPEATERS AVAILABLE TO INCREASE COVERAGE?

Repeaters amplify signals from transmitters in case the property is expanded or remodeled, obstacles such as mature vegetation develop over time, or the radio "noise floor" rises.

### FCC SITE LICENSE AND RENEWAL REQUIRED FOR EACH INSTALLATION?

Some systems require additional licenses to be obtained from the FCC and renewed every three years.

### EASY TO REPLACE BATTERY?

Even though most systems have battery lives in excess of five years, premature battery failures do occur. The battery cannot be changed in some systems.

### PERSON REQUIRED TO VISIT PROPERTY TO READ METERS?

### UNIVERSAL ARCHITECTURE?

Qualified service providers can read sites without expensive, proprietary hardware.

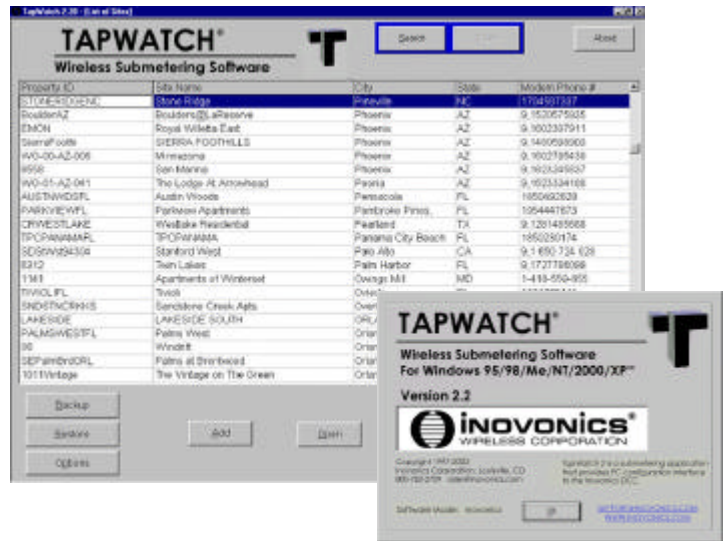
Information gathered from distributors, equipment manufacturers, and their published specifications/price lists. Inovonics Wireless is not responsible for errors or changes.

Inovonics Wireless TapWatch System	Licensed-Channel System	Walk/Drive by System
<b>YES</b>	<b>NO</b>	<b>NO</b>
<b>NO</b>	<b>YES</b>	<b>YES</b>
<b>YES</b>	<b>NO</b>	<b>NO</b>
<b>NO</b>	<b>NO</b>	<b>YES</b>
<b>YES</b>	<b>NO</b>	<b>NO</b>

OUTPUT, THE TAPWATCH SYSTEM IS IDEAL FOR BOTH NEW CONSTRUCTION AND RETROFITS

## DATA AND SYSTEM MANAGEMENT

TapWatch software, a Microsoft® Windows™ compatible application, provides a menu-driven, graphical interface for collecting data from the DCC. Created specifically for a Read, Bill, Collect company, it provides a means to store and export meter read data. Monitoring water consumption for each unit, updating site information, and monitoring system status are also done using TapWatch software. At any time of day, up to 90 days of usage data can be retrieved from the DCC and exported to a billing program or spreadsheet.



## SPECIFICATIONS

Based on 900 MHz Frequency Agile technology, the TapWatch system utilizes a frequency hopping, spread spectrum radio communication method. FCC approvals and labels are included on every transmitter.

### METER REQUIREMENTS

**Compatibility** TapWatch transmitters are compatible with virtually any meter with a pulsed output including meters from AMCO, Badger, Hersey, Master Meter, Invensys, Viterra Energy Services, E-MON, Global Power Products, Osaki, and others. Contact Inovonics Wireless or your TapWatch distributor for details.

### SYSTEM SPECIFICATIONS

**Operating Frequency Range** 902-928 MHz  
**Modulation** Frequency hopping, spread spectrum

### TRANSMITTER SPECIFICATIONS

**Open Field Range** Up to 2500 feet  
**Battery Type** 2/3 A-size LiMnO2 (Duracell DL123A available through retail outlets)  
**Typical Battery Life** 5 years average, assuming operating temperatures are in the range of 70° to 90°F. Battery life will be reduced at higher temperatures.  
**Dimensions** 3.5" x 1.7" x 0.92"  
**Operating Environment** 32° to 140°F, up to 90% relative humidity (non-condensing)

### REPEATER SPECIFICATIONS

**Power Requirements** 120 VAC transformer included (plugs into standard 120 V wall outlet)  
**Open Field Range** Up to 4 miles  
**Dimensions** Indoor repeater: 6.5" x 3.5" x 1"  
Outdoor repeater: 7" x 7" x 3"  
**Operating Environment** -20° to 145°F, non-condensing  
**Indoor** -20° to 145°F, up to 90% relative humidity (non-condensing)  
**Outdoor** -20° to 145°F

### RECEIVER SPECIFICATIONS

**Power Requirements** Powered by DCC at 11-14 VDC, 80 mA  
**Dimensions** 6.9" x 3.9" x 1.2" (excludes 3" antennae)  
**Operating Temperature** 32° to 140°F, non-condensing

### DCC SPECIFICATIONS

**Power Requirements** 120 VAC transformer included (plugs into standard 120 V wall outlet)  
**Dimensions** 11" x 8.5" x 2"  
**Operating Environment** 32° to 140°F, non-condensing  
**Required Software** TapWatch monitoring software