# eTracker

## True cloud-based sensor configuration, logging, reporting and data analysis all-in-one.

**eTracker** is the gateway of cloud-computing in merging sensors, communications, and information technology infrastructure under one user interface experience. eTracker was designed from the ground up to embrace the current and future trends of cloud-based remote data acquisition and the Internet of Things (IoT) revolution. This paradigm shift centralizes all the historically isolated processes of remote configuration, programming, logging, and telemetry. Configuration, logging, data processing and analysis is now done in the cloud, eliminating time and cost in programming and maintaining expensive, complex data loggers and communication devices at each remote location.

- Cellular-based telemetry (GSM or CDMA) and station controller.
- Direct Internet compliant data stream using HTTP/HTTPS.
- Sensor measurements stored on easily-accessible SD card.
- Cloud logging: all sensor data is forwarded to the cloud for processing, logging, retrieval and resulting action.
- Integrated sensor interface with ports: 4 analog, 4 pulse, SDI-12 (up to 62 SDI-12 sensors).
- Approximately 20X typical improvement in power consumption vs. typical cellular telemetry.
- Intelligent data management, data buffering, and network verification to ensure successful transmission of critical data.

eTracker embraces Stevens' M2M vision—

"What the sensors Measure, the Mind sees"!
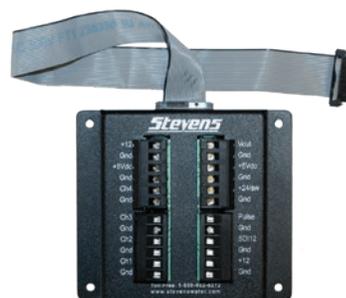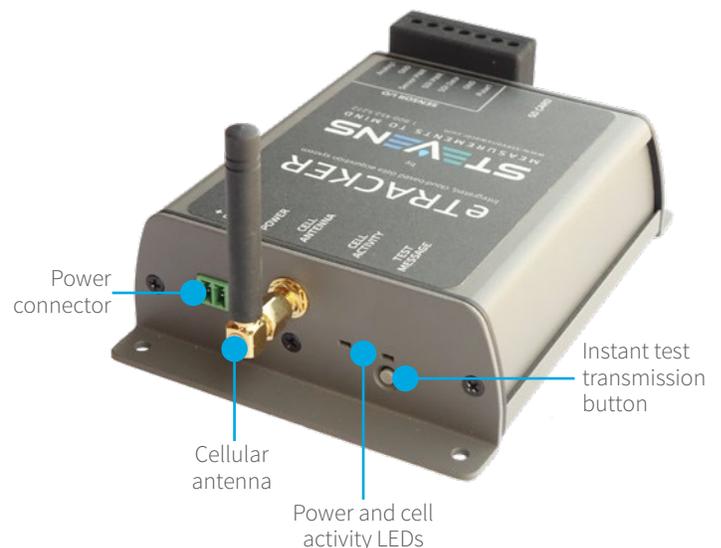
**STEVENS**

MEASUREMENTS TO MIND

# eTracker:

### A cloud-based management experience

All configuration, data logging, data storage, custom algebraic equations, custom data formats and forwarding, control, analysis, alarm notifications, data visualization, and reporting is **done in the cloud.**
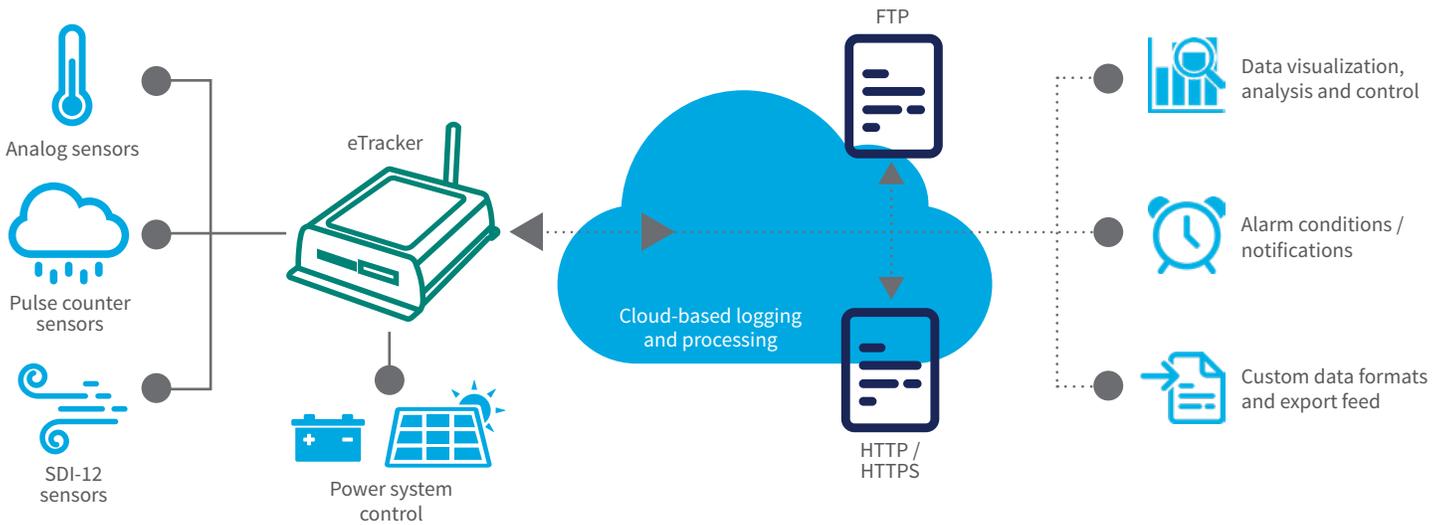
## Unique Features

- **Link sensors to the cloud**: Sensor data is linked directly to the cloud-based Amazon service or user's server via the cellular network using HTTP or HTTPS (optional FTP available).

- **One cloud-based management experience**: Sensor configuration, data storage, custom algebraic equations, custom data formats and forwarding, control, analysis, alarm notifications (email, SMS), reporting and actions all done in the cloud.

- **Easy configuration**: Configure with any device connected to the Internet via the cloud-based Stevens-Connect. No custom programming or scripts required.

- **Automated updates:** Updates to firmware and cloud-based application can be automatic.

- **Security:** Three user accessibility levels for configuration, data management interface and visualization. Also, data is saved on SD card and on the secured and redundant Amazon Cloud Services. Optional data encryption.

- **Reliable connection**: eTracker verifies connection with cell network and server connection before data is sent. If no connection is available or if data reception is not confirmed, data is saved and sent the next scheduled transmission.

- **True cloud data service experience**: Your data is sent directly and securely to the Amazon cloud-based service. No back-end database hosting or web server controlled by Stevens in which data flow takes a detour to the cloud.

- **Data format flexibility**: Optionally forward data in various formats for third party software platforms, like Aquarius or WISKI, and in other formats such as binary, pseudo-binary, SHEF, and more.

- **Power control**: Power cycle commands automatically initiated with the Stevens' SOLO power management system.
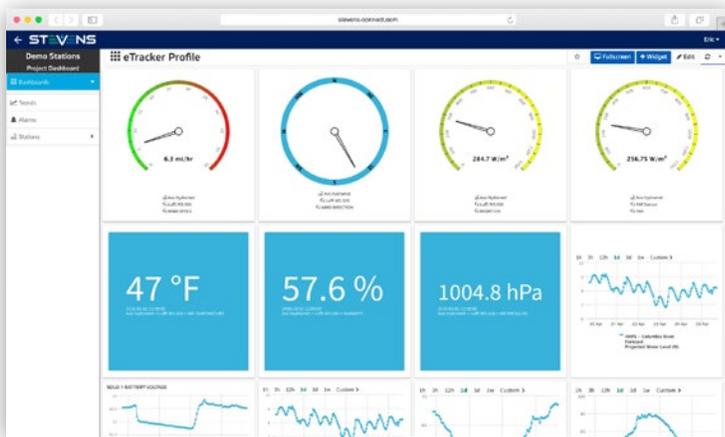


SD card slot

Sensor interface module



Power connector

Cellular antenna

Power and cell activity LEDs

Instant test transmission button



Optional larger sensor interface module

# Simple stations.

## Interact with your system and data from anywhere.



Analog sensors

Pulse counter sensors

SDI-12 sensors

eTracker

Power system control

FTP

Cloud-based logging and processing

HTTP / HTTPS

Data visualization, analysis and control

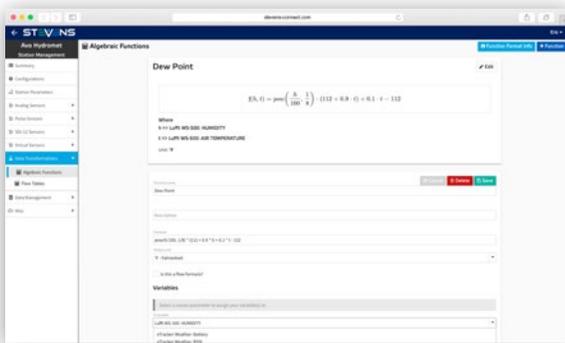Alarm conditions / notifications

Custom data formats and export feed

# Stevens-Connect



Customize your dashboard display with drag-and-drop data widgets

A cloud-based interface to eTracker to configure hardware, analyze and present data, and manage alarms, calculations and data routing.



Custom math functions and calculations



Easily chart trends of any parameter

**eTracker:**
True cloud computing, NOT cloud *viewing*.

**M2M**

**THIS IS M2M.**
MEASUREMENTS TO MIND

# TECHNICAL SPECIFICATIONS

## KEY FEATURES

| | |
|---|---|
| **Processors** | 16-bit dsPIC microprocessor, and 16-bit TI MSP430 |
| **Data storage** | Removable 2 GB SD memory card (FAT 32) |
| **Non-volotile memory** | All setup parameters |
| **Logging interval** | 1 second to 24 hours (sensor dependent) |
| **Reporting interval** | 2 minutes to 24 hours |
| **Cellular antenna** | SMA |
| **LED indicators** | Power, cell network, test message |

## CURRENT CONSUMPTION

| | |
|---|---|
| **Listen/trigger mode/idle** | <2 mA |
| **Logging** | 35 mA |
| **Data receive/store/ prepare for transmission** | 150 mA |
| **Data transmit** | 250 mA |

## POWER

| | |
|---|---|
| **Input voltage** | 10 to 18 VDC (reverse polarity protection) |
| **TX output power** | 24.3 dBm (270 mW) |

## SENSOR INPUT

| | |
|---|---|
| **Analog input** | 4 analog channels, single-ended |
| | **Input type**: 2 wire, 0 – 2.5 V or 4 - 20 mA current loop |
| | **Sensor power**: 24 VDC switched (under firmware control) |
| | **Analog to digital (0-2.5 VDC)**: 21-bit resolution |
| **Pulse input** | 4 pulse channels |
| | **Continuity or TTL**: 0 V to 2.2 V - 5 V |
| | **Maximum rate**: 10 pulses per second |
| **SDI-12 input** | **Number of sensors**: up to 62 sensors (up to 9 parameters per sensor) |
| | **Sensor power**: 12 VDC switched, during measurement |

## ENVIRONMENTAL

| | |
|---|---|
| **Operating temperature** | -30°C  to 65°C * |
| **Storage temperature** | -40°C  to 85°C * |
| **Lightning protection** | AC transient voltage suppressor (TVS) on each sensor port input |

## PHYSICAL

| | |
|---|---|
| **Dimensions (H x L x W)** | 1 3/8" (3.5 cm) x 5 1/8" (13 cm) x 3 3/4" (9.7 cm) |
| **Weight** | 10.78 oz (305.6 g) |

\* SIM Card selection may limit this range for GSM version

# ORDERING INFORMATION

| PART # | DESCRIPTION |
|---|---|
| 80060-60B | eTracker for GSM * |
| 80060-60A | eTracker for CDMA * |
| 80060-502 | Mini sensor interface box |
| 80060-505 | Full sensor interface box |
| 93777 | Antenna, dual-band 900/1900 MHz, 5dB gain, Omni with N female |
| 92824-002 | Cable assembly, cell modem to bulkhead, N to SMA, 2 ft. |
| 92845-010 | LMR400, N-to-N, antenna cable length per 10 feet |
| 93772 | Antenna, 900 Mhz, 70 MHz BW, 11DB, Yagi with N female |
| 93950-108 | Antenna, 700-2500 MHz wideband, high gain, log periodic with N female |