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Station



# THE SIERRA SUMMIT

A Newsletter for Customers of High Sierra Electronics

Fall Issue : Volume 18 : October 2013

## Product "ALERT" Antenna Lightning Protection



### Navigating the ALERT2 Obstacle Course



### Checks & Balances: Study of Holiday Weekend Flooding in San Antonio



### Did you Know?

Oklahoma has a total of  
2,107 watershed dams  
in 121 watershed projects.

## THE ART OF HELPING

When we help another person we make life easier and open up the possibility for them in some way; we offer something that is useful. At HSE the helping that we are concerned with involves practical assistance supplying hardware and providing training, installation or preventative maintenance. Since every situation is unique and no two customers are exactly the same, such helping is ideally a learning process for both our customers and us. The art of helping, when done well, can allow people to see possibilities and to believe that change is possible.

*You can have everything in life you want, if you will just help other people get what they want.*  
- Zig Zigler

## MANUFACTURING AWARD

HSE was honored at the 2013 American Manufacturing Repatriation Summit at a luncheon held in Chico, CA. Our company was recognized for our innovation and economic contributions to the local community and the North State region of California. HSE is now a top Nor-Cal 100 manufacturer.



Mike Peevers, RWIS Systems Engineer can be seen here accepting the award.

## SWEET SUITE for Road Weather

HSE is offering a RWIS Software Suite that supports Road Weather Information Systems. The program incorporates the National Transportation Communications Standard for ITS protocol; reference NTCIP 1204v3 ESS. It allows users to communicate with any NTCIP-based Environmental Sensor Station device via TCP/IP or serial port.

- ◆ Graphics (both web-based and Windows-based), including GIS-based mapping with drill-down detail screens).
- ◆ Simple alarm detection (sensor upper limit, lower limit, rate of change, malfunctioning sensor behavior).
- ◆ Complex alarm detection in which alarms are based upon values of multiple sensors.
- ◆ Data storage in any ODBC-compliant relational database, including but not limited to MSSQL, MySQL, Access, Oracle, Postgres, & SQLite.

To find out more about HSE's RWIS Software Suite, call us at 800-275-2080 or send an e-mail message to [sales@highsierraelectronics.com](mailto:sales@highsierraelectronics.com).

## TWO THUMBS UP

Hearing about our customer's experiences and getting their feedback about our equipment is not only helpful but essential. We received the following comments recently regarding our Model 3306 Data Transmitter:

Shelby McGee  
West Virginia Dept of Homeland Security & Emergency Management

"I'm a dedicated convert to the 3306. I was skeptical at first, but I've been using it with Design Analysis radar sensors and other equipment, and I'm convinced of its superiority over other transmitters".

## PRODUCT "ALERT" Antenna Lighting Protection Device With Changeable Gas Arrester Tube

The Model 7205-00 Antenna Lightning Protector is a gas-filled surge protection device with a changeable Gas Arrester Tube. Its designed to protect Transmitters, Repeaters, and Base Stations from surge voltages caused by lightning or other electrical sources induced onto antenna cables.



The 7205 has a threaded cap on the side that contains a recess that positions the gas arrester tube in the center of the access hole. The gas discharge tube can be replaced in the event that a lightning strike causes a failure.

For more information or to place an order, call us at (800)-275-2080 or send an e-mail to [sales@highsierraelectronics.com](mailto:sales@highsierraelectronics.com)

### Advantages of ALERT2

1. Collision Avoidance
2. Higher Data Thru-put
3. Data Type Options
4. "Unlimited" Source ID's
5. Precise Time Stamp
6. Error Correction
7. Data Transmitted in Engineering Units

## SANTA BARBARA CITY COLLEGE Weather Station

A grant was given to the Earth and Biological Science Department at Santa Barbara City College, CA to install a weather station. Working together with the County and HSE, the station was recently installed.

The weather station is being used to help teach weather and the affects of climate change. According to Geography Professor Michael Robinson, "Climate is more long-term...so what's nice is, over a four month semester students will really get to see some of the changes in temperature patterns and precipitation."

Professor Robinson worked with Shawn Johnson, the Senior Hydrologist at Santa Barbara County Public Works Department to install the station with equipment supplied by HSE. The County has also offered to help maintain the site. A keen interest of the college is to share the data among many different groups and agencies, including the local NWS office in Oxnard, CA. "They'll digest the data and make it accessible via the Internet," says Robinson.

## NAVIGATING ALERT2

Like ALERT, ALERT2 is a system for transporting short data messages over a radio path. It differs from ALERT in that it's much faster, carries more information (including detailed engineering units), and operates virtually error free. Using a channel sharing technique called TDMA, each transmitter has its own time slot in which to transmit. The message contention and data loss problems of ALERT are eliminated. It has a large enough range of available ID's to eliminate the ID assignment problems common in some areas of the country.

### Some frequently asked questions about ALERT2:

**(Q) What is an ALERT Concentrator?** A Concentrator receives ALERT messages and forwards them bundled in an ALERT2 transmission. A Concentrator can be built to only receive ALERT messages or it can be functionally built into an appropriately-equipped ALERT2 Repeater that can receive both ALERT and ALERT2 signals with all retransmissions using ALERT2. As a result, the hop from gauge to Concentrator is ALERT and the hop from the Concentrator to the base (or next Repeater) is ALERT2.

**(Q) What is the available ID range for sites/sensors in ALERT2?** Unlike ALERT which requires a unique ID number for each sensor, ALERT2 calls for a unique number for each site. ALERT2 provides an ID range of 0 to 65,535 sites and each transmitting site can have up to 255 sensors. ALERT ID's were generally assigned in blocks of 10 for each site, so the unique identification capability has increased at least eighty-fold.

You should consider ALERT2 carefully if you are starting a new system, adding significantly to an existing one, or undertaking a system rehab. If your system is large enough to have data collision problems during rain events, you should be considering what ALERT Concentration can do as part of a phased transition to ALERT2.

For these and other questions relating to ALERT2, contact HSE for a technical consultation and to discuss your requirements.

## INNOVATION AWARD



At the 2013 National Hydrologic Warning Council Conference & Expo held in Ponte Vedra, FL Jim Slouber was recognized for his contributions to the ALERT community. Jim, who co-founded HSE and is the Vice President of Engineering, received the Innovation Award.

The Innovation Award is given to an individual or organization that has developed an innovative product or program improvement that has exceptionally benefitted the hydrologic warning profession. Jim was honored for his engineering work toward the advancement of ALERT2.

## CHECKS & BALANCES

### Memorial Holiday Weekend Flooding in San Antonio, TX

A massive Memorial Day weekend storm brought up to 10 inches of rain in San Antonio and triggered flash-flood warnings across South Texas. Emergency crews scrambled to rescue nearly 200 residents in flood-prone areas.

Rains began Friday evening on May 24th and fell at a rate of nearly 2 inches per hour over an 8 hour period, according to the National Weather Service. San Antonio International Airport recorded 9.57 inches of rain Saturday morning alone.



Bexar County is in the 6<sup>th</sup> year of a decade-long capital improvement program with a goal of addressing critical flooding issues. The program includes the HSE-supplied 52 site system known as HALT (High Alert Lifesaving Technology). HALT alerts drivers to dangerous high water with either flashing lights or a combination of flashing lights and automatic barrier gates. In addition to manufacturing and installing the system, HSE is under contract to monitor and maintain the network.

After a thorough study by the County and the San Antonio River Authority, the floods were discussed during the Bexar County Commissioner's meeting on Tuesday, May 28<sup>th</sup>. According to Bexar County Engineer Rene Green, the flood event proved that the projects are working. We're very proud of how they performed," "They performed properly."

The County's study determined that the center of the storm equated unofficially to a 250-year flood. More than 12 inches of rain fell in just 24 hours. The study also revealed there were 72 rescue victims, 114 homes affected, 35 homes destroyed, and 3 fatalities

While patrolling the Bexar County sites during the flooding on Saturday morning, Chris Chappel, HSE Field Service Technician rescued a woman who was stranded on Hwy 281 by the quarry. Water was getting into the car's engine, so Chris pushed her car out of the flood waters and helped get her out of harms way.

## ADVICE FROM THE FIELD

Jerry Bloom, Field Service Technician  
High Sierra Electronics, Inc.

Tip: Installing a Barometric Pressure Sensor

1. Install pressure sensors in a vented weatherproof enclosure such as a building, shelter, enclosure, etc.
2. Avoid siting that will cause pressure variations due to airflow over the venting interface.
3. The area around the sensor should be free of jarring, vibration, and rapid temperature fluctuations.
4. In airport applications, the distance between the pressure sensor and the airport elevation should not exceed 30 meters (98.4'), as per Automated Weather Observing Systems requirements.

## COLORADO 2013

While other floods over the years in Colorado may have been more intense, the Flood of 2013 occurred over a much larger area and was significantly longer lasting than most. Almost forty years after the Big Thompson Flood, the September storm event set up over Colorado, New Mexico, western Kansas and southern Wyoming, and spanned from September 8-15<sup>th</sup>. In parts of New Mexico, the flooding continued into September 16<sup>th</sup>.

The key weather systems during the September 2013 event were a large swath of tropical moisture over the Rockies (referred to as the Monsoon by locals), a large area of high pressure over the Midwest, and a storm in the upper atmosphere over the Great Basin. The moisture over the Rockies was literally being squeezed from both sides by the high to the east and the dry air rotating in from the Great Basin around the upper-level storm.

"We detected the threat early," stated Kevin Stewart, who manages the Urban Drainage and Flood Control District's flood warning program. Although officials tragically reported seven confirmed fatalities, history has proven that it could have been far worse. The Big Thompson Flood of 1976 claimed 140 lives. A recent press release from the National Hydrologic Warning Council points out what was different this time:

"Fundamentally, the region simply committed to a different outcome. Since 1976, Front Range communities have improved floodplain management policy and invested in flood control structures, public education, emergency preparedness, and flood warning system technologies. Today more than 230 rainfall and water level gauges stand sentinel along the Front Range; instantly reporting changing storm conditions to emergency managers".

Early warnings and evacuations are now credited with saving hundreds of lives last month in Colorado - All because local communities invested in a different result.

## Factoid

In 1803 a classification of clouds was created by Luke Howard that remains in use today. He used Latin words to describe each cloud's characteristics.

Cirrus: tufts or wisps; Stratus: a layer; Nimbus: rain bearing; Cumulus: a heap or pile.



## FIELD MAINTENANCE SERVICES

Factory trained, regular full-time HSE Field Service Technicians are stationed in Grass Valley, CA, San Antonio - Fort Worth - Houston, TX and typically focus on maintenance and construction activities in and around those areas. For other locations, and depending on the level of service required, contracted HSE Field Service Technicians are dispatched and utilized to maintain customer systems to assure the most accurate and timely data is available.

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Editor Sue Swenor  
sue@highsierraelectronics.com

Layout Will Trant  
will@highsierraelectronics.com



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## HIGH SIERRA ELECTRONICS

155 Spring Hill Drive Suite 106  
Grass Valley, CA 95945



ADDRESS CORRECTION REQUESTED

## ALERT2 TRANSMITTER

Sophisticated, yes. Complicated, no. The Model 3306-02 Transmitter has all the sensor interface, data logging and reporting features you've come to expect from HSE, plus the added advantages of ALERT2.



In addition to our ALERT products and services, HSE offers a complete line of ALERT2 and Concentrated ALERT products, including Transmitters, Repeaters, and Demodulators. We have the engineering expertise and field experience to help you transition easily, effectively, and affordably to ALERT2. Call us at 800-275-2080 or send an e-mail to sales@highsierraelectronics.com.

**ALERT2 Upgrade Program is Available for your HSE Transmitters!**

## SIERRA SUMMIT CHALLENGE

Test your knowledge of these facts about rainbows:

1. A rainbow is light refracted through millions of droplets of water. They occur when it's both raining and the sun is shining simultaneously.  
A) True  
B) False
2. Who discovered the seven distinct colors of the visible spectrum?  
A) Benjamin Franklin  
B) Sir Isaac Newton  
C) Thomas Edison
3. The angle of light refraction to create a rainbow is 42 degrees to the eye of the person watching.  
A) True  
B) False



1. True  
2. Sir Isaac Newton  
3. True