MASS NOTIFICATION PRODUCTS

Non-discriminating audible warning products that A.I.D. in response to man-made or natural events that require warning the public for community and industrial applications.
What is the quickest, most effective way for warning the public of man-made or natural events such as tornado, flash flood, severe weather, campus safety issue, or chemical release?

The most effective way for warning the public is to issue a tone and follow it with clear, intelligible voice instructions.

Whelen’s three step approach, A.I.D.™ ...ALERT, INFORM & DIRECT will eliminate confusion, restore order, and, most importantly, save lives.

Whelen Engineering has engineered, designed and manufactured more electronic sirens than any other manufacturer in the world.

Two US-based manufacturing plants in Connecticut and New Hampshire employ almost 1,500 workers.

Corporate Headquarters in Chester, Connecticut

Charlestown, New Hampshire Division
Whelen Mass Notification Systems warn the outdoor public. Some of the applications where Whelen systems are used are listed below:

- Tornado Warning
- Emergency Management County/Municipal public warning
- College/University campus
- Tsunami warning
- Flood/downstream warning
- Firehouse siren
- Chemical/Refinery plant
- Employee alarms

Whelen produced the first reliable electronic Mass Notification Products over thirty years ago - the first major innovation in public warning in many decades.

Today, Whelen offers a family of products that integrates outdoor and indoor warning into a single unified system. Whelen is the first name in Mass Notification, with more products installed worldwide than any other manufacturer.

All Whelen Mass Notification Systems are Proudly Engineered, Designed and Manufactured in the U.S.A.
A single source for Design and Manufacture

Whelen manufactures every electronic assembly used in the final assembly of its products, truly a “Manufactured in America” product line. No other manufacturer in the industry can state that.

Low frequency tones are the most effective

At Whelen, we use low frequency (300 hz to 700hz) warning tones because tones in this range penetrate most background noise and carry to greater distances than higher frequency tones.

Only from Whelen, a low frequency speaker driver

Designed exclusively for Whelen Engineering for outdoor warning applications, Whelen’s 400 watt speaker driver is the most rugged, durable and reliable speaker driver in the industry. The only 400 watt speaker driver in the industry, certified to a minimum twenty year life cycle for the Government of Denmark.

The Electronics

Within this document you will find an in-depth look into our electronics, all made by Whelen Engineering. Modular for easy maintenance, each assembly is invented, constructed to match the other components for reliability and longevity. Relying upon commercial components for use in the manufacturing of a siren is for the competition, not Whelen.

Speech Intelligibility Index

Speech Intelligibility Index, or “STI”. Ask for a speech intelligibility report from other manufacturers. Whelen’s voice clarity is the best in the industry. Our STI report supports this.

Detailed product information

Visit www.whelen.com for more information.

Whelen’s 2900 Series have a removable driver for easy in the field maintenance.

It’s as easy as...

1 - grip the handle...
2 - lift out driver...
3 - perform maintenance.
Professional Sales and Design team
Whelen's Authorized Managing Sales Representatives are available to recommend a product, design a system, and develop a bill of material and specification to match your needs. Visit www.whelen.com for the up to date contact list for your area. Click on “Where to Buy”, this will lead you to the Where to Buy (Mass Notification) section.

Warranty
Limited five (5) year warranty standard. The best in the industry, email us at iowserv@whelen.com for a copy of our warranty.

Corporate Capabilities
Available at www.whelen.com, is a brochure on the corporate capabilities of Whelen Engineering. No other manufacturer has the infrastructure in place to design, build, service and maintain your Whelen product not only for now, but 20 years from now.

Two manufacturing facilities totaling over 586,000 square feet.
Largest staff of Design Engineers in the industry.
Research and development.
Partnering with OEMs on new vehicle design and product integration.
Plastics injection molding machines from 30 to 2000 tons capacity.
In-house plastics, hard coating, metallizing, and sheet metal fabrication.
On-site test lab for environmental dust, moisture, vibration, etc., acoustic anechoic sound chamber, industry certifications (SAE, AMECA, FAA to name a few).
Sales and Technical Personnel are trained at the factory training center and return for updates on a regular schedule.
Worldwide network of Sales, Service and Training.

Whelen Mass Notification home page
Whelen Corporate Capabilities Brochure

Safe professional installation through Whelen factory-certified distributors is available throughout the world. Trust local distributors familiar with local codes and soil conditions.

Fort Worth Installation
Ohio Valley Installation
Installation of VisuAlert™ on siren
Electronic cabinet installation
Mass Notification Products

All Whelen Mass Notification Products feature the following:

- Battery operation
- Six warning tones: Wail, Whoop, Attack, Hi/Lo, Alert and Airhorn
- Local controlled or radio controlled
- SI TEST® (patented by Whelen) confirms the operation of AC power, partial or full operation of both the power amplifiers and speaker drivers, as well as rotor operation of the rotating models
- UL Listed

**WPS2900 Series**

- Ten models to choose from
- Field-serviceable 400 watt EZ-PULL™ speaker driver
- Speaker array, electronics cabinet, and cabling all included, all assembled and tested prior to shipping
- VOICE CAPABLE through pre-recorded messages and live public address

**WPS4000 Series**

- Rotating sirens
- Speaker array, electronics cabinet, and cabling all included, all assembled and tested prior to shipping
- VOICE CAPABLE through pre-recorded messages and live public address
- “Long throw” warning at output power levels sending tones and voice to distances beyond one mile
- Heavy-duty, gear-driven rotor, and high-torque motor
- Public Address Quadrant Control. The WPS4000 speaker can be commanded by radio control to eight compass points for public address messages

**Omni-Alert™ Series**

- Economical alternative to the WPS2900 series
- TONE ONLY – voice messaging not available
- Field-serviceable 400 watt EZ-PULL speaker driver
- Speaker array, electronics cabinet, and cabling all included, all assembled and tested prior to shipping

**VORTEX™ Series**

- Economical alternative to the WPS4000 series
- TONE ONLY – voice messaging not available
- Speaker array, electronics cabinet, and cabling all included, all assembled and tested prior to shipping

**HORNET™ Series**

- Economical rotating product
- TONE ONLY – voice messaging not available
- Speaker array, electronics cabinet, and cabling all included, all assembled and tested prior to shipping

**Firehouse Series**

- Designed around the Omni-Alert platform, specifically for the Firehouse market
- Same rugged design, built for years of service
- Whelen lighting products available for both the top and bottom of the speaker array
- TONE ONLY – voice messaging not available

⚠️ WARNING: These products contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, visit whelen.com/regulatory.
IPS™ Series
- Same features as our WPS series products, but in a compact design
- Indoor cabinet but designed around our rugged outdoor cabinet
- Unique 400 watt amplifier features 100 watt “channels” for distributed audio
- Sold with Whelen’s family of indoor speakers (15, 30, 60 and 100 watt)
- VOICE CAPABLE through pre-recorded messages and live public address

Siren Speakers for IPS Series
A choice of siren speakers ranging from 30 to 100 watts is available for the IPS Series

Voice Option and Live Public Address
- The WPS2900, WPS4000 and IPS product lines offer digital voice capability and live public address, standard
- Store up to 28 messages with 60 minutes of on-board voice capability
- Custom messages or messages selected from Whelen’s message library are available

Base Station Equipment
E1000
- 6 row by 40 character backlit LCD display
- 20 “HOT” call keys
- 4 time of day call key activations
- 2 remote input call keys
- Automatic system polling
- Base radio interface
- Channel grant input for trunking radio system
- Super Capacitor backup for time and date
- Rugged membrane keyboard
- Microphone for live public address
- Computer interface USB
- Speaker driver/amplifier status availability
- 28 RDVM message capacity
- 24 hour clock, day of the week, month, date, year, and standby message displayed when encoder is not in use
- May be used for mobile applications
- 18 function capability

E969
- One-way control
- Control your sirens individually, in groups, or altogether
- 35 function capability
- Four “Call Keys” on keyboard provide simple and fast two-step activation of most warning scenarios (select “Call Key”, press Send)

E747
- One-way control
- Control your sirens individually, in groups, or altogether
- 18 function capability
- May be used for mobile applications

Alert Monitor
VA2000
- Extends the reach of the Whelen system
- Addressable similar to a siren, it will react when receiving the DTMF signal just as a siren would
- Upon activation, it will sound a piercing alarm, flash an LED, and display one of 60 pre-programmed messages

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Electronic Cabinet Features and Options
Each Whelen siren comes with a completely manufactured and tested cabinet. We manufacture our own cabinet by bending, coring, punching, and riveting a raw piece of “5052” aluminum alloy or “304” stainless steel. Our cabinet can be painted, and engraving services are available as well.

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Electronic Assemblies

All major electronic assemblies used in our cabinets are manufactured by Whelen, as is the cabinet itself.

**Whelen Controller**

Our controller is the heart of every WHELEN cabinet. The controller controls the key functions of every Whelen siren, including the following:
- Tone Generation
- Event Timing
- Remote Station Status Reporting (encoding)
- System Diagnostics (including SI TEST™)
- Remote Activation
- Rotor Control (for WPS4000, VORTEX™ and HORNET™ Series)
- Local Control (push-button inside the cabinet)
- The controller contains a microphone jack for public address and a serial port to allow connection of our Siren Diagnostic Programming Tool Software (hereafter referred to as SDPTS) to the siren. The controller is also the location of the diagnostic LEDs

**Whelen Power Amplifiers**

- Each cabinet includes one to ten power amps, depending on the model
- The amplifier receives the desired tone or message generated by the control board, amplifies it, and delivers it to the siren driver
- Whelen-manufactured with a die-cast cover, short circuit protection, current limiting, fuse protected
- LED service indicators verify completion of the circuit between the 400 watt amplifier and 400 watt speaker siren driver. The basis for our high speech intelligibility lies within these amplifiers, increasing their output by 25% when in the voice mode of operation

**Whelen Battery Charger**

- Each cabinet contains a temperature-compensated battery charger
- The battery charger maintains the batteries in a stand-by power mode
- Temperature-compensated to ensure that the batteries are charged to 100% of capacity in all regions and climates around the world, from "the frozen tundra of Greenland to the deserts of Kuwait"

**Motherboard**

- This component (located on the inside of the upper cabinet door) distributes battery voltage and signals to system components
- This component also contains fusing for system components
- A second motherboard is used in the WPS2906 thru WPS2910
- The Motherboard also distributes signals between the amplifiers and the control board and is the link to most components in the siren

**Radio and Interface Board**

- The radio component receives an RF signal and delivers them to the controller via DTMF protocol for processing
- Through the use of the feedback radio or feedback landline board, the siren is also capable of transmitting status information back to the control center

**Landline Board**

- Whelen Siren products may be remotely controlled by landline
- This board communicates via DTMF protocol as well
- When using the landline option, this allows an AC 600ohm wire to replace the radio link. A 2-wire line is used for one-way activation and a 4-wire line is used for two-way activation and feedback systems
- While the name “landline” implies a hard wire line, the landline may be any hardware that can emulate a dedicated AC grade phone line at both the control and siren ends of the system

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Options

**Auxiliary Input Board**
The Whelen Siren product may be equipped with an optional module that can activate siren functions via an external auxiliary input contact closure from a nearby location. For external controls, the “closure” must be at least 1/2 second in duration. The “closure” must be made to ground. A ground contact is supplied at the terminal strip for this purpose. The following Whelen Commands are supported: Cancel (or Clear), Wall, Attack, Alert, Air Horn, Hi-Low, Whoop, Noon Test, DVM 1, DVM 2, DVM 3, DVM 4.

**Auxiliary Control/Status Board**
The Whelen Siren product may be equipped with an optional module that allows the user to remotely control siren functions and to remotely collect siren status information from a nearby location. All Whelen commands are supported, depending upon product. In addition to commands and status functions, the Auxiliary Control/Status Option has transformer coupled circuits for accepting audio. One circuit is active in conjunction with the Public Address command, while the other circuit is used for local audio, such as a local microphone or paging system. The local audio must have a “Push To Talk” contact closure for operation. In either case the audio is broadcast over the system.

**LED / Strobe Control Board**
This component is a device that controls a pole-mounted LED or strobe light. This light can be configured to activate during specific conditions (example: when any tone or message is generated).

**Intrusion Alarm**
This sensor detects the opening of the cabinet door. If the station is equipped with this option, the alarm is configured to transmit a signal back to the control center.

**Solar Option**
This component uses electrical energy collected by pole-mounted solar panels to maintain the station batteries at their proper voltages. This regulator is temperature compensated.

**VisuAlert™**
The VisuAlert option provides a ring of Whelen Super-LED® M6 lights mounted under any WPS2900 or OMNI-ALERT™ siren system. VisuAlert will illuminate with a designed flash pattern when the siren is activated adding an additional layer of warning.

**Status Option**
If a siren is equipped with the STATUS option, full power station activation can be visually confirmed from outside the siren cabinet. This diagnostic display, located on the right side of the cabinet, will indicate the following:
- Presence of AC power (if equipped with an AC Battery Charger)
- Presence of DC power at minimum operating level (at least 19VDC)
- Partial amplifier/driver function
- Full amplifier/driver function
- Rotor operation (WPS-4000 Systems only)

**Batteries**

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Over 20,000 sirens have been manufactured by Whelen over the last 35 years. Our products are used in all 50 States, 52 different countries and almost 200 college and university campuses. Here is a sample of some of the end users that have purchased Whelen products over the years:...
**WHELEN CORPORATE CAPABILITIES**

**DESIGN & ENGINEERING**
The largest staff of Design Engineers in the industry! Many of our Engineers are Fire Volunteers and EMTs so they know first hand the critical need for life saving, innovative products.

**INJECTION AND VACUUM MOLDING**
1600 molds, 38 molding machines from 30 to 2000 tons, 20 million parts produced every year. Vacuum machines produce irregularly shaped components not suitable for injection molding.

**ELECTRONICS MANUFACTURING**
Surface mount and through-hole circuit boards are manufactured, assembled and tested In-circuit.
FABRICATION
Robotic and laser cutting and drilling, Robotic Bending Cells for stand-alone operation. All machine parts are produced and maintained by automated production machine shops in New Hampshire and Connecticut.

FINISHING PROCESSES
Hard-coating of lenses and powder coating housings make them resistant to weather and abrasion. Metallizing reflectors adds reflectivity and helps prevent corrosion and oxidation.

PRODUCTION MACHINE SHOP
The production machine shop uses state-of-the-art milling machines, CNC lathes and screw machines to make the precision parts required for our products.

AMERICAN EMPLOYEES, AMERICAN MANUFACTURING, AMERICAN PRIDE!
QUALITY CONTROL AND TESTING

Quality Control is maintained throughout the manufacturing process. Certified test labs on site facilitate product development and shorten lead times.

EMI  RF  Corrosion  Atmospheric

Rain  Vibration  Dust  Environmental

Photometric Chamber  Acoustic Chambers  Quality Control & Reliability Testing

REPAIR, SERVICE AND TRAINING

Whelen’s Repair Goal is to get product repaired and back out the door to you within 24 hours. Authorized Service facilities are located around the globe. Training is available not only at the Chester Training Facility but at sites around the country. All Whelen Authorized Managing Sales Representatives and technicians return to the plant several times a year for new product introduction and advanced training.
2011 and 2012 were devastating years in terms of loss of life and property damage as a result of over 2,300 confirmed tornadoes throughout the United States. Billions of dollars worth of property damage and over 600 fatalities in all were reported. In places like Joplin, MO, Smithville, MS and Henryville, IN, it was complete destruction. But in those areas as well as others, outdoor warning sirens were credited with saving thousands of lives.

From the Clarion Ledger Newspaper - April 28, 2011
Pam Hodges (from right) of Brandon and her son Brian Hodges of Smithville walk along U.S. 25 surveying damage from the EF-5 tornado that wiped out parts of the small Monroe County community Wednesday. Although Brian Hodges’ home is a total loss, he glances up at an old tornado siren nearby, saying “That’s what saved most of these people. That right there. The siren that talked.”

Calhoun County, AL - April, 2011
A Whelen siren still stands after a devastating tornado.

Joplin, MO - May 23, 2011
Whelen Master Distributor Washington Electronics.