

Earthquake Early Warning System

ELPAM Electronics Ltd. provided a system to warn residents of tsunamis, earthquakes, floods and other natural disasters.



The Israeli company ELPAM Electronics offers a comprehensive solution for earthquakes detection and early warning system.

ABOUT ELPAM ELECTRONICS LTD.:

The Company's range of operation expended to cover both the domestic and international markets, introducing major electronics technological developments to meet the homeland security challenges, search & rescue, detection and other situations both in Israel and worldwide.

The Company's engineering capabilities range include designing, maintenance, installation, consulting and manufacturing specialized sophisticated electronic devices and systems covering the fields of Public Warning, Alarm and Control Systems.



Earthquakes of magnitude six or more on Richter's scale cause devastating disasters leading to death, casualties and significant loss of property. It is not possible to predict well in advance when and where the next earthquake will occur. Fortunately, thanks to recent advances in science and technology, it is now possible to provide early warning when an earthquake is approaching a location. These few seconds of early indication can be the difference between life and death.

Elpam warning System provides this crucial early indication. An alarming audio and visual siren rushes people out of buildings to a safer place. Elpam warning System is based on state-of-the-art seismic detectors. The first 'Type P' pressure waves (which are not yet harmful) are detected by the system and cause the alert. This provides enough time for safe evacuation of buildings before the harmful "Type S" waves reach the area.

Using seismic detection systems can generate a short term alert before the actual arrival of the destructive waves allowing sufficient time to perform emergency operations and preparation.



Elpam's warning and information systems use in Earthquakes early warning and announcing outdoor systems.

The EL3000 high power electronic sirens offered by ELPAM Electronics Ltd.

The EL3000 are acoustic warning systems used to provide warnings in Emergency states.



System Features



Seismic Detector

- Provides an early, reliable alert few seconds before a life - threatening earthquake takes place.
- Uses state-of-the-art technology for early detection of 'P' and 'S' waves, meeting the standards of official geophysical Institutions.
- Enables special "drill" mode, for practicing quick evacuation of building.
- Can be controlled remotely by computers from all over the world.
- Includes backup batteries lasting 15 days for cases of power outage.
- Provides both amplified vocal and visual alarms in real-time.
- Has a control and emergency indicator light for power connection integrity and power outage.
- Has an external communication port to a telephone line which sends out text messages for earthquakes.

Earthquake Early Warning System - SOLUTION DESCRIPTION

A Seismic Detector:

Sensors for detection.

The sensors can be directly connected to electronic sirens, or can be transferred data to control center.

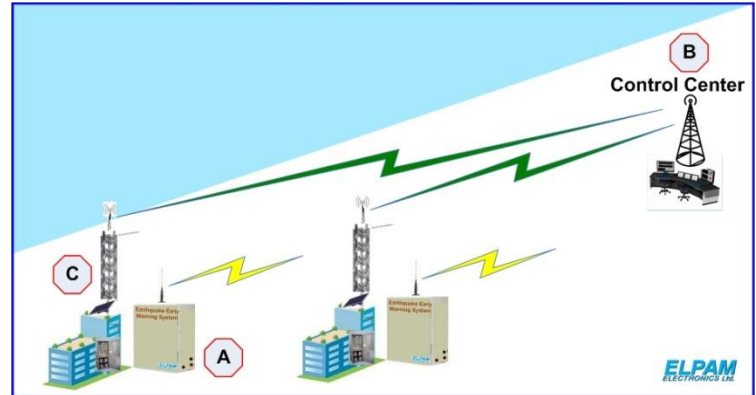
B Control Center:

Collecting data from Seismic Detector and activate the sirens

C ELPAM Electronic Siren:

The EL3000 high power electronic sirens offered by ELPAM Electronics Ltd.

The siren equipped with alternate batteries for the case of outage and solar cells that do not require any external power supply.



The solutions can be configured and optimally applied to the targeted tasks as listed below:

- Activate a selected siren from the control center
- Activate a selected siren from the seismic detector
- Activate selected group(s) of sirens (broadcast/group-cast)
- Interface to a wide range of siren equipment and public annunciation units

EL3000 high power electronic sirens

- Ability to connect local audio signal inputs, including a local microphone or other local signal sources.
- 300 to 3000 Watts of continuous audio power – 103dB(A) to 124dB (A) at 30m.
- Separate class “D” 300W true RMS amplifiers with up to 90% power efficiency.
- Local activation capability.
- Power supply from maintenance-free batteries.
- An RS232 port.
- Enhanced automatic testing routines, including so-called “silent” siren tests, complete functionality tests.
- Different local activation options.
- Different remote activation options.
- Intelligent battery recharging, charging current optimizing based on modern algorithms recommended by manufactures to prolong battery life.
- A stainless steel cabinet.
- Solar operation to keep the batteries charged in applications where AC is not available.
- Microphone for on-site announcements.
- 2 batteries.
- Very low standby power requirements.
- System function surveillance via microprocessor.
- Very High MTBF (Mean Time Between Failures)
- Activation of up to 7 individual alert signals and live PA.
- Built-in tone generator providing for six standard, pre-configured tones
- Weather-proof Siren Horns.
- Modular Siren Head Construction.
- 360° Omnidirectional Sound Propagation.
- Extremely high dB/W sound pressure level.
- Operating Types: Local activation, Remote activation, Activation via remote control panel and Voice announcements.
- Integrated batteries allow operation independent of mains power.
- Local operating unit, including LCD display and keypad.



Seismic Detector

The warning principle is based on the time difference between the arrival time of the “P wave” (the Primary wave) and the “S wave” (the Secondary wave) that causes the majority of the damage.

The two types of waves propagate at a speed of several kilometers per second, but P waves propagate twice as fast as S waves, therefore the P waves come before the S waves and warns about the coming destructive wave.



Features and Specifications are subject to change without prior notice