

EMERGENCY RESPONSE

WHERE WAS THE EARTHQUAKE'S CENTRE? WHERE SHALL I SEND EMERGENCY RESPONSE?

WHICH AREA HAS BEEN HIT HARDEST?

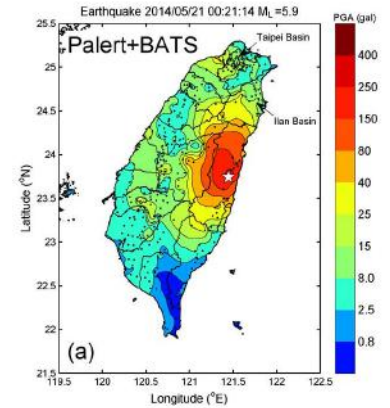
HOW DO I GET A DETAILED SHAKE MAP WITHIN 30 SECONDS OF AN EARTHQUAKE?

Overview

The use of the low cost Palert system in Taiwan and several other countries, has ensured these critical questions can be rapidly and accurately answered.

The system sends data back to a central Earthworm Server, that within a minute or so can quickly provide a detailed shake map allowing emergency response to be rapidly deployed to the worst effected areas.

Businesses, schools, councils and governments can use the Palert units to not only provide some early warning of an approaching earthquake, but also to enable this map production

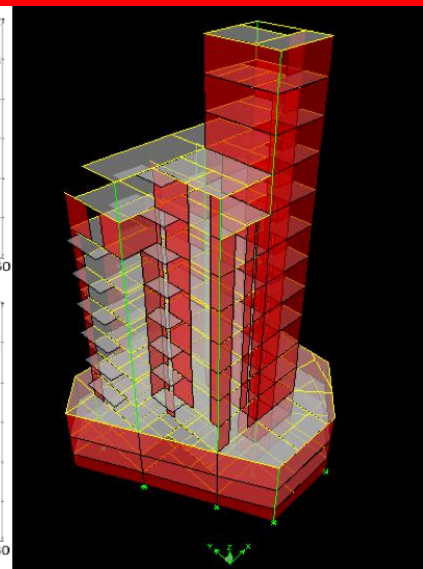
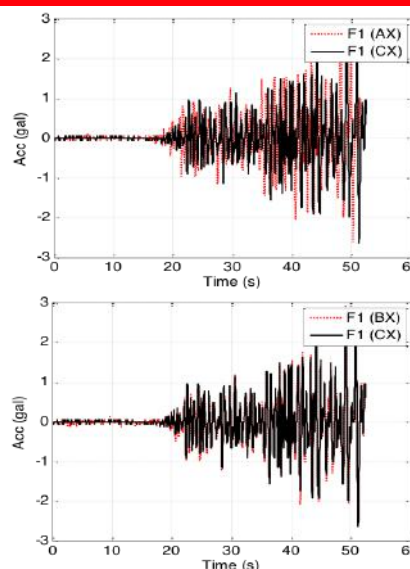


Key Features

- Warning before shock waves arrive (pre-earthquake)
- Emergency shut-down of vital devices (pre-earthquake)
- Structural assessments for safety (post-earthquake)
- Suitable for: Multi-story Buildings, Damns, Bridges, Tunnels, Railways, Subways, etc.
- Most cost effective solution available in the market
- Easily scalable to enhance data collection
- Easy to integrate with industrial applications using PLC, HMI and SCADA

Structural Analysis from Palert data:

- Structural System Identification
- ETAB Simulation
- Stochastic Subspace Identification Method
- Engineering Software for Building Analysis
- Damage assessment from Modal and Real Building



Specifications

Accelerometer

- Type: Tri-axial MEMS
- Range: ± 2 g (b, c Axes); $+ 1$ g / -3 g (a Axis)
- Frequency Response: 0.05~20 Hz
- Displacement Frequency: 0.075 HPF
- Response: 3000 g 0.5ms
- Shock: 10000 g 0.1ms

Resolution

- Output Resolution: 16 Bits

Earthquake Gauge

- Algorithm: Pd, PGA, Displacement, STA/LTA
- STA Setting Range: 0.1~100 seconds
- LTA Setting Range: 0.1~200 seconds
- Event Duration Time: 1~200 seconds

Switch Set-points

- Digital Output Numbers: 2
- Set-point Range: 1~1960 gal
- Contact Type: Normal Open
- Contact Capacity: 60V / 0.6A DC
- Hold-On Time: User defined

Power

- Supply Voltage: 10~30 V C
- Power (12V): 3.5 W

Input/Output

- Modbus RTU: RS-232 or RS-485 format 19200, N, 8, 1
- Modbus TCP: 5 Hosts Simultaneously
- Modbus ID: Default 101, settable
- Modbus Function: Function 3 and 16
- Active Connect to TCP Server: Support 2 TCP Servers
- Time Calibration: Via NTP or PC Utility
- Data Recording: Via Network by PC Utility

Size

- Dimensions: 125 x 105 x 30 mm
- Weight: 450g (without Power and Cable)

Environment

- Operation Temperature: $-10\sim 60^{\circ}\text{C}$
- Storage Temperature: $-20\sim 70^{\circ}\text{C}$



Palert

Background

Palert is one of a family of advanced earthquake P-wave alarm detector systems developed by San Lien in Taiwan and represented by Jenlogix in Oceania.

Palert is a P-wave sensor equipped with MEMS accelerometers for 16 bit output resolution. When integrated into a network using SCADA or the dedicated controller, the **Palert** provides the ability to trigger digital outputs enabling warnings and other actions to occur before or during an earthquake.

With Modbus TCP/RTU capabilities, it is very easy to integrate **Palerts** with industrial applications, such as PLC, HMI and SCADA. The **Palert** can stream to 2 hosts and connect to 5 Modbus clients at the same time.

See www.earthquakeearlywarning.systems for more information.