

United States Geological Survey - Hawaii

Powerful Solution Extends the Possibilities of Volcano Research

Key Benefits

- Enhanced Safety - Enables live volcano monitoring from a safe distance, thereby taking both researchers and delicate equipment out of harm's way.
- Improved Data Delivery – Permits live monitoring of volcanic activity 24/7, providing the most up-to-date and accurate information.
- Cost & Energy Efficiency – Modestly-priced unit utilizes third-party energy-efficient solar panel requiring only 5 volts of electrical power.
- Time Savings – Eliminates need for long climbs up volcanic mountain.

Meeting the Challenge

Every climb up the volcanic mountain brought new risks and wasted precious hours. In addition, the intense heat generated by molten lava could be brutal to the delicate sensor equipment. The scientists of the U.S. Geological Survey Hawaiian Volcano Observatory (USGS-HVO) clearly needed a safer and more efficient way to monitor volcanic activity on the island of Hawaii.

The team searched for a solution, finally identifying the Enable-IT 860 Ethernet Extender as the optimum choice. Recognized for its high speed information delivery, the 860 delivered a full range of benefits ideally suited to their needs.

How the Enable-IT 860 Transformed Volcano Research

First and foremost, the 860 dramatically increased the distance and speed at which high-grade data signals could travel. This allowed the research team to monitor volcanic activity from the safety of a remote location. The network configuration consisted of an 860 in the office, which housed the researchers; a remote 860 unit connected via copper-based cable to the office around 6000 ft. (1828.8m) away, powered by low voltage third-party solar panels; and sensors and cameras connected to the Enable-IT unit an additional 328 ft. (100m) away within the crater itself. This additional 328 ft distance was gained by plugging another Ethernet cable into the 860. Since the rugged 860 has been engineered to withstand temperatures of -49°F to 168°F (-45° to 76°C), it clearly was the extender best suited to withstand the intense air and ground heat.

The 860 matches distance enhancement with unsurpassed speed and accuracy of data delivery.

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Transmitting up to 100Mbps full duplex, the unit provides live streaming data 24/7 with split-second precision. Such high-speed info delivery enables researchers to watch events continuously in real-time.

Despite its distance-enhancing capabilities, the 860 is affordably priced and requires a scant 5 volts of power, which the USGS provided via third-party energy-saving solar panels. As a result, there was no need to utilize an additional power cable. Implementation of the unit also saves the researchers' hours of valuable time, the system has eliminated the necessity of long, grueling mountain hikes to set up and manage equipment.

The Expert Choice

Clearly, the highly-acclaimed Enable-IT 860 has proven a powerful, cost-effective solution for the diverse needs of the Hawaiian Volcano Observatory. Enhancing both the safety of personnel and the speed and accuracy of critical information, the system undoubtedly will continue to play a vital role in the understanding, management, and prediction of volcanic activity.

Products Used

- Enable-IT 860 - 100Mbps Full Duplex Ethernet Extender