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**HIGH-RESOLUTION, ULTRA LOW POWER, INTERGRATED AFTERSHOCK AND
MICROZONATION SYSTEM**

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Rapid Aftershock Mobilization plays an essential role in the understanding of both focal mechanism and rupture propagation caused by strong earthquakes. A quick assessment of the data provides a unique opportunity to study the dynamics of the entire earthquake process in-situ. Aftershock study also provides practical information for local authorities regarding the post earthquake activity, which is very important in order to conduct the necessary actions for public safety in the area affected by the strong earthquake.

REF TEK a Division of Trimble has developed a self-contained, fully integrated Aftershock System, model 160-03, providing the customer simple and quick deployment during aftershock emergency mobilization and microzonation studies. The 160-03 has no external cables or peripheral equipment for command/control and operation in the field. The 160-03 contains three major components integrated in one case: a) 24-bit resolution state-of-the art low power ADC with CPU and Lid interconnect boards; b) power source; and c) three component 2 Hz sensors (two horizontals and one vertical), and built-in $\pm 4g$ accelerometer. Optionally, the 1 Hz sensors can be built-in the 160-03 system at the customer's request.

The self-contained rechargeable battery pack provides power autonomy up to 7 days during data acquisition at 200 sps on continuous three weak motion and triggered three strong motion recording channels. For longer power autonomy, the 160-03 Aftershock System battery pack can be charged from an external source (solar power system). The data in the field is recorded to a built-in swappable USB flash drive. The 160-03 configuration is fixed based on a configuration file stored on the system, so no external command/control interface is required for parameter setup in the field. For visual control of the system performance in the field, the 160-03 has a built-in LED display which indicates the systems recording status as well as a hot swappable USB drive and battery status.



The detailed specifications and field performance are presented and discussed.