

STT073-04

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## The experimental manufacture of the high sensitivity IT strong-motion seismometer

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In order to reduce the seismic disaster, it seems to be the usefulness to investigate the seismic vibration of our familiar buildings such as housing, companies, schools, etc. in small earthquake, examine the weak point and improve the earthquake resistance of these building effectively. For this purpose, we devised IT strong motion seismometer as a new type self install strong motion seismometer.

ITK sensors using the GMR(giant magnetoresistance effect) acceleration pickup are developed and marketed. In addition, the logger using AD conversion part of this inexpensive ITK sensor is developed and is utilized to build up the real time observation network of CEORKA. The network part after the AD conversion can use the standard program of the IT strong-motion seismometer in common while connecting a high-performance outside sensor.

On the other hand, the performance of the GMR acceleration pickup understands that a noise is too big to measure a microtremor although it realizes enough SN ratio to take the record of the felt earthquake. The collecting wave except an earthquake can constitute the high sensitivity ITK sensor that is available as data for microtremor if it connects a force balance acceleration sensor having high sensitivity to above-mentioned ITK logger. As for the ITK station for microtremor, the application for data analysis specialized in a microtremor measurement becomes the other development. But it can use the data collecting system of the IT strong-motion seismometer for building. The program of the ITK station supports Linux, Windows, each MacOSX and can build the microtremor observation system which assumed the notebook PC which installed this portable station easily. It can carry out observation if it uses the existing LAN of the building without taking trouble to put a new signal line. If a system is inexpensive, and observation enforcement becomes easy, the increase of the observation frequency and number of the sensors is enabled.

Keywords: IT Kyoshin (Strong Motion) Seismometer, Structural Health Monitoring