DEVICE SPECIFICATIONS

PATENT PENDING
INTELLECTUAL PROPERTY OFFICE OF THE PHILIPPINES

	DPWH REQUIREMENT	USHER SPECIFICATIONS	REMARKS
ACCELEROGRAPH	Seismic qualified as tested by recognized international testing laboratory	Seismic qualified as tested by recognized international testing laboratory	Compliant
SENSORS MUSTBE CAPABLE/ EQUIPPED OF:	Stores seismic activity information as gathered by the attached accelerometer	Stores seismic activity information as gathered by the attached accelerometer	Compliant
	Equip with fault detection	Equipped with three fault detection 1) recording activity checker 2) internet connectivity 3) accelerograph status monitoring	Compliant
	Provides real-time alarm information (either audio, visual or both) during an earthquake event	-Provides real-time alarm information (either audio, visual or both) during an earthquake event -Equipped with a buzzer and three rotary warning lights which activates during an Earthquake event. -Furthermore, alerts during seismic activities are also available on the USHER portal.	Compliant
	Equipped with internal battery back-up power to ensure continuous operation during a power fluctuation	Equipped with internal battery back-up power to ensure continuous operation during a power fluctuation	Compliant
WHERE APPLICABLE, MAY INCLUDE	**Minimum design life:** 10 years and should be demonstrated and certified to have a 40,000-hour (minimum) mean time between failures	**Minimum design life:** 10 years and have been tested and certified to have a 40,000-hour (minimum) mean time between failures	Compliant
	Minimum of 3 components (vertical, longitudinal, and transverse)	Minimum of 3 components (vertical, longitudinal, and transverse)	Compliant
	Natural Frequency: above 50Hz	**Natural Frequency:** above 50Hz	Compliant
	Damping: Approximately 60-70 percent critical	Damping approximately 60-70 percent critical	Compliant
	Sensitivity: 2g	**Sensitivity:** User selectable (± 2g, 4g, 8g) (Default: 2g)	Compliant
	Bandwidth: DC to 100 Hz	**Bandwidth:** User selectable (DC to 1000Hz)	Compliant
	Environment: IP67	Environment: IP67	Compliant
RECORDING	**Sampling Frequency:** Minimum of 100 samples per second	**Sampling Frequency:** User selectable (4, 8, 16, 31, 62.5, 125, 250, 500, 1000, 2000, 4000 Hz) Current setting is at 125 samples per second	Compliant
	Time: From at least 20 seconds before the ground shaking begins until 30 seconds after the last triggering level motion	**Time:** From at least 20 seconds before the ground shaking begins until 30 seconds after the last triggering level motion	Compliant
	RMS Noise: System noise shall be less than 40 µg measured over 0-30 Hz.	**RMS Noise:** System noise shall be less than 40 µg measured over 0-30 Hz	Compliant
	Media: Memory Card	**Media:** Flash Memory Card **(32 GB upgradable)**	Compliant
	Continuous Recording: capable of continuous recording	**Continuous Recording:** capable of continuous recording	Compliant
	AD Converter: 16bits	**AD Converter:** 20bits (ERI Max model) 32bits (ERI Maximus model)	Compliant
TIMING	**Interval:** Half a second of less	**Interval:** Half a second of less	Compliant
	Accuracy: Plus or minus 0.2 second per 100 seconds	**Accuracy:** Plus or minus 0.2 second per 100 seconds	Compliant
	Type: GPS or NTP server	**Type:** GPS or NTP server	Compliant
TRIGGERING (As applicable)	**Method:** Pendulum or other device using earthquake motion as an exciting force	**Method:** Microelectromechanical systems accelerometer	Compliant
	Level: Accelerograph: 0.5-100 gals nominal velocitimeter: 5µm/s to 1mm/s)	**Level:** Accelerograph: 0.5-100 gals nominal velocitimeter: 5µm/s to 1mm/s)	Compliant
	Time: Full operation of accelerograph/velocity in not over 0.1 sec after activation.	**Time:** Full operation of accelerograph/velocimeter in not over 0.1 sec after activation	Compliant
POWER	Battery maintained by charger	Battery maintained by charger	Compliant
COMMUNICATION	**Ethernet:** 10 base-T or 100 base-TX	**Ethernet:** 10 base-T or 100 base-TX	Compliant
	Protocol: TCP/IP FTP/SFTP	**Protocol:** TCP/IP FTP/SFTP	Compliant
RECORDS	Continuous recording of data	Continuous recording of data	Compliant
BATTERY INSPECTION	The accelerograph shall be tested with any charge device disconnected from an electric power source	The accelerograph shall be tested with any charge device disconnected from an electric power source	Compliant
ADDITIONAL FEATURES		FDAS Integration Ready 24/7 Remote Data retrieval, interpretation, and storage through the USHER Platform (Web Portal) Structural Health Index based on parameters set Mobile applications accessibility	EXCEEDS COMPLIANCE