

All-in One | Ultrasonic & Sonic Test System 2020 - 21

Ultrasonic Pulse Velocity Tester for Concrete | Ultrasonic and Sonic Testing with Tomography | MCHA Cross Hole | Pile Integrity Tester



All-in One is a **modular ultrasonic test kit system** that can be configured for checking homogeneity of concrete structures, piles & diaphragms foundation. The instrument is designed for construction, building and geophysical research industry and is available in following configuration options which are **scalable and future upgradeable** for performing the below tests:

1. **Contact KIT 2: Ultrasonic pulse velocity test measurement** based on transducers for checking homogeneity of concrete structures based on 2 nos 55 kHz or 20 kHz transducers
2. **Contact KIT 3:** For **Ultrasonic and Sonic test** measurements on concrete, masonry and stone structures based on 1 x 55 kHz transmitter and 2 x 55 kHz receivers, with option for further **tomographic elaboration**
3. **MCHA** for Ultrasonic **cross-hole testing** for **checking posts and diaphragm**
4. **P.I.T.** for **Pile Integrity Test** through vibrational methods such as Echo test and low strain integrity method

All-in One System is a rugged and reliable equipment with options of various dedicated piezoelectric sensors and probe. The equipment is characterized by an A/D board **multichannel** and selectable sampling rates from 100Hz-10MHz. All acquired signals are displayed, computed and data logged directly on tablet with pre-installed software. Connection between All-in One System and tablet is via WiFi.

All-in One System is utilized for Verification of concrete elements on-site, Control of rocks and laboratory samples, Analysis of foundation piles and diaphragms and Seismic Cross Hole test.

+ KIT CONTACT + KIT MCHA + KIT P.I.T.

Quality in Concrete.Delivered.

KIT CONTACT 2: Ultrasonic Pulse Velocity Tests

- Conforms to UNI EN 12504-4 ASTM D2845-08 and ASTM C597-02 standards
- CONTACT-APP software for data storage
- 2 nos transducers including 1 nos Ultrasonic transmitter T x 55 kHz with 5m cable length and 1 nos Ultrasonic receiver R x 55 kHz with 5m cable length
- Test sample, transport bag (item code KV-LL1.C2)
- **Android 10" TABLET**
- Upgradeable to Contact 3 Kit Cross Hole or Pile Test Kit



KIT CONTACT 3: Sonic and Ultrasonic Test Kit

- Conforms to UNI EN 12504-4 ASTM D2845-08 and ASTM C597-02 standards
- CONTACT-APP software for data storage
- 3 nos transducers including 1 nos Ultrasonic transmitter T x 55 kHz with 5m cable length and 2 nos Ultrasonic receiver R x 55 kHz with 5m cable length
- Test sample, transport bag (Item code KV-ALL1.C3)
- **Hammer Transmitter** for sonic test ALLINONE (item code AR-MA.01)
- **Android 10" TABLET**
- **aTom Tomographic elaboration Software**
- **Note:** Contact 3 System offered is further future upgradeable to Cross Hole Test OR Pile Integrity Test by addition of necessary elements.



KIT MCHA Ultrasonic Cross-Hole Testing

- Conforms to ASTM D6760-16 standard
- Simultaneous Cross Hole measurements along three paths in pile foundation
- Synchronization impulse using an encoder
- Result can be printed promptly
- **High power transmitter and high sensitive active-type piezoelectric receivers (50 or 80 kHz)**
- **Ruggedized Tablet** with Window preinstalled software



Kit Options:

Item Code	Kit Version	No. of Transmitter (Tx) and Receiver (Rx) probes	Cable rollers (nos) & length	Link cable probe wheel/control unit & pulleys	Other Accessories included
KV-ALL1.M2	CH 2	2 probes: 1 x T x, 1 x R x	2nos, 60m	2nos	1 x Encoder, 1 x link cable
KV-ALL1.M2.100	MCHA 2	2 probes: 1 x T x, 1 x R x	2nos, 100m	2nos	Encoder/Control Unit,
KV-ALL1.M3	MCHA 3	3 probes: 1 x T x, 1 x R x, 1 x T x / R x probe	3nos, 60m	3nos	1 x Cable driver, 1 x tripod,
KV-ALL1.M3.100	MCHA 3	3 probes: 1 x T x, 1 x R x, 1 x T x / R x probe	3nos, 100m	3nos	1 x transport case, 1 x ruggedized tablet windows

KIT P.I.T. Pile Integrity Testing

- Conforms to ASTM D5882-07 standard
- Low Strain Integrity and Echo method
- Equipped PIT-Hammer and Accelerometer
- "PPS" software included
- **Ruggedized Tablet** with Window preinstalled software



Specifications:



Channel	2 Channel Receiver input/ 1 transmitter
Converter Type	2 A/D x 12 bit converter
Input Type	Differential/ Single ended/ IEPE
Input Voltage	± 5 Vpp
Amplifier	1 to 1024 software selectable
Pretrigger	Selectable, 0 to 80%
Time Base	50kHz to 10MHz (10MHz/1Ch - 5MHz/2Ch)
Sample Per Event	1K to 8 K for channel
Travel Time Resolution	100ns
Sample Resolution	12 bit@10MHz to >16 bit@ 50kHz (with oversampling)
Bandwidth	> 1MHz
Filter	Antialias, Digital custom filter selectable (DSP)
Trigger Type	Software
Voltage Out Transmitter	Selectable, 100 V to 1200 V
Pulse Duration	Selectable, 1 to 65000µs
Transmitter Pulse Repetition	> 20 measurement/second
I/O	USB 2.0/ WiFi 802.11 (100m)
Transducer Options	Piezoelectric-Type: - Receiver Sensor (wall-type): 55 kHz - Transmitter Sensor (wall-type): 55 kHz - Transmitter Sensor (wall-type): 20 kHz - Hammer with accelerometer - Accelerometer Dytran - Hole-Probe: Transmitter/ Receiver Diameter 26 mm; Length 150 mm; 50 kHz or 80 kHz
Recharging Time	4hours
Power Consumption	0.8W Standby / 1.6W Ultrasonic active
IP Rating	IP65
Autonomy	> 35hours
Power	Internal battery LiFePO4 (6Ah)
Temperature	0-60°C
Size	Length 32cm, size 21 x 21 x 9 cm
Weight (kg)	2.5



All-in One is manufactured by SolGeo S.r.l. Italy. SolGeo S.r.l. is a manufacturer of technological instruments for geophysics investigation & monitoring of structures & soils. Instruments are manufactured at Seriate, Italy.



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