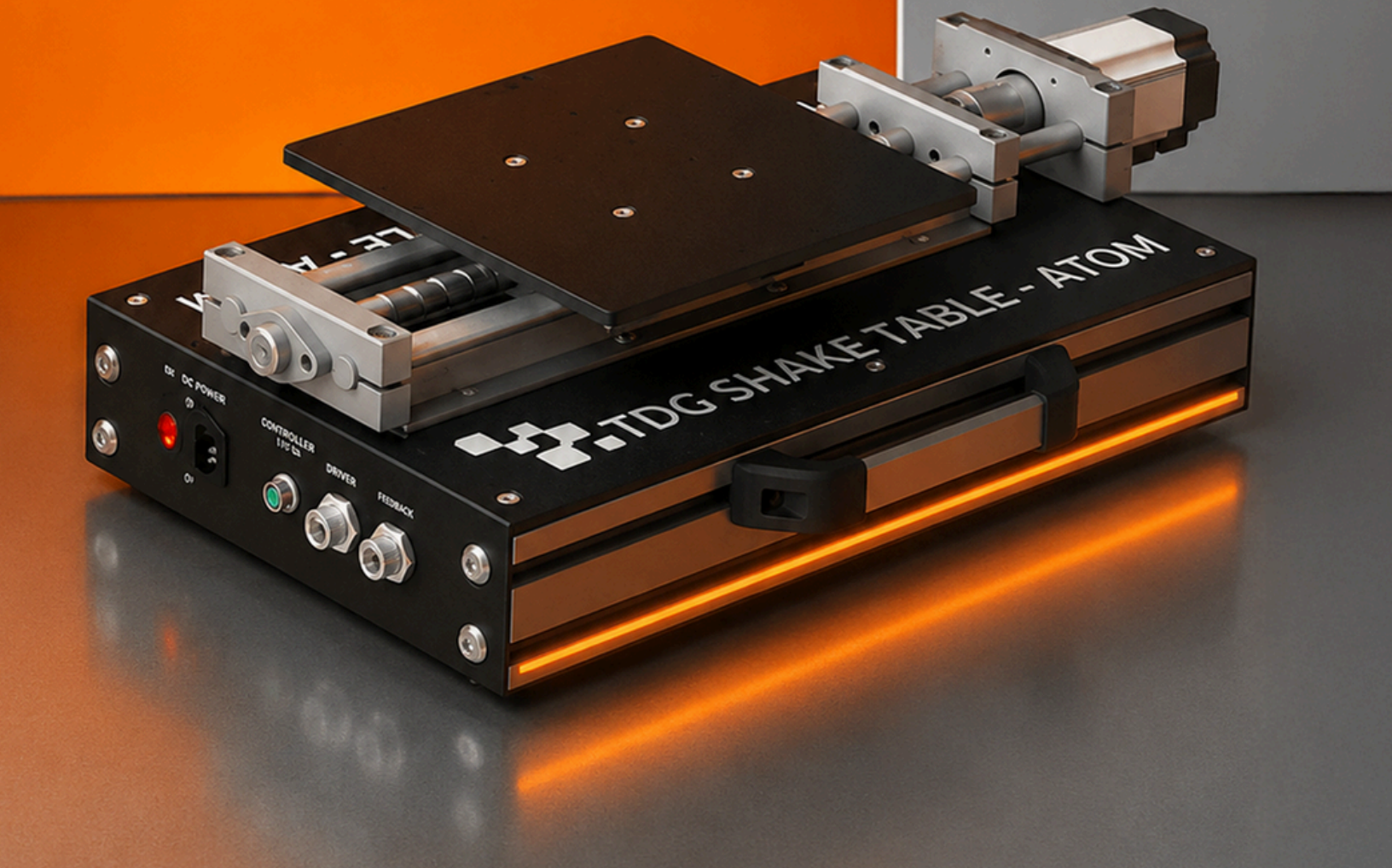
QUAKELOGIC

TDG-ELECTROMAGNETIC SHAKE TABLE ATOM

QL-ATOM 25



QL-ATOM-25

ELECTROMAGNETIC SHAKE TABLE ATOM

MASTER EARTHQUAKE SIMULATION IN A COMPACT HIGH-PRECISION TESTING ENVIRONMENT

QuakeLogic proudly offers the ATOM Electromagnetic Shake Table System, a compact, high-performance laboratory solution designed for earthquake simulation, vibration testing, structural dynamics, and engineering education. Featuring precision servo motion control, advanced control software, and real-time data acquisition, the system delivers accurate, repeatable, and reliable testing for universities, research laboratories, and engineering institutions.

- Improves research and educational efficiency by providing precise motion control, real-time monitoring, automated data acquisition, and comprehensive test recording for accurate experimental analysis.
- Reduces testing time and operational costs through repeatable digital control, integrated data logging, user-defined motion profiles, and efficient computer-based operation.
- Enhances laboratory safety with integrated emergency stop functions, hardware limit switches, automatic fault protection, and closed-loop motion control for reliable operation.
- Supports comprehensive dynamic testing with sine, sweep, random vibration, earthquake replay, and user-defined motion profiles for structural dynamics, vibration analysis, seismic research, modal analysis, and educational demonstrations.

What's Included »

- ATOM Electromagnetic Shake Table System
- Digital Closed-Loop Servo Motion Controller
- High-Performance Power Amplifier
- EasyTest Shake Table Control Software
- Integrated Data Acquisition & Monitoring System
- Real-Time Motion Control & Feedback
- USB & Ethernet Communication Interfaces
- Automated Data Logging & Test Report Generation
- Earthquake Replay & User-Defined Motion Profiles
- User Manual, Installation Guide & Training Documentation

KEY FEATURES

- High-precision closed-loop servo control delivers accurate, stable, and repeatable motion for structural dynamics, vibration, and seismic testing.
- Supports multiple excitation modes, including sine, frequency sweep, random vibration, earthquake replay, and fully user-defined motion profiles.
- Simulates real earthquake events using recorded seismic data for structural testing, engineering education, and advanced research applications.
- Provides real-time monitoring of displacement, velocity, acceleration, and frequency for precise performance analysis.
- Integrated data acquisition and automated data logging enable continuous recording, data export, and professional test report generation.
- Precision linear guide technology and a servo-driven actuator ensure smooth motion, excellent positioning accuracy, and outstanding repeatability.
- Intuitive control software simplifies test setup, waveform generation, real-time visualization, and experiment management through a user-friendly interface.
- Compact, laboratory-ready design supports structural model testing, vibration experiments, seismic instrument calibration, and educational demonstrations.
- Comprehensive safety features include an emergency stop button, software motion limits, hardware limit switches, overcurrent protection, and automatic fault shutdown.
- USB and Ethernet connectivity provide seamless integration with laboratory computers, data acquisition systems, and external measurement equipment.

PRODUCT FEATURES

Operating Modes
Sine Excitation
Frequency Sweep
Random Vibration
Earthquake Replay
User-Defined Motion Profiles

Applications
Structural Dynamics Testing
Earthquake Engineering
Vibration Analysis
Modal Analysis
Structural Model Testing
Engineering Education
Accelerometer & Seismic Instrument Calibration

Motion System
Closed-Loop Servo Motion Control
Electromagnetic Linear Actuator
Precision Linear Guide System
±125 mm Stroke
Up to 30 Hz Operating Frequency
Up to ±1 g Peak Acceleration

Control & Data Acquisition
Real-Time Data Acquisition
Displacement, Velocity & Acceleration Monitoring
Automated Data Logging
Test Report Generation
CSV, TXT & MATLAB-Compatible Export
Graphical User Interface (GUI)

Communication
USB Interface
Ethernet Interface

Languages
English or Customized

For more information about the QL-ATOM 25 Electromagnetic Shake Table System, please contact QuakeLogic Inc.

TESTING APPLICATIONS

Application	Description	Supported
Structural Dynamics	Dynamic response evaluation of structures	✓
Earthquake Engineering	Seismic simulation and structural testing	✓
Vibration Analysis	Dynamic vibration performance analysis	✓
Modal Analysis	Natural frequency and mode shape studies	✓
Structural Model Testing	Scale model validation and experimentation	✓
Engineering Education	Laboratory demonstrations and student training	✓
Instrument Calibration	Accelerometer & seismic sensor calibration	✓

SYSTEM CAPABILITIES

System Function	Description	Available
Motion Control	Closed-loop servo motion control	✓
Real-Time Monitoring	Displacement, velocity, acceleration & frequency monitoring	✓
Data Acquisition	Continuous real-time data acquisition & recording	✓
Data Export	CSV, TXT & MATLAB-compatible export	✓
Test Reporting	Automated test report generation	✓
Motion Profiles	Sine, Sweep, Random, Earthquake Replay & User-Defined Motion	✓
Connectivity	USB & Ethernet communication	✓
Safety Protection	Emergency stop, limit switches & automatic fault protection	✓

SYSTEM COMPONENTS

Description	Details	Available
Motion Actuator	Electromagnetic Linear Actuator	✓
Motion Controller	Digital Closed-Loop Servo Controller	✓
Position Feedback	High-Resolution Encoder	✓
Power Amplifier	Integrated High-Performance Amplifier	✓
Control Software	EasyTest Shake Table Software	✓
Safety System	Emergency Stop & Limit Switch Protection	✓

SOFTWARE FEATURES

Description	Standard	Advanced
Sine Wave Generation	✓	✓
Frequency Sweep Testing	✓	✓
Random Vibration Control	✓	✓
Earthquake Replay	✓	✓
User-Defined Motion Profiles	✓	✓
Real-Time Data Monitoring	✓	✓
Automated Data Logging & Reporting	✓	✓
CSV, TXT & MATLAB Data Export	✓	✓

ANALYSIS & REPORTING

Description	Standard	Advanced
Real-Time Motion Monitoring	✓	✓
Automated Data Acquisition	✓	✓
Continuous Data Logging	✓	✓
Test Report Generation	✓	✓
CSV & TXT Data Export	✓	✓
MATLAB-Compatible Export	✓	✓
Graphical Data Visualization	✓	✓
Printable Test Reports	✓	✓

INTEGRATED MOTION CONTROL, DATA ACQUISITION & ANALYSIS SYSTEMS

PRECISION SERVO MOTION CONTROL

The ATOM Electromagnetic Shake Table System features a high-performance closed-loop servo control system that delivers accurate, stable, and repeatable motion. Combined with a precision linear guide mechanism and high-resolution position feedback, it ensures reliable dynamic testing for structural, vibration, and seismic engineering applications.

EARTHQUAKE SIMULATION & MOTION GENERATION

The integrated control software supports sine excitation, frequency sweep, random vibration, earthquake replay, and fully user-defined motion profiles. Real earthquake records can be reproduced to evaluate structural behavior, validate engineering designs, and support advanced laboratory research.

DATA ACQUISITION & ANALYSIS

The built-in data acquisition system provides real-time monitoring of displacement, velocity, acceleration, and frequency throughout each test. Automated data logging, graphical visualization, and professional report generation simplify experiment analysis and improve research efficiency.

CONTROL SOFTWARE & CONNECTIVITY

The intuitive EasyTest control software enables rapid test configuration, waveform generation, experiment management, and data export through a user-friendly interface. USB and Ethernet connectivity provide seamless integration with laboratory computers and external measurement systems.

TECHNICAL SPECIFICATIONS

Specification	Description
Product	QL-ATOM Electromagnetic Shake Table System
Table Dimensions	400 × 400 mm
Maximum Payload	Up to 50 kg
Maximum Stroke	±125 mm
Maximum Acceleration	Up to ±1 g
Operating Frequency	DC to 30 Hz
Actuation System	Electromagnetic Linear Actuator
Motion Control	Digital Closed-Loop Servo Control
Position Feedback	High-Resolution Encoder
Guide System	Precision Linear Guide Rails
Control Software	EasyTest Shake Table Software
Data Acquisition	Real-Time Monitoring & Automated Data Logging
Communication	USB & Ethernet
Power Supply	110–240 VAC, 50/60 Hz, Single Phase
Excitation Modes	Sine, Sweep, Random, Earthquake Replay & User-Defined Motion
Data Export	CSV, TXT & MATLAB-Compatible
Safety Features	Emergency Stop, Limit Switches & Automatic Fault Protection
Language	English or Customized
Warranty	1-Year Manufacturer Warranty

QL-ATOM 25

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Contact Us:

- For product information, quotations, technical support, or partnership opportunities, our team is ready to assist you with professional and timely service.

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About QuakeLogic:

- QuakeLogic Inc. is a California-based engineering and technology company providing innovative, reliable, and high-quality solutions to customers worldwide.

Our Commitment

- At QuakeLogic, we are committed to quality, innovation, and customer satisfaction. We build lasting partnerships by delivering reliable solutions and dependable support.

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