

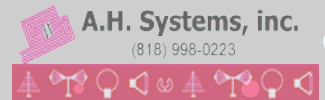


Technocomm Instruments Pvt. Ltd.[®]

Total Solutions in Instrumentation & Information



Elektro-Automatik



Technocomm Instruments Pvt Ltd is a Company Pioneer in Marketing and Supporting of highly sophisticated overseas products in India. The Company is promoted by group of technocrats having more than 30 years of experience in instrumentation sales and support. Our prospective and satisfied customers are Defence Organizations, Research & Development Organizations, Space Organizations, Engineering Institutions, Universities, Private & Public Sectors and Educational Institutions.

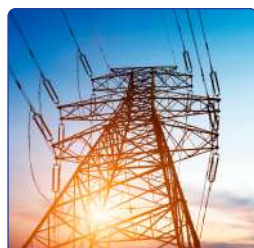
We Choose instruments from the best companies around the world, the pioneers in the respective fields. We have served many reputed organizations in India and have been lauded by them for our quality products, in-time service and competitive price.



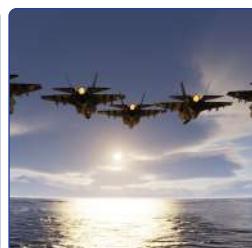
Aerospace



EV Charging



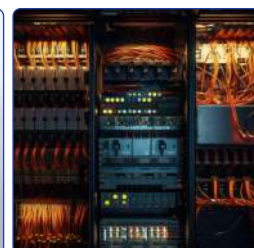
Renewable Energy



Military & Defense



Hydrogen and Fuel cells

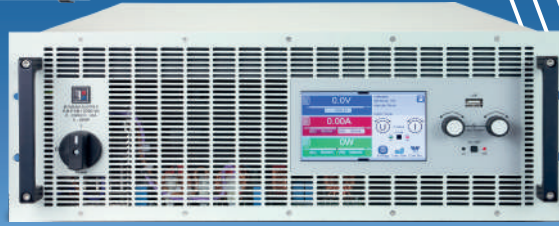


Power Design & Validation



EA ELEKTRO-AUTOMATIK

Innovation & quality for more than 40 years



BI-DIRECTIONAL POWER SUPPLIES



Battery



Fuel Cell



Renewable Energy



Automotive



Railways



Avionics



Marine



ATE Systems



Manufacturing

EA Elektro-Automatik, a worldwide manufacturer of DC Power supplies and Regenerative Electronics loads

- The Bidirectional DC power supplies and Regenerative electronic loads, Series EA-PSB 10000 and EA-ELR 10000 provides 5kW, 10kW, 15kW in 3U and 30kW in 4U chassis with up to 2000 VDC.
- This series easily parallels supplies for almost 1.92MW of power.
- EA bidirectional dc power supplies come standard with an arbitrary waveform function generator, swappable digital interface control and built-in test routines for battery test, photovoltaic simulation and MPP tracking, to name a few.
- Regenerative Energy Recovery: The PSB is bidirectional, meaning it can source (provide) or sink (absorb) current and regenerate that current to the local power grid with up to 96% efficiency. The built-in electronic load function is regenerative, making the PSB a very green solution on top of minimizing investment and test equipment space. Save electricity + costs, Efficiency approx. 96%.

Highlights

- True Autoranging – Advantages for Test
- Regenerative Energy Recovery
- Waveform Function Generator
- Color touch screen
- 3-ways onboard Interface

Technical Specifications

- **Nominal Power** 2500W to 30000W
Systems up to 1.92MW parallel operation
- **Nominal Voltage** 60V to 2000V
- **Nominal Current** 20A to 1000A

Features

- Master-Slave-Bus for parallel connection
- 19" Full insertion
- 2 U, 3 U and 4 U housing
- Analog and USB interface, further options retrofittable
- Microprocessor (FPGA) controlled
- Color touch panel
- Internal resistance control
- Battery test mode
- Arbitrary generator & car startup curve
- Optional: Digital, pluggable interface modules
- SCPI and ModBus protocol
- LabView VIs and control software
- Reduce power consumption with high efficiency 10000 series & enjoy greater than 96% energy recovery
- Communicate easily to PCs and Programmable Logic Controllers (PLCs)

Series	Power	Voltage	Current	Input
EA-PSB 10000 4U	0 – 30000 W	0 – 10 V up to 0 – 2000 V	0 – 40 A up to 0 – 1000 A	380- 480V~3ph L-L
EA-PSB 10000 3U	0 – 5 kW / 0 – 10 kW / 0 – 15 kW	0 – 10 V up to 0 – 2000 V	0 – 20 A up to 0 – 510 A	208 V – 480 V 3ph AC
EA-PSB 10000 2U	0 – 1500 W / 0 – 3000 W	0 – 10 V up to 0 – 1500 V	0 – 6 A up to 0 – 120 A	110- 240V AC
EA-ELR 10000 4U	0 – 30000 W	0 – 80 V up to 0 – 2000 V	0 – 40 A up to 0 – 1000 A	380- 480V~3ph L-L
EA-ELR 10000 3U	0 – 5 kW / 0 – 10 kW / 0 – 15 kW	0 – 80 V up to 0 – 2000 V	0 – 20 A up to 0 – 510 A	208 V – 480 V 3ph AC
EA-ELR 10000 2U	0 – 1500 W / 0 – 3000 W	0 – 80 V up to 0 – 1500 V	0 – 6 A up to 0 – 120 A	110V – 240V AC

The Power of THREE: The new EA-BT 20000 & EA-PSB 20000 Series

Available with triple or single output



Highlights

- 3 channels with up to 600 A or 1800 A in parallel
- Single Channel up to 2000V, 1000A, 30kW
- Simultaneous testing of up to three battery packs with 4 kW / 6 kW or 10 kW per channel

Technical Specifications

- **Nominal Power** 0 - 30kW, up to 10 kW per/ch
- **Nominal Voltage** 0 - 10V up to 0 - 920V per/ch
- **Nominal Current** 0 - 40A up to 0 - 600A per/ch



Battery Tests

- Testing of the electrical characteristics of a battery
- SOH (State-of-Health) for Second Life Classification
- End-of-Line (EOL) Testing
- Can be run in an automated test system or stand-alone



Battery Simulation

- Simulation of batteries as single cells, modules or packs
- For optimal design of the energy storage system as well as the components to be tested
- When reproducible data is required



Battery Recycling

- For complete discharge of the battery before final recycling
- Maximum possible deep discharge at high charge current, even at voltages below 2V



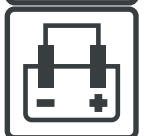
EA-PSB 20000 Triple

- **3U**
3 x 5 kW
60 – 920 V / 20 – 170 A
Wide range input
- **4U** (optional water cooling)
3 x 10 kW
60 – 920 V / 40 – 340 A
Wide range input
- A future-proof and flexible solution

PURE & POWERFUL - EA-10000 Industrial Series

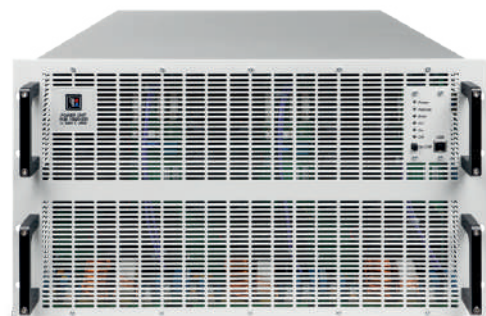
Power Unit	EA-PU 10000 6U 60kW
Power Unit Bidirectional	EA-PUB 10000 6U 60kW
Power Unit Load	EA-PUL 10000 6U 60kW

Power Unit	EA-PU 10000 4U 30kW
Power Unit Bidirectional	EA-PUB 10000 4U 30kW
Power Unit Load	EA-PUL 10000 4U 30kW



Powerful Industrial Test Solution in 3U & 6U

- 19" rack with 42U for a system with 300 kW
- Up to 13 racks with 64 devices of 60 kW each in parallel
- For high power applications up to 3.84 MW
- Less devices for a high performance system
- Less operating costs
- Power supplies and electronic loads: programmable, bidirectional, regenerative up to over 96 %
- For ATE systems and automated process control systems
- With Master-Slave-Bus/Share-Bus interface, autoranging, integrated function generator and much more



PicoScope 2000 Series

Ultra-compact range of 8-bit oscilloscopes & mixed-signal oscilloscopes (MSO). 2000B models offer more memory & bandwidth. All models are USB-powered & have a built-in function generator and AWG.

Channels	2 or 4 (+16 digital with MSO)
Bandwidth	10 to 100MHz
Max Sampling	1 GS/s
Memory	8kS to 128 MS



PicoScope 3000E Series

The highest performance USB powered oscilloscopes available. Up to 500 MHz bandwidth, 5 GS/s sampling and 2 GS memory, 10-bit Resolution. All models have a built-in function generator and AWG.

Channels	4 (+16 digital with MSO)
Bandwidth	350 & 500MHz
Max Sampling	5 GS/s
Memory	2 GS



PicoScope 4000 Series

High-resolution oscilloscopes with 12 to 16-bit resolution. Low noise and distortion provide unmatched signal fidelity. All are USB-powered and most include an AWG. Series includes differential-input models.

Channels	2, 4 or 8
Bandwidth	5 to 20MHz
Max Sampling	80 MS/s
Memory	10MS to 256 MS



PicoScope 5000 Series

Flexible Resolution Oscilloscopes. Breakthrough ADC technology allows a range of hardware resolutions from 8 to 16 bits. Combines the high sampling rate of the PicoScope 3000 Series with high resolution of the PicoScope 4000 Series.

Channels	2 or 4 (+16 digital with MSO)
Bandwidth	60 to 200MHz
Max Sampling	1 GS/s
Memory	128MS to 512MS



PicoScope 6000 Series

High-performance oscilloscopes with up to 1 GHz bandwidth, 8 or 8-12 bit flexible resolution and ultra-deep capture memory that delivers 200 ms capture duration at maximum sample rate of 5 GS/s. Optional MSO pods add up to 16 digital channels.

Channels	4 or 8 (+16 digital, optional with MSO)
Bandwidth	300MHz to 1 GHz
Max Sampling	5 GS/s
Memory	1 GS to 4 GS



PicoScope 9000 Series

The unique PicoScope SXRTOs and Sampling Oscilloscopes for data eye diagram, speed and jitter analysis out to 16 Gb/s. 9.5 GHz optical, clock recovery and differential TDR/TDT options.

Channels	2 or 4
Bandwidth	5GHz to 25GHz
Max Sampling	500 MS/s
Memory	250 kS



PicoVNA - VECTOR NETWORK ANALYZERS

Professional and portable performance at low cost

PicoVNA 106 - 6 GHz

PicoVNA 108 - 8.5 GHz

- 300 kHz to 6 or 8.5 GHz operation
- High speed, up to 5500 dual-port S-parameters per second
- > 10 000 S11 + S21 per second
- Quad RX four-receiver architecture for best accuracy
- Up to 124 dB dynamic range at 10 Hz bandwidth
- 0.005 dB RMS trace noise at maximum bandwidth of 140 kHz
- Half-rack, small-footprint, lightweight package
- Reference plane offsetting and de-embedding
- Time domain and port impedance transformations
- Multiple live and memory traces on dual y-axis display channels
- Save on trigger for high-speed device profiling (PicoVNA 108)
- Dual-frequency mixer measurements with VSWR correction (PicoVNA 108)
- Phase meter, P1dB, AM to PM, and stand-alone signal generator utilities
- Male and female SOLT and automated E-Cal calibration standards
- Guided 8/12-term, SOLT, TRL and TRM calibrations including unknown-through
- Confident measurement based on traceable data for all calibration and check standards
- **PicoVNA 5 software** for Pico VNAs: PicoVNA 5 is designed from the ground up to work with the PicoVNA hardware, available on Windows, Mac, Linux and Raspberry Pi.



USB Data Acquisition & Data Loggers

Unlock the power of data acquisition without breaking the bank with Measurement Computing Corporation (MCC) and Data Translation's (DT) extensive range of Low-Cost Data Acquisition Solutions. USB Data Acquisition (DAQ) boards, devices, and modules offer an unbeatable combination of performance, versatility, and affordability. USB data acquisition devices offer analog input and output, digital I/O, and counter/timers.

MCC offers high-quality hardware with accompanying software and drivers for a quick and customizable data acquisition solution for your unique application.



Benchtop



Temperature



Sound & Vibration



Digital I/O



Ethernet & Remote

DATA ACQUISITION

USB, Ethernet and PCI(PCIe) acquisition systems for wide range of applications. Measure Current, Voltage, Temperature, strain and Digital signals
Board-only / OEM solutions with easy to integrate connectors

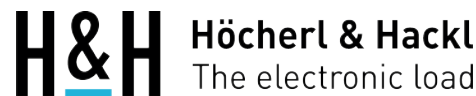
TEMPERATURE MEASUREMENT

MCC offers a wide selection of temperature measurement DAQ products for use with thermocouples, thermistors and RTDs. USB Ethernet, Wireless and Data logger solutions.

INTERNET ENABLED LOGGERS

Stand alone data loggers provides solutions for recording temperature, voltage, current, humidity and more. Available with various configurations and comes with easy to use software to log, view and process data. Internet Enabled Data Loggers WebDAQ's.

AC & DC ELECTRONIC LOADS



Electronic DC / AC Loads & Multi Channel Loads

DC Loads - From 200 to 28,800 W we offer different series for almost every DC test object the suitable electronic load, air-cooled or regenerative.

AC Loads - From 400 to 3 x 8,400 W our AC loads cover a frequency range up to 1,000 Hz. DC operation is also possible.

ACL series provides single-phase (ACLS) and 3-phase loads (ACLT) in one housing. By master-slave operation in system connection 3 single-phase loads may be operated as a 3-phase system and are operated then like a 3-phase load.



DC LOADS	PLI SERIES		SCL SERIES		TRL SERIES		AC LOADS	ACL SERIES	
	Voltage	Up to 1,200 V	Voltage	12 V or upto 40 V	Voltage	Up to 1,200 V		Voltage	Up to 3 x 500 V
	Current	Up to 2,700 A	Current	Upto 1,200 A	Current	Up to 60 A		Current	Up to 3 x 60 A
	Power	600W - 28,800W	Power	600 W - 1,800W	Power	1,000 W		Power	3 x 1,400 W to 3 x 8,400 W
	Standard Interface	Ethernet + USB + RS-232 + CAN	Standard Interface	RS-232,USB,LAN CAN, I/O port	Standard Interface	RS-232, USB LAN, CAN		Frequency	Up to 1,000 Hz
Operating Modes	CC+CV, CV+CC, CR+CC+CV, CC, CV, CR, CP	Operating Modes	CC+CV, CR+CC+CV, CP+CC+CV, CV+CC, CR, CP	Operating Modes	CC+CV, CV+CC, CR+CC+CV, CC, CV, CR, CP	Standard Interface	RS-232, USB LAN, CAN (GPIB Optional)		

Precision Power Analyzers



Models Overview

- **LMG 671** - 1 to 7 Channel Power Analyzer
- **LMG 641** - 1 to 4 Channel Power Analyzer
- **LMG 611** - Single Channel Precision Power Analyzer as Compact Desktop Device

Features

- 1 to 7 channels precision power analyzers
- Outstanding accuracy of 0.015% of measured value + 0.01% of range
- Full dynamic range of 500 μ A to 32 A / 3 mV to 1000 V per channel available in single instrument
- Range extension with sensors upto 2000A
- Simultaneous measurement of narrow- and broadband values through innovative DualPath architecture
- Simultaneous capturing of fundamental frequency & broadband RMS values for instantaneous detection of losses, resp. high-frequency components
- Harmonics and interharmonics up to 2000. order, as required by EN61000-4-7
- With optional I/O card speed/torque inputs freely configurable for all signal types (analogue, frequency as RS422, TTL or HTL) via menu
- Flexible scripting tool for custom applications
- Simultaneous measurement of V, I, P values and harmonics, presentation in tabular or graphical form
- Signal filters freely configurable by frequency, type and characteristics
- Synchronization to up to 7 different frequencies simultaneously
- Flicker measurement, interactions between grid and appliance according to EN61000-4-15
- Process signal interface (PSI), Star-to-delta conversion
- Bi-directional CAN interface – remote control via CAN bus

Measurement Channels

L60-CH-S

High-Precision Wideband Channel, DC-optim. up to **1500V** with DualPath functionality, bandwidth **DC-10 MHz**, best power accuracy **0.015% + 0.01%** 18 bit channel resolution.

Measuring inputs:

1. Voltage directly: 300 mV - 1000 Vtrms/1500VDC in 10 ranges: 3200 Vpk
2. Voltage sensor input: 3 mV - 4 Vtrms in 8 ranges: 12.5 Vpk
3. Current directly 500 μ A-32 Atrms in 10 ranges: 120 Apk
4. Current sensor input: 3 mV - 4 Vtrms in 8 ranges: 12.5 Vp

L60-CH-A

Channel for high-precision wideband measurements with DualPath functionality, bandwidth **DC-10 MHz**, best power accuracy **0.015% + 0.01%** 18 bit channel resolution.

Measuring inputs:

1. Voltage directly: 300 mV - 1000 Vtrms in 10 ranges, 3200 Upk
2. Voltage sensor input: 3 mV - 4 Vtrms in 8 ranges, 12.5 Upk
3. Current directly 500 μ A-32 Atrms in 10 ranges, 120 lpk
4. Current sensor input: 3 mV - 4 Vtrms in 8 ranges, 12.5 Upk

L60-CH-B

Channel for general purpose measurements with DualPath functionality, bandwidth **DC - 500 kHz**, best power accuracy **0.05% + 0.02%**.

Measuring inputs:

1. Voltage directly: 300 mV - 1000 Vtrms in 10 ranges, 3200 Upk
2. Current directly 500 μ A-32 Atrms in 10 ranges, 120 lpk
3. Current sensor input: 3 mV - 4 Vtrms in 8 ranges, 12.5 Upk

L60-CH-C

Channel for high-precision measurements up to **10kHz** bandwidth DC-10 kHz best power accuracy **0.03% + 0.01%**.

Measuring inputs:

1. Voltage directly: 300 mV - 1000 Vtrms in 10 ranges, 3200 Upk
2. Current directly 500 μ A-32 Atrms in 10 ranges, 120 lpk
3. Current sensor input: 3 mV - 4 Vtrms in 8 ranges, 12.5 Upk

CURRENT SENSORS

Type	Ring-type transducers					Current clamps		Shunt
Name	PCT	Hallxxx-L6	DS	WCT	LMG-Z5XX	L60-Z406, L60-Z60/66	L60-Z68	LMG-SH (-P)
Signal type	AC+DC			AC		AC	AC+DC	AC+DC
Current ranges	200... 2000A _{rms}	100... 2000A _{rms}	50... 7 000A _{rms}	100 ... 1000 A _{rms}	750 A _{rms} ... 10 kA _{rms}	40... 3kA _{rms}	1 kA _{rms}	22mA _{rms} ... 1 A _{rms}
Best accuracy	0.01 %	0.5 %	0.01 %	0.25 %	0.02 %	0.2 %	2.0 %	0.15 %
Max. bandwidth	DC.. 1MHz	DC.. 100kHz	DC.. 1 MHz	30Hz... 1MHz	15Hz... 5kHz	5Hz... 50kHz	DC.. 2kHz	DC.. 100kHz
Power supply by LMG600	PCT200/600	Yes	No	Not required		Yes		Not required
Plug 'n' Measure	PCT200/600	Yes	No	No		Yes		No

Choose the Right Programmable AC and/or DC Power Source for your Application

AZX Series



Regenerative AC, DC and AC+DC Power Sources

Power: 30kVA to 440kVA
Form: 1, 2, & 3 phase output
Voltage: 0 to 440Vac L-N/ 760Vac L-L
Frequency: DC, 1-15Hz, 15-1000Hz

AGX Series



Regenerative 4-Quadrant AC, DC or AC+DC Mode

Power: 6kVA to 105kVA
Form: 1 phase or 2 and 3 phase output modes
Voltage: AC: 0-350 VAC L-N 1 ϕ / 0-606VAC L-L 3 ϕ DC: -480Vdc to +480Vdc
Frequency: DC, 15 - 1000Hz

AFX Series



Solid-State AC, DC and AC+DC Power Sources

Power: 6kVA to 180kVA+
Form: 1, 2, & 3 phase output
Voltage: 0 up to 333Vac L-N/ 576Vac L-L or 425Vdc
Frequency: DC, 1-3000Hz

ADF Series



High Power, digital control, solid-state AC Power Sources

Power: 15kVA to 90kVA
Form: 1 phase or 2 and 3 phase output modes
Voltage: 0 up to 300V L-N/ 520V L-L
Frequency: 45 to 500Hz

LSX Series



Fully featured, switch-mode AC Power Sources

Power: 1500VA to 6000VA
Form: 1, 2, and 3 phase dedicated or selectable
Voltage: 0 up to 600VAC
Frequency: 15 to 1200Hz

LMX Series



High performance linear AC Power Sources

Power: 500VA to 30kVA
Form: 1, 2, and 3 phase dedicated or selectable
Voltage: 0 up to 600VAC
Frequency: 15 to 5000Hz

RGS Series



Regenerative Grid Simulator up to 252kW

Power: 12kVA to 252kVA
Form: 1, 2, and 3 phase
Voltage: AC:0-350VAC L-N 1 ϕ / 0-606 VAC L-L 3 ϕ DC: -500Vdc to +500Vdc
Frequency: DC, 15-200Hz

GSZ Series



Regenerative Grid Simulator up to 550kW

Power: 30kVA to 550kVA
Form: 1, 2, and 3 phase
Voltage: 0 ~ 480Vac L-N / 0-830 Vac L-L
Frequency: DC, 15-200Hz

RLS Series



Regenerative Load Simulator up to 252kW

Power: 6kVA to 252kVA
Form: 0-350 VAC L-N 1 ϕ / 0-606 VAC L-L 3 ϕ DC: -500Vdc to +500Vdc
Frequency: DC, 15-1200Hz

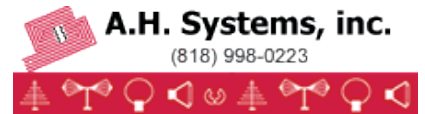
ELZ Series



Regenerative Electronic Load up to 550kW

Power: 30kVA, 45kVA, or 55kVA up to 550kVA
Form: 1, 2, and 3 phase
Voltage: 0 ~ 480Vac L-N / 0-830 Vac L-L
Frequency: 1-15Hz, 15-1000Hz

EMI AND EMC TEST ANTENNAS



EMI & EMC Test Antennas for Compliance Testing



Reliable, Cost effective EMI / EMC Antennas

A.H. Systems has been established since 1974 and manufactures a complete line of affordable, reliable, EMI test equipment. Our individually calibrated EMI Test Antennas, Preamplifiers, Current Probes and Low-Loss Cables satisfy many test standards including CISPR, MIL-STD, FCC, EN, VDE, IEC and SAE.

Manufacturing high quality products at competitive prices with immediate shipment plus prompt technical support are our goals to improve the quality of your testing requirements.

ANTENNA KITS

Frequency: 20 Hz - 40 GHz

HORN ANTENNAS

Frequency: 170 MHz - 40 GHz

LOOP ANTENNAS

Frequency: 20 Hz - 30 MHz

MONOPOLE ANTENNAS

Frequency: 100 Hz - 60 MHz

BICONICAL ANTENNAS

Frequency: 20 MHz - 18 GHz

BILOGICAL ANTENNAS

Frequency: 20 MHz - 1 GHz

LOG PERIODIC ANTENNAS

Frequency: 80 MHz - 7 GHz

H-FIELD ROD ANTENNAS

Frequency: 100 Hz - 30 MHz

DIPOLE ANTENNAS

Frequency: 25 MHz - 3 GHz

PREAMPLIFIERS

Frequency: 5 KHz - 40 GHz

CURRENT PROBES

Frequency: 20 Hz - 500 MHz

RF CABLES & ADAPTERS

Frequency: Upto 40 GHz

TRIPODS AND MOUNTING ADAPTERS

Wood Tripod, Plastic Tripod, Vertical Rod, Tripod Extension, Carrying Case, Azimuth and Elevation head, Log periodic mount

PicoScope 4425A - The Oscilloscope of Choice for Vehicle Diagnostics

PicoScope is a powerful automotive diagnostic tool that gives you detailed insights into your vehicle's systems. It's user-friendly, with advanced features like waveform comparison, easy data sharing, and non-invasive testing, ensuring you can diagnose issues accurately and efficiently. Whether you're a seasoned technician or just starting out, PicoScope helps you get to the root of problems faster and more reliably than ever before.



2 year
Warranty

Used by
30+
Brands

Over
160
Guided Tests

Easy to Use
BNC +
Connections

Over
10,000
Waveforms

High Sampling Rate
400 million samples/second
and 20 MHz bandwidth

High Resolution
12-bit (16-bit enhanced) for
detailed, high-definition waveformsh

Fast Data Transfer
USB 3.0 connected and powered
for high performance and portability



4-Channel STR Kit

4-Channel STD Kit

4-Channel EV Kit

As well as being suitable for electric vehicle system testing, the nature and range of the accessories within the **EV kit** make it versatile enough to test many of the systems and components within internal combustion engine and hybrid vehicles.

The kit is available to purchase within a carry case, for portability, or foam inlays for easy access within workshop tool trays



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driving the future together



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- A.H Systems Inc - USA
- Clarke-Hess Communication Research Corp. - USA

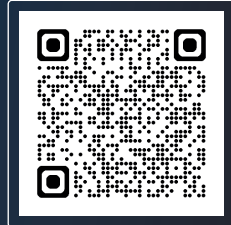
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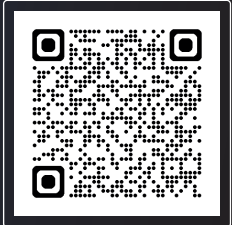
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CONTACT



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