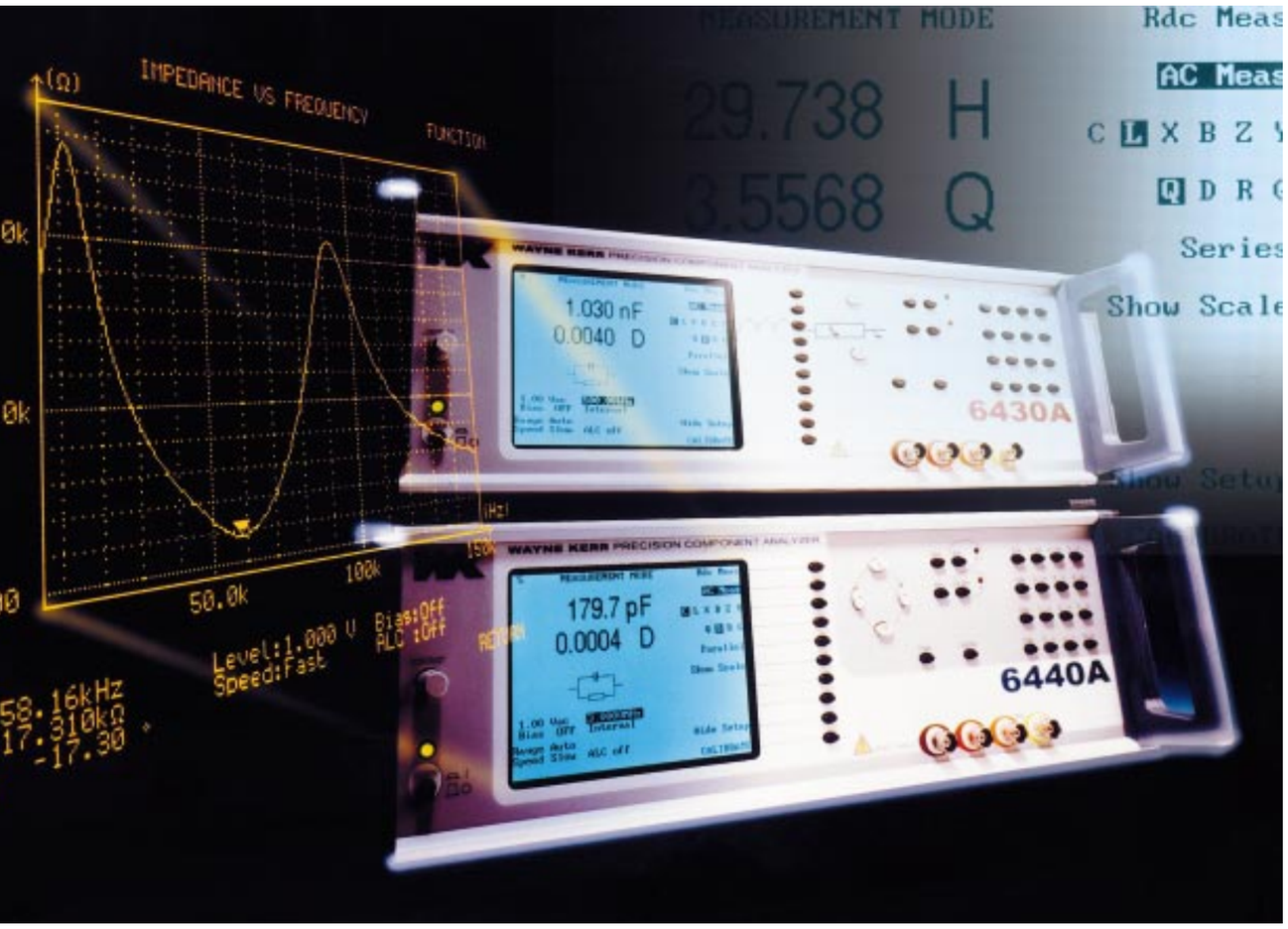


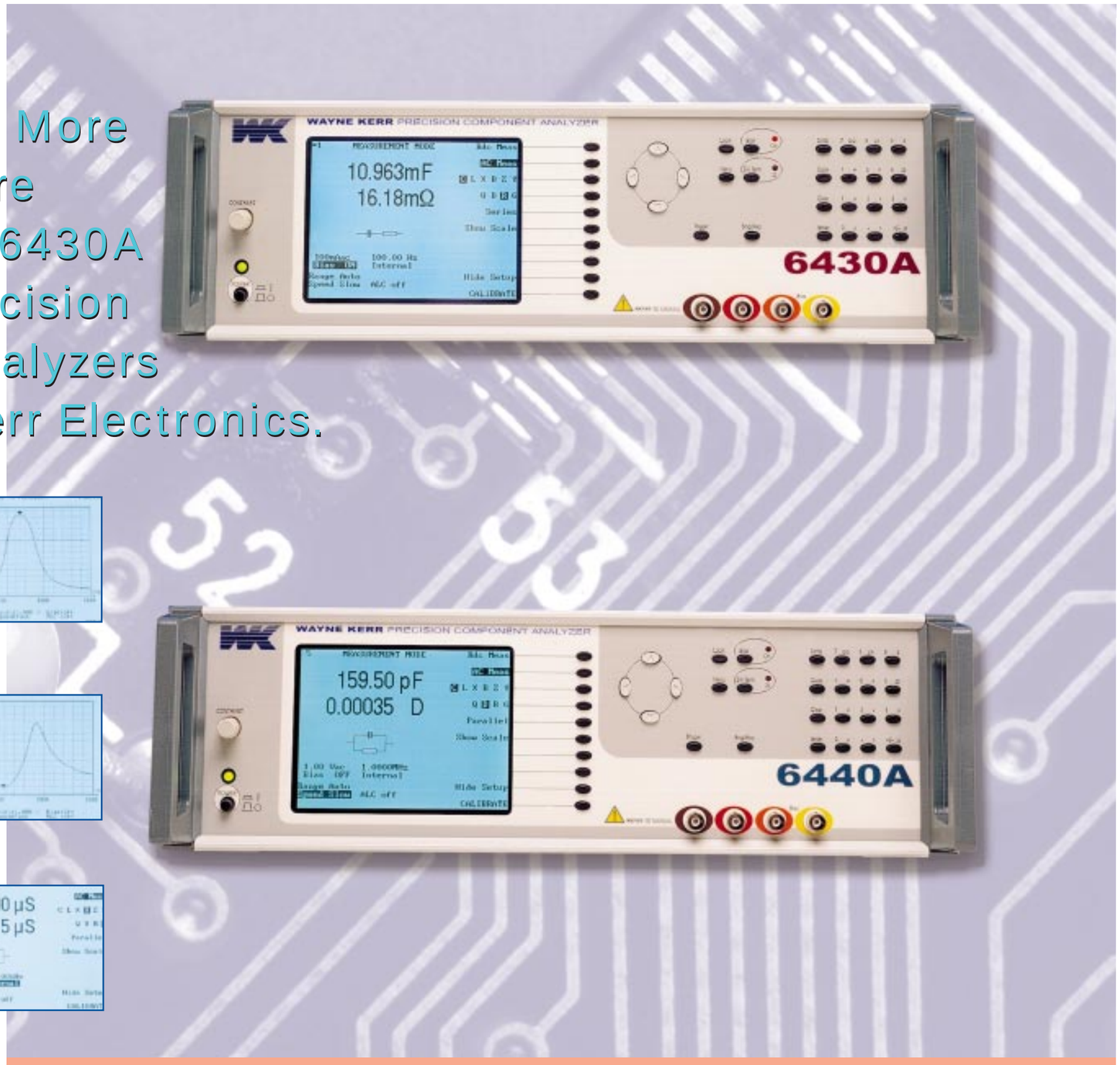
Precision Component Analyzers

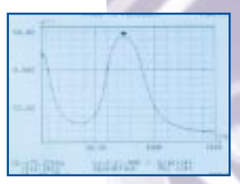
6430A & 6440A

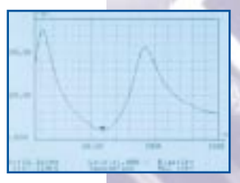
Wayne Kerr
Electronics Ltd

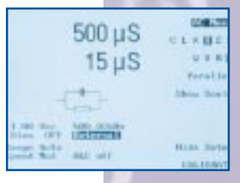
An Advance International Group Company

More Features, More Frequency, More Accuracy. The 6430A and 6440A Precision Component Analyzers from Wayne Kerr Electronics.









The 6430A and 6440A Precision Component Analyzers have been designed to allow complete and accurate characterization of any component.

A full complement of measurement functions, industry-leading accuracy and a wide frequency range provides the user with a complete solution for component testing.

The 6430A upper frequency limit is 500kHz while the 6440A extends to 3MHz and adds the ability to graphically display measurements in real time versus frequency.

If your business is design or manufacture of components, or you are a user of components as part of your equipment design, these products have been specifically developed with you in mind and at an affordable price.

Key Features include

- 0.02% Basic measurement accuracy
- Real time graphical sweep on all measurement functions
- Characterize components to 3MHz
- Fast measurement speed
- More measurement functions, including - C, L, Z, Y, X, B, Rac, Rdc, G, Q, D, ϕ & Resonant Frequency
- High measurement accuracy on Dissipation Factor
- Large LCD display and intuitive user interface
- Unbeatable price

Industry leading basic accuracy

Wayne Kerr Electronics has over 50 years experience in developing accurate measurement instruments. The 6430A and 6440A continue this tradition by providing an industry leading accuracy of 0.02% combined with the measurement integrity and functionality demanded by modern industry.

Capacitor testing requires accurate, repeatable and stable Dissipation Factor measurements. The 6430A and 6440A provide the performance required while displaying measurements at high resolution.

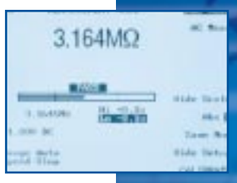
All the measurement functions you need!

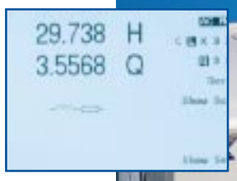
Whatever measurement you need the 6430A and 6440A will more than likely have it, and more besides! Providing all the well-known measurement parameters of Impedance (Z), Phase Angle (ϕ), Inductance (L), Capacitance (C), DC Resistance (Rdc), AC Resistance (Rac), Quality Factor (Q) and Dissipation Factor (D). In addition Admittance (Y), Conductance (G), Reactance (X) & Susceptance (B) are available.

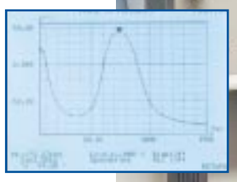
The Resonant Frequency can be automatically calculated for any component together with its equivalent series or parallel circuit at that frequency.

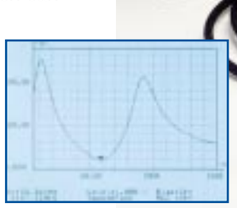
If you want to look at component performance over a fixed number of frequencies, use Multi Frequency mode. In this mode the operator decides which parameter is to be measured and at what frequency. The 6430A and 6440A does the rest, creating an easy to read table on the large LCD display. It will even tell you if each test has passed or failed.

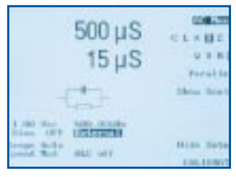
Real time graphical sweep on all measurement functions up to 3MHz











Characterize a component graphically and in real time over the full frequency band of the 6440A. The user can select any of the available measurement functions and graph the parameter in real time against frequency. The user is also able to toggle between the major and minor term, for example Impedance and Phase Angle. Both axes can be selected as either linear or logarithmic.

Following the first sweep the user can hit the FIT key, which automatically scales the vertical axis to provide the optimum display for the component under test. A marker is also displayed which can be positioned at any point on the graph using the navigation keys. Use the MAX and MIN keys to position the marker at the peak or trough of the graph. The marker position is displayed at the bottom of the screen showing the vertical axis value, its minor term and frequency.

Characterize components to 3MHz

The 6440A can test any component up to 3MHz while the 6430A has a maximum frequency of 500KHz. Both instruments start at 20Hz. Frequencies can be set with a resolution of < 1% on the 6440A.

Accurate measurements guaranteed, and at high speed!

In some applications absolute measurement accuracy is a must while for others high speed is critical. The 6430A and 6440A provide both industry leading accuracy and extremely fast measurement speed. The 20 measurements per second performance makes the instruments suitable for the production environment as well as the design laboratory.

Printing results and external control

Need to produce a hard copy of your test results? Whether it's a single parameter, table of results in Multi Frequency or a logarithmic graph of component performance, the 6430A and 6440A will output the results directly to a printer. If you need to control the instrument automatically, use the GPIB interface and you can achieve complete external control.

Output lines are also available to control a bin handler interface. Component tolerance levels may be pre-set and stored. A 25-way D connector mounted on the rear panel gives easy access for connection to external component handling equipment.

Precision Component Analyzers 6430A & 6440A

Function	6430A	6440A
Frequency Range	20Hz - 500kHz	20Hz - 3MHz
Basic Accuracy	0.02%	0.02%
Measurement Function	Z, ϕ, L, C, R, Q, D, Y, G, B, X & Resonant Frequency	Z, ϕ, L, C, R, Q, D, Y, G, B, X & Resonant Frequency
'Multi Frequency' mode	Yes	Yes
'Graph' mode	-	Yes
Printer Output	Yes	Yes
GPIB Interface	Yes	Yes
Measurement Speed	up to 20 measurements/sec	up to 20 measurements/sec

Excellent performance and unbeatable price

As the leader in our field and with over 50 years experience of developing component analyzers you would expect Wayne Kerr to provide the best performance in the industry, and you would be right. But what you might not be aware of, is that Wayne Kerr is able to offer all this performance, whilst delivering it at the most competitive selling price in the market.

Large LCD display and intuitive user interface

Whatever environment you work in - production test, design, quality, service or goods inward inspection - presentation of the measured data and instrument control are a basic requirement of all users. Wayne Kerr have responded to this need. Using a large bright LCD display, all the measurement and set up information is made available to the user, with measured values displayed in large characters. If the user needs to change the set up this is straightforward too. Using a soft key menu system you are led through intuitive commands which prompt at each point for the relevant information. No matter what your knowledge or skill level these products make set up and testing easy.

PRECISION COMPONENT ANALYZER 6430A/6440A SPECIFICATION

MEASUREMENT PARAMETERS
Any of the following parameters can be measured and displayed:

Inductance(L), Impedance(Z), Rdc and Capacitance(C)

Series or Parallel Equivalent Circuit
C+R, C+D, C+Q, L+R, L+Q
Series Equivalent Circuit Only
X+R
Parallel Equivalent Circuit Only
C+G, B+G
Polar Form
Z + Phase Angle, Y + Phase Angle

TEST CONDITIONS

Frequency Range 6430A
20Hz to 500kHz > 1000 steps
Accuracy of set frequency ±0.005%

Frequency Range 6440A
20Hz to 3MHz > 1800 steps
Accuracy of set frequency ±0.005%

Pre-set frequencies
20, 25, 30, 40, 50, 60, 80, 100, 120, 150 repeats for each decade

Drive Level (Rdc)
100mV or 1V with 100Ω source resistance

Drive Level (AC Measurements)
Open circuit voltage 1mV to 10V rms
Signal source impedance 50Ω
Automatic Level Control (ALC) maintains constant voltage or current

DC Bias Voltage (Internal)
2V with rapid charge capacitor bias with settling time < 150mSec (to 99%)

DC Bias Voltage (External)
External supply of up to ±60V may be connected via rear panel

MEASUREMENT SPEEDS
Four selectable speeds for all measurement functions Up to 20 measurements per second for test frequencies ≥100Hz

MEASUREMENT RANGES

R, Z	0.01mΩ to > 2GΩ
G, Y	1nS to > 2kS
L	0.1nH to > 2kH
C	1fF to > 1F
D	0.00001 to >1000
Q	0.00001 to >1000
Rdc	0.1mΩ to > 10MΩ

BASIC ACCURACY

L/C	±0.05%
Z	±0.02%
Q	± 0.05%(Q + 1/Q)
D	± 0.0002(1+ D^2)
Rdc	± 0.1%

Accuracy varies with component range measurement speed and frequency

MODES OF OPERATION

Measurement
Selection of any measurement parameter and test condition
Single level function menu controlled by keyboard and soft keys
Single and repetitive measurements displaying major and minor terms

Deviation
As measurement mode but relative or percentage deviation from nominal value displayed for major or minor term

Multi-Frequency
Measurement parameters and test conditions set using measurement mode
Up to 8 frequencies with absolute or percentage limits on major term PASS/FAIL indication

Frequency Sweep (6440A only)
Measurement parameters and test conditions set using measurement mode
Graphical sweep vs frequency with selection of start, stop, step size, units and linear/log

Binning (Optional)
Measurement parameters and test conditions set using measurement mode
9 bins with absolute or percentage limits
Up to 99 sets of limits may be saved
Bin outputs 0-5V (nominal) with > 10mA current sink capability
25 way D-type interface connector

MEASUREMENT CONNECTIONS
4 front panel BNC sockets
4-wire (Kelvin) measurements with screen at ground potential

GENERAL

Power Requirements
115V or 230V AC ±10% (selectable)
150VA Max

Mains Frequency
50/60Hz

Mains Fuse Rating
230V operation - 1A 'T' type
115V operation – 2A 'T' type

Display
High contrast black and white LCD module 320 x 240 with CPL back lighting visible area 115 x 86mm

Printer Output
Centronics/parallel printer port

Remote Control
Designed to GPIB IEEE-488.2 and SCPI 1992.0

Mechanical

Height	150mm (5.9")
Width	440mm (17.37")
Depth	525mm (20.5")
Weight	11kg (24.25lbs)

ENVIRONMENTAL CONDITIONS

Temperature Range

Storage	-40˚C to +70˚C
Operating	0˚C to 40˚C
Full Accuracy	15˚C to 35˚C

Relative Humidity
Up to 80% non-condensing

Altitude
Up to 2000m

Installation Category
II in accordance with IEC664

Pollution Degree
2 - mainly non-conductive

This equipment is intended for indoor use only in a non-explosive and non-corrosive atmosphere

SAFETY
Complies with the requirements of EN61010-1

EMC
Complies with EN61326 for emissions and immunity

ORDER CODES

1J6440A
Precision Component Analyzer 6440A (20Hz - 3MHz) with User Manual, 2m AC power cable and Kelvin clips 1EVA40100

1J6430A
Precision Component Analyzer 6430A (20Hz - 500kHz) with User Manual, 2m AC power cable and Kelvin clips 1EVA40100

OPTIONS
/B Binning

ACCESSORIES

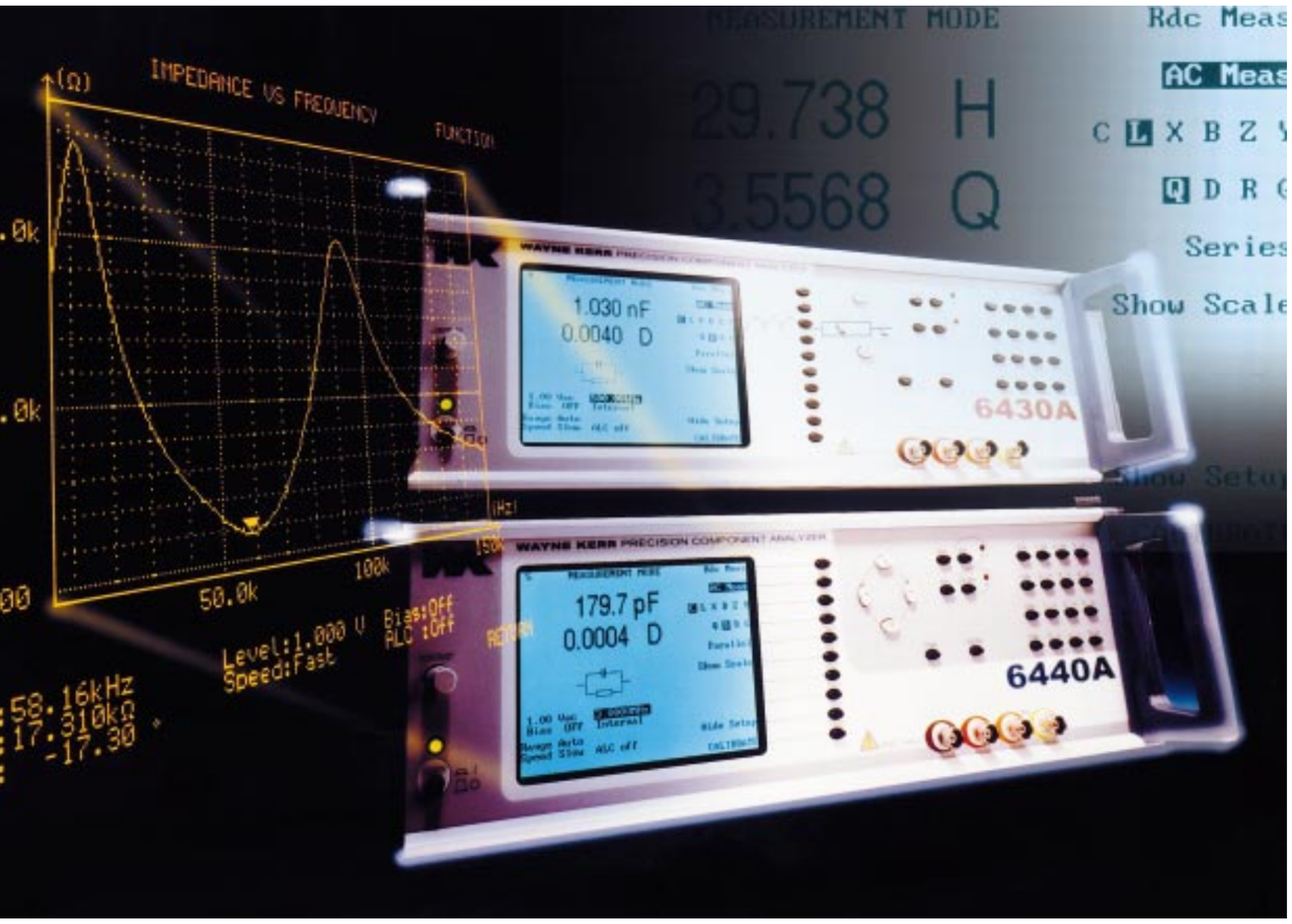
Kelvin Clips
1EVA40100 (fine jaw)
1EVA40180 (large jaw)

Component Fixture
1EV1006

Surface Mount Tweezers
A40120

Rack Mounting Kit
1EXA20230 3U (full width)

Wayne Kerr Electronics reserves the right to change specification without notice



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