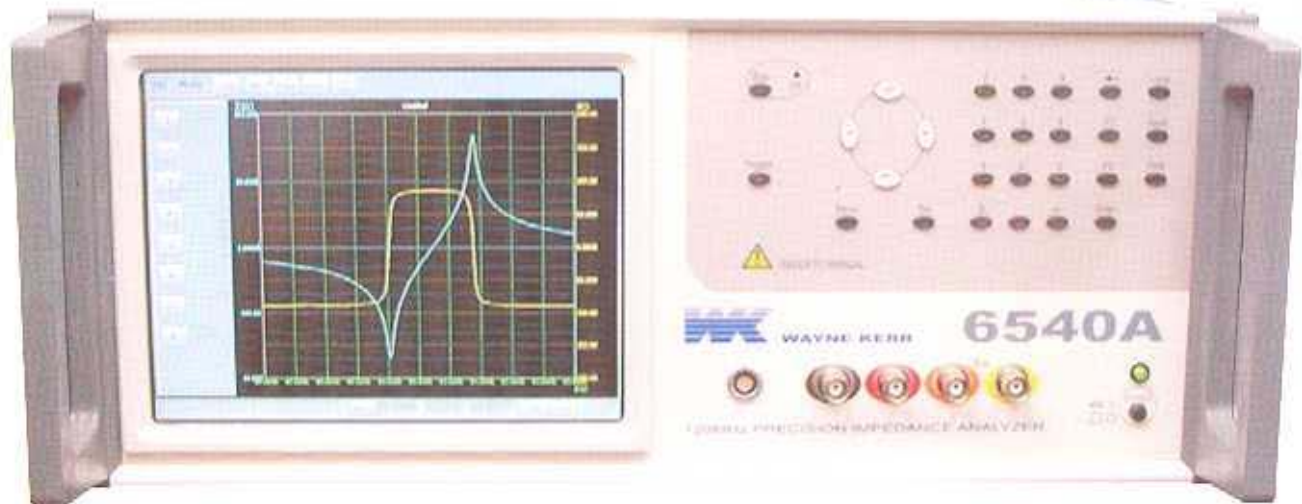
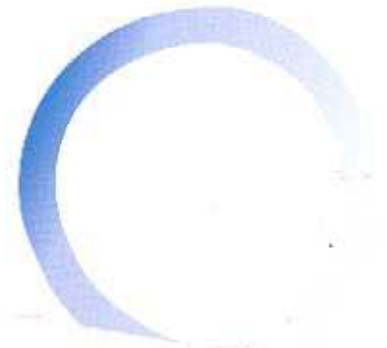




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6540A

Precision Impedance Analyzer

PRODUCT FEATURES

- Precise high frequency impedance measurements
- Characterize components to 120 Mhz
- Very fast measurement speed
- 0.05% basic measurement accuracy
- Comprehensive measurement functions
- Easy to use with large TFT touch screen
- Clear graphic displays aids measurements
- Intuitive user interface
- Fully programmable over GPIB
- Keyboard and mouse optional control
- Competitively price

Measurement parameters

- Capacitance (C)
- Inductance (L)
- Resistance (R)
- Reactance (X)
- Conductance (G)
- Susceptance (B)
- Dissipation Factor (D)
- Quality Factor (Q)
- Impedance (Z)
- Admittance (Y)
- Phase Angle (ϕ)



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High measurement accuracy

Capacitance, inductance and impedance basic accuracy is an excellent $\pm 0.05\%$. Dissipation factor accuracy is ± 0.0005 and the quality factor accuracy is $\pm 0.05\%$.

Graphical sweep of components

The 6540A 120MHz Precision Impedance Analyzer is a highly accurate high frequency component analyzer with a host of useful features.

Graphical sweep of two measured parameters is available and displayed on the clear, large, colour display. Swept parameters are frequency, drive level and DC bias.

Display formats available include series or parallel equivalent circuit.

For single frequency measurements a meter mode is available.

Variable drive and bias levels

AC drive levels up to 1 volt or 20 mA can be selected to evaluate components in realistic operating environments. Variable DC bias currents are also provided with current drives up to 100 mA.

External control

The GPIB interface is used to control the instrument and read back measured values for applications such as quality control or for archiving purposes.

An Ethernet interface similarly allows the instrument to be controlled and to send out data allowing it to be integrated into many test environments.

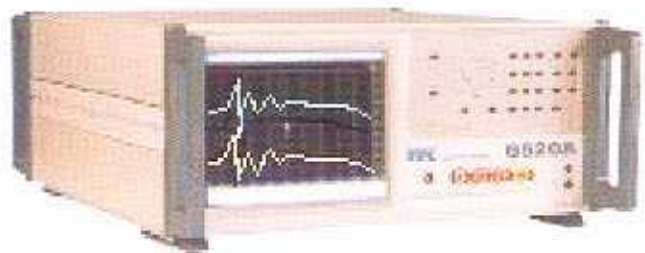
Wide range of interfaces

An external monitor or projector may be connected to the instrument. The ability to provide a large screen display of measurement results is invaluable in production environments or for teaching and training.

Instrument control from both a keyboard and mouse is available. Any keyboard or mouse, with either PS/2 or USB interfaces, can be simply connected to provide an alternative method of instrument control and operation.

Data storage and retrieval

All measurement and setup data can be stored using the Ethernet interface or a USB flash memory.



Setup data

Up to 20 instrument setups may be stored locally for each model.

Bin handling

Isolated(24V) or as alternative and non-isolated(5V) signals are available through a 25-way D-type connector.

Printer outputs

Hard copy printouts can be obtained in a number of ways including direct to an HP PCL compatible graphics printer or Epson compatible text/ticket printer. A networked HP-PCL compatible printer may also be used via Ethernet connection.

Component connections

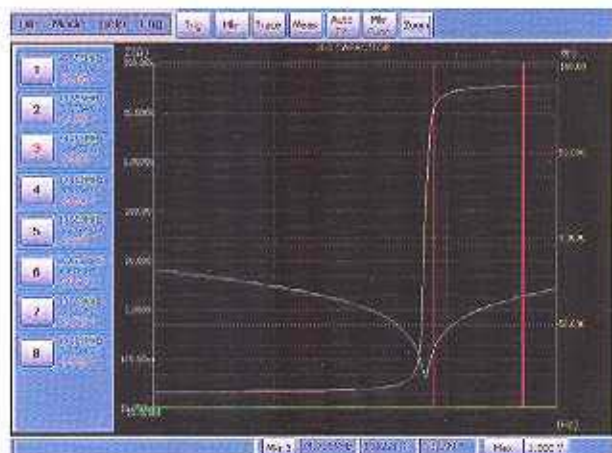
Four front panel BNC connectors permit three or four terminal connections with the screens at ground potential. To provide more connection options a range of optional accessories is available.

Protection against charged capacitors

High precision measuring instruments can be damaged by charged capacitors which can cause costly repairs and unacceptable downtime. The 6540A incorporates protection against charged capacitors.

Comprehensive and precise component tests at higher frequencies

6540A is best summarised by "Comprehensive and precise component tests at higher frequencies". The instrument is the perfect solution for those who have demanding component measurement needs.



Simultaneous plot of impedance and phase displayed against frequency on a clear colour display



Precision Impedance Analyzer

Technical Specifications 6540A

Measurement parameters

Any of the following parameters can be measured and displayed:

AC Functions

- Capacitance (C)
- Inductance (L)
- Resistance (R)
- Reactance (X)
- Conductance (G)
- Susceptance (B)
- Dissipation Factor (D)
- Quality Factor (Q)
- Impedance (Z)
- Admittance (Y)
- Phase Angle (ϕ)

Display format

Series or parallel equivalent circuit.

Test conditions

Frequency range

1 kHz to 120 MHz

Accuracy of set frequency $\pm 0.005\%$

AC Drive level

10 mV to 1V rms*

200 μ A to 20 mA rms*

* Varies with frequency

Signal source impedance: 50 ohms†

DC bias current (optional)

100 mA of DC bias current

40 V of DC bias voltage

Mode of operation

Graphical sweep mode

Allows graphical sweep of any two measurement parameters.

Sweep parameters: - frequency, drive level, or DC bias.

Meter mode

Allows the instrument to be used as a standard LCR meter.

Setup data

Up to 20 instrument setups may be stored locally for each mode.

Measurement connections

Four front panel BNC connectors permit three or four terminal connections with the screens at ground potential.

Measurement accuracy

Dissipation factor

± 0.0005 ($+D$)%

Quality factor

± 0.05 % ($Q+1/Q$)%

Capacitance / Inductance / Impedance

± 0.05 %*

* Varies with frequency, drive level and measured impedance.

General

Power supply

Input voltage: 90 V AC to 264 V AC (Autorangeing)

Mains frequency

50-60 Hz

Display

8.4 VGA (640 x 480) colour TFT with touch panel

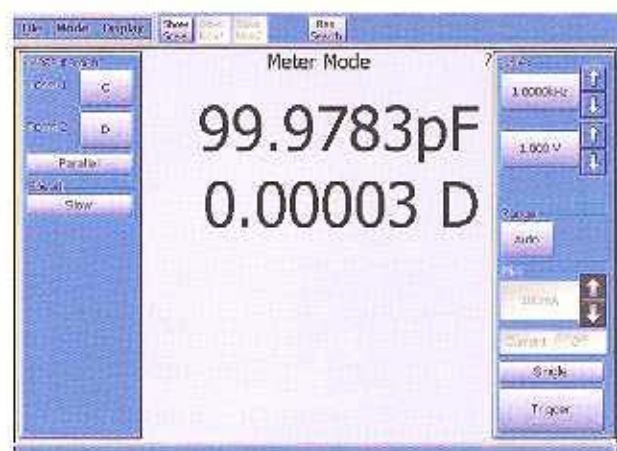
Local printer

HP-PC compatible graphics printing

Epson compatible text/ticket printing

Network printer

HP-PCL compatible graphics printing



The meter mode gives a clear and concise digital display of component characteristics.



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Remote trigger

Rear panel BNC with internal pull-up, operates on logic low or contact closure.

USB interface

Two Universal Serial Bus Interfaces

USB 1.1 compliant

VGA interface

15 way D type connector to drive an external monitor in addition to the internal screen.

Network interface

10/100-BASET-X Ethernet controller, RJ45 connector

Keyboard interface

Standard USB or PS/2 keyboard port. Instrument front panel remains active with keyboard plugged in.

Mouse interface

Standard USB or PS/2 mouse port. Touch screen remains enabled when the mouse is connected.

Bin handler (option)

Isolated (24 V) and non-isolated (5 V), 25 way D type connector

GPIO interface (option)

External instrument control 24 pin IEEE 488 connector

Environmental conditions

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

Temperature Range

Storage: -20°C to 60°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

1 in accordance with IEC664

Pollution degree

2 - mainly non-conductive

Safety

Complies with the requirements of EN61010-1

EMC

Complies with EN61326 for emissions and immunity

Mechanical

Height: 190 mm (7.5")
Width: 440 mm (17.37")
Depth: 525 mm (20.5")
Weight: 14.5 kg (32 lb)

Order codes, 6520A

Description code

6540A 120 MHz Precision Impedance Analyzer
6530A 50 MHz Precision Impedance Analyzer
6520A 15 MHz Precision Impedance Analyzer

Supplied with:-

User manual
2 m AC power cable
Universal component fixture
USB memory

Options

Description

Bin handler (isolated 24 V)
Bin handler (non-isolated)
GPIO interface
DC Bus

Optional accessories for 6540A

Description

Certificate of calibration

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