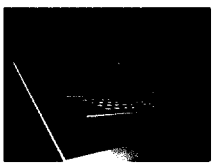
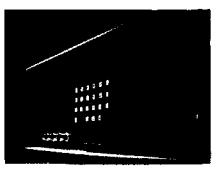
INSTRUMENTS FOR IMPEDANCE MEASUREMENT

Whether the application is incoming inspection or production line test, ESI LRC Bridges provide reliable, accurate instrumentation for measuring resistors, capacitors and inductors.



Our general purpose LRC Bridges have been designed to accommodate the requirements unique to incoming inspection, quality control and engineering benchtop applications. From the reliable, low-cost 252 LRC Bridge to the ultra flexible ESI 2160 VideoBridge, we can provide you with the proper instrumentation.



When you need speed, we've got that too—with a full line of ESI high speed LRC Bridges proven where it counts—on the production line. For passive component manufacturing ESI delivers the range, accuracy and interfacing flexibility to handlers and computers you need to meet today's production test requirements.

General Purpose LRC Bridges

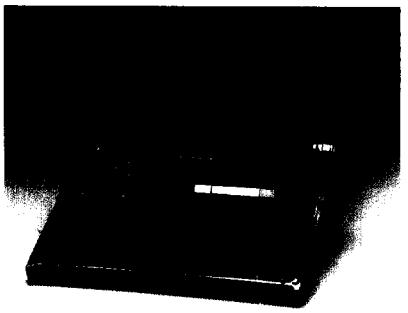
Model	Test Frequency	Measurement Functions	Capacitance Range Best Resolution	Capacitance Range Max Range	Measurement Rate	Other Features & Options
252	1kHz	L,C,R,G,D	0.1pF	200μF	4 per second	Options: 1412B Limits Comparator, battery power, input protection module. Features: external bias capability (C only), auto-ranging (253 only), analog output.
253	1kHz	L,C,R,G,D	0.1pF	2.0mF	4 per second	
254	120Hz*	L,C,R,G,D	1pF	20mF	4 per second	
2150	20Hz-150kHz	L,R,C,D,Q G,X,B,Y,Z	0.001pF D=1ppm	10F	Up to 9 per second	CRT display, variable test levels to 100mA, 1.5V, Non-Volatile Memory Option, External Bias Option to +200VDC, built-in cassette drive (2160), turnkey Statistics and Analog Display Software Options, interfaces: IEEE, RS-232C, component handlers.
2160	20Hz-150kHz	L,R,C,D,Q G,X,B,Y,Z	0.001pF D=1ppm	10F	Up to 9 per second	

*120Hz for 60Hz line frequency, 100Hz for 50Hz line frequency

High Speed LRC Bridges[1]

Model	Test Frequency	Test Voltages	Capacitance Range Best Resolution	Capacitance Range Max Range	Applications
295[2]	1kHz	1.0V, 0.5V	0.01pF	2.0mF	MLC, film cap. production test
296	120Hz[3], 1kHz	1.0V, 0.1V	0.01pF	2.0F	Tantalum and Aluminum capacitors
296V	120Hz[3], 1kHz	1.0V, 0.5V, 0.3V, 0.15V	0.01pF	2.0mF	MLC capacitor production test
410	1MHz	1.0V, 0.1V, 0.01V	0.0001pF	20nF	MLC and film capacitors

[1]All models feature dual 4½ digit LED display, 0.1% basic accuracy, handler and computer interface options.
[2]C and D measurements only, measurement speed to 28 per second.
[3]120Hz for 60Hz line frequency, 100Hz for 50Hz line frequency.



Models 252, 253 and 254 Digital LRC Bridges

- Easy to use, low cost
- Measure L, R, C, G and D
- 0.25% Basic accuracy
- 1kHz and 100/120Hz Models
- Limits Comparator Option
- Battery Power Option

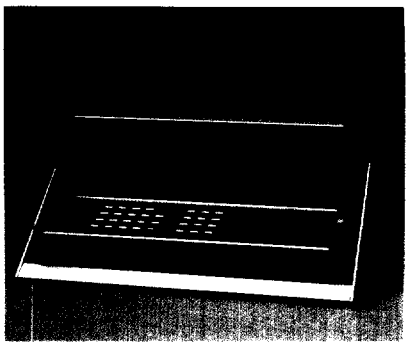
The Model 252 series of digital impedance bridges is designed to meet the needs of incoming inspection and component evaluation applications. These bridges feature four-terminal measurement and direct, digital display of the most used values of C, L, R, D and G.

The Model 252 line's fast and straightforward operation is ideal for a wide variety of hand testing applications. The addition of the Model 1412B Universal Limits Comparator speeds incoming inspection as well as low volume production testing. Optional battery power makes the 252 line perfect for aircraft maintenance, utility line service, and any application where portability is a must.

The 253 features auto-ranging for faster and easier setup. Capacitance measurement capability is extended to 2000μF.

Model 254, the 100/120Hz test frequency version, is great for line frequency component testing. You can easily and economically test power supply capacitors, motors, inductors, transformers and lighting capacitors at the proper frequency.

A wide variety of test fixtures is available for connection to axial-leaded, radial-leaded and chip components.

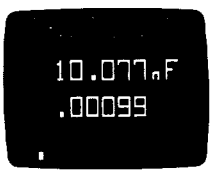


Models 2150 and 2160 VideoBridge® Impedance Test Instruments

- Test frequencies from 20Hz to 150kHz
- CRT displays setup and results simultaneously
- Measures 16 impedance functions
- Auto LRC selects test function automatically
- 0.02% Basic accuracy
- Cassette tape drive (Model 2160) for saving test setups and loading application software
- Non-Volatile Memory Option

Now there's an LRC bridge that gives you a choice of 3023 different test frequencies from 20Hz to 150kHz. Measure sixteen different impedance functions, including 100kHz ESR or D. You get extreme flexibility, excellent measurement capability and convenience in a single package.

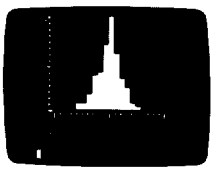
Test fixture zeroing for all ranges is completed in one simple process. The Auto LRC function identifies the component type and sets the bridge to the right function.



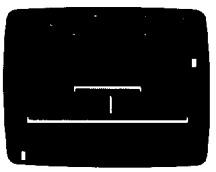
CRT Display
The CRT displays your test results in large, crisp characters. Test conditions are displayed simultaneously above the results.

The Model 2160's tape drive allows you to store up to 13 test setups per side of tape—ready to be recalled in seconds, saving setup time and reducing operator error.

RS-232C, IEEE-488 and handler interfaces are available.



Statistics Software
Statistics Software generates component lot and test sample statistics without a separate computer. The VideoBridge does all the data collection and statistical analysis while you just test the parts. Results are displayed on the CRT or sent to a printer.



Analog Display Software
Analog Display Software speeds passive component tuning by providing an easily interpreted scale and cursor display on the 2160 VideoBridge. This package replaces comparator bridges and the need for external standards.

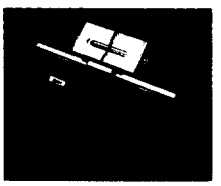
ACCESSORIES

2001 Sorting Fixture

Speeds handling of axial-leaded components as long as 66mm (2.6in.) and radial-leaded components as small as 20mm (0.78in.).

2003 Sorting Fixture

A rugged four-terminal test fixture for sorting axial leaded parts up to 110mm (4.3in.) and radial leaded parts down to 5mm (0.2in.) lead spacing.



2004 Zero-Insertion-Force Sorting Fixture

This fixture is similar to the Model 2003 but adds a lever to open the jaws.

Kelvin Klips®

Kelvin Klips allow you to make solid four terminal connection to leaded components. Gold plated, hardened beryllium-copper jaws ensure low contact resistance. Includes a 1.2m (4ft.) cable assembly.

Chip Component Tweezers

These four-terminal tweezers make solid connections to chip components up to 12.7mm (0.5in.). Includes a 1.0m (39 in.) cable.

2060 Lead Tester

The 2060 Lead Tester is designed to eliminate component rejection or misbinning by LRC Bridges due to poor 4-terminal contacting. It checks the resistance of the lead and contact system prior to each bridge measurement, and indicates to the handler or operator when resistance is excessive, such as is caused by a poor contact or a broken lead.