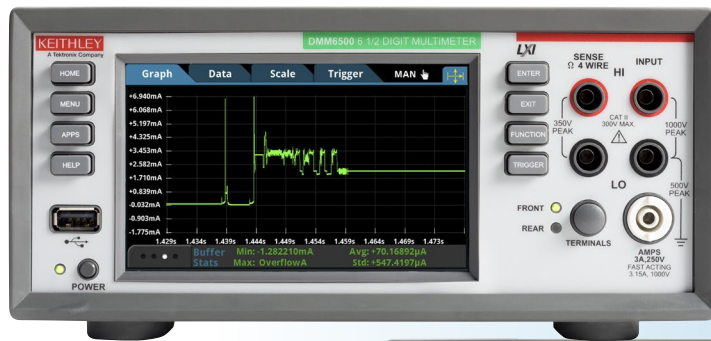


DIGITAL MULTIMETER SELECTOR GUIDE



KEITHLEY
A Tektronix Company

Tektronix

Touch, Test, Invent[®]

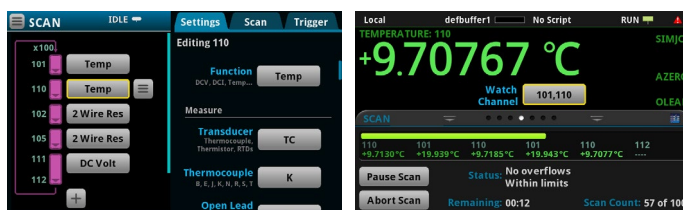
Combining touchscreen productivity with 15 measurement functions, greater sensitivity, and more connectivity



DAQ6510 DATA ACQUISITION AND LOGGING MULTIMETER SYSTEM

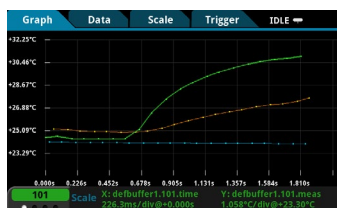
Creating a new level of simplicity, the DAQ6510 touchscreen user interface enables faster setup time, real time monitoring of test status, and detailed data analysis on the instrument.

- Set up, execute and monitor, and analyze multi-channel measurements quickly



Set up

Monitor



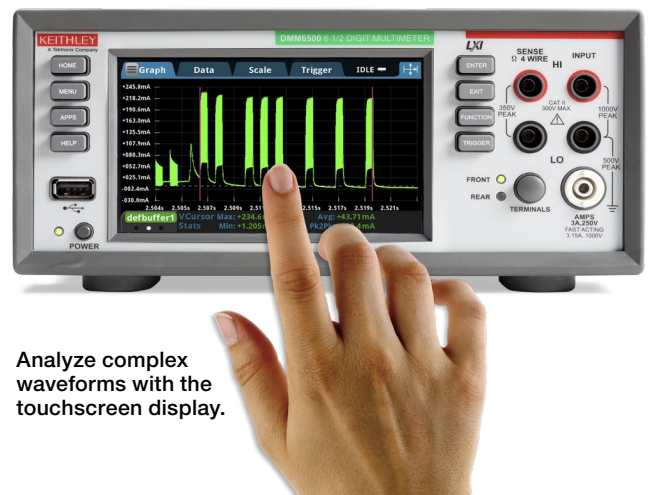
Analyze

- Built-in 6½-digit DMM for high performance measurements

DMM6500 6½-DIGIT BENCH/SYSTEM DIGITAL MULTIMETER

The DMM6500 offers more measurement capability – including transient capture, data visualization, and analysis – at a great price.

- 15 built-in measurement functions and increased sensitivity for a wider range of measurements
- Analyze graphs and trends directly on the touchscreen display for faster measurement insights



Analyze complex waveforms with the touchscreen display.

SEE PAGE 11

SEE PAGE 6

Keithley has a wide selection of your most important measurement instrument.

Keithley has a wide selection of your most important measurement instrument. 3

Standard Performance for the Most Essential Needs

DMM4020 5½-Digit Digital Multimeter. 4

2110 5½-Digit Dual-Display Digital Multimeter 4

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Enhanced Performance with a Touchscreen Graphical User Interface

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No Compromise: High Speed and High Accuracy

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Precision Multi-Channel Measurements for Data Acquisition

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DMM Comparison Table 16

STANDARD PERFORMANCE FOR THE MOST ESSENTIAL NEEDS

DMM4020 5½-Digit Digital Multimeter

- Perform pass/fail testing with the Limit Compare Mode
- Measure low currents with 1 nA sensitivity
- Measure True RMS AC + DC signals
- Interface to a PC with the RS-232-to-USB Interface Adapter cable



[Learn more about the DMM4020](#)

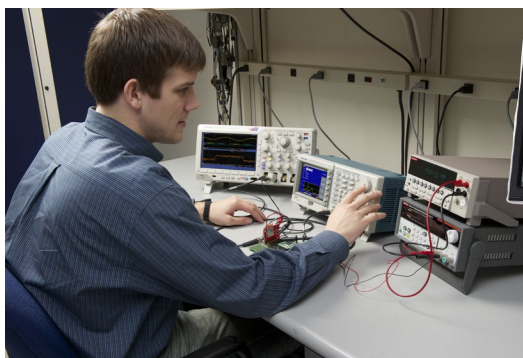
2110 5½-Digit Dual-Display Digital Multimeter

- Measure and display two parameters concurrently
- Sample a signal at 50,000 readings/s
- Measure temperature and capacitance
- Interface to a PC or a system with the USB interface or the optional GPIB interface



[Learn more about the 2110](#)

Efficiently conduct laboratory exercises in student labs with Tek SmartLab™ Software and instrumentation including the 2110 DMM.



2100 6½-Digit USB Digital Multimeter

- Connect to either the front terminals or the rear terminals
- Measure any parameter with fully-specified accuracies
- Interface to a PC with the USB-TMC compliant protocol

[Learn more about the 2100](#)



DMM4040 and DMM4050 6½-Digit Digital Multimeters

- Plot signals with the TrendPlot™ Data Recorder Mode
- Statistically analyze data with the Histogram mode
- Automate measurements with the LAN interface, GPIB interface, RS-232 interface, or to USB with the RS-232-to-USB Interface Adapter Cable
- Increase measurement accuracy by up to a factor of 2 with the DMM4050

[Learn more about the 4000 Series](#)

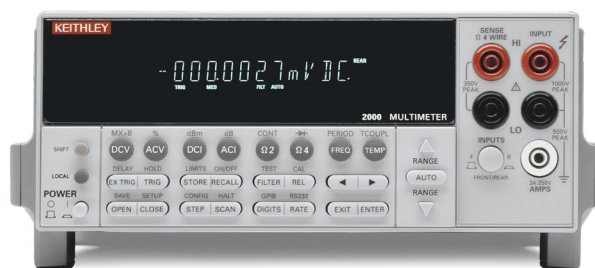


STANDARD PERFORMANCE WITH ADDITIONAL MEASUREMENT CHANNELS

2000 6½-Digit Digital Multimeter

- Increase production throughput with 2000 measurements/s
- Read up to 10 channels with optional thermocouple and voltage/resistance plug-in scanner cards
- Connect to a PC with GPIB and RS-232 Interfaces

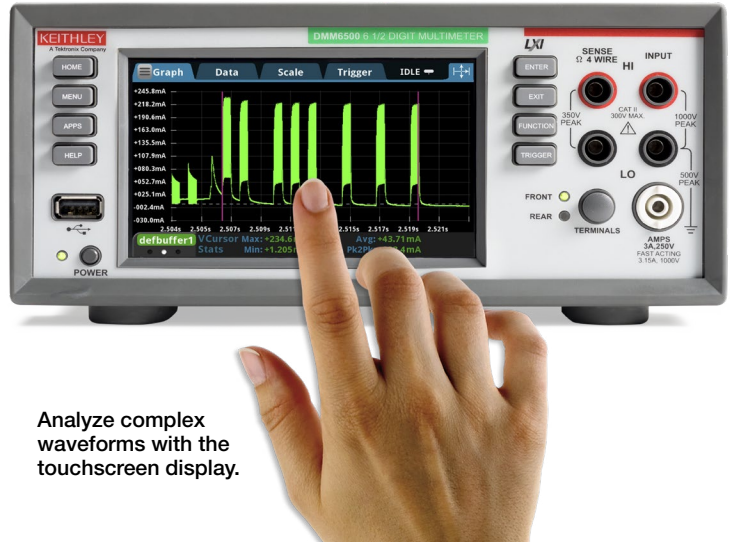
[Learn more about the 2000 Series](#)



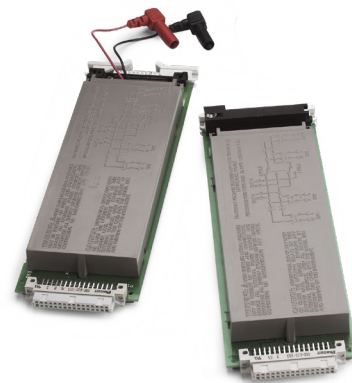
ENHANCED PERFORMANCE WITH A TOUCHSCREEN GRAPHICAL USER INTERFACE

DMM6500 6½-Digit Bench/System Digital Multimeter

- Capture complex signals and transients with up to 1 Msample/s 16-bit digitizing
- Make low level measurements with 100 nV, 10 pA, and 1 $\mu\Omega$ sensitivities
- Measure with superior 0.0025% basic, 1-year, DC Volt accuracy and 0.0075% basic, 1-year resistance accuracy
- Analyze data and display waveform plots on the 5 inch (12.7 cm) touchscreen display
- Measure power circuit current up to 10 A
- Interface to a PC with LAN/LXI and USB-TMC interfaces or optional GPIB or RS-232 interfaces
- Test up to 10 DUTs in one test setup with the optional plug-in scanner cards



Learn more about the DMM6500



Use the optional scanner cards to increase measurement capability for voltage measurements from 10 different channels or for temperature measurements from 9 different thermocouples.

Use the optional TSP-Link interface and TSP (Test Script Processor) scripts to control test sequences and to control other instruments with the DMM6500. Save test time with minimal communication with the PC and achieve low-latency synchronization between instruments.

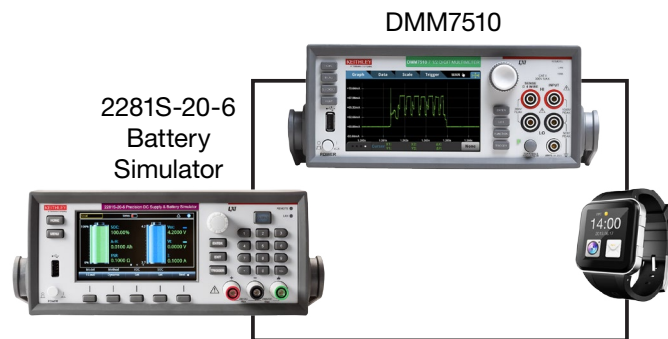
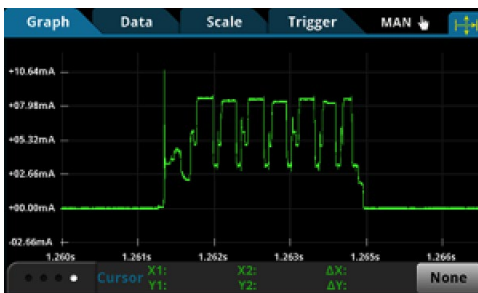
NO COMPROMISE: HIGH SPEED AND HIGH ACCURACY

DMM7510 7½-Digit Graphical Sampling Multimeter

- Capture IoT wireless device load current transmit bursts with 18-bit, 1Msamples/s digitizing
- Measure ultra-low sleep mode currents on processors and products with 1 pA current sensitivity
- Hold DUTs to tight test tolerances using voltage measurements with accuracies as low as 14 ppm
- Store up to 27.5 million readings for profiling load current waveforms and transient waveforms
- Take measurements as fast as 26,000 readings/s for high throughput testing
- Get fast insight into waveform characteristics with the 5 inch (12.7 cm) touchscreen display
- Execute custom test scripts and control other instruments with the built-in test script processing language
- Interface to a PC with either LXI LAN, USB, or GPIB interfaces



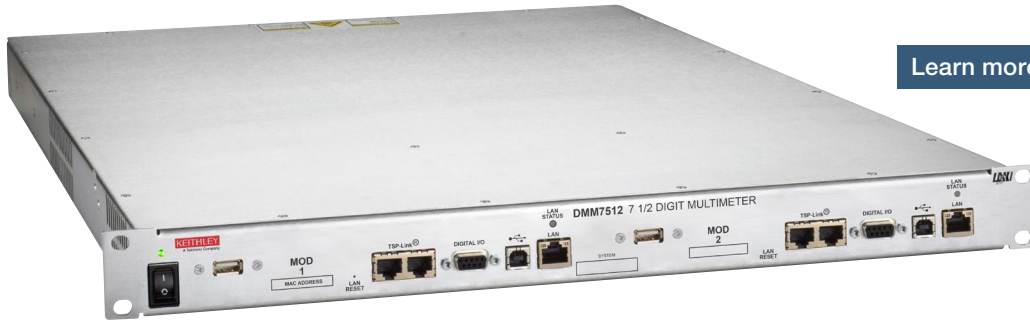
Learn more about the DMM7510



Use the high resolution and the wide dynamic range of the DMM7510 to capture the current draw during all the operating states (sleep mode, standby mode, and transmit mode) of an IoT device.

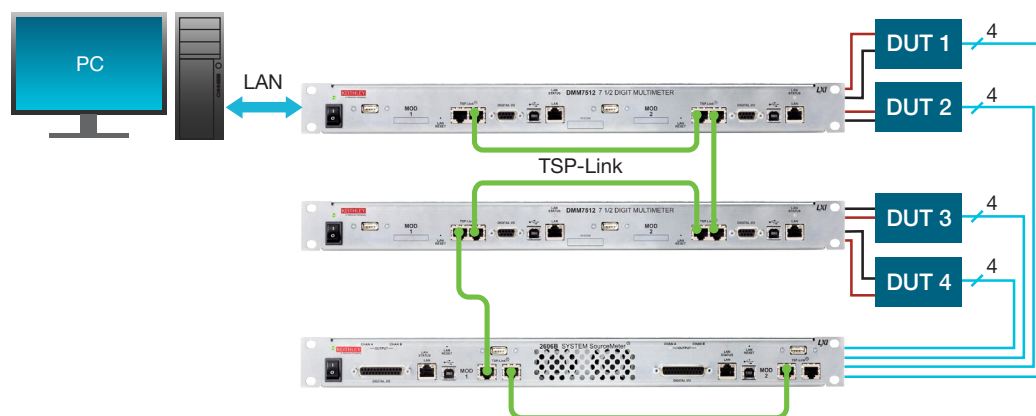
SAVE RACK SPACE AND DOUBLE TEST CAPACITY IN MANUFACTURING

DMM7512 Dual Channel 7½-Digit Sampling Multimeter



[Learn more about the DMM7512](#)

- Double measurement performance with two independent, identical 3½- to 7½-digit DMMs similar to the DMM7510 in a 1U high, full rack width chassis
- Capture waveforms such as battery drain currents with up to 1 Msample/s, 18-bit digitizing and 0.1 nA and 1 μV sensitivities
- Simultaneously capture voltage and current waveforms to determine a device's instantaneous peak and average power
- Evaluate low power components including quiescent or sleep mode states with 10 nV, 0.1 μΩ, and 1 pA sensitivities
- Make high accuracy, low resistance measurements with offset compensated Ohms, four-wire measurement, and dry circuit voltage control
- Maximize test uncertainty ratios based on 1-year DV volts accuracies as good as 14 ppm.
- Reduce test time by executing test scripts with the Embedded Test Script Processor, which saves PC command communication overhead.
- Obtain tight synchronization between the two DMMs using TSP-Link® communication

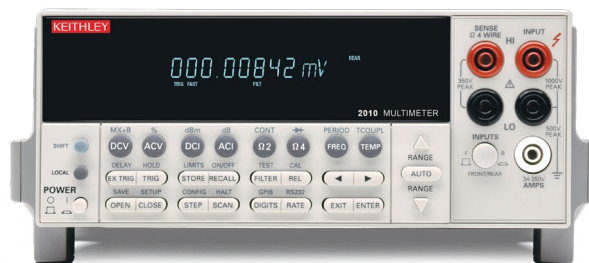


Source and measure multiple DUTs with the compact, high density configuration of the dual-DMM DMM7512 and the four-channel 2606B System SourceMeter SMU Instrument. To maximize test speed, use a test script to execute testing with one master instrument and control all instruments with the TSP-Link interface.

HIGH ACCURACY WITH HIGH RESOLUTION

2010 Low Noise 7½-Digit Autoranging Multimeter

- Resolve low voltages with the 100 nVrms noise floor
- Make automatic ratio measurements on two voltages with the front and rear inputs
- Minimize device self-heating with low power resistance measurements
- Avoid breaking down oxides or films on relay contacts and connectors with the dry circuit test function
- Test up to 10 DUTs with an optional voltage or temperature plug-in scan card
- Interface to a PC with the RS-232 or the GPIB interface



[Learn more about the 2010](#)

2001 7½-Digit High Performance Multimeter

- Capture spikes as narrow as 1 μ s with the peak detector function
- Perform in-circuit current measurements without breaking the circuit
- Automatically separate components based on measurement limits using the Binning function
- Measure up to 10 channels of voltage or 9 channels of temperature with the optional plug-in scanner cards
- Make high accuracy, 2 MHz bandwidth AC voltage measurements for control system analysis
- Connect to a PC with the GPIB interface



[Learn more about the 2001](#)

2002 8½-Digit High Performance Multimeter

- Make the most accurate voltage measurements with tolerances as narrow as 10 ppm
- Capture spikes as narrow as 1 μ s with the peak detector function
- Perform in-circuit current measurements without breaking the circuit
- Automatically separate components based on measurement limits using the Binning function
- Measure up to 10 channels of voltage or 9 channels of temperature with the optional plug-in scanner cards
- Make high accuracy, 2 MHz bandwidth AC voltage measurements for control system analysis
- Connect to a PC with the GPIB interface



[Learn more about the 2002](#)

PRECISION MULTI-CHANNEL MEASUREMENTS FOR DATA ACQUISITION

2700 and 2701 Multimeter/Data Acquisition/Switch Systems

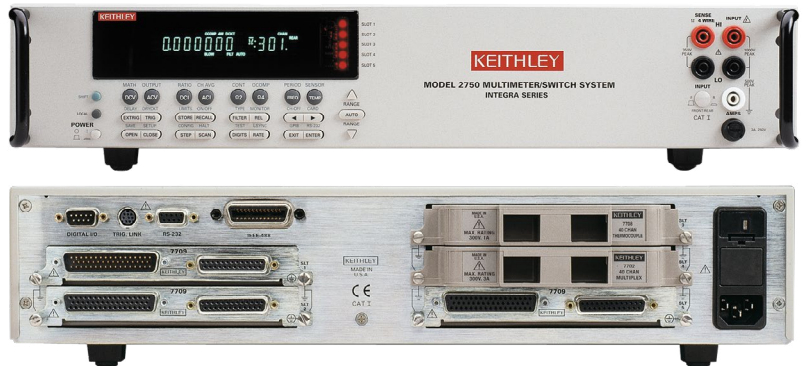


- Set up multi-channel measurement and datalogging systems with a switch system combined with a 6½-digit DMM
- Configure systems with a selection of 12 Series 7700 switch and control plug-in modules
- Build systems as large as 80 channels with two card slots for plug-in modules
- Use the instrument as an independent digital multimeter for test setup and troubleshooting
- Connect to a PC with either the RS-232 interface (2700) or the GPIB interface (2701)

[Learn more about the 2700 and 2701](#)

2750 Multimeter/Switch System

- Build a test system as large as 200 differential input channels
- Design a versatile system using up to 5 different models of the 7700-series plug-in switch modules in a 2750
- Measure low resistive components with 1 $\mu\Omega$ sensitivity
- Use the dry circuit function to protect sensitive devices from damage and to minimize self-heating errors during testing
- Make measurements with the high performance 6½-digit DMM
- Interface to a PC with the GPIB or RS-232 interface



[Learn more about the 2750](#)

PRECISION MULTI-CHANNEL MEASUREMENTS WITH BOTH MORE PERFORMANCE AND WITH THE MOST SIMPLIFIED SETUP PROCEDURE

DAQ6510 Data Acquisition and Logging, Multimeter System

- Set up a test in minutes with the 5-inch (12.7 cm) touchscreen display and graphical user interface
- Test low power devices with current sensitivity down to 10 pA
- Save upgrade costs by using the same plug-in switch modules as the 2700 Series instruments
- Monitor up to 80 channels of thermocouple, RTD, or thermistor temperature measurements
- Monitor fast-changing signals with the 1 Msample/s, 16-bit digitizer
- Make high precision measurements with the high performance 6½-digit DMM
- Interface to a PC with either LAN LXI or USB or add an RS-232 or a GPIB option
- Control other instruments and execute a test with the built-in scripting code and the Test Script Processor (TSP®), TSP-Link® I/O option



[Learn more about the DAQ6510](#)

Obtain data while an environmental test is in process for faster access to test results.



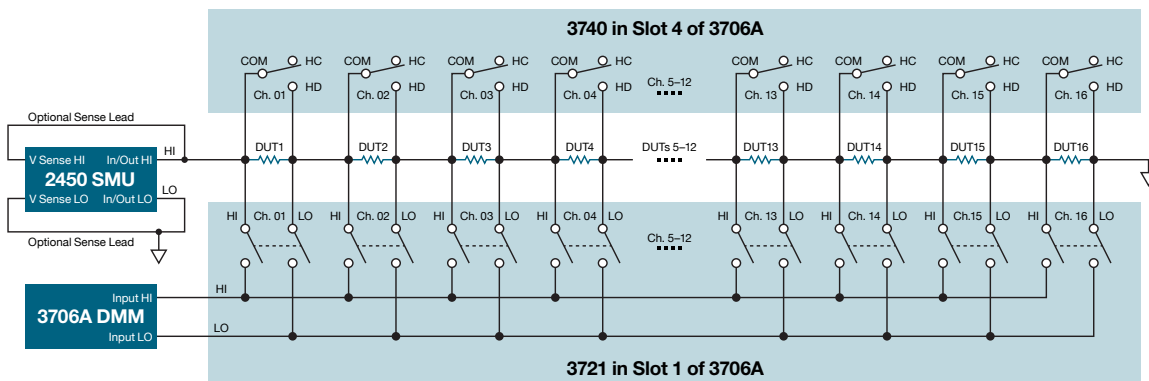
HIGH CHANNEL COUNT AND PRECISION MEASUREMENT DATA ACQUISITION SYSTEMS

3706A System Switch/Multimeter

- Build a test system with as many as 576 two-wire or 720 one-wire multiplexed channels or with up to 2,688 matrix crosspoints
- Fill up to 6 slots with 10 different 3700 Series plug-in switch modules
- Make the most accurate measurements with the 7½-digit DMM and 13 measurement functions
- Maximize throughput with measurement speeds up to 14,100 readings/s
- Minimize time-consuming interaction with a PC by using the 3706A as a master system controller using Keithley's internal Test Script Processor (TSP™) software
- Control other LAN-based instruments with the TSP-Link interface
- Interface to a PC with LAN/LXI, USB, or GPIB interfaces



Learn more about the 3706A



16-pin connector test system using a 2450 Source-Measure Instrument and a 3706A with 3740 and 3721 Multiplexer Plug-In Modules

Appendix 1: Plug-in Scanner Card Options for the DMM6500, 2000, 2001, 2010, and 2002 Digital Multimeters

| | 2000-SCAN | 2001-TCSCAN |
|----------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Number of Channels | 10 | 9 |
| Card Configuration | Multiplexer | Multiplexer |
| Input Configuration | Differential, 2-pole inputs | Differential, 2-pole inputs |
| Max Voltage | 110 VDC, 175 VAC Peak | 110 VDC, 175 VAC Peak |
| Max Current Switched | 1 A | 1 A |
| Comments | Can configure as 5-channel with 4-pole relays | Built-in thermocouple cold-junction temperature compensation. Can configure as 4-channel with 4-pole relays |

Appendix 2: Plug-in Switch Modules for the 2700 Series and DAQ6510 Data Acquisition Systems

| Module | 7700 | 7701 | 7702 | 7703 | 7705 | 7706 | 7707 | 7708 | 7709 | 7710 | 7711 | 7712 |
|---------------------------|-----------------------------------------------------|----------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------|-----------------------------------|
| Description | 20 Channel, Differential Multiplexer Module | 32 Ch. Differential Multiplexer Module | 40 Ch. Differential Multiplexer Module | 32 Ch. High Speed, Differential Multiplexer Module. | 40 Ch. Single-pole Control Module | All-in-One I/O Module. | 32 Ch. Digital I/O Module | 40 Ch. Differential Multiplexer Module | 6x8 Matrix Module. | 20 Ch. Solid-state Differential Multiplexer Module | 2 GHz 50 Ω RF Module | 3.5 GHz 50 Ω RF Module |
| # Analog Inputs | 20 | 32 | 40 | 32 | 40 | 20 | 10 | 40 | 48 | 20 | 8 | 8 |
| Configuration | Multiplexer w/CJC | Multiplexer | Multiplexer | Multiplexer | Independent SPST | Multiplexer w/CJC | Digital I/O/ Multiplexer | Multiplexer w/CJC | Matrix | Multiplexer w/CJC | Multiplexer | Multiplexer |
| | 1x20 or two 1x10 | 1x32 or two 1x16 | 1x40 or two 1x20 | 1x32 or two 1x16 | N/A | 1x20 or two 1x10 | 1x10 or two 1x5 | 1x40 or two 1x20 | 6x8 | 1x20 or two 1x10 | Dual 1x4 | Dual 1x4 |
| Type of Connector | Screw terminals | D-sub | Screw terminals | D-sub | D-sub | Screw terminals | D-sub | Screw terminals | D-sub | Removable screw terminals | SMA | SMA |
| Max. Voltage | 300 V | 150 V | 300 V | 300 V | 300 V | 300 V | 300 V | 300 V | 300 V | 60 V | 60 V | 42 V |
| Max. Switched Current | 1 | 1 A | 1 A | 500 mA | 2 A | 1 A | 1 A | 1 A | 1 A | 0.1 A | 0.5 A | 0.5 A |
| Bandwidth | 50 MHz | 2 MHz | 2 MHz | 2 MHz | 10 MHz | 2 MHz | 2 MHz | 2 MHz | 2 MHz | 2 MHz | 2 GHz | 3.5 GHz |
| Contact Life ¹ | 10 ⁸ | 10 ⁸ | 10 ⁸ | 10 ⁸ | 10 ⁸ | 10 ⁸ | 10 ⁸ | 10 ⁸ | 10 ⁸ | 10 ¹⁰ | 10 ⁸ | 10 ⁸ |
| Switch Speed | 3 ms | 3 ms | 3 ms | 1 ms | 3 ms | 3 ms | 3 ms | 3 ms | 3 ms | 0.5 ms | 10 ms | 10 ms |
| Other | Maximum power = 125 VA. 2 current measure channels. | Maximum power = 125 VA. | Maximum power = 125 VA. 2 current measure channels. | Reed relays. | Maximum power = 125 VA. | 2 analog outputs. 16 digital outputs. Maximum power = 125 VA. Event Counter/ Totalizer | 32 digital I/O. Maximum power = 125 VA. | Maximum power = 125 VA. | Connects to internal DMM. Daisy chain multiple cards for up to a 6x40 matrix. Maximum power = 125 VA. | Solid state relays, 60 V max. 500 channels/ second scan rate. | Insertion loss <1.0 dB @ 1 GHz. VSWR <1.2 @ 1 GHz. | Insertion loss <1.1 dB @ 2.4 GHz. |

1. No load contact life. See card data sheet for additional specifications.

Appendix 3: Plug-in Switch Modules for the 3706A System Switch/Multimeter

| | 3720 | 3721 | 3722 | 3723 | 3724 | 3730 | 3731 | 3732 | 3740 | 3750 |
|------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| No. of Channels | 60 (Dual 1×30) | 40 (dual 1×20) | 96 (dual 1×48) | 60 (dual 1×30) or 120 single pole (dual 1×60) | 60 (dual 1×30) | 6×16 | 6×16 | 448 cross-points (Quad 4×28) | 32 | 40 digital I/O, 4 counter/totalizers, and 2 isolated analog outputs |
| Card Config. | Multiplexer | Multiplexer | Multiplexer | Multiplexer | Multiplexer | Matrix | Matrix | Matrix | Independent | Independent |
| Type of Relay | Latching electro-mechanical | Latching electro-mechanical | Latching electro-mechanical | Dry reed | FET solid-state | Latching electro-mechanical | Dry reed | Dry reed | Latching electro-mechanical | N/A |
| Contact Configuration | 2 Form A | 2 Form A | 2 Form A | 1 Form A | 2 Form A | 2 Form A | 2 Form A | 1 Form A | 28 Form C, 4 Form A | N/A |
| Max. Voltage | 300 V | 300 V (ch 1–40), 60 V (ch 41–42) | 300 V | 200 V | 200 V | 300 V | 200 V | 200 V | 300 VDC /250 VAC (Form A) | N/A |
| Max. Current Switched | 1 A | 2 A (ch 1–40), 3 A (ch 41–42) | 1 A | 1 A | 0.1 A | 1 A | 1 A | 0.75 A | 2 A (Form C), 7 A (Form A) | N/A |
| Comments | 2 independent 1×30 multiplexers. Automatic temperature reference when used with screw terminal accessory (3720-ST) | 2 independent 1×20 multiplexers. Automatic temperature reference when used with screw terminal accessory (3721-ST) | 2 independent 1×48 multiplexers | 2 independent 1×30 multiplexers | 2 independent 1×30 multiplexers. Automatic temperature reference when used with screw terminal accessory (3724-ST) | Columns can be expanded through the backplane or isolated by relays | Relay actuation time of 0.5ms. Columns can be expanded through the backplane or isolated by relays | Banks can be connected together via bank configuration relays to create a single 4×112 or dual 4×56 matrix. Analog backplane relays also included for card to card expansion. Row expansion with 3732-ST-R accessory to create a dual 8×28 or single 16×28 matrix. | 32 general purpose independent channels. | All-in-one card design. 40 bidirectional I/O. Four 32-bit counter/totalizers. 2 programmable analog (V or I) outputs. |

DMM Comparison Table

| MODEL | BASIC PERFORMANCE | | | | | |
|---------------------------------|--------------------------------|------------------------------|------------------------------|-------------------------------------------|-------------------------------------------|------------------------------|
| | DMM4020 | 2110 | 2100 | DMM4040 | DMM4050 | 2000 |
| Display | VFD, 2 line | LCD 2 line | VFD 2 line | VFD, dot matrix | VFD, dot matrix | VFD |
| Digits | 5½ | 5½ | 6½ | 6½ | 6½ | 6½ |
| No. Measurement Channels | 1 | 1 | 1 | 1 | 1 | 10 |
| DC VOLTS | | | | | | |
| Measurement Range | 1 µV–1000 V | 1 µV–1000 V | 0.1 µV–1000 V | 100 nV–1000 V | 100 nV–1000 V | 100 nV–1000 V |
| Basic Accuracy | 0.015% | 0.012% | 0.0038% | 0.0035% | 0.0024% | 0.003% |
| Ratio | | | ✓ | ✓ | ✓ | |
| DC Peak Spikes | | | | | | |
| AC VOLTS (TRMS) | | | | | | |
| Measurement Range | 1 µV–750 V | 1 µV–750 V | 0.1 µV–750 V | 100 nV–1000 V | 100 nV–1000 V | 100 nV–750 V |
| Basic Accuracy | 0.2% | 0.12% | 0.08% | 0.12% | 0.12% | 0.05% |
| Bandwidth | 20 Hz–100 kHz | 10 Hz–300 kHz | 3 Hz–300 kHz | 3 Hz–300 kHz | 3 Hz–300 kHz | 3 Hz–300 kHz |
| dB, dBm | ✓ | | ✓ | ✓ | ✓ | ✓ |
| Frequency, Period | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| OHMS (2/4 WIRE) | | | | | | |
| Measurement Range | 1 mΩ–100 MΩ | 1 mΩ–100 MΩ | 100 µΩ–100 MΩ | 10 µΩ–1 GΩ | 10 µΩ–1 GΩ | 100 µΩ–120 MΩ |
| Basic Accuracy | 0.02% | 0.02% | 0.015% | 0.01% | 0.01% | 0.008% |
| Continuity Test | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Diode Test | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Offset Compensation | | | | | | |
| Dry Circuit | | | | | | |
| DC AMPS | | | | | | |
| Measurement Range | 1 nA–10 A | 0.1 µA–10 A | 10 nA–3 A | 100 pA–10 A | 100 pA–10 A | 10 nA–3 A |
| Basic Accuracy | 0.02% | 0.15% | 0.055% | 0.05% | 0.05% | 0.03% |
| In Circuit Current | | | | | | |
| AC AMPS (TRMS) | | | | | | |
| Measurement Range | 0.1 µA–10 A | 10 µA–10 A | 1 µA–3 A | 100 pA–10 A | 100 pA–10 A | 1 µA–3 A |
| Basic Accuracy | 0.3% | 0.3% | 0.15% | 0.1% | 0.1% | 0.1% |
| Bandwidth | 20 Hz–2 kHz | 10 Hz–5 kHz | 3 Hz–5 kHz | 3 Hz–10 kHz | 3 Hz–10 kHz | 3 Hz–5 kHz |
| OTHER MEASUREMENTS | | | | | | |
| Capacitance | | | | | 1 pF–100 µF | |
| Temperature Measurement | | TC, RTD, Thermistor | RTD | | TC | TC |
| GENERAL FEATURES | | | | | | |
| Interface | RS-232, USB with adapter cable | USB, GPIB (opt.) | USB | LAN, GPIB, RS-232, USB with adapter cable | LAN, GPIB, RS-232, USB with adapter cable | GPIB, RS-232 |
| Reading Hold | ✓ | ✓ | ✓ | | | ✓ |
| Digital I/O | | Trigger In Meter Complete | Trigger In Meter Complete | | | Trigger In Meter Complete |
| Reading Memory | | 2000 rdg. | 2000 rdg. | | | 1024 rdg. |
| Maximum Speed | | 50K rdg/s | 2000 rdg/s | | | 2000 rdg/s |
| Other | Dual Measurement Display | | | | Dual Measurement Display | |

To learn more about our basic performance, high speed, and high accuracy digital multimeters, visit www.tek.com/digital-multimeter.
To learn more about our multi-channel measurement digital multimeters, visit www.tek.com/keithley-switching-and-data-acquisition-systems.

| | HIGH SPEED, HIGH ACCURACY | | | HIGH ACCURACY | | | MULTI-CHANNEL MEASUREMENT | | | | | MODEL |
|---------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------------|---------------------------|---------------------------------------|---------------------------------------|---------------------------|---------------------------|--------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------|---------------------------------|
| | DMM6500 | DMM7510 | DMM7512 | 2010 | 2001 | 2002 | 2700 | 2701 | DAQ6510 | 2750 | 3706A | |
| | Touchscreen, 5 in. (12.7 cm) | Touchscreen, 5 in. (12.7 cm) | None | VFD | VFD | VFD | VFD | VFD | Touchscreen, 5 in. (12.7 cm) | VFD | VFD 2 line | Display |
| | 6½ | 7½ | 7½ | 7½ | 7½ | 8½ | 6½ | 6½ | 6½ | 6½ | 7½ | Digits |
| | 10 | 1 | 2 | 10 | 10 | 10 | 80 | 80 | 80 | 200 | 576 | No. Measurement Channels |
| DC VOLTS | | | | | | | | | | | | |
| V | 100 nV–1000 V | 10 nV–1010 V | 10 nV–1010 V | 10 nV–1000 V | 10 nV–1100 V | 1 nV–1100 V | 100 nV–1000 V | 100 nV–1000 V | 100 nV–1000 V | 100 nV–1000 V | 10 nV–300 V | Measurement Range |
| | 0.0025% | 0.0014% | 0.0014% | 0.0024% | 0.0024% | 0.001% | 0.003% | 0.003% | 0.0025% | 0.003% | 0.0025% | Basic Accuracy |
| | ✓ | ✓ | ✓ | ✓ | Option | Option | w/MUX card | w/MUX card | w/MUX card | w/MUX card | | Ratio |
| | | | | | ✓ | ✓ | | | | | | DC Peak Spikes |
| AC VOLTS (TRMS) | | | | | | | | | | | | |
| V | 100 nV–750 V | 100 nV–707 V | | 100 nV–750 V | 100 nV–775 V | 100 nV–775 V | 100 nV–750 V | 100 nV–750 V | 100 nV–750 V | 100 nV–750 V | 100 nV–300 V | Measurement Range |
| | 0.05% | 0.06% | | 0.05% | 0.03% | 0.02% | 0.06% | 0.06% | 0.05% | 0.06% | 0.05% | Basic Accuracy |
| z | 3 Hz–300 kHz | 3 Hz to 300 kHz | | 3 Hz–300 kHz | 1 Hz–2 MHz | 1 Hz–2 MHz | 3 Hz–300 kHz | 3 Hz–300 kHz | 3 Hz–300 kHz | 3 Hz–300 kHz | 3 Hz–300 kHz | Bandwidth |
| | ✓ | ✓ | | ✓ | ✓ | ✓ | | | | | ✓ | dB, dBm |
| | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Frequency, Period |
| OHMS (2/4 WIRE) | | | | | | | | | | | | |
| Ω | 1 μΩ–120 MΩ | 0.1 μΩ–1.2 GΩ | 0.1 μΩ–1.2 GΩ | 1 μΩ–120 MΩ | 1 μΩ–1 GΩ | 100 nΩ–1 GΩ | 100 μΩ–120 MΩ | 100 μΩ–120 MΩ | 1 μΩ–120 MΩ | 1 μΩ–120 MΩ | 100 nΩ–100 MΩ | Measurement Range |
| | 0.0075% | 0.0024% | 0.0024% | 0.0032% | 0.0032% | 0.0007% | 0.008% | 0.008% | 0.0075% | 0.008% | 0.004% | Basic Accuracy |
| | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | Continuity Test |
| | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | Diode Test |
| | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Offset Compensation |
| | | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | ✓ | Dry Circuit |
| DC AMPS | | | | | | | | | | | | |
| | 10 pA–10 A | 1pA–10.1 A | 1 pA–3 A | 1 nA–3 A | 10 pA–2 A | 10 pA–2 A | 10 nA–3 A | 10 nA–3 A | 10 pA–3 A | 10 nA–3 A | 1 pA–3 A | Measurement Range |
| | 0.02% | 0.006% | 0.006% | 0.03% | 0.03% | 0.027% | 0.03% | 0.03% | 0.02% | 0.03% | 0.03% | Basic Accuracy |
| | | | | | ✓ | ✓ | | | | | | In Circuit Current |
| AC AMPS (TRMS) | | | | | | | | | | | | |
| | 100 pA–10 A | 1 nA–10.1 A | | 1 μA–3 A | 100 pA–2 A | 100 pA–2 A | 1 μA–3 A | 1 μA–3 A | 100 pA–3 A | 1 μA–3 A | 1 nA–3 A | Measurement Range |
| | 0.1% | 0.08% | | 0.1% | 0.1% | 0.1% | 0.15% | 0.16% | 0.10% | 0.15% | 0.08% | Basic Accuracy |
| | 3 Hz–10 kHz | 3 Hz to 10 kHz | | 3 Hz–5 kHz | 20 Hz–100 kHz | 20 Hz–100 kHz | 3 Hz–5 kHz | 3 Hz–5 kHz | 3 Hz–10 kHz | 3 Hz–5 kHz | 3 Hz–10 kHz | Bandwidth |
| OTHER MEASUREMENTS | | | | | | | | | | | | |
| | 0.1 pF–100 μF | 0.1 pF–100 μF | | | | | | | 0.1 pF–100 μF | | | Capacitance |
| | TC, RTD, Thermistor | TC, RTD, Thermistor | TC, RTD, Thermistor | TC, RTD | TC, RTD | TC, RTD | TC, RTD, Thermistor | TC, RTD, Thermistor | TC, RTD, Thermistor | TC, RTD, Thermistor | TC, RTD, Thermistor | Temperature Measurement |
| GENERAL FEATURES | | | | | | | | | | | | |
| 2 | LAN/LXI, USB, GPIB (opt.), RS-232 (opt.) | GPIB, USB, LAN/LXI | USB, LAN/LXI | GPIB, RS-232 | GPIB | GPIB | GPIB, RS-232 | LAN, RS-232 | LAN/LXI, USB, GPIB (opt.), RS-232 (opt.) | GPIB, RS-232 | GPIB, LAN/LXI, USB | Interface |
| | | | | ✓ | | | ✓ | ✓ | | | | Reading Hold |
| te | Trigger In Meter Complete | Trigger In Meter Complete 6 General I/O | Trigger In Meter Complete 6 General I/O | Trigger In Meter Complete | Trigger In Meter Complete 1 In, 4 Out | Trigger In Meter Complete 1 In, 4 Out | 2 Trigger In, 5 Limit Out | 2 Trigger In, 5 Limit Out | Trigger In Meter Complete | 2 Trigger In, 5 Limit Out | 14 General I/O | Digital I/O |
| | 7 M rdg. | 27.5 M rdg. | 27.5 M rdg./channel | 1024 rdg. | Opt to 30,000 | Opt to 30,000 | 55,000 rdg. | 450,000 rdg. | 7 M rdg. | 110,000 rdg. | 650,000 rdg. | Reading Memory |
| | 1 M rdg/s (16-bit digitizing) | 1 M rdg/s (18-bit digitizing) | 1 M rdg/s (18-bit digitizing) | 2000 rdg/s | 2000 rdg/s | 2000 r dg/s | 2000 rdg/s | 3500 rdg/s | 1 M rdg/s (16-bit digitizing) | 2500 rdg/s | >14,000 rdg/s | Maximum Speed |
| | Embedded Test Script Processor and optional TSP-Link, 6 Digital I/O with Interface Options, Dual Measurement Display | Embedded Test Script Processor and TSP-LINK | Embedded Test Script Processor and TSP-LINK, 2 Digitizers | | | | | | Embedded Test Script Processor and optional TSP-Link, 6 Digital I/O with Interface Options | | Embedded Test Script Processor and TSP-LINK | |

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