

KANE525

True RMS 1000V Digital Multimeter w/Temperature

INSTRUCTION MANUAL
ENGLISH











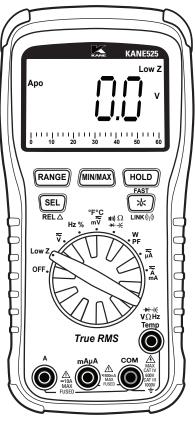


TABLE OF CONTENTS

FUNCTIONS	4
FEATURES	4
GENERAL SPECIFICATIONS	4
IMPORTANT SAFETY WARNINGS	5
OVERVIEW	6 - 7
SYMBOLS	7
CATEGORY DEFINITIONS	7
OPERATING INSTRUCTIONS	
AC/DC Voltage: <1000V AC/DC	8
Resistance: <50MΩ	9
Continuity	9
Diode	10
Capacitance	10
AC/DC Microamps: 6000μA	11
AC/DC Milliamps: 400mA	11
AC/DC Amps: <10A	12
Temperature C°/F°	13
Low Z (Low Impedance) Filter	13
Frequency/Duty Cycle	14
Relative (REL Δ) Mode	14
Wireless Capability	14
Watt (Power Factor)	15
Test Lead Notes	
Battery Replacement	16
CONNECTING AND USING APP	
FCC/IC INFORMATION	19
WARRANTY	20
DISPOSAL	20
CLEANING	20
STODAGE	20

FUNCTIONS

- 1000V AC/DC
- Resistance 50MΩ
- Diode test
- Audible continuity
- 10A AC/DC
- Capacitance 9999μF
- Temperature -328° to 2462°F (-200° to 1350°C)

- Frequency 999.9 kHz
- Microamps
- Milliamps
- Duty cycle 99.0%
- · Relative mode
- Watt (Power factor)
- Low Z

FEATURES

- Auto / Manual ranging
- · Auto power off
- Min/Max
- Hold
- 1 ms Fast response
- Low battery indicator
- · Rubber boot

- Test lead holders
- Kick stand
- · High resolution backlit display
- Bargraph
- Wireless to Free App "525 DMM"
- Auto selection

GENERAL SPECIFICATIONS

- Operating Temperature: 32° to 122°F (0° to 50°C)
- Storage Temperature: -44° to 122°F (-20° to 50°C)
- Operating Humidity: <75% max.
- Operating Altitude: 6561 ft (2000m)Display: 6,000
- Back light: Yes
- Over-range: "OL" is displayed
- **Dimensions**: 7.27 x 3.5 x 2.17
- Item Weight: 18.8 oz
- Calibration: Recommended annually
- CAT Rating: CAT IV 600V/CAT III 1000V
- Certifications: cETLus UL 61010-1:2012 3rd

CE EN 61010-1:2010 3rd, IEC61010-2-033:2012 Ed.1, EN 61326-1:2013 FCC, RoHS Compliant, TOV protection, IP 42. 6' Drop protection

- Battery Type: (AA) 4
- Test Leads: CAT IV Test leads
- Accuracy: ± (% of reading + # of least significant digits)
- · Bar graph: 24 segments

IMPORTANT SAFFTY WARNINGS

⚠ WARNING

Read entire Safety Notes section regarding potential hazard and proper instructions before using this meter. In this manual the word "WARNING" is used to indicate conditions or actions that may pose physical hazards to the user. The word "CAUTION" is used to indicate conditions or actions that may damage this instrument.

↑ WARNING

To ensure safe operation and service of the tester, follow these instructions. Failure to observe these warnings can result in severe injury or death.

⚠ WARNING

- Before each use, verify meter operation by measuring a known voltage or current.
- · Never use the meter on a circuit with voltages that exceed the category based rating of this meter.
- . Do not use this meter during electrical storms or in wet weather.
- Do not use the meter or test leads if they appear damaged.
- Ensure meter leads are fully seated and keep fingers away from the metal probe contact when making
 measurements. Always grip the leads behind the finger guards molded into the probe.
- Do not open the meter to replace batteries while the probes are connected.
- Use caution when working with voltages above 60 DC or 25 AC RMS. Such voltages pose shock hazards.
- To avoid false readings that can lead to electrical shock, replace batteries if a low battery indicator appears.
- · Unless measuring voltage or current, shut off and lockout power before measuring resistance or capacitance.
- Always adhere to national and local safety codes. Use proper personal protective equipment (PPE) to prevent shock and arc blast injury where hazardous live conductors are exposed.
- Always turn off power to a circuit or assembly under test before cutting, unsoldering or breaking the current path.
 Even small amounts of current can be dangerous.
- Always disconnect the live test lead before disconnecting the common test lead from the circuit.
- In the event of electrical shock, ALWAYS bring the victim to the emergency room for evaluation, regardless of victim's apparent recovery. Electrical shock can cause unstable heart rhythms that may need medical attention.
- If any of the following occur during testing, turn off the power source to the circuit being tested: arching, flame, smoke, extreme heat, smell of burning materials or discoloration or melting of components.

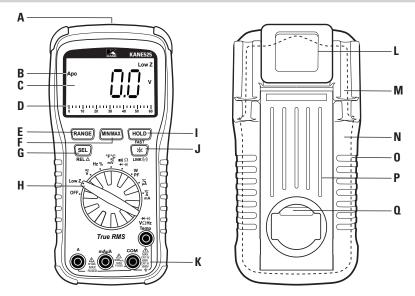
↑ WARNING

Higher voltages and currents require greater awareness of physical safety hazards. Before connecting the test leads; turn off power to the circuit under test, set meter to the desired function and range; connect the test leads to the meter first, then connect to the circuit under test. Reapply power. If an erroneous reading is observed, disconnect power immediately and recheck all settings and connections.

⚠ WARNING

This meter is designed for trade professionals who are familiar with the hazards of their trade. Observe all recommended safety procedures that include proper lockout utilization and use of personal protective equipment that includes safety glasses, gloves and flame resistant clothing.

OVERVIEW



A. Worklight

- B. Apo: Auto power off after 30 minutes of use. Press and hold the HOLD button while turning the meter on to disable Apo.
- C. Digital Backlit Display
- D. Bar graph: 24 segment, displays when in Low Z, Volts AC/DC, mV AC/DC, Ohms, Continuity, Diode, μA AC/DC, mA AC/DC and Amp AC/DC modes.

E. Range Button:

- · Press to change from auto ranging to manual ranging.
- Press repeatedly to select proper range.
- Press and hold to return to auto range (AT will be displayed on screen).

F. Min/Max Button:

- Press to enter MAX/MIN mode.
- In the V, μA, mA or Amps function, either select AC/DC or change to manual ranging before pressing this button to enter MAX/MIN mode.
- Press repeatedly to alternate between Maximum and Minimum readings.
- Press and hold to return to live readings.

G. Select Button:

- Press to select AC or DC or Auto Selection in the following functions: Voltage, µA, mA, Amps,
- Press to select Hz/Duty Cycle, DCmV/ACmV/°F/°C, Ohm/Continuity/Diode check/Capacitance or W/VA/VAr/PF.
- **H. Function Dial:** Turns on meter and is used to select the function.

I. Hold/Fast Button:

- Press to hold the reading on the display. Press again to return to live reading.
- Press to enter Fast MAX/MIN mode in MAX/MIN mode.
- Press again to return to normal MAX/MIN mode.
- J. Back Light/Worklight Button: Press to on back light. Press again to turn off. Press and hold to enable wireless capability. Back light / Worklight duration is 1 minute.

OVERVIEW (CONT.)

- K. Category Max Indicator: Maximum CAT Rating for fused input jacks.
 - Multifunction input port used for measuring: AC or DC volts, AC or DC mV, Temperature, Hertz, Duty Cycle, Watts, Resistance, Continuity, Diode, Capacitance, AC or DC Amps, AC or DC μA, AC or DC mA.
 - · Use CATIV test leads or higher
- L. Recess for magnetic hanger
- M. Test Lead Holders
- N. Protective Rubber Boot
- O. Battery Cover (under protective rubber boot)
- P. Kick Stand
- Q. Serial Number (under kick stand)

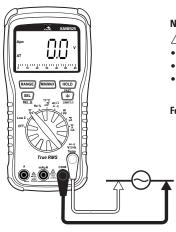
SYMBOLS	S	Υ	N	1B	0	LS
---------	---	---	---	-----------	---	----

Negative	$\overline{}$	AC/DC Voltage or Current	Apo	Auto power off Active
Overload: Range Exceeded	HOLD	Hold/Capture Value	MIN	Minimum measured value displayed
Low Battery	V	Voltage	Α	Amps
Maximum measured value displayed	μΑ	Microamps	mA	Milliamps
Low Z	nF	Nano Farads	Ω	Ohms/Resistance
Microfarad	°F	Degrees Fahrenheit	°C	Degrees Celsius
Diode	mW	MilliWatt	%	Duty cycle
Continuity	<u></u>	Ground	\Box	Fuse
Warning or Caution	VA	Volt-Ampere	VAr	Volt-Ampere reactive
Bar graph	W	Watt	PF	Power Factor
Fast Min/Max	ΚΩ	KiloOhms	A	Dangerous Levels
MegaOhms	Auto	Auto Selection	4	High Voltage Indication
Relative (REL)	AT	Auto-ranging		
	Overload: Range Exceeded Low Battery Maximum measured value displayed Low Z Microfarad Diode Continuity Warning or Caution Bar graph Fast Min/Max MegaOhms	Overload: Range Exceeded Hold Waximum measured value displayed Low Z nF Microfarad °F Diode mW Continuity Warning or Caution VA Bar graph W Fast Min/Max KΩ MegaOhms Auto	Overload: Range Exceeded Hold Hold/Capture Value Low Battery V Voltage Maximum measured value displayed Low Z nF Nano Farads Microfarad °F Degrees Fahrenheit Diode mW MilliWatt Continuity	Overload: Range Exceeded HoLD Hold/Capture Value MIN Low Battery V Voltage A Maximum measured value displayed μA Microamps mA Low Z nF Nano Farads Ω Microfarad °F Degrees Fahrenheit °C Diode mW MilliWatt % Continuity ↓ Ground ➡ Warning or Caution VA Volt-Ampere VAr Bar graph W Watt PF Fast Min/Max KΩ KiloOhms △ MegaOhms Auto Auto Selection ½

CATEGORY DEFINITIONS

Measurement Category	Short-Circuit (typical) kAª	Location in the building installation
II	< 10	Circuits connected to mains socket outlets and similar points in the MAINS installation
III	< 50	Mains distributions parts of the building
IV	> 50	Source of the mains installation in the building

AC/DC Voltage: <1000V AC/DC



Note: Meter automatically selects AC or DC

⚠ WARNING

- Use CATIV rated Test leads or higher.
- Do not attempt to measure more than 1000V AC/DC.
- Do not exceed 25 volts AC or 60 volts DC RMS at either the common or multifunction input ports as measured from earth ground.

Features: RANGE

(MIN/MAX)

(HOLD)





AC VOLTS

Dongeo	Accuracy		Resolution	Overload		
Ranges	45Hz to 500Hz	500Hz to 5kHz	5kHz to 20kHz	nesolution	Protection	
6.000V			(0.00/ .00)	0.001V		
60.00V	±(0.75% +5 dgts)	±(2.0% +8 dgts)	$\pm (2.0\% + 8 \text{ dgts})$	±(2.0% +20 dgts)	0.01V	1000V
600.0V			Unanacified	0.1V	10000	
1000V	±(0.75% +8 dgts)	±(2.0% +8 dgts)*	Unspecified	1V		

Minimum sensitivity: 0.5V AC (auto selection mode), *Accuracy for 500Hz to1kHz only

DC VOLTS

Ranges	Accuracy	Resolution	Overload Protection
6.000V to 1000V	±(0.2% +5 dgts)	0.001V to 1V	1000V

Minimum sensitivity: 0.5V DC (auto selection mode)

AC MILLIVOLTS

Ranges	Accuracy		Resolution	Overload	
naliyes	45Hz to 500Hz	500Hz to 5kHz	5kHz to 20kHz	nesolution	Protection
600.0mV	±(0.75% +5 dgts)	±(2.0% +8 dgts)	±(2.0% +20 dgts)	0.1mV	600V

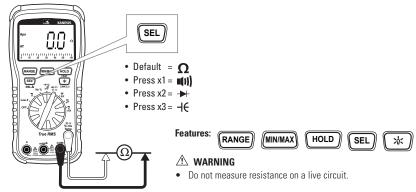
Auto selection mode is not available.

DC MILLIVOLTS

Ranges	Accuracy	Resolution	Overload Protection
600.0mV	±(0.2% +5 dgts)	0.1mV	600V

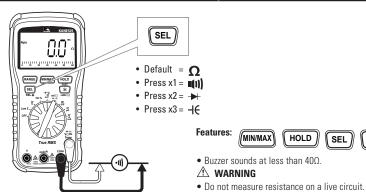
Auto selection mode is not available.

Resistance: <50MΩ



Ranges	Accuracy	Resolution	Overload Protection
600.0Ω		0.1Ω	
6.000kΩ	±(0.3% +5 dgts)	0.001kΩ	
60.00kΩ		0.01kΩ	600V
600.0kΩ	./0.750/ .5 -1>	0.1kΩ	DUUV
6.000ΜΩ	±(0.75% +5 dgts)	0.001ΜΩ	
50.00ΜΩ	±(1.2% + 10 dgts)	0.01ΜΩ	

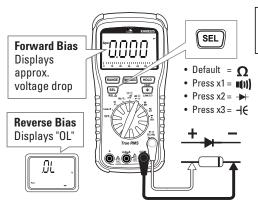
Continuity

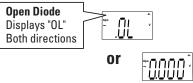


Open Circuit Voltage	Audible Threshold	Overload Protection
Approx.: <1.0V	Approx.: 40Ω	600V



BAD DIODE





'0' Both directions (shorted)

- Forward voltage drop if forward biased.
- "OL" if reverse biased.

Features: MIN/MAX



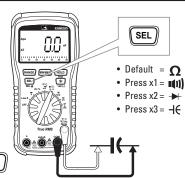






Open Circuit Voltage	Overload Protection
Approx.: <3.0V DC	600V

Capacitance



Features:

RANGE

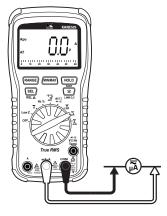
MIN/MAX

HOLD

(SEL)

Ranges	Accuracy	Resolution	Overload Protection
10.00nF	./2.00/ .E.data\	0.01nF	
100.0nF	±(2.0% +5 dgts)	0.1nF	
1.000μF		0.001µF	600V
10.00μF	±(2.5% +5 dgts)	0.01μF	0000
100.0μF		0.1μF	
9999µF	±(3.0% +5 dgts)	1μF	

AC/DC Milliamps: 400mA





Keep hands below guard when measuring current levels.

Features:

(RANGE) (M

MIN/MAX

HOLD



ΑСμΑ

Danges	Accuracy		Burden Voltage	Resolution	Overload Protection
Ranges	45Hz to 500Hz	500Hz to 5kHz	buruen voltage	nesolution	Overioau Protection
600.0μΑ	./1 00/ .E data)	./1 E0/ .10 data	100\//A	0.1μΑ	600mA /1000V Fast
6000μΑ	±(1.0% +5 ugts)	±(1.5% +10 dgts) 100μV/μ	100μV/μΑ	1μΑ	Fuse

Minimum sensitivity: 50µA AC (auto selection mode only)

$\text{DC}\mu\text{A}$

Ranges	Accuracy	Burden Voltage	Resolution	Overload Protection
600.0μA	±(0.8% +5 dgts)	100\// A	0.1μΑ	600mA /1000V Fast
6000μΑ	±(0.0 /0 +5 ugts)	100μV/μΑ	1μΑ	Fuse

Minimum sensitivity: $50\mu A$ DC (auto selection mode only)

ACmA

Ranges	Accuracy		Burden Voltage	Resolution	Overload Protection
naliyes	45Hz to 500Hz	500Hz to 5kHz	buruen voitage	nesolution	Overioau Fiolection
60.00mA	./1.00/ . E.data)	±(1.5% +10 dgts)	2mV/mA	0.01mA	600mA /1000V Fast
400.0mA	±(1.0/0 +5 ugts)	±(1.5 /0 +10 dgts)	ZIIIV/IIIA	0.1mA	Fuse

Minimum sensitivity: 5mA AC (auto selection mode only)

DCmA

Ranges	Accuracy	Burden Voltage	Resolution	Overload Protection
60.00mA	±(0.8% +5 dgts)	2mV/mA	0.01mA	600mA /1000V Fast Fuse
400.0mA			0.1mV	

Minimum sensitivity: 5mA DC (auto selection mode only)

AC/DC Amps: <10A



⚠ WARNING

Keep hands below guard when measuring current levels.

• Do not attempt to measure more than 10A AC.

Features: RANGE MIN/MAX HOLD

AC A

Dannes	Accuracy		Burden Voltage	Resolution	Overload Protection
Ranges	45Hz to 500Hz	500Hz to 5kHz	Burden voltage	nesolution	Overioau Protection
6.000A	. (1.20/ . E.data)	±(2.0% + 10 dgts)	0.02V/A	0.001A	11A/1000V Fast fuse
10.00A	±(1.2% +5 dgts)	±(2.0% + 10 ugts)	0.02V/A	0.01A	TTA/TUUUV Fast Tuse

Minimum sensitivity: 500mA (auto selection mode only)

⚠ CAUTION: 20A overload for 30 seconds max.

DC A

Ranges	Accuracy	Burden Voltage	Resolution	Overload Protection
6.000A	./1.00/ . 5 -	0.02V/A	0.001A	11A/1000V Fast fuse
10.00A	±(1.0% +5 dgts)		0.01A	

Minimum sensitivity: 500mA (auto selection mode only)

⚠ CAUTION: 20A overload for 30 seconds max.

Temperature C°/F°



- Press $x1 = m\widetilde{V}$
- Press x2 = °F
- Press x3 = °C



• Press Select button to change scale between Fahrenheit and Celsius.

Features:









°F

Ranges	Accuracy	Resolution	Overload Protection
-328° to 999°F	±(1.5% + 3.6°F)	0.1°F	600V
1000° to 2462°F	±(1.5% + 3.0°F)	1°F	

°C

Ranges	Accuracy	Resolution	Overload Protection
-200° to 999°C	±(1.5% + 2.0°C)	0.1°C	600/
1000° to 1350°C	±(1.5% + 2.0°C)	1°C	600V

Low Z (Low Impedance) Filter



⚠ WARNING

- Use CATIV rated Test leads or higher.
- Do not attempt to measure more than 600V AC/DC

Features:

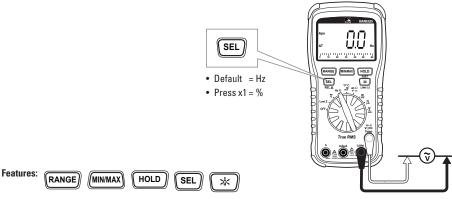






Pangos	Accuracy		Pacalution	
Ranges	DC, 45Hz to 500Hz	500Hz to 1Hz	nesolution	
600.0V	±(2.0% +8 dgts)	±(4.0% +8 dgts)	0.1V	

Frequency/Duty Cycle



Frequency

Ranges	Accuracy	Resolution	Overload Protection
99.99Hz to 999.9kHz	±(0.05% +3 dgts)	0.01Hz to 0.1kHz	600V

Duty Cycle

Ranges	Accuracy	Overload Protection
1.0% to 99.0%	±(0.1% +3 dgts + 0.2% per kHz)	600V

Relative (REL Δ) Mode

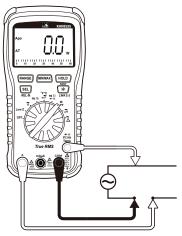
The meter will store a measurement reading (the delta) and resets display to zero. It sets a relative reference point to measure against the measurement reading.

Wireless Capability

Press and hold the **Back light button** (**) to enable the wireless capability.

Watt (Power Factor)

Measurement of Active, Apparent and Reactive Power; W,VA, VAr



The current path be measured directly (up to 10A maximum; up to 16A briefly for a maximum of 30 seconds) or with the help of current transformers or current clamp transformers. The meter automatically selects the range which allows for the highest possible resolution of the applied quantities.

NOTE:

If the meter activates a measuring range which is too high during automatic measuring range selection, this may be due to peak value monitoring. Check the crest factor of the respective signal in Volts AC or DC or Amps AC or DC.

Significance of the Power Factor:

- ±1: no phase shifting -(0 to 0.99): capacitive; +(0 to 0.99) inductive
- First disconnect supply power from the measured circuit or the power consumer, and discharge any capacitors.
- Set the rotary function dial to W/PF.
- You can switch the display back and forth between active, reactive and apparent power with the Select button (including power factor).
- The extreme values can be displayed by pressing the MIN/MAX button.

⚠ **WARNING** Keep hands below guard when measuring current levels.

• Do not attempt to measure more than 10A AC.

Features:









ACTIVE POWER

Ranges	Accuracy	Resolution	Overload Protection
5000mW to 5.000kW	±(1.5% +5 dgts)	1mW to 0.001kW	- 1000V
10.00kW	±(2.0% +8 dgts)	0.01kW	

APPARENT POWER

Ranges	Accuracy	Resolution	Overload Protection
5000mVA to 5.000kVA	±(1.2% +5 dgts)	1mVA to 0.001kVA	- 1000V
10.00kVA	±(1.5% +8 dgts)	0.01kVA	

REACTIVE POWER

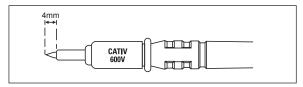
Ranges	Accuracy	Resolution	Overload Protection
5000mVAR to 5.000kVAR	±(1.5% +5 dgts)	1mVAR to 0.001kVAR	- 1000V
10.00kVAR	±(2.0% +8 dgts)	0.01kVAR	

POWER FACTOR

Ranges	Accuracy	Resolution	Overload Protection
0.05 to 1.00	±(1.5% +5 dgts)	0.01	1000V

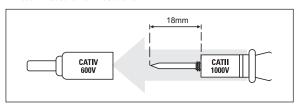
Test Lead Notes

CATV 600V Measurement Locations



Ensure the test lead shield is pressed firmly in place. Failure to use the CATIV shield increases arc-flash risk.

CATII 1000V Measurement Locations

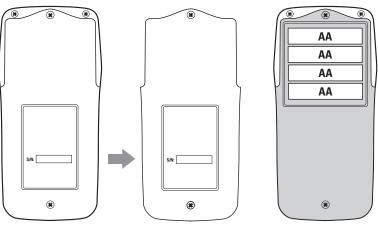


 CAT IV shields may be removed for CAT II locations. This will allow testing on recessed conductors such as standard wall outlets. Take care not to lose the shields.

MARNING: Test lead category protections apply only to test leads and should not be confused with the meter's specific CAT rating. Observe the maximum category protection indicated on the meter the test leads are plugged into.

Battery Replacement

· When the batteries are too low for safe operation, the Low Battery indicator will display.



CONNECTING AND USING THE APP

- · Search for App as, "525 DMM".
- Compatible with iPhone 4X and up running iOS7 or higher, Galaxy S4, Nexus5, HTC One running Android 4.4 or higher.
- To install ot search on iPad use "iPhone only" to find App.
- · Press and hold "LINK" button on the meter to activate wireless "BT".
- Open App. Meter will connect automatically.

Menu

• Press " MENU " to connect, disconnect, and access settings.



Settings

General settings adjust button sound, vibrate and refresh rate.

Recording settings

- · Continuous reading
- Number of samples
- · Sampling interval



Record

- Press " **RECORD** " to start, stop.
- The number of samples will show in real time.





Logs

- Press " Logs " to view recorded data.
- · Press the entry you wish to view (yyyy-mm-dd hh:mm:ss).
- Functions are noted underneath respectively AMP-AMP (TOP-BOTTOM) Display.
- Press " summary " button for summary.
- Press " button for sample data.

 " button for sample data."
- Press " | " button to export data via email in .csv, .png or .jpg format.







Graph

Press " GRAPH " to view trending data in real time during measurement.



FCC/IC INFORMATION

NOTE: This device complies with Part 15 of the FCC Rules and CAN ICES-3(A).

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operations.

INFORMATION TO THE USER

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to w hich the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

MARNING Any changes or modifications not expressly approved by the manufacturer, could void the user's authority to operate equipment.

WARRANTY

The KANE525 is warranted to be free from defects in materials and workmanship for a period of 1 year from the date of purchase. If within the warranty period your instrument should become inoperative from such defects, the unit will be repaired or replaced at UEi's option. This warranty covers normal use and does not cover damage which occurs in shipment or failure which results from alteration, tampering, accident, misuse, abuse, neglect or improper maintenance. Batteries and consequential damage resulting from failed batteries are not covered by warranty.

Any implied warranties, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the express warranty. UEi shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim or claims for such damage, expenses or economic loss.

A purchase receipt or other proof of original purchase date will be required before warranty repairs will be rendered. Instruments out of warranty will be repaired (when repairable) for a service charge

For more information on warranty and service, contact:

www.kanetest.com • email: sales@kanetest.com

This warranty gives you specific legal rights. You may also have other rights, which vary from state to state.

DISPOSAL



⚠ CAUTION: This symbol indicates that equipment and its accessories shall be subject to separate collection and correct disposal.

CLEANING

Periodically clean your meters' case using a damp cloth. DO NOT use abrasive, flammable liquids, cleaning solvents, or strong detergents as they may damage the finish, impair safety, or affect the reliability of the structural components.

STORAGE

Remove the batteries when instrument is not in use for a prolonged period of time. Do not expose to high temperatures or humidity. After a period of storage in extreme conditions exceeding the limits mentioned in the General Specifications section, allow the instrument to return to normal operating conditions before using it.