

200 hours + Video recording Playback test and calibration data with echoes, gate movements, DAC, TCG, DGS details in the instrument and **Convert to mp4** for easy transmission by email or Whatsapp Generate 2 page pdf report with ease!

Ultrasonic Flaw Detectors K7, K8, K8LTD, K9 & K1,9







RF Wave



Angle beam plot

Echo store

- State-of-the art gate movements
- Dynamic 14 point DAC & TCG, DGS
- Shaded Leg and details
- Curvature Correction, display lock
- AWS D1.1 Weld evaluation
- dB to DAC, eRef, max amp readout 110%
- Built in scientific calculator
- High penetrative power, low noise
- Two point Auto calibration

• Rapid save, reporting, video recording and playback

- Create 2 page pdf report during mp4 conversion
- Light weight, rugged design, easy to carry around
- Oil & grease friendly 7 and 9 inch touchscreen display
- Pulse width control for better near surface resolution
- Set or measure amplitude to xx.0 or xx.1% Use bare finger, gloves or stylus to work on touchscreen
 - 18-27 hours + Li-ion phosphate (LiFePO4) battery.
 - 16GB internal memory, save unlimited settings and files
 - Full PC & VGA connectivity *, convert files to mp4
 - Fully designed, developed and made in India







- 2 Energy Steps.
- Second step offers higher energy for testing of coarse grained materials.
- Figure shows the 7th BWE (Red Gate) from the perspex insert on V1 block at 77.31dB and 9th at 18% amplitude and noise below 10% (unfiltered signals, with reject turned off)
- 2 gates for measurement and flaw detection.



• State-of-the art gate movements. Gate 1 provides: (1) Amplitude (2) beam path (3) Surface distance (4) depth (5) Echo to echo distance, (6) Echo ref (7) dB to DAC (8) ERS (9) RD (10) SDC (11) Leg (12) reflector location in beam plot (13) Beam Path background highlighter (14) AWS D value

• Second gate can be used independently to measure beam path and amplitude or if used with the 1st gate, a buzzer or flashing colour can be activated to monitor amplitude drop or presence of flaw echo.



- RF Wave and video display
- Offset control for sweep positioning.
- Echo fill and envelope options
- 18-27 hours of Li-ion battery for continuous use. LED for charge status & battery % on display
- 16 GB internal memory for unlimited saving of test files.
- Files may be reviewed in the instrument or transferred to a computer for reporting.

- Scientific calculator for use in ultrasonic testing with direct conversion from inch to mm.
- Metric and inch unit selection.
- No protruding knobs or buttons.
- State-of-the art touchscreen display for convenience.
- Battery status, Temperature, Time, Date







- A and B Scan display.
- 7 display colour combinations for echo, gates and controls
- Selectable PRF (50,100Hz and 1KHz) useful for contact, immersion or semiautomated test applications.
- Calibrate range with single echo and velocity or use 2 point Auto calibration for narrow tolerance measurements. Measure thickness as low as 1mm with Normal beam probe and E2E control or use TR probes.
- Bright enough to see in any light conditions and option to invert and echo fill for viewing if needed

- Beam Plot function to help interpret location of a reflector with ease in angle beam examinations.
- Leg info is provided when a signal is gated.
- As the gate is placed on a signal, background shade changes to gray to help identify the leg.
- Enter test angle and thickness for depth to discontinuity and surface distance
- Curvature correction feature provides corrected surface distance and depth when curved products are examined.





- Change of colour on the last control used.
- VGA connectivity for large displays. Ideal for training of personnel in a classroom and very useful when you need to display the UFD display to a group of witnessing inspectors
- Save unlimited calibration settings with file names and date as required
- Recall settings with ease
- Dedicated Lock button to lock the display



- Low thickness measurement ability using Normal beam transducer and Echo to Echo (E2E) control
- 1mm thickness being displayed in E2E mode using a Normal beam transducer of 4 MHz & 10mm diameter in a calibrated range of 50mm.







- Detection of 5/64" (1.98mm) FBH at a depth of 12.7mm with a 4MHz,10mm dia Normal beam transducer.
- Use 2nd gate to measure Beam path (B2) and Amplitude (A2) for another echo

• Detection of 1/64" (0.39mm) FBH with a 4MHz, 10mm dia Normal beam transducer.







- Dual transducer for thickness checks.
- 1mm thickness being displayed using a dual transducer of 4 MHz & 10mm diameter in a calibrated range of 25mm.



• Detection of 5/64" (1.98mm) FBH with a 4MHz,10mm dia dual transducer.





• Detection of 1.5mm dia SDH at 1.2mm depth with a 4MHz,10mm dia dual transducer.







- AWS D1.1 Weld evaluation made easy. Just set 1.5mm dia SDH on V1 to 40% FSH & enter AWS for evaluations.
- Change amplitude as required
- Save settings in instrument and recall for work
- Print test result with AWS details or record a video of test

• Detection of 1.5mm SDH at 15mm depth on V1 block with a 4MHz,8x9mm, 45 degree angle beam transducer.





• Detection of 4/64" (1.58mm) FBH with a 4MHz,8x9mm, 45 degree angle beam transducer. Measurement shown with DGS

I (appaWave)

- Dynamic DGS curves
- Enter probe frequency, diameter, FBH size for calibration. Change amplitude or range as desired.
- Curves of -6, -12, +6 & +12dB by default
- ERS value is displayed when a signal is gated.
- Save settings & save test result with curves for your reports
- Construct DGS curves using reference FBH or back wall echo





- Construct 14 point Dynamic DAC or TCG with -6, 12 & +6, 12 dB curves. Static DAC also available
- Set or measure amplitude to xx.0% or xx.1%
- Save unlimited calibration files either as calibration files or as video that may be converted and transmitted to customers as Mp4 files

 Detection of 2mm dia SDH in a pipe section of 24 inch dia, 18mm thickness with curvature correction engaged. 4MHz,8x9mm, 70 degree angle beam transducer. RD & SDC are the corrected depth and surface distance respectively.





Logo, Name and address of your company	Logo, Name and address of your company				
ULTRASONIC TESTING REPORT	Field calibration re-checked by: N/A				
nt: M/s NDTTech Kottayam	Date & time: N/A				
ject: For their upcoming work	Reported amplitude of indication in % FSH: N/A				
ation: Pallom	Reported an	nplitude of indication in % DAC	Ref: N/A		
bort No: 60	Indication lo	cation from: N/A, Length: N/A,	. Height: N/A		
ld ID: N/A. Thickness: 25. Class: N/A					
Iding process: N/A		File from machine		Drawing	
ntractor: N/A	d8: 33.53	Amp: 22.0 Beam Path: 76.8 S.D	st: 7	- Gmi	
t object: Rolled component, Diameter: N/A	Depth: ? ERS: 1.18	V: 5920 Rmm: 125.0 DD: 0.0 Angle: 0 Thickness: 0.0 DS: 3.1	PD: 0.71 Scan	surface +	
wing no: N/A	AWA: 38.7 A2: 13.5	AWB: 11.5 AWC: 4.0 AWD: 2 82: -2.1 ERef: 46.6 dB2D: 4	3.1	A # 150	
t material: CS, Identification no: N/A	Leg: 0 E2E: 0.0	Reject: 0.0 Pulse: 9 Energy: ODIA: 0.0 RD: -7.8 SDC: 0.	1 *	/// <u>*</u>	
bort date: 23-02-2023	23/02/23	08:53:13 v60.kap	3mm dia 50H used for DAC	t 2mm die SDH being disipleyed	
at no: N/A	100 -			MID) DWE	
face condition: As ground	80	XXX		Photo	
ge of test: After heat treatment	60			and a second	
t Procedure/Specification: ASTM E 164	40-				
hnique: Pulse Echo	20-	4		Los	
le: N/A	0	2 4 6	8 10	COLORA DE C	
freq.: 4MHz, Dia: 10, Sensitivity:7.51dB, NB Acceptance criteria: Reject if > DAC curve				- Marth	
freq.: N/A, Dia: N/A Sensitivity: N/A, TR Acceptance criteria: N/A	Remarks				
freq.: 4MHz, Angle: 45 Size: 8x9mm, Scanning Sensitivity: N/A, Transfer correction: N/A	This report i video record	s prepared to demonstrate th ed and played in the machin	e ability to automatically g e.You can print and place	enerate a pdf report from vour signature or use d	
freq.: N/A, Angle: N/A, Size: N/A, Scanning Sensitivity: N/A, Transfer correction: N/A	signature. A	I above fields in the report n	nay be added by the user	as required. The screen	
freq.: N/A, Angle: N/A, Size: N/A, Scanning Sensitivity: N/A, Transfer correction: N/A	pool of phot	tos in our PC. In real life, y	ou may add your own d	rawings and photos for	
Acceptance criteria: N/A	reports.Video	o 54 shows the step by step D/	AC construction performed of	during the demonstration.	
iplant: Vaseline					
D make: KappaWave, Model: K9 Serial: 01121863, Calibration validity: xxxxx	1	Test Engineer	Client Engineer	Witnessed by	
d calibration date & Time: 15-02-2023 11:30 Hours	Signature				
ibration blocks: V2, Block material: CS	Date				
L'appallaure	Date:23/2/20	23		L'(annaWay	

• Save test results in one click.

I (appaWave)

- Transfer files to PC using the interface software for report generation
- Video files may be replayed in the instrument or transferred to PC for play, analysis or conversion to other format.
- Ability to record and evaluate each step in range and sensitivity calibration and test result.
- Easy recording and playback. Record over 200 hours of video
- Files saved in the instrument remains protected from being modified or manipulated in the instrument.
- Video conversion to MP4 and Reporting feature available only for models K8LTD, K9 and K1.9.
- Video playback in machine is available in models K8, K8LTD, K9 and K1.9.

- Create a 2 page pdf report with required details during video conversion to mp4 in PC
- Edit or create instantaneously a 2 page pdf report from the video downloaded in the PC
- Reports may be customised with your company's logo, info, drawings, photographs etc.
- Software for video conversion to Mp4 and reporting provided for models K8LTD, K9 & K1.9
- Files from instrument is traceable with a unique ID of year, month, date and time.
- Save unlimited calibration and test files
- Short learning time. Very easy to record video clips of short duration for transmission in E mail or WhatsApp.

I (appaWave)



Model K 1.9

- 22.8CM (9 inch) super sensitive touchscreen display
- 27 hours of battery for continuous work
- 16-32GB internal memory,

A and B scan display, RF Wave, Video recording, full PC connectivity for file transfer and video conversion.

- Higher visibility. 7 colour combinations for display. VGA connectivity.
- Versatile instrument. Offers all other features of K9.
- Ideal when large display in a portable unit is desired
- Instrument offers added security when a customer needs to verify the reports with original test file.
- Easy to carry around







- Port for VGA and PC connectivity. Extend the display to external monitors or projectors.
- Ideal for production monitoring and training classes.
- Change of colour on the menu indicates the last action performed. Play recorded video files on to a large screen using a projector
- Instrument designed and manufactured in India to meet ASTM E 317, IS 12666, BS 4331-II
- Hold in one hand and use left thumb to change amplitude during work

- Lock the display during work
- Fast, responsive menu buttons and menu page indicators
- Reference blocks, accessories and Transducers with frequencies from 1 to 10MHz in different sizes are available.
- An android application for mobile users are available that provides step by step instructional videos on how to use the features of the instrument.





- Supplied in a robust custom made carry case with space for accessories.
- Specially made back pack (optional accessory) to carry the UFD for daily work also available.
- Satisfied customers

Technical Specifications for KAPPA	WAVE Ultra	asonic	Flaw Det	ectors	
Trat Danna - OF was to Carlo start	K7	K8	K8LTD	K9	K1.9
Test Kange : 20mm to om in steel Velecity : Selectable in m/cec, 1000, 8000 m/cec	•	•	•	•	•
Unit · Selectable: mm or inches for range	•	•	•	•	•
Delay : $0-2812 \mu$ sec (6m)	•	•	•	•	•
Zero offset : 0-1000 μ sec	•	•	•	•	•
Range : Selectable with velocity & thickness	•	•	•	•	•
Range calibration : Single echo with velocity or 2 point Auto calibration	•	•	•	•	•
Screen : Touch screen17.7cm (7") TFT	•	•	•	•	22.8cm (9") TFT
Resolution : 800 (RGB) \times 480	•	٠	•	•	•
Active area : (W)154 $ imes$ (H)85 mm	•	•	•	•	(W)200x(H)111.4mm
Last action : Identify by colour of menu button	•	٠	٠	٠	•
Cancel function : Next & Previous key	•	•	•	•	•
A scan display area : (WJ 12/mm × (HJ 63mm Display membry 400 divisions (Useisentel) 5 divisions (Verticel)	•	•	•	•	(WJ162x(HJ82
Display marks : 100 divisions (Horizontal) 5 divisions (Vertical)	•	•	•	•	•
Neasurement : Gate & display marks for distance and amplitude Dulcon : Negative spike	•	•	•	•	•
Pulser . Neyduve spike Dulse width : Lloer variable	•	•	•	•	•
DRE Selectable: 50Hz 100Hz 1 KHz	•	•	•	•	•
Amplitude : Set or Measure in xx o% or xx 1%	•	•	•	•	•
Damping : Selectable, 1K, 120E	•	•	•	•	•
Frequency : 1-20MHz	•	•	•	•	•
Cross talk attenuation for TR : 78 dB with 4MHz probe	•	•	•	•	•
Gain : O to 96dB	•	•	•	•	•
Gain increment : 0.03, 0.2, 1, 2, 6, 12dB	•	•	•	•	•
Rectification : RF, Positive half wave		•	•	•	•
Reject : Selectable: 0-44%FSH. Does not lower echo amplitude	•	٠	•	•	•
Modes : Pulse echo, through transmission or dual	•	•	•	٠	•
Signal Amplitude display : 0-100% FSH	•	٠	•	•	•
Signal amplitude measurement: max 110% FSH	•	•	•	٠	•
Horizontal Non linearity : < 1% FSW	•	•	•	•	•
Vertical Non linearity : < 3% FSH	•	•	•	•	•
Measurement gates : Selectable: 2 independent gates	•	•	•	•	•
ECRO MEASUREMENT : Flank Cate start : Salastable even entire dianlaved range	•	•	•	•	•
Cate width : Selectable from gate start to and of displayed range	•	•	•	•	•
Gate colour : User variable	•	•	•	•	•
Gate beight : Selectable from 5% to 100% FSH	•	•	•	•	•
Alarms : Selectable Audio. flashing colour	•	•	•	•	•
Echo to echo : Gate 1	•	•	•	•	•
Display locations : Transparent overlay on top of screen & below A scan display	•	•	•	•	•
Gate 1 : Amplitude, beam path, Surface distance, depth, Echo to echo,	*	•	•	•	•
Echo ref*, dB difference, ERS*, RD*, SDC*, Leg, depth in beam plot*,					
Beam Path background highlighter, AWS D value*.					
Gate 2 : Beam path, Amplitude, Alarm	•	•	•	٠	•
Amplitude measurement : Floating maximum amplitude locator on Gate 1	•	•	•	•	•
AWS D1.1 *: Auto calculation of D value		•	•	٠	•
DAC - TCG : Dynamic DAC (changes with gain and range)	DAC only	•	•	•	•
DAC Static	•	•	•	•	•
DAG - IGG Points : Max 14 points	DAC only	•	•	•	•
DAL - ILD OTTSET DETAULT (+6, 12, -6, 12 OB L TOTAL 5 CURVES FOR Ease of sizing)	DAC UNIY	•	•	•	● (\\\))255V(L)157V(D)75
Dimensions (mm) : (W) 212 A (D) 122 A (D) 73 DCS : Dynamic DCS curves with default ± 6 , ± 12 & 6 & 12 dB curves & EDS	•	•	•	•	
DOS . Dynamic DOS cuives with default ± 0 , ± 12 & -0 & -12 dD cuives & LHS DGS curves: Hsing back wall echo		•	•		•
NGS curves: Using reference FRH		•	•	•	•
Weight : 1.75 kg with Li-ion batteries for 18-27 hours	•	•	•	•	2.06Ka
Menu buttons : Fasy to access, page numbers provided	•	•	•	•	● ●
Time, date, temperature, battery status: Provided	•	•	•	•	•
Scientific calculator: Built in calculator for ultrasonic testing with direct	•	•	٠	•	•
mm to inch conversion					
Keypad : Touch entries. Use with finger or stylus, with or without gloves	•	•	•	•	•
Language : English	•	•	٠	•	•
Boot time: 4 seconds	•	•	•	٠	•

Technical Specifications for KAPPAW	AVE Ultrasonic Flaw Detectors				KA 0	
Proto servesting () as Mini Land	K7	K8	K8LTD	K9	K1.9	
Prone connections : 2 nos, ivilni Lemo Draho angle : 0 - 00 degrees	•	•	•	•	•	
Prode angle : 0 - 30 degrees DE wave*:	•	•	•	•	•	
nr wave". Affect control*: For sween nositioning					•	
R Scan : Basic B scan display*				•	•	
Beam Plot *: Cross sectional plot of the test material with		•	•	•	•	
angle beam path for discontinuity location						
Curvature correction* : Corrected depth & surface distance				•	•	
when Angle, thickness & diameter given						
Battery : 3.6V, 23Ah, Lithium-ion Phosphate LiFePO 4, rechargeable	•	•	•	•	3.3V, 24Ah LiFePO4	
Battery life : 18-27 Hours	18	18	18	18	27	
Battery charger : External 220V Ac mains, 50Hz	•	•	•	٠	•	
Charge & temperature indicator : For charge % during use and temperature	•	•	•	•	•	
LED for battery charge status	•	•	•	•	•	
Battery charging max temp and time : 40°C, 3 to 5 hours	•	•	•	٠	8	
Saving of Calibration files : Unlimited calibration settings can be saved	•	•	•	٠	•	
in equipment with name,number and date						
Loading of settings : Selectable from any saved	•	•	•	•	•	
Printing of test files : Unlimited files can be saved (print), these may be	•	•	•	•	•	
transferred to PC for report preparation*, deleted or over written in instrument.			•	٠	•	
Viewing of test (PRINT) files in the instrument	•	•	•	٠	•	
File transfer*: PC connectivity, Reporting software			•	٠	•	
Video Recording of signals*: Continuous recording and playback ability		٠	•	٠	•	
Transfer files: To PC for play, analysis or conversion to other formats		_	•	•	•	
Default max recording time for individual clips: In minutes		5	5	5	5	
Total recording time: in hours		200	200	200	200	
Interface software : For connecting instrument to PC			•	٠	•	
and convert recorded video to mp4 and prepare test reports						
File names : Auto naming with date & time, thus avoids duplicating	•	•	•	•	•	
Echo Display : Fill, envelope	•	•	•	•	•	
Display Lock : Dedicated screen lock & Unlock button		•	•	•	•	
ECHO STORE : lemporary Echo store for comparisons	_		•	•	•	
E2E: Echo to echo measurement using single gate	•	•	•	•	•	
Storage : SU card on board Rate interface : UCR 2.0	•	•	•	•	•	
Data Interlace . Uod 2.0 VCA connector : 1 no for additional dignlay on projector			•	•	•	
Deconding of signals - SD cond 16 CP	•	•	•	•	•	
Recording of Signals . 30 Gara 10 00 Anonation Tomponature : 0° to 50°C	•	•	•	•	•	
Enclosure : Dust and mojeture registrant	•				•	
Drotective cover with handle : Ontional accessory	•	•	•	•	•	
Protective carry case*	*	•	•	•	•	
Detachable support stand	÷	•	•	•	•	
Warranty : 1 Year	•	•	•	•	•	

All specifications are subject to change without prior notice. All rights reserved 2023

Standard suppy with UFD: (1) Protective cover with handle(2) Stylus* (3) Battery charger (4) Carry case*(5) Operation manual in pdf

(6) Interface, video conversion and reporting software for K8LTD, K9 and K1.9 * (7) Calibration certificate *

(8) Kappawave app for Android mobile (9) USB cable for K8LTD, K9 and K1.9*

* not a standard supply with K7

Authorised dealer		



Designed, developed & manufactured by:

KAPPAWAVE

454, Karukancheril Buildings, Kiliroor North P.O., Thiruvarppu, Kottayam 686020, Kerala, India. Tel (sales) : + 91 944 770 5887 For more information: WhatsApp to +91 944 642 6305 E:sales@kappawave.com W:kappawave.com