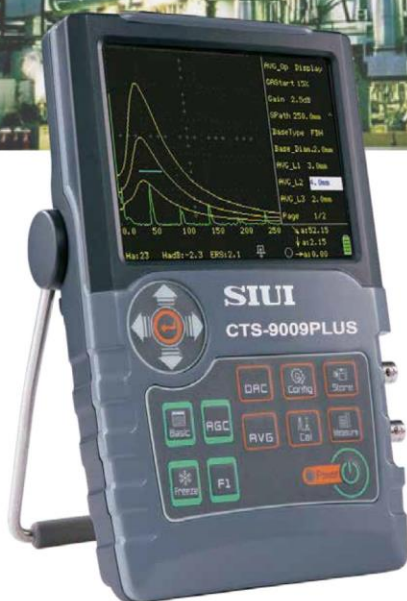
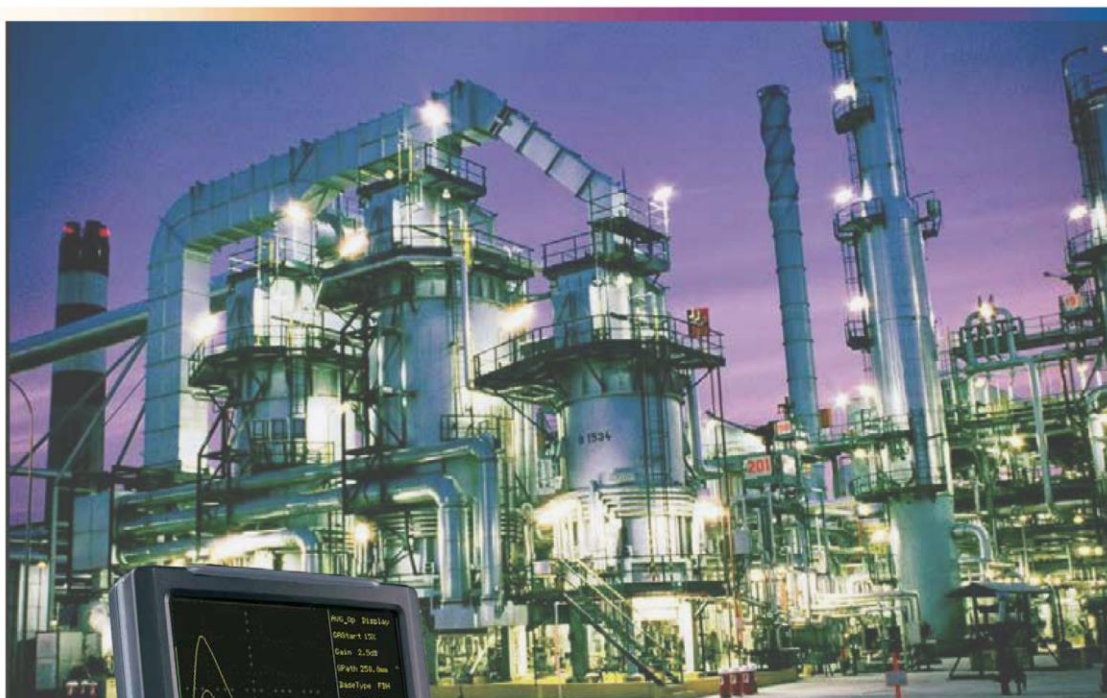


Digital Ultrasonic Flaw Detector

# CTS-9009PLUS



شرکت پتروفهران گستر جنوب



Adjustable Square Wave Pulser

High-resolution Display Screen

VGA Video Output

Portable & Reliable

# SIUI

# DIGINDT.IR

# CTS-9009PLUS

**Portable, Easy-to-Use, Reliable**

**New Generation General-Purpose Digital Flaw Detector**



- ⚙ Adjustable spike & square wave pulser up to 500V
- ⚙ High-resolution display screen with 640x480 pixels
- ⚙ VGA video output
- ⚙ Adjustable damping
- ⚙ Operation Frequency up to 20MHz
- ⚙ High dustproof & waterproof: IP65 (IP67 as option)
- ⚙ Optional functions: Network Projection/ DAC\_JP function/ Auto Freeze/ Spectrum Display/ TCG

## Superior Features

- ⚙ Operating frequency range: 0.5–20MHz, highlighting advantages of high sensitivity and broadband.
- ⚙ Adjustable pulse width square wave transmission is up to 500V.
- ⚙ 80 ~ 2000Hz PRF with 10 steps adjustable: avoid reverberation signals during flaw detection.
- ⚙ The convenient and useful probe spectrum analysis function enables the users to know the probe waveform, spectrum and center frequency, resulting in more precise flaw detection evaluation.
- ⚙ Measure crack height by edge peak echo method.
- ⚙ Max. sampling rate 240MHz; Measurement resolution 0.1mm.
- ⚙ RF (Radio Frequency) echo display: good to thin-wall material measurement, academic research or qualitative analysis.
- ⚙ The DAC curve works with echo compare function, making echo quantification of different distances and amplitudes more convenient.
- ⚙ The AGC (auto gain control) function, together with peak echo and image freeze function, help quickly identify the flaw highest echo, enabling efficient flaw detection.
- ⚙ Advanced thickness measurement function available.
- ⚙ Featured with AWS D1.1/D1.5 and API 5UE evaluation standards.
- ⚙ The gate magnifier function magnifies the echo area within the gate to the whole screen display.
- ⚙ Up to 500 sets of curve and waveform can be saved for various workpieces and flaw detection standards.



### VGA Video Output Function



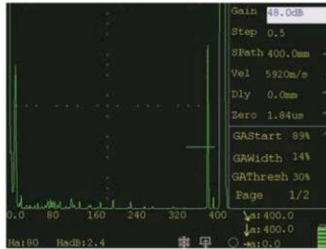
 VGA port for VGA monitor or projector connection

- ⚙ VGA Video Output function makes it easier for you to have a presentation or a flaw detection demonstration.

\*EN-12668-1 compliant

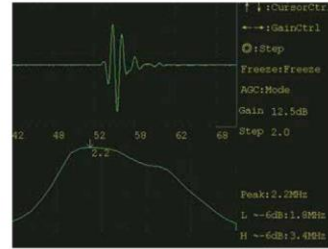
## Superior Features

### Detection on Large Forged Pieces



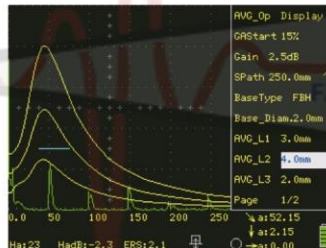
- Adjustable pulse width square wave transmission up to 500V.
- High penetration and large detection range to achieve detection on large forged pieces and coarse crystal material.
- This picture shows an echo from a 400mm 2 flat-bottom forged test block.

### Probe Spectrum Analysis Function



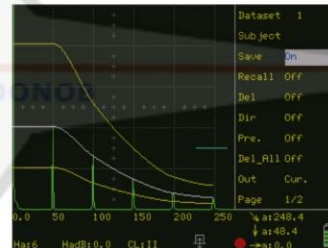
- The probe waveform, spectrum and center frequency of the probe can be measured precisely by capturing echoes.

### AVG/DGS Curve within Three Times of Near Field



- AVG/DGS curve will be auto created by taking a known flat-bottom hole or large flat-bottom echo for reference.

### DAC Curve



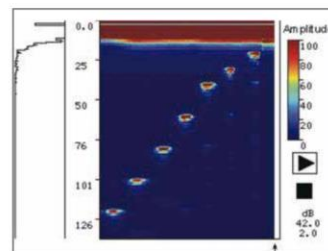
- The DAC curve function brings easier and more convenient flaw evaluation.

### Weld Groove Profile Function



- The weld groove profile function can directly point out the location of the defect.

### B-scan Function



- B scan images can be acquired by amplitude B scan.



The CTS-9009PLUS is designed to increase productivity in various inspection situations. It is suitable for inspection flaw position and size, which can be widely used for various detection demands, such as pipes and tubes, welding seams, pressure vessels and airplane parts.

Application examples are as follows:

### Weld Inspection

**Weld groove profile function**  
**Peak memory function**  
**AVG/DGS curve**  
**Advanced DAC curve**  
**AWS**



### Forgings and Casting Inspection

**Adjustable square wave pulser:** Up to 500V pulse voltage  
**Manual PRF adjustable:** 80–2000Hz with 10 steps adjustable  
**Peak memory function**  
**AVG/DGS curve**

### Thin Plates Inspection

**High operating frequency:** 0.5–20MHz  
**Manual PRF adjustable:** 80–2000Hz with 10 steps adjustable  
**Good near-field resolution**  
**Peak memory function**  
**AVG/DGS curve**



### Rail Inspection

**High PRF:** Up to 2000Hz  
**Lightweight:** The whole unit weight (battery included) is approx. 1.25 kg.  
**Peak memory function**  
**Advanced DAC curve**  
**AVG/DGS curve**

# شرکت پترو فرهان گستر جنوب

Function	Unit	Specifications
<b>Testing Index</b>		
Attenuator Error	dB	Every 12dB ±1dB
Vertical Linearity Error	%	≤3
Dynamic Range	dB	≥30
Horizontal Linearity Error	%	≤0.5
<b>Pulsar</b>		
Transmission		Negative spike or negative square, with adjustable voltage Pulse voltage range: 50V ~ 500V; Square pulse width range: 51~850ns
PRF	Hz	10 steps (80~2000Hz adjustable, but subject to detection range, material velocity, pulse shift, probe zero, transmit parameters, etc.)
Damping	Ω	25 / 75 / 200 / 1000
<b>Receiver</b>		
Operating Frequency Range	MHz	0.5 ~ 20; multiple wide/narrow frequency steps for selection Including: 1~4/ 0.5~10 / 2~20/ 1/ 2.5/ 4/ 5/ 10/ 13/ 15/ 20
Reject	%	0 ~ 80
Gain Adjustment	dB	Range: 0 ~ 110; Adjustable Steps: 0.5 / 2 / 6 / 12
<b>Measurement</b>		
Detection Range	mm	0 ~ 13000 (Longitudinal wave in steel)
Thin Plate Resolution	mm	≤3 (with a C5-10L probe)
Pulse Shift Range	mm	-10 ~ 1000 (Longitudinal wave in steel)
Rectify		Positive/ Negative/ Full/ RF/ Filter
AWS D1.1/ D1.5		Welding level is calculated as per AWS (American Welding Society) steel structural welding code (D1.1) and bridge welding code (D1.5)
API 5UE		A quantitative method for defect depth according to API (American Petroleum Institute).
Curved Surface Correction		For depth and horizontal distance correction when testing circumference with an angle probe.
Crack Height Measure		Crack height calculated with endpoint reflected wave method when using an angle probe.
Thickness Measure		Simple thickness measurement when using a narrow-pulse normal probe.
Auto Gain		Enabling the echo amplitude within the gate auto adjusted to a designated amplitude Amplitude setup: 40% / 50% / 60% / 70% / 80% / 90% / 100%
Angle Measurement		Measure probe angle
<b>Gate</b>		
Gate		There are two measure alarm gates available. Gate mode: off / positive / negative / measurement Gate Start: 0~109% Gate Width: 1~109% Gate Thresh: 10~90%
<b>Optional Software</b>		
Network Projection		Display on the PC software the same image as on the system through network
DAC JP		DAC curve for Japanese standard
Auto Freeze		Auto freeze signals within gate A/B exceeding gate thresh
Spectrum Display		Display signal spectrum within 50mm from gate A initial position.
TCG		Converted from DAC curve, echo amplitude compensated according to DAC curve, which enables artificial reflectors with different sound path but the same size have the same echo amplitude.
<b>General Technical Specification</b>		
Display Screen		5.7" high brightness TFT LCD, 640x480 pixels
Measure Unit		Inch / mm
Peripheral port		USB, Ethernet and VGA ports
Storage		500 data sets, including system setup, detection state, echo figures, etc.
Language		Up to nine kinds of language for selection, including Chinese, English, Japanese, French, Spanish, Russian, German, Portuguese, Polish
Power Supply		Adapter (CD-92A) or Li-ion battery (DC-92); Adapter: AC in 100V~240V; DC out: DC9V~12V Battery: 6.4V ~ 8.4V
Battery Operating Time	h	≥7 (in factory default mode)
Operating Temperature	°C	-10 ~ +40
IP Code		IP65
Weight	kg	Approx. 1.25 (including battery)
Dimension	mm	152 × 240 × 52 (W×H×L)

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