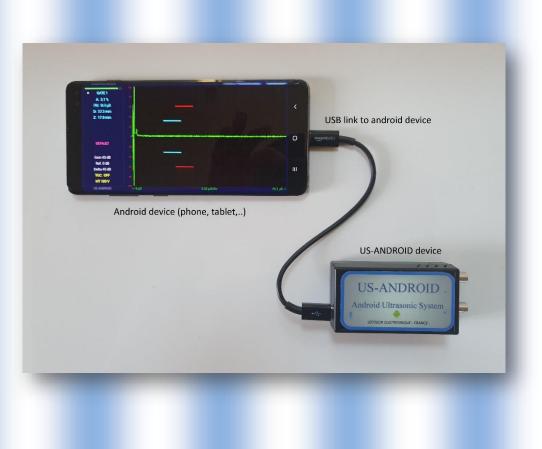




### ULTRASONIC DEVICE US-ANDROID

**On ANDROID systems** 



The US-Smart allows an ultrasonic control using the USB between the couple probe / US Android and your tablet or smartphone.

This device can also allows to realize various kinds of inspections such as welds, rails inspections, composite materials...

#### **General Description**

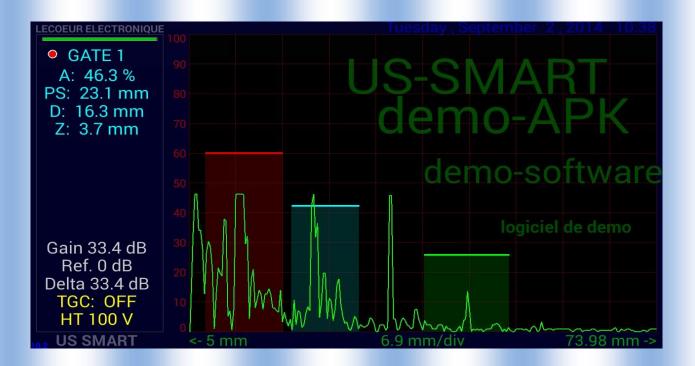
This ultrasonic device is powered supply via USB . His main quality is its small size and its 'ready to use' concept. The US-ANDROID has been created to simplify the NDT controls. The transmitter can generate pulses with a voltage level and a width programmed by the user. A low noise preamplifier combined to a VGA gives a gain range between 0 and 80 dB, a DAC curve is also available. A 12 bits analog digital converter with a sampling frequency of 80 MHz is used to digitize ultrasound signals. The device has 2 working modes : Transmission or Reflection.

#### **Features**

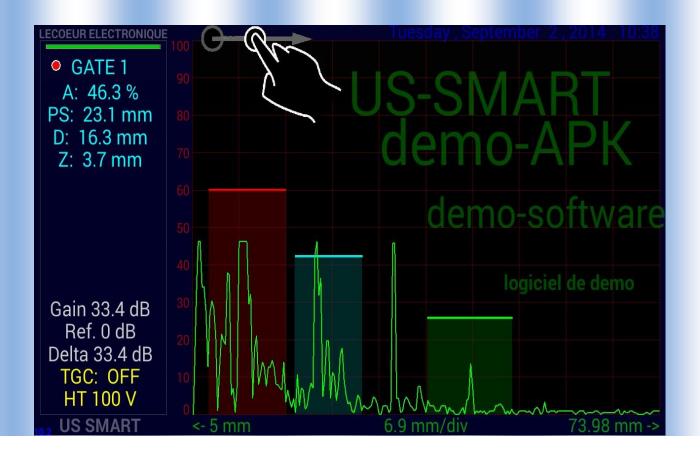
#### USB

Android System Ultralow noise preamplifier :  $0.74 \text{ nV} / \sqrt{\text{Hz}} - 6dB$ bandwidth : 540 KHz to 18MHz High voltage transmitting pulses 50  $\Omega$  load drive Digitizer 12 bits at 80 MSPS Programmable gain : 0 to 80 dB DAC curve

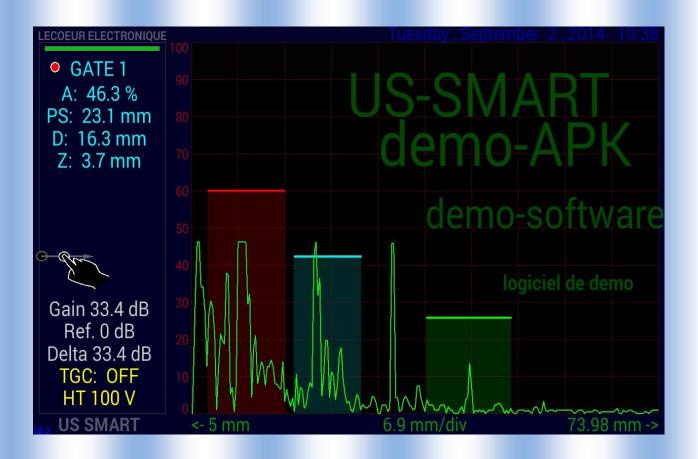
#### Software



To get menu slide your finger from the left to the right On the top of the screen or on the left-bottom part.







• GATE 1	
M.I. GAIN	
M DELAY	
MT- GATES	
ATT TGC CURVE	

Control the receiver amplifier Gain

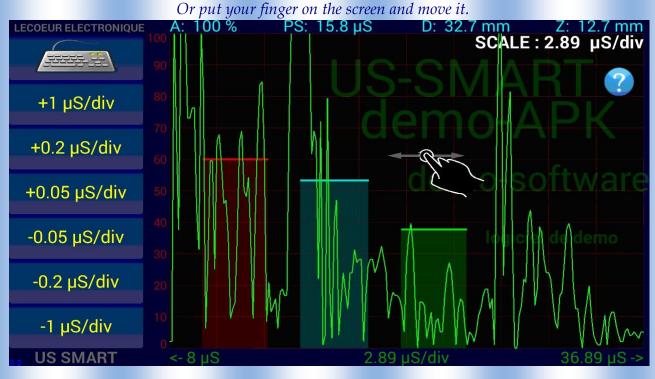
Gain:

You can adjust the gain with the menu on left Add /take off 3 / 1 / 0.1 dB or give the gain Or put your finger on the screen and move it to the top.



Scale :

Control the sampling time You can adjust the time/div with the menu on the left Add /take off 1/0.2/0.05 µs/div



#### Delay :

Control the sampling delay You can adjust the sampling delay with the menu on left Add /take off  $10/1/0.1 \mu$ s Or put your finger on the screen and move it.



#### Gates :

Give you access to the three gates of control to measure

the amplitude into the gate

- the distance of the echo

some alarme

You have access to three gate (1/2/3) that can be controle in position, width and height. Position will allow you to place the start of the gate.

Width will allow you to adjust the width of the gate



### Transmitter give an access to differant parameters :

- Voltage : amplitude of the transmitter pulse 0/-230V
- Frequency : 1 to 20 Mhz (centrale frequency probe)
- Pusle Repetetivity Frequency (200Hz to 10Khz)
- Single/double crystal (depending of your application)

FREEZE A-SCAN	CHO-DYNAMIC BOUNDS VIEW C	AD   GATE 2   - 3 de	3   - 1	dB	⊦1 dB	-
• GATE 1 A: 18.8 % PS: 19.8 ((S	Which parameter do you v	vant to modify ?				
D: 40.9 mm Z: 20.9 mm	TRANSMITTER VOLTAG	GE (				
	TRANSMITTER FREQU	ENCY				
	PRF					
Gain 40.4 dB Ref. 0 dB	SINGLE CRYSTAL					
Delta 40.4 dB TGC: OFF	DOUBLE CRYSTAL					
US SMART		√ h∕ h∕n ⊆nn-1n 10.02 μS/div	-Anan	100.	15 μS	->

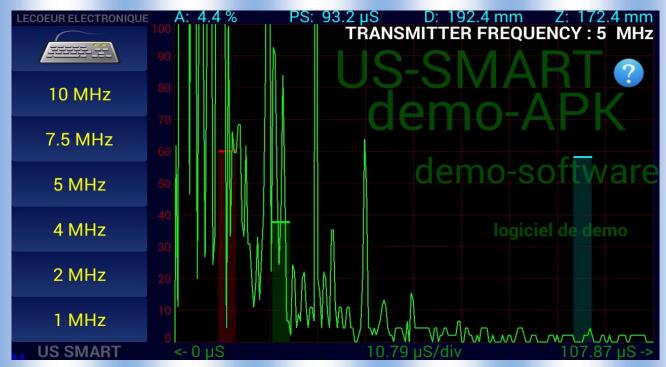
### Transmitter Voltage set the amplitude of the transmitter pulse

0 to -250 V



### Transmitter Frequency :

Set the width of the pulse ie the centrale frequency of the transducer



TGC curve :

Allow to change the gain during the acquisition



### CAD:

Display amplitude – distance curve



#### **THRESHOLD**:

All the ascan data under a thershold will be set to 0. The threshold value can be adjust .

GATE 1	Choose threshold value :		
A: 81.7 % PS: 20.1 μS D: 41.6 mm	OFF	$\bigcirc$	
Z: 21.6 mm	5 %	$\bigcirc$	
	10 %	$\bigcirc$	oftware
Gain 46.9 dB	15 %	$\bigcirc$	let de demo
Ref. 0 dB Delta 46.9 dB	20 %	$\bigcirc$	
HT 250 V	25 %		

### **MEASUREMENT UNIT/VELOCITY:**

Set the ultrasound speed and specify the display unit (mm or µs)

FREEZE A-SCAN EC	CHO-DYNAMIC   BOUNDS   .H	IDE CAD    GATE 2    - 3 dB	-1 dB   +1 dB   +
D: 192.4 mm Z: 172.4 mm	Choose the unit you v velocity :	vant to use or ajust	APK
	Time : µS	$\bigcirc$	oftware
	Distance : mm	$\bigcirc$	iel de demo
Gain 46.9 dB Ref. 0 dB	Modify velocity	$\bigcirc$	
TGC: OFF HT 250 V			

### SIGNAL ANALISYS TOOLS:

Alow you to add cursor to measure distance/amplitude on the ascan.



### SAVE/RECALL :

Save or recall some configuration.



### **OPTIONS:**

Control / Probe /Filter / Display Speed / Gate option / System option access



### Control:

Allow you to set the reference amplitude value, the reference gain and thickness



Probe :

Allow you to set the angle of the probe , add some delay.



## Filter:

Select the filter for the receiver , a FIR filter will be applied on rf data.

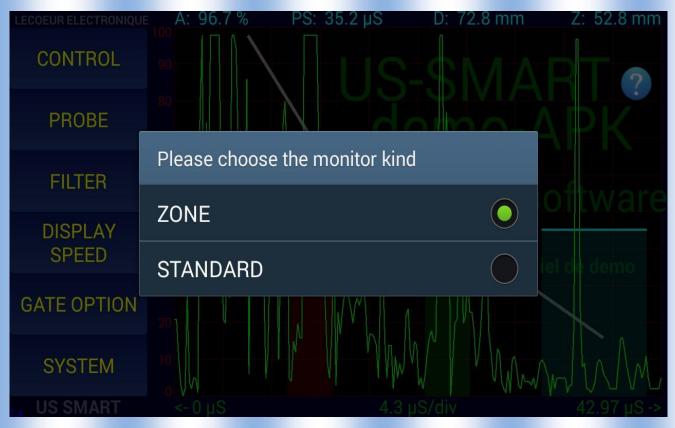
LECOEUR ELECTRONIQU	ε Α: 81.7 % PS: 20.1 μS	D: 41.6 mm	Z: 21.6 mm
CONTROL	Select receiver filter value		RT?
PROBE	1.25 MHz	$\bigcirc$	APK_
FILTER	2.5 MHz	$\bigcirc$	oftware
DISPLAY SPEED	5 MHz	$\bigcirc$	iel de demo
GATE OPTION	10 MHz	$\bigcirc$	
SYSTEM	BROADBAND		
US SMART	<pre> 0 µS 10.79</pre>	9 µS/div	<b>η μ</b> - <b>νη τ</b> - <b>νη</b>

# Display speed

LECOEUR ELECTRONIQUI	A: 96.7 %	PS: 35.2 μS	D: 72.8 mm	Z: 52.8 mm
CONTROL				R ?
PROBE	Please choose t	he screen refre	sh speed	<b>APK</b>
FILTER	SLOW		0	oftware
DISPLAY SPEED	MIDDLE			iel de demo
GATE OPTION	FAST		$\bigcirc$	
SYSTEM			W WWW	MMM
US SMART				42.97 µS ->

### Gate Option :

Fill the zone between the origin axis and the gate or between the two gate.



### System :

Allow to setup some option, color of the ascan or the langage.....

CONTROL	Select system options		Z: 52.8 mm
PROBE	Allow HF display		
FILTER	English langage		
DISPLAY	Reference Display		oftware
SPEED	Threshold Display		iel de demo
GATE OPTION	keys vibrations		
SYSTEM	Ok		MALAM
US SMART		705107	42.97 µS ->

**QUIT** : Leave the Us-Android apk.