

BLUETOOTH ULTRASONIC DEVICE US-SMART

On ANDROID systems - wireless -



The US-Smart allows a ultrasonic wireless control using the bluetooth between the couple probe / US Smart and your tablet or smartphone.

By using the US-Smart, you'll have the possibility to make statements of measures until 8 m of the US Smart.

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

General Description

The US-Smart is a unique worldwide device due to the BLUETOOTH connectivity and its ANDROID environment

This ultrasonic device is powered supply via battery Li-Ion.

His main quality is its small size and its 'ready to use' concept.

The US-Smart 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

Bluetooth

Android System

Battery Li-Ion (capacity : 2 600 mAh)

Battery life : 8 hours

Available connectivity up to 8 m

Ultralow noise preamplifier : 0.74 nV / $\sqrt{\text{Hz}}$

-6dB bandwidth : 540 KHz to 18MHz

High voltage transmitting pulses

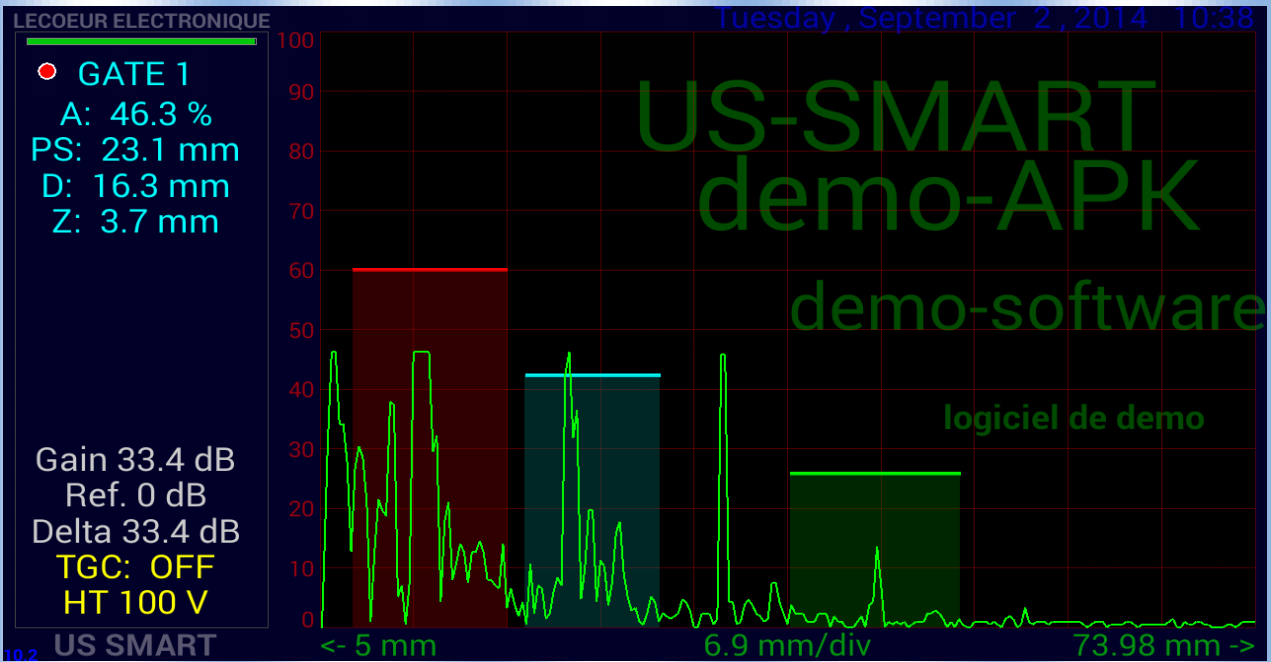
50 Ω load drive

Digitizer 12 bits at 80 MSPS

Programmable gain : 0 to 80 dB

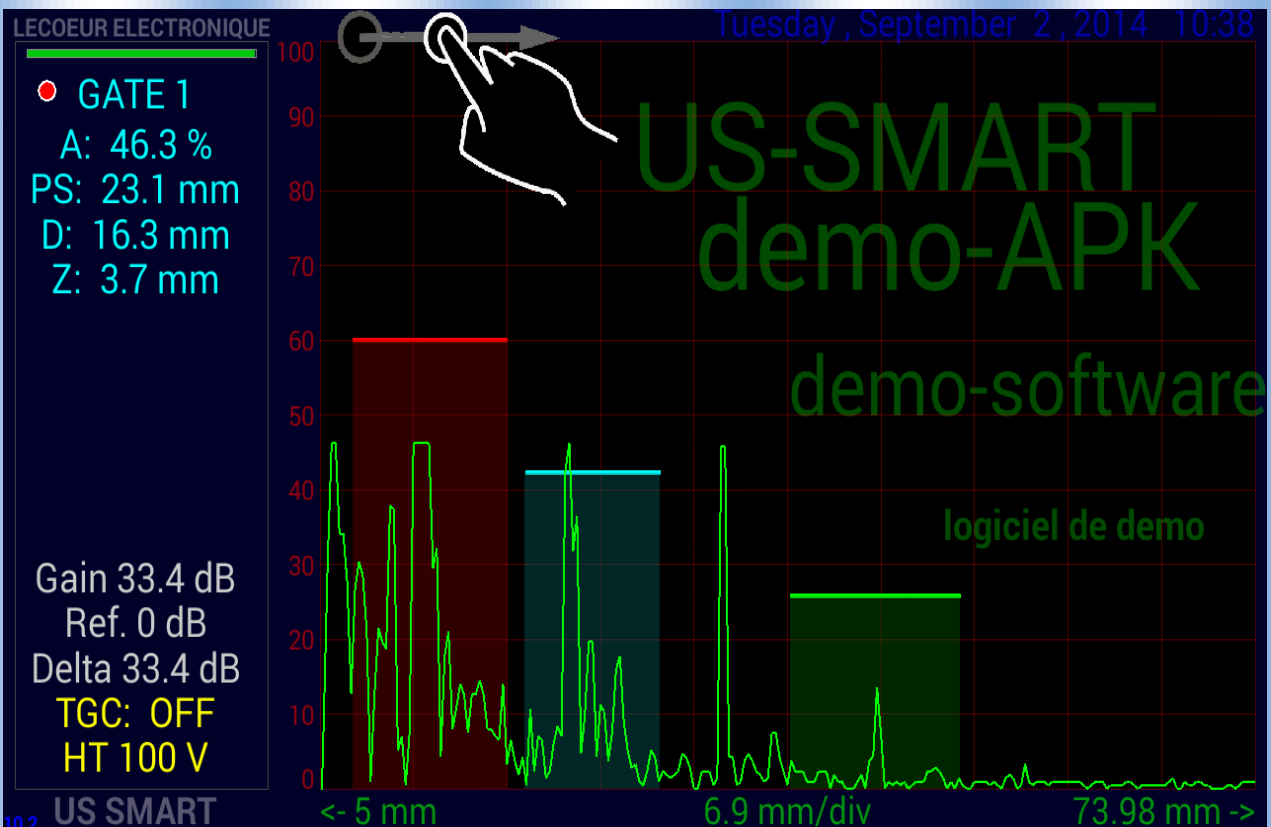
DAC curve

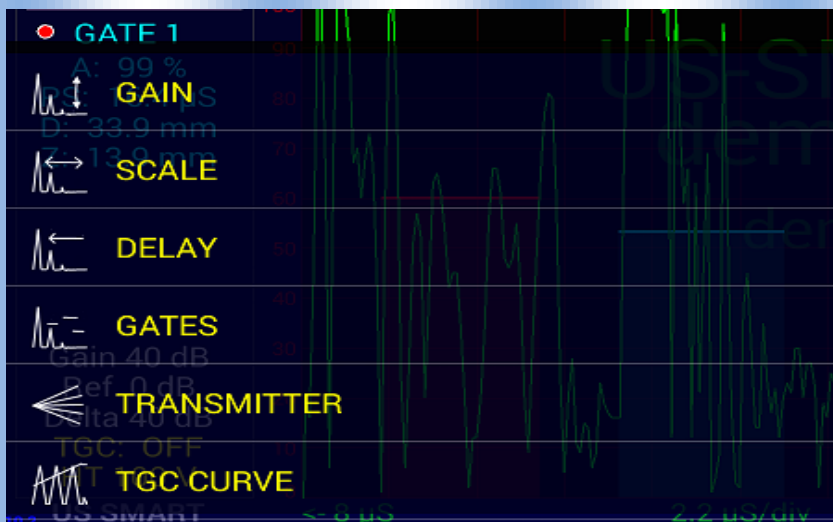
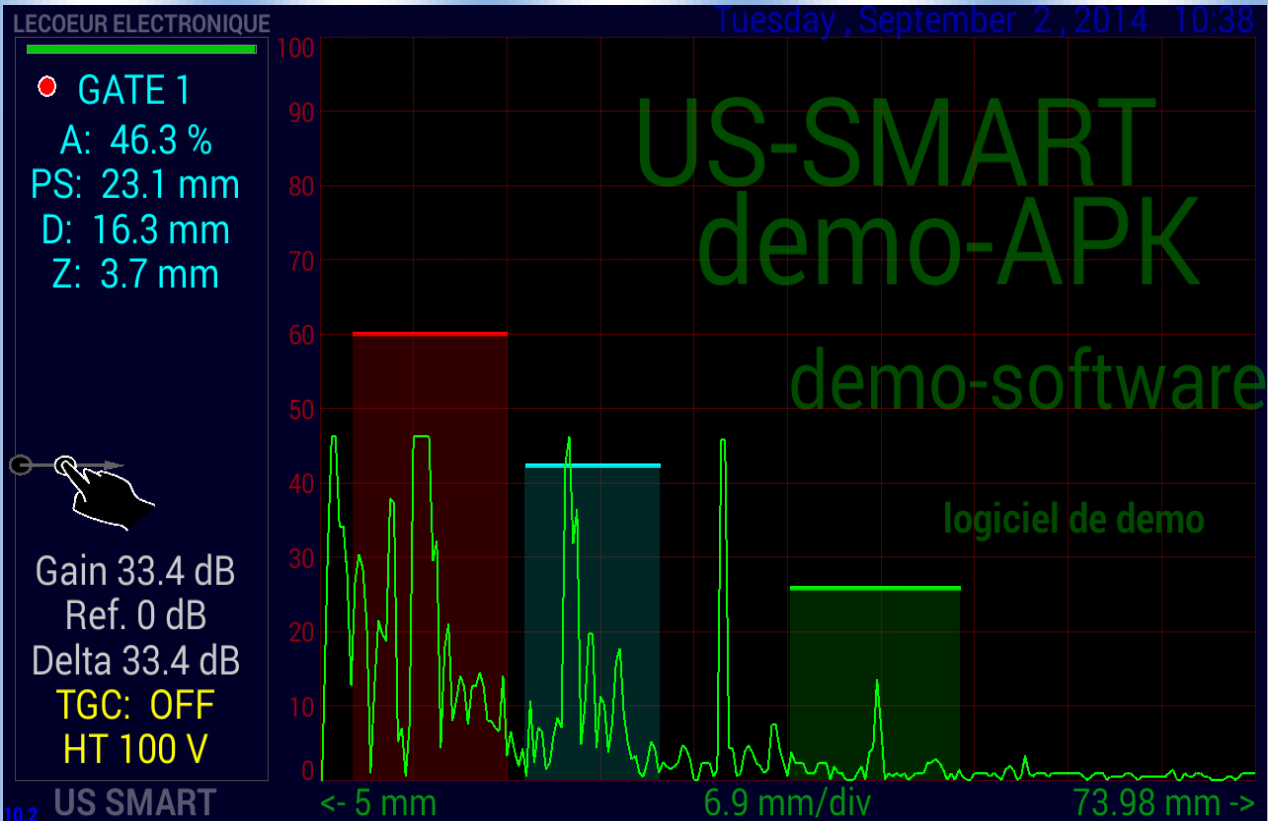
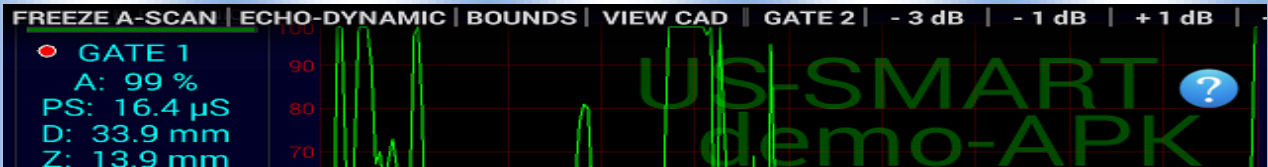
Software



To get menu slide your finger from the left to the right

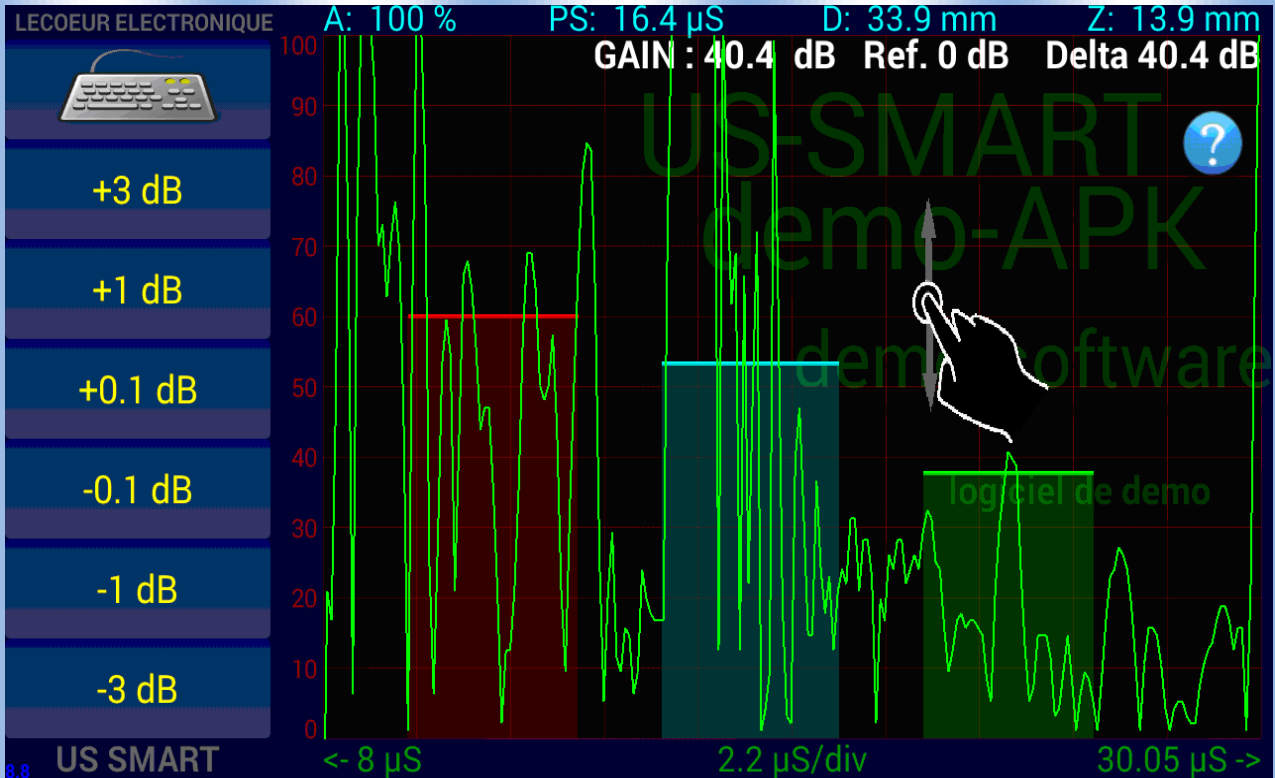
On the top of the screen or on the left-bottom part.





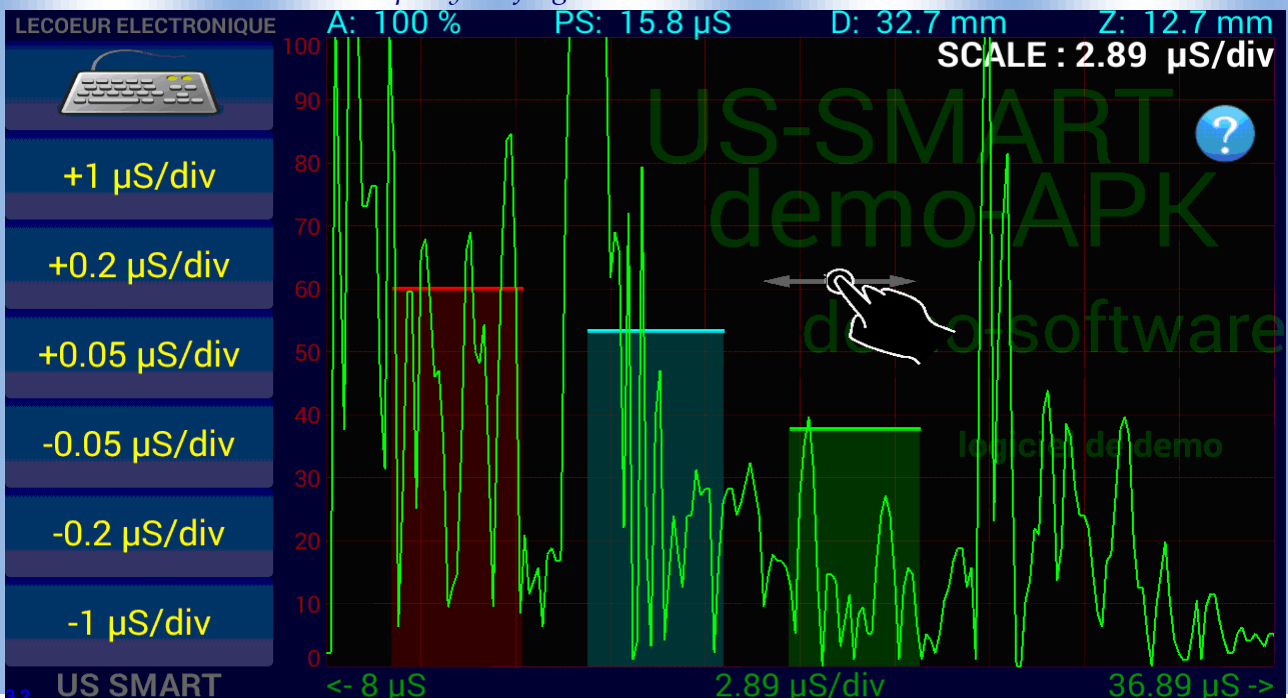
Gain :

Control the receiver amplifier 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 μ S/div
Or put your finger on the screen and move it.



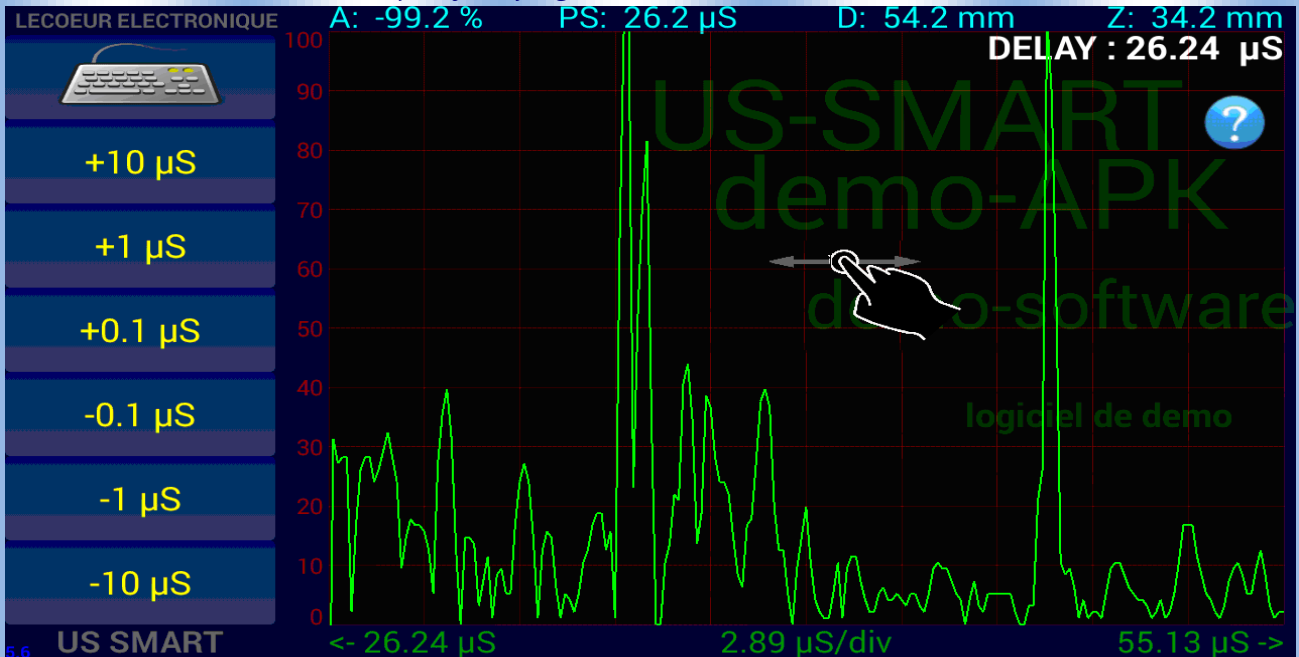
Delay :

Control the sampling delay

You can adjust the sampling delay with the menu on left

Add /take off 10 /1 /0.1 μs

Or put your finger on the screen and move it.



Gates :

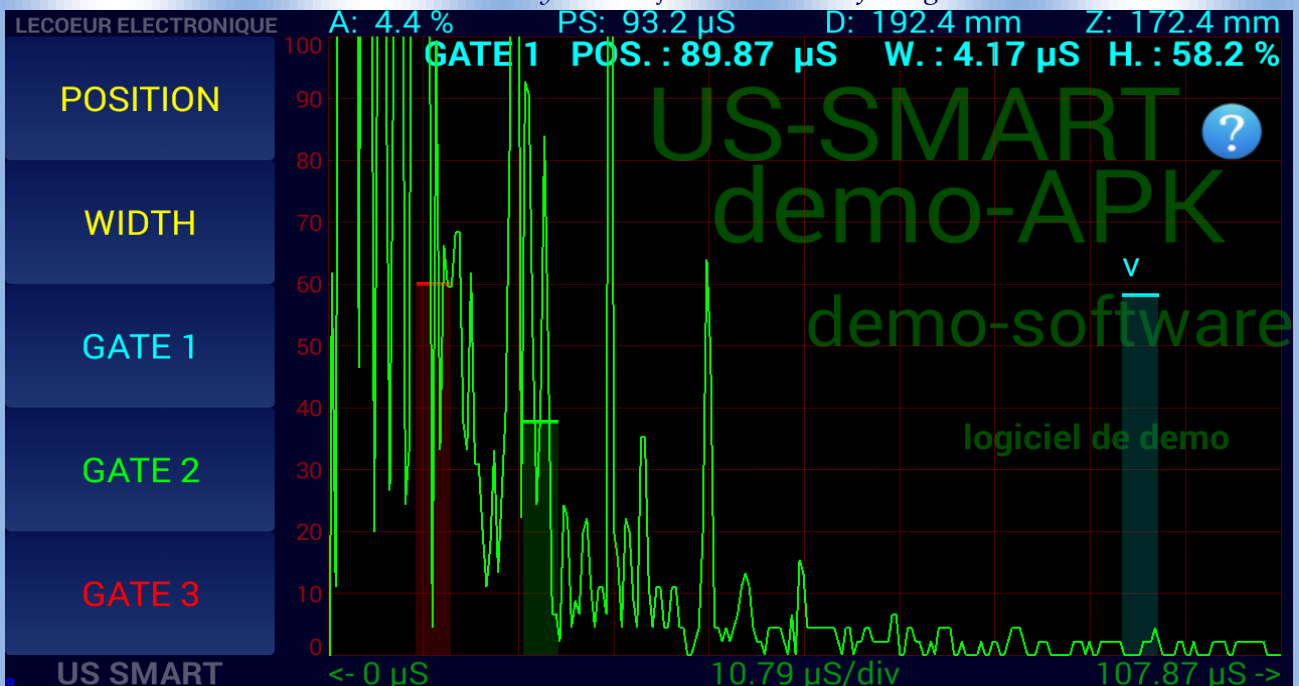
Give you access to the three gates of control to measure

- 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.

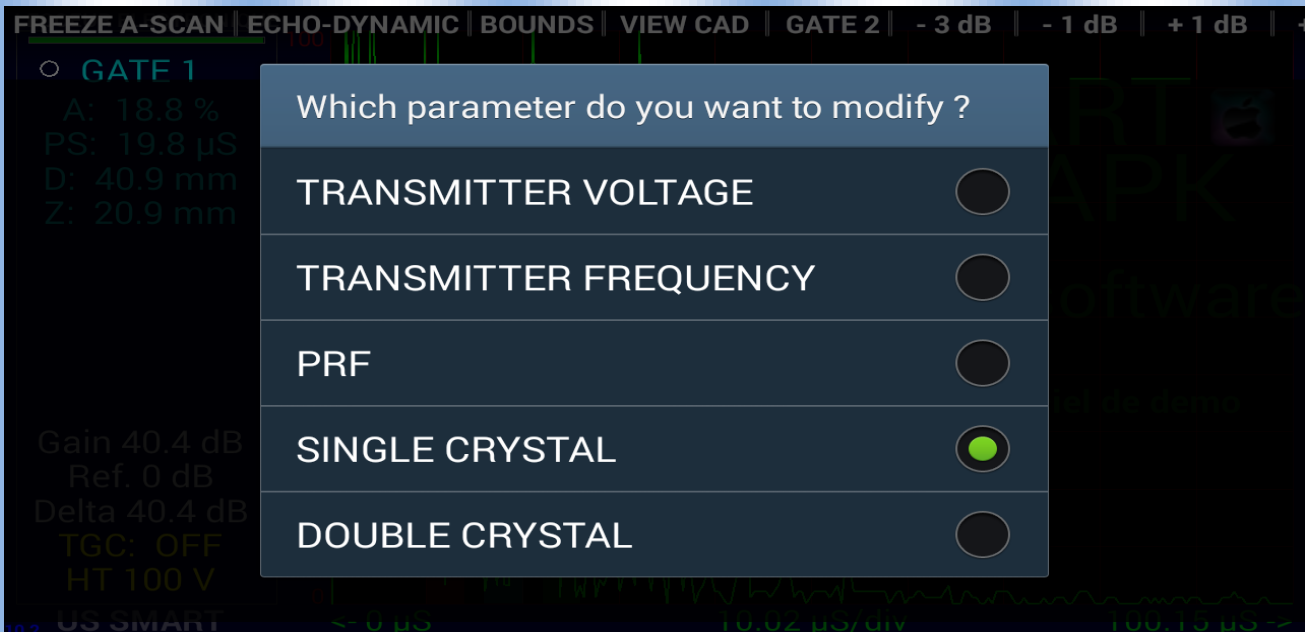
Position will allow you to place the start of the gate.

Width will allow you to adjust the width of the gate



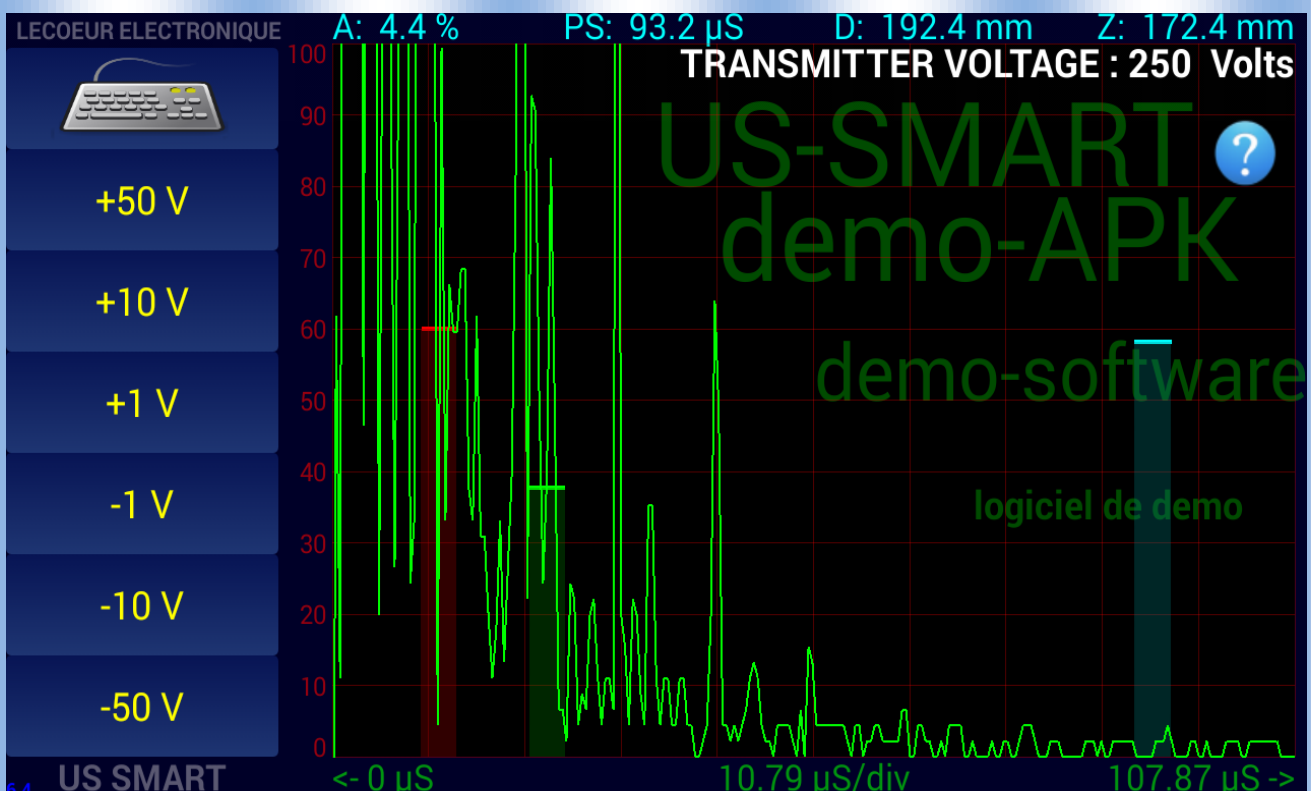
Transmitter give an access to differant parameters :

- 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)



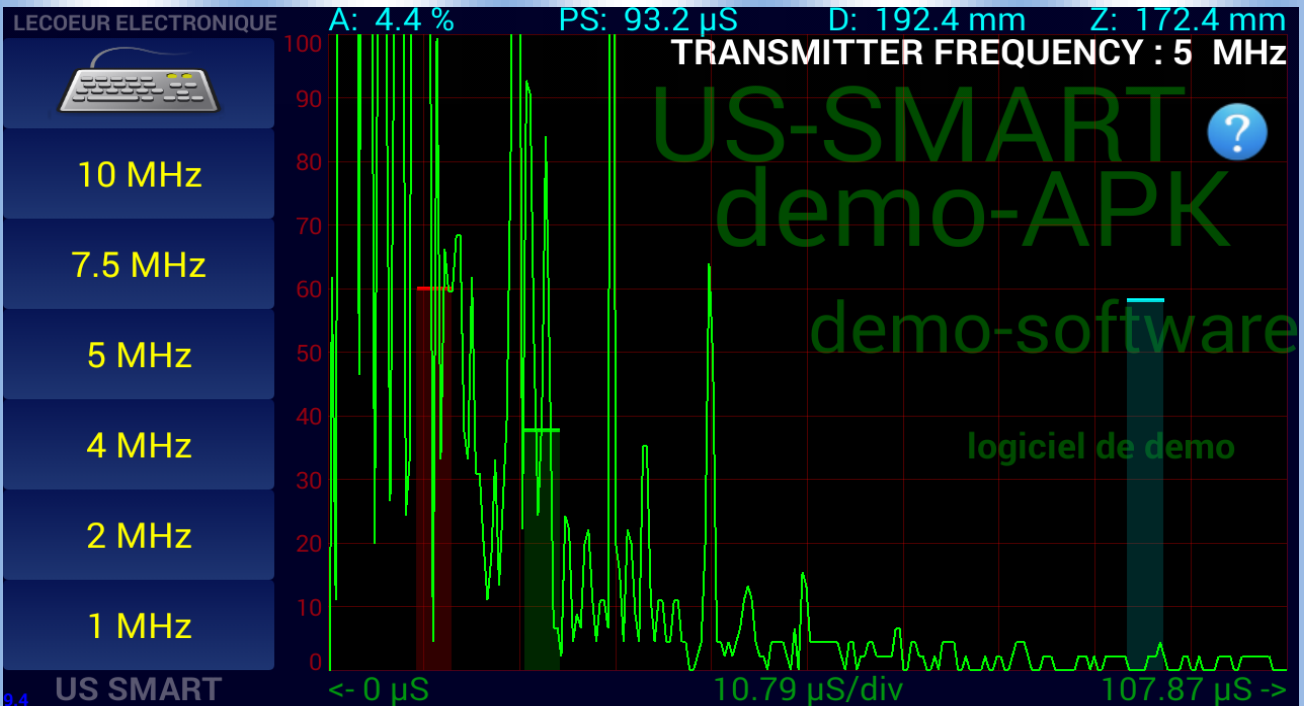
Transmitter Voltage set the amplitude of the transmitter pulse

0 to -250 V



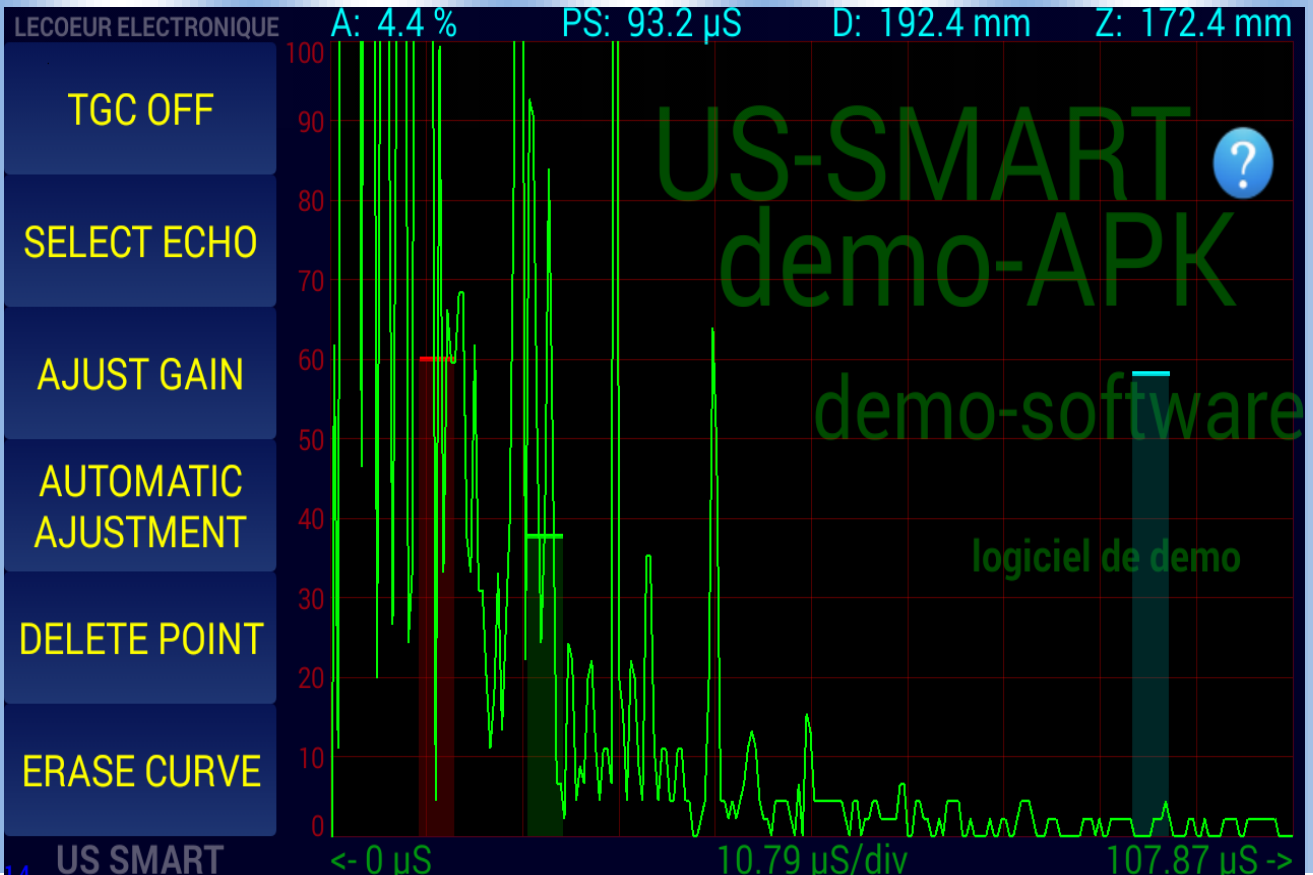
Transmitter Frequency :

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



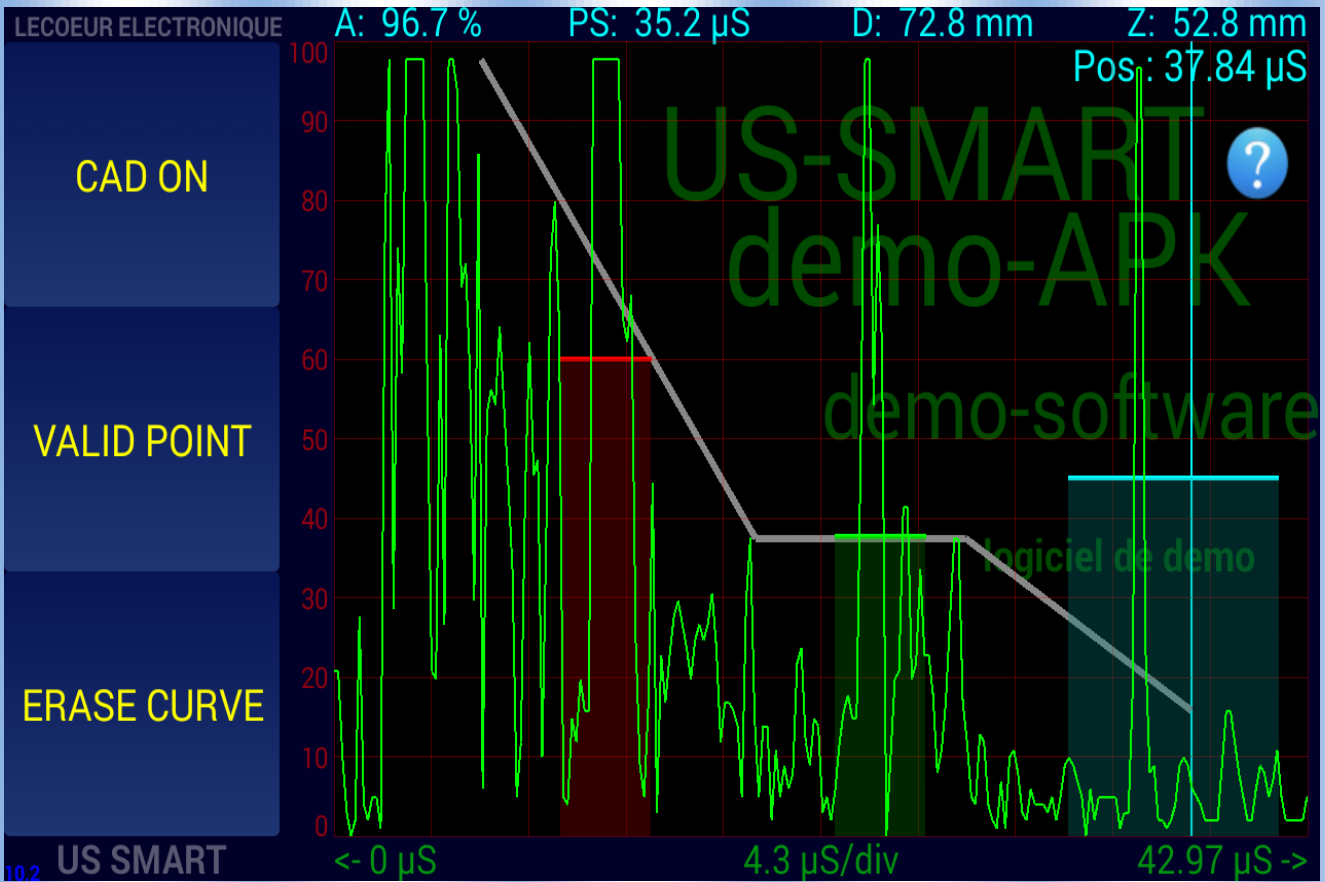
TGC curve :

Allow to change the gain during the acquisition



CAD :

Display amplitude - distance curve



THRESHOLD :

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

LECOEUR ELECTRONIQUE

Choose threshold value :

OFF

5 %

10 %

15 %

20 %

25 %

A: 81.7 % PS: 20.1 μ S D: 41.6 mm Z: 21.6 mm

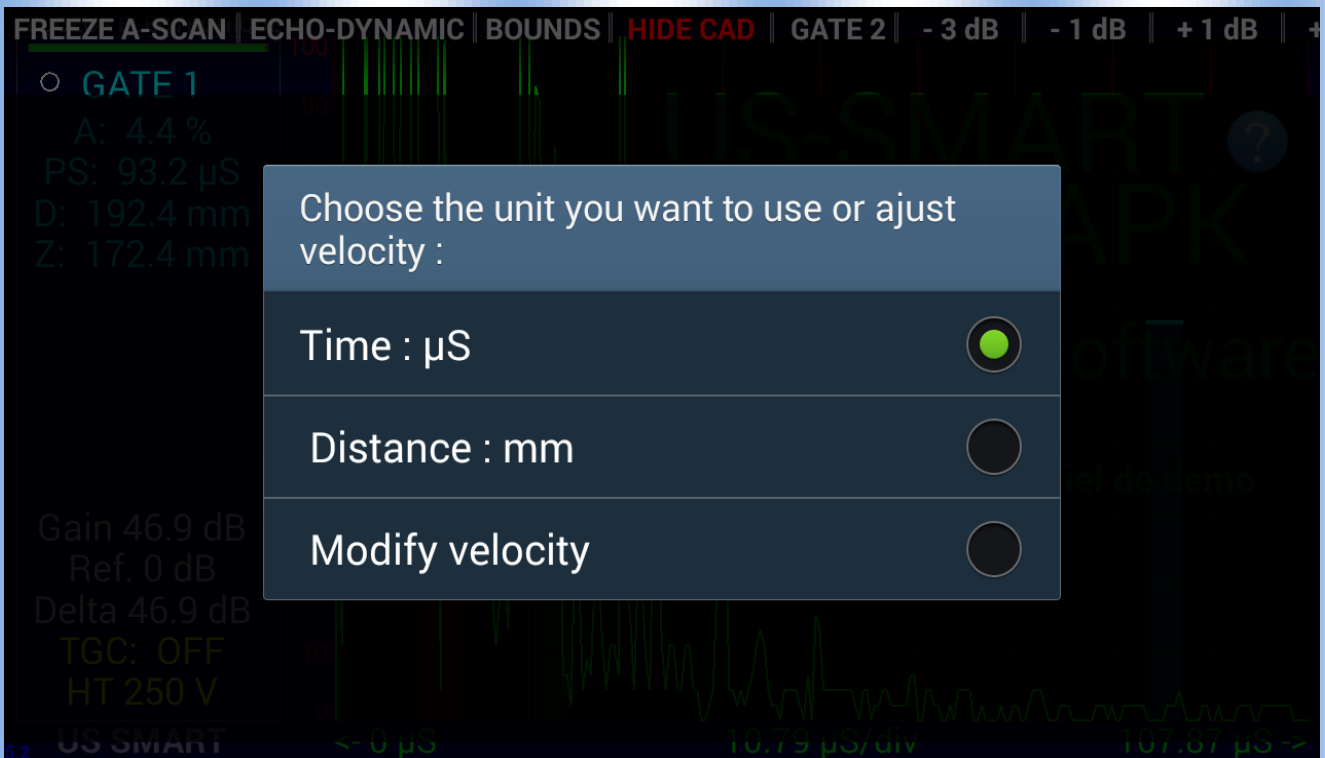
Gain 46.9 dB Ref. 0 dB Delta 46.9 dB TGC: OFF HT 250 V

US SMART

Monday, October 15, 2014 02:04

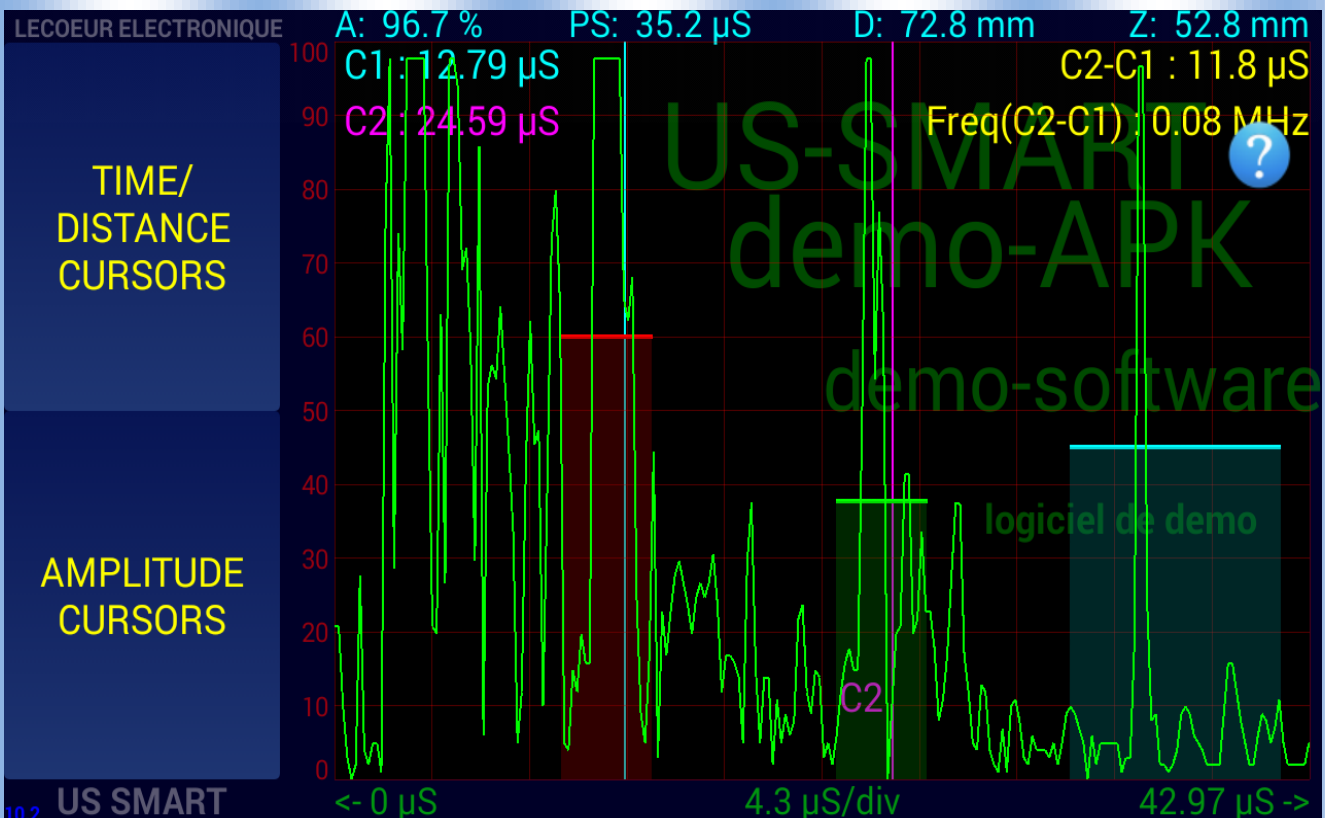
MEASUREMENT UNIT/VELOCITY :

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



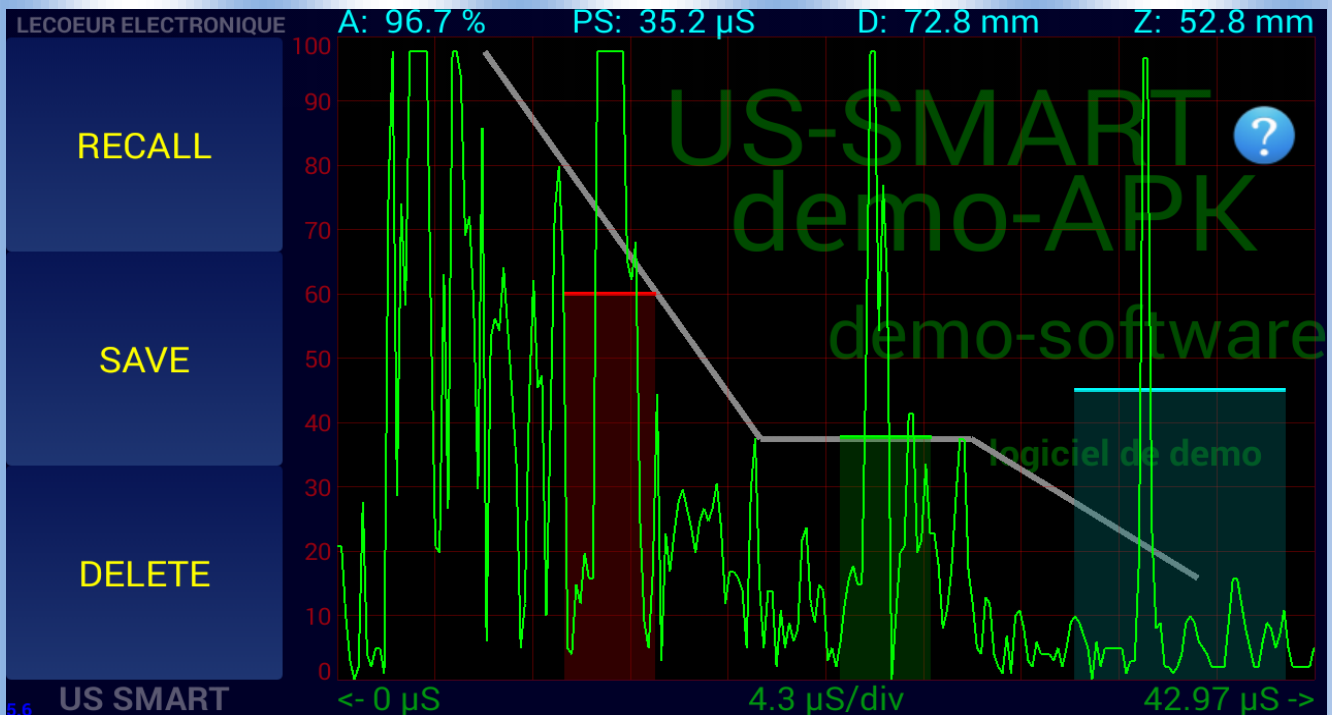
SIGNAL ANALYSIS TOOLS:

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



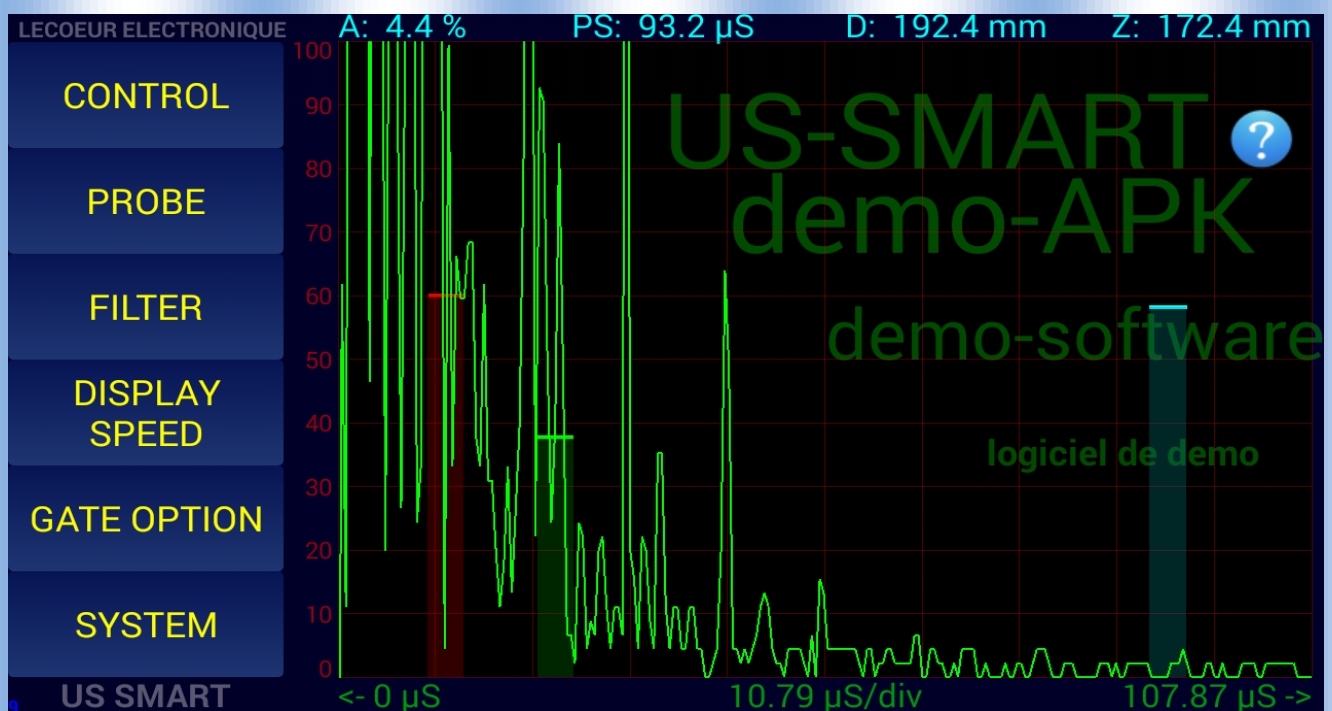
SAVE/RECALL :

Save or recall some configuration.



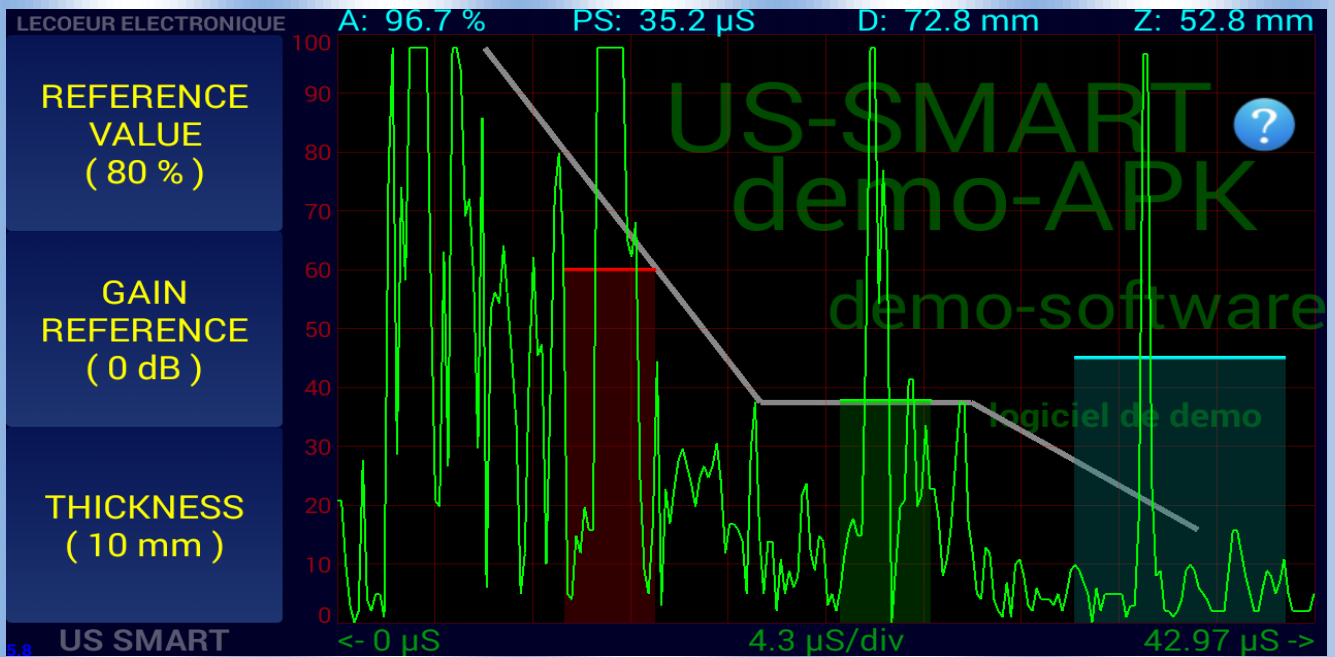
OPTIONS:

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



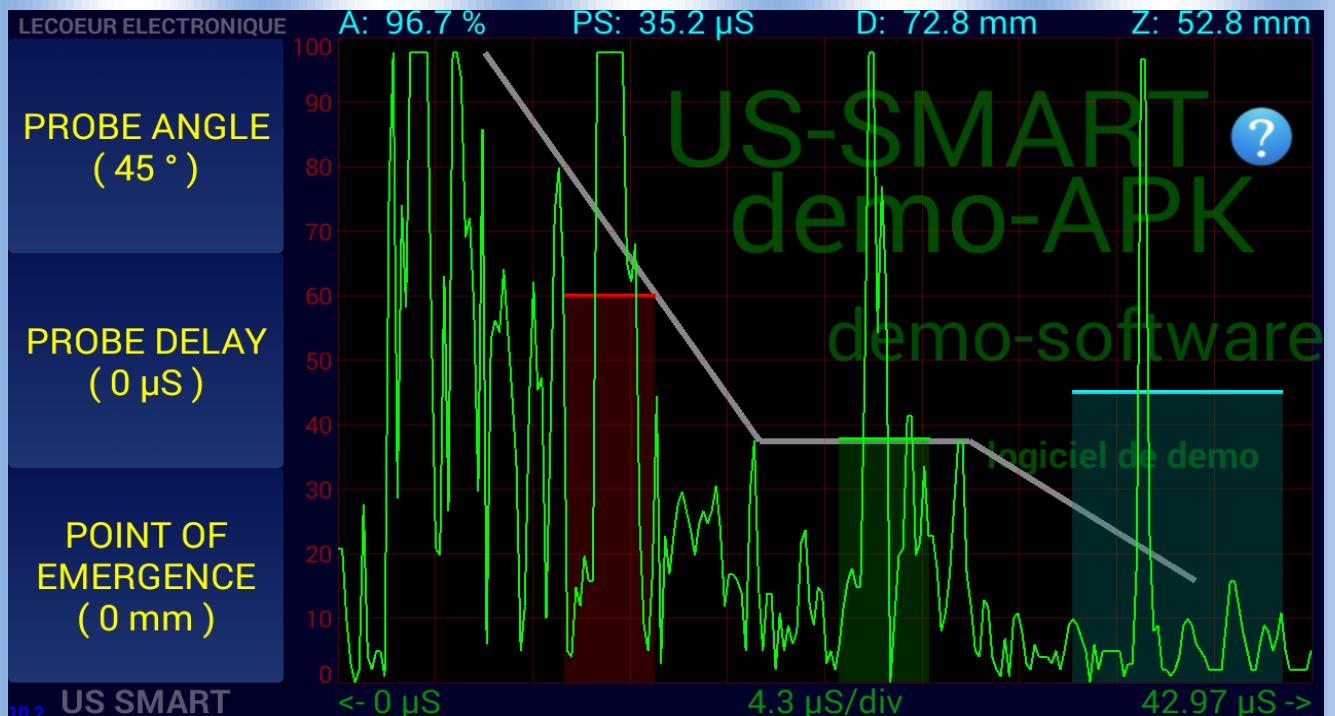
Control :

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



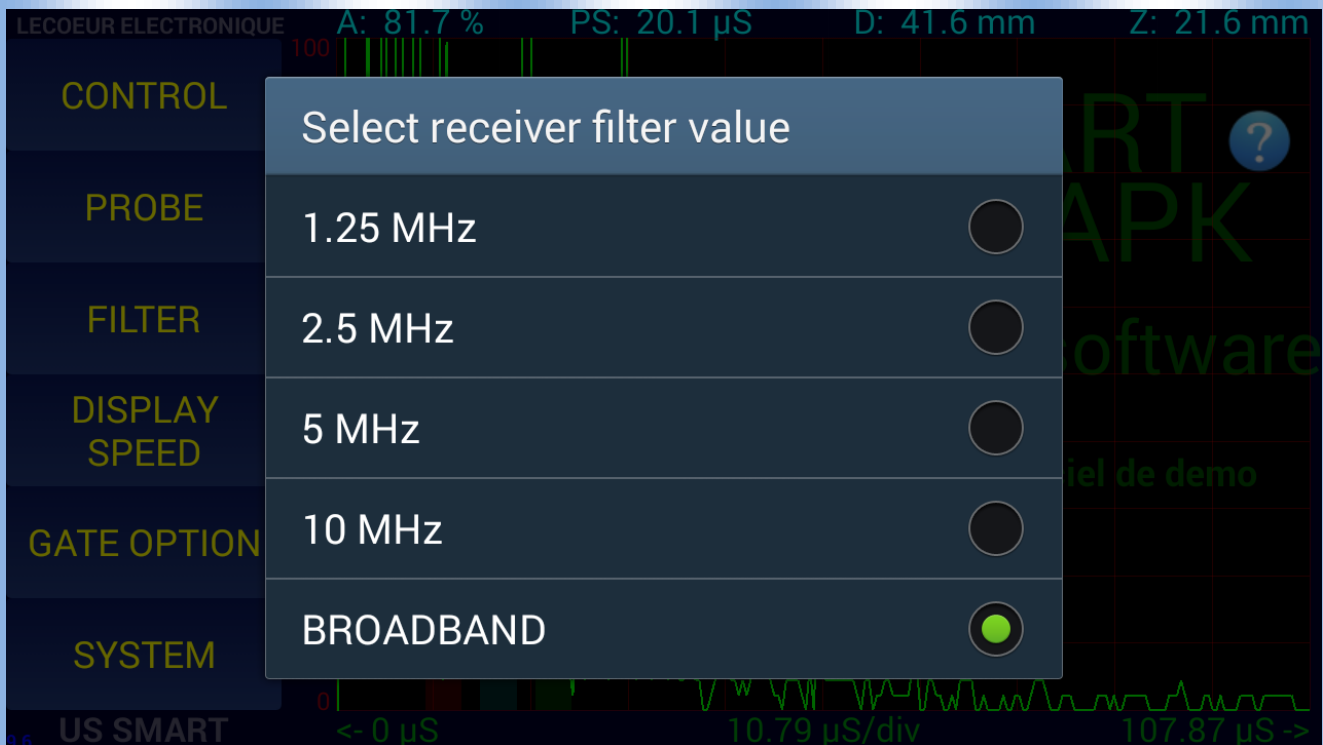
Probe :

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

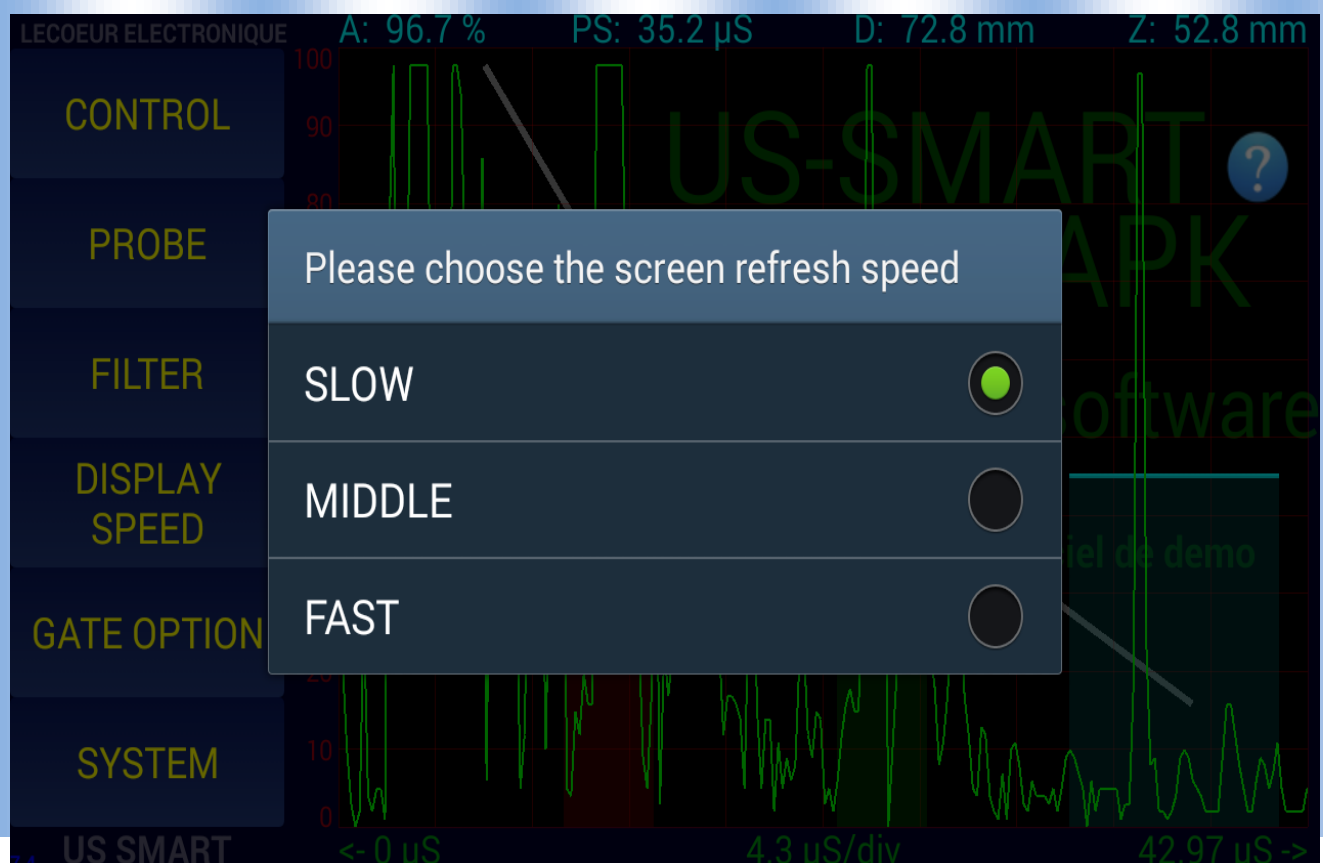


Filter :

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

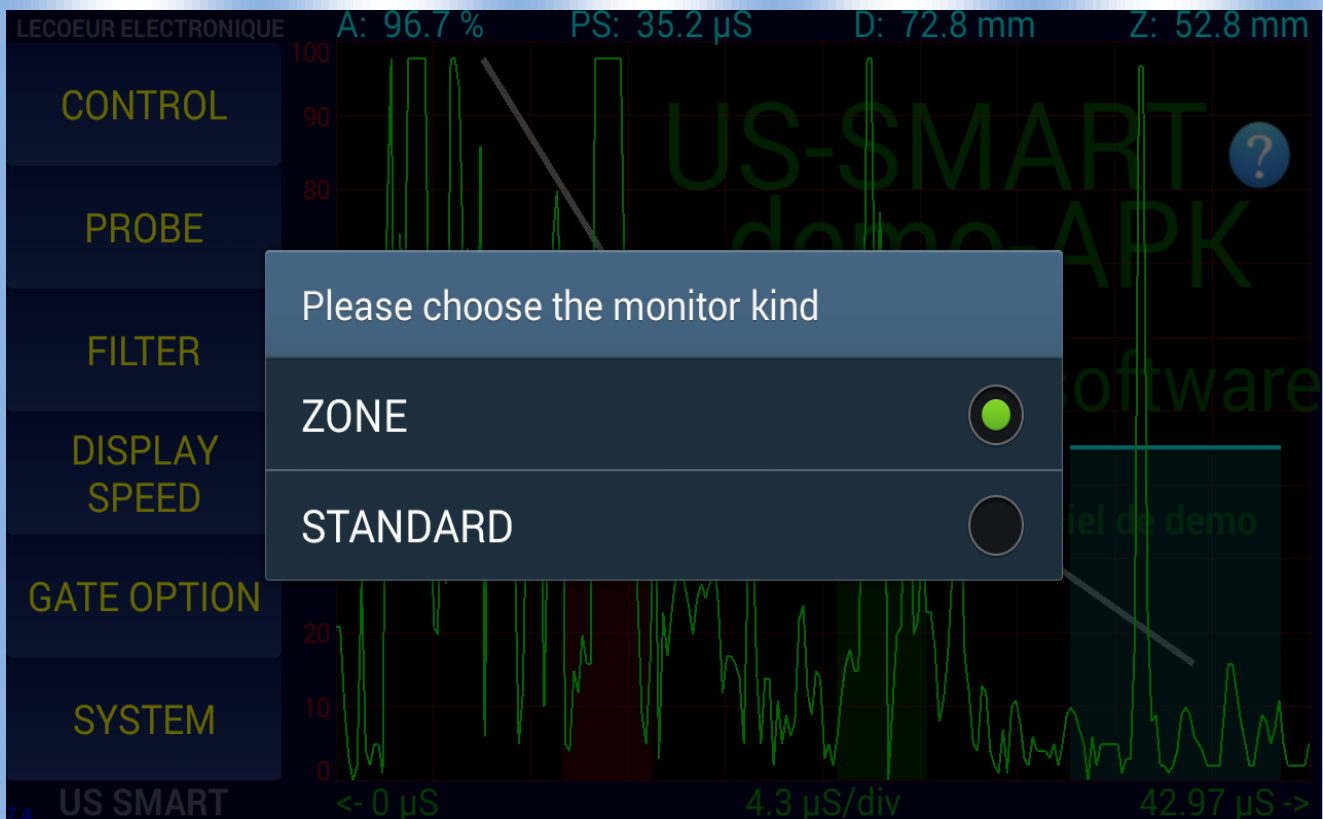


Display speed



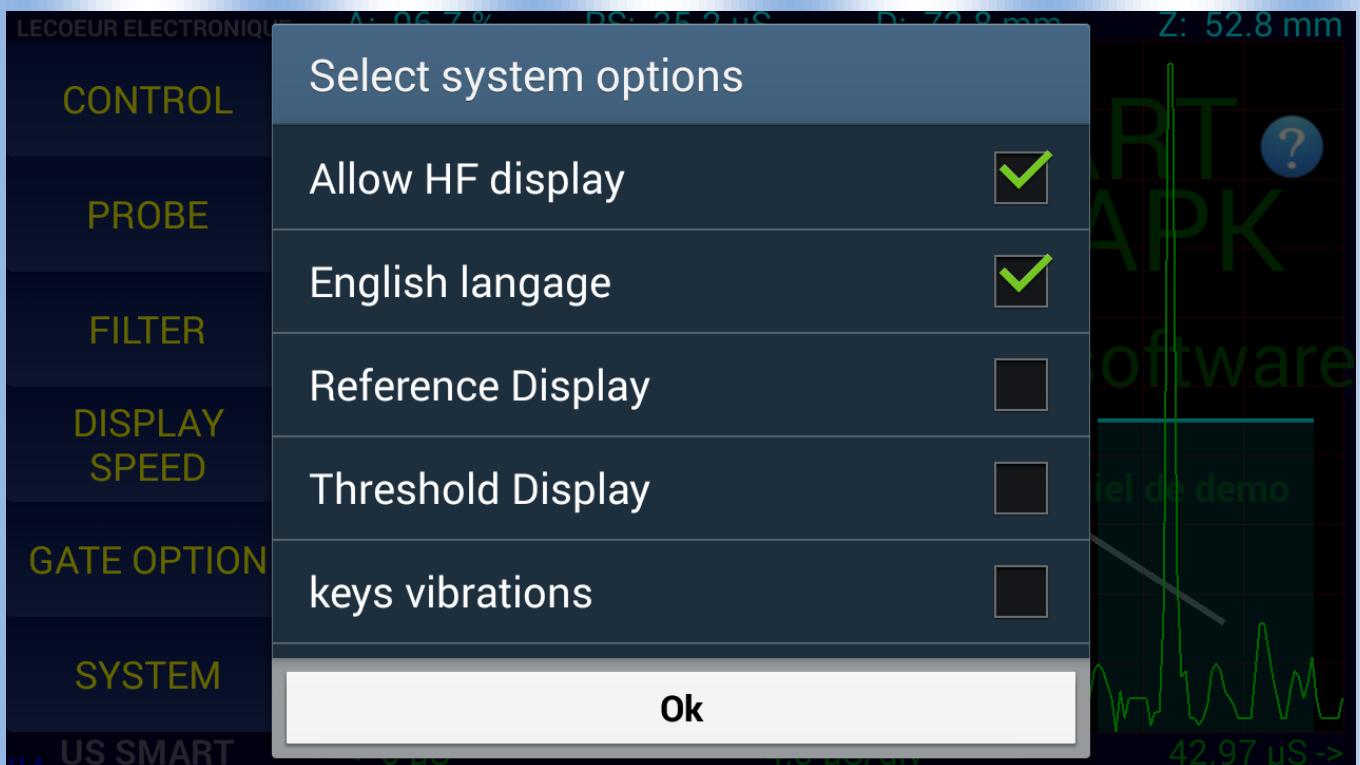
Gate Option :

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.....



QUIT : Leave the Us-smart apk.