

High-Frequency Ultrasonic Imaging System USPC 3060 UHF with 200 MHz Bandwidth

Highlights

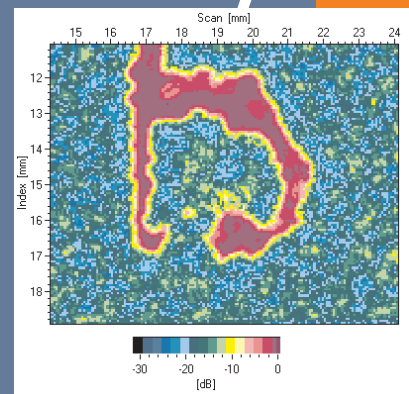
- Testing of thin components, ceramics, solder fittings and welded connections, materials with low sound attenuation
- 200 MHz Bandwidth and combination of **analogue and digital filters** deliver extreme high resolution
- External pulser-/receiver module enables a short transducer cable
- All parameters software controlled
- Software Hillgus for Windows™ with easy handling
- 1 GHz digitizer (Options 500 MHz or 2 GHz)
- Imaging with B-, C-, D- and F- scans
- Storage of full wave A-scan data files



Pulser/ receiver unit mounted at the scanner

The ultrasonic imaging system USPC 3060 UHF is optimized for the testing with high frequencies and delivers high resolution B-, C-, D- and F- scans. It consists of a scanning system with water tank and the external pulser-/receiver module as well as a 19"-rack with scanner controller and the ultrasonic system and monitor, keyboard and mouse.

The easy to handle software Hillgus for Windows™ is of modular design and can be enlarged customized. The scans can be easily transferred in other Windows™-software.



Technical data

(Subjects may change without notice)

- Frequency range: <math><0.001</math> to 200 MHz (-3 dB, broadband setting)
- Hardware-Band pass-filters for highest resolution, Centre frequencies : 10, 15, 25, 35, 50, 80, 100 MHz, BB
- Gain: 52 dB (broadband setting)
- Pulser output voltage: ca. 180 V into 50 Ohm
- Pulse energy: switch able 5 μ J and 19 μ J
- Damping: switch able 200 to 30 Ohm in four steps
- Software: Hillgus for Windows A-, B-, C-, D- scan, 3D-full-wave data acquisition, software filter, Oculus de luxe, automatic calculation of defect areas, digital gain in 0,1 dB steps
- Transducers: 2.25 to 125 MHz
- Scanner: 400 x 300 x 150 mm, resolution 12.5 μ m

200 MHz Ultrasonic Imaging Technique for highest Resolution

Where the resolution of conventional systems fails, our USPC 3060 UHF delivers best results. This modular high frequency imaging system with an extreme large bandwidth from 0,001-200 MHz provides highest resolution. In order to keep the cable to the transducer as short as possible, the pulser/receiver module is built separately from the system. Therefore best electrical match of the transducer without any cable reflections and also the best signal to noise ratio is achieved. Seven receiver (hardware-) band pass filters in the frequency range from 10 to 125 MHz increase the optimal frequency spectrum for the inspection and suppress unwanted ones. In order to achieve a further increase of the resolution used-defined software high- and low pass are possible.

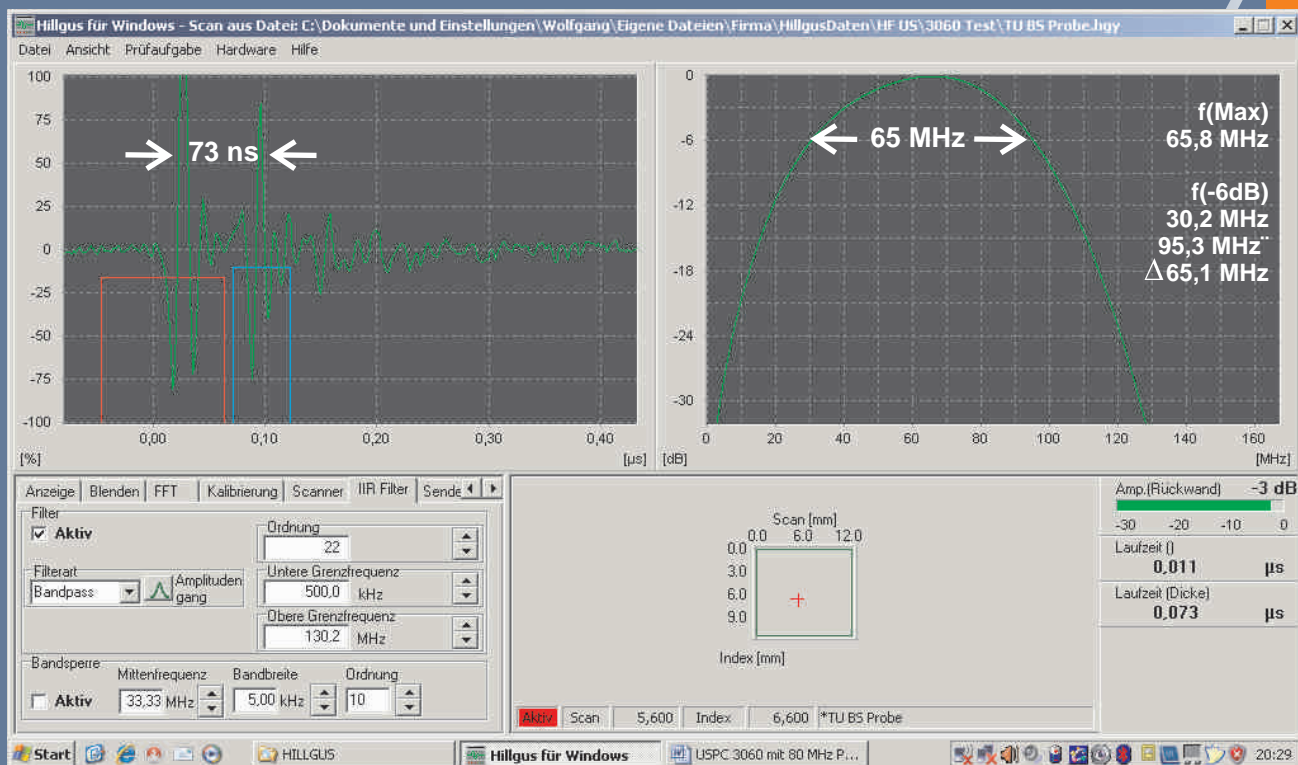
The digitizing is carried out with 1 Gsamples/s und 8 bit resolution. Options are 500 Msamples with 12 bit or 5 GHz with 8 bit

The computer controlled USPC 3060 UHF can be used as A- scan system with signal enhancement software and/or as an ultrasonic imaging system with scanner and tank.

The results can be easily continued processed by other Windows™ software.

It is not possible to test all materials with high frequencies; however the USPS 3060 enables test frequencies down to 2 MHz.

The screen-shot shows the user-interface of the software Hillgus for Windows™ testing a bonding of a 0.3 mm thick silicium plate. The A-scan indicates the back wall echo after a delay of 73 ns (!). The frequency spectrum of the interface echo in a range of 30.2 to 95.3 MHz is also evaluated.



Screen shot of USPC 3060 UHF testing a 0.3 mm thick silicium-plate (interface and back wall echo) and FFT of the back wall echo (30.2 - 95.3 MHz)