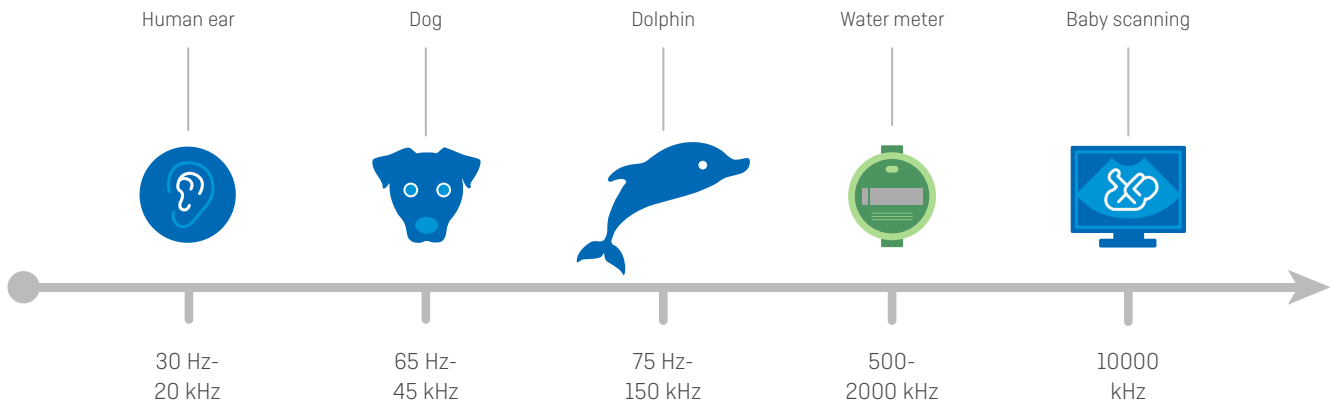


# Factsheet about ultrasound

## Water meters



### What is ultrasound?

Ultrasound is a mechanical wave that can be transmitted in air or water.

Ultrasonic waves have the same properties as sound waves, but with a higher frequency, such that a human ear cannot hear them. When ultrasonic waves transmit through water, they do not have any negative effect on the water, nor change the composition of the water.

### **Ultrasound waves are low energy waves.**

The pressure intensity for the Kamstrup ultrasound waves is at the same level as compression of air that happens during quiet speech.

The ultrasonic signals in Kamstrup water meters have a frequency higher than what humans and animals can hear and lower than an ultrasound scan, for example used in pregnancy.

### Examples of sound frequencies

- Frequency that a human can hear: 30 Hz-20 kHz
- Frequency that a dog can hear: 65 Hz-45 kHz
- Frequency that a dolphin can emit and detect: 75 Hz-150 kHz
- Ultrasound scan in e.g. pregnancy: approximately 10000 kHz

### Other applications of ultrasound

Some animals use sound waves to localize objects and potential preys, this is known as sonar detection. Of all animals that have this ability, dolphins are among the animals who emit the highest frequency sound waves.

Ultrasound is used to visualize an unborn baby inside the womb of a pregnant woman by emitting high frequency sound waves into the body and using the echo of the waves to construct an image.