
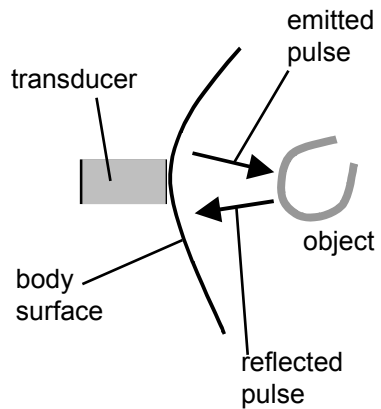





<b>1 - Imaging - Ultrasound</b>		
<ul style="list-style-type: none"> <li>• Ultrasound scanning</li> </ul> 	<p>An <b>ultrasound</b> (sound of <b>frequency</b> higher than the human ear can detect) scanner is a system which emits <b>ultrasound</b> pulses and detects pulses reflected at boundaries between different substances.</p> <p>The reflected pulses are used to form images.</p>	<p><b>Keywords</b>          Ultrasound          Pulse          Transducer</p>
		<b>1.01</b>

<b>1 - Imaging - Wave equation</b>		
<b>Wave speed = frequency x wavelength</b>		<b>Keywords</b>
<ul style="list-style-type: none"> <li>• Wave speed is in m/s</li> <li>• <b>Frequency</b> is in hertz, Hz which is equivalent to cycle per second</li> <li>• <b>Wavelength</b> is in metres</li> <li>• For all regions of the <b>electromagnetic spectrum</b> the wave speed is the speed of light, <math>3 \times 10^8</math> m/s</li> </ul>	Frequency Wavelength Electromagnetic Wave speed Hertz	
		<b>1.04</b>

<b>1 - Imaging - Pixels</b>		
<ul style="list-style-type: none"> <li>• <b>Pixels</b> are the tiny building blocks from which a digital image is built.</li> <li>• A <b>pixel</b> (a contraction of 'picture element') is one of a large array of small blocks which together make up a digital image.</li> <li>• <b>Resolution</b> concerns the ability to detect small changes or differences.</li> <li>• For a digitised image composed of <b>pixels</b>, the <b>resolution</b> is the scale corresponding to one <b>pixel</b>.</li> </ul>	<p><b>Keywords</b>          Pixel          Resolution          Digital</p>	
		<b>1.03</b>

<b>1 - Imaging - Ultrasound</b>		
<ul style="list-style-type: none"> <li>• <b>Ultrasound</b> is sound of higher <b>frequency</b> than about 20,000 Hz. It cannot be heard by humans.</li> <li>• The <b>ultrasound</b> used in scans is produced using the piezoelectric effect.</li> <li>• Ultrasonic reflections can be detected from boundaries between tissues of differing <b>densities</b>, which is why ultrasonic scanners are able to form images of body organs.</li> <li>• A gel is applied between an ultrasonic transducer of a scanner system and the body surface to reduce ultrasonic wave <b>reflection</b> at the body surface.</li> </ul>	<p><b>Keywords</b>          Ultrasound          Pulse          Transducer</p>	
		<b>1.02</b>