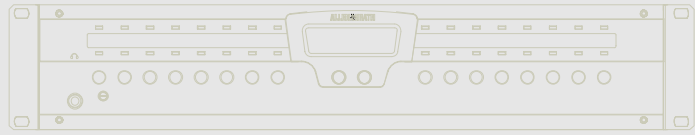


iDR System Latency

iDR SERIES DIGITAL SIGNAL PROCESSING



:: WHAT IS LATENCY?

Throughput delay, commonly referred to as latency is an inescapable consequence of using digital audio technology. By sampling and digitising the audio it introduces a time delay. When adding more processing modules e.g. EQ, Compression, Limiting etc it adds more latency/delay to the signal.

:: OTHER MANUFACTURERS

It is worth noting that other manufacturers of similar products use a system where more processing modules can be added to the system therefore increasing the latency as more modules are added. Consider what happens when you add 3 modules to one channel of audio and only 2 on to another channel? The channel with only 2 processing modules is heard slightly before the one with 3 modules as the extra processing module adds more latency. Although this may only be a small delay the results are audible and can cause phase coherency problems, resulting in poor quality audio. Often the manufacturers' latency statistics stated are the smallest latency results possible from the equipment.

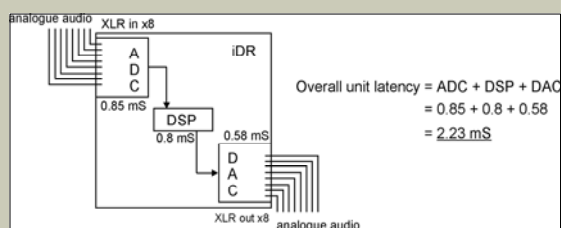
:: IDR AND LATENCY

iDR offers the user a fixed architecture where all the processing modules are offered on every input and output channel keeping the phase coherent between all channels.

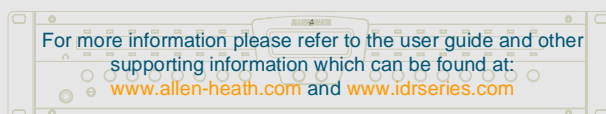
iDR uses DSP (Digital Signal Processing), it is therefore converting the analogue audio into digital data, manipulating it and then reconverting it into an analogue signal. This causes latency.

:: IDR LATENCY DEFINED

:: SINGLE IDR UNIT LATENCY

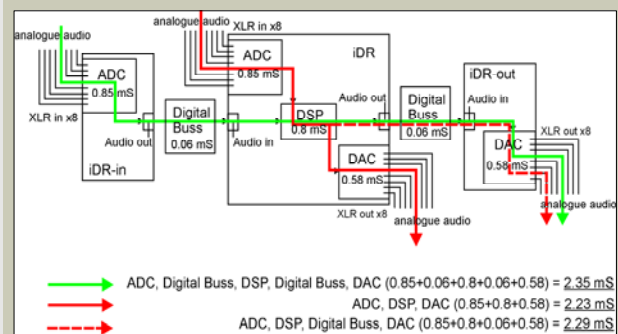


A single unit has a total system latency of 2.23 mS from input through to output. Each of the components which make up the total system latency are shown in the block diagram above



:: IDR UNIT AND DIGITAL EXPANDERS

When connecting the iDR-In and iDR-Out digital expanders the latency between the various components in the system changes as shown below. It is possible for the installer and system architect to work out the latency between several units in the system and adjust the delays accordingly within iDR System Manager.



ALLEN&HEATH WORLD CLASS MIXING

