

## UV22HR in the Internet Audio Environment

### *An Overview*

- Digital systems are not perfect: high quality signals are degraded by transferring them to lower-quality media such as Internet audio, or even CD.
- When you convert a signal in this way, you are throwing away detail, which reduces the quality.
- You can't simply throw bits away: you need to retain the detail. How?
- In the analog world, a signal could be faded down to nothing and would smoothly disappear through the noise floor. You could hear detail through the noise.
- Digital audio isn't like that: run out of bits and the sound stops.
- You need a method of smoothing out digital audio at low level. How?
- The answer is **dither** – a noise signal added to the digital audio to smooth out transitions.
- Unfortunately, most dither causes as many problems as it solves:
  - Adds noise
  - Detail is lost in the noise
  - Noise sounds objectionable
- Many solutions were tried: the best is Apogee's solution, UV22
- UV22: Sub-Nyquist dither, keeps the dither signal above the audible range.
- Developed in 1993 – now the mastering industry standard. 80% of albums mastered with UV22.
- New improved version released in 1999: UV22HR "High Resolution".
- UV22HR offers increased benefits for mastering, plus outstanding benefits for Internet, multimedia and computer audio
- Smaller file sizes without loss of quality
- Fewer artifacts, better audio quality
- Easy to incorporate into the OS to process all audio leaving the system
- Apogee's UV22HR: The solution to better digital audio for new media.