

21M.380 · MUSIC AND TECHNOLOGY
RECORDING TECHNIQUES & AUDIO PRODUCTION

READING ASSIGNMENT 9 (RD09)
DIGITAL AUDIO

DUE: MONDAY, OCTOBER 17, 2016, 9:30AM
SUBMIT TO: MIT LEARNING MODULES ▶ ASSIGNMENTS
0.5% OF TOTAL GRADE

1 Materials to study

Bohn, Dennis (1997). *Digital Dharma of Audio A/D Converters*. URL:
http://www.rane.com/pdf/ranenotes/Digital_Dharma_of_Audio_AD_Converters.pdf (visited on 09/02/2014). RaneNote 137.

2 Questions to respond to

1. Express the decimal (base 10) number 975 in binary (base 2) form and show how you derive the result.
2. Under which circumstances does *aliasing* occur in analog-digital conversion, and what is its audible effect? How does this relate to the *sampling frequency* and *Nyquist frequency*?
3. What are the practical benefits of quantizing the amplitude of audio signals at a higher bit depth (e.g., 24 rather than 16 bit)?

3 Guidelines

- Your answers need not be very extensive (a short paragraph per question is enough), but they should demonstrate that you have actually read the article and understood its main points.
- Be concise and pay attention to form, grammar, and spelling.

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