Assignment 4 Dynamics Processing

Part 1

Apply the compressor effect to the Tom's Diner track. Use the compressor effect in Audacity or another compressor.

1.1. Experiment with two different settings of threshold and ratio using the default values of attack time 0.2 sec and release time 1.0 sec and describe the results.

1.2. Experiment with two different settings of attack time and release time using the threshold of --36 dB and ratio of 10:1 and describe the results.

Assessment (8/46 marks)

1.1 description of 2 results and comparison to original 4 marks

1.2 description of 2 results and comparison to original 4 marks

Part 2

Implement a compressor using the ideas in the DAFX text Figures 5.3 and 5.10 and test it using a sine wave which changes amplitude from 1 to 2 every 300 msec

Adjust the parameters (compressor slope, compressor threshold, attack time, decay time) so that the compressor effect can be clearly heard and seen on the plots.

Clearly document the algorithm and your code, and comment on when and how the compressor is working.

Plot the static gain f and dynamic gain g, along with the input waveform x,

level measurement xPEAK or xRMS and output waveform y. Choose the best way to present the 5 plots together, e.g. subplots and/or different color lines.

Assessment

Documented implementation of compressor stages

1. level measurement (4 marks)

2. static gain (4 marks)

3. attack/release (4 marks)

4. integration and test code (4 marks)

Demonstration of correct functioning on sine wave signal

5. level measurement (4 marks)

6. static gain (4 marks)

7. dynamic gain (4 marks)

8. specify the value of all parameters used (4 marks)

Explain clearly why and how the plots demonstrate correct functioning.

32/46 marks

Part 3
AE text question 7 (6/46 marks)

Consider a dynamic range compressor with hard knee, threshold at −12 dB, and ratio of 3:1. What is the output signal level if the input signal level is −15, −12, or 3 dB?