

# Lesson 15

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## Recording Connection Quiz - Signal Processing

1. List three types of equalizers commonly found in a studio, and briefly describe each. You may use a drawing.

- a.
- Tone Controls - Tailor your sound to suit your music; they are the most common equalizers. Bass & treble knobs control a low-pass filter (shelving) and a high pass shelving filter. (They remove a portion of the sound spectrum. Shelving filters just pump up one side. There's mid controls found on 3 band EQs. That can sometimes be called peaking or band pass filter (mid controls).
- b.
- Graphic EQs - provide more flexibility and control than tone controls. A graphic EQ is a set of filters that allow you to control the amount of boost or cut in each frequency band; used to completely isolate frequency bands. They are great for sound re-enforcement and "tuning" rooms.
- c.
- Parametric EQs - allow the most flexibility but are more difficult to use. Parametric EQ allows you to set the center frequency and bandwidth. They can eliminate feedback by using a lot of cut (also called a notch filter) positioned right at the frequency that is feeding back.

2. List the controls commonly found on a compressor, and briefly describe their function.

1. Input Gain - Used to determine how much signal will be sent to the compressor's input stage
2. Threshold - Determines the level at which the compressor will begin to proportionately reduce the incoming signal
3. Output Gain - Used to determine how much signal will be sent to the device's output
4. Slope ratio - Determines the slope of the input-to-output gain ratio
5. Attack - Determines how fast or slowly the device will turn down signals that exceed the threshold
6. Release - Used to determine how slowly or quickly the device will restore a signal to its original dynamic level once it has fallen below the threshold point
7. Meter display - This control changes the compressor's meter display to read the device's output or gain reduction levels
8. \_\_\_\_\_
9. \_\_\_\_\_

3. At which ratio does a compressor commonly begin to become a limiter?

10:1

4. List the controls commonly found on an expander / gate and briefly describe their function.

1. Range - adjust the amount of reduction the signal will undergo
2. Threshold - the point where a decreasing signal will be turned down
3. Release Time - the time (adjusted by the engineer) it takes for the gain to fall to the maximum reduction as selected by the range

5. List the controls commonly found on a digital reverb unit and briefly describe their function.

1. Reverb Time - Designates the length of the time that reverberation will remain
2. Pre-delay - Determines the length of the time it will take after a source reaches the unit until it starts the reverb process
3. Size - Selects the cubic space that the digital circuitry will emulate. \* Not on all units \*
4. Type - Usually many environments are available to be selected in order to match the desired reverb sound. They may include small, medium and large rooms or halls and etc.
5. Reflection - Allows a control over the number of early reflections and the volume of these reflections. \* Not on all units \*
6. Equalization - Usually there are adjustments concerning frequency response to the signal going into the reverb unit
7. Input - Controls the volume of the input signal
8. Meter - Shows the signal level amount
9. Output - Controls the volume of the output signal \* Not on all units \*

6. List three sources of artificial reverberation.

- a Via MIDI control and parameter change messages
- b Via external hardware controller
- c Via DAW or other form of automation control