Digital Communications

1. Microphone (transducer) - Convert energy from one form to another: sound → electric

2. Analog voltage / power amplification

3. Sample and Hold

4. Comparator

5. Ramp Voltage Generator

6. Binary Counter

7. Parallel/Serial Converter

8. Low Pass Filter

9. Mixer

10. Analog Amplifier

Steps for binary counting:
- Convert the binary input into a voltage waveform.
- Use the ramp voltage generator to create a linear ramp voltage.
- Compare the ramp voltage with the input waveform using the comparator.
- The output will be 0 or 1 based on the comparison result.
- Stop the binary counter as soon as the binary counter stops.

Bandwidth of the signal before transmission to avoid bleeding into other channels.