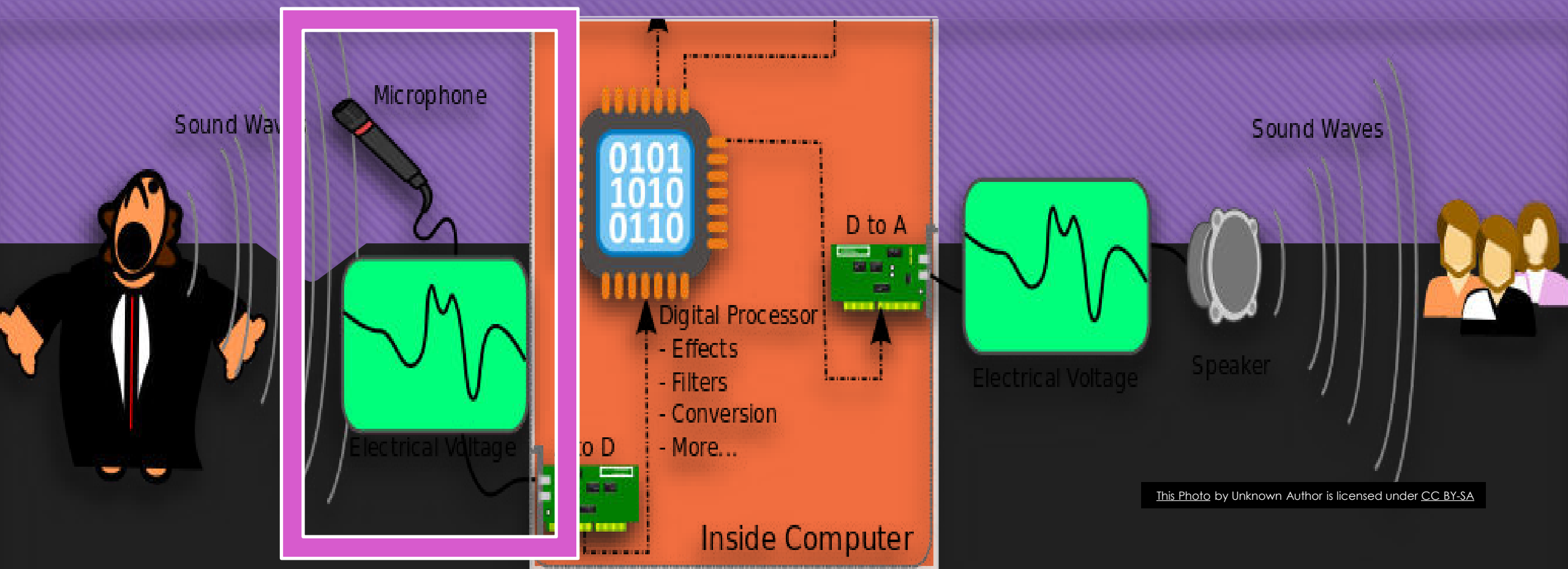


AUDIO PRODUCTION & PODCASTING

COMM-M464: Advanced Audio Technique

JRN-J360: Journalism Specialties





AUDIO SIGNAL FLOW

Lecture #3

MICROPHONES

Alten Chapters 4



Microphone TOPICS

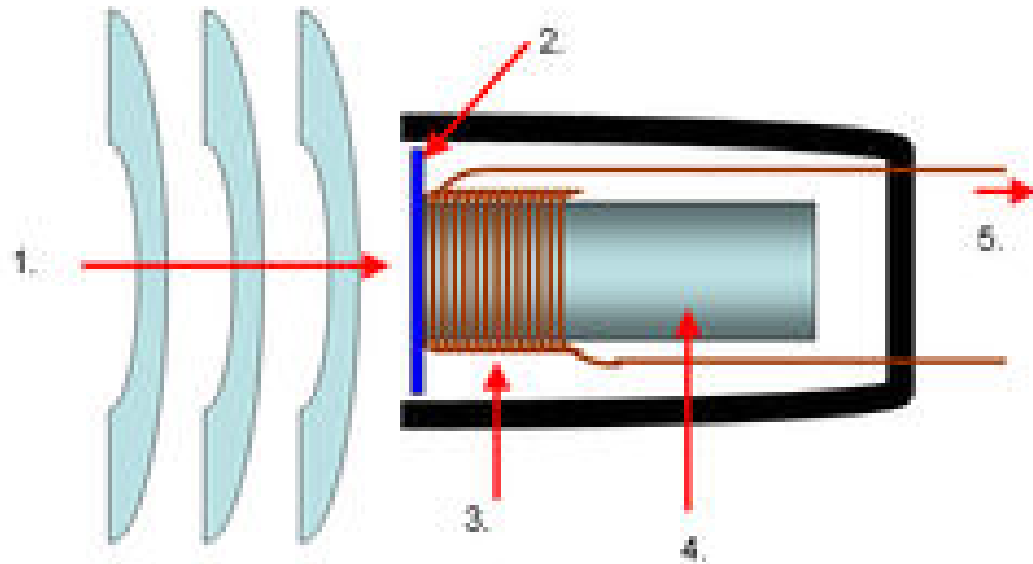
Electronics

Categories

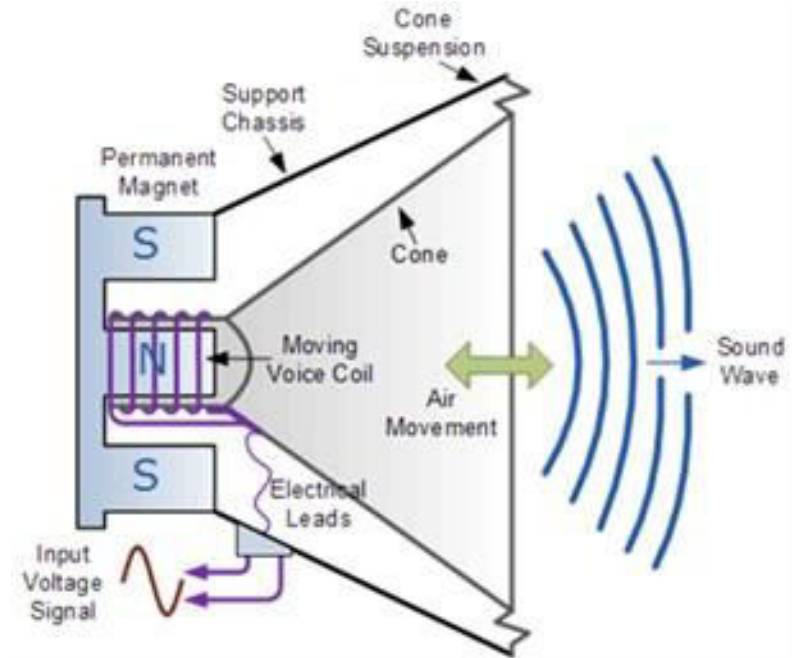
Patterns

Vocal Response

Signal Chain



MICROPHONE TRANSDUCER



SPEAKER TRANSDUCER

This Photo by Unknown Author is licensed under CC BY
A MICROPHONE is a “TRANSDUCER”

DEF: converts one form of (acoustic) energy to another (electrical) energy

MICROPHONE CATEGORIES



DYNAMIC

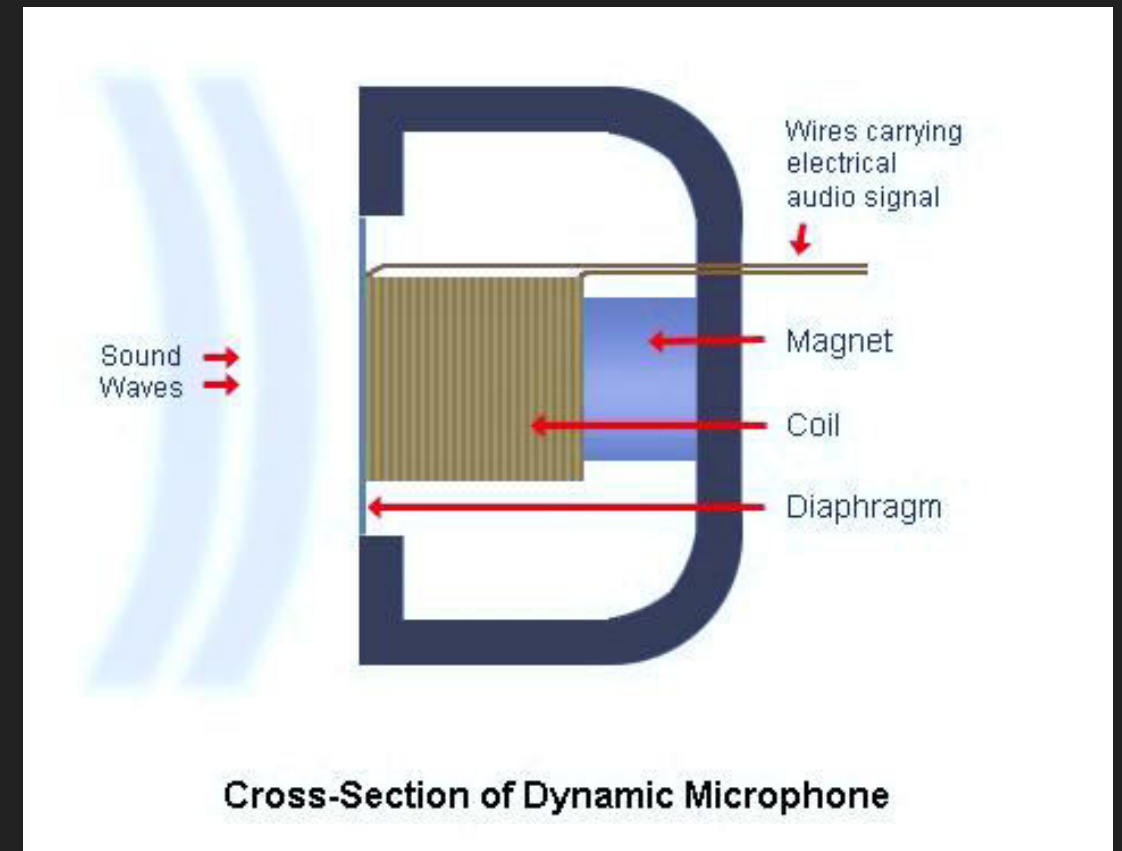


CONDENSER

DYNAMIC MICROPHONE

DEFINTION:

- A mic that uses magnetic induction, as the transducer
- The dynamic movement of a thin diaphragm and coil of wire against a fix magnet generates the electronic signal
- Sometimes called “moving coil mics”





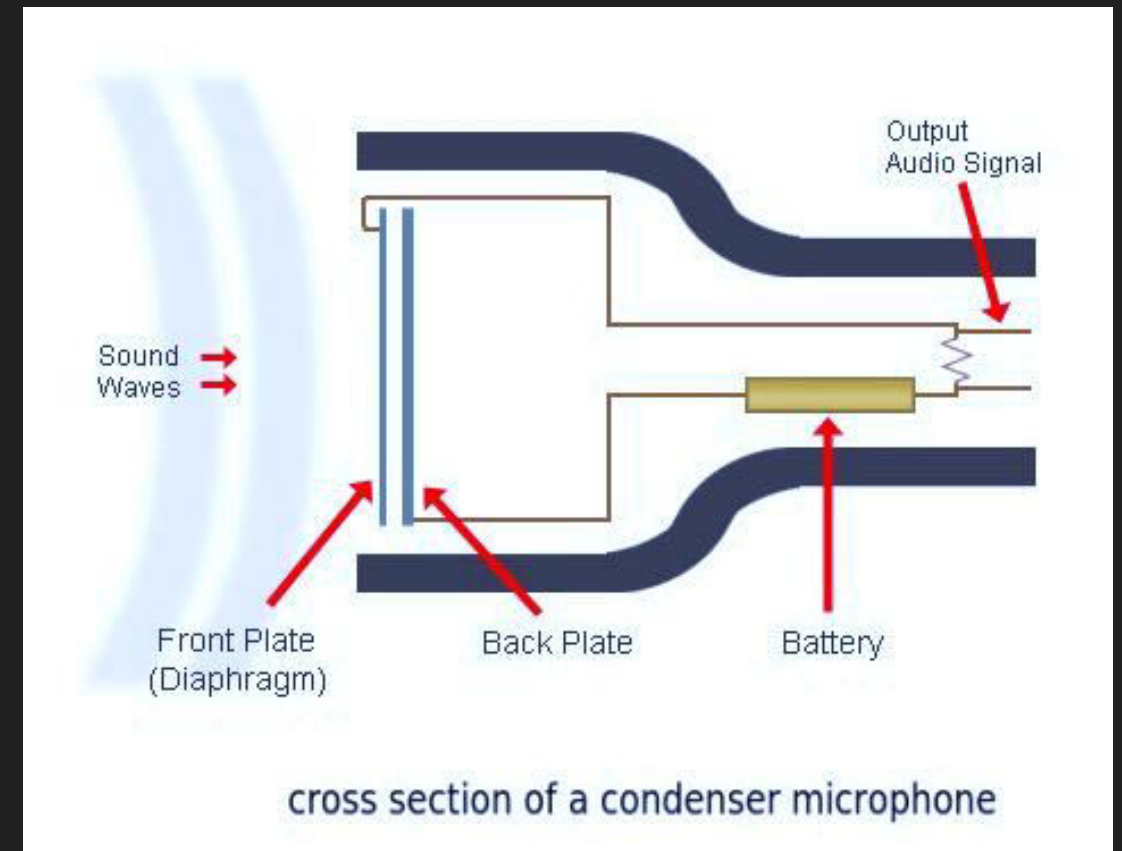
DYNAMIC “STICK” MICS



CONDENSOR MICROPHONE

DEFINTION:

- A mic that uses variable capacitance, as the transducer
- Two electrically charged plates, or electrodes, form a capacitor
- The movement of the diaphragm plate varies the space between them, changing the voltage signal



CONDENSOR MICS

- Lavalier (Lav)
- Studio
- Pressure Zone Mic (PZM)
- Shotgun Mic



CONDENSOR MIC POWER SOURCES

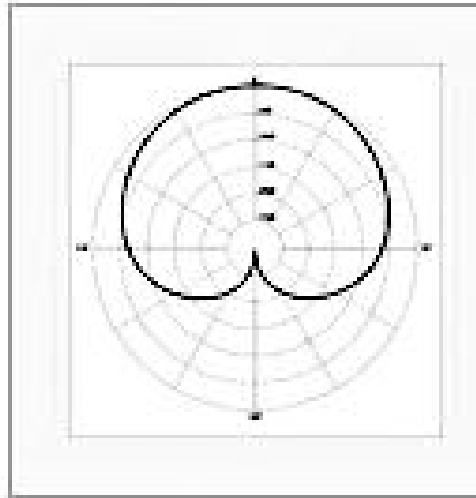


INTERNAL

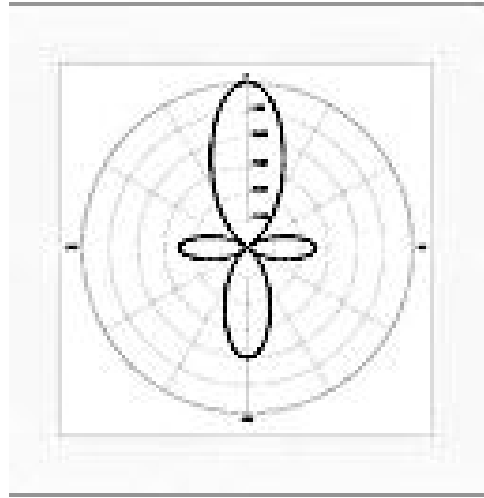
- Battery Compartment

EXTERNAL "PHANTOM POWER"

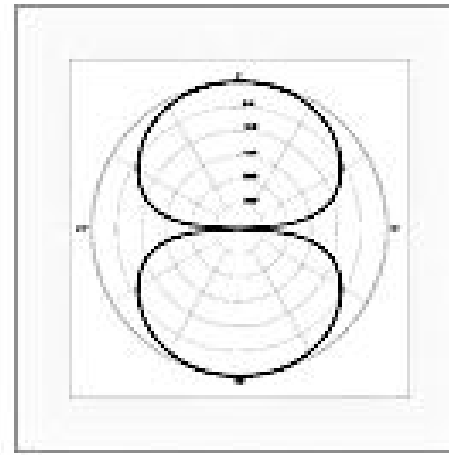
- Power Supply Box
- +48V from Camera/Mixer/Interface



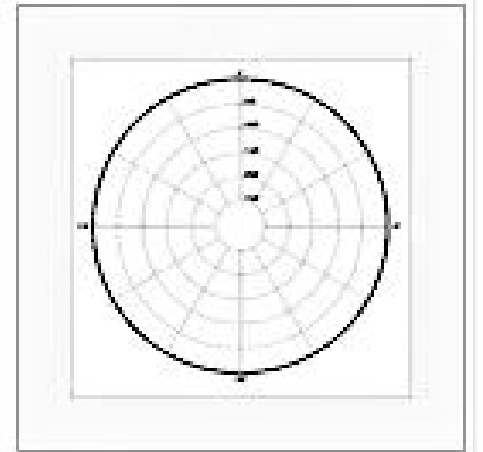
Cardioid



Shotgun



**Bi-directional or
Figure of 8**



Omnidirectional

PICKUP PATTERNS

DEF: The “polar response” directions in which a mic hears sounds

USB MICS

- Direct to computer
- No additional hardware
- Digital Transducer
- Most affordable



AFFORDABLE MIC BRANDS

- Neewer
- Zoom
- Blue
- Samson
- Audio Technica
- Rode



HIGH-END BRANDS

- Electro Voice
- Shure
- Sennheiser
- AKG
- Schoepes
- Neuman



SHURE SUPER 55



SHURE SM57 / SM58

MICROPHONE ADDRESSING

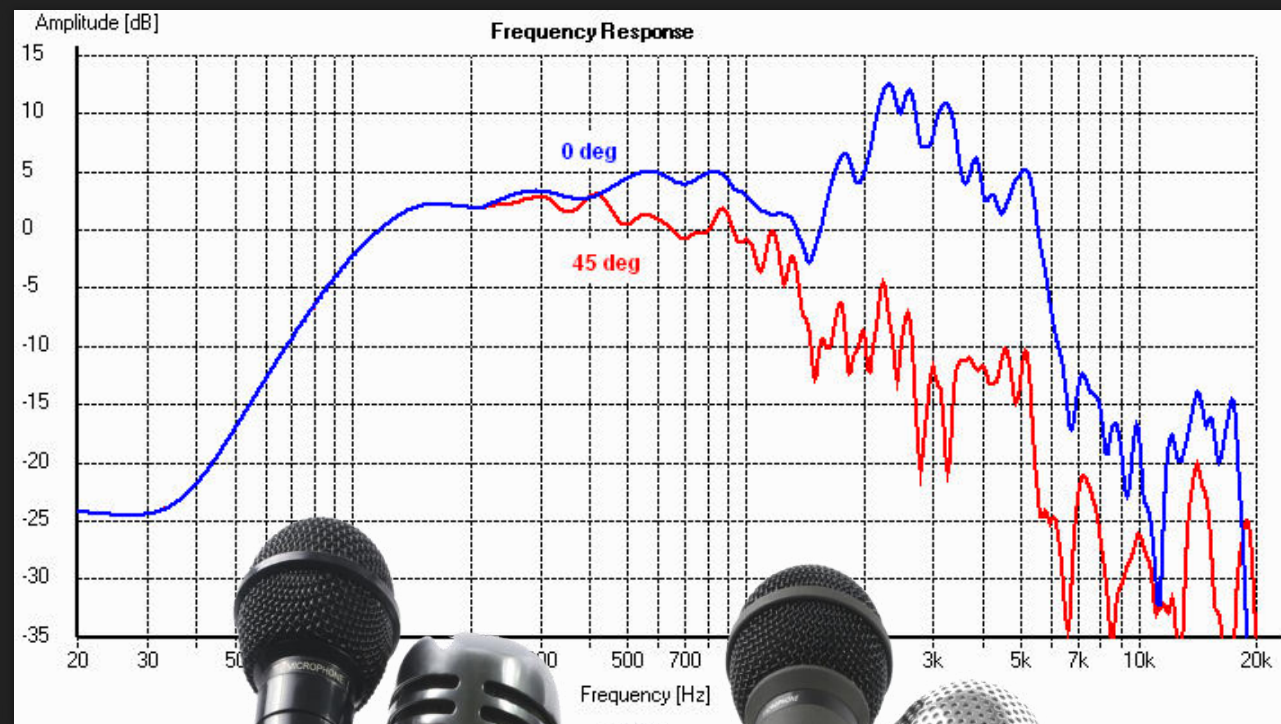
○ Front Address

○ Side Address



MIC FREQUENCY RESPONSE

- **DEF:** the range of frequencies a mic can faithfully reproduce at the same loudness
- The response curve graph shows a mic's "coloration" or "character" of sound



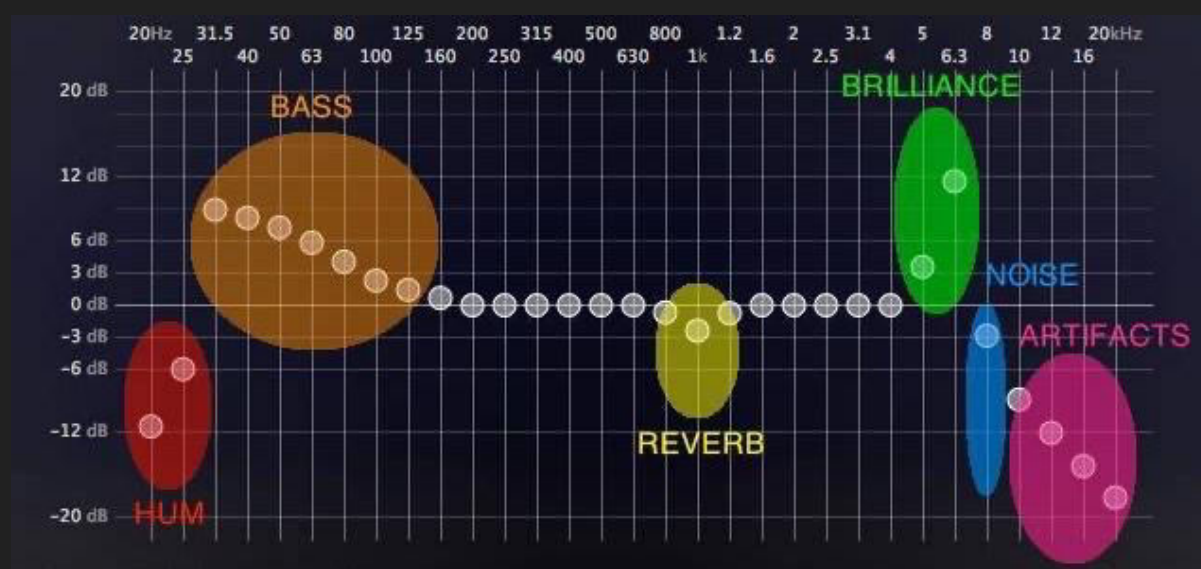
PROXIMITY EFFECT

○ DEFINITION:

- The increase of bass frequencies when talking closer to the mic
- Only apparent in cardioid mic patterns

○ SOLUTION:

- Bass Roll-off switch



MIC ACCESSORIES

- Shock Mount
- Pop Filter
- Boom/Stand



SIGNAL FLOW

Voice



Mic



Recorder

HUMAN

ANALOGUE

DIGITAL

Ears



Headphones/Speakers



Computer/DAW

SIGNAL FLOW VARIATIONS

ANALOGUE

ANALOGUE

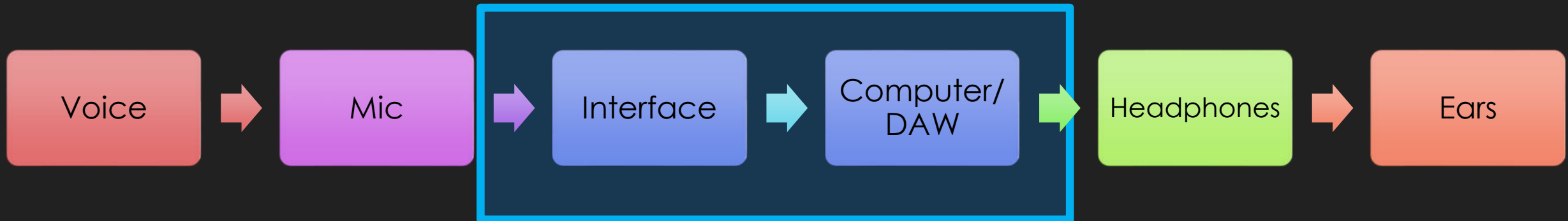
ANALOGUE



ANALOGUE

DIGITAL

ANALOGUE



NEXT TUES FIRST QUIZ



Online via Canvas



10 Questions = 10pts



Podcasting, Sound Physics,
Microphones



Posted Tuesday morning



Closed 10min into class

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