AI-03817 FBQ3105 EQ Frequency Tuning

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Tags	Project
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List all graphic equalizer cut / boost cheat frequency

Graphic Equalizer Cut / Boost Cheat Frequency Table

Frequency	Boost = Adds	Cut = Reduces
20 Hz	Subsonic rumble, cinematic low-end	HVAC rumble, stage vibration
25 Hz	Extreme sub extension	Unnecessary ultra-lows
31.5 Hz	Club sub bass, EDM energy	Muddy sub boom
40 Hz	Kick drum weight, deep sub	Loose boomy bass
50 Hz	Bass depth, floor thump	Excessive room resonance
63 Hz	Punch, kick impact	Thick muddy PA sound
80 Hz	Bass thump, warmth	Stage rumble, proximity boom
100 Hz	Fullness, male vocal warmth	Boomy vocals, muddy guitars
125 Hz	Warmth, thickness	Blanket-over-speakers sound
160 Hz	Snare body, thick guitar	Low-mid buildup
200 Hz	Fullness, body	Mud, cardboard tone
250 Hz	Instrument body	Boxiness, congestion
315 Hz	Density, fullness	Cheap speaker tone
400 Hz	Vocal body	Boxy PA sound
500 Hz	Mid presence	Honk, nasal tone

630 Hz	Guitar articulation	Telephone sound
800 Hz	Instrument definition	Hollow harsh mids
1 kHz	Vocal intelligibility	Megaphone effect
1.25 kHz	Speech clarity	Fatiguing mids
1.6 kHz	Attack, guitar bite	Sharp aggressive vocals
2 kHz	Vocal clarity, snare crack	Ear fatigue
2.5 kHz	Presence, intelligibility	Harsh PA bite
3.15 kHz	Speech attack, definition	Painful sharpness
4 kHz	Vocal definition, drum attack	Brittle harsh sound
5 kHz	Crispness, pick attack	Sibilance, harsh cymbals
6.3 kHz	Brightness	Harsh “S” sounds
8 kHz	Air, cymbal sheen	Hiss, excessive treble
10 kHz	Sparkle, hi-fi polish	Piercing brightness
12.5 kHz	Airiness	Hiss
16 kHz	Expensive airy sound	Digital harshness

Fast “Problem Solver” EQ Table

Problem	**Frequencies to Cut/Boost**
Muddy mix	Cut 200–400 Hz
Boomy room	Cut 63–100 Hz
Thin sound	Boost 100–250 Hz
Harsh vocals	Cut 2–4 kHz
Dull speakers	Boost 6–10 kHz
No vocal clarity	Boost 1–3 kHz
Piercing cymbals	Cut 5–8 kHz
Weak kick drum	Boost 50–80 Hz
Weak bass guitar	Boost 80–125 Hz
Feedback ringing	Cut offending frequency narrowly

Hi-fi “smile curve”	Boost 63 Hz + 8 kHz, cut 315 Hz

Instrument Frequency Cheat Table

Instrument	Important Frequencies
Kick Drum	50–80 Hz thump, 2–4 kHz click
Bass Guitar	60–120 Hz body, 700 Hz growl
Snare Drum	200 Hz body, 2 kHz crack
Electric Guitar	100–250 Hz body, 2–4 kHz bite
Acoustic Guitar	100–200 Hz warmth, 5 kHz sparkle
Piano	80 Hz–5 kHz full spectrum
Male Vocal	100–250 Hz warmth, 2–4 kHz clarity
Female Vocal	200–400 Hz body, 3–5 kHz presence
Cymbals	6–12 kHz shimmer
Speech	1–4 kHz intelligibility

Recommended Starting Curve for Your PA

For:

- Behringer FBQ1502HD
- Alto Professional TS115A
- Polk powered sub

Frequency Area	Suggested Adjustment
40–63 Hz	+1 dB
125–400 Hz	-2 dB
2–4 kHz	+1 dB
8–10 kHz	+1 dB

This usually gives:

- cleaner vocals

- tighter bass
- less mud
- more hi-fi playback sound

Graphic EQ “Cheat Frequencies” Reference

A graphic equalizer like the Behringer FBQ1502HD or Behringer FBQ3102HD lets you shape sound by boosting or cutting frequency bands.

Golden Rule

- **Cut first**, boost second.
- Small moves matter:
  - ±2 dB = subtle
  - ±4 dB = obvious
  - ±6 dB = aggressive
- Too much boost = harshness, feedback, clipping, ear fatigue.

Ultra-Simplified Frequency Map

Frequency Range	What You Hear
20–40 Hz	Sub bass, rumble
40–80 Hz	Deep punch, thump
80–160 Hz	Bass fullness
160–400 Hz	Warmth / muddiness
400 Hz–1 kHz	Boxiness / body
1–3 kHz	Clarity / attack
3–6 kHz	Presence / intelligibility
6–10 kHz	Brightness / sizzle
10–16 kHz	Air / sparkle

Full Graphic EQ Cheat Sheet

20 Hz

- Boost:
  - Earthquake rumble
  - Cinematic sub effects
- Cut:
  - HVAC rumble
  - Stage vibration
  - Mic stand noise

25 Hz

- Boost:
  - Extreme subwoofer extension
- Cut:
  - Unnecessary ultra-low energy

31.5 Hz

- Boost:
  - Club-style sub bass
  - EDM low-end
- Cut:
  - Muddy sub boom
  - Speaker stress

40 Hz

- Boost:
  - Kick drum “weight”
  - Subwoofer power
- Cut:
  - Boomy rooms
  - Loose bass

50 Hz

- Boost:
  - Bass guitar depth
  - Floor-shaking lows
- Cut:
  - Excessive room resonance

63 Hz

- Boost:
  - Punchy kick drum
  - Bass impact
- Cut:
  - Thick muddy PA sound

80 Hz

- Boost:
  - Thump

    - Warm bass
- Cut:
    - Stage rumble
    - Proximity effect on vocals

100 Hz

- Boost:
    - Fullness
    - Male vocal warmth
- Cut:
    - Muddy vocals
    - Boomy guitars

125 Hz

- Boost:
    - Warmth
- Cut:
    - “Blanket over speakers” sound

160 Hz

- Boost:
    - Thick guitar
    - Snare body
- Cut:
    - Mud accumulation

200 Hz

- Boost:
  - Fullness
- Cut:
  - Mud
  - Cardboard sound

250 Hz

- Boost:
  - Body
- Cut:
  - Boxiness
  - Congested mix

315 Hz

- Boost:
  - Instrument density
- Cut:
  - “Cheap speaker” tone

400 Hz

- Boost:
  - Some vocal body
- Cut:
  - Boxy PA

- Muddy room

500 Hz

- Boost:
  - Mid presence
- Cut:
  - Honky tone
  - Nasal sound

630 Hz

- Boost:
  - Guitar articulation
- Cut:
  - Telephone-like tone

800 Hz

- Boost:
  - Instrument definition
- Cut:
  - Hollow harsh mids

1 kHz

- Boost:
  - Vocal intelligibility
- Cut:
  - Harsh megaphone sound

1.25 kHz

- Boost:
  - Speech clarity
- Cut:
  - Fatiguing mids

1.6 kHz

- Boost:
  - Attack
  - Guitar bite
- Cut:
  - Sharp aggressive vocals

2 kHz

- Boost:
  - Snare crack
  - Vocal clarity
- Cut:
  - Ear fatigue

2.5 kHz

- Boost:
  - Presence
- Cut:
  - Harsh PA bite

3.15 kHz

- Boost:
  - Speech intelligibility
  - Guitar attack
- Cut:
  - Painful sharpness

4 kHz

- Boost:
  - Vocal definition
  - Drum attack
- Cut:
  - Listener fatigue
  - Brittle sound

5 kHz

- Boost:
  - Crispness
  - Pick attack
- Cut:
  - Sibilance
  - Harsh cymbals

6.3 kHz

- Boost:

    - Brightness
- Cut:
    - Harsh “sss” sounds

8 kHz

- Boost:
    - Air
    - Cymbal sheen
- Cut:
    - Hiss
    - Harsh treble

10 kHz

- Boost:
    - Sparkle
    - Hi-fi polish
- Cut:
    - Excessive brightness

12.5 kHz

- Boost:
    - Airiness
- Cut:
    - Hiss

16 kHz

- Boost:
  - “Expensive” airy sound
- Cut:
  - Digital harshness

Live Sound “Quick Fix” Cheat Codes

Muddy Mix

Cut:

- 200 Hz
- 250 Hz
- 315 Hz
- 400 Hz

Boomy Room

Cut:

- 63 Hz
- 80 Hz
- 100 Hz

Harsh Vocals

Cut:

- 2 kHz
- 3 kHz
- 4 kHz

Improve Speech Intelligibility

Boost slightly:

- 1.5 kHz
- 2 kHz
- 3 kHz

Reduce Feedback

Cut ringing frequencies:

- Usually:
  - 250 Hz
  - 400 Hz
  - 2.5 kHz
  - 4 kHz

Make Music Sound Bigger

Slight “smile curve”:

- Boost lows:
  - 63–80 Hz
- Boost highs:
  - 8–10 kHz
- Slight cut:
  - 315–500 Hz

Common Instrument Frequency Cheats

Instrument	Key Frequencies

Kick Drum	50–80 Hz thump, 2–4 kHz click
Bass Guitar	60–120 Hz body, 700 Hz growl
Snare	200 Hz body, 2 kHz crack
Guitar	100–250 Hz body, 2–4 kHz bite
Piano	80 Hz–5 kHz wide spectrum
Male Vocal	100–250 Hz warmth, 2–4 kHz clarity
Female Vocal	200–400 Hz body, 3–5 kHz presence
Cymbals	6–12 kHz shimmer

PA System Starting Curve (Good Baseline)

For your setup with:

- Behringer FBQ1502HD
- Alto Professional TS115A
- Polk powered sub

Try:

Band	Adjustment
40–63 Hz	+1 dB
125–400 Hz	-2 dB
2–4 kHz	+1 dB
8–10 kHz	+1 dB

This usually creates:

- cleaner vocals
- tighter bass
- less mud
- more hi-fi sound

Fastest Way to Learn EQ

Practice Method

1. Play familiar music.
2. Boost one frequency aggressively (+8 dB).
3. Listen carefully.
4. Then cut it aggressively.
5. Train your ears repeatedly.

This is how live sound engineers learn frequency recognition quickly.

Most Important Frequencies to Memorize

Frequency	Meaning
63 Hz	Punch
125 Hz	Warmth
250 Hz	Mud
500 Hz	Honk
1 kHz	Mid clarity
2 kHz	Presence
4 kHz	Attack
8 kHz	Brightness
12 kHz	Air