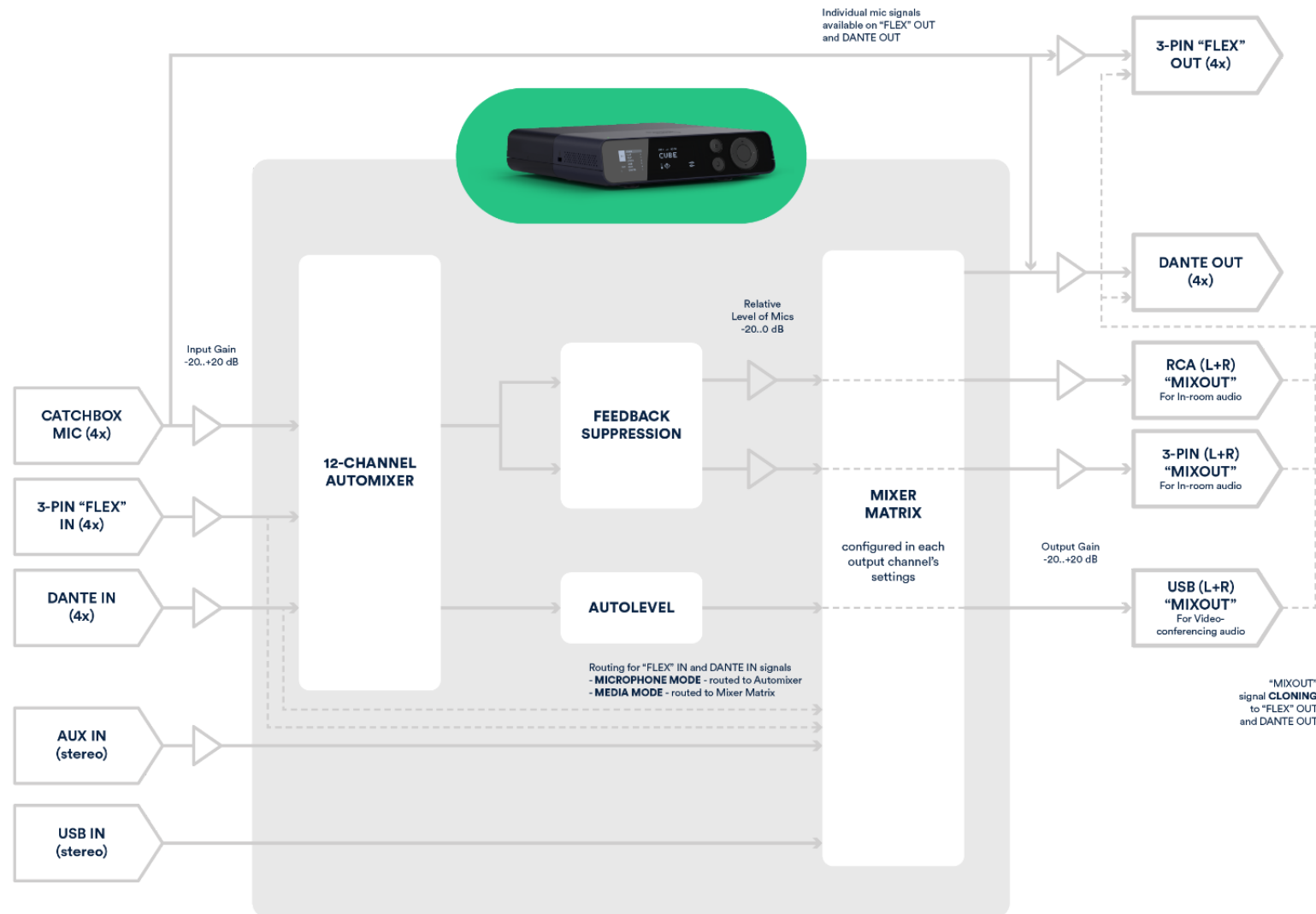


Audio Signal Flow in Hub DSP



1. Audio Inputs & Gain Stage

- **x12 Available Input Channels:** Accepts up to 4 Catchbox mics (Cube, Clip, Stick), 4 FLEX inputs (3-pin balanced), 4 Dante network inputs, AUX IN (3.5mm), and USB IN.
- **Input Gain Control:** Every input channel (except USB IN) features gain adjustments (-20 dB to +20 dB in 5 dB steps).

2. Internal Processing Paths

- **12-Channel Automixer:** Mixer that automatically prioritizes active speakers while attenuating idle mics. Applied to all Catchbox mics; FLEX and Dante inputs configured to **Microphone Mode**.
- **Feedback Suppression (In-Room Path):** Continuous 5 Hz frequency-shifting algorithm applied to local room outputs (MIXOUT 3-pin and RCA) to prevent room rings and feedback screech.
- **AutoLevel (Video Call Path):** Volume-stabilizing algorithm applied to the USB OUT path to ensure consistent speech volume for online participants on Zoom, Teams, etc.
- **Media Mode Bypass:** External sources (FLEX, Dante, AUX) configured to Media Mode bypass the Automixer and voice processing entirely, passing raw line-level audio (such as presentation soundtracks) directly to the Mixer Matrix.

3. Outputs & Channel Cloning

- **Mixer Matrix Outputs:** Independent, customizable audio mixes assigned to 3-PIN MIXOUT L&R (balanced in-room), RCA MIXOUT (unbalanced in-room), and USB MIXOUT (video conferencing).
- **Direct Unmixed Outputs:** Raw, individual microphone channels available on FLEX OUT and Dante OUT.
- **Output Channel Cloning:** Mirrors any processed master mix (e.g., In-Room mix with Feedback Suppression or USB mix with AutoLevel) directly onto FLEX OUT 1–4 or Dante OUT 1–4 ports.
- **Output Gain Stage:** Output gain control (-20 dB to +20 dB) available across destination channels (except USB OUT).