

# AI-Powered Speech Boost

## Overview:

Meeami's Speech Boost is an AI-powered bandwidth extension solution that enhances low-resolution speech (e.g., 8kHz telephony audio) to wideband (16kHz) or full-band (32kHz) audio in real time. Based on a modified HiFi-GAN architecture, Speech Boost reconstructs missing high-frequency components to deliver speech that sounds more natural, clear, and intelligible – without increasing data transmission requirements.

## Ideal Use Cases

- **VoIP / Telecom**  
Improve clarity and listener experience in mobile or internet-based calls.
- **Audio Restoration**  
Upsample archival or low-bitrate recordings for podcasts, interviews, or broadcast.
- **Hearing Assistive Devices**  
Enrich voice clarity for better comprehension in constrained devices.
- **Machine Learning Pipelines**  
Feed high-fidelity input into speech recognition or speaker ID models.

## Technical Specifications

Feature	Specification
Input Format	8kHz, 16kHz
Output Format	48 kHz
Latency	~10ms end-to-end
Model Size	~4 MB
Compute	~330M MACs
POLQA Score	4.7 (from 8kHz input)
MOS Score	~4.3 (subjective avg.)
Platforms	Windows, Linux, Mac, Android, iOS, WebAssembly

## Integration

- Meeami C-SDK available for Windows and Linux
- WebAssembly SDK for browser-based real-time enhancement
- Interfaces: Audio driver integration, streaming pipeline support
- Compatible with Meeami AEC, NS, AGC stack

## Outcomes

- **Significantly Enhanced Audio Quality**  
Elevate poor-quality 8kHz audio to near-native 48 kHz fidelity.
- **Improved Call Experience**  
Users perceive clearer, richer audio even over narrowband networks.
- **Higher ASR/AI Accuracy**  
Feed better data into speech engines for more accurate results.
- **Edge-Deployable and Real-Time**  
Low compute and memory requirements enable widespread deployment.

## Transformational Impact

Without Speech Boost	With Speech Boost
Narrow, muffled speech at 8kHz	Full, clear audio at 48 kHz
Low MOS and listener fatigue	High MOS and user satisfaction
Poor audio input for AI/ML models	High-resolution input for better AI results
GPU-only inference	Edge-optimized for CPU and browser

## Request Access or Demo

Meeami's Speech Boost is ready for real-time deployments and PoC integrations  
[sales@meeamitech.com](mailto:sales@meeamitech.com)