HFFx Auto

OXFORD
D I G I T A L

## High Frequency Reconstruction Effect

Overview

HFFx is an embedded application for audio high frequency restoration used in Soundbars, Speakers, Headphones, Earbuds, TVs and AVRs. Use cases include:

- Correcting low audio bandwidth caused by data rate restrictions, data 'throttling' and legacy codecs in Streamed AV, Digital Broadcast services and Digital TV

- Restoration of high frequency content that was removed by lossy sub-band coding (e.g. MP3, AAC, Bluetooth) the absence of which produces a dull, lifeless sound without correction (often an issue in covering the last few metres in the delivery chain when streaming to a loudspeaker or other device via a mobile phone)

- Extending the bandwidth of material that was recorded band-limited (e.g. recorded to analogue tape, low sample rate, or other restrictions)
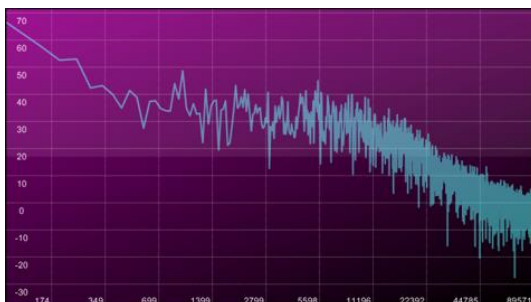
Tuning UI Displays

Incoming audio with missing HF
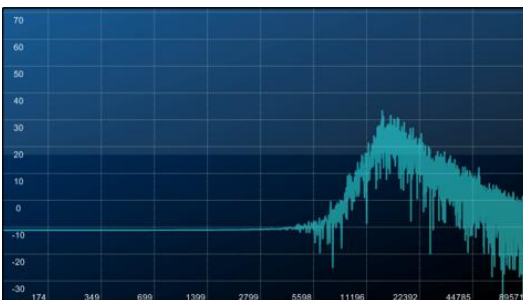
Reconstructed harmonics

Reconstructed signal

Auto Mode

HFFx Auto Mode is a new feature which includes an adaptive algorithm that measures the channel bandwidth and allows HFFx to automatically and dynamically reconstruct full range bandwidth audio.

Examples where adaptation is required include:

- correction of HF loss in AV streamed services (e.g. YouTube, Amazon Prime) which may vary from clip to clip as well as channel to channel

- switching between different channels in Digital Video Broadcast transmission where channel audio bandwidth can vary from ~17KHz down to ~10KHz

Further Information

Please contact:

E: info@oxford-digital.com
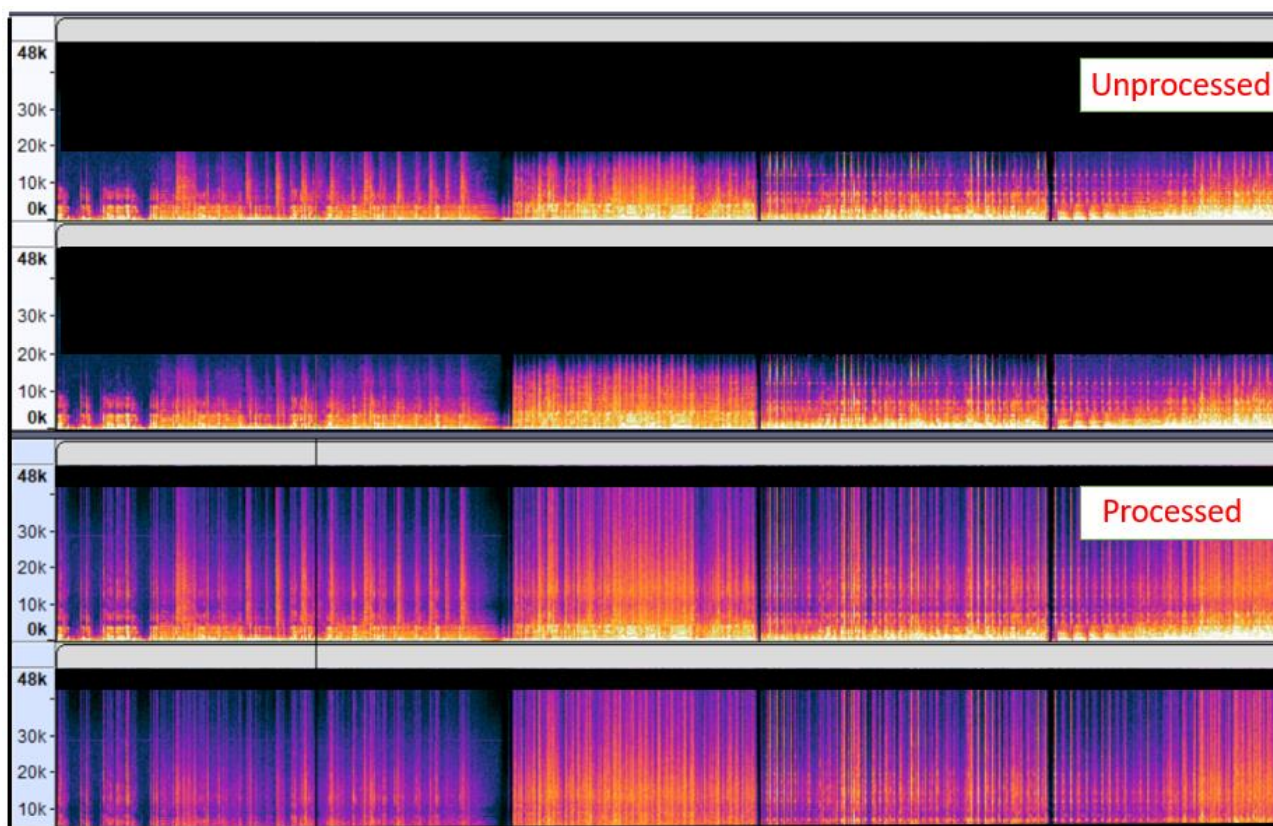
or

T: +44-845-450-5664

HFFx Auto UC

OXFORD DIGITAL

High Frequency Reconstruction Effect

Overview

HFFx Auto UC incorporates all the functionality of HFFx Auto, but in addition has the ability to up-convert content to 88.2/96KHz or 176.4/192KHz sample rates which provides a more natural 'open' sound for premium products.

Spectrograms Input/Output

The bandwidth of the signal has been increased from ~19KHz to 45KHz in the example above.

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