HFFx Auto

High Frequency Reconstruction Effect

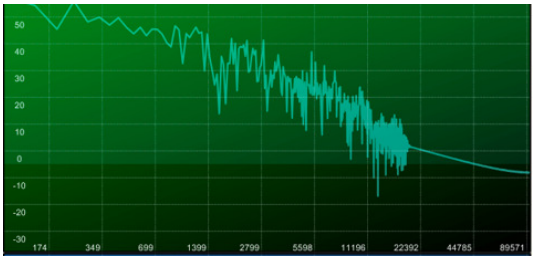
Overview

Targeted at embedded applications in Soundbars, Speakers, Headphones, Earbuds, TVs and AVRs, use cases include:

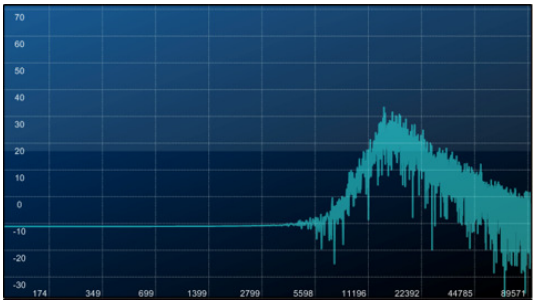
- Restoration of high frequency content that was removed by lossy sub-band coding (e.g. MP3, AAC, Bluetooth) producing a dull, lifeless sound
- Switching between channels of varying audio bandwidth (e.g. on a TV – see below)
- Extending the bandwidth of material that was recorded band-limited (e.g. recorded to analogue tape, low sample rate, or other restrictions)
- Up-conversion of audio from 1Fs (44.1k and 48kHz) to High Resolution audio rates such as 2Fs (88.2KHz, 96KHz), 4Fs (176.4KHz, 192KHz) to create a more 'open' sound

Tuning UI Displays

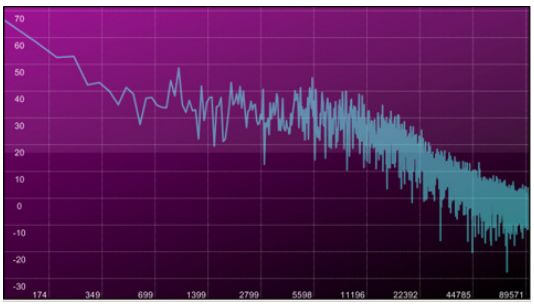
Devices are tuned using a PC app and the parameters are then transferred to the embedded code for manufacture.



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 dynamically reconstruct full bandwidth audio.

Examples include switching between:

- different channels in DVB-T transmission where channel audio bandwidth can vary from ~17KHz down to ~10KHz
- lossy encoded links such as Bluetooth and full bandwidth sources
- legacy material – e.g. from archive analogue tape

Further Information

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