



## Hypex Electronics Filter Design Release notes

The software package includes:

- Setup + DLL's for the Hypex Filter Design program v5.2.4
- Sample impulse files
- FusionAmp firmware v1.51 and v5.8
- DSP3-224 firmware v1.1

To use the program extract the HFDSetup.zip file to a local drive and start HFDSetup.exe. After installation is completed, a few sub-folders are created in the same folder as where HFD.exe is installed.

For extra help, please read the "FA Update Tutorial V0200.pdf" which is located in the "Documentation" folder.

The software is designed for use on Windows-7, 8.1, 10 and 11 platforms.

Future software and firmware version will be available at the website, but latest DSP3 firmware (DSP3-213: v1.51 and v5.8, DSP3-224: v1.1) are also included in this HFD update in the "DSP3 fimware" folder.

Please note that v1.51 is intended for FusionAmps currently running v1.3x or v1.4x, and v5.8 can only be installed on FusionAmps currently running v5.x

Also note that v5.x FusionAmps can only connect to this HFD version v4.98 or newer and that DSP3-224 firmware only can connect to HFD v5.2 or higher.

For sample impulse files, please see folder 'Sample files' (it also contains a file with flat response data).

Starting with HFD version 4.9, a connected FusionAmp should have firmware version v1.4 (or higher). Please update your FusionAmp to version 1.51 (see folder "FusionAmp firmware").

Note: if your FusionAmp currently has a firmware version 1.3x or lower, please start with updating your FusionAmp to a v1.4x (like 1.44 or 1.46), before installing v1.51

Note2: Please notice that only firmware v5.x+ has FIR capability, due to a hardware change

Please use HFD version 5.1 or higher if you are planning to implement a FIR filter on channel 3 of the FusionAmp (DSP3-213), as only 1500 taps filters are allowed by the DSP (in case of selected output FIR filters).

## Hypex Filter Design v5.2

Improvements in HFD v5.2:

- Ability to connect to and setup the new DSP3-224 (Stereo DSP)
- USB connection sometimes “hanged” using VU meter, this is fixed
- FIR enable in graphical filterdesign screen was not working properly
- The delay in graphical filterdesign screen (channel header) was not updated correctly over all the channels when changing one channel
- User messages changed, where “FusionAmp” was written, now contains “DSP3” as both the FusionAmp (DSP3-213) as the new DSP3-224 (Stereo DSP) are of the same DSP3 family
- The softclip limiter maximum power is now 1200W
- DSP3-224 bootloader reported itself as a DSP3-213
- Default setting button now disabled when device is password protected and locked
- A warning is given when dimmed display brightness is changed with a value of 7 or higher to prevent oled burn-in
- A warning is given when the selected database path is no longer valid
- A message is given after the hardware configuration is saved (device needs to reboot to activate the new settings)
- Taborder of components in device settings was erratic
- The softclip limiter value entry now accepts comma’s as well as dots
- The softclip limiter is now completely set to default when ‘Force defaults’ is hit
- The actual input displayed by HFD was not always what was selected
- In graphical filterdesign, Q of a biquad can now be changed by pressing the control-key and then left clicking the biquad. When this combination is held, moving the mouse up will increase Q, moving the mouse down will decrease the Q-factor. This is the same functionality as rotating the mousewheel on a selected biquad
- When a biquad is added, it is now standard a Boost/Cut filter. Previously a Unity filter was set
- A ‘noise’ checkbox is added on the mainscreen. Checking this box, will instruct the DSP3 to rotate a noise signal from channel to channel. Only valid programmed channels are used for the noise output. The volume is set to -55dB when producing noise
- On the equalizer screen it is now possible to program the EQ of the current preset to all other presets with button ‘save to all presets’. Button ‘upload to DSP’ is renamed to ‘save to this preset’ and will only program the EQ to the current selected preset
- It was not possible to create a project offline with FIR filters other than input-FIR filter
- Improved opening "Device settings" screen (very occasionally failed to load settings from the connected device)

HFD v5.2.4 quick fixes:

- Released along with DSP3-224 firmware v1.21
- Clone functionality is now less dependent of host cpu speed.
- Error in microphone correction calculation fixed
- Display logo update button was invisible for OEM users

## **Hypex Filter Design v5.1**

Improvements in HFD v5.1:

- When using FIR filters in channel 3, it was not possible to add a 1500 taps filter. 1500 taps is the mandatory amount for all channels (in case of selected output FIR filters)
- OEM settings improvements

## **Hypex Filter Design v5.0**

Improvements in HFD v5.0:

- Removed legacy devices like AS2, DLCP, DSP2W, PSC2xxx
- New projects for FusionAmp v1.x and v5.x when no device is attached
- FIR implemented for firmware v5.x+(4500 taps for one FIR filter at the input or 1500 taps per channel on the output)
- Clone option added (under "Filterdesign-Tools")
- Fixed memory leaks
- Name change: MP-DSP-Main is now called DSP3-213
- Attack and Release properties revealed for soft-clip limiter
- tooltips added in Device settings screen
- "Auto-detect" on source slave removed
- For Windows 11 users: HFD is a 32-bit application and may need vcredist\_x86.exe. Please install the latest version from Microsoft, see "<https://learn.microsoft.com/en-us/cpp/windows/latest-supported-vc-redist?view=msvc-170>"

## Hypex Filter Design v4.981

Improvements in HFD v4.981:

- EQ upload bug fixed. Please use THIS version (v4.981 or higher) of HFD to change your device settings

## Hypex Filter Design v4.98

Improvements in HFD v4.98:

- Delay extended from 19msec to 32msec
- Functionality added for OEM users
- New USB driver implemented
- Memory leaks solved
- Ready for FusionAmp V1.x as well as V5.x
- FIR question removed when creating a new project with no FusionAmp attached
- High shelf with negative gain
- Delay for V5 FusionAmps was not saved

## Hypex Filter Design v4.97

Improvements in HFD v4.97:

- After changing only one preset and uploading all presets, the channels of the other presets were set to unity filters (passing audio with a gain of 0dB)
- Sometimes during changing an equalizer filter, exceptions were thrown
- Password protection now works on individual items (previous it protected all settings)
- E-mail address is checked more thoroughly
- The phase was not always calculated when changing channel parameters like 'invert' when the phase tab was selected
- Standby LED (red LED) functionality changed. Now selectable: OFF, 100%, 50% 25% brightness
- NC52 amplifier added
- The name of a linked channel (top-left on the magnitude tab) is expanded with the text "(readonly: linked to channel x)"
- Graphical screen is closed when FusionAmp is disconnected
- It was possible to manually enter a center frequency of over 50k, causing the biquad to be unselectable afterwards
- Changing the volume with HFD is a bit delayed to prevent sudden high level output. Still, it is preferable to control the volume slider with the arrow keys of the PC keyboard
- Changing numeric values with a comma is improved (especially when parts of the number were selected)
- Sometimes the DELETE button for biquads was not presented (especially for low-pass biquads)
- The file system in HFD is improved. Network drives (Linux and Windows) are now all visible, including the projects

- A browse for folder button is added, to select a new location for the database
- HFD is now ready for FusionAmps with FIR filters (FA with FIR is in development)
- A checkbox is added to enable or disable the equalizer effect during filter design
- The equalizer can be bypassed
- Closing filterdesign sometimes changed the selected preset of an attached FusionAmp
- Import of microphone correction values improved (now skips more text at the beginning of the file)
- Several exceptions fixed

## **Hypex Filter Design v4.96**

Improvements in HFD v4.96:

- NCAS500 and NCAS1000 soft clip limiting values updated
- NCAS500 cannot have third channel enabled

## **Hypex Filter Design v4.95**

**This version requires FusionAmp firmware version 1.41, included in this bundle. Please update your FusionAmp to v1.41 (or higher), after installing HFD v4.95**

Improvements in HFD v4.95:

- Added parametric equalizer (firmware v1.41 needed)
- Added phase plots
- Improved zooming on impulse graph
- Added some help at magnitude and impulse graph
- All fractional inputs now use '.' or ',' as decimal separator
- Many minor bugs fixed (please check releasenote file "Resources\FusionAmp firmware\Releasenotes v1.41, hfd v4.95.txt" for details)

## **Hypex Filter Design v4.83**

Improvements in HFD v4.83:

- HFD produced incorrect password recovery codes when requested by mail
- On main window, numeric volume input now works with '.' and ',' as decimal separator

## **Hypex Filter Design v4.82**

Improvements in HFD v4.82:

- "Productcode" changed to "Serial number" for connected OEM devices
- BTL disabled for NCAS amplifiers (FusionAmp)
- DLCP number of analog inputs was incorrect

## Hypex Filter Design v4.8

**This version requires FusionAmp firmware version 1.3, included in this bundle. Please update your FusionAmp to v1.3 (or higher), after installing HFD v4.8**

Changes in HFD v4.8:

- Graphical filter design:
  - o in an edit box it was possible to enter a 0Hz frequency
  - o in AsymShelf, zero and pole frequencies and Q-factors were swapped (zero was pole, pole was zero)
  - o Live update option is removed
  - o invert channel had no effect on filters with only unity biquads (or when no filter entered at all)
- Absolute SUBIN volume now only available when SUBIN board is detected
- Now possible to create filter designs offline for all types of FusionAmps
- Startup volume is changed from dropbox (with 10dB increments) to fixed point number entry (0.1dB resolution)
- Power mode now only contains two options in the drop-down menu: Low-Power (for use with DIGIN board), Standby mode ( $\leq 0.5W$ )
- preset volume offset did not change when pressing ENTER key, or when changing back to original value
- DAC filter setting now accessible through HFD
- Only FusionAmp projects can be uploaded to a FusionAmp
- Volume is rounded to nearest whole dB
- Projects are now sorted on date changed, not on creation date
- HFD help file updated

## Hypex Filter Design v4.71

Enhancements in HFD v4.71:

- Fixed volume bug AS2.100 when connecting Hypex Filter Design to AS2.100
- Fixed preset issue PSC2
- Fixed volume numeric format on main form for legacy devices

## Hypex Filter Design v4.7

Enhancements in HFD v4.7:

- Added FusionAmp device
- New URLs for webshop and software updates
- USB communication driver updated (needed for FusionAmp)
- Alignment of channels in header of graphical filter design screen improved
- Fixed exception when a 1-channel project was created
- AS2.100 sub out setting made available again
- Several minor bugs fixed

# Hypex Filter Design v4.62

Enhancements in HFD v4.62:

- Bug fixed: Changing the measurement sampling frequency did not always have the proper effect (application used 44100Hz as default)

# Hypex Filter Design v4.6

Enhancements in HFD v4.6:

- Bug fixed: Floating point error occurred when taking measurement and DecimalPointSeparator was set to '.' in Windows regional settings

## HFD is designed by:

Hypex Electronics BV  
Kattegat 8  
NL-9723 JP GRONINGEN  
The Netherlands

OEM Web-site: [www.hypex.nl](http://www.hypex.nl)

DIY Web-site: [www.diyclassd.com](http://www.diyclassd.com)

E-mail: [support@hypex.nl](mailto:support@hypex.nl)

Future software and firmware version will be available at the website and on [www.diyclassd.com](http://www.diyclassd.com)

## Software disclaimer

Software distributed by Hypex Electronics B.V. is provided 'as is' without warranty of any kind, either express or implied, including, but not limited to, the implied warranties of fitness for a purpose, or the warranty of non-infringement.

Without limiting the foregoing, Hypex Electronics B.V. makes no warranty that:

- \* the software will meet your requirements
- \* the software will be uninterrupted, timely, secure or error-free
- \* the results that may be obtained from the use of the software will be effective, accurate or reliable
- \* the quality of the software will meet your expectations
- \* any errors in the software obtained from Hypex Electronics B.V. will be corrected.

Software and its documentation made available by Hypex Electronics B.V.:

- \* could include technical or other mistakes, inaccuracies or typographical errors. Hypex Electronics B.V. may make changes to the software or documentation at any time, without notice.
- \* may be out of date, and Hypex Electronics B.V. makes no commitment to update such materials.

Hypex Electronics B.V. assumes no responsibility for errors or omissions in the software or documentation.

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.

In no event shall Hypex Electronics B.V. be liable to you or any third parties for any special, punitive, incidental, indirect or consequential damages of any kind, or any damages whatsoever, including, without limitation, those resulting from loss of use, data or profits, whether or not Hypex Electronics B.V. has been advised of the possibility of such damages, and on any theory of liability, arising out of or in connection with the use of this software.

The use of the software provided by Hypex Electronics B.V. is done at your own discretion and risk and with agreement that you will be solely responsible for any damage to your computer system or loss of data that results from such activities. No advice or information, whether oral or written, obtained by you from Hypex Electronics B.V. or from Hypex Electronics B.V. website shall create any warranty for the software.

Last update: October, 2024.