Release Notes

HQH & HQH Pro version 8.5

Prepared for
Hell Gravure Systems GMBH

File Name: HQH 8.5 Release Notes.docx

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HQH 8.5 Release Notes

1.   Introduction

The document communicates the major new features and changes in this release of HQH. It also documents known problems and workarounds.

2.   About This Release

This release of HQH contains actually two versions:

- 32-bit HQH 8.5: this version was built under the Visual 2015 compiler. It uses a newer Tiff 4.0.6.library, which supports the concept of "Big Tiff" (Tiff files larger than 4GB).

- 64-bit HQH 8.5. As a 64-bit version, it is somewhat faster and can benefit from the additional memory which is usually available on modern PCs.

Note: **These two HQH versions can work in parallel on the same PC and the user may choose which one of them to work with.**

Both versions contain the new HQH Pro option which is sold separately. HQH Pro is using high-resolution Tiff files as its input data and can significantly improves the electro-mechanical engraving quality via software-based image processing techniques – with no impact whatsoever on overall engraving time.

The high resolution packaging TIFF files (of 450 L/CM or higher resolution) which are the input for HQH Pro, should feature mainly text and graphics without oversampling. This results in a higher quality engraving of fine text and graphics elements.

3.   Windows Operating Systems Supported:

32-bit HQH 8.5 has been tested on the following platforms:

- Windows 7.0 SP1 (32 and 64 bit editions, 64-bit edition is recommended)

- Windows 10 (32 and 64 bit editions, 64-bit edition is recommended)

- Windows Server 2012 R2

- Windows Server 2016

64-bit HQH 8.5 has been tested on the following platforms:

- Windows 7.0 SP1 (64 bit editions)

- Windows 10 (64 bit editions)
- Windows Server 2012 R2
- Windows Server 2016

4.   Upgrades

HQH Pro is a separate, to be paid for, addition.

HQH Version 8.5 requires that a new special key is burned to the Hasp in order to enable it.

HQH customers with maintenance contracts are due to free upgrade of the <u>regular HQH part</u> of their software.

5.   New Features

5.1   General

5.1.1   Visual 2015 and LibTiff 4.0.6

This version was built with Visual Studio 2015. A new 4.0.6 version of the Tiff library is also used instead of the previous 3.5.7 version.

5.1.2   Monthly code support has been removed

5.1.3   The location and the names of ini files

The location and names of hqh.ini and psik.ini files are now dependent on the version type:
- For win32 – file names are hqh.ini and psik.ini and they are located in the Windows folder
- For win64 – file names are hqh64.ini and psik64.ini and they are located in the 'Program Files\psik' folder

5.2   PViewer

5.2.1   *The new PViewer 8.5 is bundled in this version*

- Faster turning on/off separations display

- New Tifftool

- Display of some HQH related Job Ticket parameters.

- New Diff feature ('Color') which ease the ability to view the changes made by HQH/Pro

- Support for viewing jobs with mixed resolutions

5.3   HQH / HQH Pro

5.3.1   *HQH Pro - High Resolution Halftone Processing*

Several improvements in processing text over halftone by HQH Pro were added, especially for noisy background and framed text.

5.3.2   *HQH Pro - Character Joining*

Better protection of closed character or graphic elements from joining after HQH.

5.3.3   *Simplified HQH user interface*

Several HQH parameters are now hidden, both in the low resolution and in the high resolution modes. These parameters can be unhidden again by changing flags in the hqh.ini/hqh64.ini files A new configuration dialogue was added to help setting some common HQH Settings.

5.3.4   *Separated maximum text enlargement for positive and negative text*

The maximum text enlargement parameter in high resolution mode can now be set separately for positive and negative text. Therefore, you can better control the expansion in positive and negative text.

5.3.5   *HQH Pro - Improved Barcode Detection*

Limited barcode detection for horizontal, vertical and 45 degrees tilted barcode in High Resolution mode.
Limitations: Done on both positive and negative barcodes. Uses hard coded threshold, loosely based on EAN8/13 standard.
In order to modify its activation the user can use the Preferences setting in the Setup menu (see 5.3.14)

5.3.6 *This version supports HQH embedded mode.*

HQH version 8.5 (only the HQH part of it) can be integrated now and be part of the new engraving machines software delivered by HGS.

5.3.7 *Forcing LZW compression when writing output TIFF files.*

HQH version 8.5 will use the LZW compression as default when writing the output TIFF files. To cancel this default compression, the user can use the Preferences setting in the Setup menu (see 5.3.14).

5.3.8 *Separations selection.*

In this version, the separation selection is now defined for both the low resolution and high resolution files. The term "From job ticket only" replaces the previous term "Copy if HQH is not set in job ticket" and the term "Apply hinting on" replaces the previous term "to separations".

5.3.9 *Adding processing of high resolution files only.*

If HQH Pro is set in the HASP, the field "Apply HQH on:" will appear in the HQH Parameters (HQH set) and enables selection of:

- Both High res and Low res
- High res only
- Low res only

5.3.10 *HQH Pro - adding support of halftone text and graphics enlargement.*

HQH Pro can now handle halftone text and graphic elements correctly, as long as they are placed on a black or white background. Just to clarify, halftone elements should be unicolor, or in other words: flat.

5.3.11 *Additional files and folders in the job folder*

When handling files and folders that are not part of the job, the current change in HQH hot folders policy is as follows:
- In case of successful completion, all files and folders (not just the Tiff files and the Job Ticket files as in previous versions) will be moved to the output folder.
- In addition, they will be also moved to the backup folder (depending on the backup settings in the hot folder settings).

- In case of failure, all files and folders will be moved to the error folder, or just deleted, depending on the on error settings in the hot folders settings.

There is one exception: MD5 files are not copied or moved since they refer to the original Tiff files before HQH.

5.3.12 Changes in the hot folders processing policy due to the required adaptation to working with the HGS' Job Ticket Creator

In this version, HQH waits until all the Tiff files and the Job Tickets arrive in the input hot folder before start processing (the number of required colors is taken form the Job Ticket).

To disable this option (not recommended) you can set the following parameter in hqh64.ini / hqh.ini to 0:

[GENERAL]
WaitForAllJTFromHF = 0

5.3.13 HQH Pro – taking HQH Pro parameters from the job ticket

In recent versions of HelioDisk, HQH Pro parameters were added to the job ticket, in addition to the classic HQH parameters.
HQH Pro can now read these parameters. In order to activate this feature, you should set the following flag in the LW section of hqh64.ini or hqh.ini to 1 (currently the default is 0, to be changed to 1 in the future, once it is possible to identify if the job ticket is supporting this feature or not)
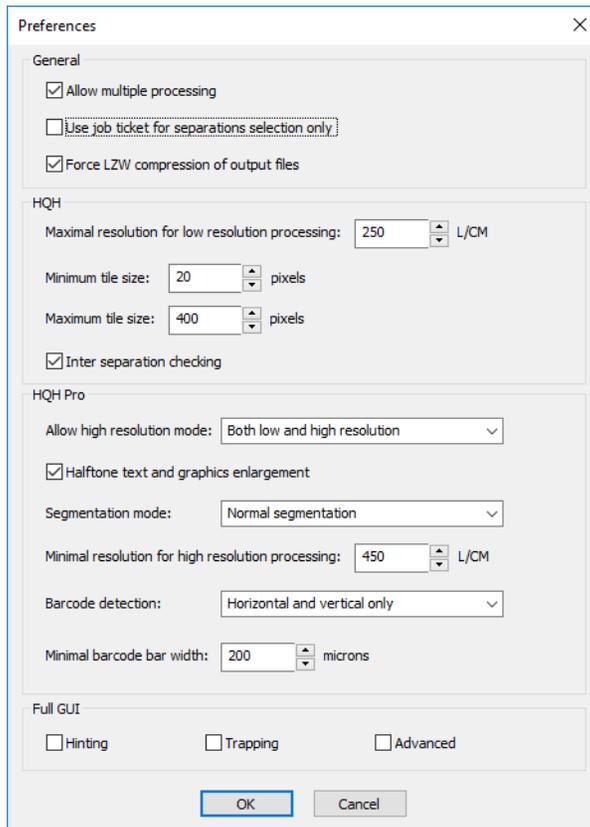
[LW]
LW_UseJTHqhProParameters = 1

Note:

Currently, HQH Pro is checking the oversampling parameters in the job ticket. If this parameter is not equal 0, the HQH Pro processing is aborted with error message. However, we cannot always count on this parameter. Sometimes despite the fact the Tiff has no oversampling, this parameter will be set to non-zero value.
To overcome this situation, we have added a new flag in hqh.ini / hqh64.ini that if once set it to 0, HQH Pro will ignore the oversampling value in the job ticket:

[LW]
LW_CheckOversamplingInJT = 0

5.3.14 Activating the preferences settings

In order to see it in the Setup menu the following flag should be set in hqh64.ini / hqh.ini

[GENERAL]
ShowPreferences=1

5.3.15 HQH Pro – enhanced text recognition

Text recognition in HQH Pro was enhanced.

The newly introduced method, tests additional attributes of the detected areas and makes a better decision regarding text recognition.

Another outcome of this enhancement is that HQH Pro will now recognize outlined text in most of the cases and enlarge it correctly.

5.3.16 HQH Pro – Positive Text Reduction

Dot gain, or tonal value increase, is a phenomenon which causes printed material to look darker than intended. Usually, Dot Gain can be compensated by use of look up tables or gradation curves. However, these curves do not affect text and graphic elements which are 100% black ("positive text"). In other words, the change in the geometric shape of these elements, which may originally starts from the simple fact that the output device dot size is larger than the pixel size, cannot be handled by simple tone curves and there is a need to modify the thickness of the text/graphic elements.
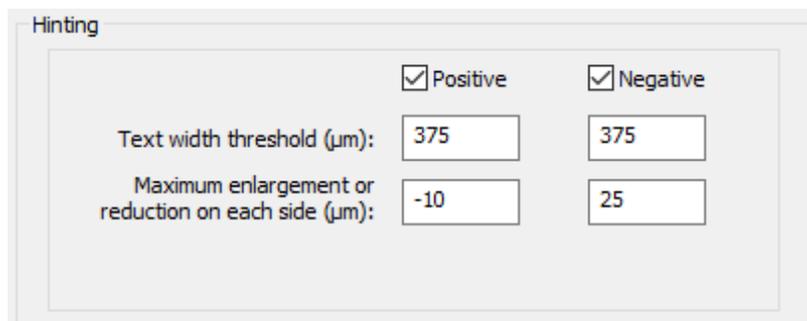Additional effects may come from the engraved material, the ink and the substrate. Therefore, it might happen that different combinations of laser power, engraving material, ink & substrate might require slightly different compensation.

HQH Pro can now compensate for this phenomenon by applying positive text reduction. It is mainly suitable for laser devices.

One should remember that in case of electro-mechanical engraving, HQH and HQH Pro are used to expand both positive and negative text in order to make the text more readable and to avoid cases where elements are too thin to be engraved properly. In the case of laser devices, the need is to reduce the positive text since it is usually being expanded during the engraving and the printing process.

It is important to note that the negative text enlargement remains as it is today. There is no effect on the negative text.

To use this option just enter a negative value of the desired expansion in the "Maximum enlargement or reduction on each side (µm)" field under positive text only:

Hinting	Positive	Negative
Text width threshold (µm):	375	375
Maximum enlargement or reduction on each side (µm):	-10	25

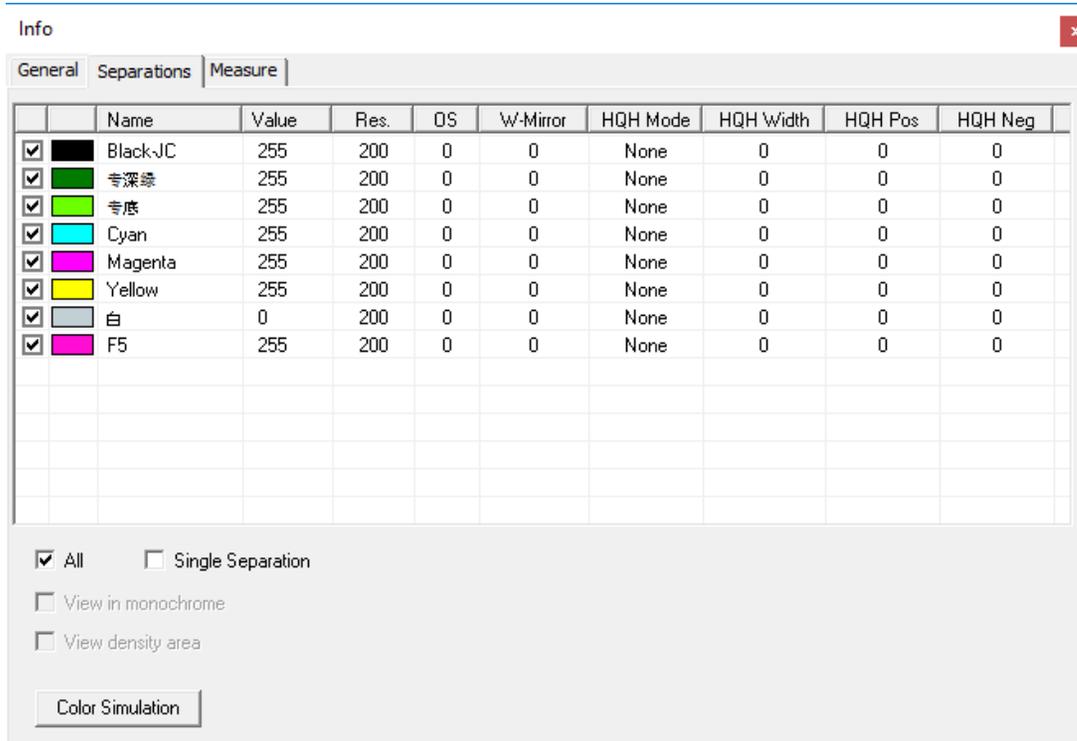### 5.3.17 *HQH Pro – Improved Normal / Bold Text Expansion*

The issue of normal / bold tax expansion is a very old and disturbing issue that some HQH users have complained about for many years. It started with HQH Classic and continued with HQH Pro users as well.

HQH Pro new concept is to enlarge the normal text a little bit less than the bold text, so that the ratio bold to normal will be preserved.

6. Bug Fixing

6.1 UTF8

Fix of wrong reading of ink names in Tiff files which were encoded using the UTF-8 encoding. This was specifically found in case of far-east ink names, etc.

6.2. Fix when Tiff file names were different than the names which appear in the Job Ticket

Fix issue of HQH failure in case there was a difference between the names of the actual Tiff files and the names of the Tiff files as they appear in the job ticket.

6.3. Separation selection

Fix wrong separation selection in HQH settings, in case not all of the separations are selected.

6.4. Hot folder mode

Bug fix in working with hot folders in high resolution mode

6.5. Fix Hot folder issue

In multiple high resolution separations job, if the job was already processed, the job was not copied correctly to the error folder. This has been fixed.

7. Known Bugs and Limitations

7.1 General Note

HQH is working up to 240 l/cm. HQH Pro works from 450 l/cm and up. Files with resolutions between 240 l/cm 450 l/cm are not processed at all.

8. Additional Useful Information

8.1 Summary of HQH default setting in hqh.ini / hqh64.ini relevant to this release notes

```
[LW]
LW_UseJTHqhProParameters = 1 (Default is 0 – Don't take HQH Pro parameters from job ticket)
LW_CheckOversamplingInJT = 1 (Default is 1 – Check oversampling parameter in job ticket)
LW_EnlargeHalftoneText = 1 (Default is 0 – No halftone enlargement)
LW_EnhancedTextRecognition = 1 (Default is 1 – Enhanced text recognition)
LW_DetectBarcodes = 2 (Default is 2 – Detect horizontal, vertical and tilted (45 degrees) barcodes)
LW_ImprovedNormalBoldExpansion = 1 (Default is 1)
```

Revision History

Version	Date	Summary of Changes	Author	Revision Marks (Yes/No)
0.1	16.1.2018	Initial revision.	Udi	
0.2	18.1.2018	Added features	Carmi	
0.3	22.1.2018	Added features	Udi	
0.4	12.4.2018	Added features and bug fixes	Moshe	Yes
0.5	21.10.2018	UI changes and bug fixes	Moshe	Yes
0.6	27.01.2019	UI changes and bug fixes	Moshe	Yes
0.7	16.02.2020	Modifications for version 8.5, UI changes and bug fixes	Moshe	Yes
0.8	21.04.2020	Added features	Udi, Moshe	No