Release Notes

Perception & GEN Series Firmware **Version v8.82**

HBK
HOTTINGER BRÜEL & KJÆR

Contents

1 Update information **2**

2 Mid and long-term support roadmap **3**
2.1 Supported on latest Windows versions . . . 3
2.1.1 Running Perception . . . 3
2.1.2 Network license server . . . 3
2.2 Downgrade . . . 3

3 Perception Versions **4**

4 Known Issues **5**

5 Perception **6**
5.1 New Features in Perception . . . 6
5.2 Improvements in Perception . . . 6

6 ePower Suite **7**
6.1 Improvements in ePower Suite . . . 7

7 Hardware **8**
7.1 New Features in Hardware . . . 8
7.2 Improvements in Hardware . . . 8

8 Support items and requests **9**

9 Deprecated support **11**

10 Supported Genesis HighSpeed Mainframes **12**

11 Supported QuantumX Modules **13**

1 Update information

These release notes describe changes in Perception (including GEN series firmware) V8.82.

2 Mid and long-term support roadmap

Starting with Perception V8.00 some legacy features, mainframe and card support are no longer present. (A Perception V7.6x maintenance version is available for critical bug fix support.)

2.1 Supported on latest Windows versions

2.1.1 Running Perception

Including all updates until July 2025:

- Windows 10 Pro 20H2 and higher (64 bit only)
- Windows 11 Pro

Installation requirements:

- Dot Net Framework V4.8.1 (distributed with Perception installer)
- Microsoft Direct3D® capable graphics card.

2.1.2 Network license server

The license server for network licenses can run on Windows 10 or Windows 11. Note that Windows Server 2008 is the last version of Windows Server which can be used to run the license server.

2.2 Downgrade

Perception V8.82 can be downgraded to the following versions.

Note: When an EtherCAT card is installed, a downgrade to any version before V8.28 must go through version V8.28 first.

- Perception V8.Xx
- Perception V7.6x
- Perception V7.5x

3 Perception Versions

Version	Description	
	Perception Standard	Free
1-PERC-AD-0x	Perception Advanced	Paid
1-PERC-VA-0x	Perception Viewer Enterprise	Paid
1-PERC-E64-0x	Perception Enterprise	Paid

Perception supports the following application extensions:

Version	Description	
1-PERC-OP-EDR	eDrive application (setup, live and efficiency mapping table)	Paid
1-PERC-OP-STL	Advanced High Voltage/High Power analysis according STL standards	Paid
1-PERC-OP-HIA	High Voltage Impulse Analysis	Paid
1-PERC-OP-CSI	CSI Runtime extensions (Customized Software Interfaces)	Paid

4 Known Issues

Perception recording	When in Perception -> Settings -> Acquisition all optional storage is disabled, the recording will not stop the normal way. It will stop after a timeout of several minutes.
Split recording and RTFDB functions	When using the option for split recording (in Perception go to File -> Preferences... -> Perception -> Recordings) together with one of the RTFDB functions TimedMean(), TimedStdDev(), NumSamplesMean() or NumSamplesStdDev(), the different parts of the recording will remain locked until the end of the acquisition.
Limit of 900 sweeps when using split recording using the mainframe disk	When a recording is made to the drive in a mainframe and split recording is active, after 900 sweeps, the recording continues but no longer as a split recording. Also, a continuous recording can be split every 'x' seconds, if this is the case, the same will stop and the number of splits in continuous and sweeps is added together and cannot exceed 900. Workaround: The user can record to the PC drive instead of to the mainframe drive. Alternatively, the user may stop and start the recording again after a large number of sweeps.
Perception does not update settings modified through the fieldbuses	If Perception is connected and mainframe settings are changed via CAN acquisition control, Perception doesn't update setting with new value. Workaround: disconnect and reconnect to the mainframe.
Workbench behavior with ePower (using GN800B card)	Loading a workbench saved with Perception 8.70 or an earlier version with a GN800B card into Perception 8.80 or later, may result in an incomplete ePower setup. A manual channel assignment must be carried out in such cases
Intermittent issues with CT Power Status of the Remote Probes not reflecting correctly	At some occasions after powering on, the CT power of the current Remote Probes is not yet present the status becomes “Not OK”. Later, as the power is OK the status is not updated back and remains “Not OK”.
FFT Export of different sample rate FFT traces.	When using the action ”FFT export” to export all traces in a Spectral display, if all traces do not share the same sample rate, the exported frequency vector is based on the last trace of the y(t) display, To get an accurate Frequency vector, export only Spectral displays that contain traces with the same sample rate.

5 Perception

5.1 New Features in Perception

Add MDF4 to Perception free version exports	Exporting a pnrf file to MDF4 is now included in Perception Free Viewer
Easier naming of Timer/Counter channels	Timer/Counter channels have always shared the same nomenclature as analog channels, therefore it was challenging to immediately know the channel type based on the naming. Additionally, given the different boards supported, the Timer/Counter channels index was not always the same. To make it easier to immediately know the channel type from its default name, Timer/Counter channels have now taken a new name TC XN, where X is replaced by the recorder (A, B, C, D, etc) and N is the number of the T/C channel, where 1 is the first timer counter channel of the recorder. This change will not affect any previously created workbenches.
New @Sync-BooleanToSync RT-FDB formula	A new formula to convert SyncBool signals to Sync has been added to RT-FDB. This formula can be useful if there is a need to convert boolean results to sync to be used in other formulas that require the input to be of sync type

5.2 Improvements in Perception

GN800B sample rate information	Given that the GN800B may have different limitations of its sample rate depending on the connected remote probes configurations, two improvements have been implemented to facilitate the information to a user: • Added the remote probe's sample rate to the Properties pane • Added the current maximum sample rate of the GN800B board to the Properties pane. The current maximum sample rate is given by the appended ”Capped at” after the Sample rate field. This value is dependent on the number and type of remote probes connected

6 ePower Suite

6.1 Improvements in ePower Suite

Improve torque measurement uncertainty	The measurement uncertainty of the torque signal was based on a single measuring time, which caused a too conservative MU and did not convey an accurate uncertainty. The calculations have been adjusted to include the multiple measuring times over a (cycle based) torque measurement. As with all MU calculation, it assumes that the system is in steady state, outside of said state the calculated MU values may not be as accurate.

7 Hardware

7.1 New Features in Hardware

Companion remote probe identification	It is now possible, in Perception, to activate the LED in a remote probe to identify the corresponding probe and its companion. Either in the Settings sheet or in the Hardware panel tree, if right clicking a channel and selecting ”Identify”, the LED of the selected channel's probe as well as its companion will blink. This facilitates the identification of the probe a channel refers to, as well as its companion.

7.2 Improvements in Hardware

Remote Probes: Support for four Remote probes	Added support for four remote probes to the GN800B receiver card. Flexible probe allocation for voltage and current across 4 ports. Maximum sample rate supported is 4 MS/s with four probes (1 MS/s if RTFDB is activated). In Perception, Remote Probes status sheet will reflect the correct information based on the kind of probe that is connected. The old Configured-Boot file is incompatible with the latest version if the setup contains GN800B receiver card. Before upgrading to 8.82 version, create a workbench(pVWB) file of current configured-boot settings. After the upgrade, reload the workbench(pVWB) file and store the configured boot settings.

8 Support items and requests

Investigation of Perception freezing issue during recordings	SUPEPT-532 SUPEPT-535	Perception freeze experienced during recordings after switching to torque sensors with integrated speed/position sensors and using reference pulse cycle detection. The freeze occurred between sweeps when the shaft was stationary, causing the system to wait indefinitely for missing pulses. During the freeze, the stop button was unresponsive and reboot from Perception did not work and hard reboot only mitigated the issue. This issue is now fixed.
Shunt verification sheet shows wrong internal shunt resistance	SUPEPT-501	An issue that caused the shunt value to update incorrectly while assigning bridge sensor (strain gauge 3 wire 120 Ohm) to a channel of a GN840B card was fixed.
Export FFT action exported wrong result	SUPEPT-549	When using the “Export FFT” action to export Spectral Display data, the exported data printed the DC component as the first frequency. This caused all values to be shifted. The DC component is no longer printed since it is also not displayed in the Spectral display
@RelativeTime2Local and @RelativeTime2UTC results not being added to the log file	SUPEPT-544	The FDB formulas RelativeTime2Local and RelativeTime2UTC results were not printed in the log file. This issue has been fixed
Signals not being displayed in Cycle trigger y(t) display view	SUPEPT-514	An issue that caused some signals to not be displayed in the y(t) view when Cycle trigger mode was selected has been fixed
XY Display view not displaying results when analog and Timer/Counter signals are used	SUPEPT-511	When adding an analog and a Timer/Counter signal to an XY Display the live view remained empty. This issue has been fixed
Drawing gap between reduced and high sample rate in Y(t) Display trace	SUPEPT-504	In some specific scenarios it was observed there was a display issue when drawing traces in a y(t) display. The displayed trace presented a small gap at the time stamp where the sample rate changed from reduced to high. The issue was related to the drawing of the data but did not affect the stored samples. This issue has been fixed
Wrong deflection value when the channel has been previously zero balanced	SUPEPT-162 SUPEPT-500	When calculating the deflection on the Shunt verification menu, if the channel had previously been zero balanced, the deflection would yield wrong results when using technical units. This issue has been fixed
ExportPNRF tool not exporting according to the specified requirements	SUPEPT-499	While using the ExportPNRF stand alone tool, all channels would be exported, regardless of the channel list provided in the input JSON file. This issue has been fixed and only the specified channels are exported.

”Auto scale y-axis all pages of active display” macro not working as expected	SUPEPT-497	When using the macro “Auto scale y-axis all pages of active display” on calculated (FDB) data, the macro would not always scale the y-axis correctly. This would happen for heavy calculation. The macro would run before the calculations were completed which caused a smaller than expected y scale. The macro’s behaviour has been changed so that the y scaling only happens after all the data has been computed.
Meters showing wrong name for FDB formulas	SUPEPT-496	When adding an alias formula to a meter, the meter would show the original signal's name and not the added FDB formula one. This issue has been fixed such that the meters always show the name of the data source added.
Digital marker not displaying units	SUPEPT-491	An issue that caused added digital markers to not show the trace’s unit has been fixed.
ExportPNRF tool fails to export to Excel	SUPEPT-482	An issue that caused the ExportPRNF tool to fail exporting to Excel has been fixed.
Recording suspension	SUPEPT-542	While recording data using auto-trigger (1s) the memory usage was increasing untill a recording suspension is shown. Once that happened no further trigger was recognized. This issue has been fixed.
Trigger is sent out while mainframe reboots	SUPEPT-538	During reboot of a GEN2tB a pulse of around 150 ms was seen on the External Trigger Out and the External Event Out outputs on the mainframe I/O connector. This issue has been fixed and both outputs stay low during reboot.
Account for phase delay error in GN610B power measurement uncertainty	PERC-6625	The power measurement measurement uncertainty when using a GN610B board has been updated to account for the inaccuracy introduced by the phase delay differences between the voltage and current measurements.
ePower Suite default channel assignment when using 2 remote probes	PERC-6521	When having a GN800B with two remote probes connected and loading a default ePower Suite application, it would not always yield a valid default configuration. The new logic ensures this is no longer the case

9 Deprecated support

The following is no longer supported within Perception:

- GPS2750
- GN610 (without B) Perception 8.72 is the last release supporting this acquisition card

Dropped support and maintenance of MU Basic Sheet:

- The MU Basic sheet will no longer be supported or maintained. Reported bugs or requests will not be fixed, improvements and new features will not be added.
- All new development in regards to measurement uncertainty will be included as part of the MU for setpoints, which is an integral part of the ePower Suite.

10 Supported Genesis HighSpeed Mainframes

The following Genesis HighSpeed Mainframes are supported:

- GEN2tB
- GEN4tB
- GEN7tA
- GEN17tA
- GEN3i
- GEN3iA
- GEN7i
- GEN7iA
- GEN7tB
- GEN17tB
- BE3200

Update:

- GEN3t is fully supported until Perception 8.80. The Gen3t daily testing has been stopped for future releases.

11 Supported QuantumX Modules

Note: The support of QuantumX Modules in Perception will stop with future versions of Perception! QuantumX modules can be integrated in systems with tethered mainframes using the CAN-interface together with a QuantumX MX471C.

The following QuantumX models are supported:

- MX1609KB
- MX1609TB
- MX471B
- MX809B
- CX27B as single network access point only, no setup or control of CX27B

Patents no: 7,868,886

Hottinger Brüel & Kjaer GmbH
Im Tiefen See 45 • 64293 Darmstadt • Germany
Tel. +49 6151 803-0 • Fax: +49 6151 803-9100
E-mail: info@hbkworld.com • www.hbm.com