Release Notes

Perception & GEN Series Firmware

Version v8.72



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1 Update information

These release notes describe changes in Perception (including GEN series firmware) V8.72.

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 April 2024:

- 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 V8.72 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 V8.7x
- Perception V8.6x
- Perception V8.5x
- Perception V8.4x
- Perception V8.3x
- Perception V8.2x
- Perception V8.1x
- Perception V8.0x
- Perception V7.6x
- Perception V7.5x

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 change 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)	With 8.72 software release version, there are new functionalities included for the Remote Probes, user has an option to connect two high voltage only probes (unlike just one voltage and one current probe as in previous versions). This functionality required the channel configurations to be modified/improved for ePower with GN800B receiver card. Thus, the modification limits users to use a workbench (saved with 8.70 or before) with GN800B ePower setup in 8.72. The workbench reload may result in an incomplete ePower setup and user may need to be informed of this behavior.
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". Workaround: Power cycle the remote probe to have status reflect correctly. This is planned to be fixed for next immediate release 8.80.

5 Perception

5.1 New Features in Perception

New CTN1000ID	Two new sensors were added to Perception's sensor database:
database	• CTN1000ID_AC • CTN1000ID_DC
	Although both entries represent the same sensor CTN1000ID the distinction has been made between AC and DC to account for the different ranges (1kA RMS for AC and 1kA for DC)

5.2 Improvements in Perception

Add new statuses to the Remote Probe possible status	 Two new status were added to show the user more accurate information about the connected remote probes: Busy: indicate that a channel is connected and initializing; Updating: an upgrade is ongoing.
Capabilities added to MU Basic Sheet	 Added the following updates to the MU Basic Sheet: Included input to set the Frequency Prescaler Torque MU accounts for inaccuracies based on the Time-Counter channels internal calculations Added the option to calculate MU for mechanical speed when the speed is derived from an angle signal
Remote ProbeA system health warning is thrown in case the SFP is not supportedunsupported SFPA system health warning is thrown in case the SFP is not supportednotificationA system health warning is thrown in case the SFP is not supported	
Remote Probe cable length inaccuracy	Included cable length inaccuracy in the Probe Cable Length column in the "Remote Probe Status" sheet

6 ePower Suite

6.1 Improvements in ePower Suite

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Disable setpoint MU calculations when using Reference Pulse as cycle source	Measurement Uncertainty (MU) can only be calculated when there is one period p cycle (i.e., 'Number of cycles' is set to 1). The underlying reason is that only the underlying MUs for a single cycle is known. Since, for a multiple-pole-pair motor, the interval for a reference pulse may contain several 1-cycle results, MU calculations are not supported. Note that if 'Number of cycles' is set to 1, the setpoint values can still be determined over multiple cycle-based results by selecting one of the averaging modes for determining setpoint values . In this case, the MU calculations will take	− ∋r
	into account the effect of averaging on the MU.	
MU calculations when using Reference Pulse as cycle source	cycle (i.e., 'Number of cycles' is set to 1). The underlying reason is that only the underlying MUs for a single cycle is known. Since, for a multiple-pole-pair moto the interval for a reference pulse may contain several 1-cycle results, MU calculations are not supported. Note that if 'Number of cycles' is set to 1, the setpoint values can still be determined over multiple cycle-based results by selecting one of the averaging modes for determining setpoint values . In this case, the MU calculations will ta into account the effect of averaging on the MU.	∍ r, ke

7 Hardware

7.1 Improvements in Hardware

Remote Probes: Two High Voltage Only Probes	The GN800B receiver card can connect up to two remote probes via optical fiber cables. In the last release, the support was available to connect a voltage and a current probe. This will be the first release where the support for connecting two High Voltage only probes on a GN800B card will be available, this will therefore entail two voltage probes instead of one voltage and one current. In Perception, Remote Probes status sheet will reflect the correct information based on the kind of probe that is connected.		
Remote Probes: Improvements	When remote probe is connected, for user to easily identify the type of probe a channel corresponds to, the text of the "Type" column in the setting sheet is updated as below (based on the probe that is connected):		
	 P101I-4 Remote Voltage P111I-4/P112I-4 Remote Current P201I-4 Remote Voltage P211I-4/P212I-4 Remote Current And the same text shows as "Remote Probe Channel Disabled" when the channel is disabled and "Remote Probe Not Connected" when the probe is not connected. 		
	(Note: The 20 MS/s Remote Probes, version type numbers (P2xxl-4) are not released yet and aimed for future releases)		
Internal disk	The following disk can be used within the GHS mainframes:		
	Kinston Fury Renegade 500GB - SFYRS500G		

8 Support items and requests

Increase recording number only if the previous file was created	SUPEPT-429	Recording number is only increased if the file from the previous test was actually created.
Speed analog is not available in ePower SCOPE	SUPEPT-430	The problem that cause the analog speed (n_raw) not being available in the ePower Suite scope settings has been fixed.
Mainframe display status counts more trigger events then expected	SUPEPT-432	Mainframe display status counts more trigger events then expected.
ExportPNRF tool fails when exporting big PNRF files to Matlab format	SUPEPT-438	An issue in ExportPNRF tool that caused it to failed when exporting big PNRF files into Matlab format has been fixed.
Default decimals in setpoint mapping is set to 1	SUPEPT-442	Changed default number of decimal spaces in setpoint mapping to 1 for easier reading
Incorrect sample rate shown in Perception	SUPEPT-443	An issue that led to wrong sample rates being shown as options in sample rate selection has been fixed.
Spikes displayed in y(t) display when in Review with dual rate recording	SUPEPT-444	An issue with displaying the last sample of a sweep in Review with dual rate recording has been fixed. This issue caused a random spike when visualizing the data. This was a display issue and the recorded data was not affected.
Export into Diadem format fails with big file size	SUPEPT-450	Fixed a bug that caused a crash when exporting large files to Diadem format.
"Invert signal" setting of ePower is not saved in the workbench.	SUPEPT-453	When reloading a workbench with "Invert Signal" property it reloads without this property, This issue has been fixed, reloading the workbench will restored the "Invert Signal" property in the workbench
Issue with Linked Cycle Detector settings	SUPEPT-454	An issue when setting a component cycle detector type from Linked to Timed and then to Linked again the UI would not be updated accordingly was fixed.
Creating formulas failed with incorrect or missing units	SUPEPT-460	An issue that occurred when creating review formulas for ePower Suite setups where some formulas has missing or wrong units has been fixed.
Connection to the mainframe is lost during test (with split recording enabled) and mainframe could not be connected properly	SUPEPT-467	A problem that was causing mainframe connection to be lost with split recording enabled has been fixed.

Once tabular linearization is used on torque channel Perception fails to reload the workbench	SUPEPT-472	A problem that was causing Perception fail to reload the workbench, once tabular linearization is used on torque channel has been fixed.
In the Measurement Uncertainty calculation document the formula 215 had some problem	PERC-6391	For measurement uncertainity, a problem in formula 215 has been fixed. It solves the problem in the MU-sheet and also in the dynamic Setpoint calculations.

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

10 Supported Genesis HighSpeed Mainframes

The following Genesis HighSpeed Mainframes are supported:

- GEN2tB
- GEN3t
- GEN4tB
- GEN7tA
- GEN17tA
- GEN3i
- GEN3iA
- GEN7i
- GEN7iA
- GEN7iB
- GEN7tBGEN17tB
- BE3200

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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

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