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DCMS^{Link} for Bruker CompassTM / HyStarTM

Version 2.10

Troubleshooting Guide

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1 Introduction

1.1 Scope

The Troubleshooting Guide has three major chapters (except the Introduction):

The “**Good to Know**” section provides reference information:

- Description of the status indicators
- List of known issues and limitations
- DOs and DON'Ts for preventing problems

The **Troubleshooting** section lists error messages and typical problems and provides remedies.

The last section describes how to **Collect Data for Troubleshooting by Dionex**.

1.2 Other Resources

The following documents provide further details about installing, configuring and using the software.

Document	Description
Installation Guide	<ul style="list-style-type: none"> - Describes all the requirements for installing DCMS^{Link} (e.g. PC and operating system requirements). - Lists the supported instruments. - Gives step-by-step instructions for installing and configuring DCMS^{Link} for HyStar.
Quick Start Guide	<ul style="list-style-type: none"> - Gives an overview of what DCMS^{Link} for HyStar is, - Provides step-by-step instructions about how to control and acquire data from Dionex instruments via the HyStar software
Release Notes	Describes what is new in this DCMS ^{Link} for HyStar release
Migration of Methods	Describes how to modify instrument methods (Program scripts, PGM files), which were created in Chromeleon before they can be used with DCMS ^{Link} for HyStar and vice versa.
Online Help	Provides general information and context sensitive help about the various options available in DCMS ^{Link} .

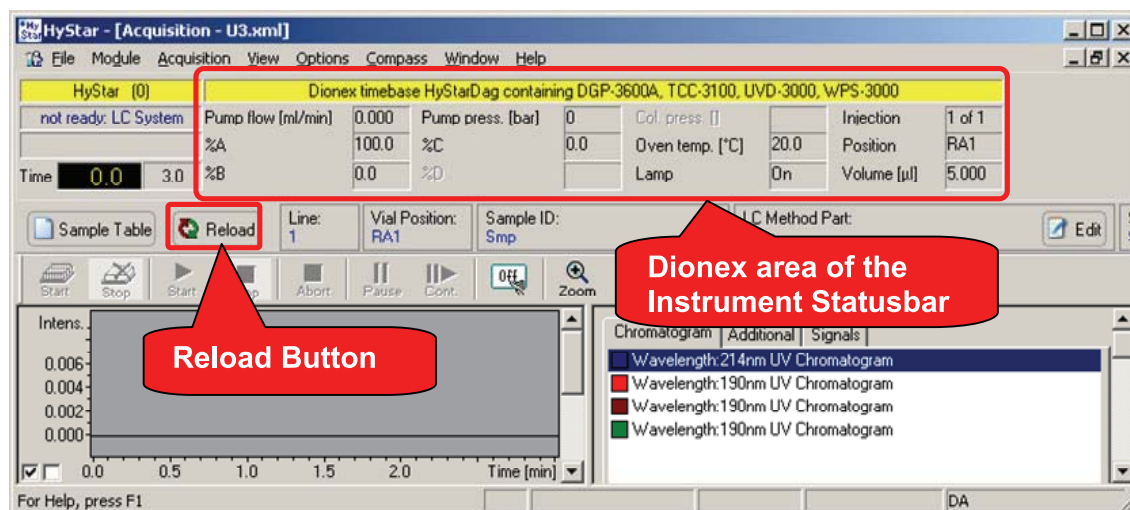
Tip: After installing DCMS^{Link}, the above resources and this Troubleshooting Guide can be easily accessed at any time from the Start menu: **Start > All Programs > Dionex > DCMSLink > Documentation**. (The documents are installed in the “Documentation” folder in the DCMS^{Link} installation folder (C:\DCMSLink). They are also available on the installation CD in the “Additional Documents” folder.)

Tip: For consulting, training, and implementation services, contact your local Dionex support and service center.

Tip: For abbreviations and glossary of terms, please refer to the *Quick Start Guide*.

2 Good to Know

2.1 Instrument Status bar – What do the Colors Mean?



The Instrument Statusbar in the HyStar Acquisition module shows information about the instruments attached to the system. The Dionex area shows the status of DCMS^{Link} as follows:

- **Grey background** – DCMS^{Link} is **not connected** to HyStar. Try restarting HyStar.
- **Yellow background** – DCMS^{Link} is **not ready** for starting an acquisition. Typical reasons are that the detector lamp is off or the flow is zero. In addition, the Status bar can turn yellow during an ongoing acquisition (or “manual acquisition”). This is normal and indicates that DCMS^{Link} is busy with performing certain instrument control tasks.
- **Green background** – DCMS^{Link} and the instruments are **ready to start** an acquisition.
- **Blue background** – There is an **analysis** (acquisition or injection) **in progress**.

Tip: In order to get the system ready for an acquisition make sure that all LC modules has “**Connected**” and “**Ready**” status in DCMS^{Link} (you can see this on the DCMS^{Link} Panels or in the Commands dialog). Also, ensure that there is a **flow** delivered by the master pump and the **lamp** of the master detector is turned on. If the system is still not ready, try pressing the “**Reload**” button.

2.2 Known Issues and Limitations

The list below describes the known limitations and issues with DCMS^{Link} 2.10 for HyStar.

- This version of DCMS^{Link} is **based on Chromeleon 6.80 SR10**: Any UltiMate 3000 drivers/features that are released in later Chromeleon versions are not supported by this DCMS^{Link} version.
- **For 3D acquisition, a patch must be applied to HyStar** in order to have HyStar properly store 3D data as well as UV data. (If this patch cannot be applied (e.g. for regulatory reasons) use the setting in the Hardware Settings Control Dialog to “Handle PDA detectors as UV detectors”. For more information, please refer to the *Installation Guide*.)
- **The parameters for a 3D acquisition** (such as minimum and maximum wavelength, reference wavelength and bandwidth) **must not be changed during a Method**. (However, it is possible to assign different Methods for different samples in the same Sample Table (Sequence)).
- **The maximum data rate (200 Hz) of the DAD-3000RS, FLD-34000RS, and MWD-3000RS may not be used**. The maximum usable data rate is 20 Hz, which is limited by HyStar.
- **CM6-17386: “Channel gaps” cannot be handled by HyStar**: Some detectors can deliver several data channels. For example the VWD-3400 can record four channels, UV_VIS_1 .. UV_VIS_4. If all these are enabled in the Server Configuration but in the Method (PGM) only some of them are recorded, care must be taken to use the first channels without a gap. For example acquiring UV_VIS_1 and 2 will work as expected, but UV_VIS_1 and 3 or UV_VIS_3 and 4 will not work, as some channels will not be displayed in the HyStar Acquisition Plot.
- When working with more than one device of the same type, HyStar requires that one of them is selected to be the “master” device. **When using two detectors, only the signals from the master detector can be recorded by HyStar**. (However, DCMS^{Link} can store channels from more than one detector in its temporary sequence. This data can be viewed with Chromeleon.)
- **NCS-3500RS Pressure mapping in HyStar**: The NCS-3500 system contains two pump modules, a splitless HPG “NC pump”, and a ternary LPG “Loading Pump”. Thus, it provides several pressure signals. In HyStar one of the pumps must be selected as “Master Pump”. For the NCS system this should be the NC Pump, which provides the Column Pressure (denoted as NC Pump Pressure in Chromeleon).
In this case the various pressures are mapped like this in HyStar:
 - HyStar - LC Pump (1) Pressure = <not used>
 - HyStar - LC Pump (2) Pressure = Loading Pump Pressure
 - HyStar - LC Column Pressure = Column Pressure = NC_Pump_Pressure
 As a consequence, the “Pump press.” field is empty in the Instrument Statusbar of the HyStar Acquisition Module (the “Col. press.” field is correctly populated with the column pressure).

- **Special Program files for Tandem mode and On-line SPE are not fully supported.** The Program Wizard will offer the special pages and create appropriate PGM files. However, once these Programs are saved inside the MS Method, they cannot be edited in Device views any more. To modify them, the Commands view must be used, or the Program has to be recreated with the Wizard.
- **No other “Hardware Setup” is provided by HyStar when controlling a Dionex system.** This means that third party instruments cannot be controlled and data from third party detectors cannot be recorded in HyStar, if HyStar also controls Dionex instruments via DCMS^{Link}. This is a limitation in HyStar.
- Observe the following difference when you analyze the same UV data both in HyStar and in Chromeleon: When acquiring 3D data with HyStar, it interpolates the UV channels from the uncompensated spectra data (i.e. the absorbance at the reference wavelength is not subtracted). Thus, **UV channels shown in HyStar can differ from those shown in Chromeleon.**
- **Editing commands in a program file.** Select the program line you want to edit by placing the cursor anywhere in the line. Right-click and choose "Command..." from the context menu, or use the keyboard shortcut "F8".
- **The DCMSLink Context Menu: Turn lamp on/off.** Turns the UV detector lamp on/off only.
- **The Pump pressure signal will always be recorded in ‘bar’ by HyStar** regardless of the unit settings in the instrument configuration. HyStar does not allow for specifying a unit and it automatically assumes bar (for pressures). However, the online control panel in DCMS^{Link} is able to display the correct signal (MPa, psi or bar) during baseline monitoring. This is a limitation in HyStar.
- **For non-UV detectors, the data collection rate will be limited to a maximum of 20Hz** independent of the data collection rate set in the control program. These channels can also be used for detector diagnostic/debug channels but **a maximum of 8 (eight) channels can be installed** (this includes the existing main UV channels). This is a limitation in HyStar.

2.3 DOs and DON'Ts

This section lists a few things you should / should not do to prevent various problems.

2.3.1 During Installation

- **Do NOT try to upgrade DCMS^{Link} for HyStar using any other DCMS^{Link}, Chromeleon, or Chromeleon Service Pack installation CD.**
- In a networked environment, make sure that **each Timebase has a unique name.**
- Make sure that the **“Dionex DCMSLink for HyStar” driver is part of your Timebase.**
- Make sure that **your Timebase only contains instruments that are supported.**
- In the Server Configuration, **enable all the channels that you want to record in HyStar – but not more (see #17386 above).**
- **Enable “Start Server at System Start” option in the Chromeleon Server Monitor.**
- Ensure that the **decimal separator** is set to “.” (period), and not to “,” (comma).
- Once all the instruments (MS and the front-end) are physically installed, make sure that **none of the LC drivers are in “Demo” or “Virtual” mode** (unless you are using DCMS^{Link} for testing purposes with no real LC, see 2.4.2).

2.3.2 During Use

- **Keep all the method timing information in the Method.** Avoid using HyStar’s prerun time (“Prerun [min]”) specification in the Sample Table. Instead, place all the timing information within the Program.
- **When changing the timing in a Method (Program), make sure you change it for all the devices** (for example shortening the gradient will not automatically shorten the acquisition times for the detector signals).
- **Make sure that the overall “Runtime” of the Method is not zero** (this can be an issue, for example if you are creating a shutdown Program).
- **When running samples in overlapped mode use HyStar’s multiple injection feature (“Number of Injections”)** in order to benefit most from sample overlap.
- **Before starting a run, make sure that all LC modules have “Connected” and “Ready” status in DCMS^{Link}** (you can see this on the DCMS^{Link} Panels or in the Commands dialog).
- **Avoid interfering with an ongoing run using the Panels or the Commands dialog.**
- **When monitoring system properties in the Properties window, make sure that you do not select more than a few properties** (for example, do not select an instrument node with all its properties),
- **If you have a PDA detector and acquire the 3-D field, make sure that you also acquire at least the first UV channel (UV_VIS_1).** This ensures that you can see a chromatogram in the Panels and in the HyStar Acquisition Module during the analysis.

2.4 Hints for Special Uses

2.4.1 Working without an MS

Some MS software always expects an MS be present in the system. This is not an issue when working with HyStar. Simply make sure that the HyStar Hardware Configuration does not contain an MS and that the Method does not contain an MS Method Part.

- **Tip:** Working without an MS is useful for example,
- when the LC front-end must be tested without having a properly configured mass spectrometer available;
 - when the LC system is operated standalone.

2.4.2 Working with a Simulated LC (Demo / Virtual Mode)

DCMS^{Link} supports simulation of the LC modules (so-called “Demo Mode” or “Virtual Mode”). To use simulated LC modules, add the module to the Server Configuration (Compass/HyStar > Hardware Setup > LC System > Settings > Device Configuration) and make sure to select the “Demo Mode” or “Virtual Mode” option.

- **Important:** Make sure that you turn “Demo Mode” off / turn “Live Mode” on when you want to control real instruments.

- **Tip:** Simulated LC modules can be useful for testing configuration and Instrument Method generation before an instrument is physically connected, for example for testing valve control or “Master Device” handling (e.g. checking the effect of adding a second detector to the system).

2.4.3 Working with DCMS^{Link} and Chromeleon

If you want to use any of the powerful features of Chromeleon that are not included in DCMS^{Link} (like advanced reporting, automatic qualification tools, System Suitability Tests, spectra library tools, automated off-line 2D-LC, etc), you must purchase a Chromeleon license (please discuss your needs with your local Dionex representative to figure out which license(s) would be needed).

- **Important:** In these cases all digital data from Dionex instruments is stored in Chromeleon, and NOT in HyStar.

Installation

If you decide to use Chromeleon on the same PC where DCMS^{Link} is already installed, you need not (and should not!) install Chromeleon, as it is already installed as part of DCMS^{Link}. Simply insert a dongle and activate the Chromeleon License in the Chromeleon Server Configuration.

Alternatively, if the focus is on reprocessing the data, you can install a Chromeleon “Data Client” (client license only) on a separate PC, and remotely access the Datasource on the Instrument PC (with HyStar and DCMS^{Link}). The Datasource on the IPC must be shared at Windows level.

Use

Note that DCMS^{Link} by default deletes temporary data after 30 days (this can be changed by the “Delete temporary DCMSLink data” setting on the DCMS^{Link} Context Menu). The deleted data includes the temporary Sequence that was generated by DCMS^{Link}. If you want to preserve this, use Chromeleon to *move* it from its default location, i.e. “<Timebase Name>\DCMSLink Data\HyStarSequence” to a different folder or Datasource. The best practice is to *move* the temporary “HyStarSequence” to a different location *after each finished* HyStar sequence. A new “HyStarSequence” will be created for the next HyStar sequence.

To avoid instrument control conflicts:

- When you use Chromeleon for instrument control, make sure that the HyStar Acquisition Module is not used on the same PC, or at least that there is no “Dionex System” in the active Hardware Setup.
- When HyStar is controlling the instruments and you open Chromeleon, do not use other Chromeleon features than direct control via Panels (most notably do not manipulate the running Sequence or Batch). Note, that HyStar will automatically take control over the system whenever this is required

For information about migration of methods (conversion of PGM files) between Chromeleon and DCMS^{Link}, please refer to the “*DCMSLink for HyStar - Migration of Methods*” document.

3 Troubleshooting

3.1 Typical Error Messages, Problems, and Resolutions

The following table summarizes the most frequently observed error messages and problems that might occur while using DCMS^{Link} for HyStar, lists possible causes, and suggests appropriate remedial actions:

Message / Problem	Probable cause	Remedial action
Problems during Server (Device) Configuration		
“Missing Hystar sync driver” error message during hardware setup	The “Dionex DCMSLink for HyStar” driver is not part of the Timebase.	Add the “DCMSLink for HyStar” driver to the Timebase (see <i>Installation Guide > Instrument Configuration in HyStar and DCMS^{Link}</i>).
“Unsupported device found” error message during hardware setup.	The Timebase contains a device that is not supported by DCMS ^{Link} .	Check the <i>Installation Guide</i> for the list of supported modules and remove any unsupported module from the Server Configuration.
General Problems		
“No timebase configured...” error message appears repeatedly when working with HyStar.	The “Dionex DCMSLink for HyStar” driver is not part of the Timebase.	Add the “DCMSLink for HyStar” driver to the Timebase (see <i>Installation Guide > Instrument Configuration in HyStar and DCMS^{Link}</i>).
	The Timebase contains a device that is not supported by DCMS ^{Link} .	Check the <i>Installation Guide</i> for the list of supported modules and remove any unsupported module from the Server Configuration.
The physical control panels of the connected LC modules are not working	This is normal, when instruments are under software control.	Control the instruments via the software Panels or Device Commands provided by DCMS ^{Link} .
Various problems with a system including a DAD-3000RS	The maximum data rate (100 Hz) of the DAD-3000RS may not be used. The maximum usable data rate is limited by the processing power of the PC and bottlenecks in the HyStar data interfaces.	Reduce the data rate to 20 Hz or below.
Various non-reproducible problems with instrument control	Timebases with the same name exist in the same computer network (domain)	Make sure that timebase names are unique. Dionex recommends including the PC name in the Timebase name.

Message / Problem	Probable cause	Remedial action
Problems with Direct Control of the Front-end		
Panel Tabset does not appear or it does not contain all the necessary Panels / controls.	Unusual instrument combinations may not be fully supported by Panel Tabsets.	Use Control Commands for direct control of the not supported modules. Contact your local Dionex support organization and describe the problem. In some cases it may be possible to customize the Panel Tabset.
Commands cannot be sent from Panels, some controls are grayed out	The Panel Tabset is in “Monitor Only” mode.	On the “ Home ” Panel click on the “ Take Control ” button.
Commands sent from the Commands dialog are not executed	HyStar took over the control of the Timebase.	Close the Commands dialog and open it again to regain control.
	The device is not “Connected”.	Make sure that all the devices are “Connected” to DCMS ^{Link} . You can easily see this on the Panels.
Cannot find commands in the Commands dialog	The command may be an Advanced or Expert level command but the view is set to Normal	Right-click in the selection area and choose Expert mode. On the keyboard press the starting letter of the command to find it quickly.
Problems during Method (Program) Editing and while Running Samples		
Lines are highlighted with red text	This indicates a value out of range or a syntax error.	Position the cursor inside the red line and press the F8 key. If the syntax is correct, the Commands dialog opens showing the highlighted command. Make sure, that the parameter is within the allowed range. If the syntax is incorrect, the Commands dialog opens with no command selected. Browse the command tree to find the appropriate command.
The “LC method part editor” dialog cannot be closed.	The overall “Runtime” of the Method is zero (this can be the case if you are creating a shutdown Program).	Make sure that the runtime of the Program is not zero. Save the changes.
Various error messages / warnings from DCMS ^{Link} after starting the Batch in HyStar	The LC part of the Method (Program) may need manual modification.	A table in the “ <i>Creating a New Instrument Method</i> ” section of the <i>Quick Start Guide</i> describes typical modifications that have to be done manually.

Message / Problem	Probable cause	Remedial action
Problems with Data Acquisition / Viewing the Data		
The system does not get ready for an acquisition (The Instrument Statusbar in the HyStar Acquisition is yellow)	One or more of the LC modules are not “Connected” (to DCMSLink) or not “Ready”.	- Connect the devices via a DCMSLink Panel or via the Command Box. - Allow time for the devices to become “Ready”.
	The master pump flow is zero or the master detector’s lamp is turned off.	Set the flow to a value higher than zero and turn the master detector’s lamp on.
	HyStar lost track of communication	Click on the “Reload” button in the HyStar Acquisition Module
A data channel from the front-end is not acquired	The channel is not enabled in the Chromeleon Server Configuration	Enable the channel in the Chromeleon Server Configuration (see <i>Installation Guide > Instrument Configuration in HyStar and DCMS^{Link}</i>).
	Data acquisition is not activated in the LC part of the Method	Activate data acquisition in the LC part of the Method (see <i>Quick Start Guide. > Creating a New Acquisition Method</i>).
	Not all the channels are acquired from a detector that is able to provide several data channels.	See #17386 in section 0 <i>Known Issues and Limitations</i> .
3D and UV data are displayed in the HyStar plot windows but are not available in HyStarPP.	When using a PDA detector a patch must be applied to HyStar in order to have HyStar properly store PDA data.	Apply the patch as described in the “Bruker_PluginControl_readme.txt” file (in the Additional Files folder on the DCMS ^{Link} CD) or enable the “Handle PDA detectors as UV detectors” option in the Hardware Configuration.
HyStar PP does not start	This is a HyStar installation issue: .NET 1.1 is not properly installed.	Contact Bruker for assistance.

3.2 If Nothing Else Helps...

If the system entered an error condition, that could not be resolved with the usual troubleshooting steps described above, you may try the following:


1. Close HyStar
2. Close Chromeleon Xpress
3. Stop the Chromeleon Server (e.g. using the Chromeleon Server Monitor – Start > All Programs > Dionex > DCMSLink > Server Monitor)
4. Quit the CM Server Monitor
5. Start the Chromeleon Server (using the Chromeleon Server Monitor)
6. Start HyStar (client)

4 Collecting Data for Troubleshooting by Dionex

4.1 DCMS^{Link} Event Log

All communication between HyStar, DCMS^{Link} and the LC modules as well as additional information are automatically saved in daily log files, which can be sent to Dionex for trouble shooting (part of this information can be displayed for on-line viewing in the DCMS^{Link} Event Log).

The log files are by default located in the “C:\DCMSLink\Logfiles\” folder. They are named “DCMSLink_for_HyStar_Dump_<YYYY-MM-DD>”.

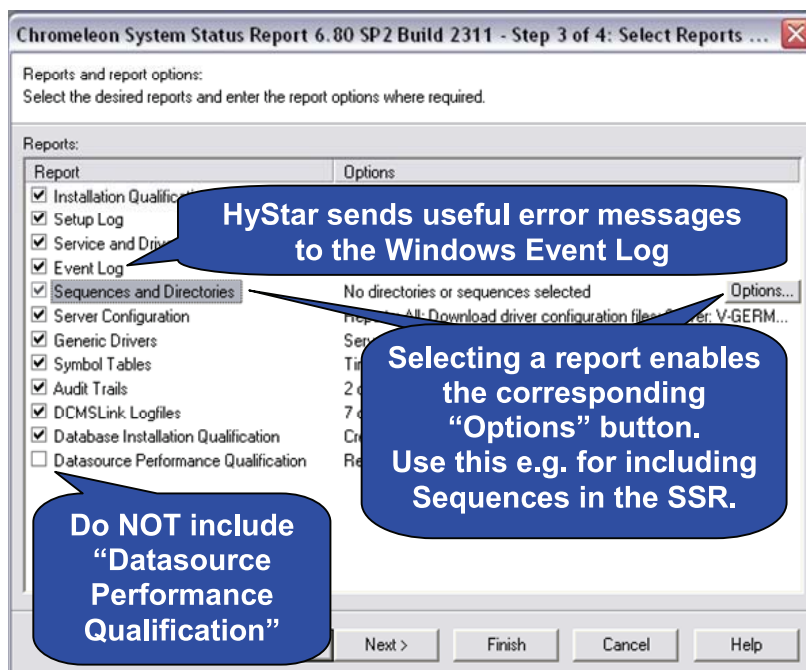
 **Important:** The log files are purged according to the “Delete temporary DCMSLink data” settings on the DCMS^{Link} for HyStar Context Menu (this setting now influences the deletion of both the log files and the temporary data stored in the underlying Chromeleon Datasource).

4.2 System Status Report (SSR)

The System Status Report is a tool that captures all the necessary information for trouble shooting problems with DCMS^{Link} (including the above mentioned log files). The resulting reports can be sent to Dionex for analyzing the problem.

To create a System Status Report

1. Choose Start > All Programs > Dionex > DCMSLink > System Status Report.
2. On the “Select Datasources” and the “Select Timebases” pages the proper selections are normally done by default.
3. On the “Select Reports” page select the reports you want to include. If you are uncertain which reports should be included, select all of them, except the last item (“Datasource Performance Qualification” is currently only compatible with full Chromeleon installations).
4. On the “General” page, accept the default paths. Note the destination directory of the SSR. If you enable the “Send report by e-mail” option, an e-mail will be prepared with the SSR attached as a zipped (compressed) archive.

**Tip:**

You can use the Windows keyboard shortcuts Ctrl + C and Ctrl + V to copy the exact text of DCMS^{Link} error messages from message boxes and from the "Check Results" dialog. When relevant you should provide this information (*in addition* to the SSR), when you seek support from Dionex.