

LORD MicroStrain plugin manual



SOFTWARE USER MANUAL

LORD MicroStrain V24-1



1. Table of contents

1. Table of contents	2
2. About this document	4
2.1. Legend	4
3. General information	5
3.1. Supported devices	5
3.2. Important information	6
4. System configuration	7
5. SensorConnect software installation	7
6. Ethernet configuration	8
7. USB connection	10
8. DewesoftX ® LORD MicroStrain plugin	10
9. Licensing	11
9.1. Licensing options and configurations	11
9.1.1. Stand-alone application	11
9.1.2. Combined DAQ application	11
9.2. Requesting an Evaluation License	11
9.3. Activating the Evaluation license	12
10. Plugin installation	13
11. Registering the plugin	14
12. Hardware setup	15
12.1. Demo mode	15
13. Channel setup	16
14. Typical configurations	17
14.1. G-Link-200 (wireless accelerometer node)	17
14.2. SG-Link-200-OEM	18
Measurement example: Full bridge load cell	19
14.3. V-Link-200	20
14.4. TC-Link-200	20
15. CAN device setup for Dewesoft (MV5)	22
16. Inertial sensors	25
17. Warranty information	27
17.1. Calibration	27
17.2. Support	27
17.3. Service/repair	27
17.4. Restricted Rights	27
17.5. Printing History	28
17.6. Copyright	28
17.7. Trademarks	28
18. Safety instructions	28
18.1. Safety symbols in the manual	28
18.2. General Safety Instructions	28
18.2.1. Environmental Considerations	29

18.2.2. Product End-of-Life Handling	29
18.2.3. System and Components Recycling	29
18.2.4. General safety and hazard warnings for all Dewesoft systems	29
19. Documentation version history	32
20. List of Images	33

2. About this document

This is the user's manual for the LORD MicroStrain module.

2.1. Legend

The following symbols and formats will be used throughout the document.



Important

It gives you important information about the subject.
Please read carefully!



Hint

It gives you a hint or provides additional information about a subject.



Example

Gives you an example of a specific subject

3. General information

A summary of need-to-know information and links that will help you with product selection, connection, and configuration of the measurement system.

3.1. Supported devices

Wireless Sensor Nodes		USB Devices	
		Wireless Gateways	
G-Link-200	Yes	WSDA-2000	Yes
G-Link-200-R	No	WSDA-200-USB	Yes
SG-Link-200	Yes	WSDA-Base-101-LXRS	No
TC-Link-200	Yes	WSDA-Base-LXRS	No
V-Link-200	Yes	Inertial sensing	
G-Link-200-OEM	Yes	3DM-GQ7	Yes
SG-Link-200-OEM	Yes	3DM-GX5-25	Yes
TC-Link-200-OEM	Yes	3DM-GX5-45	Yes
RTD-Link-200	No		
Torque-Link-200	No		
SHM-Link	Yes		
TC-Linc-6CH-LXRS	No		

Is your device not on the list? Please contact support+LORD@dewesoft.com

3.2. Important information



Important

The LORDMicroStrain plugin requires a properly valid DewesoftX ® license.
For more information proceed to chapter [Licensing](#).



Important

DewesoftX ® **only supports the LXRS** protocol, NOT LXRS+.



Important

Due to the nature of data transmission, LORD data is sent from Node to Gateway in burst-style intervals to save battery life. As SensorConnect is made for this type of data stream and the synchronization between devices is SoftSync-ed, it's not an issue for them to fill in samples as they are received.

DewesoftX on the other hand requires a relatively fixed stream and cannot fill in data if it's too old so data loss is recorded. Such operation is important to us as our devices provide a constant stream of data packets from where we also know that the device is working properly.

We tested some combinations and found repeatable results.

This type of data transfer becomes an issue if lower quantities of data are transmitted, for example, 3 channels on G-Link-200 with a sample rate 32Hz and less.

1 channel on SG-Link-200-OEM with a sample rate 32Hz or less
and 3 channels on V-Link- 200 with a sample rate 32Hz or less.

This is an issue of bandwidth so if more channels than described above, are used the system will work fine. This is also true for other channel counts/ sample rates in this bandwidth range.

For more information contact support+LORD@dewesoft.com.

The number of connected nodes does not affect the probability of data loss.

4. System configuration

To assemble the whole measurement chain you need a sensor, wireless node, gateway, and a PC.

WSDA wireless gateways coordinate communication between remote wireless sensor nodes and a local computer. The gateways can be connected via Ethernet or USB.



Image 1. Explanation of device functions

5. SensorConnect software installation

SensorConnect is a software where you can configure all the gateways, nodes, and sensors. You can download SensorConnect [here](#). More information about SensorConnect can be found on the [webpage](#) and in the [Quick start guide](#).



Important

After configuring all the gateways and nodes in SensorConnect, please close the program, before opening DewesoftX ®. The gateway cannot communicate with both software at the same time.

6. Ethernet configuration

The gateways [WSDA-1500](#) and [WSDA-2000](#) are connected to the measurement PC (e.g. S-BOX) via the LAN port (TCP/IP for data transfer). If more than one gateway is connected, it is recommended to use an Ethernet Switch.



Image 2. Gateway connection

The gateway is connected to the measurement unit via ethernet cable for data exchange. To establish a communication between the gateway and the measurement system, the ethernet interface on the PC and the ethernet interface/s on the gateway/s must be configured to use the same IP address range (i.e. the subnet mask must match). To find out the IP address of the WSDA gateway visit the WSDA Control Panel in Sensor Connect.

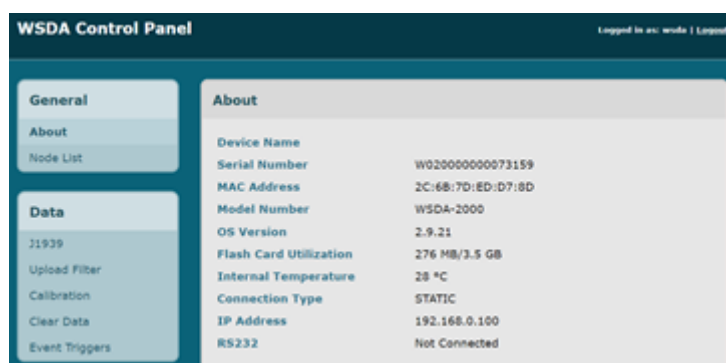


Image 3. Gateway IP address in WSDA Control Panel

Open Network connection settings on your PC:

- Define the IP address (192.168.0.10)
- Define the Subnet mask (255.255.255.0)
- Click OK to confirm the settings



Image 4. Ethernet card IPv4 definition

Open SensorConnect, select Add Device, and enter the devices IP address. After that, you will get a note that the device was added.



Image 5. SensorConnect Add Device menu



Hint

For more information please refer to the [LORD quick start guide](#) or [LORD User manual](#).

7. USB connection

The gateway [WSDA-2000](#) and [WSDA-200-USB](#) can be connected to the PC via a USB connection. When you connect the gateway via USB, it is automatically recognized by the SensorConnect software.



Image 6. WSDA-200-USB Gateway

For more information, please take a look at the [WSDA-200-USB datasheet](#) or [WSDA-200-USB User manual](#).

8. DewesoftX ® LORD MicroStrain plugin

The LORD MicroStrain plugin enables DewesoftX ® to collect data from LORD MicroStrain wireless gateways, which acquire the data from wireless sensor nodes. There are three operation modes:

- **No Dewesoft hardware:** LORD MicroStrain is running standalone.
- **Soft sync:** Gateway and Dewesoft hardware each run with their own internal clock.
- **Demo mode:** When no gateway is connected, DewesoftX ® will create a virtual one.

Current plugin version: [Check on the Dewesoft download center](#)

Minimum DewesoftX ® version: LORD MicroStrain plugin requires Dewesoft X3 SP4 or higher.

Supported gateways:

- [WSDA-2000](#)
- [WSDA-1500](#)
- [WSDA-200-USB](#)

Latest supported Visual C++ redistributable packages for Visual Studio is required before registering the addon: [The latest supported Visual C++ downloads](#)

9. Licensing

The plugin requires a valid **DEWESOFT-X-PROF + DEWESOFT-PLUGIN-LORD-MicroStrain** license or **DEWESOFT-X-ENTERPRISE**.

To test the plugin, you can use an Evaluation license.

9.1. Licensing options and configurations

Stand-alone application

Using the LORD devices in a stand-alone application requires the following licenses:

DEWESOFT-X-PROF + DEWESOFT-PLUGIN-LORD-MicroStrain or
DEWESOFT-X-ENTERPRISE (MicroStrain plugin included)

Weather registered on the PC or activated with the help of a dongle.

Combined DAQ application

When using LORD devices in conjunction with Dewesoft DAQ, the DAQ will typically already have a DEWESOFT-X-PROF pre-registered. In that case, you only need the following licenses:

DEWESOFT-PLUGIN-LORD-MicroStrain or
DEWESOFT-X-ENTERPRISE (MicroStrain plugin included)

9.2. Requesting an Evaluation License

You can request an Evaluation license from our homepage on the following [LINK](#).

- A. Click on **Evaluation license**
- B. Fill out all the required fields
- C. Click the **Request license** button

9.3. Activating the Evaluation license

When you have received your trial license key, open DewesoftX ®, go to Options -> Settings, select Licensing and expand the Create new license section. Enter the license code (3) and click the Register online (4) button. Then your new license key will show up in the list and have the Status Valid.

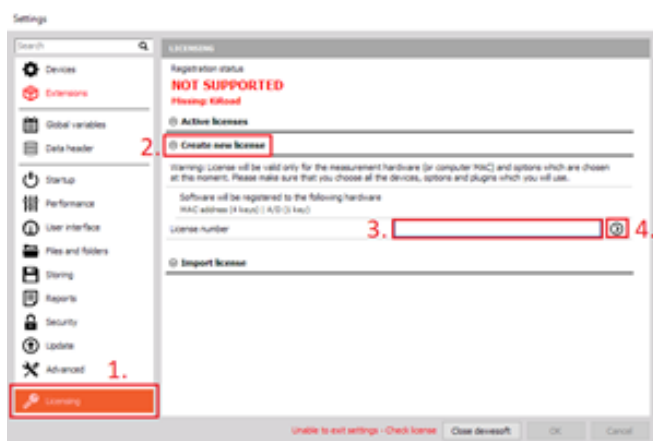


Image 7. Dewesoft X Licence activation

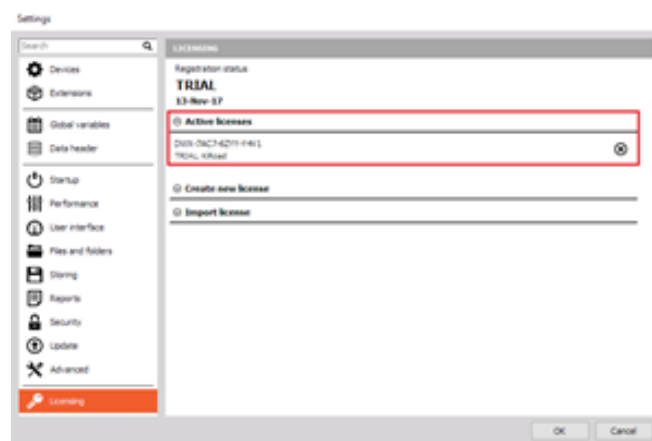


Image 8. Dewesoft X Licence confirmation

10. Plugin installation

The LORD MicroStrain plugin can be downloaded from our webpage:

- [32-bit version of the plugin](#)
- [64-bit version of the plugin](#)

Simply extract the contents of LORDMicroStrain_vXX.XX.XX.zip[1] archive into the Addons folder of your DewesoftX ® installation. (e.g., C:\Dewesoft\Bin64\Addons64\).

Then you can start DewesoftX ® as an administrator and register the plugin (extension). Click Options -> Settings, select Extensions, and click the plus sign. Then find the LORD MicroStrain plugin in the list and activate it (i.e. click the check-box that is shown in the picture on the right) – when the plugin does not show up in the list, you may need to register it first.

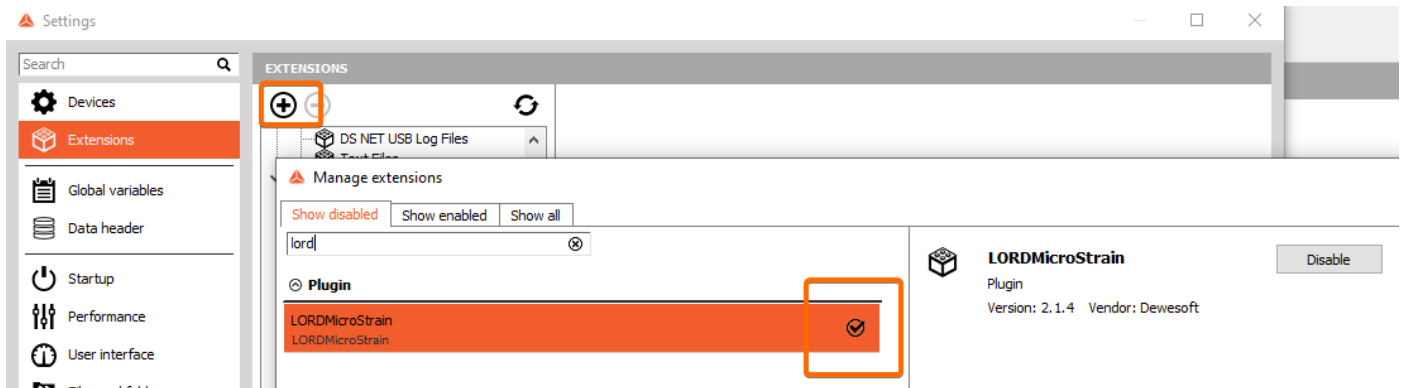


Image 9. Procedure for adding LORDMicroStrain Extension

11. Registering the plugin

Before you can use Plugins in DewesoftX®, they must be registered once. When DewesoftX® is started it will try to register all plugins (*.dll files) that it finds in the Addons folder. In order to do that, DewesoftX® requires administrator permissions (because it must write to the Windows registry). When DewesoftX® is not run with administrator permissions, the registration cannot be done automatically.

When the plugin does not show up in the Extensions list, you must press the Refresh button.

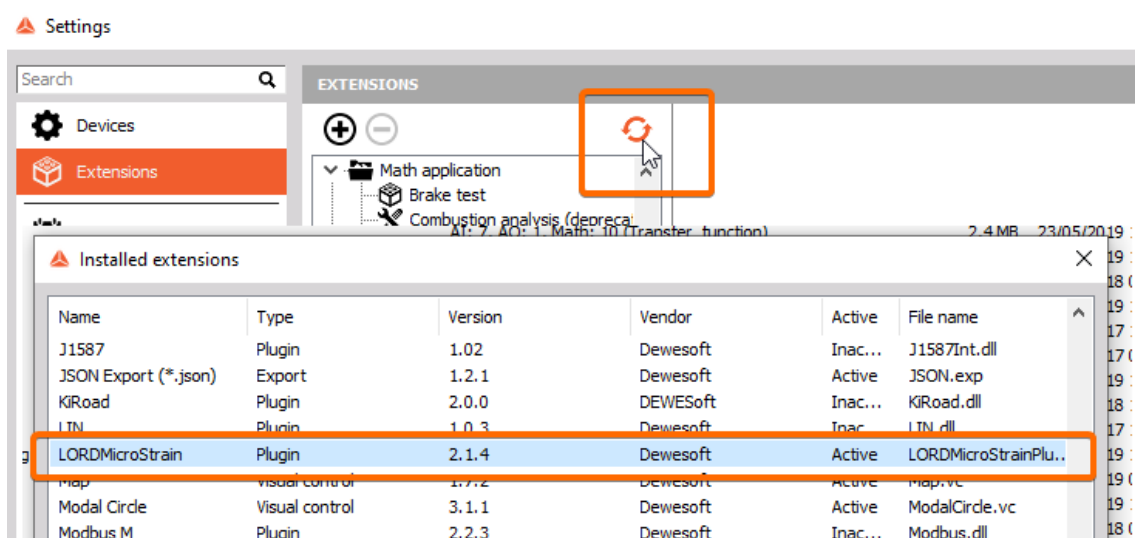


Image 10. Updating Extensions list



Hint

You may need to start DewesoftX® as administrator (depending on the UAC settings of your Windows user/installation). When you have pressed the Refresh button, the registration Window will be shown for a short time. After that, you must restart DewesoftX®.

12. Hardware setup

After you have installed and enabled the plugin, start DewesoftX ® and go to Settings -> Extensions.

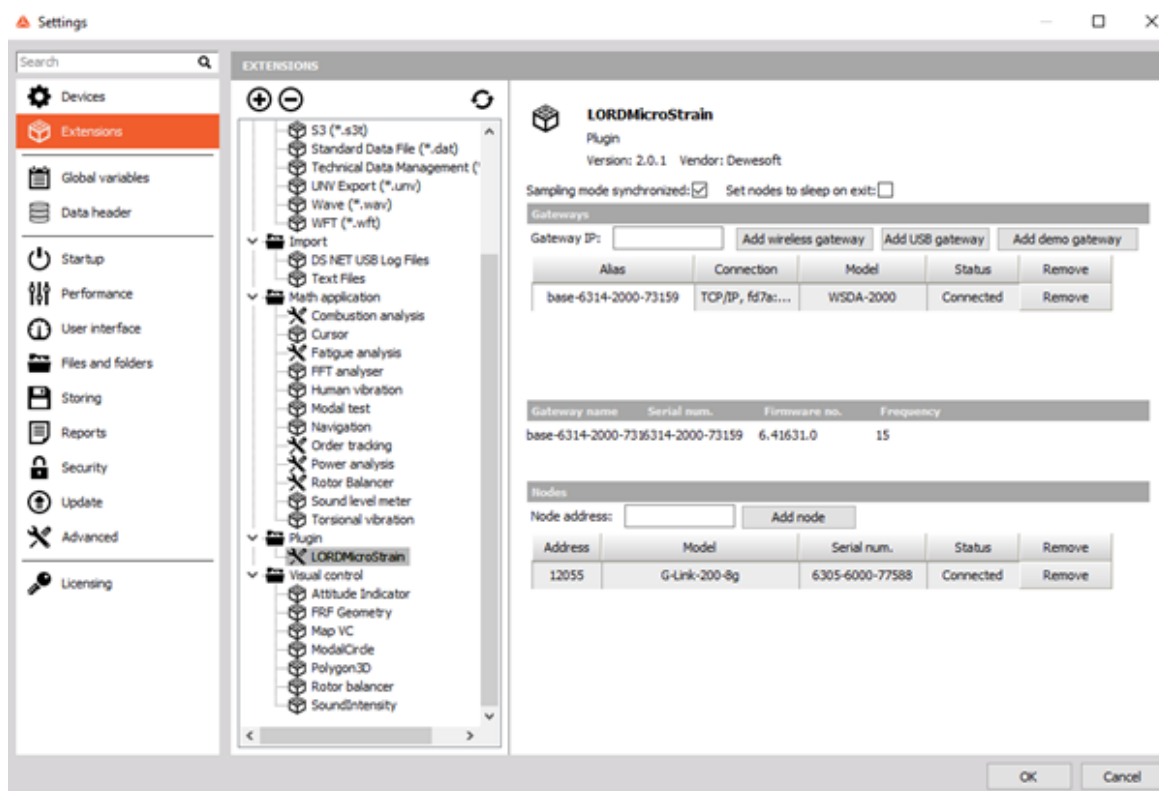


Image 11. LORDMicroStrain Extension configuration

The network can be run in synchronized or non-synchronized mode. Mixing synchronized and non-synchronized nodes are not allowed, all nodes work either in synchronized or non-synchronized mode. The network must be set to synchronized mode if nodes return structure health data.

Gateways are added by (static) IP addresses. When the connection is established with the device, data is retrieved.

If you have a USB gateway, simply select Add USB gateway. The gateways will be automatically recognized.

To add a wireless node, select a gateway and insert the node address.

12.1. Demo mode

When no gateway is found, DewesoftX ® will create a virtual system denoted as “Demo gateway”. This is only to show the basic plugin functionality. A sine signal is simulated on every channel.

13. Channel setup

In the channel setup of the LORD MicroStrain plugin, you can activate/deactivate channels of the connected wireless nodes.

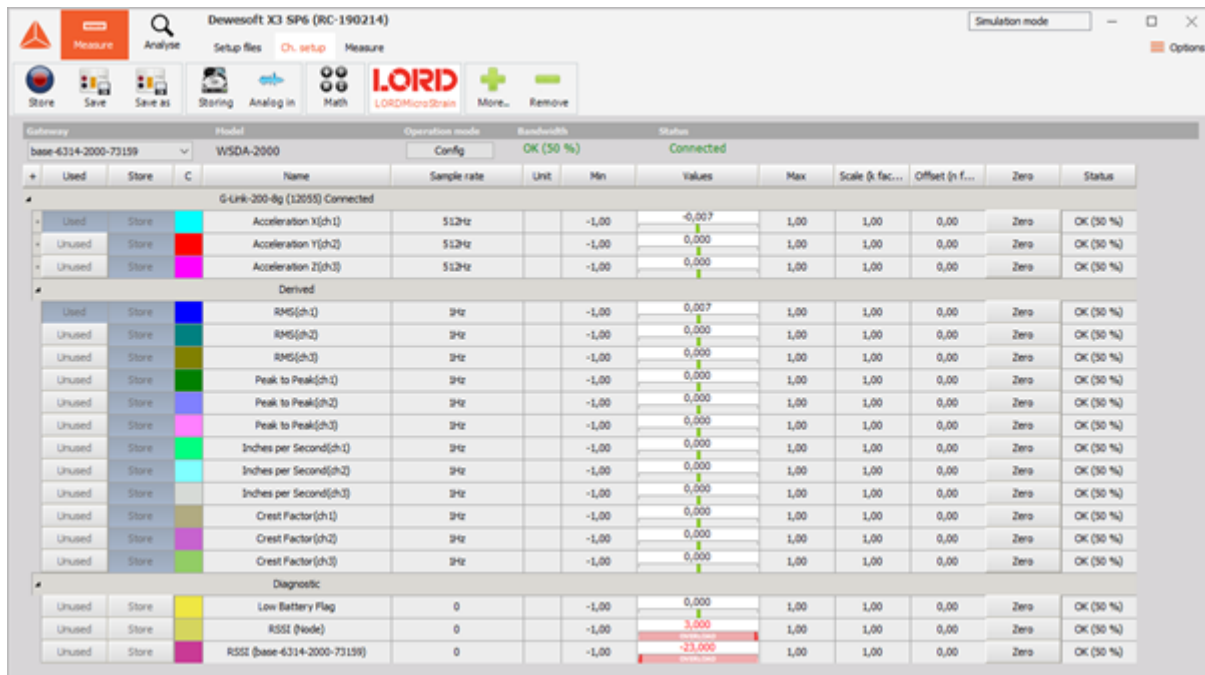


Image 12. LORD channel configuration inside Dewesoft X

- If more than one gateway is connected, you can switch between the channel lists by selecting the gateway in the dropdown list.
- Channel list: The channel list of each gateway is divided by nodes into sub-groups for easier navigation.



Hint

To change channel properties, enter Config mode.

- In Config mode, it is possible to alter each channel name, color, unit, and scaling directly in the channel list.
- The supported sample rates depend on the wireless node.
- If a channel is enabled/disabled or the sample rate is changed the network bandwidth is updated.



Hint

To apply changes, press the apply changes button.

- If the bandwidth is exceeded the changes made to channels will not be applied.

14. Typical configurations

14.1. G-Link-200 (wireless accelerometer node)

[G-Link-200](#) + [WSDA-2000](#) or [WSDA-200-USB](#)

- [G-Link datasheet](#)
- [G-Link quick start guide](#)
- [G-Link User manual](#)



Image 13. G-Link-200 and Gateway option

The G-Link-200 is a battery-powered wireless 3-axis accelerometer with a rugged, weatherproof enclosure. The G-Link-200 provides extremely low noise waveform data, ideal for vibration, impact, motion, and tilt applications.

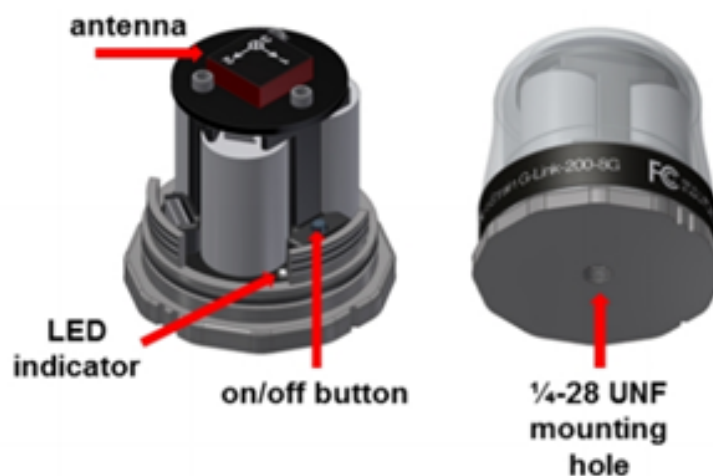


Image 14. G-Link-200 description

14.2. SG-Link-200-OEM

[SG-Link-200-OEM](#) + [WSDA-2000](#) or [WSDA-200-USB](#)

- [SG-Link-200-OEM datasheet](#)
- [SG-Link-200-OEM quick start guide](#)
- [SG-Link-200-OEM user manual](#)



Image 15. SG-Link-200-OEM and gateway options

2-channel analog input node for precise measurement of strain gages, load cells, and pressure transducers.

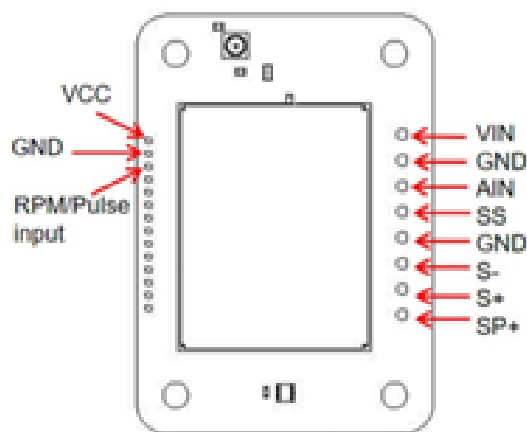


Image 16. SG-Link-200-OEM description

Measurement example: Full bridge load cell



Image 17. WSDA-200-USB & SG-Link-200-OEM connected to a load cell

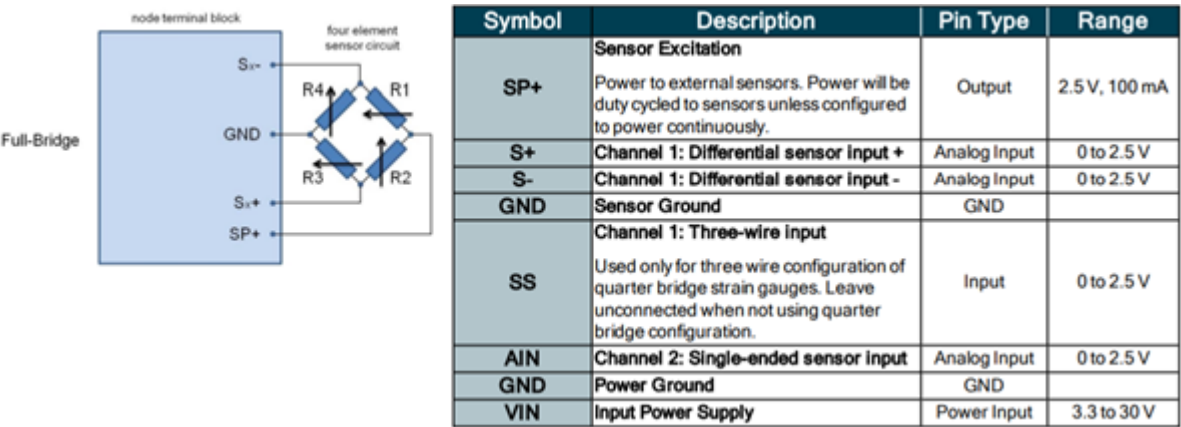


Image 18. Strain gage connection datasheet

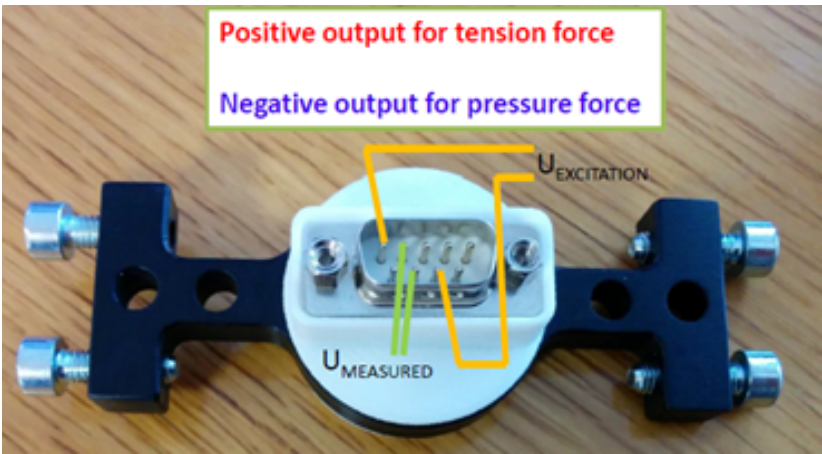


Image 19. Load cell connections

14.3. V-Link-200

[V-link-200](#) + [WSDA-2000](#) or [WSDA-200-USB](#)

- [V-Link-200 datasheet](#)
- [V-Link-200 quick start guide](#)
- [V-Link-200 user manual](#)



Image 20. V-Link-200 and Gateway option

8 analog input channels. It includes onboard PGA, filtering, and high-resolution ADC for precise measurement of a large range of sensor types including strain gauges, load cells, and pressure transducers. It has 4 differential analog channels and 4 single-ended analog channels.

Node Pin Number	Signal	Node Pin Number	Signal
1	SP+	16	SP+
2	S1+	17	S4+
3	S1-	18	S4-
4	GND	19	GND
5	S1 S	20	S4 S
6	SP+	21	Ain5
7	S2+	22	GND
8	S2-	23	Ain6
9	GND	24	GND
10	S2 S	25	Ain7
11	SP+	26	GND
12	S3+	27	Ain8
13	S3-	28	GND
14	GND	29	Vin
15	S3 S	30	GND

terminal block connections

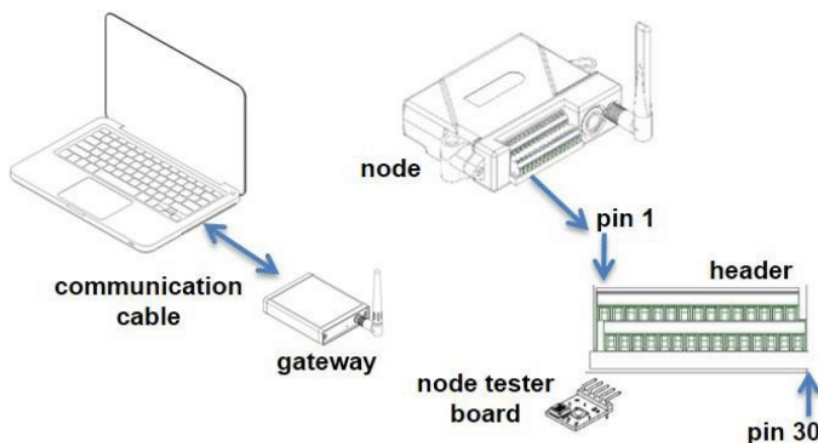


Image 21. V-Link-200 Terminal block connections

14.4. TC-Link-200

[TC-link-200](#) + [WSDA-2000](#) or [WSDA-200-USB](#)

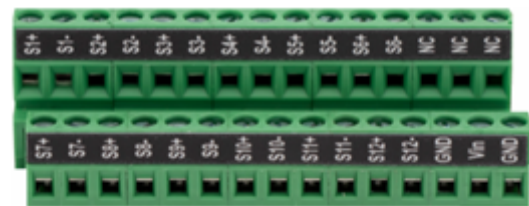
- [TC-Link-200 datasheet](#)
- [TC-Link-200 user manual](#)



Image 22. TC-Link-200 with Gateways

12-channel wireless sensor used for precise measurement of thermocouples and differential output sensors. There is no calibration required. Select the desired thermocouple type and the node will output accurate, low noise temperature or mV data.

Pinout and sensor wiring



Pin #	Signal	Pin #	Signal
1	S1+	16	S7+
2	S1-	17	S7-
3	S2+	18	S8+
4	S2-	19	S8-
5	S3+	20	S9+
6	S3-	21	S9-
7	S4+	22	S10+
8	S4-	23	S10-
9	S5+	24	S11+
10	S5-	25	S11-
11	S6+	26	S12+
12	S6-	27	S12-
13	NC	28	GND
14	NC	29	VIN
15	NC	30	GND

Signal	Type	Description	Range
VIN	Power input	External supply voltage	4.0 V to 36 V
GND	Power return	Ground	GND
Sx+	Analog input	Thermocouple positive input, with internally applied 1.4V bias	0 to 2.5 V
Sx-	Analog input	Thermocouple negative input	0 to 2.5 V

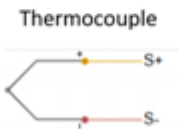


Image 24. TC-Link-200 terminal pinout

15. CAN device setup for Dewesoft (MV5)

- A. Connect Dewesoft DSCAN2 device to a USB port on the computer and to MV5 in CAN0 port through MV5 special cable. Power is provided through a USB port.
- B. Start DewesoftX ® (license required unless using the trial version)
- C. Start new Setup

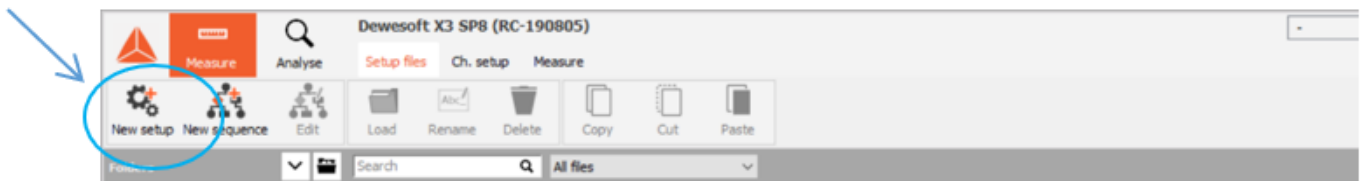


Image 25. New setup button

- D. The DSCAN2 device should be detected automatically. Once initiated, open the Settings menu for CAN0 to configure.
 - Settings may automatically launch when the software or a new session is started
 - Access through Ch. Setup > CAN > CAN0 > tool symbol
 - Access through Options > Settings from any menu tab
- E. In Settings menu select **Devices > Dewesoft Devices > DS-CAN2 > CAN0**
 - Operations mode = Read/write/acknowledge
 - Default baud rate = any
 - CAN plugin = None

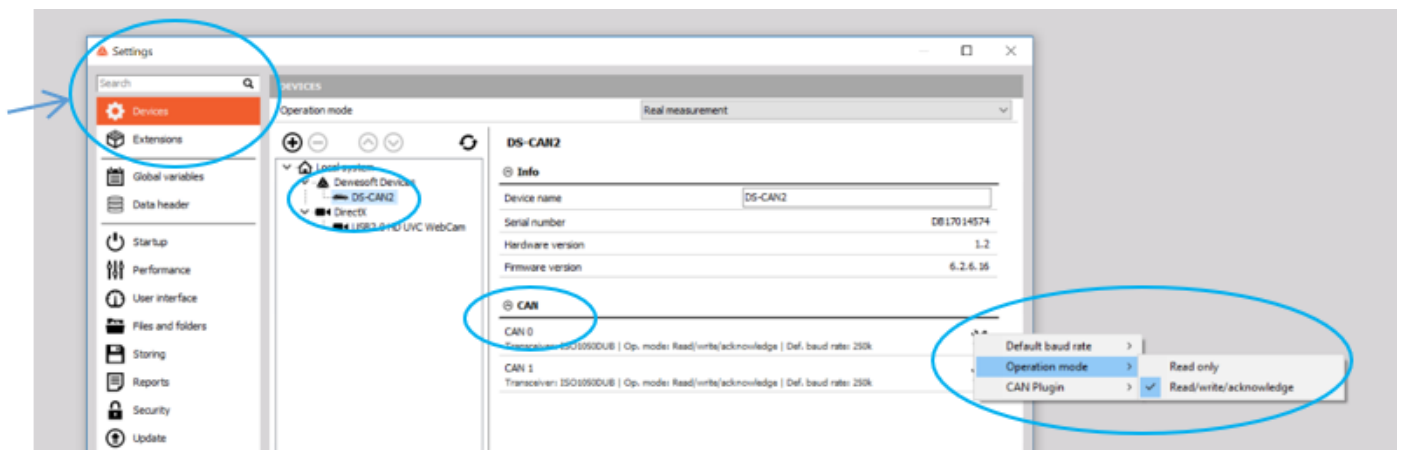


Image 26. Read/write/acknowledge selection procedure

- F. Close Settings and select Ch. Setup > CAN > CAN0
 - Check Bus type = J1939

G. Import the DBC file that designates MV5 channels from the CAN data stream

- MV5_v1.3.dbc (or newer version as available)
- Will be on the MV5 product page on LORD website

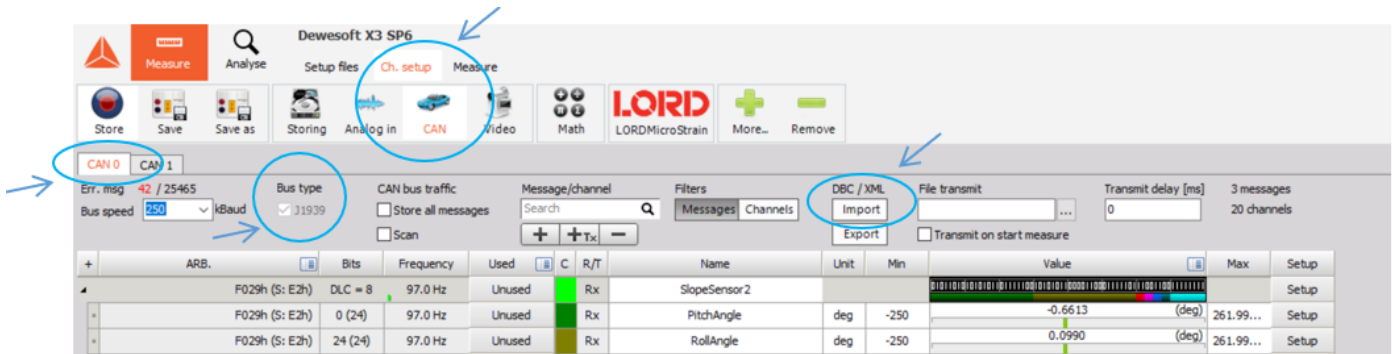


Image 27. MV5 DBC import

H. Set up channels for data acquisition as needed

- Channel Min and Max to set the operational ranges
- Select Unused/Used button to enable and disable channels
- Other settings as needed
- Save channel setup

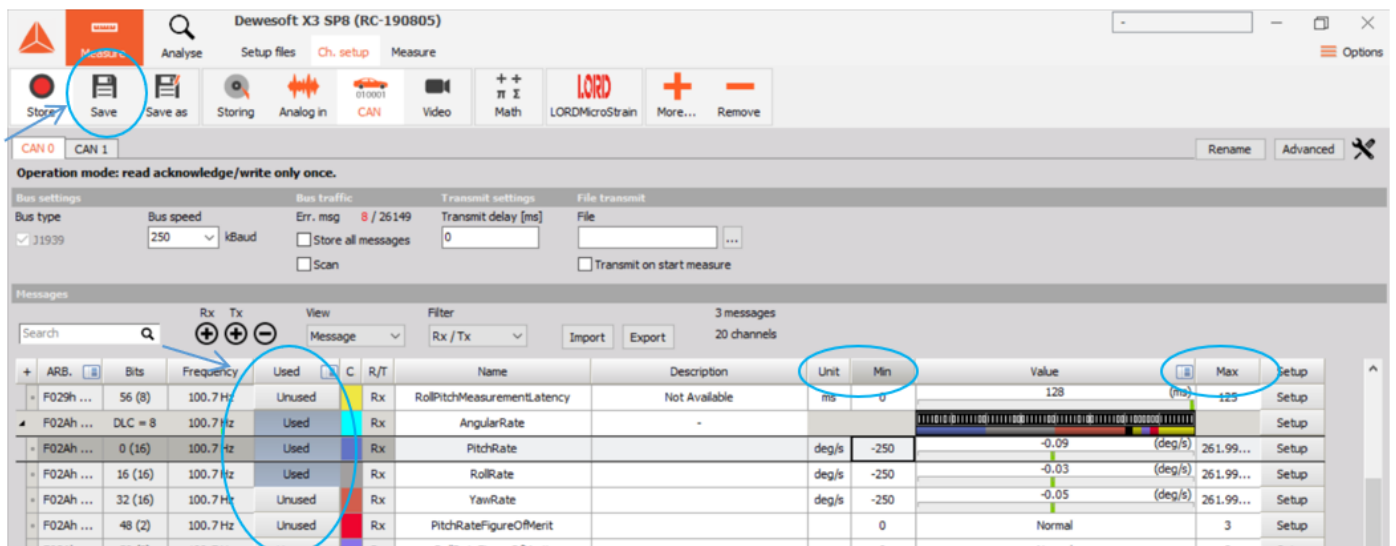


Image 28. Channel setup

I. Start data acquisition in the Measure tab

- Design custom widget layouts in the Design menu
 - Right-click on Custom or Recorder > Properties to name and save layouts
 - Access the Design menu bar and in the + More menu
 - Click on the widget to assign channels from the right column
 - Change widget settings in the left column

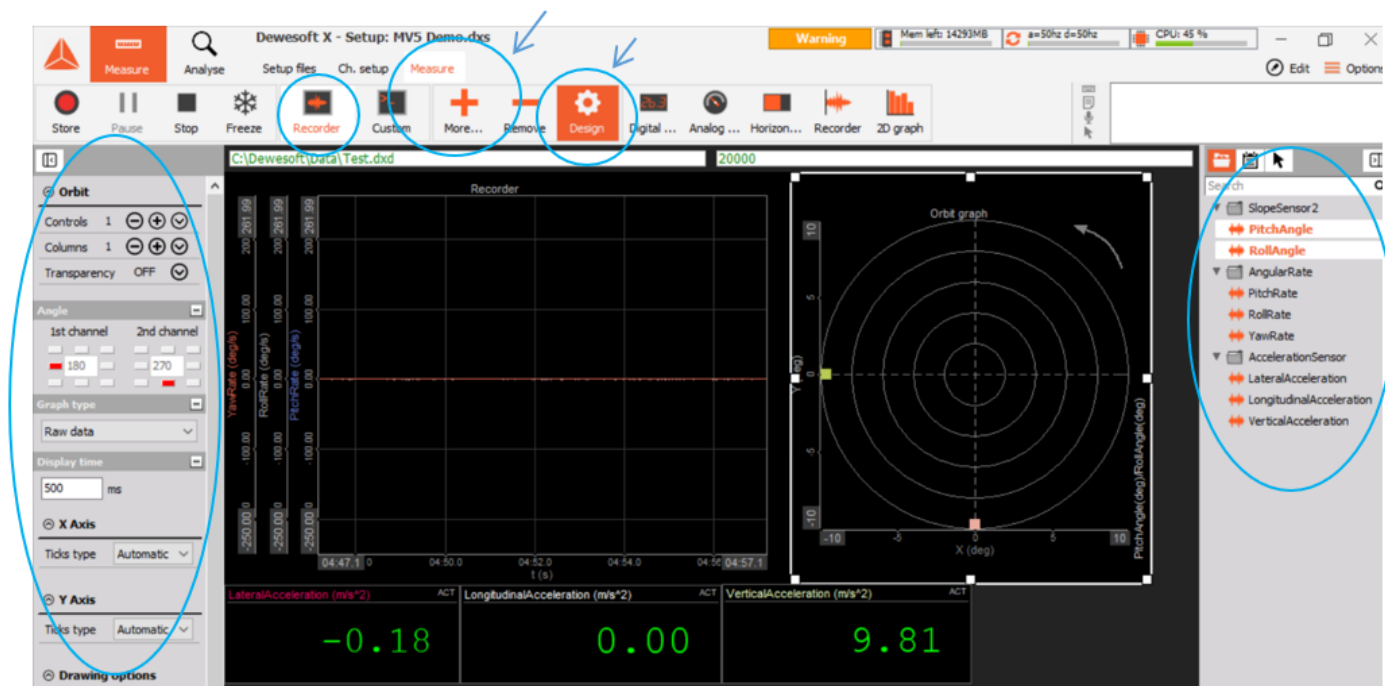


Image 29. Measurement screen definition

- Click on Design to exit the design space and start measuring
 - Change axis ranges by clicking on the axis
 - Data is only recorded if the Store button is used

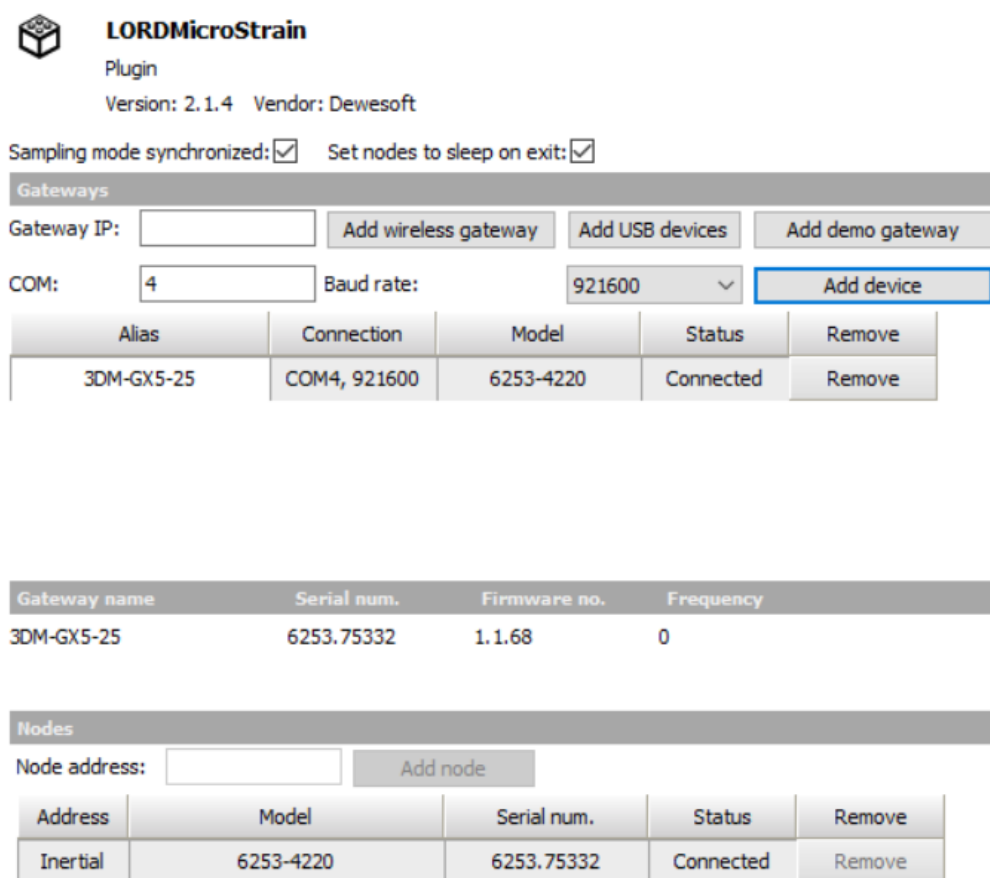


Image 30. Fine-tuning measurement screen and storing of data

16. Inertial sensors

The [3DM®-GX5-25](#) is the smallest and lightest precision industrial AHRS available. It features a fully calibrated and temperature compensated triaxial accelerometer, gyroscope, and magnetometer to achieve the optimum combination of measurement qualities under all dynamic conditions.

The inertial sensors are also supported in the DewesoftX ® LORD plugin. If the device is connected via USB select Add USB devices. If the device is connected via the Serial interface, select the correct COM port and baud rate. After that select Add device.



LORDMicroStrain
Plugin
Version: 2.1.4 Vendor: Dewesoft

Sampling mode synchronized: ☒ Set nodes to sleep on exit: ☒

Gateways

Gateway IP:

COM: Baud rate:

Alias	Connection	Model	Status	Remove
3DM-GX5-25	COM4, 921600	6253-4220	Connected	<input type="button" value="Remove"/>

Gateway name	Serial num.	Firmware no.	Frequency
3DM-GX5-25	6253.75332	1.1.68	0

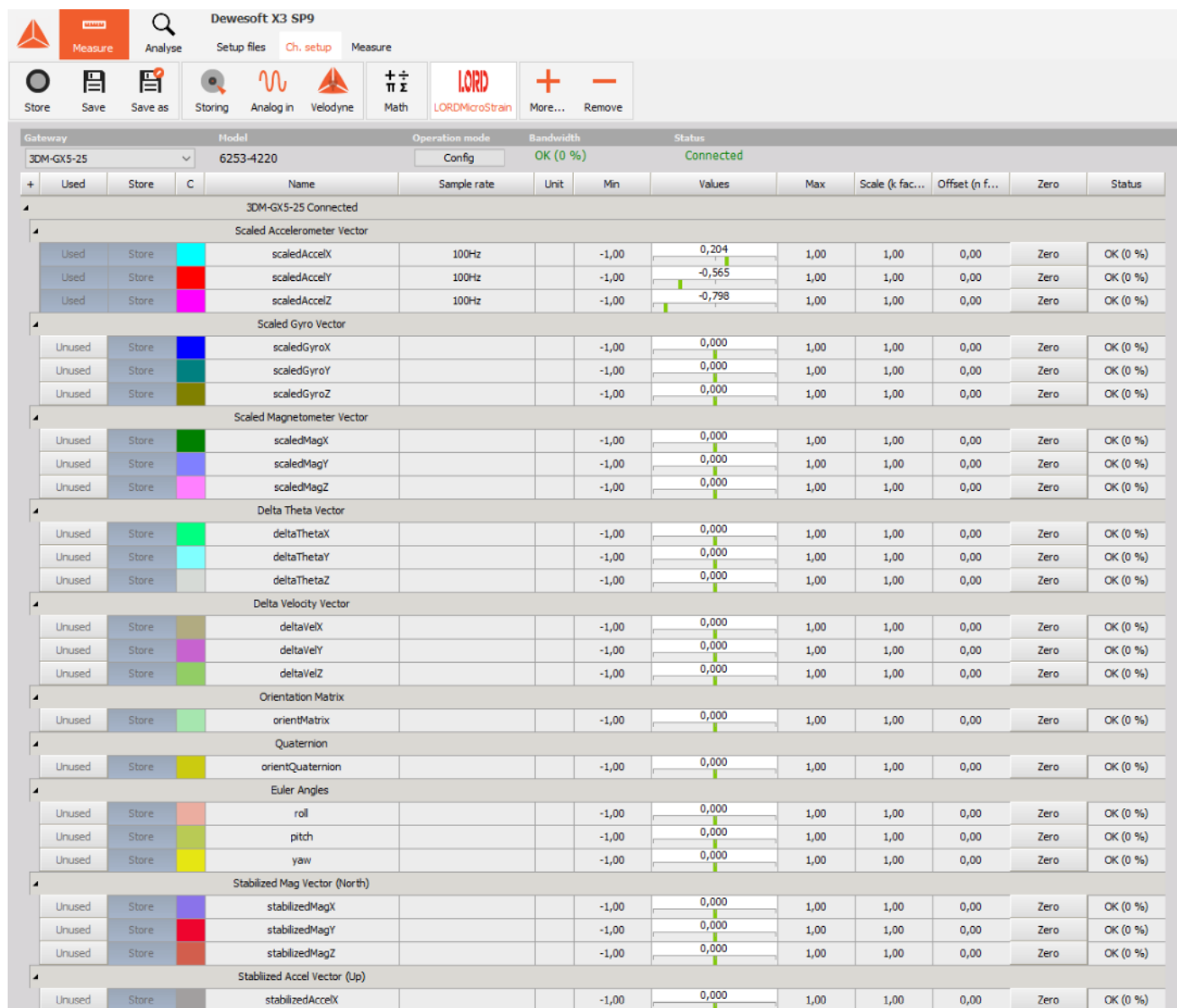
Nodes

Node address:

Address	Model	Serial num.	Status	Remove
Inertial	6253-4220	6253.75332	Connected	<input type="button" value="Remove"/>

Image 31. Adding devices in LORDMicroStrain extension

In the LORD setup you can select the sample rate and which channels you want to measure/store.



Dewesoft X3 SP9

Measure Analyse Setup files **Ch. setup** Measure

Store Save Save as Storing Analog in Velodyne Math LORDMicroStrain More... Remove

Gateway		Model		Operation mode	Bandwidth	Status							
3DM-GX5-25		6253-4220		Config	OK (0 %)	Connected							
+	Used	Store	C	Name	Sample rate	Unit	Min	Values	Max	Scale (k fac...)	Offset (n f...)	Zero	Status
3DM-GX5-25 Connected													
Scaled Accelerometer Vector													
Used	Store			scaledAccelX	100Hz		-1,00	0,204	1,00	1,00	0,00	Zero	OK (0 %)
Used	Store			scaledAccelY	100Hz		-1,00	-0,565	1,00	1,00	0,00	Zero	OK (0 %)
Used	Store			scaledAccelZ	100Hz		-1,00	-0,798	1,00	1,00	0,00	Zero	OK (0 %)
Scaled Gyro Vector													
Unused	Store			scaledGyroX			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			scaledGyroY			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			scaledGyroZ			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Scaled Magnetometer Vector													
Unused	Store			scaledMagX			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			scaledMagY			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			scaledMagZ			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Delta Theta Vector													
Unused	Store			deltaThetaX			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			deltaThetaY			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			deltaThetaZ			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Delta Velocity Vector													
Unused	Store			deltaVelX			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			deltaVelY			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			deltaVelZ			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Orientation Matrix													
Unused	Store			orientMatrix			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Quaternion													
Unused	Store			orientQuaternion			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Euler Angles													
Unused	Store			roll			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			pitch			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			yaw			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Stabilized Mag Vector (North)													
Unused	Store			stabilizedMagX			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			stabilizedMagY			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Unused	Store			stabilizedMagZ			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)
Stabilized Accel Vector (Up)													
Unused	Store			stabilizedAccelX			-1,00	0,000	1,00	1,00	0,00	Zero	OK (0 %)

Image 32. LORD device channel list example

17. Warranty information

Notice

The information contained in this document is subject to change without notice.

Note:

Dewesoft d.o.o. shall not be liable for any errors contained in this document. Dewesoft MAKES NO WARRANTIES OF ANY KIND WITH REGARD TO THIS DOCUMENT, WHETHER EXPRESS OR IMPLIED. DEWESOFT SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Dewesoft shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory, in connection with the furnishing of this document or the use of the information in this document.

The copy of the specific warranty terms applicable to your Dewesoft product and replacement parts can be obtained from your local sales and service office. To find a local dealer for your country, please visit <https://dewesoft.com/support/distributors>.

17.1. Calibration

Every instrument needs to be calibrated at regular intervals. The standard norm across nearly every industry is annual calibration. Before your Dewesoft data acquisition system is delivered, it is calibrated. Detailed calibration reports for your Dewesoft system can be requested. We retain them for at least one year, after system delivery.

17.2. Support

Dewesoft has a team of people ready to assist you if you have any questions or any technical difficulties regarding the system. For any support please contact your local distributor first or Dewesoft directly.

Dewesoft d.o.o.
Gabrsko 11a
1420 Trbovlje Slovenia

Europe Tel.: +386 356 25 300
Web: <http://www.dewesoft.com>
Email: Support@dewesoft.com
The telephone hotline is available Monday to Friday from 07:00 to 16:00 CET (GMT +1:00)

17.3. Service/repair

The team of Dewesoft also performs any kinds of repairs to your system to assure a safe and proper operation in the future. For information regarding service and repairs please contact your local distributor first or Dewesoft directly on <https://dewesoft.com/support/rma-service>.

17.4. Restricted Rights

Use Slovenian law for duplication or disclosure. Dewesoft d.o.o. Gabrsko 11a, 1420 Trbovlje, Slovenia / Europe.

17.5. Printing History

Versions and changes described in [Documentation version history](#).

17.6. Copyright

Copyright © 2015-2019 Dewesoft d.o.o. This document contains information which is protected by copyright. All rights are reserved. Reproduction, adaptation, or translation without prior written permission is prohibited, except as allowed under the copyright laws. All trademarks and registered trademarks are acknowledged to be the property of their owners.

17.7. Trademarks

We take pride in our products and we take care that all key products and technologies are registered as trademarks all over the world. The Dewesoft name is a registered trademark. Product families (KRYPTON, SIRIUS, DSI, DS-NET) and technologies (DualCoreADC, SuperCounter, GrandView) are registered trademarks as well. When used as the logo or as part of any graphic material, the registered trademark sign is used as a part of the logo. When used in text representing the company, product or technology name, the ® sign is not used. The Dewesoft triangle logo is a registered trademark but the ® sign is not used in the visual representation of the triangle logo.

18. Safety instructions

Your safety is our primary concern! Please be safe!

18.1. Safety symbols in the manual



Warning

Calls attention to a procedure, practice, or condition that could cause the body injury or death



Caution

Calls attention to a procedure, practice, or condition that could possibly cause damage to equipment or permanent loss of data.

18.2. General Safety Instructions



Warning

The following general safety precautions must be observed during all phases of operation, service, and repair of this product. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the product. Dewesoft d.o.o. assumes no liability for the customer's failure to comply with these requirements.

All accessories shown in this document are available as an option and will not be shipped as standard parts.

18.2.1. Environmental Considerations

Information about the environmental impact of the product.

18.2.2. Product End-of-Life Handling

Observe the following guidelines when recycling a Dewesoft system:

18.2.3. System and Components Recycling

Production of these components required the extraction and use of natural resources. The substances contained in the system could be harmful to your health and to the environment if the system is improperly handled at its end of life! Please recycle this product in an appropriate way to avoid unnecessary pollution of the environment and to keep natural resources.



This symbol indicates that this system complies with the European Union's requirements according to Directive 2002/96/EC on waste electrical and electronic equipment (WEEE). Please find further information about recycling on the Dewesoft web site www.dewesoft.com

Restriction of Hazardous Substances

This product has been classified as Monitoring and Control equipment and is outside the scope of the 2002/95/EC RoHS Directive. However, we take care of our environment and the product is lead-free.

18.2.4. General safety and hazard warnings for all Dewesoft systems

Safety of the operator and the unit depend on following these rules.

- Use this system under the terms of the specifications only to avoid any possible danger.
- Read your manual before operating the system.
- Observe local laws when using the instrument.
- DO NOT touch internal wiring!
- DO NOT use higher supply voltage than specified!
- Use only original plugs and cables for harnessing.
- You may not connect higher voltages than rated to any connectors.
- The power cable and connector serve as Power-Breaker. The cable must not exceed 3 meters, the disconnect function must be possible without tools.
- Maintenance must be executed by qualified staff only.
- During the use of the system, it might be possible to access other parts of a more comprehensive system. Please read and follow the safety instructions provided in the manuals of all other components regarding warning and security advice for using the system.
- With this product, only use the power cable delivered or defined for the host country.
- DO NOT connect or disconnect sensors, probes or test leads, as these parts are connected to a voltage supply unit.
- Ground the equipment: For Safety Class 1 equipment (equipment having a protective earth terminal), a non-interruptible safety earth ground must be provided from the mains power source to the product input wiring terminals.
- Please note the characteristics and indicators on the system to avoid fire or electric shocks. Before connecting the system, please read the corresponding specifications in the product manual carefully.

- The inputs must not, unless otherwise noted (CATx identification), be connected to the main circuit of category II, III and IV.
- The power cord separates the system from the power supply. Do not block the power cord, since it has to be accessible for the users.
- DO NOT use the system if equipment covers or shields are removed.
- If you assume the system is damaged, get it examined by authorized personnel only.
- Adverse environmental conditions are Moisture or high humidity Dust, flammable gasses, fumes or dissolver Thunderstorm or thunderstorm conditions (except assembly PNA) Electrostatic fields, etc.
- The measurement category can be adjusted depending on module configuration.
- Any other use than described above may damage your system and is attended with dangers like short-circuiting, fire or electric shocks.
- The whole system must not be changed, rebuilt or opened.
- DO NOT operate damaged equipment: Whenever it is possible that the safety protection features built into this product have been impaired, either through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use the product until the safe operation can be verified by service-trained personnel. If necessary, return the product to Dewesoft sales and service office for service and repair to ensure that safety features are maintained.
- If you assume a more riskless use is not provided anymore, the system has to be rendered inoperative and should be protected against inadvertent operation. It is assumed that a more riskless operation is not possible anymore if the system is damaged obviously or causes strange noises. The system does not work anymore. The system has been exposed to long storage in adverse environments. The system has been exposed to heavy shipment strain.
- Warranty void if damages caused by disregarding this manual. For consequential damages, NO liability will be assumed!
- Warranty void if damage to property or persons caused by improper use or disregarding the safety instructions.
- Unauthorized changing or rebuilding the system is prohibited due to safety and permission reasons (CE).
- Be careful with voltages >25 VAC or >35 VDC! These voltages are already high enough in order to get a perilous electric shock by touching the wiring.
- The product heats during operation. Make sure there is adequate ventilation. Ventilation slots must not be covered!
- Only fuses of the specified type and nominal current may be used. The use of patched fuses is prohibited.
- Prevent using metal bare wires! Risk of short circuit and fire hazard!
- DO NOT use the system before, during or shortly after a thunderstorm (risk of lightning and high energy over-voltage). An advanced range of application under certain conditions is allowed with therefore designed products only. For details please refer to the specifications.
- Make sure that your hands, shoes, clothes, the floor, the system or measuring leads, integrated circuits and so on, are dry.
- DO NOT use the system in rooms with flammable gasses, fumes or dust or in adverse environmental conditions.
- Avoid operation in the immediate vicinity of high magnetic or electromagnetic fields, transmitting antennas or high-frequency generators, for exact values please refer to enclosed specifications.
- Use measurement leads or measurement accessories aligned with the specification of the system only. Fire hazard in case of overload!

- Lithium ion batteries are classified as not hazardous when used according to the recommendations of the manufacturer described in Battery Safety Data Sheet, which is available for download from [this link](#).
- Do not switch on the system after transporting it from a cold into a warm room and vice versa. The thereby created condensation may damage your system. Acclimatize the system unpowered to room temperature.
- Do not disassemble the system! There is a high risk of getting a perilous electric shock. Capacitors still might be charged, even if the system has been removed from the power supply.
- The electrical installations and equipment in industrial facilities must be observed by the security regulations and insurance institutions.
- The use of the measuring system in schools and other training facilities must be observed by skilled personnel.
- The measuring systems are not designed for use in humans and animals.
- Please contact a professional if you have doubts about the method of operation, safety or the connection of the system.
- Please be careful with the product. Shocks, hits and dropping it from already- lower level may damage your system.
- Please also consider the detailed technical reference manual as well as the security advice of the connected systems.
- This product has left the factory in safety-related flawlessness and in proper condition. In order to maintain this condition and guarantee safety use, the user has to consider the security advice and warnings in this manual.

EN 61326-3-1:2008

IEC 61326-1 applies to this part of IEC 61326 but is limited to systems and equipment for industrial applications intended to perform safety functions as defined in IEC 61508 with SIL 1-3.

The electromagnetic environments encompassed by this product family standard are industrial, both indoor and outdoor, as described for industrial locations in IEC 61000-6-2 or defined in 3.7 of IEC 61326-1.

Equipment and systems intended for use in other electromagnetic environments, for example, in the process industry or in environments with potentially explosive atmospheres, are excluded from the scope of this product family standard, IEC 61326-3-1.

Devices and systems according to IEC 61508 or IEC 61511 which are considered as “operationally well-tried”, are excluded from the scope of IEC 61326-3-1.

Fire-alarm and safety-alarm systems, intended for the protection of buildings, are excluded from the scope of IEC 61326-3-1.

19. Documentation version history

Version	Date	Notes
1.0	26.4.2018	Initial document
1.1	16.5.2018	Minor changes
2.0	23.7.2019	Needed hardware. Added links to LORD webpage and manual, added USB connection and SensorConnect, Typical configurations.
2.1	29.1.2020	New manual template, added Can device setup MV5, added inertial sensors, minor corrections
V21-1	22.9.2021	New template
V22-1	17.05.2022	Image captions, List of supported devices on top, Emphasis on important information on top
V22-2		Spell check, Important & Hint updates,
V22-3	5.7.2022	Supported devices table update LXRS compatibility note Low frequency data loss warning
V24-1	04.1.2024	Better explanation of Licencing

20. List of Images

- [Image 1. Explanation of device functions](#)
- [Image 2. Gateway connection](#)
- [Image 3. Gateway IP address in WSDA Control Panel](#)
- [Image 4. Ethernet card IPv4 definition](#)
- [Image 5. SensorConnect Add Device menu](#)
- [Image 6. WSDA-200-USB Gateway](#)
- [Image 7. Dewesoft X Licence activation](#)
- [Image 8. Dewesoft X Licence confirmation](#)
- [Image 9. Procedure for adding LORDMicroStrain Extension](#)
- [Image 10. Updating Extensions list](#)
- [Image 11. LORDMicroStrain Extension configuration](#)
- [Image 12. LORD channel configuration inside Dewesoft X](#)
- [Image 13. G-Link-200 and Gateway options](#)
- [Image 14. G-Link-200 description](#)
- [Image 15. SG-Link-200-OEM and gateway options](#)
- [Image 16. SG-Link-200-OEM description](#)
- [Image 17. WSDA-200-USB & SG-Link-200-OEM connected to a load cell](#)
- [Image 18. Strain gage connection datasheet](#)
- [Image 19. Load cell connections](#)
- [Image 20. V-Link-200 and Gateway options](#)
- [Image 21. V-Link-200 Terminal block connections](#)
- [Image 22. TC-Link-200 with Gateways](#)
- [Image 24. TC-Link-200 terminal pinout](#)
- [Image 24. TC-Link-200 terminal pinout](#)
- [Image 25. New setup button](#)
- [Image 26. Read/write/acknowledge selection procedure](#)
- [Image 27. MV5 DBC import](#)
- [Image 28. Channel setup](#)
- [Image 29. Measurement screen definition](#)
- [Image 30. Fine tuning measurement screen and storing of data](#)
- [Image 31. Adding devices in LORDMicroStrain extension](#)
- [Image 32. LORD device channel list example](#)