

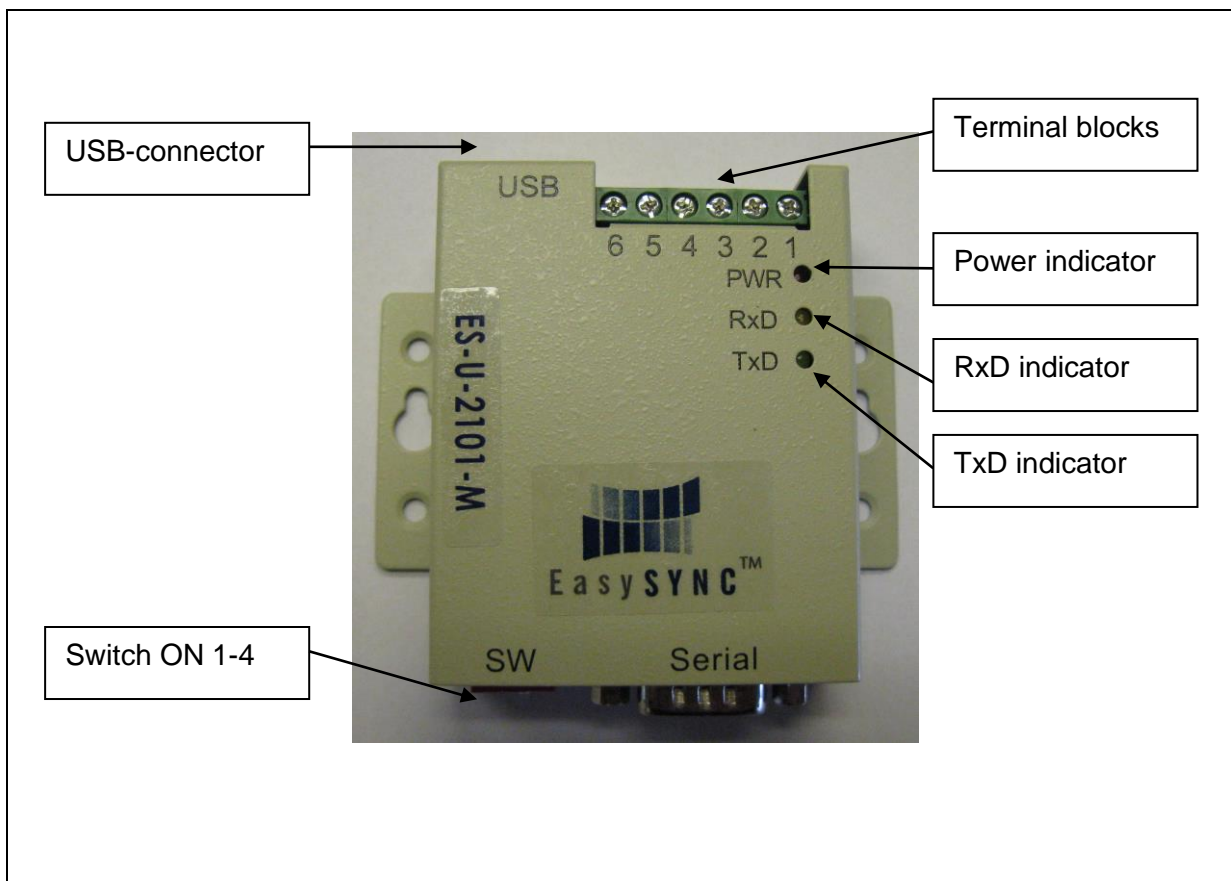
## 1. Component overview and description

The EasySYNC™ ES-U-2101-M is an RS-485 to USB converter. The USB connector is connected to the PC, and the RS-485 data bus output is connected to the GWAB11 using a 3-wire cable.

The cable length between the GWAB11 and the EasySYNC™ converter is uncritical (<1000m/3300ft.) since the RS-485 signal is rather insensitive to interference. The GWAB11 should therefore be mounted as closely to the Network Switches type GWNET11 as possible.

**Suitable tools:** wire stripper, cable cutter, small flat-tip and Phillips screwdriver, bootlace ferrules and crimping pliers

**For installing the driver:** Internet connection, USB flash drive



### ATTENTION

The power must always be turned off before you do any work on wiring or components.

Make sure the terminal blocks are correctly connected and that the switch is set according to this manual.

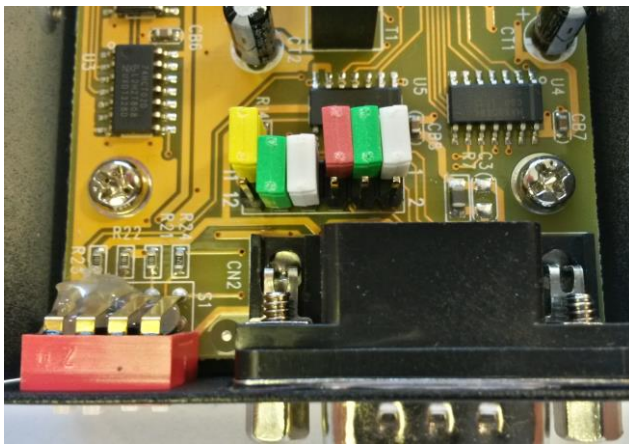
## 2. Jumper and switch settings on EasySYNC™ ES-U-2101-M

The EasySYNC™ ES-U-2101-M has one set of internal jumpers and one set of external switches which need to be set to the proper position.

**If you have bought your PC with Ex-works Software Installation with LIROS, the jumpers and dip switches will already be set. Skip this section and proceed to 3. Connecting the 3-wire cable.**

### 2.1. Internal jumpers

The internal jumpers must be set as follows:



Remove the cover and set the jumpers to the following position:



### 2.2. External dip switches

The external dip switches must be set as follows:

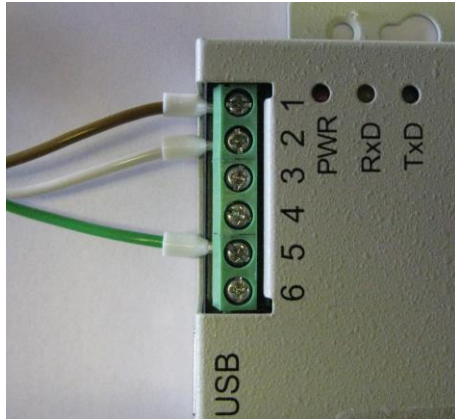


**Make sure that the external ON DIP switch on the bottom of the converter is set to:**

1	2	3	4
OFF	OFF	ON	OFF

### 3. Connecting the 3-wire cable between the EasySYNC™ ES-U-2101-M and the GWAB11

The shielded 3-wire cable is connected to the terminal blocks on the EasySYNC™ ES-U-2101-M and to terminal CN6 (RS-485 A) in the GWAB11.

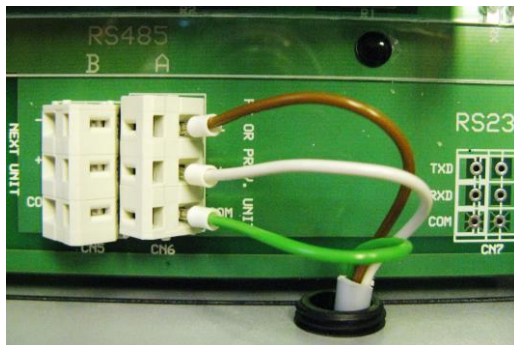


Connect the shielded 3-wire cable to the terminal blocks on the EasySYNC™ converter as follows:

Wire color	EasySYNC™	GWAB11
Brown	1	- (minus)
White	2	+ (plus)
Green	5	COM

Make sure the cable shield does not protrude from under the cable sheath, i.e. isolate the cable sheath neatly.

### 4. Connecting the EasySYNC™ ES-U-2101-M to the GWAB11 (CN6)



Connect the shielded 3-wire cable to terminal CN6 on the GWAB11 as follows:

Wire color	EasySYNC™	GWAB11
Brown	1	- (minus)
White	2	+ (plus)
Green	5	COM

Make sure the cable shield does not protrude from under the cable sheath, i.e. isolate the cable sheath neatly.

### 5. Power application

Insert the USB connector into the EasySYNC™ ES-U-2101-M converter and the PC running the Grain-Watch® TMS Software. The PC will supply the converter with power. When the PC is turned on, the red Power (PWR) indicator will shine.

### 6. Driver installation

**If you have bought your PC with Ex-works Software Installation with LIROS, the driver will already be installed. Skip this section and proceed to 7. COM port settings.**

There are three ways of installing the driver for the EasySYNC™ ES-U-2101-M converter:


1. Install the driver from the GrainWatch CD (easiest method)
2. Windows Update (requires an active Internet connection)
3. Driver Executable (requires another PC with active Internet connection and a USB flash drive)

## 6.1. Install from the GrainWatch CD

This is the easiest installation method. Insert the GrainWatch CD and go to **Additional Applications**. Click on the EasySYNC driver and install it onto your hard drive. Follow the download instructions if needed.

### Additional applications

You need to install virtual COM port drivers for the EasySYNC ES-U-2101-M RS-485 to USB converter.

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- [Virtual COM Port Drivers, for EasySYNC RS-485 to USB converter](#)

Microsoft .NET Framework is normally installed automatically when the Grain-Watch software is installed. The link below should only be use if it needs to be reinstalled or repaired.

- [Microsoft .NET Framework 2.0](#)

You may need to install the Microsoft Visual C++ 2010 Redistributable Package on Windows 7. If you need to install the Redistribution Package on a Windows 7 64-bit installation, you may have to install both versions (x64 and x86).

- [Microsoft Visual C++ 2010 Redistributable Package \(x64\) for Windows 7, 64-bit](#)
- [Microsoft Visual C++ 2010 Redistributable Package \(x86\) for Windows 7, 32-bit](#)

You will need the Adobe Reader in order to open and view most of the documents on the CD. Install one of the versions below if the application is not already installed on the PC.

- [Adobe Reader 7 For Windows XP](#)
- [Adobe Reader 8 For Windows XP SP2](#)
- [Adobe Reader 9 For Windows XP SP3](#)
- [Adobe Reader 11 For Windows 7](#)

## 6.2. Windows Update

Connect the USB connectors to the converter and the PC. **Found New Hardware wizard** will recognize the converter. Allow **Windows Update** to search for a driver and follow the instructions provided.

**For more detailed information, see the official EasySYNC™ manual, page 10 provided in the Grain-Watch® systems folder.**

### 6.3. Driver Executable

This installation option requires another PC with active Internet connection and a USB flash drive. The driver is downloaded onto the USB flash drive and then installed onto the PC running the Grain-Watch® TMS Software using the USB flash drive.

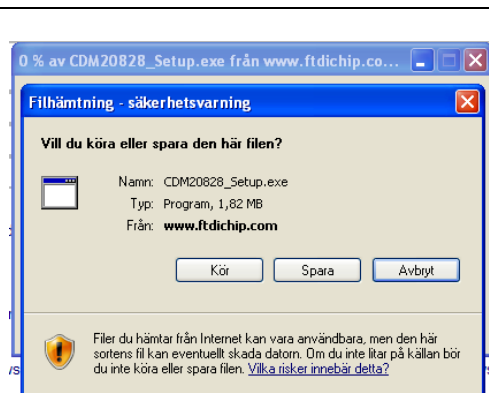
For Installation Guides, see: <http://www.ftdichip.com/Support/Documents/InstallGuides.htm>  
For Drivers, see: <http://www.ftdichip.com/Drivers/VCP.htm>

**For more detailed information, see the official EasySYNC™ manual, page 11, provided in the Grain-Watch® systems folder.**

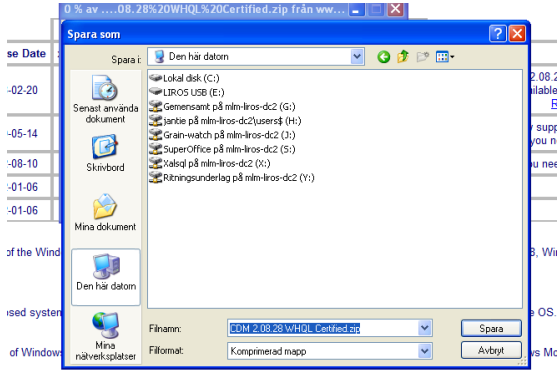
Opening the web link presents a chart with a choice of operative systems for which the driver is suited. **The driver must correspond to the operative system on the PC running the Grain-Watch® TMS Software, or it will not work!**

Operating System	Release Date	Processor Architecture							Comments
		x86 (32-bit)	x64 (64-bit)	PPC	ARM	MIPSII	MIPSIV	SH4	
Windows*	2011-04-12	<a href="#">2.08.14</a>	<a href="#">2.08.14</a>	-	-	-	-	-	WHQL Certified Available as <u>setup executable</u> <a href="#">Release notes</a>
Linux	2009-05-14	<a href="#">1.5.0</a>	<a href="#">1.5.0</a>	-	-	-	-	-	Included in 2.6.31 kernel and later <a href="#">ReadMe</a>
Mac OS X	2011-02-28	<a href="#">2.2.16</a>	<a href="#">2.2.16</a>	<a href="#">2.2.16</a>	-	-	-	-	Customers wishing to have a VID/PID combination added should <a href="#">contact FTDI Support</a>
Windows CE 4.2-5.2**	2010-02-11	<a href="#">1.1.0.6</a>	-	-	<a href="#">1.1.0.6</a>	<a href="#">1.1.0.6</a>	<a href="#">1.1.0.6</a>	<a href="#">1.1.0.6</a>	
Windows CE 6.0	2010-02-11	<a href="#">1.1.0.6</a>	-	-	<a href="#">1.1.0.6</a>	<a href="#">1.1.0.6</a>	<a href="#">1.1.0.6</a>	<a href="#">1.1.0.6</a>	

Click on setup executable as circled above for the appropriate operative system (Windows).

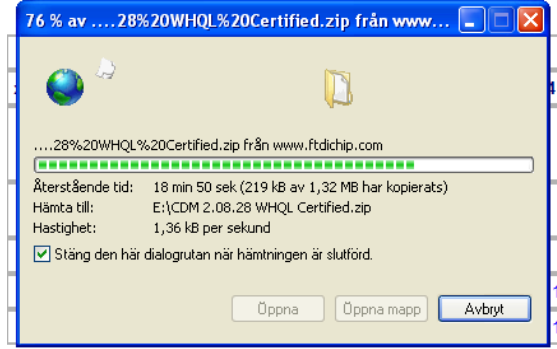


**Save the file.**




Choose to save the file onto the USB flash drive.

Locate the USB flash drive on the computer and click on **Save**.



The program file downloads quickly onto the USB flash drive.

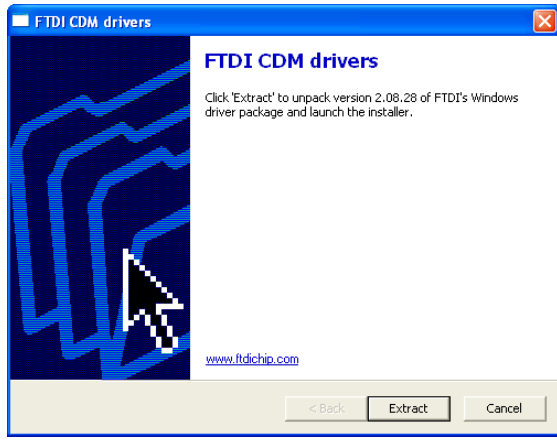
Once the driver is downloaded onto the USB flash drive, follow these steps to install it onto the PC running the Grain-Watch® TMS Software:



Insert the USB flash drive into the PC running the Grain-Watch® TMS Software.

Locate the USB flash drive and open it.

Double-click on the file **DMXXXX\_Setup.exe**



If prompted to extract the driver, click on **Extract**.

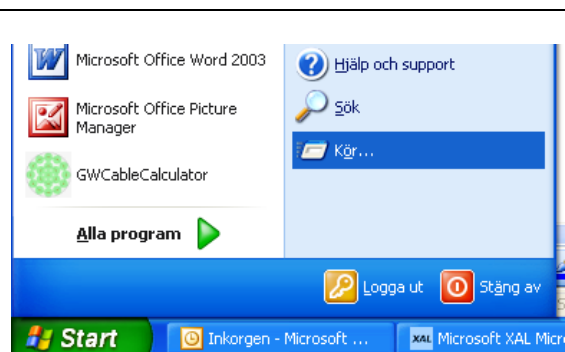
In the next window, click on **Next**.

The file installs quickly.

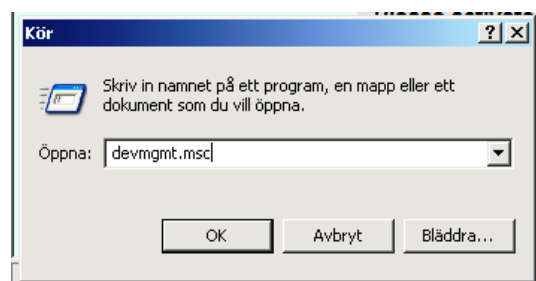


## 7. COM port settings

Power on the GWAB11. **Make sure it is safe to do so.**



Open the Windows Start Menu and click on **Run...**



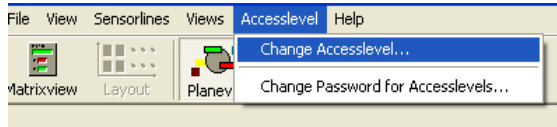
Type in **devmgmt.msc** and click on **OK**.



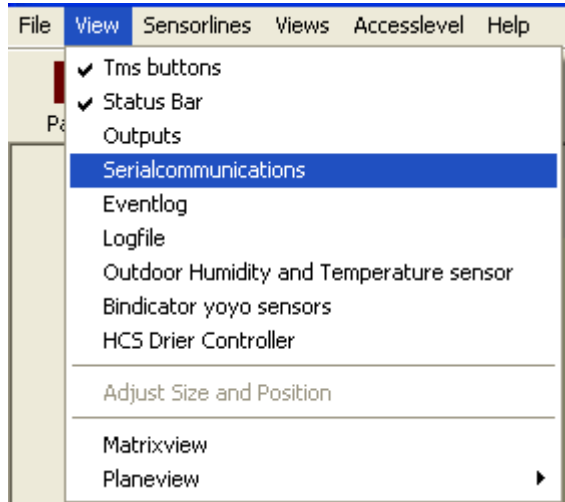
Click on **Ports (COM & LPT)**.

The Device Manager will show the COM port used for the EasySYNC™ ES-U-2101-M converter.

**Make a note of which COM port is used.**

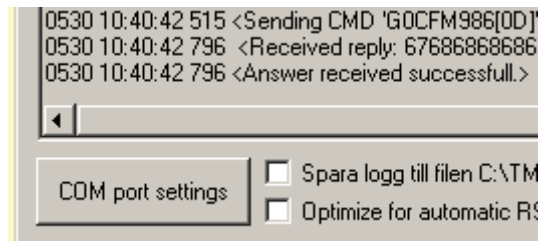


Open the Grain-Watch® TMS Software and change the **Accesslevel** to **Highest**.

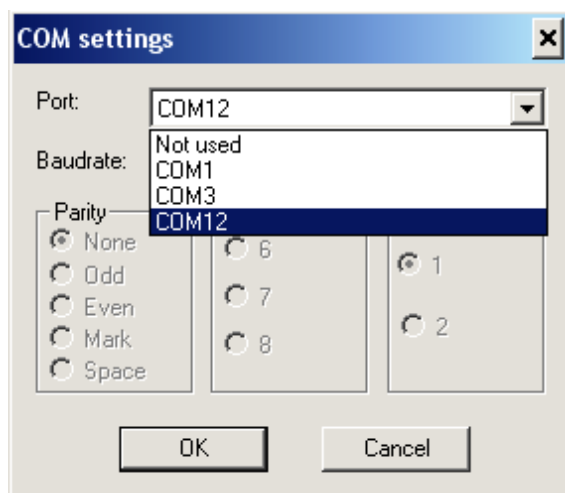


Click on **View** in the menu bar.

Then click on **Serial communications**.



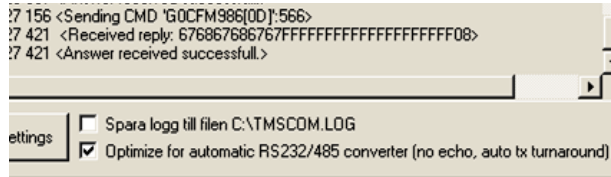
In the new window, click on **COM port settings**.



Choose the COM port previously found by the Device Manager (see above).

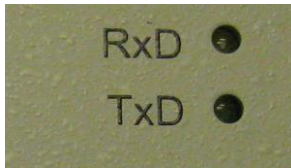
Click on **OK**.





Next to the COM port settings field, click into the little box labelled **Optimize for RS232/485 converter (no echo, auto turnaround)**.

Make sure the box is checked in before you exit the window.



The RxD indicator (yellow) and the TxD indicator (green) on the converter should now start blinking.