TETRAEDRE

TRMC-GGUN

TRMC-GGUN-COM

User’s manual

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Introduction

Quick introduction

The TRMC-GGUN and TRMC-GGUN-COM are dataloggers developped by the Tetradre company especially for customer using only one fluorometer sensor, FL-24 or FL-30 of the company Albillia.

TRMC-GGUN and TRMC-GGUN-COM are using the advances developped in term of hardware and software for the whole family of Tetraedre's TRMC dataloggers family.

TRMC-GGUN and TRMC-GGUN-COM comparisons

	TRMC-GGUN	TRMC-GGUN-COM
Memory size	1'000'000 bytes	1'000'000 bytes
PC connection	Yes	Yes
IP65 protective case	Yes	Yes
Bluetooth interface	Yes	Yes
Low power consumption	Yes	Yes
2G, 3G, 4G communication modem	-	Yes
Built-in antenna	-	Yes
Types of interface for sensors	1x RS-232 Connector	1x RS-232 Connector
Internal battery (1)	Yes	Yes

(1) : 12V 7Ah Lead battery, must be ordered separately. Order number 708504

Connections

Connectors

Figure 1. TRMC-GGUN connectors

1. Electronics compartiment, including Bluetooth antenna
2. GGUN FL-30 or GGUN FL-24 connector. RS-232 Fischer
3. PC cable interface, for USB adapter

Figure 2. TRMC-GGUN Battery location

7 Battery protection and holder

8 Battery protection screws

Figure 3. TRMC-GGUN Battery connection

10 Battery connection. Red for +12V

11 Battery connection. Blue for 0V

Connecting the TRMC-GGUN

Power supply

To operate, the TRMC-GGUN and TRMC-GGUN-COM need a 12V 7Ah battery. This battery must be located inside the loggers. The battery must be ordered separately. Tetraedre's product number is 708504.

Battery replacement procedure

To access, the battery, you must open the case. Unmount the battery protection case 7 by unscrewing the two screws 8. The battery is then easily accessible 10 11.

Fuse

The TRMC-GGUN contains a replaceable fuse inside the electronic box. This is a 5x20mm 1A T fuse. The fuse can easily be replaced if necessary 1.

FL-24 or FL-30 connection

The fluorometers must be connected to the connector outside the case 2.

PC connection

To be able to communicate with the logger using the USB adapter cable, you must connect it to the connector located on the front plate 3.

The USB adapter cable must be ordered separately. Tetraedre's product number is 709572.

Communicating with the datalogger

There are two ways to communicate with the datalogger: By using a USB adaptation cable or by Bluetooth.

Bluetooth

The TRMC-GGUN and TRMC-GGUN-COM have built-in Bluetooth. Currently (January 2023), the software is not ready to use this feature. We expect to have first version during spring 2023. Don't hesitate to contact your reseller to know the status of the latest software.

USB

When using the appropriate cable, you can communicate with the datalogger using a Windows applications. The USB adapter cable creates a COM port on your computer.

Currently, to communicate with the TRMC-GGUN, you must be the **Axiome Basic** software. Tetraedre is currently developping a simplified version of Axiome Basic name **Axiome Fluo**. Currently (January 2023), the software is not ready to use this feature. We expect to have first version during spring 2023. Don't hesitate to contact your reseller to know the status of the latest software.

Functionnalities of the datalogger

The TRMC datalogger have great functionnalities. This document will only present basic functionnalities. A complete documentation of the TRMC firmware capabilites is available. Contact Tetraedre if you want this documentation.

Using Axiome Basic with the TRMC-GGUN and TRMC-GGUN-COM

In order to communicate with the TRMC-GGUN, you need at least Axiome Basic version h01 or newer. Check Tetraedre's web site for the latest version:
https://www.tetraedre.com/publication.php?publication_id=149

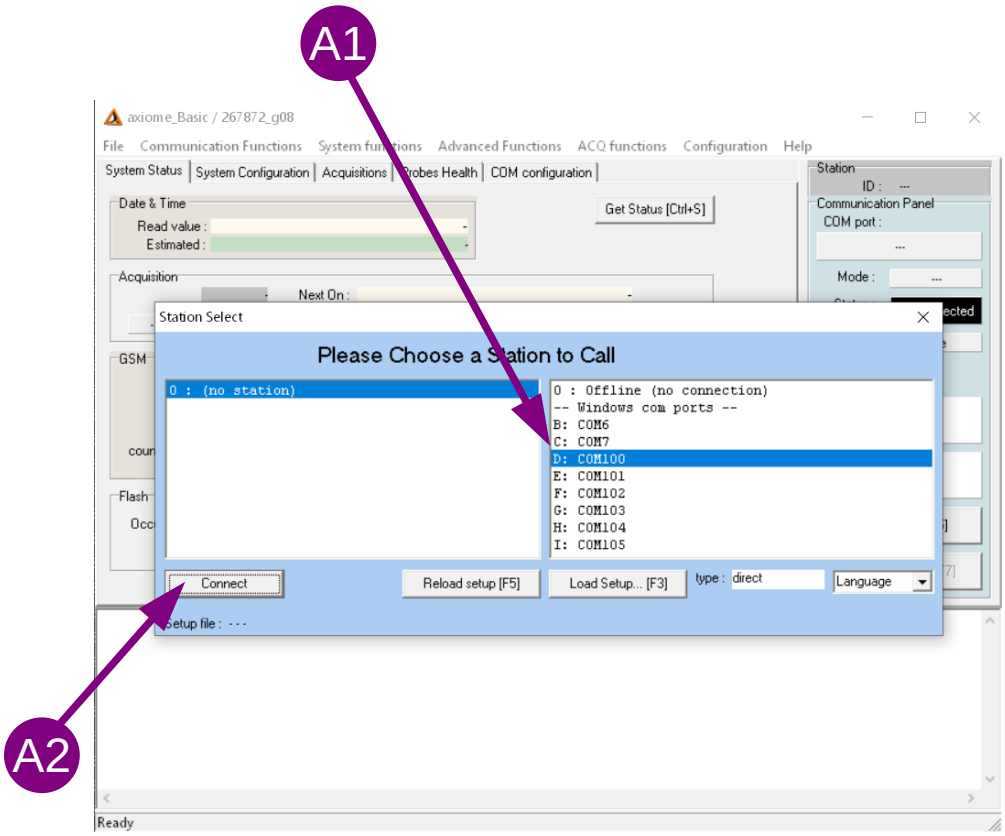
Using Axiome Basic

Connect the COM port

To discuss with the logger, you must start the Axiome Basic program and connect to the appropriate COM port.

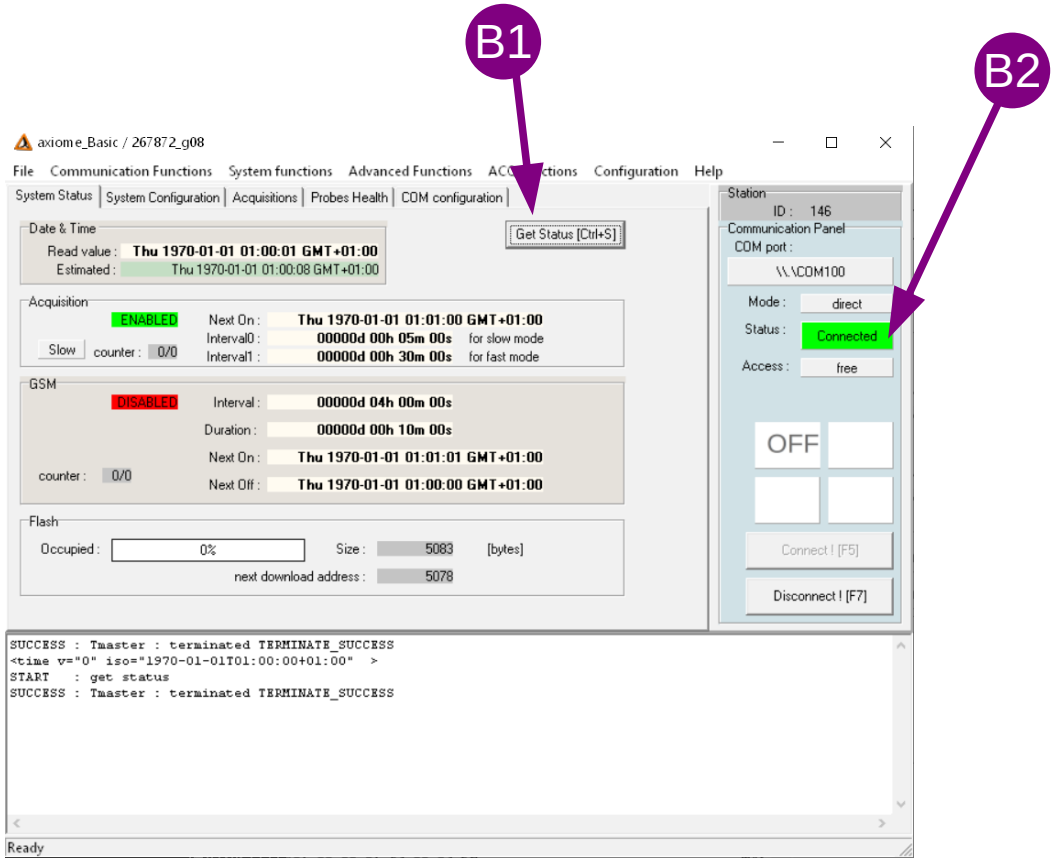
See picture below. Select correct COM port in list. See A1.

Then click on the «Connect» button A2.



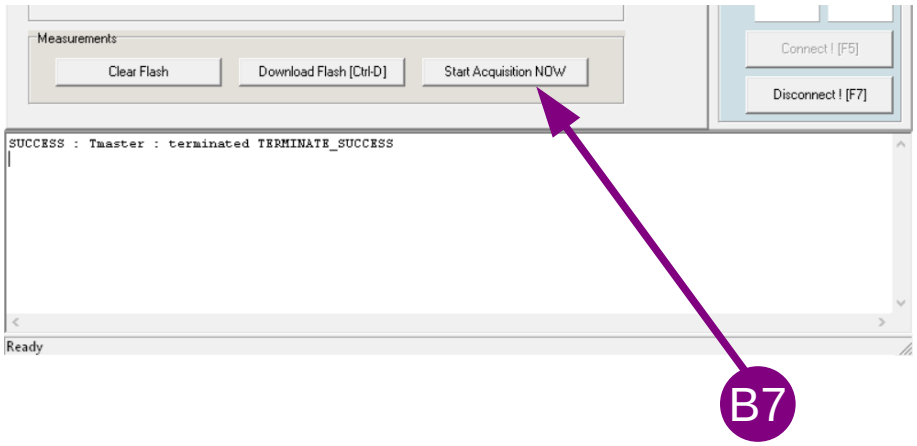
Once the COM port is opened, the «Connected» green text is displayed. see B2.

Click on «Get Status [Ctrl+S]» (B1) to view informations related to the device.

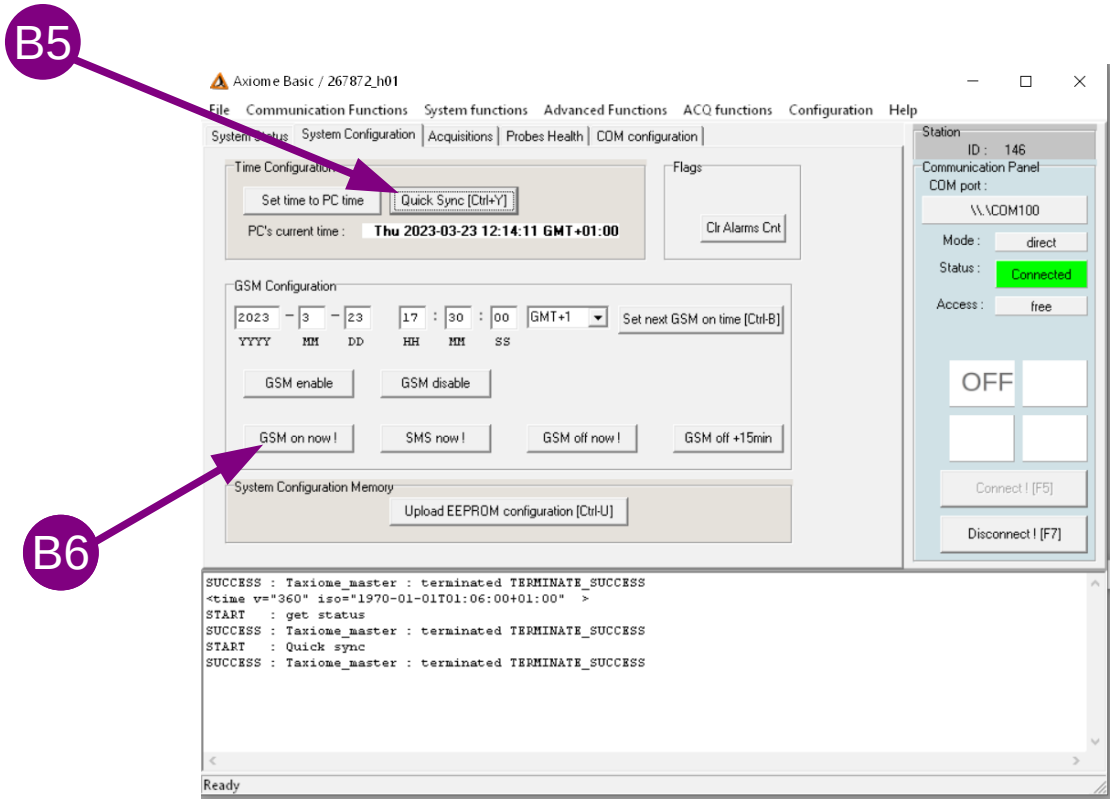


Look especially at the time of the logger. Acquisition => «Next On» indicates when the next acquisition will take place. GSM => «Next On» indicates when the next data transmission will take place (obviously only useful for logger with remote communication capabilities).

The section «Flash» indicates the memory occupation. Depending on the filling level of the memory, you might decide, or not, to clear the memory.



Each time that you start an acquisition(B7), or when the logger makes an automatic acquistion, you can check the current memory filling level. You can easily extrapolate how many acquisitions you can make and for how long (depending on «Interval0»).



Click on «Quick Sync [Ctrl+Y]» (B5) to set the logger clock, next acquisition time and next transmission time. You can also manually start a remote communication.

Please note that when making a remote communication exchange with Tetraedre TDS server, the memory occupation is automatically managed by the server so you don't have to take care of it.

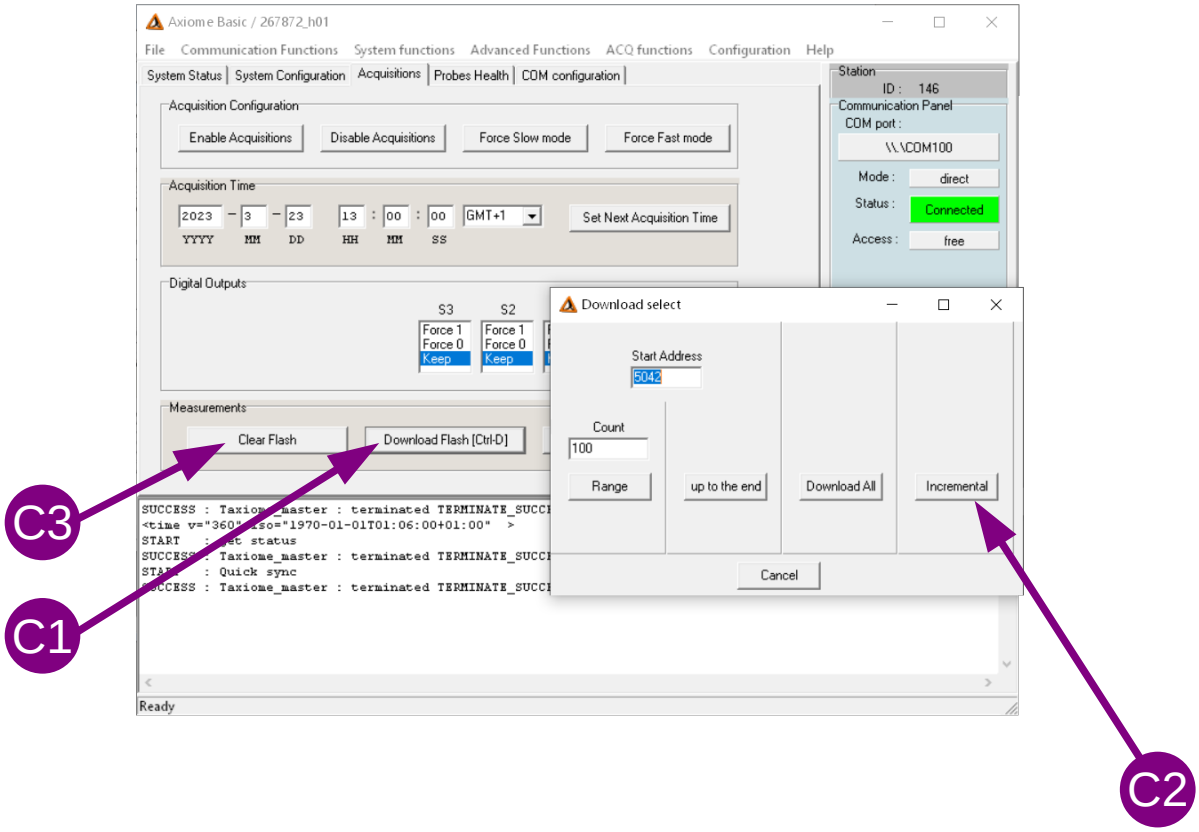
Data download

Once you have done the acquisitions that you are interested in, you can either download them on your computer using the USB connection or transmit them to the TDS server (for dataloggers having such capacity).

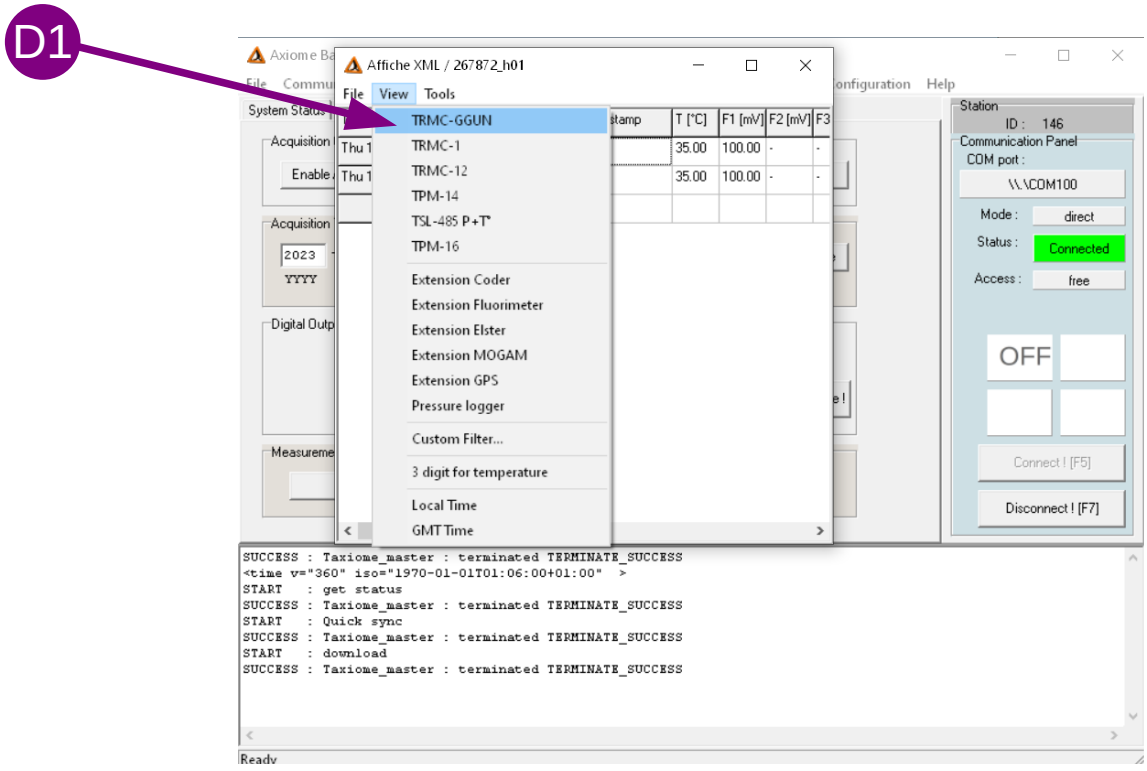
By clicking on «Download Flash» (C1), you can download measurement locally to your computer. You can clear the memory by clicking on «Clear Flash» (C3). These operations are usually reserved for on-site operations or for dataloggers not having remote communication capabilities.

To download the «new» data, we suggest to click on «incremental» (C2). By doing so, Axiome Basic will download the new data and update an internal pointer that indicates up to where the data have been previously downloaded. So next time you won't download the same data again

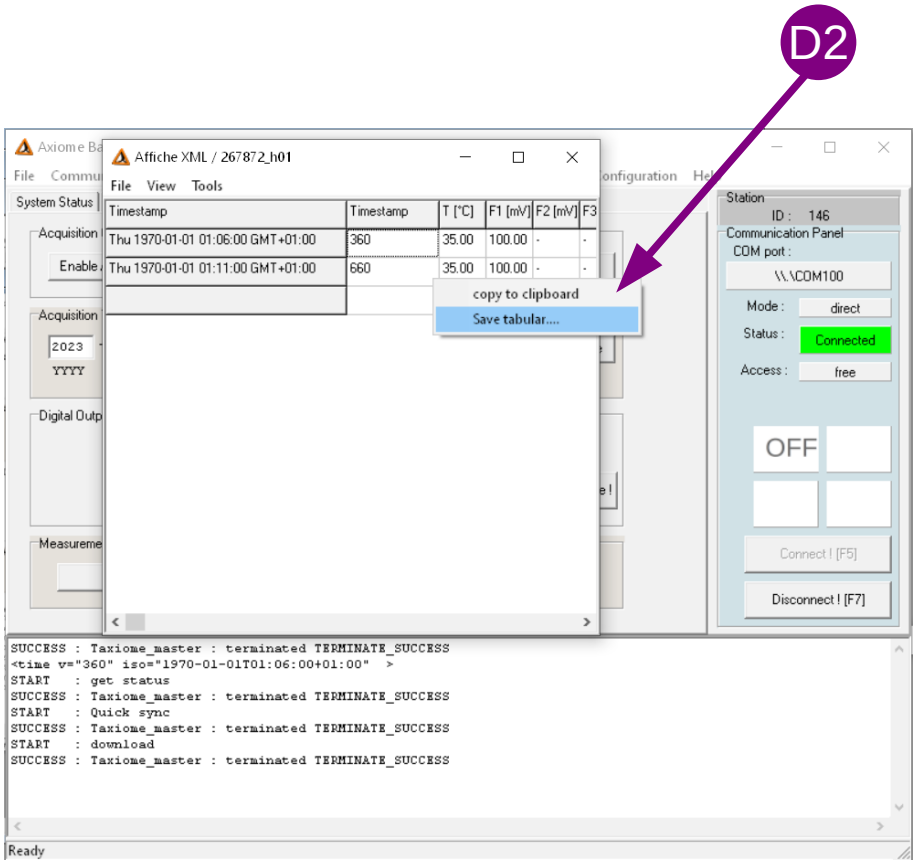
The downloaded data are stored in a raw .bin file located in the directory c:\tetraedre\data_bin. A second file is created in the directory c:\tetraedre\data_xml



When the download is finished a new windows is opened. Click in the «View» menu and select «TRMC-GGUN» (D1) to simplify the display.

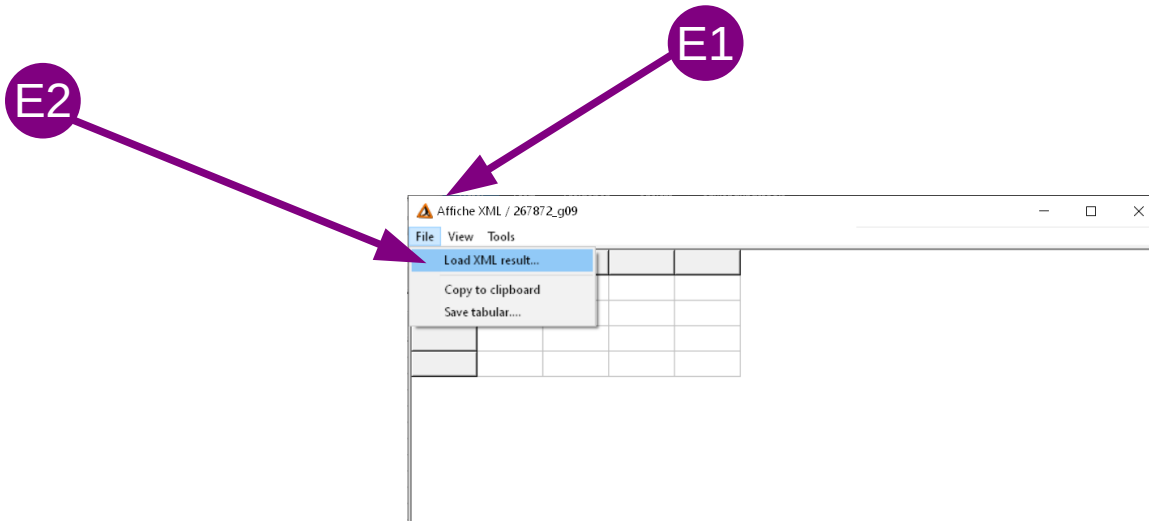


The new window will show the measured data in a tabular format. With the right mouse button, you can copy or save the data a tabular file.

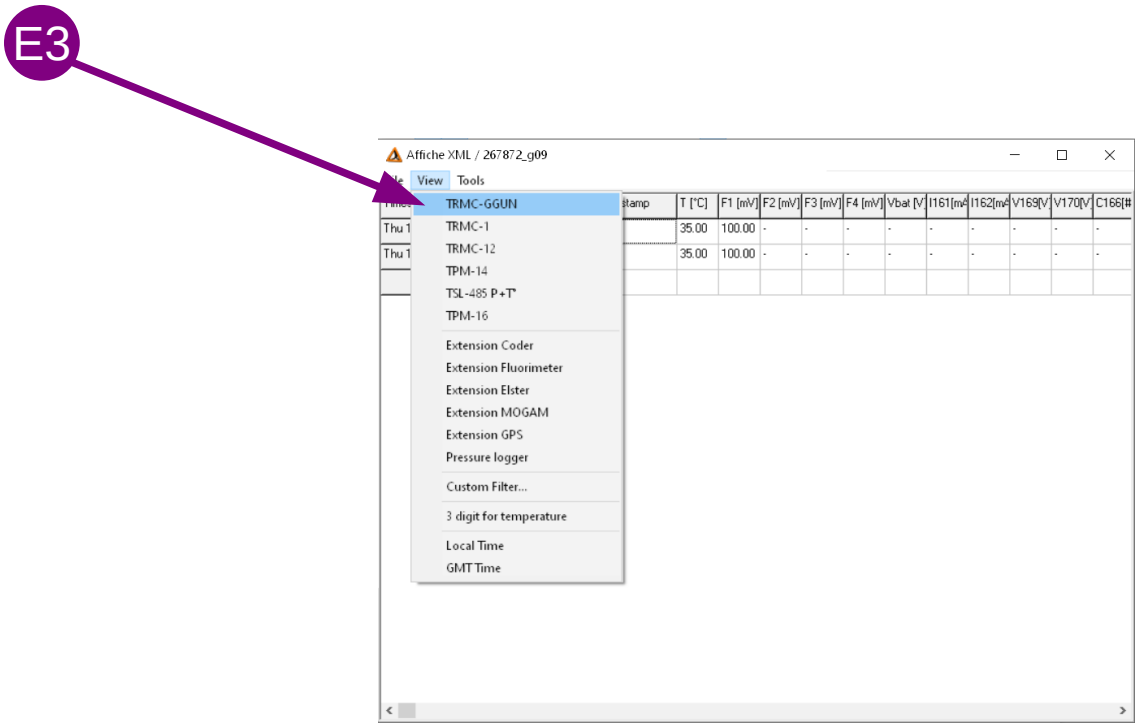


Affiche XML

To analyze data after they have been downloaded, you can start the «Affiche XML» program.



Within this program, you can reopen the XML file (stored in c:\tetraedre\data_xml), change the display an save the data as tabular.



Fluorometer measurement ppb conversion

Inside the «Affiche XML» windows, you can select the «convert to ppb» tool. We using this tools, load the newest calibration data file of your fluorometer.

You can then convert the mV values returned by the fluorometer into NTU and ppb.

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