DEWETRON

OXYGEN SCPI Query v1.1

TECHNICAL REFERENCE MANUAL

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Table of Content

1 PREFACE

This documentation describes, how to use the SCPI Query Plugin in OXYGEN.

The Plugin can be used for fetching data from DAQ-Systems and Multimeter with SCPI Interface.

2 FUNCTIONAL OVERVIEW

The SCPI Query Plugin for OXYGEN is an extension for the popular OXYGEN measurement software to fetch data from SCPI-Compatible devices. This allows the user, to read data from foreign devices into the DEWETRON measurement system and use it as data source.

Features:

- Fetch Data from SCPI devices via TCP/IP Socket
- Individual Init Command Field
- Separate Query Command for cyclic reading
- Read Multiple Channels if comma separated.
- Selectable Query interval (0.1s to 100s)

Known Limitation:

- No support for Binary Data (String Represented Numbers only)
- TCP/IP only (no serial port)
- Only working with no header in answer

2.1 CONCEPT

There is a simple state-machine behind the Plugin and how it works:

Preparation:

1. Set all Parameters and the number of expected channels.
2. Name the created channels if necessary.

After the start of the measurement

1. the TCP connection to the set Host and Port will be established.
2. Init Command is Sent once to the device (e.g. set the Channel Parameters)
3. The Query Command is executed cyclically in the set interval.
    a. OXYGEN -> Device: Query Command
    b. Device -> OXYGEN: Answer
    c. OXYGEN interprets the incoming data and splits the comma separated fields, if more channels were transmitted.
    d. OXYGEN fills the data channels with data.

3 GETTING STARTED

1. Start OXYGEN (if not already started)
2. Open the data channel list
3. Press "+" add channel in the left bottom

Select "SCPI Query" in the *Data Input* section

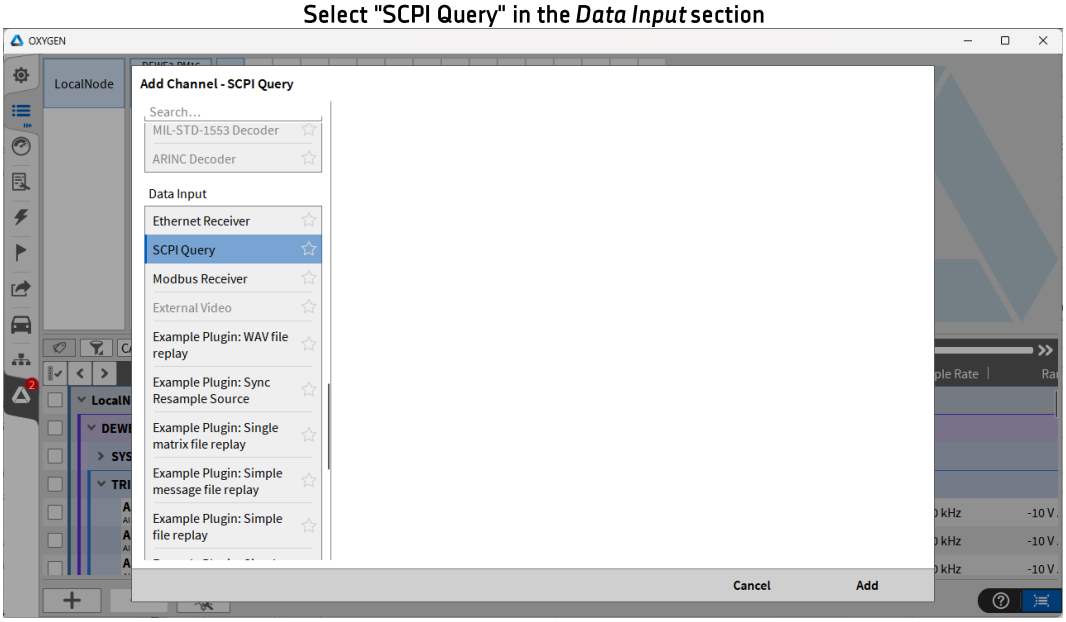

Figure 3-1: Create a SCPI Query channel

Fill in all the needed configuration (e.g.):

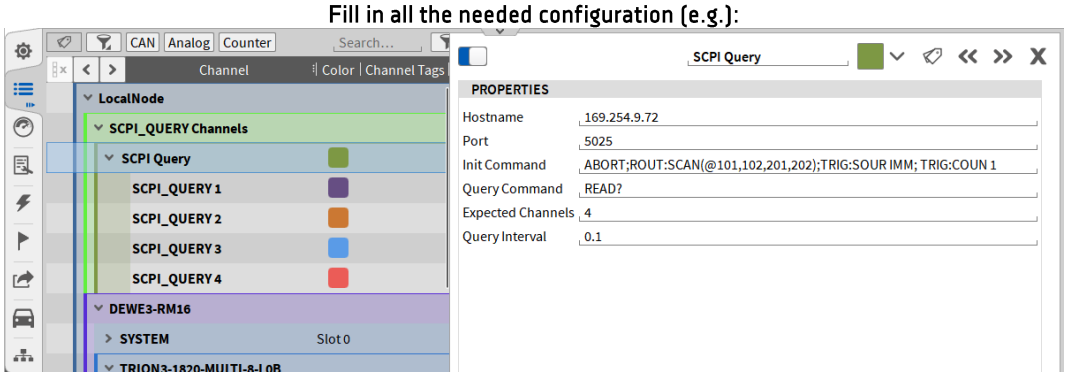

Figure 3-2: Configure a SCPI Query channel

4. Adapt the channel names if necessary.
5. Save Setup to persist Settings for the next time
6. Optionally add another SCPI Query Instance, if more devices are used

4 SETTINGS

Settings	*Description*
Hostname	Set the Hostname or IPv4 Address (e.g. 192.168.0.123)
Port	Set the TCP Port number to connect to the SCPI service on the device. This is very individual to every product and family, please consult the Command Reference Manual of the device. (e.g. 5555)
Init Command	Command String which is sent at once at start of the acquisition. Use this Property to configure necessary device settings, like number of channels, headers off, ... Typically, several commands are separated by Semicolon;
Query Command	Command String which is sent every Query interval. Some devices use the "Read?" Query or "Fetch?" or ":NUM:NORM:VAL?". Please consult the command reference manual to check the right command.
Expected Channels	Set the expected number of channels. This item is used to pre-generate the OXYGEN channels. If the return value consists of more channels than expected, the additional data is ignored.
Query Interval	Set the Interval of the data query in Seconds (0.1 to 10000s) This interval is used to read the data from the device cyclically

5 ADDITIONAL INFORMATION

The Answer of the device (to the Query Command) is expected to be a Number as String, separated by comma, if multiple channels are used.

e.g. 4 Channels:

OXYGEN -> Device: "Read?"

Device -> OXYGEN: "1.234e-3,2.331e2,7.434e-1,8.123e1"

OXYGEN:	CH1	CH2	CH3	CH4