VECTOR >

Fast Polling Usage in CANape

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1 Overview

This Support Note describes the Fast Polling measurement option which can be used with nearly every VX1000 measurement setup and CANape.

It can be used to acquire measurement data from the ECU without requiring an VX1000 Application Driver or any other kind of code instrumentation.

Furthermore typical use cases and possible restrictions will be shown as well as all the required steps to use this feature.

This document refers to CANape 19 SP3 and VXtools 4.4.

2 Feature description

Fast Polling is an advanced polling option which can be used with nearly every VX1000 measurement setup. It can be used to acquire measurement data from the ECU without requiring an VX1000 Application Driver or any other kind of code instrumentation.

For using Fast Polling, CANape v18 SP2 and VXtools 4.1 or newer versions are required.

Polling/Fast Polling	DAQ OLDA
Asynchronous data acquisition	Synchronous data acquisition
Command & Response for every value	DAQ lists with to be measured data will be exchanged before start of measurement. After that only Data packages will be send to XCP Master.
Only low datarate possible	High datarate possible

> **Caution**
> Just like polling, measuring via Fast Polling is an asynchronous measurement mode. Therefore you may experience data inconsistencies.
>
> e.g. if multiple variables, arrays or structures are measured, some of the values could contain old data while others contain new data.
>
> In some environments where big datatypes (e.g. double) cannot be written and read in a whole, one part of a variable could be the new data while the other parts are old data. This would lead to a complete wrong value.

> **Caution**
> Measuring cached memory areas may lead to wrong data.

3 Use case

The main use cases for Fast Polling are:

1.) Measuring of additional signals in an ECU with integrated VX1000 Application Driver
Example: Measuring signals which are not synchronous to any of the event channels

2.) Measuring of an ECU without integrated VX1000 Application Driver
Example: Production ECU returned from the field for errror analysis

3.) For a quick measurement demonstration or measurement preview without spending effort to integrate the VX1000 Application Driver into the ECU

4   Limitations

> Risk of data inconsistency

> Measurement of cached signals may return false data

> Fast Polling can not be used in parallel with:

> Data Trace via Serial POD
> OLDA over Data Trace

> Possible restrictions when using In-Place OLDA (IPO) in parallel.

> Possible restrictions when using Data Trace DAQ measurement in parallel

> Only supported with VX1000 Hardware and CANape MC tool

> A maximum of 512 non-adjacent signals can be measured

> **Note**
It is highly recommended to place the to be measured data in a contiguous area.
The measurement system is optimized for measuring adjacent signals and therefore the measurement performance can be improved.

> Up to 32 different polling cycle times supported in the same measurement configuration

If any of the last three restrictions are exceeded, part of the signals will be acquired using normal polling.

5   Hardware requirements

5.1   ECU
The ECU must have a microcontroller which is supported by the VX1000 system, like the target families Infineon TriCore/Aurix, Renesas RH850 or ST/NXP PowerPCs. In case of compatibility questions, please refer to Contacts at the end of this document.

5.2   VX1000 hardware
Fast Polling can be used with any VX1000 system **except** XPOD (VX1621A).

6   Software Instrumentation

No particular software instrumentation or drivers are required in the ECU.

7   Tooling Configuration

For using Fast Polling, CANape v18 SP2 and VXtools 4.1 or newer versions are required.
In the following chapter the required tool configuration for usage with or without integrated VX1000 Application Driver will be shown.

7.1 VXconfig

7.1.1 With integrated VX1000 Application Driver
There is no special configuration needed in VXconfig for this use case.

7.1.2 Without integrated VX1000 Application Driver
In VXconfig, navigate to **Base Module | Target** and activate the **Enable Usage without VX1000 Application Driver** feature
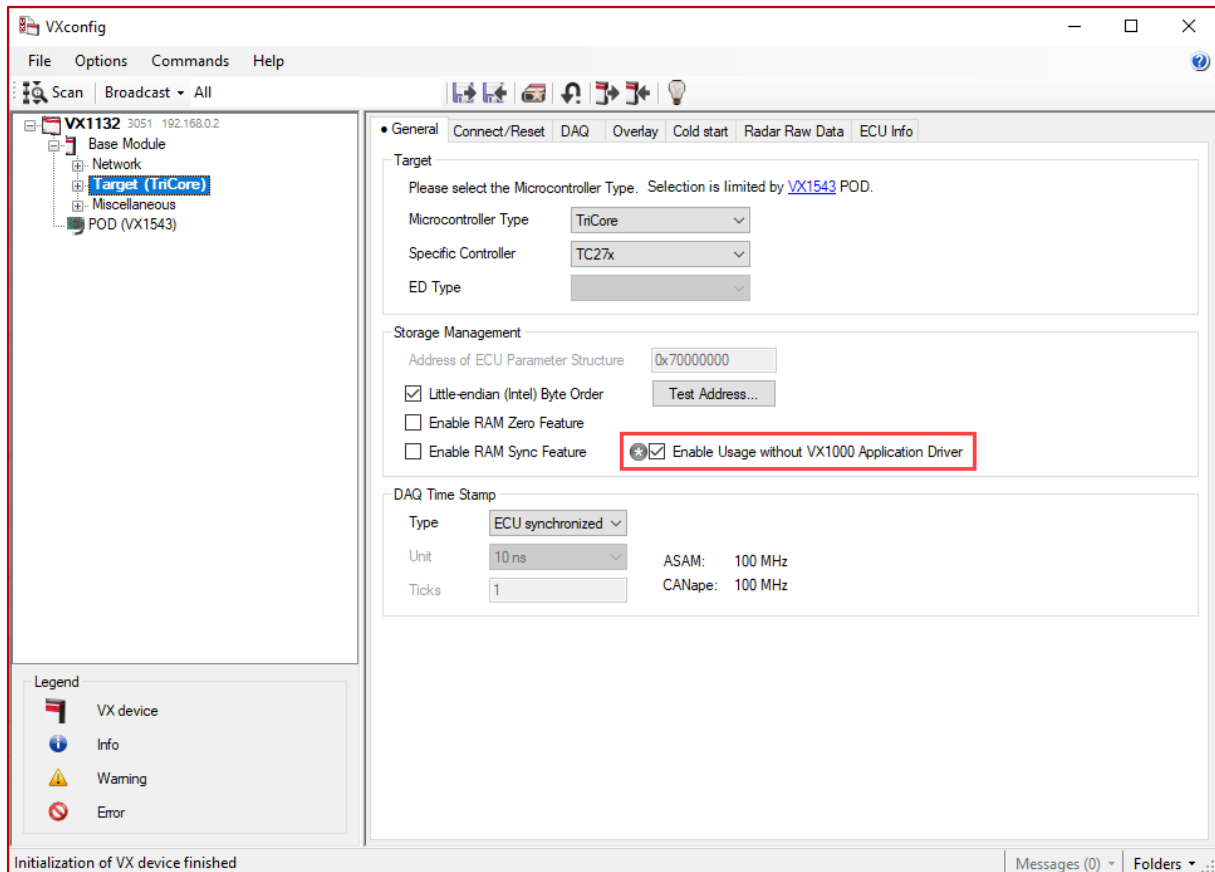

Figure 1: Target settings in VXconfig

7.2   CANape (MC Tool)
Here are the required steps to measure via fast polling in CANape

7.2.1   With integrated VX1000 Application Driver
The required settings in CANape are the same for the usage with or without implemented VX1000 Application Driver.

7.2.2   Without integrated VX1000 Application Driver
To use the fast polling measurement method, a VX1000 device must be used in CANape.
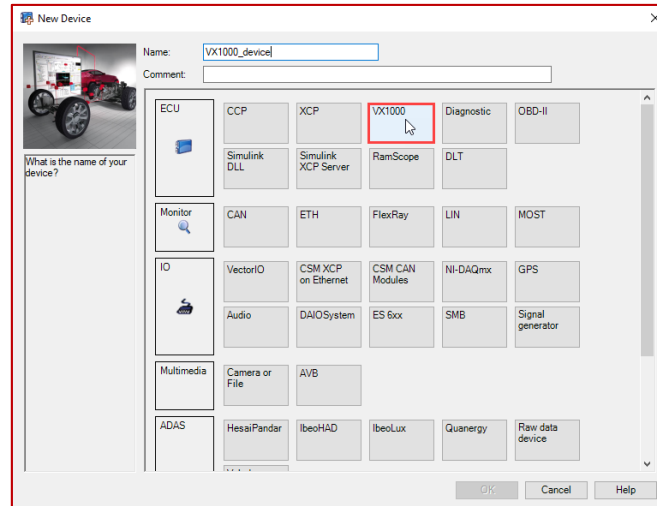So either create a new VX1000 device

Figure 2: Create a new VX1000 device in CANape

or change the already exisiting device via the **Device Configuration**.
Via **right klick | Modes** the device can be changed between XCP mode and VX1000 mode at any time.
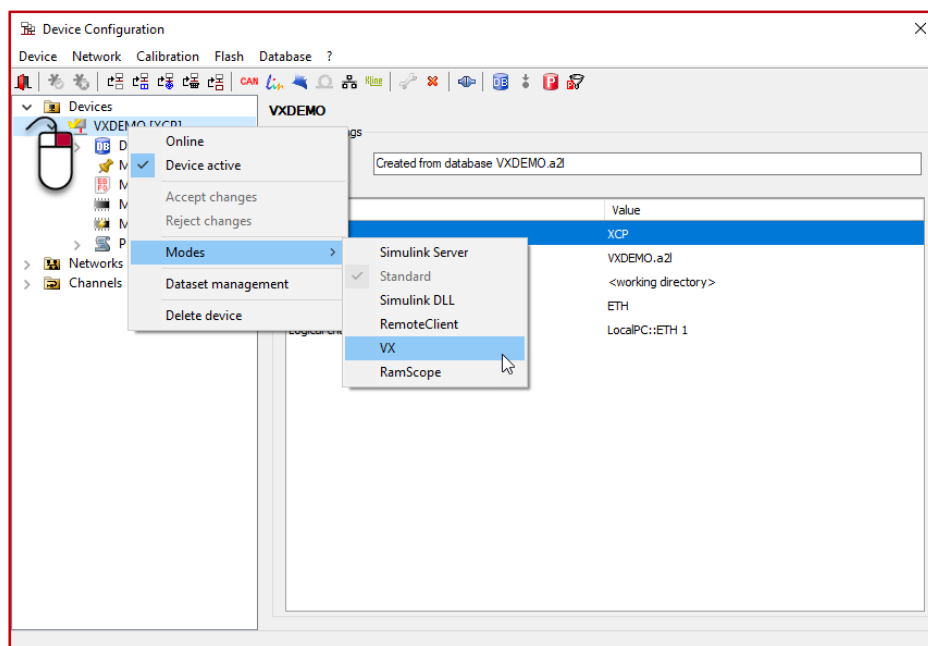

Figure 3: Change device mode in CANape

Navigate to **Device Configuration | <your device> | Protocol | Expert Settings** and change the **CONNECT_MODE** to the value 2.
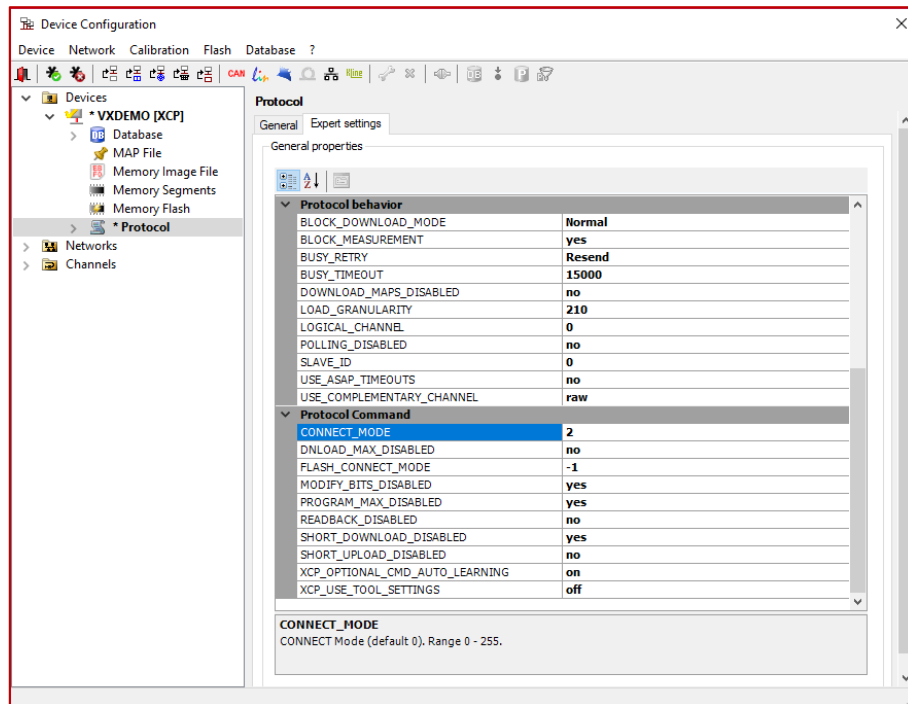

Figure 4: Connection mode setting in CANape

Open the **Measurement Configuration [F4]** and make sure that all signals are measured via polling (see step **1** in Figure 5).

CANape will automatically use Fast Polling for the VX1000 device as you can see in the measurement information (see marker **2** in Figure 5).
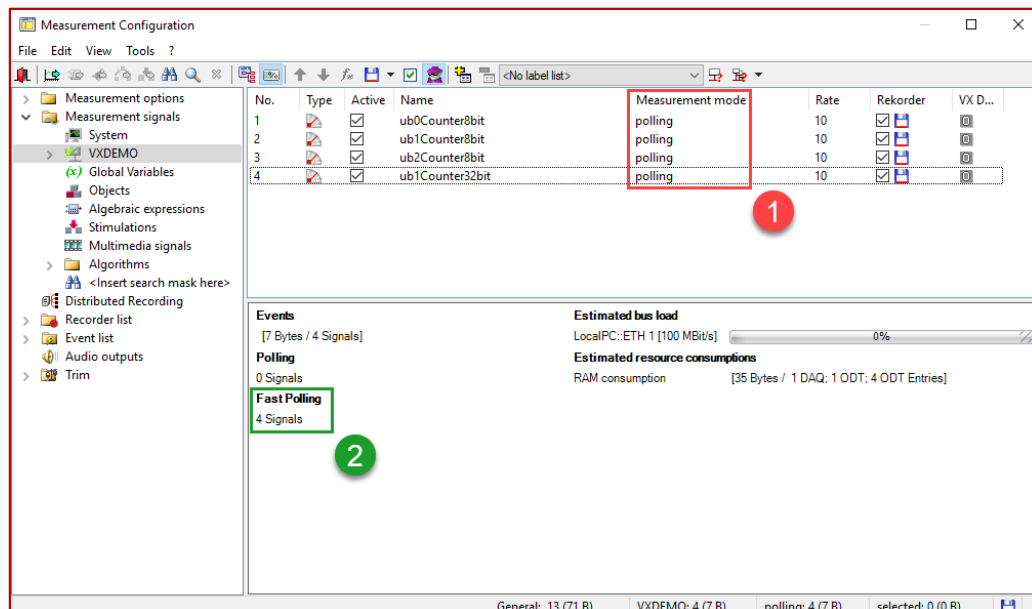

Figure 5: Measurement Configuration in CANape

8 Contacts

For support related questions please address to the support contact for your country https://www.vector.com/int/en/company/contacts/support-contact/.