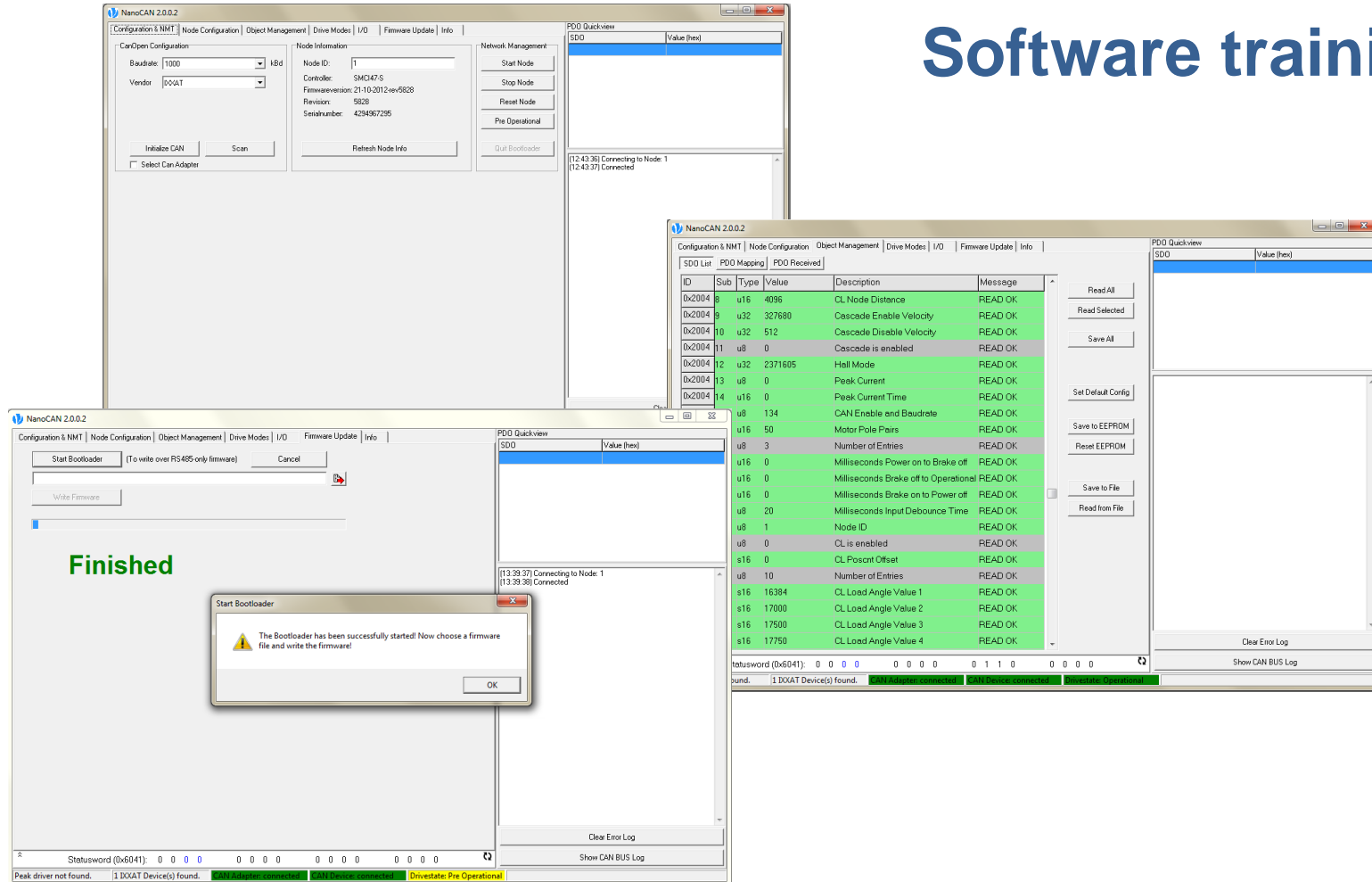
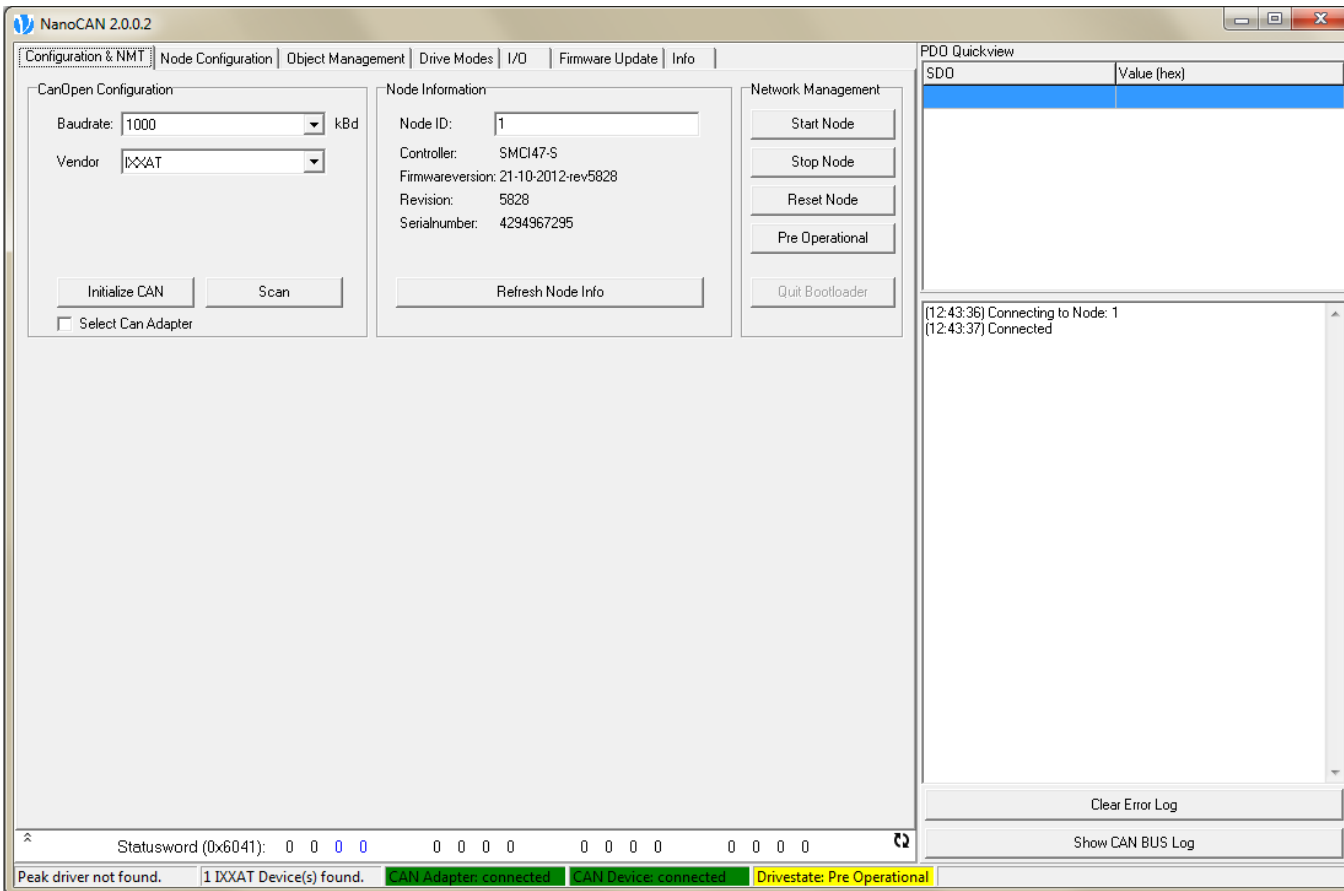


## Software training



The screenshot displays the NanoCAN 2.0.0.2 software interface, which is used for configuring and managing CAN nodes. The interface is divided into several sections:

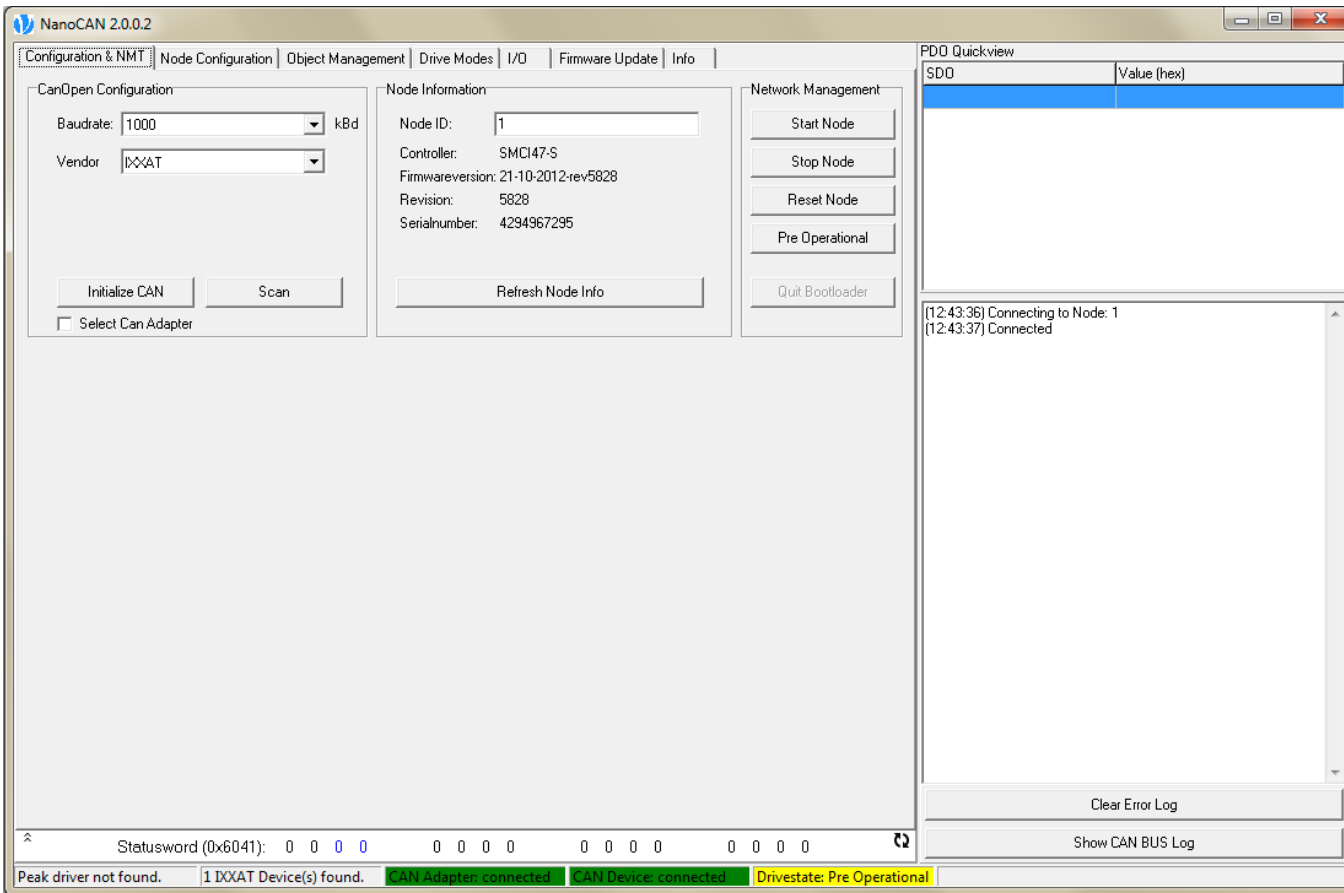
- Configuration & NMT:** This section allows users to configure the CAN node. It includes fields for Baudrate (1000 kBd), Vendor (DOXAT), Node ID (1), Controller (SMC147-S), Firmware version (21-10-2012rev5628), Revision (5828), and Serial number (4294967295). There are buttons for 'Initialize CAN', 'Scan', 'Refresh Node Info', and 'Quit Bootloader'.
- Network Management:** This section provides options to 'Start Node', 'Stop Node', 'Reset Node', 'Pre Operational', and 'Quit Bootloader'.
- PDO Quickview:** This section displays a table of Parameter IDs (PDOs) and their values. The table has columns for ID, Sub, Type, Value, Description, and Message. The values are currently blank.
- Start Bootloader:** This section is used to write firmware to the CAN node. It includes a 'Start Bootloader' button, a 'Write Firmware' field, and a 'Finished' status indicator. A dialog box is shown with the message: 'The Bootloader has been successfully started! Now choose a firmware file and write the firmware!'.
- PDO Mapping:** This section displays a table of PDOs that have been mapped. The table has columns for ID, Sub, Type, Value, Description, and Message. The values are currently blank.
- Statusword and Bus Log:** This section displays the statusword (0x6041) and the bus log. The statusword is shown as 00000000000000000000000000000000. The bus log shows '1 DOXAT Device(s) found.' and 'Drivestate: Pre Operational'.



NanoCAN ist ein nützliches Tool für:

- Prüfung
- Fehlersuche und -behebung
- Firmware-Updates

Unsere Steuerungen sind immer CAN-Slaves. Aus diesem Grund stehen uns weniger Möglichkeiten als in NanoPro zur Verfügung. Die Hauptarbeit wird vom CAN-Master übernommen (Beckhoff, Siemens usw.).



Die erste Registerkarte von NanoCAN hat Ähnlichkeiten mit der Registerkarte "Communication" von NanoPro.

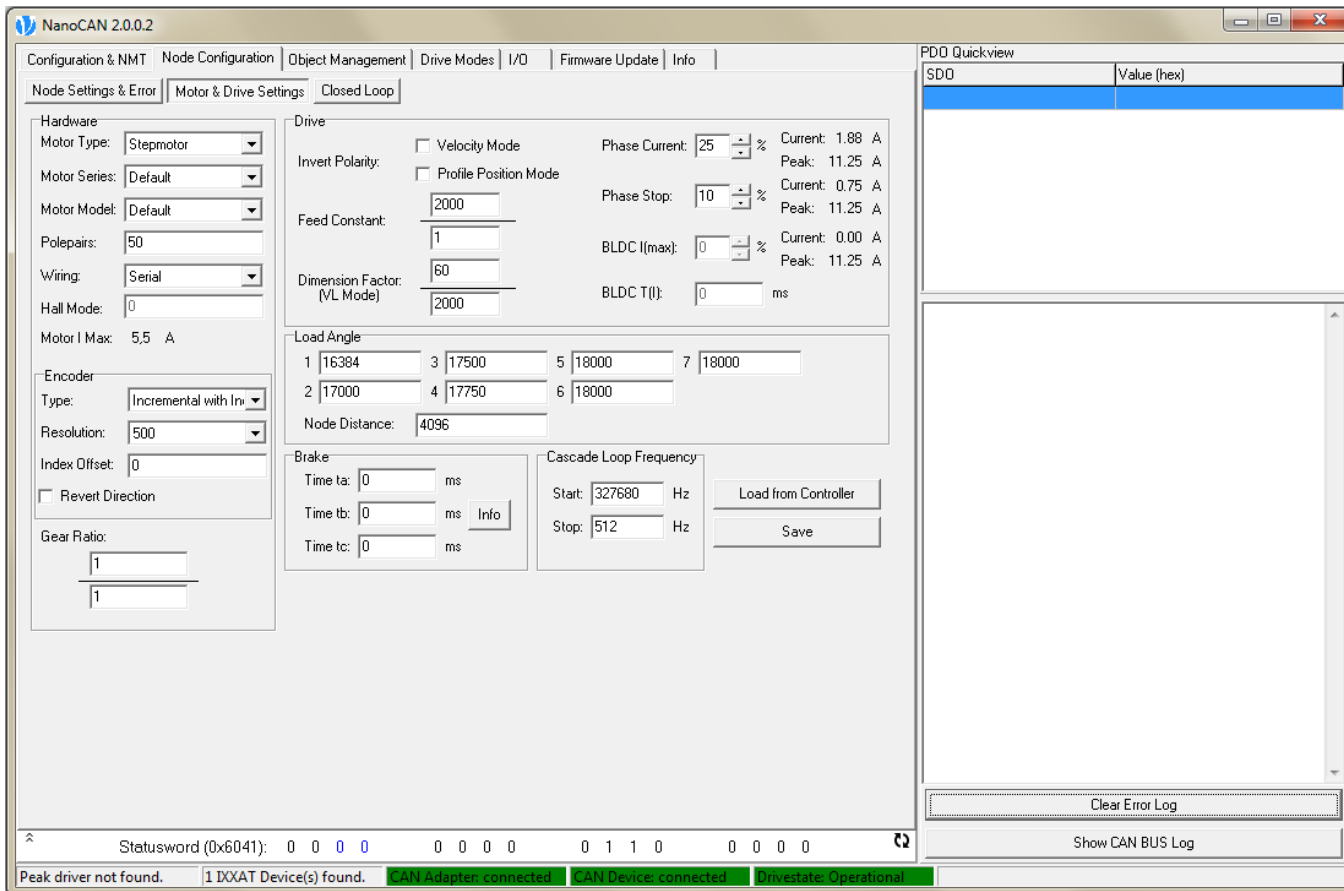
Ihre Hauptfunktion ist die Herstellung der Kommunikation mit der Steuerung.

Am unteren Bildschirmrand werden der Antriebs- und der Kommunikationsstatus angezeigt.

## Motor & Drive Settings:

Hierbei handelt es sich um die Haupteinstellungen für den Motor:

- Phasenstrom
- Hardware
- Encoder
- Bremse (nur SMCI47-S)
- BLDC-Parameter
- Anzeigeeigenschaften



The screenshot shows the NanoCAN 2.0.0.2 software interface. The main window is titled 'NanoCAN 2.0.0.2' and has a menu bar with 'Configuration & NMT', 'Node Configuration', 'Object Management', 'Drive Modes', 'I/O', 'Firmware Update', and 'Info'. The 'Node Configuration' tab is active, and the 'Motor & Drive Settings' sub-tab is selected. The interface is divided into several sections:

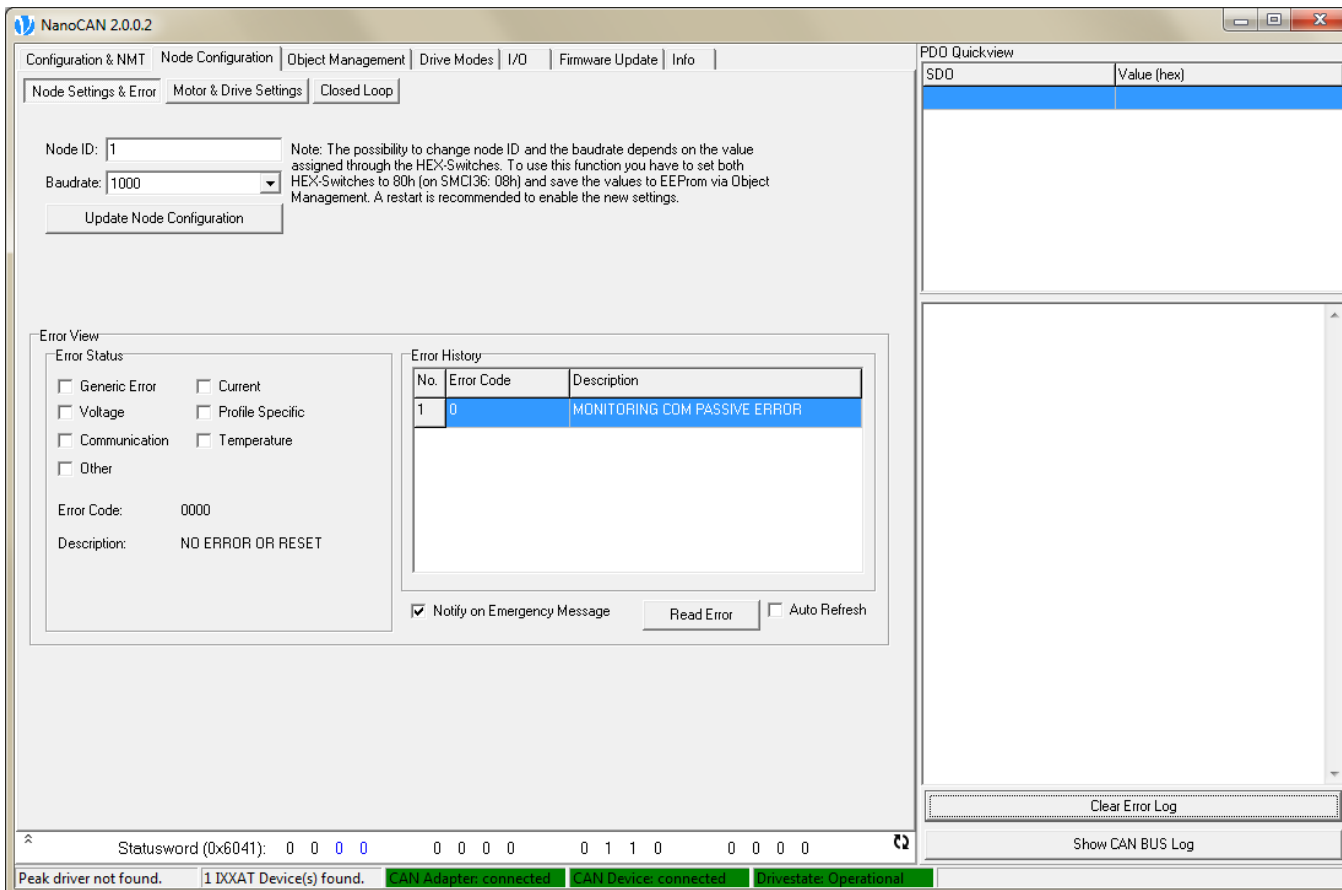
- Hardware:** Motor Type (Stepmotor), Motor Series (Default), Motor Model (Default), Polepairs (50), Wiring (Serial), Hall Mode (0), Motor I Max (5,5 A).
- Encoder:** Type (Incremental with In), Resolution (500), Index Offset (0), Revert Direction (unchecked), Gear Ratio (1/1).
- Drive:** Velocity Mode (unchecked), Profile Position Mode (unchecked), Phase Current (25%), Current (1.88 A), Peak (11.25 A), Phase Stop (10%), Current (0.75 A), Peak (11.25 A), Feed Constant (2000), BLDC I(max) (0%), Current (0.00 A), Peak (11.25 A), Dimension Factor (VL Mode) (60), BLDC T(I) (0 ms), Node Distance (4096).
- Load Angle:** A grid of 7 load angle settings (1-7) with values ranging from 16384 to 18000.
- Brake:** Time ta (0 ms), Time tb (0 ms), Time tc (0 ms), Info button.
- Cascade Loop Frequency:** Start (327680 Hz), Stop (512 Hz), Load from Controller button, Save button.

At the bottom, there is a status bar showing 'Statusword (0x6041): 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0' and a row of diagnostic indicators: 'Peak driver not found.', '1 IXXAT Device(s) found.', 'CAN Adapter: connected', 'CAN Device: connected', and 'Drivestate: Operational'. A 'PDD Quickview' window is open on the right, showing a table with columns 'SDO' and 'Value (hex)'. At the bottom right, there are buttons for 'Clear Error Log' and 'Show CAN BUS Log'.

## Node Settings & Error:

Hier können die "Node ID" und die "Baudrate" geändert werden.

Weiterhin können aktive Fehler und die Fehlerhistorie ausgelesen werden.



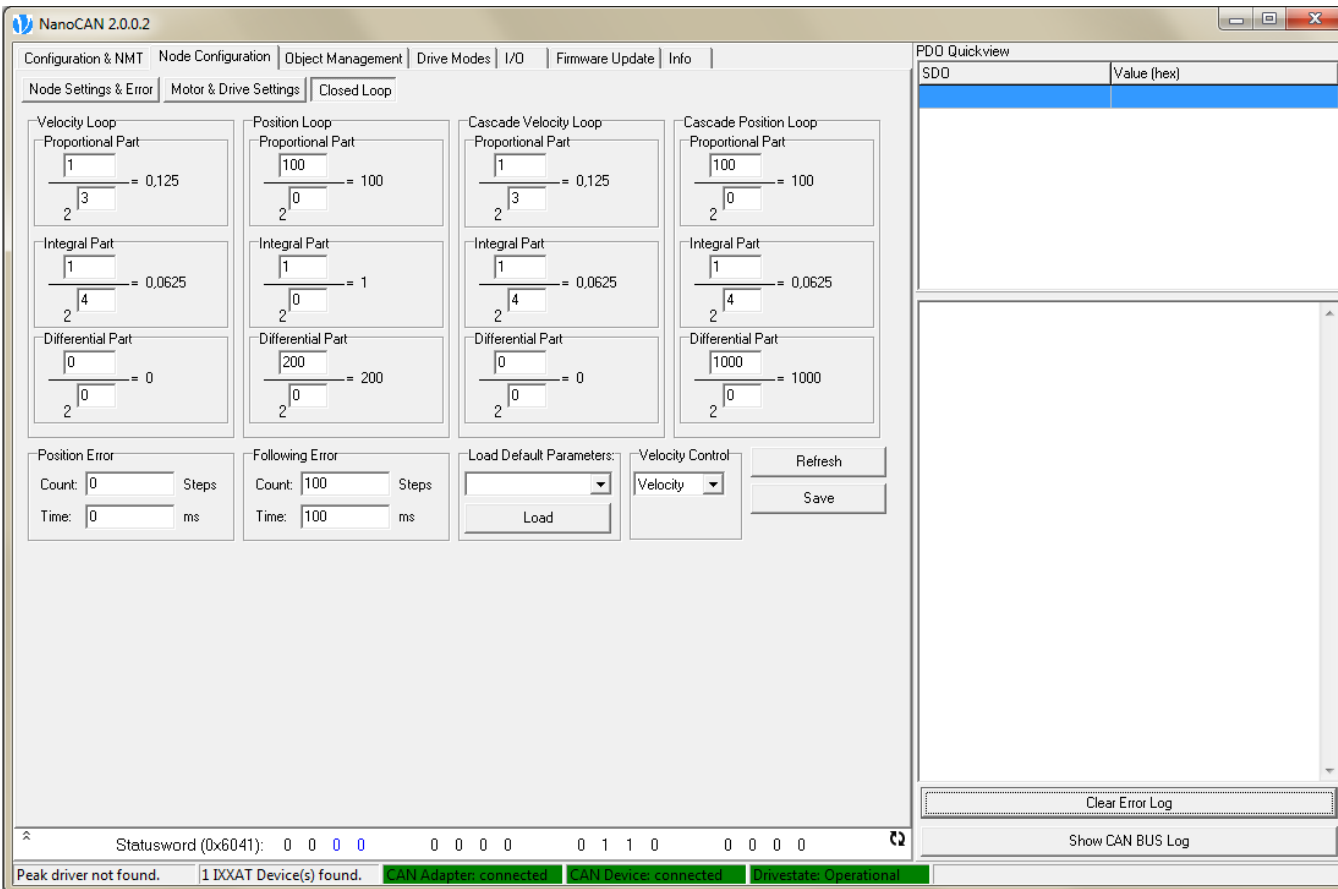
The screenshot shows the NanoCAN 2.0.0.2 software interface. The main window is titled "NanoCAN 2.0.0.2" and has a menu bar with "Configuration & NMT", "Node Configuration", "Object Management", "Drive Modes", "I/O", "Firmware Update", and "Info". The "Node Configuration" tab is active, showing "Node Settings & Error", "Motor & Drive Settings", and "Closed Loop" sub-tabs. The "Node Settings & Error" sub-tab is selected, displaying fields for "Node ID" (set to 1) and "Baudrate" (set to 1000). A note explains that changing the node ID and baudrate depends on the value assigned through the HEX-Switches. A "Update Node Configuration" button is present. Below this, the "Error View" section shows "Error Status" with checkboxes for "Generic Error", "Voltage", "Communication", "Other", "Current", "Profile Specific", and "Temperature". The "Error Code" is 0000 and the "Description" is "NO ERROR OR RESET". The "Error History" table shows one entry: "1 | 0 | MONITORING COM PASSIVE ERROR". A "Read Error" button and "Auto Refresh" checkbox are also visible. The status bar at the bottom shows "Statusword (0x6041): 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0" and "Peak driver not found. 1 IXXAT Device(s) found. CAN Adapter: connected. CAN Device: connected. Drivestate: Operational." The "PDD Quickview" window on the right shows an empty table with columns "SDO" and "Value (hex)".

Closed Loop:

Diese Registerkarte entspricht der Registerkarte "CL-Parameter" in NanoPro.

- PID-Parameter
- Positionsfehler
- Folgefehler

Der einzige Unterschied besteht darin, dass hier kein Assistent gestartet werden kann.



NanoCAN 2.0.0.2

Configuration & NMT | Node Configuration | Object Management | Drive Modes | I/O | Firmware Update | Info

Node Settings & Error | Motor & Drive Settings | Closed Loop

Velocity Loop

Proportional Part:  $\frac{1}{2} \frac{3}{0} = 0,125$

Integral Part:  $\frac{1}{2} \frac{4}{0} = 0,0625$

Differential Part:  $\frac{0}{2} \frac{0}{0} = 0$

Position Loop

Proportional Part:  $\frac{100}{2} \frac{0}{0} = 100$

Integral Part:  $\frac{1}{2} \frac{0}{0} = 1$

Differential Part:  $\frac{200}{2} \frac{0}{0} = 200$

Cascade Velocity Loop

Proportional Part:  $\frac{1}{2} \frac{3}{0} = 0,125$

Integral Part:  $\frac{1}{2} \frac{4}{0} = 0,0625$

Differential Part:  $\frac{0}{2} \frac{0}{0} = 0$

Cascade Position Loop

Proportional Part:  $\frac{100}{2} \frac{0}{0} = 100$

Integral Part:  $\frac{1}{2} \frac{4}{0} = 0,0625$

Differential Part:  $\frac{1000}{2} \frac{0}{0} = 1000$

Position Error: Count: 0 Steps, Time: 0 ms

Following Error: Count: 100 Steps, Time: 100 ms

Load Default Parameters: Load

Velocity Control: Velocity

Refresh, Save

PDD Quickview

SDO	Value (hex)

Statusword (0x6041): 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0

Peak driver not found. 1 IXAT Device(s) found. CAN Adapter: connected. CAN Device: connected. Drivestate: Operational

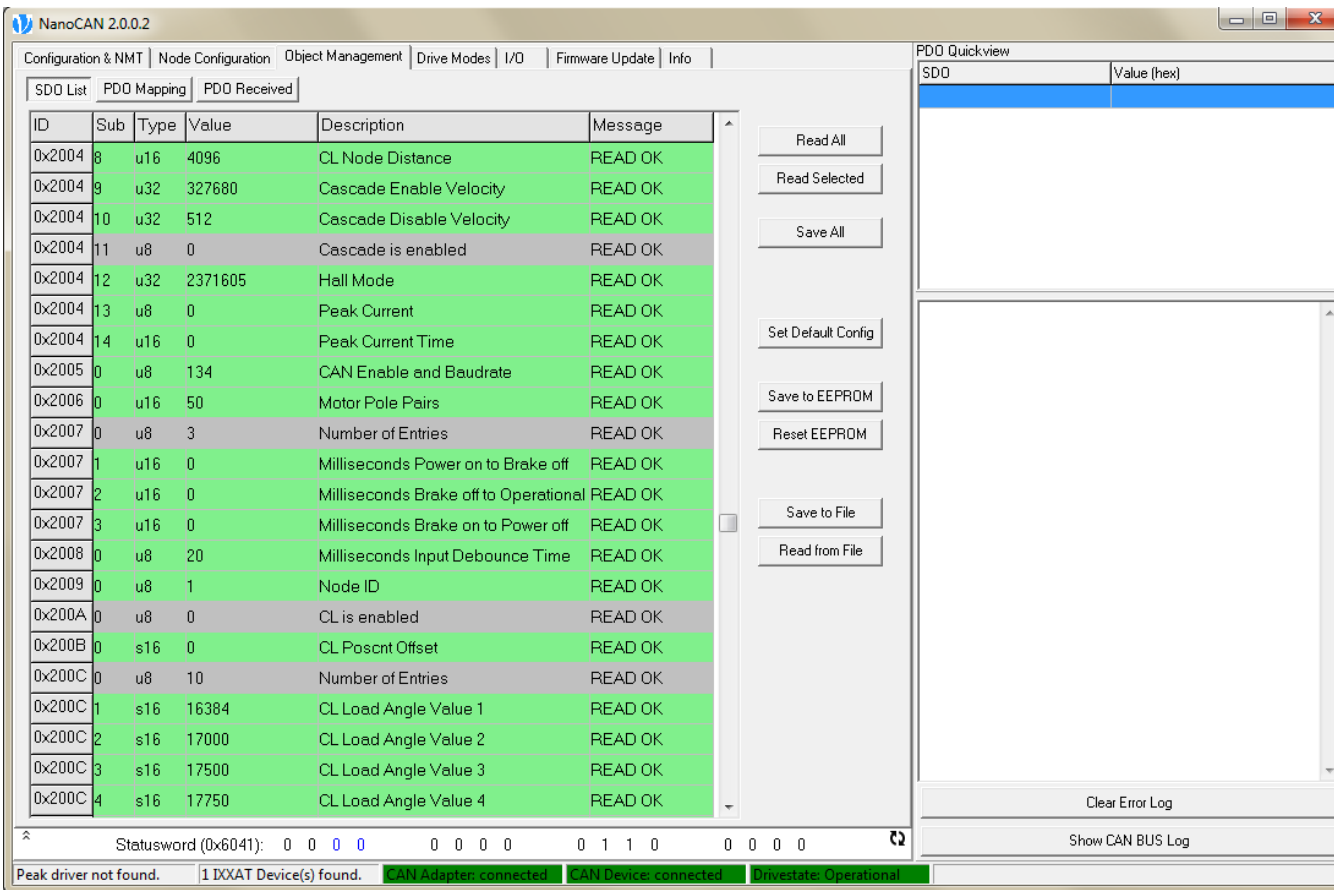
Clear Error Log, Show CAN BUS Log

## SDO List:

In der SDO-Liste sind alle Parameter der Steuerung zu finden.

Das Prinzip funktioniert wie bei einem Register:  
 Allen Parametern ist eine Adresse, ein Datentyp und ein Wert zugeordnet.

Die Adressen und die meisten der Datentypen sind im CANopen-Protokoll standardisiert.



The screenshot shows the NanoCAN 2.0.0.2 software interface. The main window is titled "Object Management" and contains a table of SDO parameters. The table has columns for ID, Sub, Type, Value, Description, and Message. The status bar at the bottom indicates "Peak driver not found", "1 IXAT Device(s) found", "CAN Adapter: connected", "CAN Device: connected", and "Drivestate: Operational".

ID	Sub	Type	Value	Description	Message
0x2004	8	u16	4096	CL Node Distance	READ OK
0x2004	9	u32	327680	Cascade Enable Velocity	READ OK
0x2004	10	u32	512	Cascade Disable Velocity	READ OK
0x2004	11	u8	0	Cascade is enabled	READ OK
0x2004	12	u32	2371605	Hall Mode	READ OK
0x2004	13	u8	0	Peak Current	READ OK
0x2004	14	u16	0	Peak Current Time	READ OK
0x2005	0	u8	134	CAN Enable and Baudrate	READ OK
0x2006	0	u16	50	Motor Pole Pairs	READ OK
0x2007	0	u8	3	Number of Entries	READ OK
0x2007	1	u16	0	Milliseconds Power on to Brake off	READ OK
0x2007	2	u16	0	Milliseconds Brake off to Operational	READ OK
0x2007	3	u16	0	Milliseconds Brake on to Power off	READ OK
0x2008	0	u8	20	Milliseconds Input Debounce Time	READ OK
0x2009	0	u8	1	Node ID	READ OK
0x200A	0	u8	0	CL is enabled	READ OK
0x200B	0	s16	0	CL Poscnt Offset	READ OK
0x200C	0	u8	10	Number of Entries	READ OK
0x200C	1	s16	16384	CL Load Angle Value 1	READ OK
0x200C	2	s16	17000	CL Load Angle Value 2	READ OK
0x200C	3	s16	17500	CL Load Angle Value 3	READ OK
0x200C	4	s16	17750	CL Load Angle Value 4	READ OK

Buttons on the right side of the SDO List include: Read All, Read Selected, Save All, Set Default Config, Save to EEPROM, Reset EEPROM, Save to File, and Read from File.

The PDO Quickview window on the right shows a table with columns for SDO and Value (hex).

Statusword (0x6041): 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0

Peak driver not found. 1 IXAT Device(s) found. CAN Adapter: connected. CAN Device: connected. Drivestate: Operational.

Es können alle Werte der Steuerung ausgelesen und gespeichert werden.

PDO Mapping:

Diese Seite ist für das PDO-Mapping vorgesehen.

Das bedeutet, Sie können entscheiden, welche SDOs die Steuerung automatisch senden bzw. lesen soll.

The screenshot shows the NanoCAN 2.0.0.2 software interface. The main window is titled "NanoCAN 2.0.0.2" and has a menu bar with "Configuration & NMT", "Node Configuration", "Object Management", "Drive Modes", "I/O", "Firmware Update", and "Info". The "Object Management" tab is selected, and the "PDO Mapping" sub-tab is active. The interface is divided into several sections:

- Configuration:** Includes radio buttons for TxPDO and RxPDO (RxPDO is selected). Fields for "PDO Number" (1), "Transmission Type" (255), "RTR" (checked), "Enable" (checked), "Number of Objects" (1), "Inhibit Time" (100 ms / 10), "Event Time" (0 ms), and "COB-ID" (Dec/Hex, 0x201).
- Objects:** A list of 8 objects with dropdown menus for their IDs. Object 1 is "0x6040 0x00 u16 Controlword". Objects 2-8 are "0x0000 0x00 0 none".
- Buttons:** "Read", "Write", "Load Config", and "Save Config".
- Right Panel:** "PDO Quickview" table with columns "SDO" and "Value (hex)".
- Status Bar:** Shows "Statusword (0x6041): 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0". Below it, a green bar indicates "1 IXAT Device(s) found", "CAN Adapter: connected", "CAN Device: connected", and "Drivestate: Pre Operational".

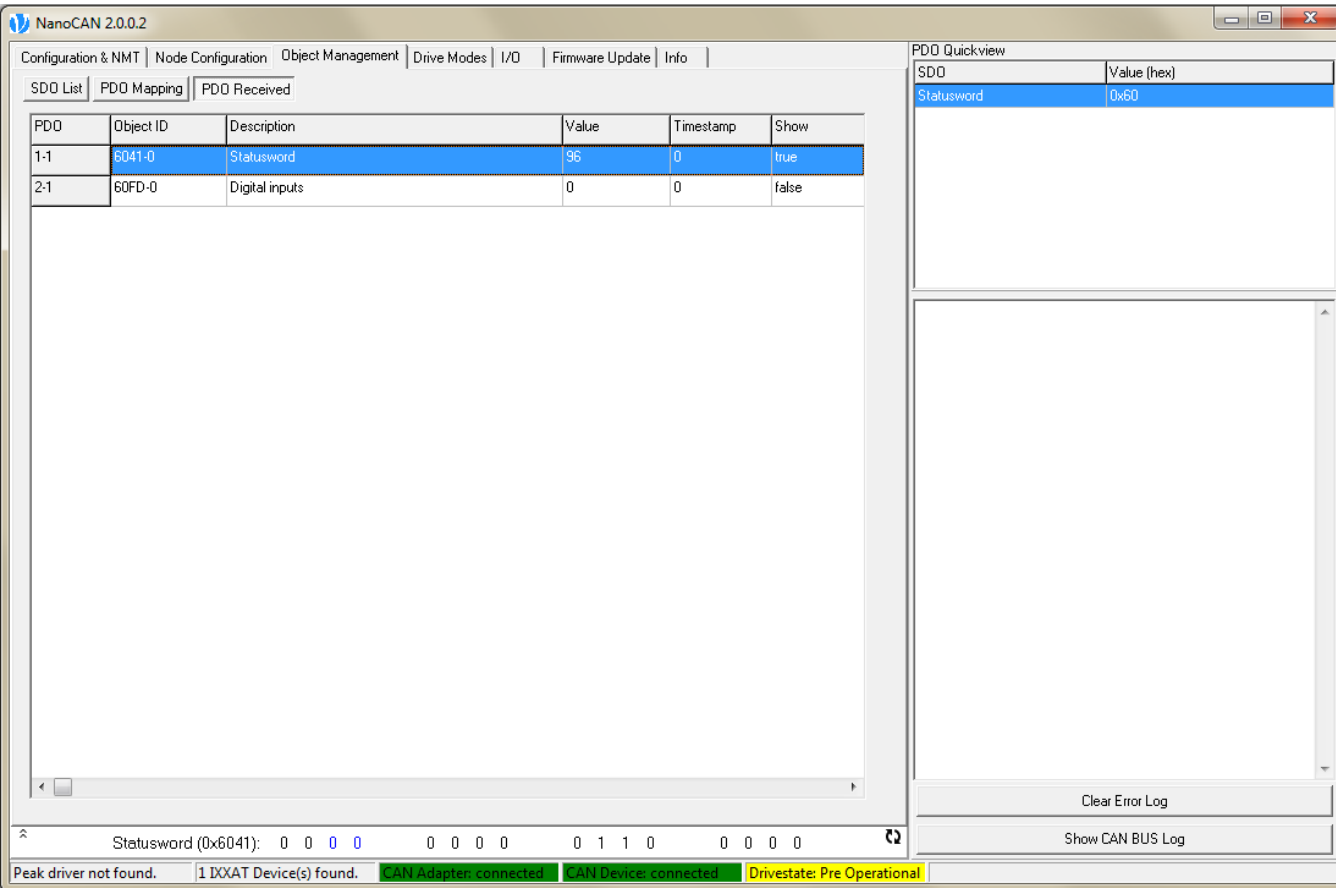
Die Hauptkommunikation zwischen dem Master und unseren Steuerungen wird über PDO-Nachrichten abgewickelt.



PDO Received:

Auf dieser Seite wird eine Übersicht über alle gemappten PDOs gegeben.

Außerdem können Sie entscheiden, ob bzw. welche PDOs in dem kleinen Fenster rechts oben im NanoCAN-Bildschirm angezeigt werden sollen.



The screenshot shows the NanoCAN 2.0.0.2 software interface. The main window has several tabs: Configuration & NMT, Node Configuration, Object Management (selected), Drive Modes, I/O, Firmware Update, and Info. Under the Object Management tab, there are sub-tabs for SDO List, PDO Mapping, and PDO Received. The PDO Received sub-tab is active, displaying a table with the following data:

PDO	Object ID	Description	Value	Timestamp	Show
1-1	6041-0	Statusword	96	0	True
2-1	60FD-0	Digital inputs	0	0	false

At the bottom of the main window, there is a status bar showing the Statusword (0x6041) as 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0. Below this, a green bar indicates: Peak driver not found. 1 IXXAT Device(s) found. CAN Adapter: connected. CAN Device: connected. Drivestate: Pre Operational.

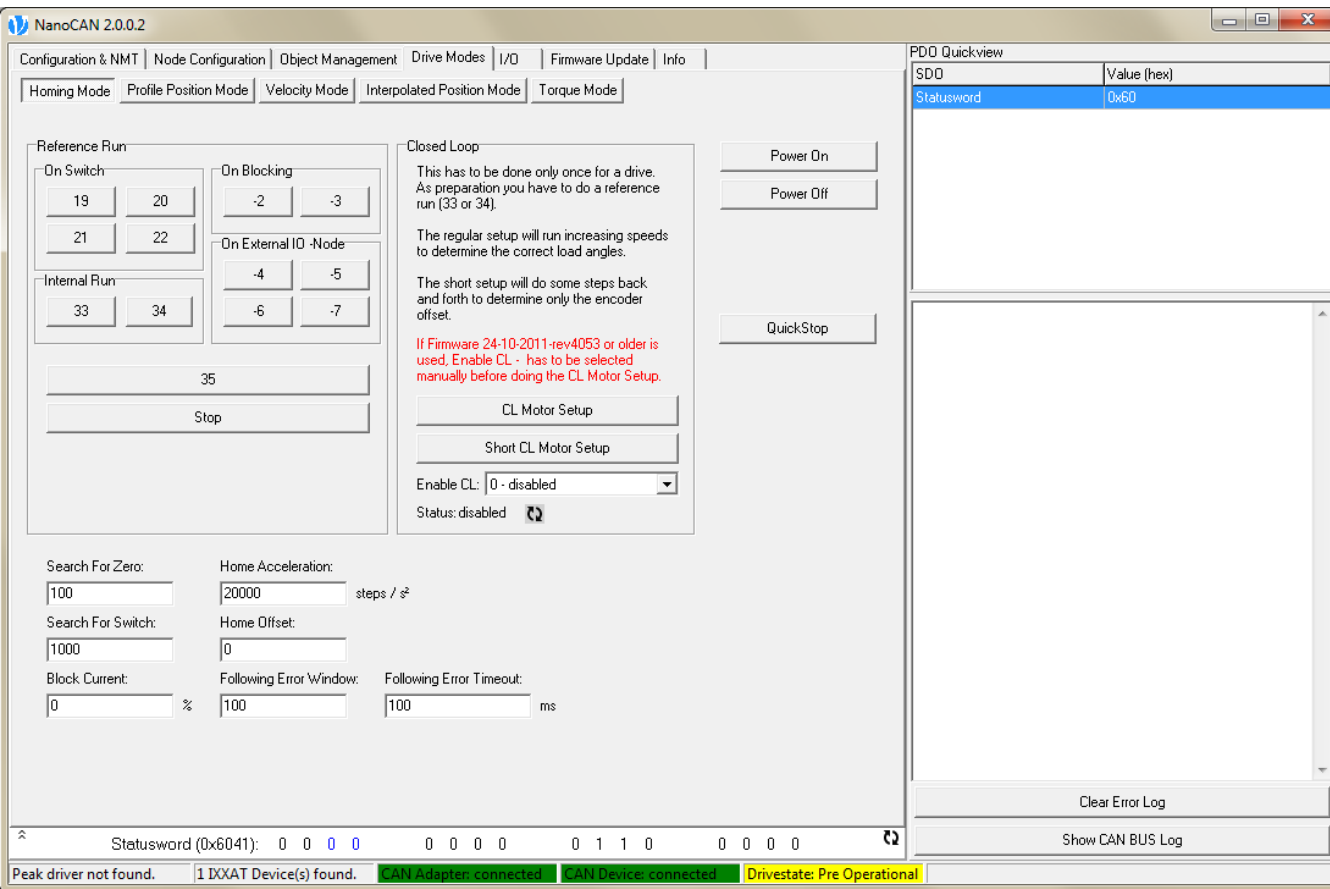
On the right side, there is a 'PDD Quickview' window with a table showing the SDO 'Statusword' with a value of 0x60. Below this window are buttons for 'Clear Error Log' and 'Show CAN BUS Log'.

## Homing Mode:

Auf dieser Seite können Sie alle Homing (Referenz)-Modi testen.

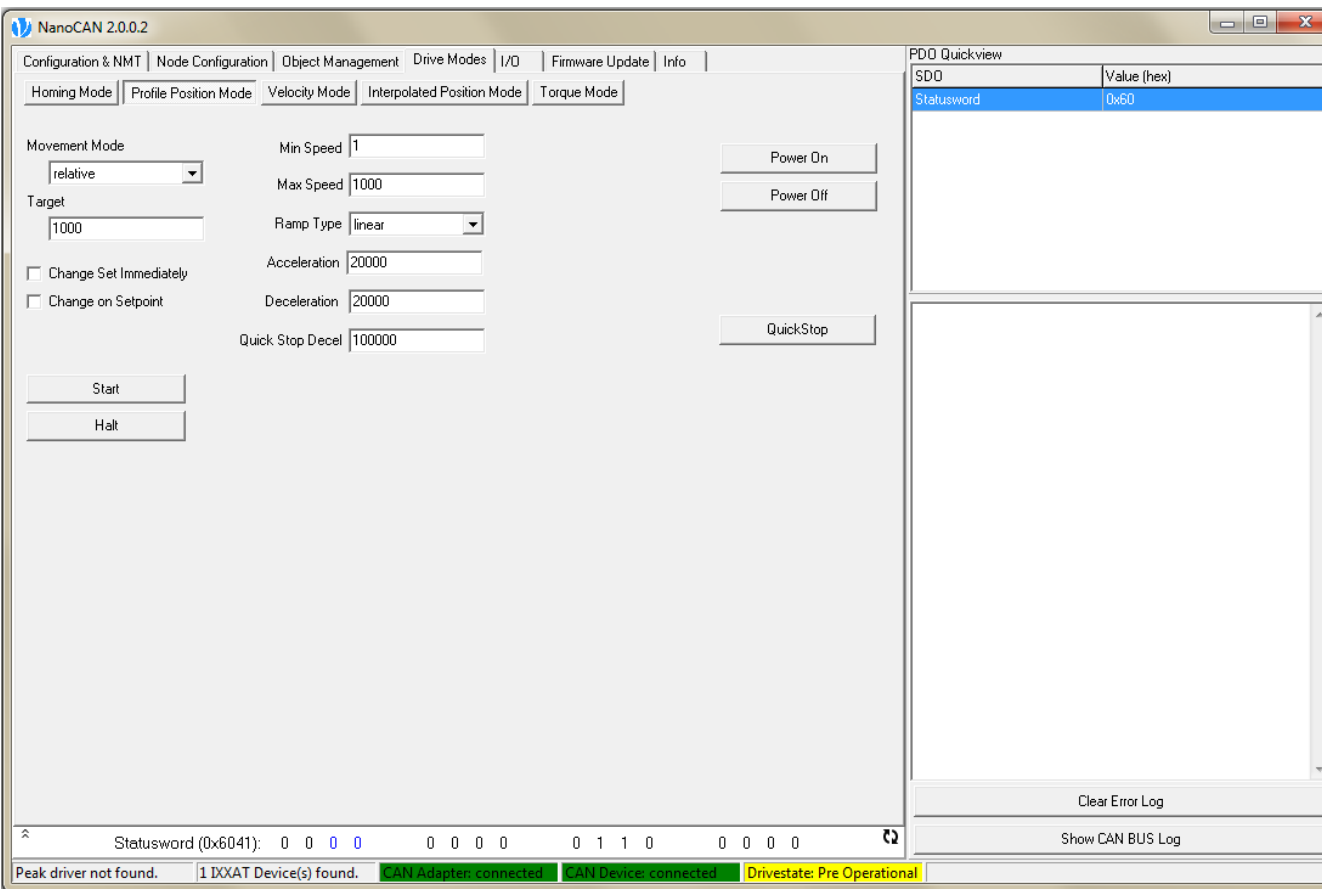
- Internes Homing
- Externes Homing
- Homing auf mechanischen Anschlag
- Homing ohne Bewegung

Außerdem kann hier die Closed Loop-Einrichtung vorgenommen und auf den Closed Loop-Modus umgeschaltet werden.



The screenshot shows the NanoCAN 2.0.0.2 software interface. The 'Drive Modes' tab is selected, and the 'Homing Mode' sub-tab is active. The interface is divided into several sections:

- Reference Run:** Contains buttons for 'On Switch' (19, 20, 21, 22), 'On Blocking' (-2, -3), 'On External IO -Node' (-4, -5, -6, -7), and 'Internal Run' (33, 34). A 'Stop' button is also present.
- Closed Loop:** Includes a 'Power On' button, a 'Power Off' button, and a 'QuickStop' button. Text instructions describe the reference run and closed loop setup. A dropdown menu for 'Enable CL:' is set to '0 - disabled'.
- Search Parameters:** Fields for 'Search For Zero' (100), 'Search For Switch' (1000), 'Block Current' (0%), 'Home Acceleration' (20000 steps/s²), 'Home Offset' (0), 'Following Error Window' (100), and 'Following Error Timeout' (100 ms).
- Status Bar:** Shows 'Statusword (0x6041): 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0' and system messages: 'Peak driver not found.', '1 IXXT Device(s) found.', 'CAN Adapter: connected', 'CAN Device: connected', and 'Drivestate: Pre Operational'.
- PDD Quickview:** A table showing 'SDO' values: 'Statusword' with value '0x60'.
- Buttons:** 'CL Motor Setup', 'Short CL Motor Setup', 'Clear Error Log', and 'Show CAN BUS Log'.



The screenshot shows the NanoCAN 2.0.0.2 software interface. The 'Drive Modes' tab is active, and the 'Profile Position Mode' sub-tab is selected. The interface includes several configuration fields and control buttons.

**Configuration & NMT** | Node Configuration | Object Management | Drive Modes | I/O | Firmware Update | Info

Homing Mode | Profile Position Mode | Velocity Mode | Interpolated Position Mode | Torque Mode

**Movement Mode:** relative (dropdown)

**Target:** 1000

Change Set Immediately  
 Change on Setpoint

**Speed and Acceleration Settings:**

- Min Speed: 1
- Max Speed: 1000
- Ramp Type: linear (dropdown)
- Acceleration: 20000
- Deceleration: 20000
- Quick Stop Decel: 100000

**Control Buttons:** Power On, Power Off, QuickStop, Start, Halt

**PDO Quickview:**

SDO	Value (hex)
Statusword	0x60

**Statusword (0x6041):** 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0

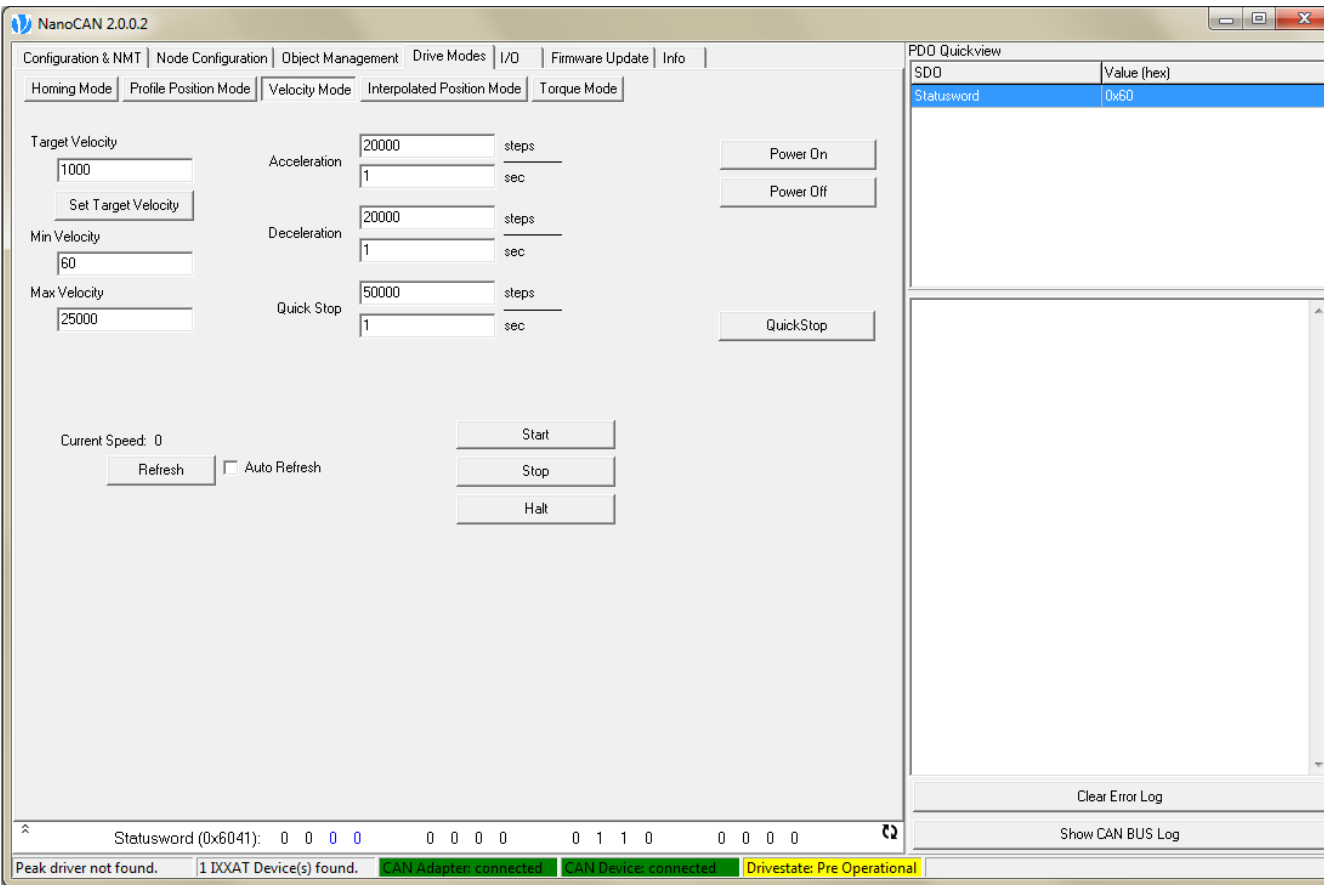
**System Status:** Peak driver not found. 1 IXAT Device(s) found. CAN Adapter: connected. CAN Device: connected. Drivestate: Pre Operational

Profile Position Mode:

Relativer und absoluter  
Positionsmodustest.

Dies entspricht den  
entsprechenden Modi in  
NanoPro.

Die Zielposition kann sofort  
oder bei Erreichen der  
ersten Position geändert  
werden.



The screenshot shows the NanoCAN 2.0.0.2 software interface with the 'Drive Modes' tab selected. The 'Velocity Mode' sub-tab is active, displaying various configuration parameters:

- Target Velocity:** 1000 (with 'Set Target Velocity' button)
- Acceleration:** 20000 steps, 1 sec
- Deceleration:** 20000 steps, 1 sec
- Min Velocity:** 60
- Max Velocity:** 25000
- Quick Stop:** 50000 steps, 1 sec

Control buttons include 'Power On', 'Power Off', 'QuickStop', 'Start', 'Stop', and 'Halt'. The 'Current Speed' is shown as 0. A 'Refresh' button and an 'Auto Refresh' checkbox are also present.

At the bottom, the status bar shows: Statusword (0x6041): 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0. The system status is 'Peak driver not found. 1 IXXAT Device(s) found. CAN Adapter: connected. CAN Device: connected. Drivestate: Pre Operational'.

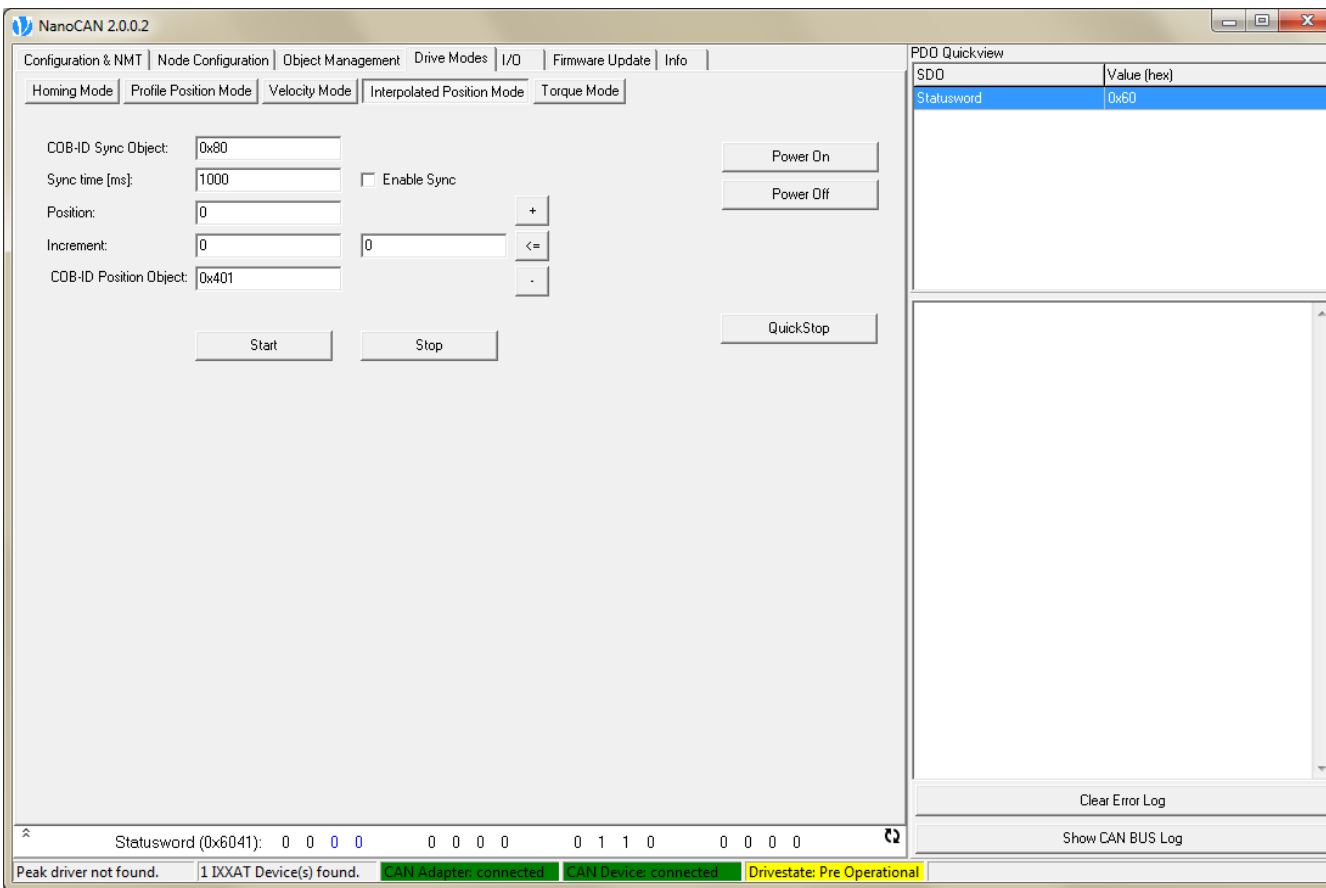
The 'PDD Quickview' window on the right shows a table with the following data:

SDD	Value (hex)
Statusword	0x60

Velocity Mode:

Testen des Drehzahlmodus.

Dies entspricht dem Drehzahlmodus in NanoPro.



Interpolated Position Mode:

Dieser Modus dient zum Synchronisieren von mehreren Motoren.

Der Master sendet mit jedem Zeitstempel eine neue Position. Die Steuerung berechnet die Geschwindigkeit, um zu dieser Position zu gelangen, bevor die neue Position eingestellt wird.

Dieser Modus darf nicht mit "Closed Loop" kombiniert werden.

The screenshot shows the NanoCAN 2.0.0.2 software interface. The 'Drive Modes' tab is selected, and the 'Torque Mode' sub-tab is active. The interface includes input fields for 'Max. Speed' (set to 25000 rpm) and 'Target Torque' (set to 500). Control buttons for 'Power On', 'Power Off', 'Start', 'Stop', and 'QuickStop' are visible. On the right, the 'PDO Quickview' table shows the 'Statusword' with a value of '0x60'. At the bottom, the status bar indicates 'Drivestate: Pre Operational'.

SDO	Value (hex)
Statusword	0x60

Statusword (0x6041): 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0

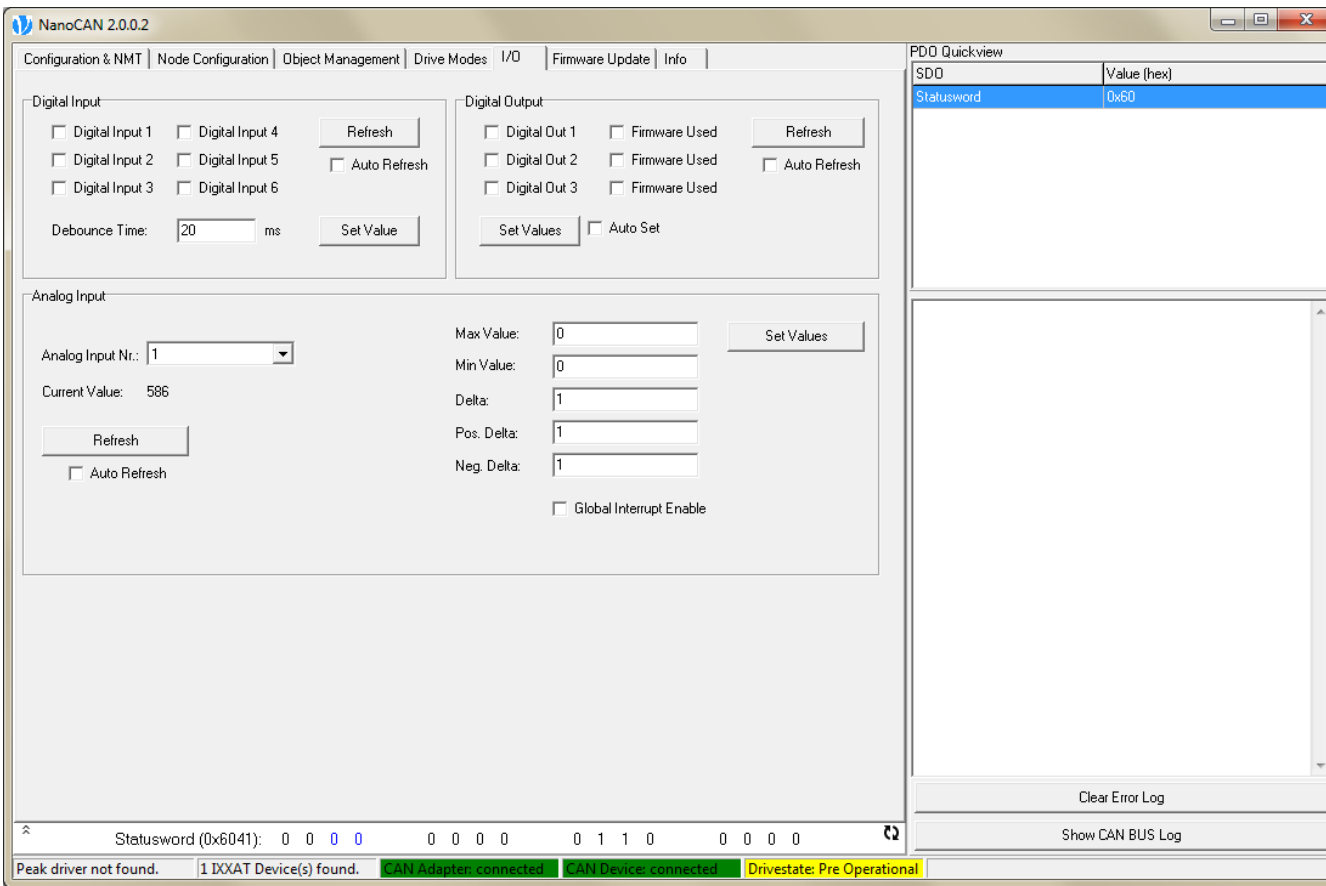
Peak driver not found. 1 IXAT Device(s) found. CAN Adapter: connected. CAN Device: connected. Drivestate: Pre Operational

Torque Mode:

Das Verhalten des Drehmomentmodus entspricht dem von NanoPro.

Das maximale Drehmoment wird hier allerdings als Wert eingestellt, nicht mit dem Analogeingang. Außerdem kann eine maximale Drehzahl definiert werden.

"Closed Loop" muss aktiviert sein.



The screenshot shows the NanoCAN 2.0.0.2 software interface. The main window is divided into several sections:

- Digital Input:** Includes checkboxes for Digital Input 1 through 6, a Refresh button, and an Auto Refresh checkbox. The Debounce Time is set to 20 ms, with a Set Value button.
- Digital Output:** Includes checkboxes for Digital Out 1 through 3, Firmware Used checkboxes, a Refresh button, and an Auto Refresh checkbox. There are Set Values and Auto Set buttons.
- Analog Input:** Features a dropdown for Analog Input Nr. (set to 1), a Current Value of 586, a Refresh button, and an Auto Refresh checkbox. It also has fields for Max Value (0), Min Value (0), Delta (1), Pos. Delta (1), and Neg. Delta (1), along with a Global Interrupt Enable checkbox and a Set Values button.
- PDD Quickview:** A table showing SDO data. The first row is highlighted in blue.
 

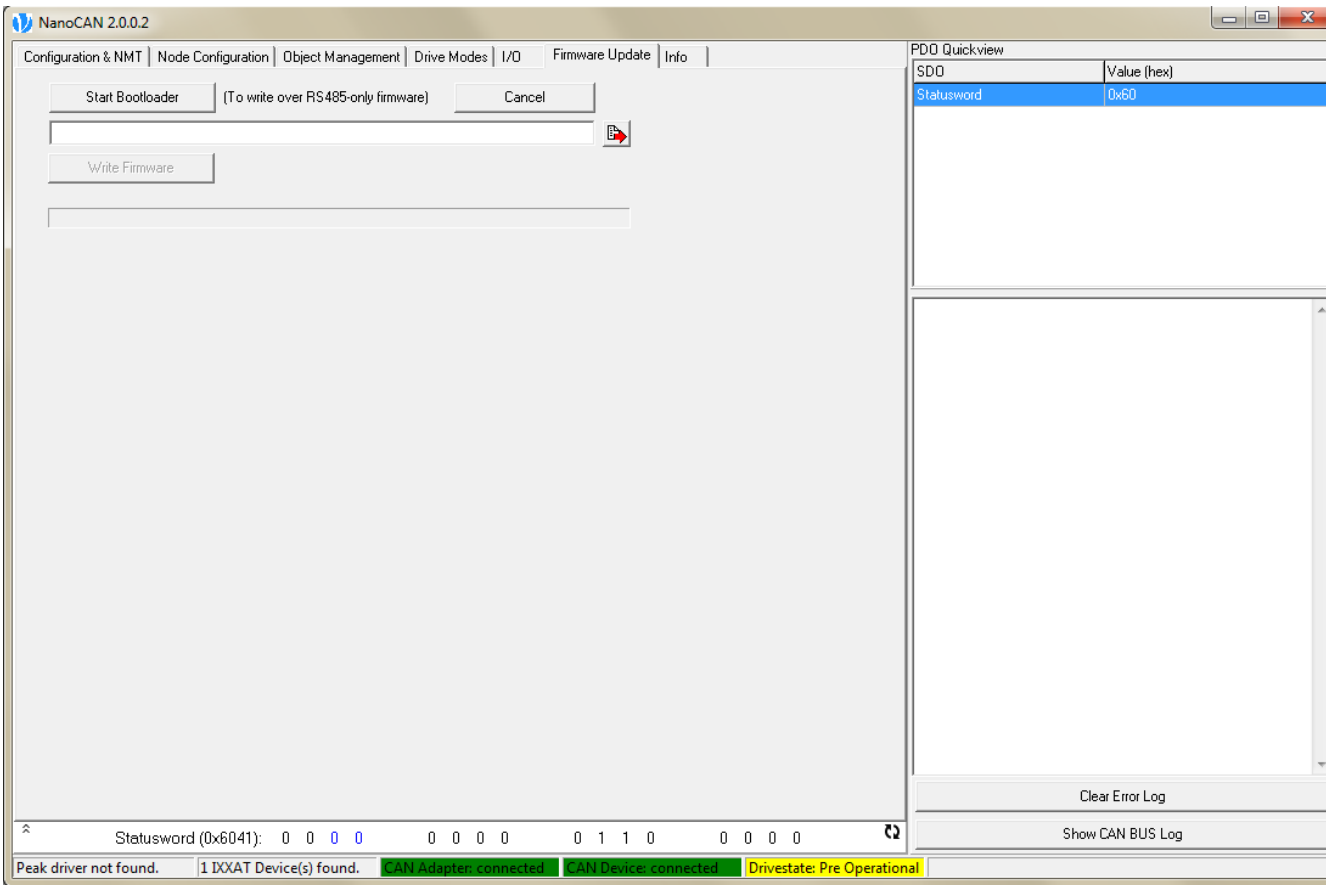
SDO	Value (hex)
Statusword	0x60
- Status Bar:** Shows the Statusword (0x6041) as 0 0 0 0 0 0 0 1 1 0 0 0 0 0. It also displays system messages: Peak driver not found., 1 IXXAT Device(s) found., CAN Adapter: connected, CAN Device: connected, and Drivestate: Pre Operational.

Auf dieser Registerkarte wird der Status der Ein- und Ausgänge angezeigt.

Es ist möglich, Bereiche und einen Filter für den Analogeingang einzustellen.

Der Analogeingang kann bei Verwendung von CANopen nicht von der Steuerung genutzt werden, der Wert am Eingang lässt sich aber über ein SDO auslesen.

Die Digitaleingänge können ebenfalls nicht von der Firmware genutzt werden. Eine Ausnahme ist Eingang 6, der als End- und Referenzschalter dient.



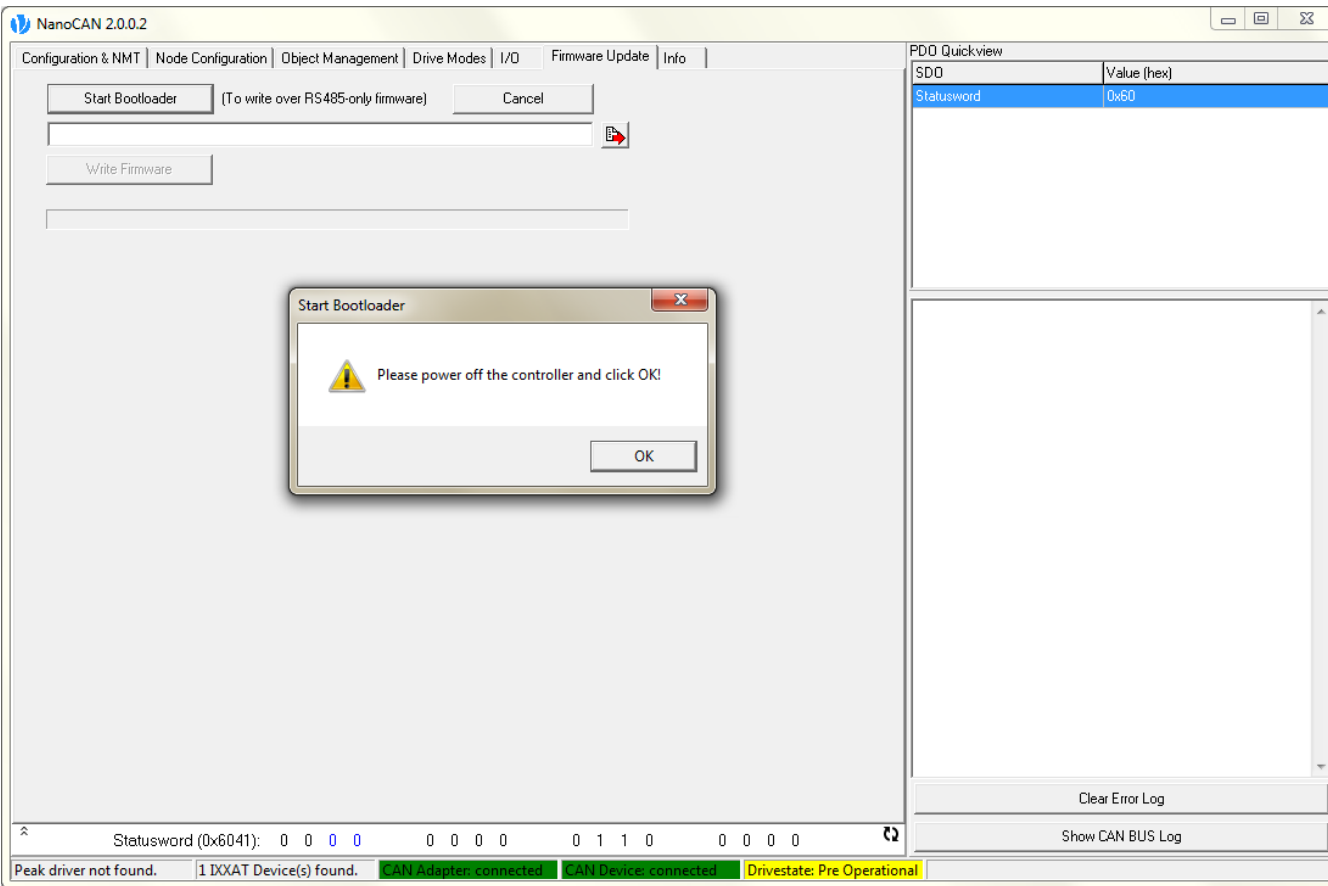
Diese Registerkarte wird für Firmware-Updates und -Änderungen verwendet.

Im Gegensatz zu NanoPro verfügt NanoCAN nicht über eine Datendatei mit Firmware-Versionen. Es wird eine Firmware-Datei benötigt.

Es kann ein Firmware-Update auf neuere Versionen oder eine Änderung von RS485 auf CANopen vorgenommen werden. Dies ist für Steuerungen von großer Bedeutung, die RS485 und CANopen unterstützen.

Unser Supportteam bietet spezielle Firmware an.





Um von RS485 auf CANopen zu wechseln, auf die Schaltfläche "Start Bootloader" klicken und den Anweisungen folgen.

The screenshot shows the NanoCAN 2.0.0.2 software interface. The main window has a menu bar with 'Configuration & NMT', 'Node Configuration', 'Object Management', 'Drive Modes', 'I/O', 'Firmware Update', and 'Info'. The 'Firmware Update' tab is active, showing a 'Start Bootloader' button (with a subtext '(To write over RS485-only firmware)') and a 'Cancel' button. Below these are two empty text input fields and a 'Write Firmware' button. A 'Start Bootloader' dialog box is open in the center, displaying a warning icon and the text: 'Please click OK and power on the controller afterwards!' with an 'OK' button.

On the right side, the 'PDD Quickview' panel shows a table with two columns: 'SDO' and 'Value (hex)'. The first row is 'Statusword' with a value of '0x60'. Below the table, a red error message is displayed: '(13:15:57) EMERGENCY: VOLTAGE MAIN ERROR'. At the bottom of this panel are buttons for 'Clear Error Log' and 'Show CAN BUS Log'.

At the bottom of the main window, the 'Statusword (0x6041):' is shown as a sequence of 16 bits: 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0. Below this, a status bar shows: 'Peak driver not found.', '1 IXXAT Device(s) found.', 'CAN Adapter: connected', 'CAN Device: connected', and 'Drivestate: Pre Operational'.

NanoCAN 2.0.0.2

Configuration & NMT | Node Configuration | Object Management | Drive Modes | I/O | Firmware Update | Info

Start Bootloader (To write over RS485-only firmware) Cancel

Write Firmware

**starting Bootloader.....**

SDO	Value (hex)
Statusword	0x60

(13:15:57) EMERGENCY: VOLTAGE MAIN ERROR

Clear Error Log

Show CAN BUS Log

Statusword (0x6041): 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0

Peak driver not found. 1 IXAT Device(s) found. CAN Adapter: connected CAN Device: connected Drivestate: Pre Operational

Der Bootloader wird gestartet.

The screenshot shows the NanoCAN 2.0.0.2 software interface. The main window has a tabbed menu with 'Firmware Update' selected. The 'Start Bootloader' button is highlighted, with a tooltip that reads '(To write over RS485-only firmware)'. Below it is a 'Write Firmware' button and a file selection icon. The main area displays 'Finished' in large green text. A modal dialog box titled 'Start Bootloader' is open, containing a warning icon and the message: 'The Bootloader has been successfully started! Now choose a firmware file and write the firmware!'. The dialog has an 'OK' button. On the right side, there is a 'PDD Quickview' table with columns 'SDO' and 'Value (hex)'. Below the table is a log window showing the following entries: '(13:39:37) Connecting to Node: 1' and '(13:39:38) Connected'. At the bottom of the interface, there is a status bar with the text 'Statusword (0x6041): 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0' and a 'Peak driver not found.' message. The bottom status bar also shows: '1 IXAT Device(s) found.', 'CAN Adapter: connected', 'CAN Device: connected', and 'Drivestate: Pre Operational'. There are also buttons for 'Clear Error Log' and 'Show CAN BUS Log'.

SDO	Value (hex)

(13:39:37) Connecting to Node: 1  
(13:39:38) Connected

Start Bootloader

⚠ The Bootloader has been successfully started! Now choose a firmware file and write the firmware!

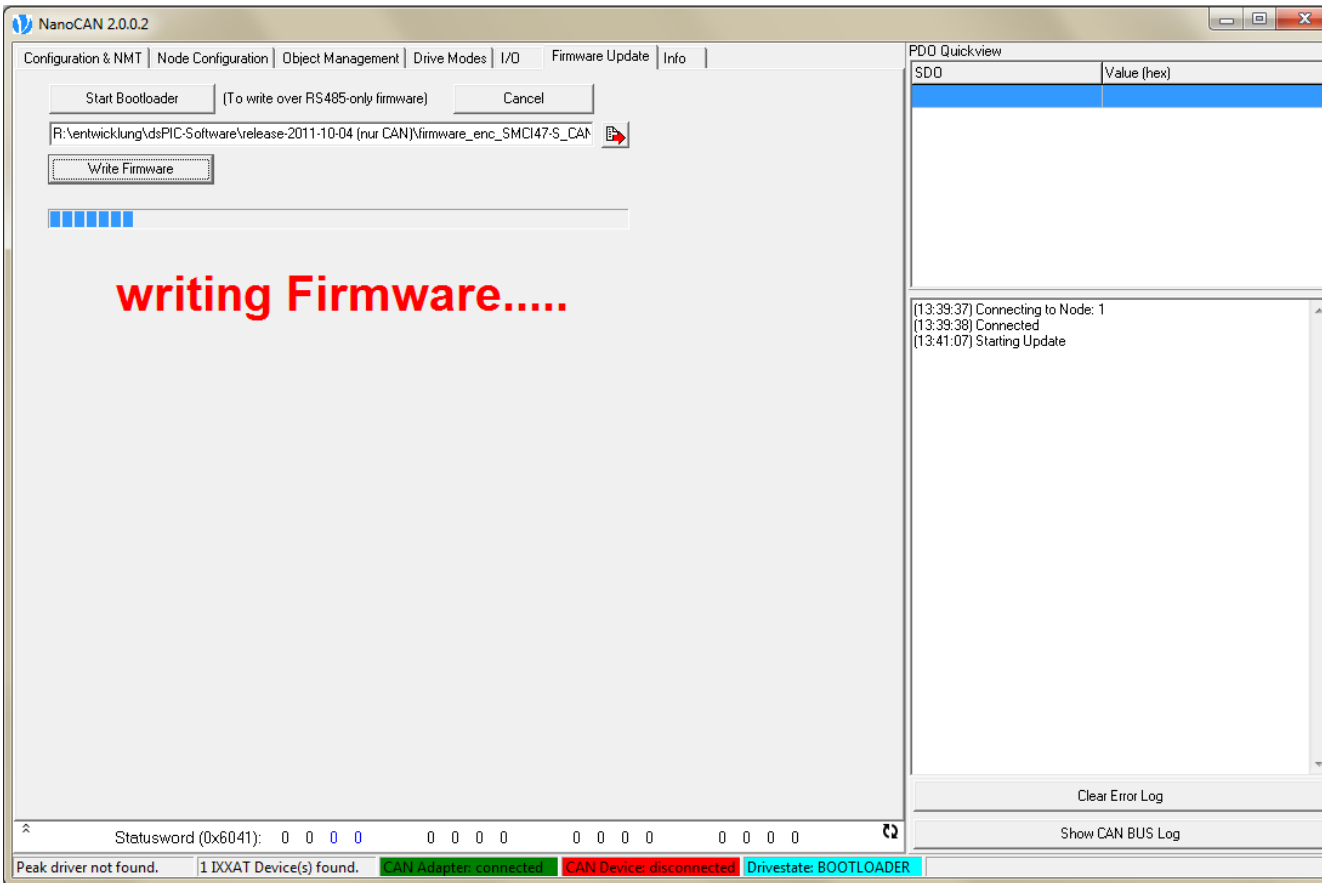
OK

Statusword (0x6041): 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Peak driver not found. 1 IXAT Device(s) found. CAN Adapter: connected CAN Device: connected Drivestate: Pre Operational

Clear Error Log

Show CAN BUS Log



Dies ist der Einstiegspunkt, wenn nur die CANopen-Firmware auf eine aktuellere Version aktualisiert werden soll.

Die Firmware hochladen und auf "Write Firmware" klicken.

Das Update kann ein bis zwei Minuten dauern.

NanoCAN 2.0.0.2

Configuration & NMT | Node Configuration | Object Management | Drive Modes | I/O | Firmware Update | Info

Start Bootloader (To write over RS485-only firmware) Cancel

R:\entwicklung\dsPIC-Software\release-2011-10-04 (nur CAN)\firmware\_enc\_SMC147-S\_CAN

Write Firmware

**writing Firmware.....**

Firmware update finished successful

OK

PDO Quickview

SDO	Value (hex)

(13:39:37) Connecting to Node: 1  
(13:39:38) Connected  
(13:41:07) Starting Update  
(13:41:34) Finished!

Clear Error Log

Show CAN BUS Log

Statusword (0x6041): 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Peak driver not found. 1 IX2AT Device(s) found. CAN Adapter: connected CAN Device: disconnected Drivestate: BOOTLOADER

Zuletzt wird eine Meldung angezeigt, dass das Update erfolgreich vorgenommen worden ist.

Hier einige typische Probleme, die beim Kunden auftreten können:

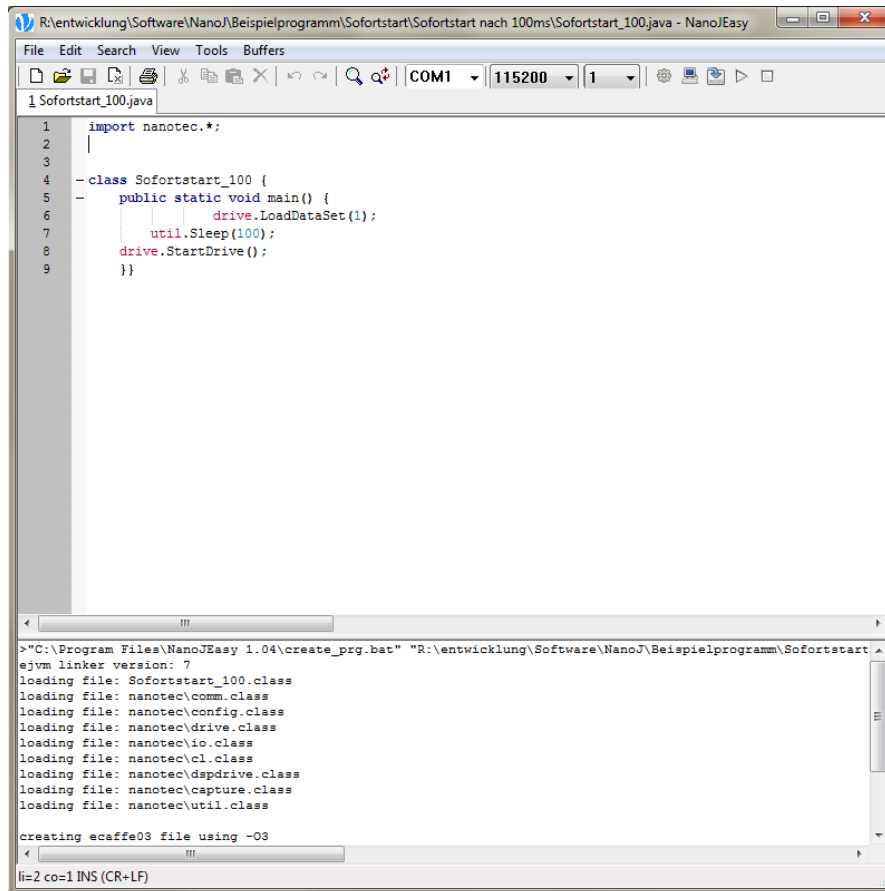
Hier einige typische Probleme, die beim Kunden auftreten können:

? NanoCAN findet meine Steuerung nicht.



Hier einige typische Probleme, die beim Kunden auftreten können:

- ? NanoCAN findet meine Steuerung nicht.
- ! Möglicherweise verwendet der Kunde nicht den erforderlichen Abschlusswiderstand zwischen CAN+ und CAN- (120 Ohm).



```
1 import nanotec.*;
2
3
4 -class Sofortstart_100 {
5 - public static void main() {
6     drive.LoadDataSet(1);
7     util.Sleep(100);
8     drive.StartDrive();
9 }
```

```
>"C:\Program Files\NanoJEasy 1.04\create_prg.bat" "R:\entwicklung\Software\NanoJ\Beispielprogramm\Sofortstart
ejvm linker version: 7
loading file: Sofortstart_100.class
loading file: nanotec\comm.class
loading file: nanotec\config.class
loading file: nanotec\drive.class
loading file: nanotec\io.class
loading file: nanotec\cl.class
loading file: nanotec\dsdrive.class
loading file: nanotec\capture.class
loading file: nanotec\util.class

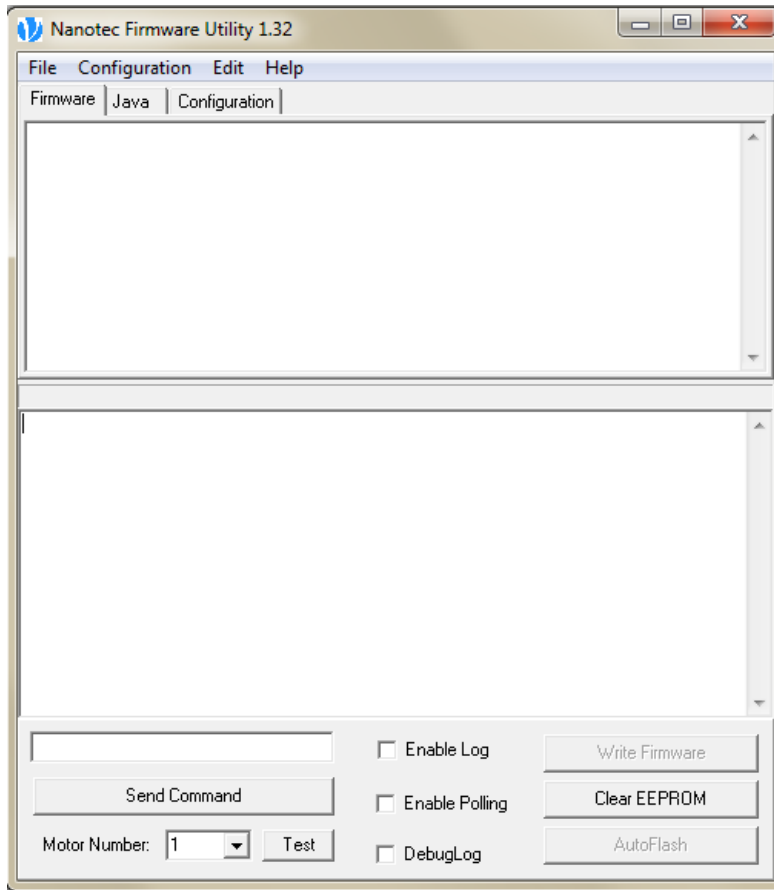
creating ecaff03 file using -03
li=2 co=1 INS (CR+LF)
```

Mit dem oben dargestellten Beispiel wird Profil 1 gestartet, wenn die Steuerung eingeschaltet wird.

NanoJEasy ist ein kleines, aber sehr nützliches Tool, mit dem Sie einige SPS-Funktionen in Ihren Geräten implementieren können. (Nur bei serieller Kommunikation)

NanoJEasy basiert auf der Programmiersprache Java. Das Programm wird im Hintergrund parallel zur Firmware ausgeführt.

Es werden unter anderem folgende Funktionen angeboten: Eingänge, Position oder Status auslesen. Mit diesen Informationen kann eine Reaktion ausgelöst werden, z. B. das Starten oder Stoppen eines Profils, die Änderung der Geschwindigkeit, die Einstellung eines Ausgangs usw.



Das "Firmware Utility" ist ein Tool für die Firmware-Aktualisierung. Es ist nützlich, wenn die Aktualisierung mit NanoPro nicht ordnungsgemäß funktioniert.

Das Tool und die am häufigsten verwendeten Firmware-Dateien sowie ein Schritt-für-Schritt-Handbuch sind im Bereich "Troubleshooting" auf unserer Homepage zu finden.



**Vielen Dank für  
Ihre  
Aufmerksamkeit!**

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