PCAN-Diag 2 概要(1)

ハンドヘルドCANバスチェッカー

- 物理・プロトコルレベルのCANネットワーク解析
  - CAN 2.0 A/B 準拠
    - 標準： High-speed CAN （25 kbit/s ～ 1 Mbit/s）
    - On request： Low-speed CAN, Single-wire CAN
  - ビットレート検出（固定値リストから： 25 kbit/s ～ 1 Mbit/s）
  - バス負荷測定（0 ～ 100 %）： bmp保存可
  - 終端測定（High-speed CANのみ対応： xx Ω）
- オシロスコープ機能
  - CAN_H & CAN_Lのアナログ信号を可視化： bmp保存可
    - CAN_LはBNCアナログ入力に設定変更可能
  - トリガー： CAN ID、その他イベント（プリ： 10:90, 50:50, 90:10）
  - CANフレーム： アナログ信号をデコード
- データ表示
  - ロウデータ（生データ）表示：
    - 例. ID D0 D1 D2 D3 D4 D5 D6 D7 Count Time (200 2E 45 7D 6C 00 54 7E 38, 18, 238)
  - シンボリック表示（シンボルファイル作成要）
    - 例. VehicleSpeed 56 km/h, EngineSpeed 3500 rpm

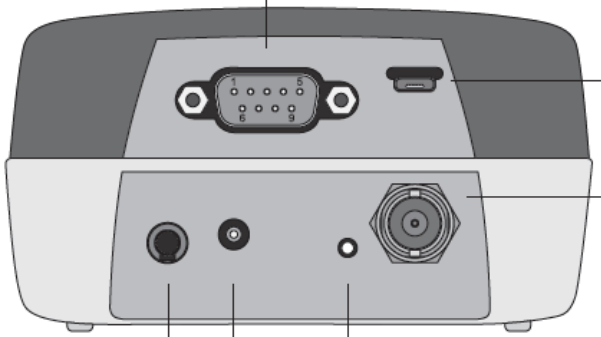
PEAK System

GAILOGIC CORPORATION

PCAN-Diag 2 概要(2)

- ハンドヘルドCANバスチェッカー
  - その他の機能
    - トレース機能（IDフィルタ可能）
    - プレイバック機能（トレースデータの送信）
    - CANデータの送信（シングルフレーム送信はランタイムでデータ変更が可能）
    - CAN終端設定（標準 High-speed CAN時のみ： On / Off）
    - リッスンオンリモードをサポート
  - D-Sub9 コネクタ： CAN
  - BNCコネクタ：
    - トリガー出力（通常 3.3V, イベント 0V；立下りエッジ）
    - アナログ入力（Ch2 CAN_Lと切替）-3 ～ ＋15V　または -10 ～ ＋50V
  - TFTディスプレイ：　320 x 240 ピクセル
  - サイズ： 103 x 58 x 212 (225 BNC含む) mm
  - 重量： 400 g（電池別）
  - 動作温度： 0 ～ 50 ℃（32 ～ 122 °F）
  - 電源： 単3電池 x 4本 または 外部供給 DC 8 ～ 50 V（ACアダプタ付属）

コネクタ等



CANコネクタ（D-Sub9オス）

標準タイプ（デフォルト）

ピン番	信号
2	CAN_L
3	GND
7	CAN_H

USBコネクタ（マイクロB）
ケーブルを介してPCと接続し、PCAN-Diag Editorによりプロジェクト転送を行います。また、トレースデータをPCに吸い上げます。

BNCコネクタ（メス）
設定により、外部オシロスコープのためのトリガー出力、または CAN_Lの代わりにアナログ入力として使用します。***1**

インターロックスイッチ
運搬時の電源On防止スイッチ　***2**

電源用ジャック
DC 8 ～ 50 V（付属のACアダプタを接続）

GNDソケット（4mm）
外部デバイス接続用

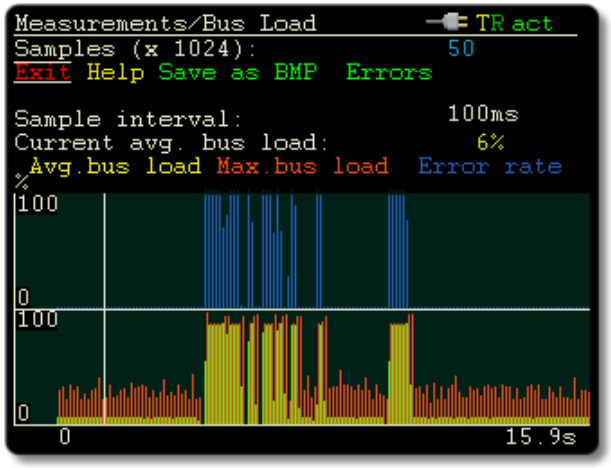
プッシュダイアル
電源On（長押し）。
回すと機能設定の移動。押下で決定。

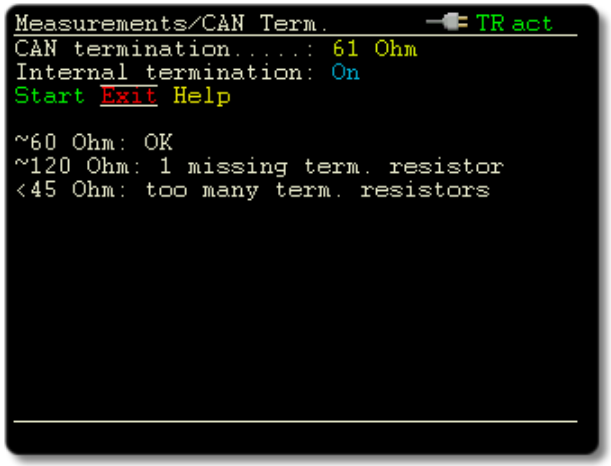
***1**
プローブ x1 をサポート。X10 はサポートされていません。

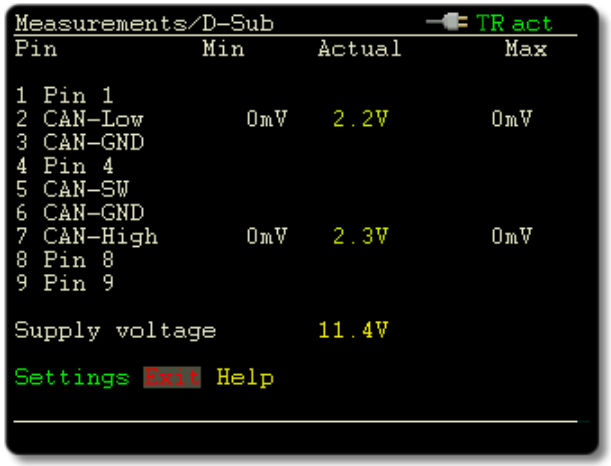
***2**
1回押すと、電池を入れた状態でプッシュダイアルを押しても電源が入らないようになります。再度、押すと、電源が入る状態になります。

CANバスチェック

- バス負荷
  - 操作：Measurements > Bus Load
- 終端抵抗
  - 操作：Measurements > CAN Termination
- D-Subコネクタの電圧
  - 操作：Measurements > CAN Termination

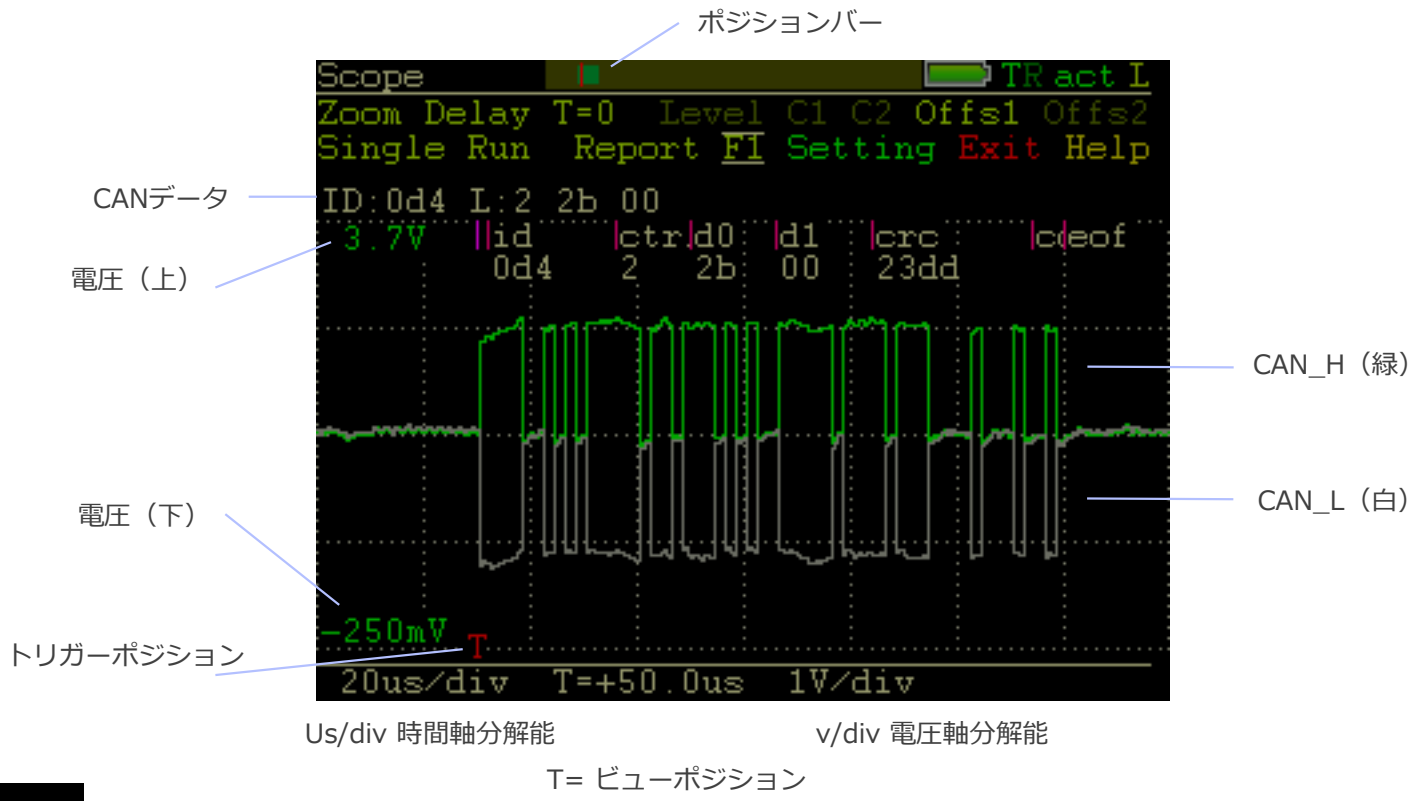






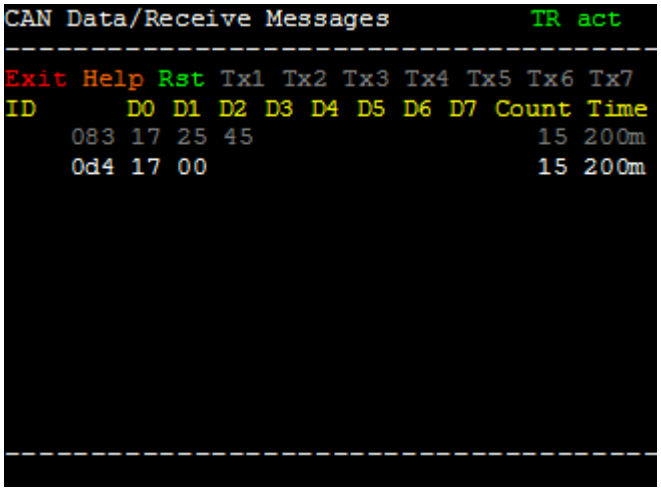
オシロスコープ表示

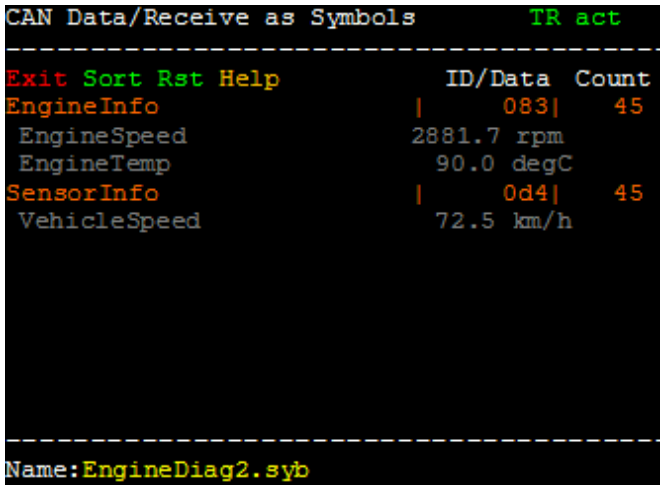
- CAN_HとCAN_Lをオシロスコープ表示
  - 操作：Scope > Run



CANデータ表示

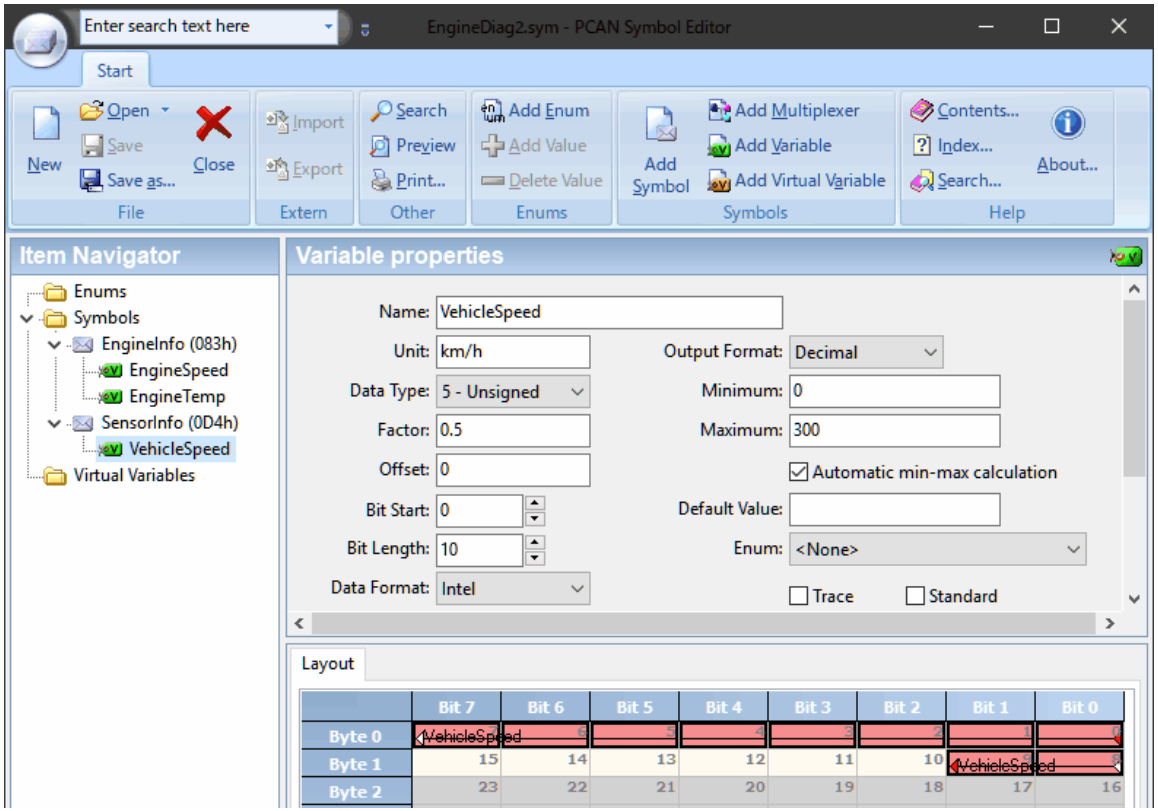
- ロウデータ（生データ）表示
  - 操作：CAN Data > Receive Messages
- シンボリック表示（例. km/h）
  - シンボルファイル（*.sym）をどれかで作成
    - 無償シンボルエディタ PcanSEdt.exe
    - テキストエディタ
    - CANdbからsymに変換
      - PCAN-Explorer 6 + CANdb Importアドイン
  - プロジェクト Symbolsで追加
  - プロジェクト転送・ロード
  - 操作：CAN Data > Receive Msgs. as Symbols





シンボルファイル（sym）作成

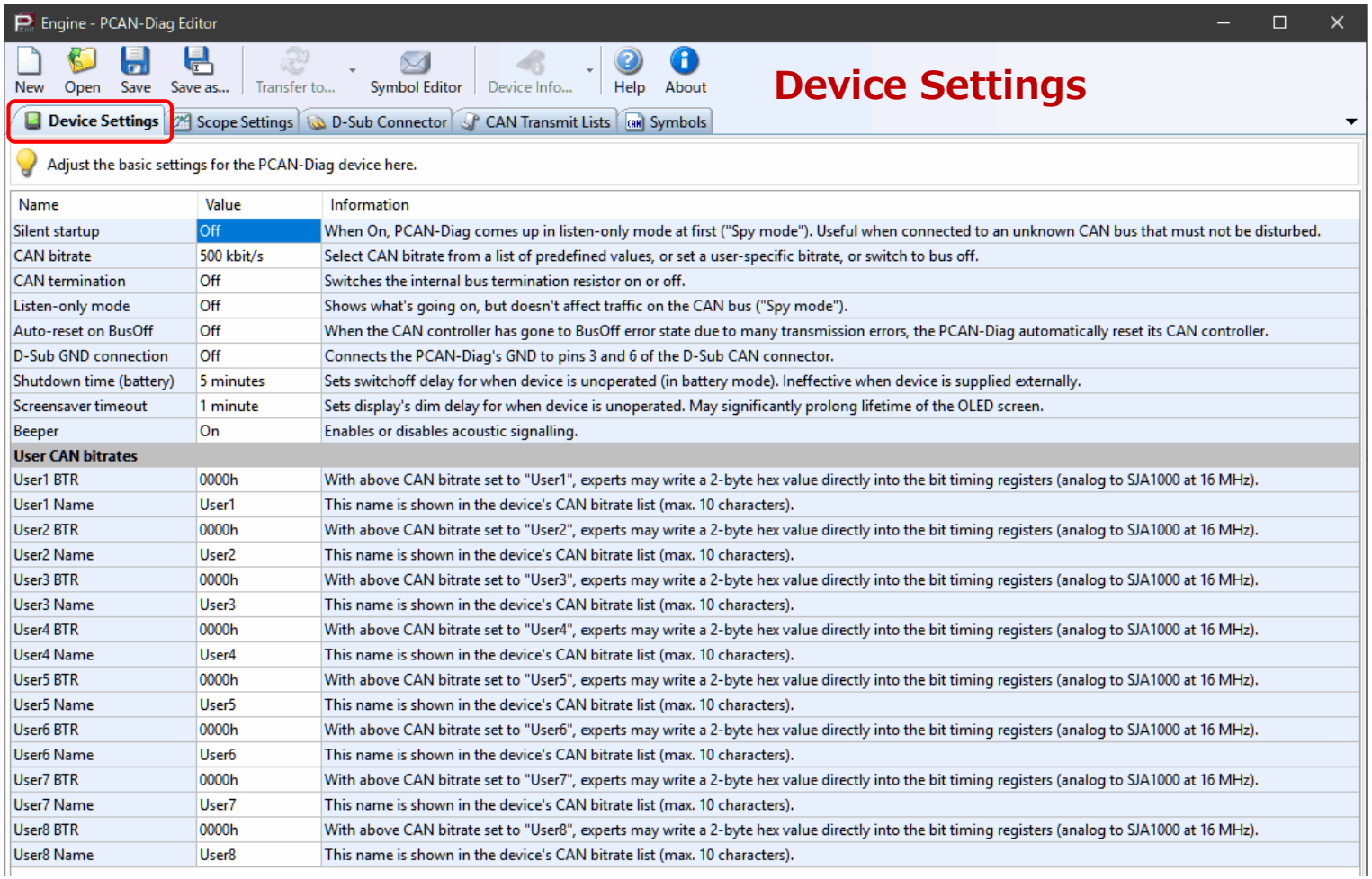
- 無償シンボルエディタ（PcanSEdt.exe）
  - PRODUCT DVD: Tools¥PCAN-Diag¥PCAN-DiagV2¥Tools¥PcanSEdt.exe



プロジェクト作成 PCAN-Diag Editor

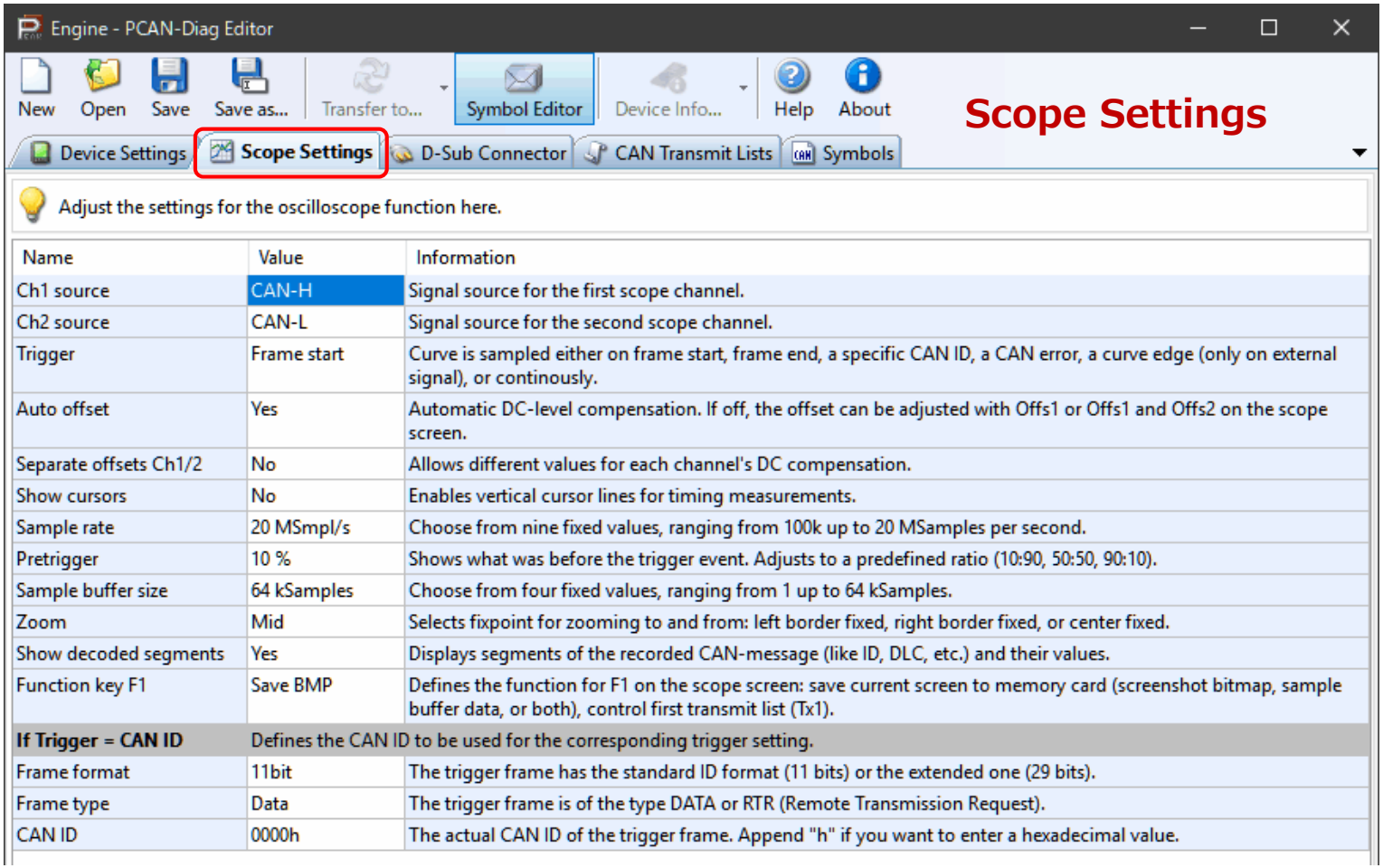
- プロジェクト作成が必要
  - PCAN-Diag操作に存在しない項目
    - シンボル表示（例. km/h, rpm）
    - CANデータ送信
      - デバイスでも設定できるが、プロジェクト作成の方が容易
- PRODUCT DVD
  - Tools¥PCAN-Diag¥PCAN-DiagV2¥Tools¥PcanDiagEdt.exe

PCAN-Diag Editor デバイス設定



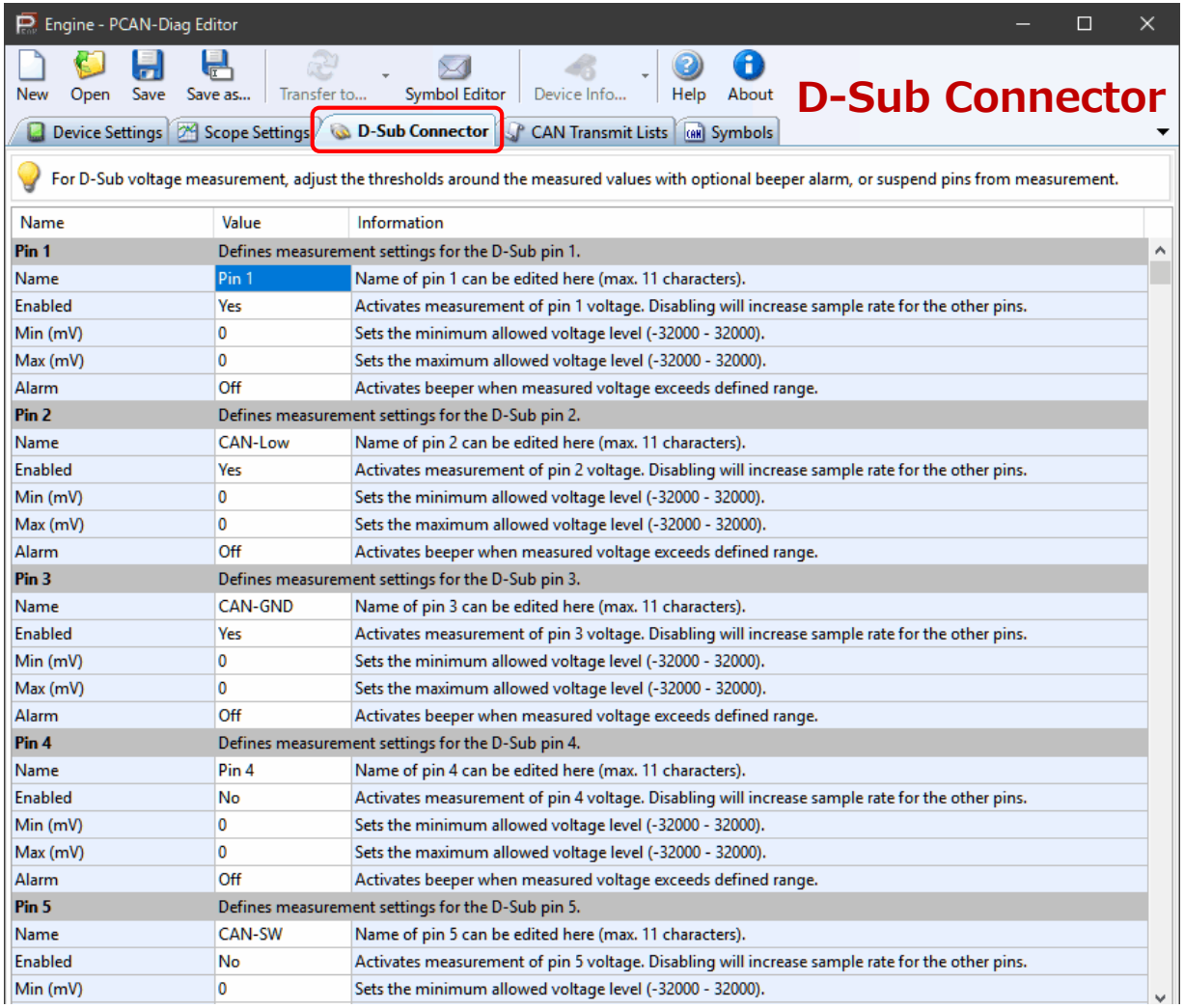
Name	Value	Information
Silent startup	Off	When On, PCAN-Diag comes up in listen-only mode at first ("Spy mode"). Useful when connected to an unknown CAN bus that must not be disturbed.
CAN bitrate	500 kbit/s	Select CAN bitrate from a list of predefined values, or set a user-specific bitrate, or switch to bus off.
CAN termination	Off	Switches the internal bus termination resistor on or off.
Listen-only mode	Off	Shows what's going on, but doesn't affect traffic on the CAN bus ("Spy mode").
Auto-reset on BusOff	Off	When the CAN controller has gone to BusOff error state due to many transmission errors, the PCAN-Diag automatically reset its CAN controller.
D-Sub GND connection	Off	Connects the PCAN-Diag's GND to pins 3 and 6 of the D-Sub CAN connector.
Shutdown time (battery)	5 minutes	Sets switchoff delay for when device is unoperated (in battery mode). Ineffective when device is supplied externally.
Screensaver timeout	1 minute	Sets display's dim delay for when device is unoperated. May significantly prolong lifetime of the OLED screen.
Beeper	On	Enables or disables acoustic signalling.
User CAN bitrates		
User1 BTR	0000h	With above CAN bitrate set to "User1", experts may write a 2-byte hex value directly into the bit timing registers (analog to SJA1000 at 16 MHz).
User1 Name	User1	This name is shown in the device's CAN bitrate list (max. 10 characters).
User2 BTR	0000h	With above CAN bitrate set to "User2", experts may write a 2-byte hex value directly into the bit timing registers (analog to SJA1000 at 16 MHz).
User2 Name	User2	This name is shown in the device's CAN bitrate list (max. 10 characters).
User3 BTR	0000h	With above CAN bitrate set to "User3", experts may write a 2-byte hex value directly into the bit timing registers (analog to SJA1000 at 16 MHz).
User3 Name	User3	This name is shown in the device's CAN bitrate list (max. 10 characters).
User4 BTR	0000h	With above CAN bitrate set to "User4", experts may write a 2-byte hex value directly into the bit timing registers (analog to SJA1000 at 16 MHz).
User4 Name	User4	This name is shown in the device's CAN bitrate list (max. 10 characters).
User5 BTR	0000h	With above CAN bitrate set to "User5", experts may write a 2-byte hex value directly into the bit timing registers (analog to SJA1000 at 16 MHz).
User5 Name	User5	This name is shown in the device's CAN bitrate list (max. 10 characters).
User6 BTR	0000h	With above CAN bitrate set to "User6", experts may write a 2-byte hex value directly into the bit timing registers (analog to SJA1000 at 16 MHz).
User6 Name	User6	This name is shown in the device's CAN bitrate list (max. 10 characters).
User7 BTR	0000h	With above CAN bitrate set to "User7", experts may write a 2-byte hex value directly into the bit timing registers (analog to SJA1000 at 16 MHz).
User7 Name	User7	This name is shown in the device's CAN bitrate list (max. 10 characters).
User8 BTR	0000h	With above CAN bitrate set to "User8", experts may write a 2-byte hex value directly into the bit timing registers (analog to SJA1000 at 16 MHz).
User8 Name	User8	This name is shown in the device's CAN bitrate list (max. 10 characters).

PCAN-Diag Editor オシロスコープ設定



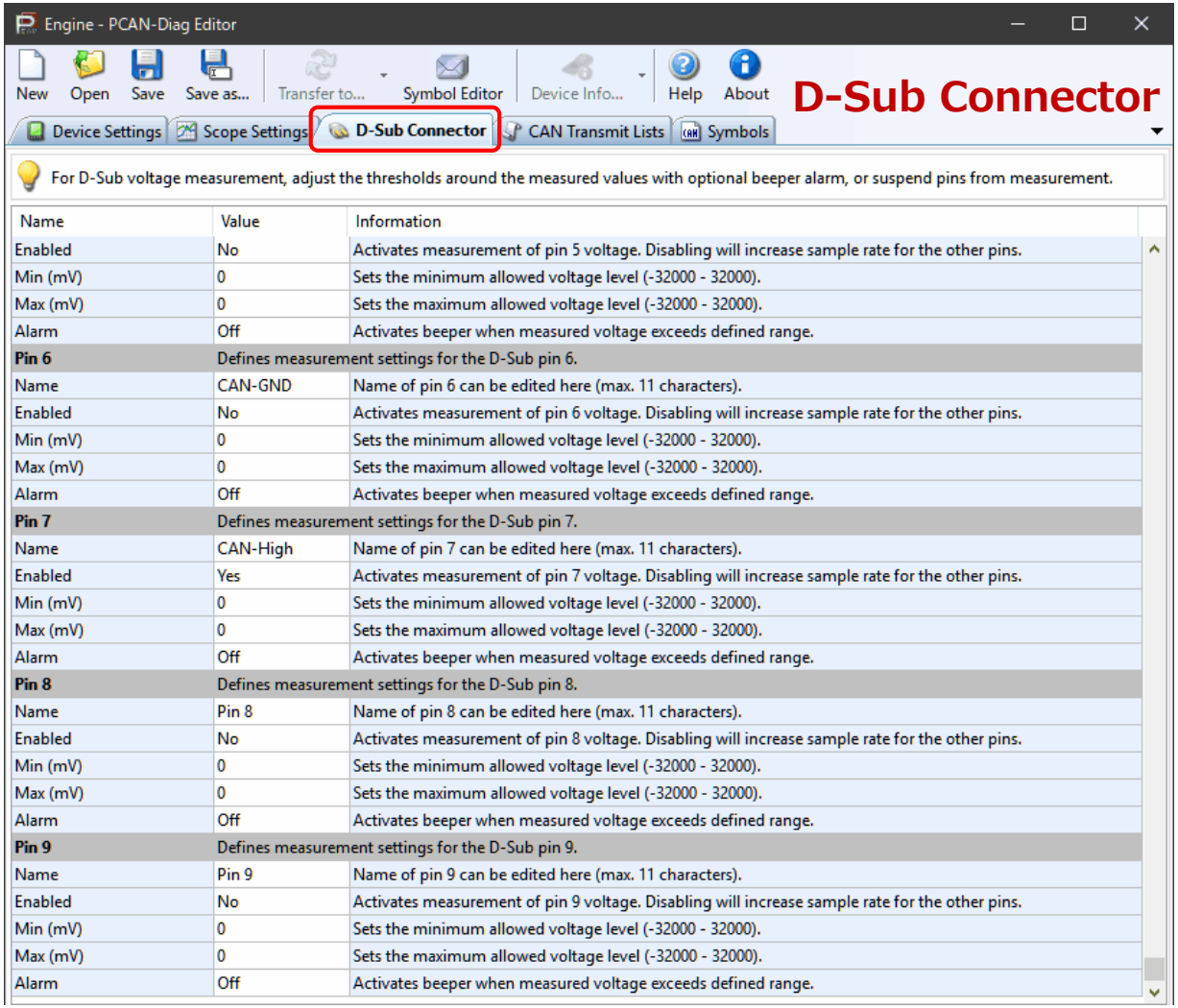
Name	Value	Information
Ch1 source	CAN-H	Signal source for the first scope channel.
Ch2 source	CAN-L	Signal source for the second scope channel.
Trigger	Frame start	Curve is sampled either on frame start, frame end, a specific CAN ID, a CAN error, a curve edge (only on external signal), or continously.
Auto offset	Yes	Automatic DC-level compensation. If off, the offset can be adjusted with Offs1 or Offs1 and Offs2 on the scope screen.
Separate offsets Ch1/2	No	Allows different values for each channel's DC compensation.
Show cursors	No	Enables vertical cursor lines for timing measurements.
Sample rate	20 MSmpl/s	Choose from nine fixed values, ranging from 100k up to 20 MSamples per second.
Pretrigger	10 %	Shows what was before the trigger event. Adjusts to a predefined ratio (10:90, 50:50, 90:10).
Sample buffer size	64 kSamples	Choose from four fixed values, ranging from 1 up to 64 kSamples.
Zoom	Mid	Selects fixpoint for zooming to and from: left border fixed, right border fixed, or center fixed.
Show decoded segments	Yes	Displays segments of the recorded CAN-message (like ID, DLC, etc.) and their values.
Function key F1	Save BMP	Defines the function for F1 on the scope screen: save current screen to memory card (screenshot bitmap, sample buffer data, or both), control first transmit list (Tx1).
If Trigger = CAN ID	Defines the CAN ID to be used for the corresponding trigger setting.	
Frame format	11bit	The trigger frame has the standard ID format (11 bits) or the extended one (29 bits).
Frame type	Data	The trigger frame is of the type DATA or RTR (Remote Transmission Request).
CAN ID	0000h	The actual CAN ID of the trigger frame. Append "h" if you want to enter a hexadecimal value.

PCAN-Diag Editor D-Subコネクタ(1)



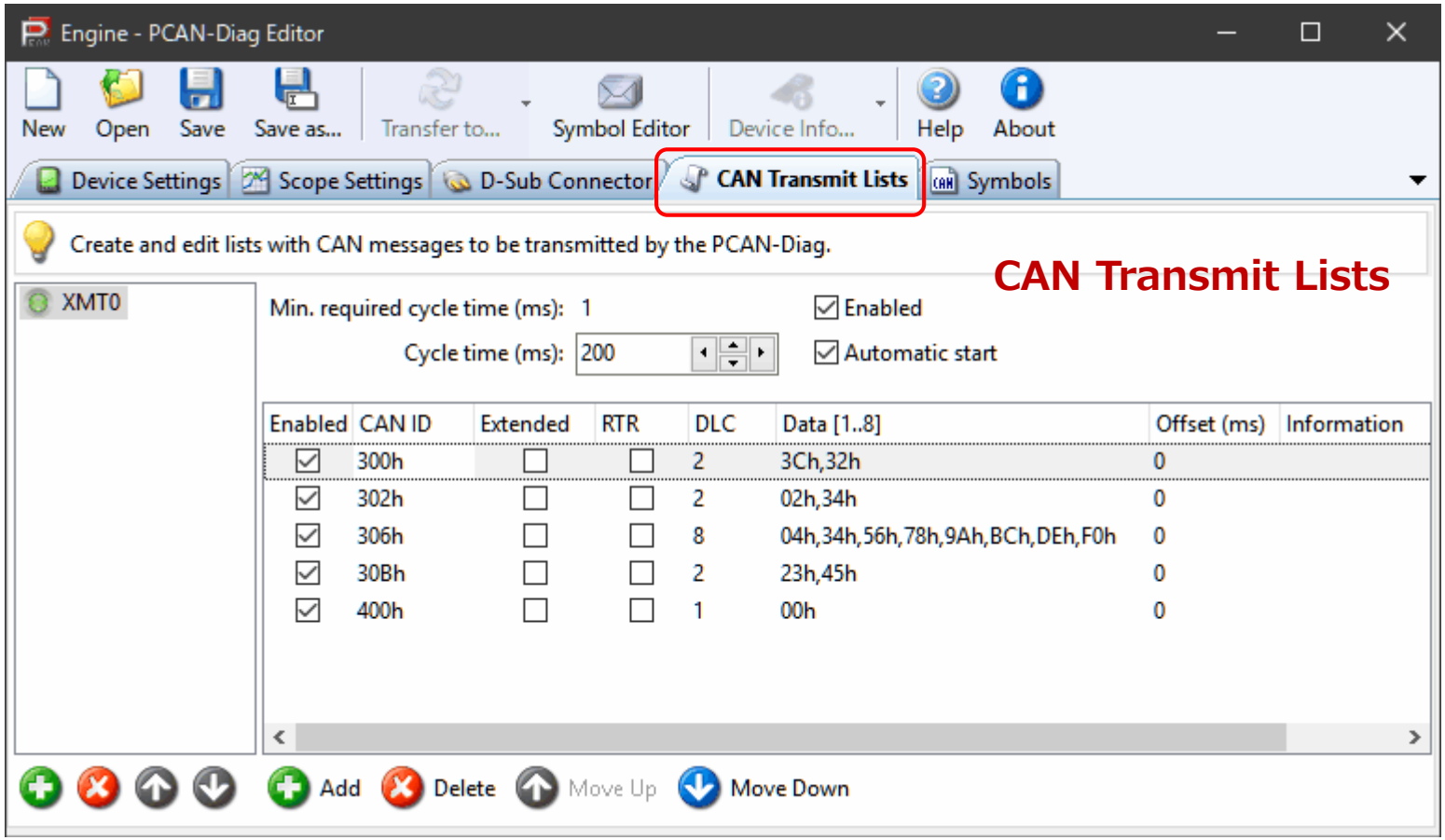
Name	Value	Information
Pin 1	Defines measurement settings for the D-Sub pin 1.	
Name	Pin 1	Name of pin 1 can be edited here (max. 11 characters).
Enabled	Yes	Activates measurement of pin 1 voltage. Disabling will increase sample rate for the other pins.
Min (mV)	0	Sets the minimum allowed voltage level (-32000 - 32000).
Max (mV)	0	Sets the maximum allowed voltage level (-32000 - 32000).
Alarm	Off	Activates beeper when measured voltage exceeds defined range.
Pin 2	Defines measurement settings for the D-Sub pin 2.	
Name	CAN-Low	Name of pin 2 can be edited here (max. 11 characters).
Enabled	Yes	Activates measurement of pin 2 voltage. Disabling will increase sample rate for the other pins.
Min (mV)	0	Sets the minimum allowed voltage level (-32000 - 32000).
Max (mV)	0	Sets the maximum allowed voltage level (-32000 - 32000).
Alarm	Off	Activates beeper when measured voltage exceeds defined range.
Pin 3	Defines measurement settings for the D-Sub pin 3.	
Name	CAN-GND	Name of pin 3 can be edited here (max. 11 characters).
Enabled	Yes	Activates measurement of pin 3 voltage. Disabling will increase sample rate for the other pins.
Min (mV)	0	Sets the minimum allowed voltage level (-32000 - 32000).
Max (mV)	0	Sets the maximum allowed voltage level (-32000 - 32000).
Alarm	Off	Activates beeper when measured voltage exceeds defined range.
Pin 4	Defines measurement settings for the D-Sub pin 4.	
Name	Pin 4	Name of pin 4 can be edited here (max. 11 characters).
Enabled	No	Activates measurement of pin 4 voltage. Disabling will increase sample rate for the other pins.
Min (mV)	0	Sets the minimum allowed voltage level (-32000 - 32000).
Max (mV)	0	Sets the maximum allowed voltage level (-32000 - 32000).
Alarm	Off	Activates beeper when measured voltage exceeds defined range.
Pin 5	Defines measurement settings for the D-Sub pin 5.	
Name	CAN-SW	Name of pin 5 can be edited here (max. 11 characters).
Enabled	No	Activates measurement of pin 5 voltage. Disabling will increase sample rate for the other pins.
Min (mV)	0	Sets the minimum allowed voltage level (-32000 - 32000).

PCAN-Diag Editor D-Subコネクタ(2)

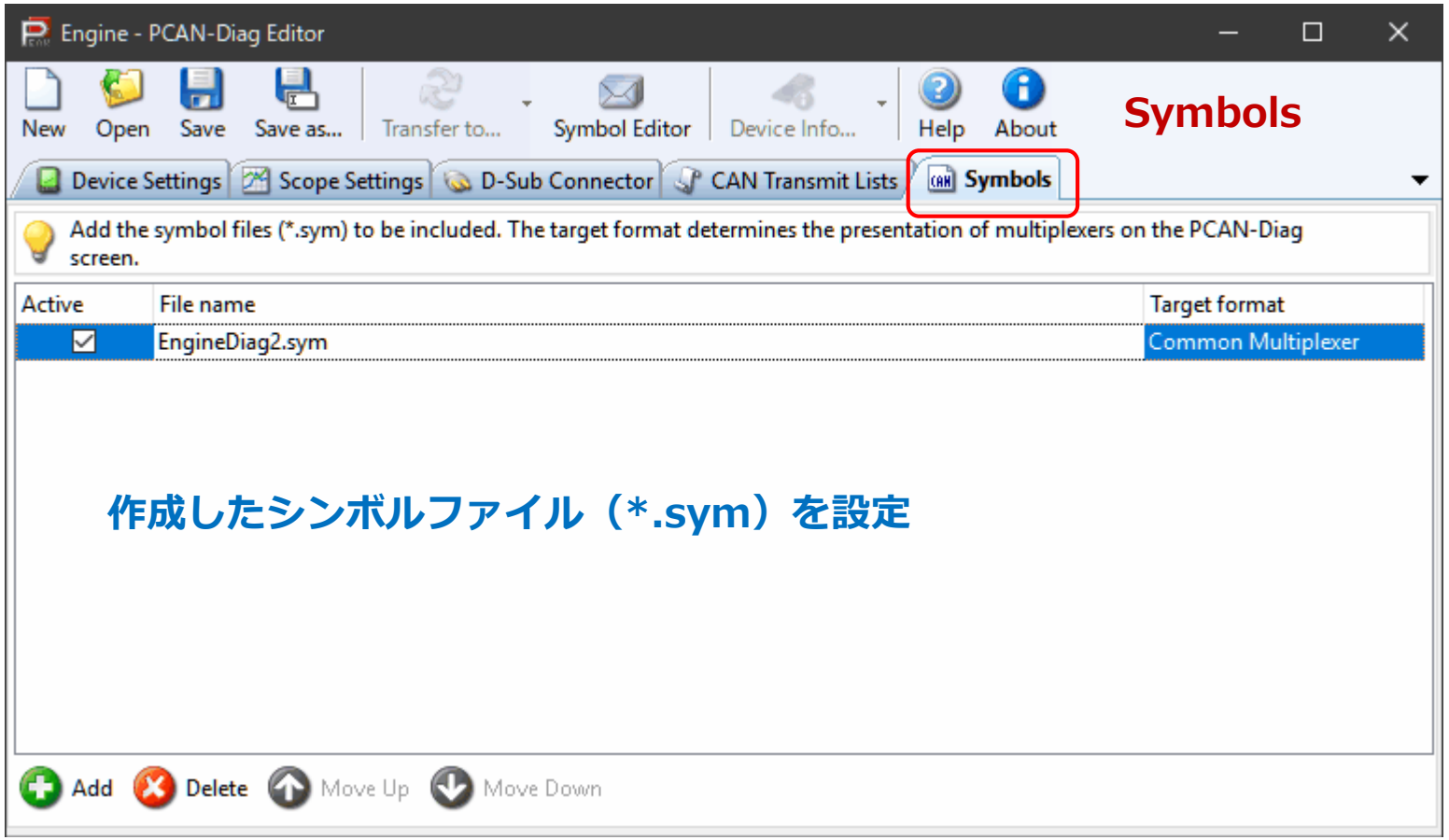


Name	Value	Information
Enabled	No	Activates measurement of pin 5 voltage. Disabling will increase sample rate for the other pins.
Min (mV)	0	Sets the minimum allowed voltage level (-32000 - 32000).
Max (mV)	0	Sets the maximum allowed voltage level (-32000 - 32000).
Alarm	Off	Activates beeper when measured voltage exceeds defined range.
Pin 6	Defines measurement settings for the D-Sub pin 6.	
Name	CAN-GND	Name of pin 6 can be edited here (max. 11 characters).
Enabled	No	Activates measurement of pin 6 voltage. Disabling will increase sample rate for the other pins.
Min (mV)	0	Sets the minimum allowed voltage level (-32000 - 32000).
Max (mV)	0	Sets the maximum allowed voltage level (-32000 - 32000).
Alarm	Off	Activates beeper when measured voltage exceeds defined range.
Pin 7	Defines measurement settings for the D-Sub pin 7.	
Name	CAN-High	Name of pin 7 can be edited here (max. 11 characters).
Enabled	Yes	Activates measurement of pin 7 voltage. Disabling will increase sample rate for the other pins.
Min (mV)	0	Sets the minimum allowed voltage level (-32000 - 32000).
Max (mV)	0	Sets the maximum allowed voltage level (-32000 - 32000).
Alarm	Off	Activates beeper when measured voltage exceeds defined range.
Pin 8	Defines measurement settings for the D-Sub pin 8.	
Name	Pin 8	Name of pin 8 can be edited here (max. 11 characters).
Enabled	No	Activates measurement of pin 8 voltage. Disabling will increase sample rate for the other pins.
Min (mV)	0	Sets the minimum allowed voltage level (-32000 - 32000).
Max (mV)	0	Sets the maximum allowed voltage level (-32000 - 32000).
Alarm	Off	Activates beeper when measured voltage exceeds defined range.
Pin 9	Defines measurement settings for the D-Sub pin 9.	
Name	Pin 9	Name of pin 9 can be edited here (max. 11 characters).
Enabled	No	Activates measurement of pin 9 voltage. Disabling will increase sample rate for the other pins.
Min (mV)	0	Sets the minimum allowed voltage level (-32000 - 32000).
Max (mV)	0	Sets the maximum allowed voltage level (-32000 - 32000).
Alarm	Off	Activates beeper when measured voltage exceeds defined range.

PCAN-Diag Editor CAN送信リスト

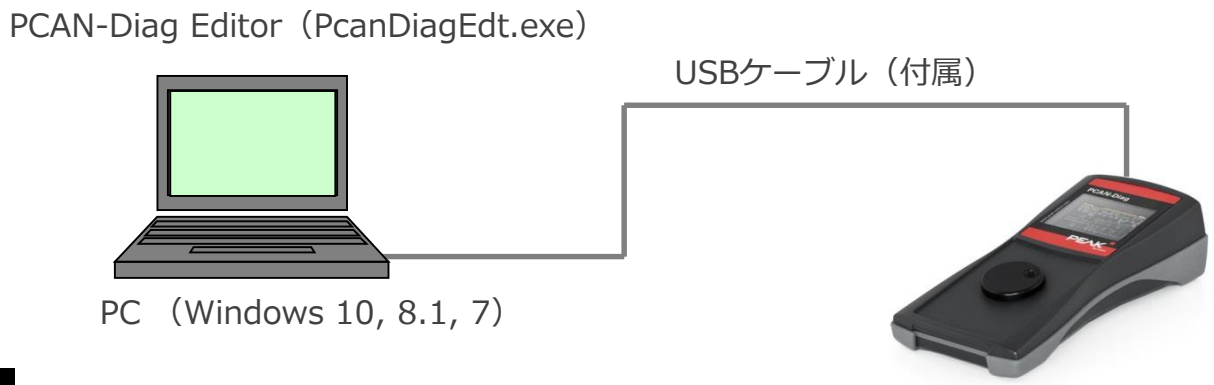


PCAN-Diag Editor シンボル



プロジェクト転送・ロード

- USB接続（PC [Type-A] ⇔ PCAN-Diag [Micro-B]）
- PCAN-Diag Editor起動
  - Transfer to...
- PCAN-Diag操作
  - Projects > Load Project



トレース & プレイバック

- トレース（記録）
  - 操作： CAN Data > Trace Messages
- プレイバック（再生）
  - 操作： CAN Data > Play Back Trace
- コンバータ
  - PRODUCT DVD
    - Tools¥PCAN-Diag¥PCAN-DiagV2¥Tools¥PEAK-Converter.exe
  - テキストベースのフォーマットに変換
    - CSV
    - asc（Vectorトレースフォーマット）
    - Trc（PEAK-Systemトレースフォーマット）