

Evaluation and Programming Tool for POSIC Encoder Kits

Product data

Contents

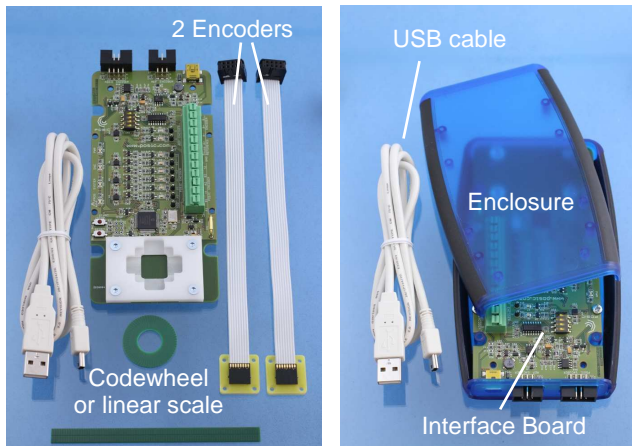


Fig. 1: Evaluation Tool (left) and Programming Tool (right).

The Evaluation Tool contains either a codewheel with 64 periods and outer diameter 28.2 mm or a 2-track linear scale of 100 mm length with a centered index. Both targets fit in the white plastic target holder.

Interface Board

The board contains several LEDs as listed below:

- PWR (red): Interface Board powered via USB
- ENC (red): Encoder active
- SYSTEM (red): Microcontroller active
- PROG (yellow): Programming of OTP (One Time Programmable) memory is ongoing
- Signal LEDs (red): encoder output signals

The encoder signals are visualized by the signal LEDs and can be measured on the TestPins and the Terminal Block.

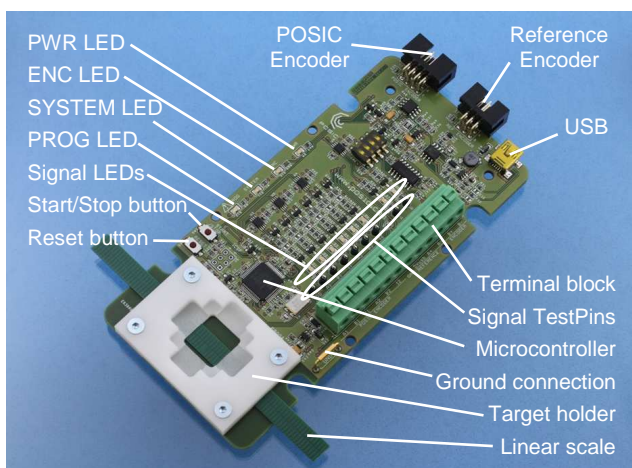


Fig. 2: The Interface Board

Operation without PC

The Interface Board is operated without PC by connecting the USB-cable to a mains-to-USB converter, Fig. 3. Start or stop the encoder by pressing the "Start/Stop" button.

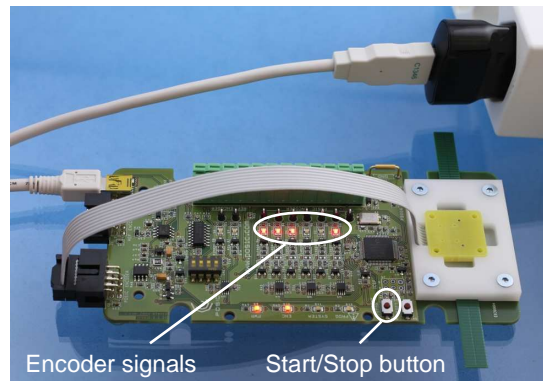


Fig. 3: The Interface Board operated without PC

Operation with PC

The Interface Board is operated with a PC using the USB cable and the ASSIST software.

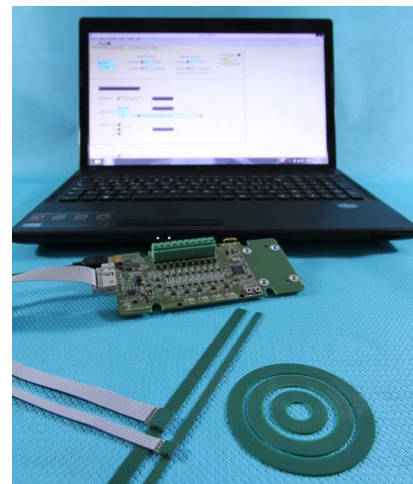


Fig. 4: The Interface Board operated with PC

Software

The ASSIST software allows you to configure, evaluate and linearize POSIC encoder kits. These three functions are available in three windows as explained below.

Configuration

The configuration window allows you to:

- Choose between rotary and linear measurement
- Define the resolution of the reference encoder
- Define the codewheel or scale of the POSIC encoder
- Select the resolution of the POSIC encoder
- Select the LookUp Table
- Define 3 encoder identification numbers

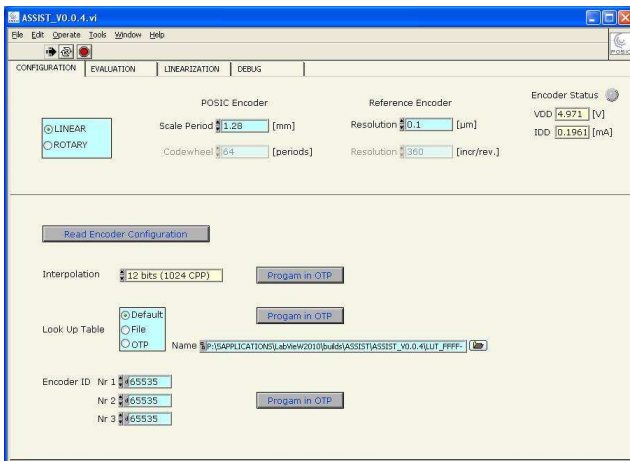


Fig. 5: Configuration window

Evaluation

The evaluation window allows you operate the encoder and shows the measured position of the POSIC- and reference-encoder.

Linearization

The linearization window allows to compensate the periodic non-linearity (NL) of the encoder by means of a LookUp Table (LUT) that can be stored in volatile memory (RAM) or in non-volatile memory (OTP = One Time Programmable).

Three linearization methods are available:

- Manual: Measurement in steps adjusted with microscrew
- File: Measurement via external data acquisition system
- Automatic: Measurement via Interface Board

The linearization sequence:

- 1) Measure with Default LUT in RAM
- 2) Measure with calculated LUT in RAM
- 3) Program the LUT in the OTP memory of the encoder
- 4) Save the linearization data

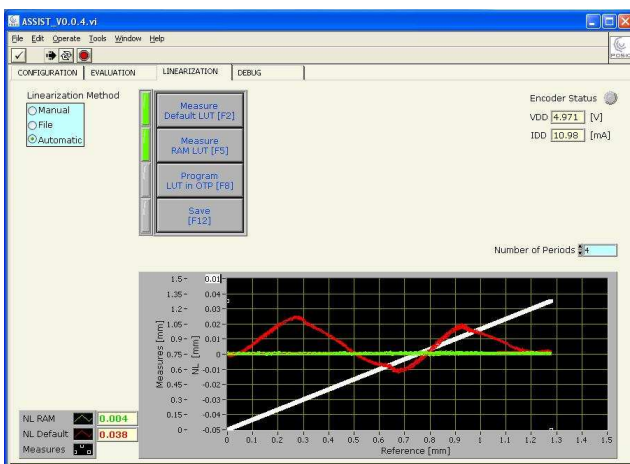


Fig. 7: Linearization window; red line prior to linearization NL 38 um; green line after linearization NL 4 um.

Debug

The Debug window allows you to check the Interface Board and the encoder if a problem occurs:

- Check Interface Board firmware revision number
- Check Interface Board supply voltage
- Check encoder connections (all outputs toggle on/off)
- Check the encoder supply voltage and current

Encoder Status

The encoder status is shown at the top right side of each window. The indicator turns red when the encoder is activated. The encoder's supply voltage and current are measured at the moment that the encoder is activated.

When the encoder-indicator is off, the encoder is not active and may be disconnected or replaced by another encoder.

When a short-circuit occurs between the supply lines or between an output and a supply line, the IDD display turns red and the encoder is turned off.



Fig. 8: Encoder status

Requirements

- PC operation: MicroSoft Windows XP or similar
- Linearization: reference encoder with A quad B outputs

Types of encoders

The Interface Board and the software are compatible to the following encoder kits:

- ID1101L/C/G with linear scale, codewheel or gear
- ID1301L/C/G with linear scale, codewheel or gear
- IT3401L/C with linear scale or codewheel

User manual

A user manual for the Interface Board and the ASSIST software can be downloaded from POSIC's website.

Ordering information

Eval. & Progr. Tool: **EPT002- Encoder**

Suited for: Evaluation and prototyping
Including: Interface Board, USB cable, 2 encoders with cable/connector, codewheel or linear scale.

Encoder: ID1101L/C/G, ID1301L/C/G or IT3401L/C; to be specified according to the respective datasheet.

Programming Tool: **PT002**

Suited for: Programming during production
Including: Interface Board, enclosure and USB-cable. Excluding encoders, codewheel/scale and target holder.

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