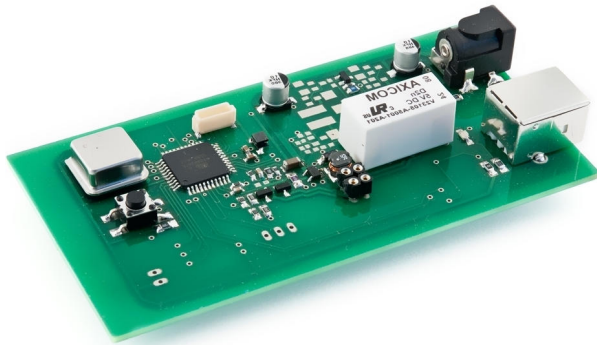


ZE081-02-001



- ATMega644 with 64k Flash / 4k SRAM
- Programmable via ISP
- Single +5V/1A power supply
- Communication via USB / UART bridge
- Encoder connector
- additional μC pins for external signals
- AAT4900 power stage

Technical Data

Microcontroller	ATMega644	Power stage	AAT4900
Operating Speed	20 MHz	min. power supply	+4,5V / 1A
power supply ATMega644	+5V via USB	max. power supply	+5,5V / 2A
Quadrature encoder connector	JST06	Dimensions	50 x 95 x 20 mm
power supply Encoder	+5V via USB		
USB communication	Via FT232 - USB/UART bridge		
Microcontroller pin for external signals	2 pins		

Product Description:

The ZE081-02-001 is a small X15G - driver kit based on an ATMega644 microcontroller and an AAT4900 power stage. The ZE081-02-001 is designed for driving two Elliptec X15G piezo motor sequential via USB commands. If position feedback is required, an external quadrature encoder can be connected on the board via JST06 connector.

Because of the large Flash/SRAM, the fast 20MHz operating speed and the additional 2 microcontroller pins which can be accessed via pin header, the ZE081-02-001 board is also suitable for building own applications.

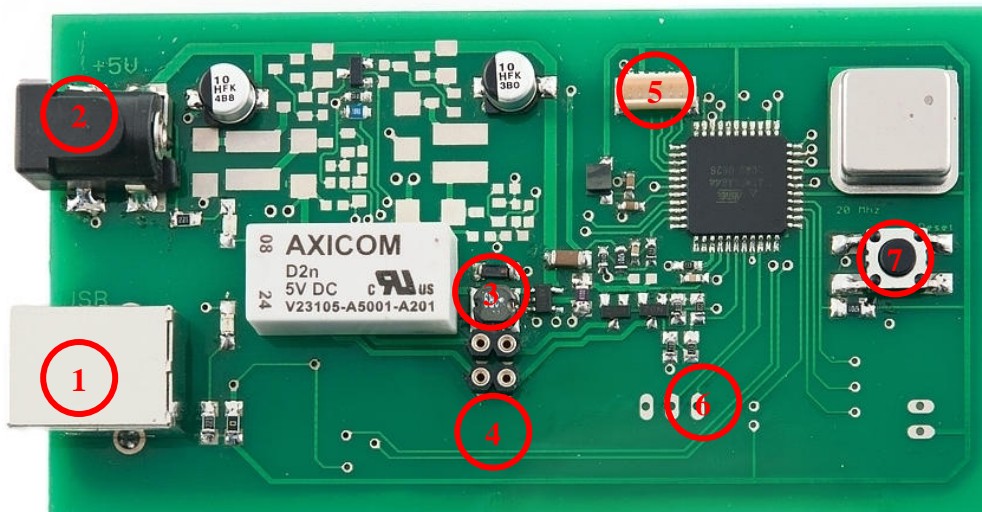
Implemented software modules:

- Detecting the optimal driving frequencies in both directions
- Forward / backward motion of the X15G for defined time which is send via USB-commands.

Additionally the ZE081-02-001 can be upgraded with new software modules which can be found on the Elliptec website.

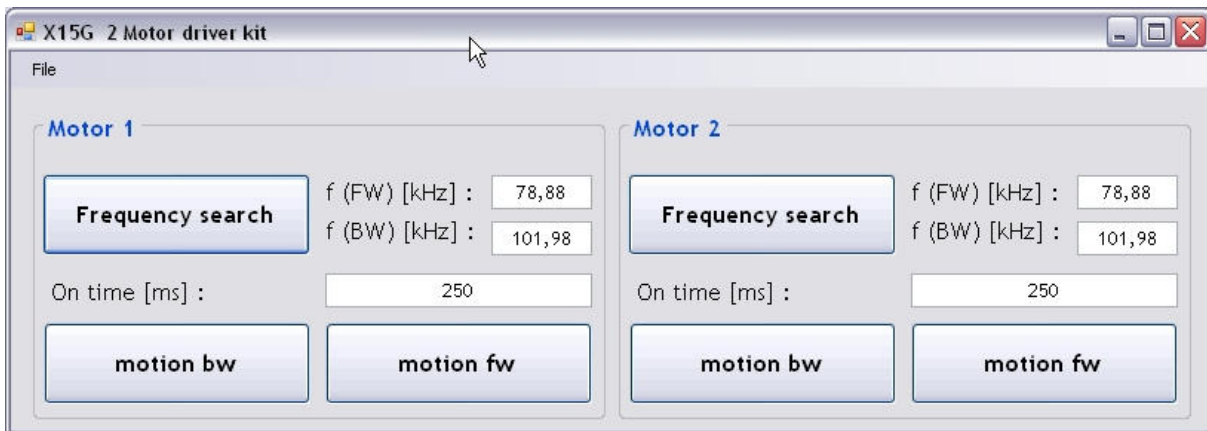
Pin - Connection

Rev. 09.09 valid from September 2009



1. USB connector
2. +5V/1A Power supply for power stage
3. Motor 1 connector
4. Motor 2 connector
5. Quadrature encoder connector
6. 2 additional μ C pins for external signals
7. reset button

PC - Interface:



Frequency search:

- After a power on reset or simple reset the driving frequencies of each motor have to be detected. Therefore the “Frequency search” button has to be pressed.

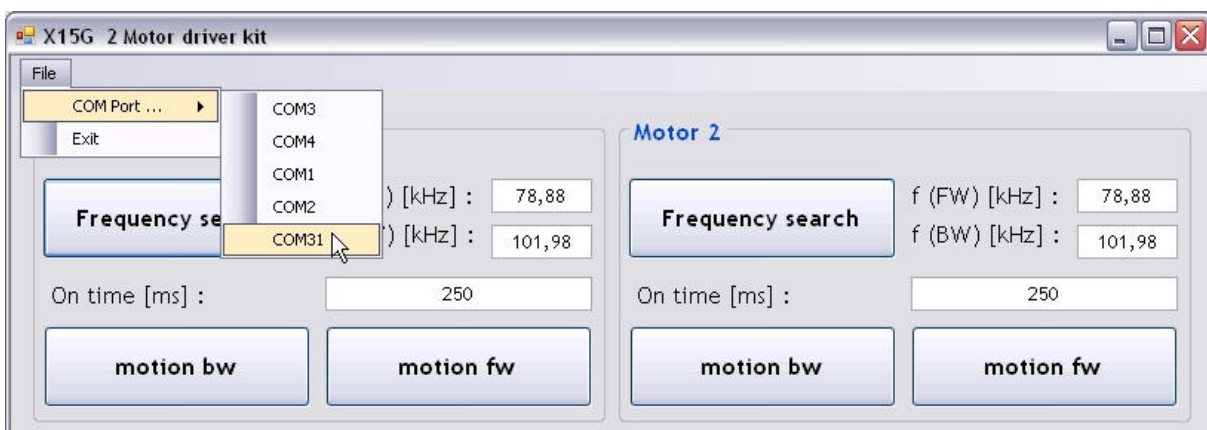
motion fw:

- By pressing the “motion fw” button the motor is initiated to run in forward direction for the given time in the “On time [ms]” text box.

motion bw:

- By pressing the “motion bw” button the motor is initiated to run in backward direction for the given time in the “On time [ms]” text box.

Initialization of the driver Kit



Before the driver kit is ready to be used, the com-port has to be selected like in the picture above.

Initialization of the driver Kit - error messages



If the wrong COM-Port is selected an error message is displayed like in the picture above.



If a wrong “On-time” value is selected an error message is displayed like in the picture above. Valid values are between 1 ... 9999 ms.

Communication parameters

Baud rate:	500.000
Data Bits :	8
Parity:	no
Stop Bits:	1
Handshake:	none

Commands

Each command contains 10 characters and is composed as followed :

- start sign, address, motion time, xx , end sign
- each command is answered with some information's like frequencies or motion time, depending on the command and an end sign (Eot)

Star sign :	0
Address :	5
Command	
Motion time	0001 ... 9999
	xx
End sign	B

The following commands are supported by the ZE081-02-001 kit:

9	Detecting the com port
0	Forward motion of motor 1 for defined time
1	Backward motion of motor 1 for defined time
2	Forward motion of motor 2 for defined time
3	Backward motion of motor 2 for defined time
4	Detecting the optimal driving frequencies for motor 1
5	Detecting the optimal driving frequencies for motor 2

Command - Examples

Examples:

Command	Description	Answer
054xxxxxxxxB	Frequency search of motor 1	250;200Eot
055xxxxxxxxB	Frequency search of motor 2	250;200Eot
0500255xxB	Forward motion of motor 1 for 255 ms	255Eot
0510255xxB	Backward motion of motor 1 for 255 ms	255Eot
0520255xxB	Forward motion of motor 2 for 255 ms	255Eot
0530255xxB	Backward motion of motor 2 for 255 ms	255Eot
059xxxxxxxxB	Detecting com port	COMEot