

### General Description

The CO401GW-EVA is an evaluation board for the high performance CANopen-Gateway-Chip CO401GW1. The chip enables serial connections to a standard CANopen network.

The Chip CO401-Gateway1 is implemented as CO401A-BD module. The CO401GW-Eva allows to start serial transmission to CANopen network immediately. It's only necessary to configure the serial baud rate and the CAN-baud rate and Identifier. A RS232 driver is on board and allows the connection to a standard asynchronous serial interface.

All configuration pins are wired to dipswitches and the I/O signals of the CO401GW1 chip are wired to plugs. Additionally the I/O signals of the CO401GW1 are indicated by LEDs and the inputs can be connected to low or high potential by jumper settings.

### Applications

- Connection of microcontroller applications to CANopen networks
- CANopen slave controller for existing applications

### Features

- Evaluation Board for CANopen-Gateway-Chip CO401GW1 - Interface for using UART with programmable baud rate
- According to CiA Draft Standards DS301 Version 4.0 and DS401 Version 2
- CAN Transceiver 80C251
- RS232 Drivers
- CAN baud rate up to 1MBit
- Watchdog output
- Dimensions ( 126mm x 80 mm )

### CANopen Features

- 2 Transmit- and 2 Receive PDOs
- Variable PDO identifier
- All CANopen specific PDO transmission types supported: synchronous, asynchronous, event driven, cyclic, acyclic and remote frame dependent.
- Event timer and inhibit timer features for all transmit PDOs.
- Storing and restoring of object dictionary to non-volatile memory
- Node guarding, Life guarding, Heartbeat
- Emergency messages
- Minimum boot up

### Configuration

The configuration of the CO401-Gateway-Chip will be set with dip switches SW1, SW2 and SW3.

DIP switch SW1								
Switch Nr. and CO401 Pin								Function
1	2	3	4	5	6	7	8	
CAN-Terminator	ID6	ID5	ID4	ID3	ID2	ID1	ID0	
ON								CAN-Terminator-Resistor On
OFF								CAN-Terminator-Resistor OFF
	X	X	X	X	X	X	X	Node ID
	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Node ID = Programmable ID
	OFF	OFF	OFF	OFF	OFF	OFF	ON	Node ID = 1
	OFF	OFF	OFF	OFF	OFF	ON	OFF	Node ID = 2
	OFF	OFF	OFF	OFF	OFF	ON	ON	Node ID = 3
	..	..	..	..	..	..	..	
	ON	ON	ON	ON	ON	ON	OFF	Node ID = 126
	ON	ON	ON	ON	ON	ON	ON	Node ID = 127

DIP switch SW2									
Switch Nr. and CO401 Pin								Function	
1	2	3	4	5	6	7	8		
BD2	BD1	BD0	CFG2	CFG1	CFG0	EMY1#	EMY0#		
X	X	X							Baud rate selection
OFF	OFF	OFF							1 Mbit / sec
OFF	OFF	ON							800 kbit / sec
OFF	ON	OFF							500 kbit / sec
OFF	ON	ON							250 kbit / sec
ON	OFF	OFF							125 kbit / sec
ON	OFF	ON							50 kbit / sec
ON	ON	OFF							20 kbit / sec
ON	ON	ON							10 kbit / sec
			X	X	X			Operation Mode ( CFG1 and CFG2 are reserved for future applications )	
			X	X	OFF			Digital inputs enabled	
			X	X	ON			Digital inputs disabled	
						X	X	Emergency Inputs	

DIP switch SW3					
Switch Nr. and CO401 Pin			Function		
RSBD2	RSBD1	RSBD0	Serial Interface Baud Rate		
X	X	X	nominal	exact	
OFF	OFF	OFF	9600	9615	
OFF	OFF	ON	4800	4807	
OFF	ON	OFF	2400	2404	
OFF	ON	ON	Reserverd	-	
ON	OFF	OFF	76900	76923	
ON	OFF	ON	38400	38461	
ON	ON	OFF	19200	19230	
ON	ON	ON	Reserved	-	

### Jumper-Settings:

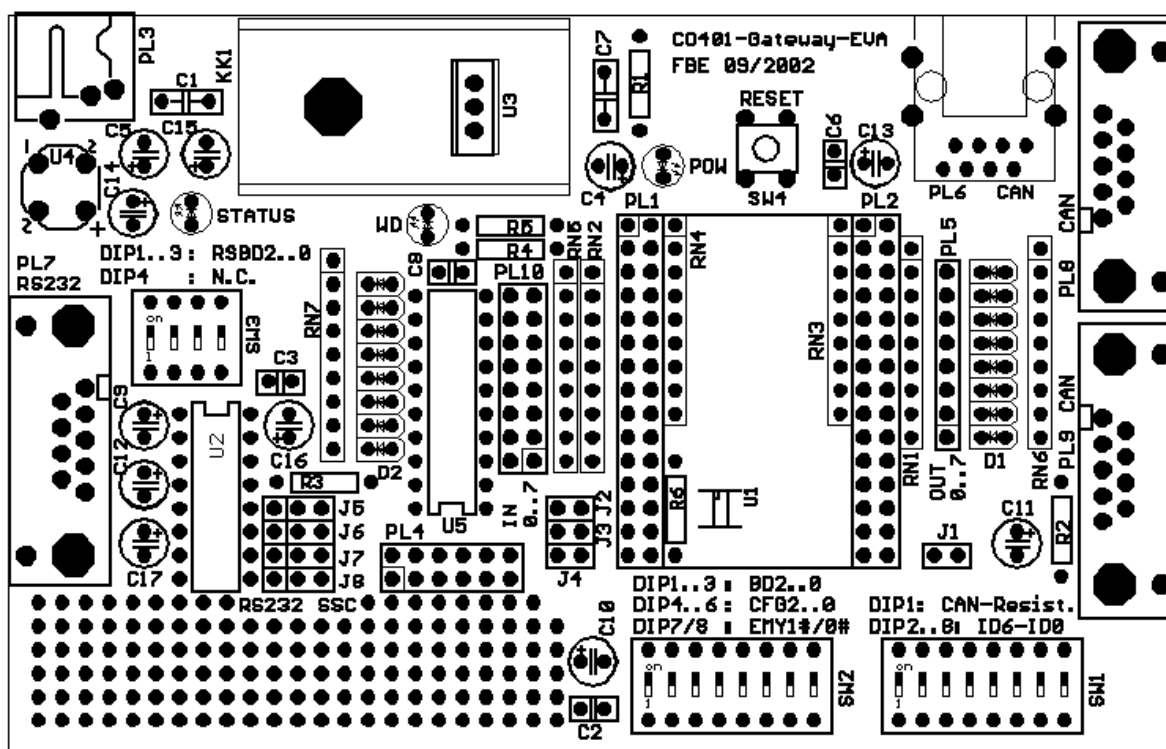
If the Jumper J1 is set after reset, the firmware update mode is activated.

With the jumpers J2, J3 and J4 the reference voltages for the AD-Converter can be applied to VCC and VSS.

The jumpers J5 and J6 are used to connect RSRXD and RSTXD to the on board RS232 driver or to the PIN-Header PL4 ( TTL-levels ).

The jumpers J7 and J8 are used to connect SSC0 and SSC1 to the on board RS232 driver, working as CTS and RTS of a synchronous serial interface ( for future applications ), or to the PIN-Header PL4 ( TTL-levels).

### Placeplan



PL5 and PL10 are implemented to connect the I/O port bits to an application hardware using simple flat cable. PL10 also may be used to place any jumpers for activation of input bits.

PL4 is implemented to connect the asynchronous serial interface signals RSTXD and RSRXD on TTL Levels, the Emergency Inputs, as well as the signals off the synchronous serial interface for future applications.

### Schematic

