

# iC-PI EVAL MQ1D

## EVALUATION BOARD DESCRIPTION

### ORDERING INFORMATION

Type	Order Designation	Description
Evaluation Board	iC-PI EVAL MQ1D	iC-PI Evaluation Board Supplied ready-to-operate (without PC adapter)
Software	iC-PI GUI	GUI Software for Windows PC For configuration of eval board and connected devices, and the definition of IC setup files. For download link check <a href="http://www.ichaus.com/pi">www.ichaus.com/pi</a>
PC Adapter	iC-MB3 ICSY MB3U-I2C	PC-USB Adapter with I2C/SPI extension cable Connects the eval board to the GUI. Download documentation at <a href="http://www.ichaus.com/tools">www.ichaus.com/tools</a>

### BOARD MQ1D

(size approx. 80 mm x 100 mm)

### TERMINAL DESCRIPTION

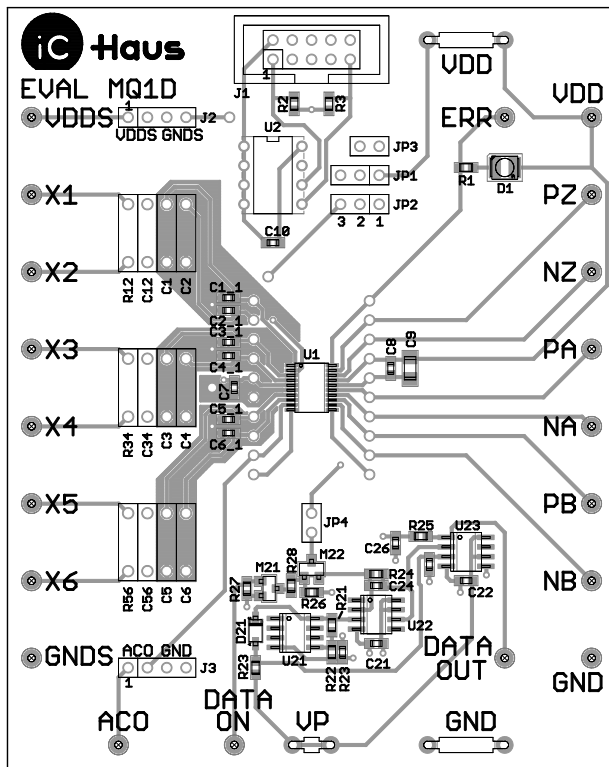


Figure 1: Component side

VDD	+5 V Supply Voltage Input For supply by PC adapter close jumper JP3 and change JP1 and JP2 to setting 1-2.
GND	0 V Ground
X1...X6	Signal Input 1...6
PZ	Signal Output Z+
NZ	Signal Output Z-
PA	Signal Output A+
NA	Signal Output A-
PB	Signal Output B+
NB	Signal Output B-
ERR	Error Signal (Input/Output)
ACO	Signal Level Controller Output High-side current source output
VDDS	Switched Supply Output (20 mA max.)
GNDS	Switched Ground Link (20 mA max.)
D1	Error LED (red) Connected to pin ERR of iC-PI
J1	10-pin Male Connector to I2C Adapter

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### RELATED DOCUMENTS

- IC documentation → <http://www.ichaus.de/pi>
- PC-USB adapter description → [http://www.ichaus.de/MB3U\\_MB3U-I2C\\_datasheet\\_en](http://www.ichaus.de/MB3U_MB3U-I2C_datasheet_en)
- GUI software for Windows PC: check here for download link → <http://www.ichaus.de/pi>
- GUI software manual: check here for download link → <http://www.ichaus.de/pi>

### PINOUT OF CONNECTORS AND TERMINALS

#### J1: I<sup>2</sup>C Interface to Master (to PC adapter)

Connector 5x2

Pin	Name	Function
1	SCL	Serial Clock Line
2	GND	Ground
3	-	-
4	+5V	Supply Voltage
5	-	-
6	-	-
7	SDA	Serial Data Line
8	-	-
9	SDA	Serial Data Line
10	GND	Ground

#### J2: Auxiliary Connection (to clip-on board)

Connector 4x1

Pin	Name	Function
1	VDDS	Switched Supply Output
2	VDDS	Switched Supply Output
3	GNDS	Switched Ground Link
4	GNDS	Switched Ground Link

#### J3: Auxiliary Connection (to clip-on board)

Connector 4x1

Pin	Name	Function
1	ACO	Signal Level Controller Output
2	ACO	Signal Level Controller Output
3	GND	Ground
4	GND	Ground

### DESCRIPTION OF JUMPERS

Jumper JP1	Function
Pos. 1-2	EEPROM supplied by VDD
Pos. 2-3	EEPROM supplied by VDDS (shipping setup)

Jumper JP2	Function
Pos. 1-2	EEPROM connected to GND
Pos. 2-3	EEPROM connected to GNDS (shipping setup)

Jumper JP3	Function
Closed	Board supplied by PC adapter.
Open	External VDD supply: connect +5 V to terminal VDD. (shipping setup)

Jumper JP4	Function
Closed	No function, not in use with iC-PI.
Open	(shipping setup)

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### SCHEMATIC CIRCUIT DIAGRAM

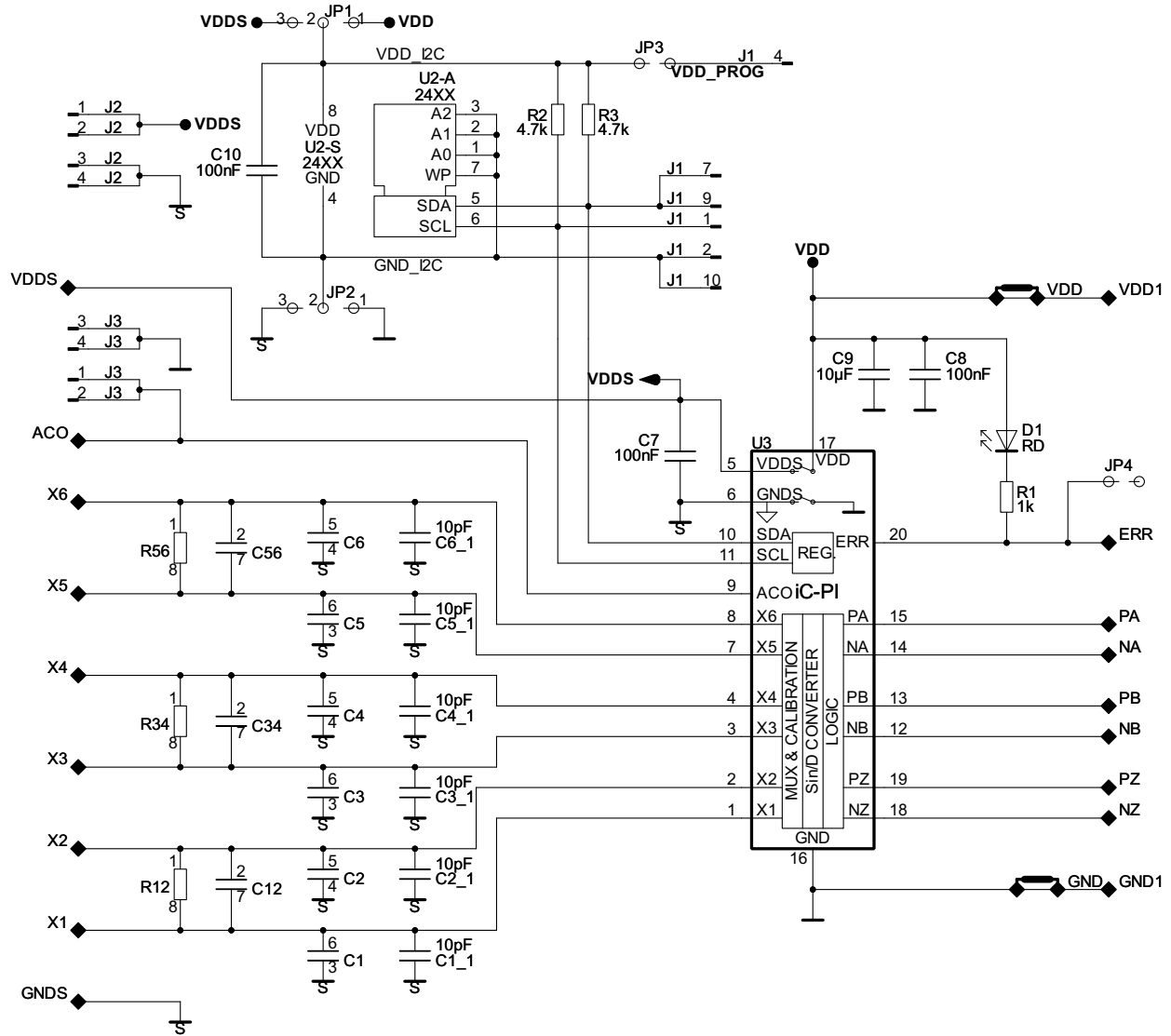


Figure 2: Circuit diagram including optional filter components

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### ASSEMBLY PARTS LIST

Components (top)	Typical Value	Population	Comment
C1, C2, C3, C4, C5, C6	10 pF, 10 %	assembled	Filter capacitors at signal inputs
C7, C8	100 nF, 20 %	assembled	Supply backup capacitors
C9	10 $\mu$ F, 20 %	assembled	Supply backup capacitor
C10	100 nF, 20 %	assembled	EEPROM backup capacitor
C12, C34, C56		optional	Input signal filtering
D1	LED red	assembled	Error/alarm indication
JP1, JP2	SL LP1 097 3 G	assembled	Jumper
JP3	SL LP1 097 2 G	assembled	Jumper
J1	WSL10G	assembled	I <sup>2</sup> C Interface connector
J2, J3	4-pin socket	assembled	
J4, J5, J6, U2	8-pin DIL socket	assembled	
R1	1 k $\Omega$ , 5 %	assembled	LED series resistor
R2, R3	4.7 k $\Omega$ , 5 %	assembled	I <sup>2</sup> C line pull-up resistors
R12, R34, R56	(120 $\Omega$ )	optional	Input signal termination
U1	iC-PI	assembled	Sine/cosine interpolation IC
U2	24C01 (DIL8)	assembled	Serial I <sup>2</sup> C EEPROM

### REVISION HISTORY

Rel.	Rel. Date*	Chapter	Modification	Page
A1	2017-08-22		Initial release	all

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\* Release Date format: YYYY-MM-DD