

iC-MSC EVAL MSB1D

EVALUATION BOARD DESCRIPTION



Rev A1, Page 1/5

ORDERING INFORMATION

Type	Order Designation	Description
Evaluation Board	iC-MSC EVAL MSB1D	iC-MSC Evaluation Board Ready-to-operate, accessible by GUI using PC adapter (not included)
Software	iC-MSC GUI	GUI software for Windows PC Device setup file generation, board configuration via adapter For download link check www.ichaus.com/msc
PC Adapter	iC-MB3 ICSY MB3U-I2C	PC-USB Adapter with I2C/SPI extension cable Download documentation at www.ichaus.com/tools

BOARD MSB1D

(size approx. 80 mm x 100 mm)

TERMINAL DESCRIPTION

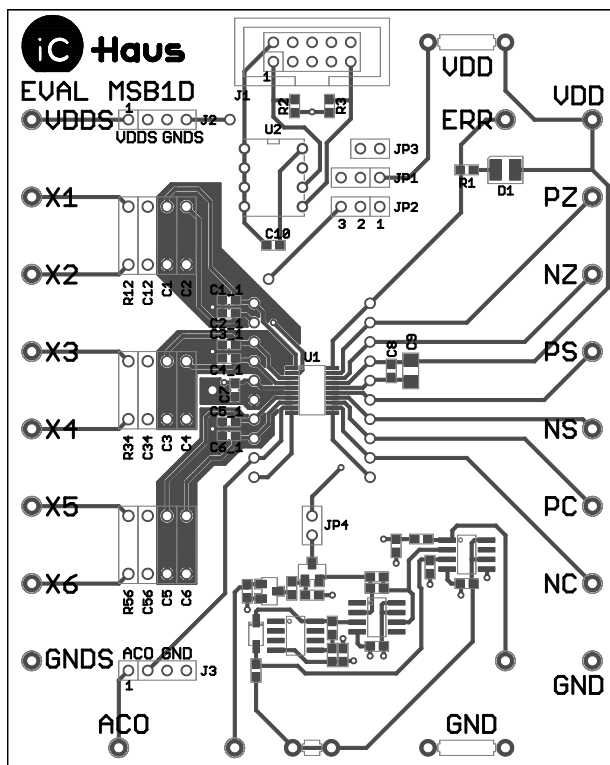


Figure 1: Component side

VDD	+5 V Supply Voltage Input (ca. 15mA) Connected to PC adapter if jumper JP3 is closed.
GND	0 V Ground
X1	Signal Input 1 (Index +)
X2	Signal Input 2 (Index -)
X3...X6	Signal Input 3...6
PZ	Signal Output Index+
NZ	Signal Output Index-
PS	Signal Output Sine+
NS	Signal Output Sine-
PC	Signal Output Cosine+
NC	Signal Output Cosine-
ERR	Error Signal (Input/Output) Test Mode Trigger Input
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-MSB.
J1	10-pin Male Connector to I2C Adapter

iC-MSC EVAL MSB1D

EVALUATION BOARD DESCRIPTION



Rev A1, Page 2/5

RELATED DOCUMENTS

- IC Documentation
→ <http://www.ichaus.de/MSC>
- PC-USB Adapter Description
→ http://www.ichaus.de/MB3U_MB3U-I2C_datasheet_en
- GUI software for Windows PC: check here for download links
→ <http://www.ichaus.de/MSC>

CONNECTOR AND TERMINAL PINOUT

10-pin Connector J1 (to I2C Master)

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

4-pin Terminal J2

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

4-pin Terminal J3

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

JUMPER DESCRIPTION

Jumper JP1	Function
Pos. 1-2	EEPROM supplied by VDD
Pos. 2-3	EEPROM supplied by VDDS

Jumper JP3	Function
Closed	VDD sourced from PC adapter
Open	External VDD supply Connect +5 V to supply VDD.

Jumper JP2	Function
Pos. 1-2	EEPROM connected to GND
Pos. 2-3	EEPROM connected to GNDS

Jumper JP4	Function
Closed	Pin ERR connected to decoding circuit (optional, components not populated.)
Open	Pin ERR disconnected from decoding circuit.

iC-MSC EVAL MSB1D

EVALUATION BOARD DESCRIPTION



Rev A1, Page 3/5

CIRCUIT SCHEMATIC

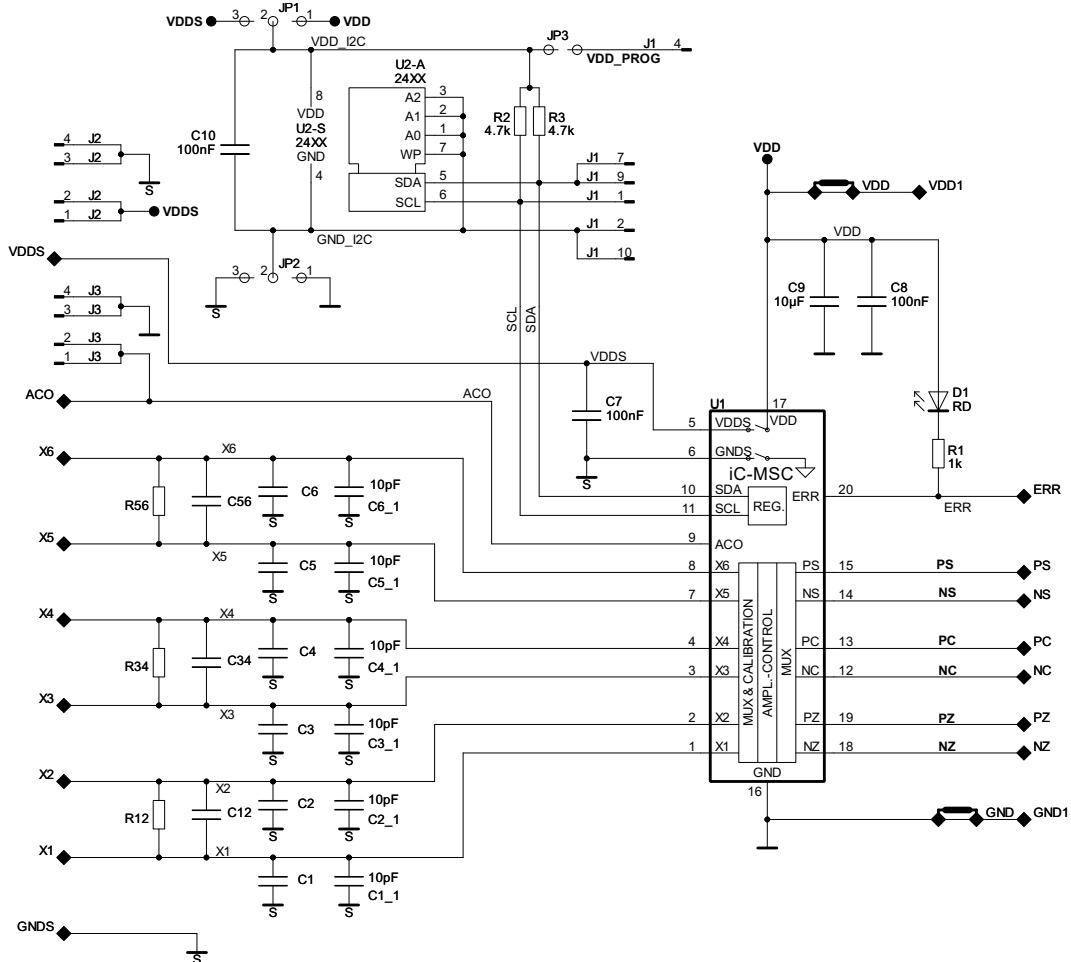


Figure 2: Circuit diagram including optional filter components.

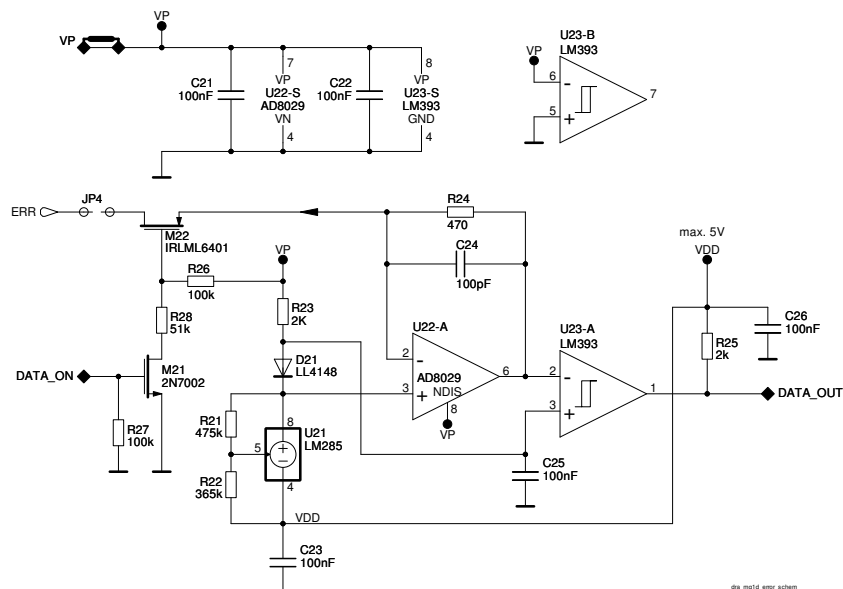


Figure 3: Error interface decoding circuit (components not populated).

iC-MSC EVAL MSB1D

EVALUATION BOARD DESCRIPTION



Rev A1, Page 4/5

ASSEMBLY PART LIST

Related to circuit diagram, Figure 2

Device	Value (typical)	Comment
U1	iC-MSC	Sine/cosine signal conditioner IC
U2	24C01 (DIL 8)	Serial EEPROM
R1	1 k Ω	LED series resistor
R2, R3	4.7 k Ω	I2C pull-up resistor
D1	LS-T670-HK	Indicator LED for alarm message
C1, C2, C3, C4, C5, C6	10 pF	Capacitors for input filter
C7, C8	100 nF	Supply backup capacitors
C9	10 μ F	Supply backup capacitor
C10	100 nF	EEPROM backup capacitor
JP1, JP2	SL LP1 097 3 G	Jumper
JP3	SL LP1 097 2 G	Jumper
JP1, JP2, JP3		Jumper cap
J1	WSL10G	I2C connector to PC-USB adapter
J2, J3	MK 01 4 G	4-pin socket
J4, J5, J6, U2		8-pin DIL socket

Related to error interface decoding circuit, Figure 3

Device	Value (typical)	Assembled	Comment
C21, C22, C23, C25, C26	100 nF	optional	
C24	100 pF	optional	
R21	475 k Ω	optional	
R22	365 k Ω	optional	
R23, R25	2 k Ω	optional	
R24	470 Ω	optional	
R26, R27	100 k Ω	optional	
R28	51 k Ω	optional	
D21	LL4148	optional	
M21	2N7002	optional	
M22	IRLML6401	optional	
U21	LM285	optional	
U22	AD8029	optional	
U23	LM393	optional	

iC-MSC EVAL MSB1D

EVALUATION BOARD DESCRIPTION



Rev A1, Page 5/5

REVISION HISTORY

Rel.	Rel. Date*	Chapter	Modification	Page
A1	2020-04-07		Initial release	all

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* Release Date format: YYYY-MM-DD