

# iC-MU EVAL MU5M

## EVALUATION BOARD DESCRIPTION



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### FUNCTIONAL MODEL; EVAL-BOARD:

This device is for laboratory use only. Due to limited testing and lack of qualification for use under all conditions, long-term performance is not guaranteed. Malfunctions and operating errors may damage the device and the connected circuit; such damage may result in personal injury to the user. Safety goggles are mandatory. All liability and option of return are terminated upon activation of the device.

### ORDERING INFORMATION

Type	Order Designation	Description Options
Evaluation Board	iC-MU EVAL MU5M	Evaluation board to be used with iC-MU EVAL MU3C. This adapter board is designed to provide easy access to the MU3C electrical interface and includes a BiSS adapter connector.

### BOARD EVAL MU5M

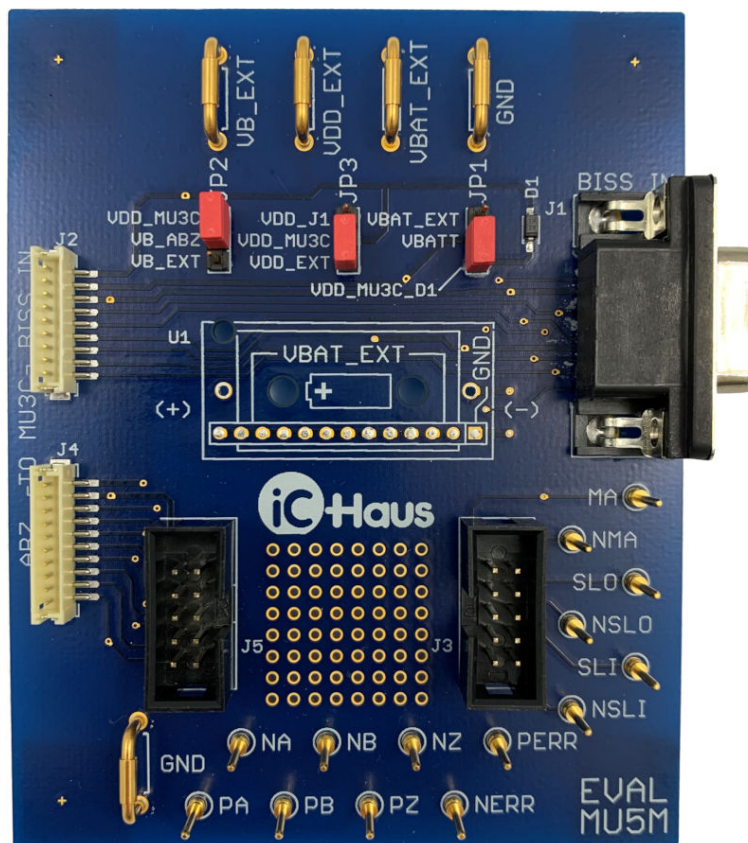


Figure 1: EVAL MU5M Top Side

### RELATED PRODUCTS AND DOCUMENTATION

- iC-MU EVAL MU3C Description  
→ [www.ichaus.de/MU3C](http://www.ichaus.de/MU3C)
- IC Documentation  
→ [www.ichaus.de/iC-MU](http://www.ichaus.de/iC-MU)  
→ [www.ichaus.de/iC-PVL](http://www.ichaus.de/iC-PVL)  
→ [www.ichaus.de/iC-HF](http://www.ichaus.de/iC-HF)  
→ [www.ichaus.de/iC-HD7](http://www.ichaus.de/iC-HD7)
- Application Notes  
→ [iC-MU AN3 \(Rotary Calibration\)](#)  
→ [iC-PVL AN2 \(Multiturn Configuration Guide\)](#)
- Magnetic Code Disc  
→ [www.ichaus.de/MU18S\\_30-32N](http://www.ichaus.de/MU18S_30-32N)
- MB4U PC-USB Adapter Description  
→ [www.ichaus.de/MB4U](http://www.ichaus.de/MB4U)
- MB5U PC-USB Adapter Description  
→ [www.ichaus.de/MB5U](http://www.ichaus.de/MB5U)

### CONNECTOR AND TERMINAL DESCRIPTION

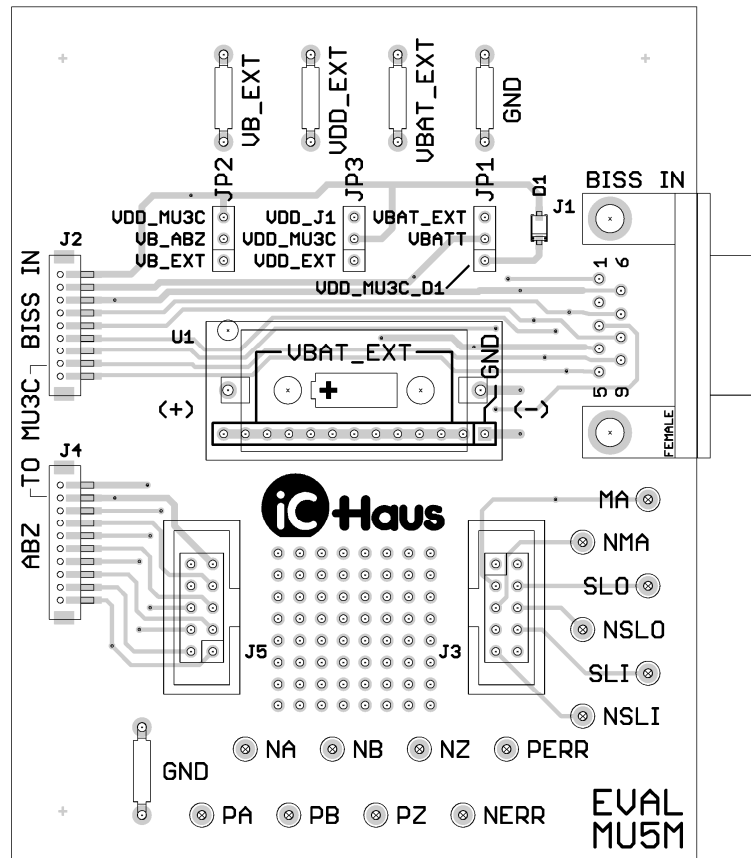


Figure 2: EVAL MU5M Top Side (80 mm x 100 mm)

#### TERMINAL DESCRIPTION

VB_EXT	External line driver supply
VDD_EXT	5V digital supply
VBAT_EXT	Battery voltage input
GND	Ground
MA	BiSS Clock P
NMA	BiSS Clock N
SLO	BiSS slave output P
NSLO	BiSS slave output N
SLI	BiSS slave input P
NSLI	BiSS slave input N
PA	A digital output P
NA	A digital output N
PB	B digital output P
NB	B digital output N
PZ	Z digital output P
NZ	Z digital output N
NERR	Error N
PERR	Error P

#### CONNECTOR DESCRIPTION

J1	BiSS interface input
J2	To MU3C BiSS In connector (9-pole)
J3	J1 breakout connector
J4	To MU3C ABZ connector (10-pole)
J5	J4 breakout connector

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### CONNECTOR PINOUT

#### J1: BiSS interface input

PIN	Name	Function
1	VB	BiSS adapter VB (not used in circuit)
2	MA	BiSS clock input P
3	NMA	BiSS clock input N
4	VDD	5V digital supply input
5	NSLI	BiSS slave in N
6	GND	Ground
7	SLO	BiSS slave out P
8	NSLO	BiSS slave out N
9	SLI	BiSS slave in P

#### J4: To MU3C ABZ connector

PIN	Name	Function
1	PERR	Error P
2	NERR	Error N
3	NZ	Z digital output N
4	PZ	Z digital output P
5	NB	B digital output N
6	PB	B digital output P
7	NA	A digital output N
8	PA	A digital output P
9	GND	Ground
10	VB_ABZ	External line driver supply

#### J2: To MU3C BiSS In connector

PIN	Name	Function
1	NSLI	BiSS slave in N
2	SLI	BiSS slave in P
3	NMA	BiSS clock input N
4	MA	BiSS clock input P
5	NSLO	BiSS slave out N
6	SLO	BiSS slave out P
7	GND	Ground
8	VBATT	Battery Voltage
9	VDD_MU3C	5V digital supply

#### J5: J4 breakout connector

PIN	Name	Function
1	PERR	Error P
2	NERR	Error N
3	NZ	Z digital output N
4	PZ	Z digital output P
5	NB	B digital output N
6	PB	B digital output P
7	NA	A digital output N
8	PA	A digital output P
9	GND	Ground
10	VB_ABZ	External line driver supply

#### J3: J1 breakout connector

PIN	Name	Function
1	VB	BiSS adapter VB (not used in circuit)
2	GND	Ground
3	MA	BiSS clock P
4	SLO	BiSS slave out P
5	NMA	BiSS clock N
6	NSLO	BiSS slave out N
7	VDD	5V digital supply
8	SLI	BiSS slave in P
9	NSLI	BiSS slave in N
10	N.C.	N.C.


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### JUMPER DESCRIPTION

Jumper	Description	Jumper Configuration	Information
JP1	 <b>WARNING:</b> Do not install a battery on the MU5M board. Always use the appropriate manufacturer recommended battery protection circuitry when connecting an external battery to the VBAT_EXT bar. Failure to do so may result in dangerous battery damage.	VBAT_EXT	iC-PVL battery supply via terminal VBAT_EXT
		VDD_MU3C_D1	iC-PVL battery supply via MU3C VDD (5V)
JP2	VB_ABZ - External line driver supply selector	VDD_MU3C	Line driver supply via MU3C VDD (5V)
		VB_EXT	Line driver supply via terminal VB_EXT
JP3	VDD_MU3C - MU3C 5V supply selector	VDD_J1	MU3C supply via J1 (BiSS adapter)
		VDD_EXT	MU3C supply via terminal VDD_EXT

### CIRCUIT SCHEMATIC

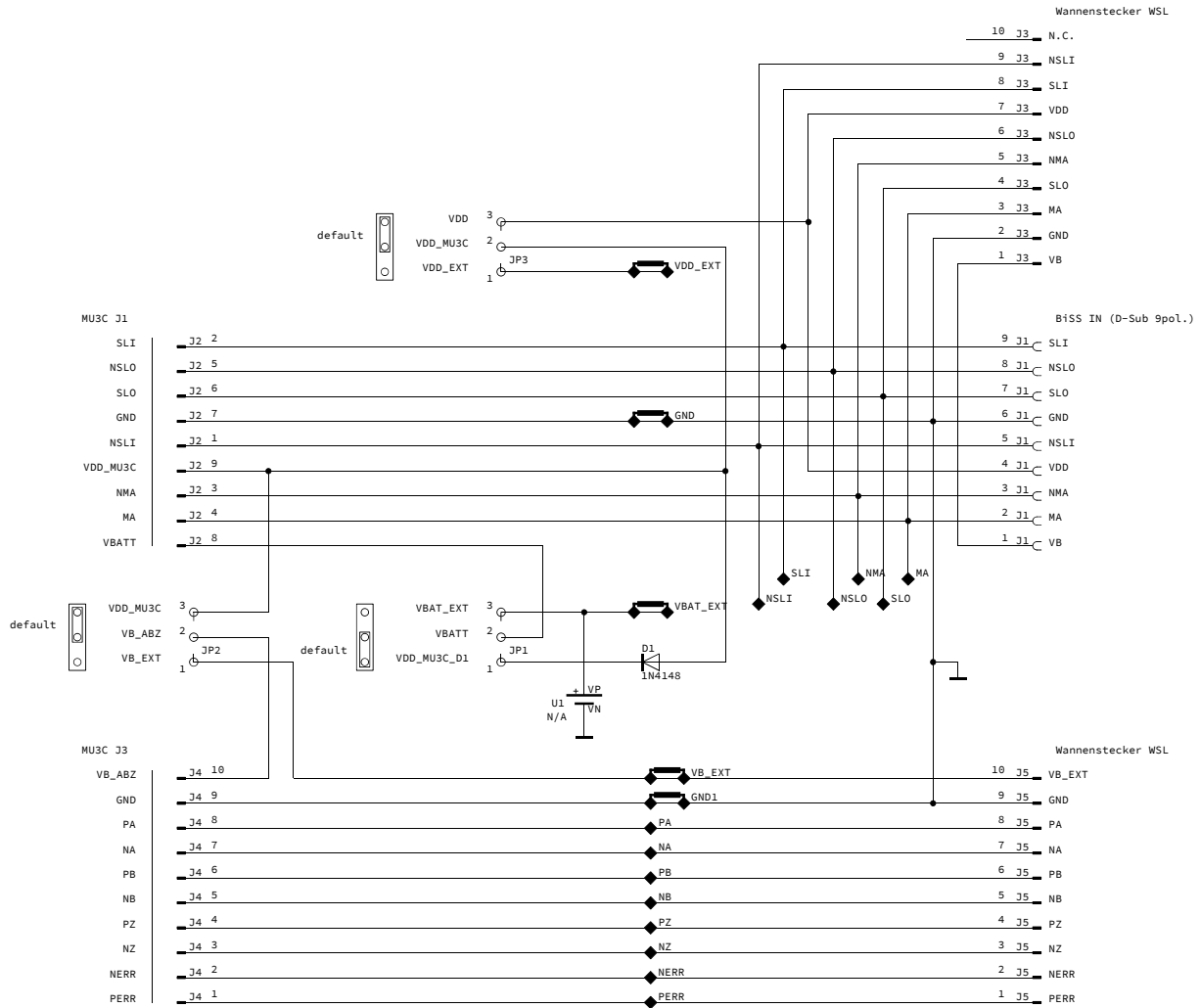


Figure 3: Circuit diagram EVAL MU5M



**WARNING:** Do not install a battery on the MU5M board (U1). Always use the appropriate manufacturer recommended battery protection circuitry when connecting an external battery to the VBAT\_EXT bar. Failure to do so may result in dangerous battery damage.

# iC-MU EVAL MU5M

## EVALUATION BOARD DESCRIPTION



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### ASSEMBLY PART LIST

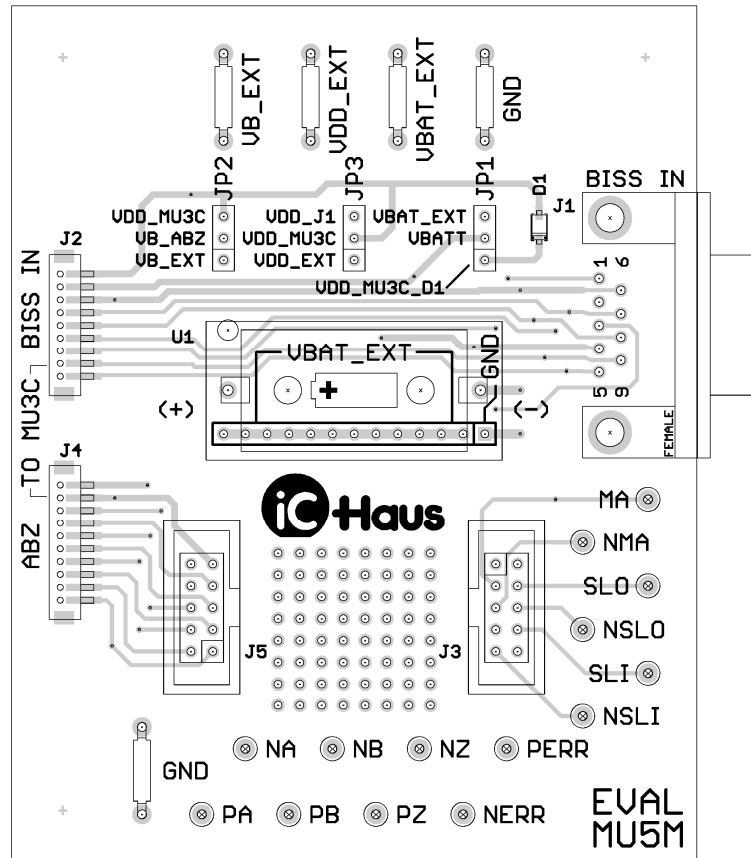


Figure 4: EVAL MU5M Top Side (80mm x 100mm)


Device	Value (typical)	Comment
D1	1N4148	SMD-D 1N4148W-V SOD123
J1		Connector 9-pole SUBD female 90°
J2		Connector 9-pole (B9B-ZR-SM4-TF)
J3		Connector 2x5-pole male (WSL10G)
J4		Connector 10-pole (B10B-ZR-SM4-TF)
J5		Connector 2x5-pole male (WSL10G)
JP1...JP3	SLLP10973G	Connector 3x1-pole 2,54 mm (SLLP10973G)
MA, NA, NB, NERR, NMA, NSLI, NSLO, NZ, PA, PB, PERR, PZ, SLI, SLO	S1-F	PIN 11,5 mm
U1		not assembled  <b>WARNING:</b> Do not install a battery on the MU5M board.
VBAT_EXT, VB_EXT, VDD_EXT, GND	LBA04G	Jumperlink 10,16 mm d=1 mm (LBA04G)

Table 1: EVAL MU5M Assembly Part List

### APPLICATION EXAMPLE

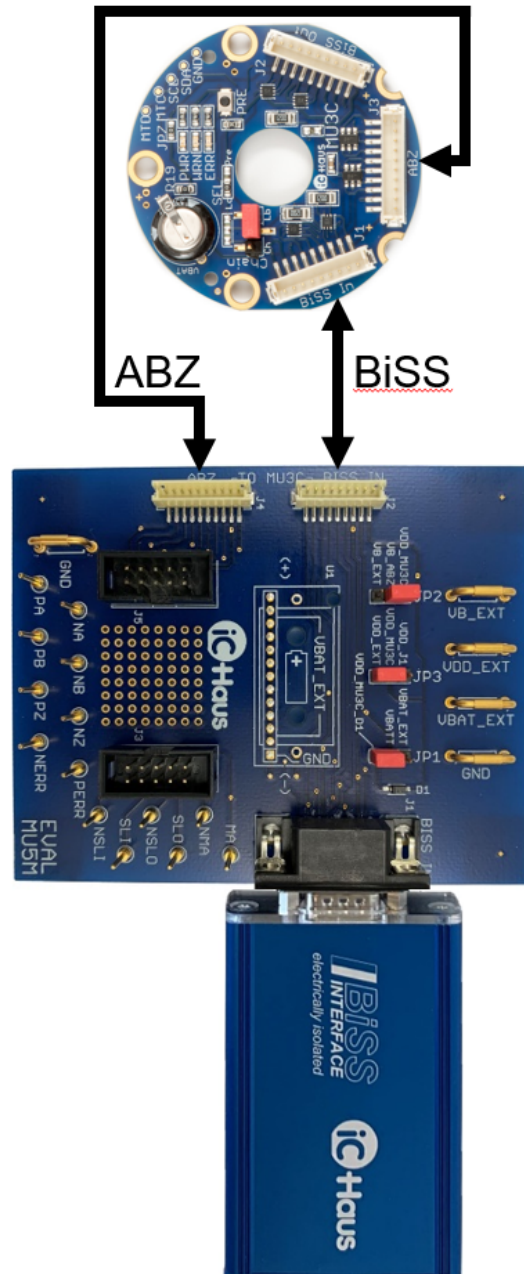


Figure 5: EVAL MU5M application example with MB5U BiSS adapter and EVAL MU3C

Required Evaluation Kit parts:

1. iC-MU EVAL MU5M
2. iC-MU EVAL MU3C
3. iC-MB5 iCSY MB5U



# iC-MU EVAL MU5M

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### REVISION HISTORY

Rel.	Rel. Date*	Chapter	Modification	Page
A1	2018-05-30		Initial Release	all

Rel.	Rel. Date*	Chapter	Modification	Page
A2	2021-07-27	BOARD EVAL MU5M	Updated EVAL MU5M picture	1
		JUMPER DESCRIPTION, CIRCUIT SCHEMATIC, ASSEMBLY PART LIST	Added battery warning	5, 6, 7
		APPLICATION EXAMPLE	Updated picture	8

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\* Release Date format: YYYY-MM-DD