iC-MU EVAL MU5M
EVALUATION BOARD DESCRIPTION

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

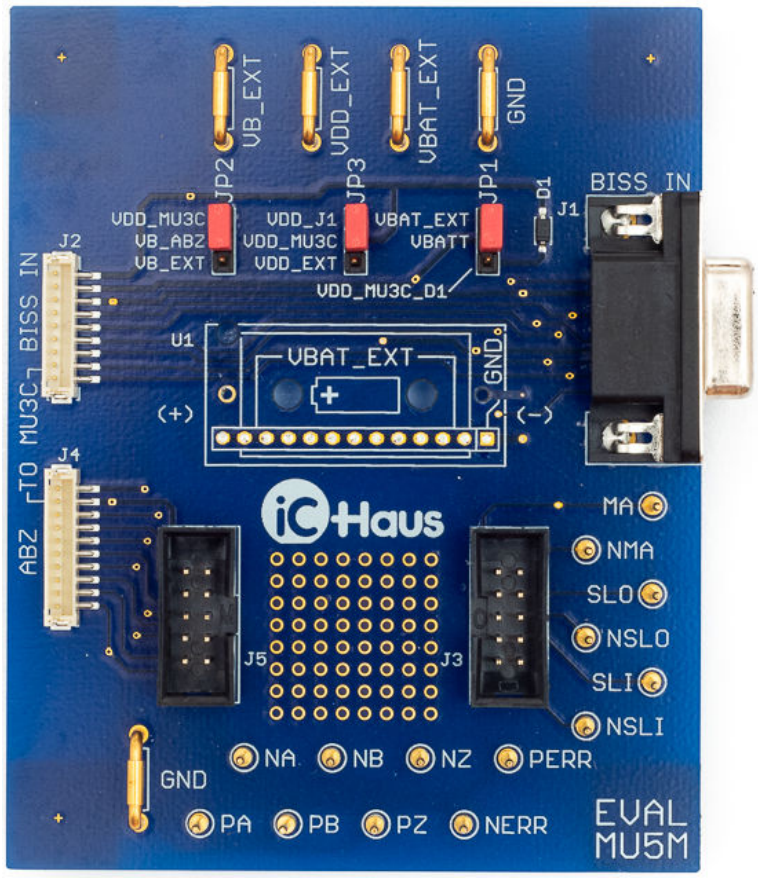

Figure 1: EVAL MU5M Top Side

RELATED PRODUCTS AND DOCUMENTATION

- iC-MU EVAL MU3C Description
  → www.ichaus.de/MU3C
- IC Documentation
  → www.ichaus.de/iC-MU
  → www.ichaus.de/iC-PVL
  → www.ichaus.de/iC-HF
  → 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
- MB4U PC-USB Adapter Description
  → www.ichaus.de/MB4U
- MB5U PC-USB Adapter Description
  → www.ichaus.de/MB5U

CONNECTOR AND TERMINAL DESCRIPTION

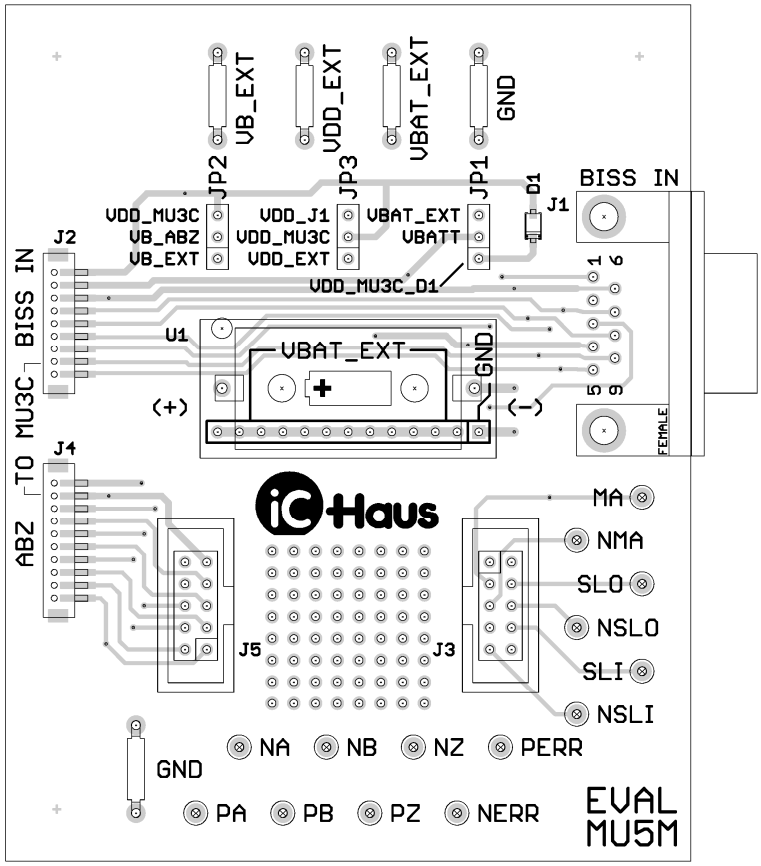

Figure 2: EVAL MU5M Top Side (80 mm x 100 mm)

TERMINAL	DESCRIPTION
VB_EXT	External line driver supply
VDD_EXT	5 V 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

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

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

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.

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

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

JUMPER DESCRIPTION

Jumper	Description	Jumper Configuration	Information
JP1	VBATT - iC-PVL battery supply selector **WARNING:** 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 (5 V)
JP2	VB_ABZ - External line driver supply selector	VDD_MU3C	Line driver supply via MU3C VDD (5 V)
		VB_EXT	Line driver supply via terminal VB_EXT
JP3	VDD_MU3C - MU3C 5 V supply selector	VDD_J1	MU3C supply via J1 (BiSS adapter)
		VDD_EXT	MU3C supply via terminal VDD_EXT

CIRCUIT SCHEMATIC

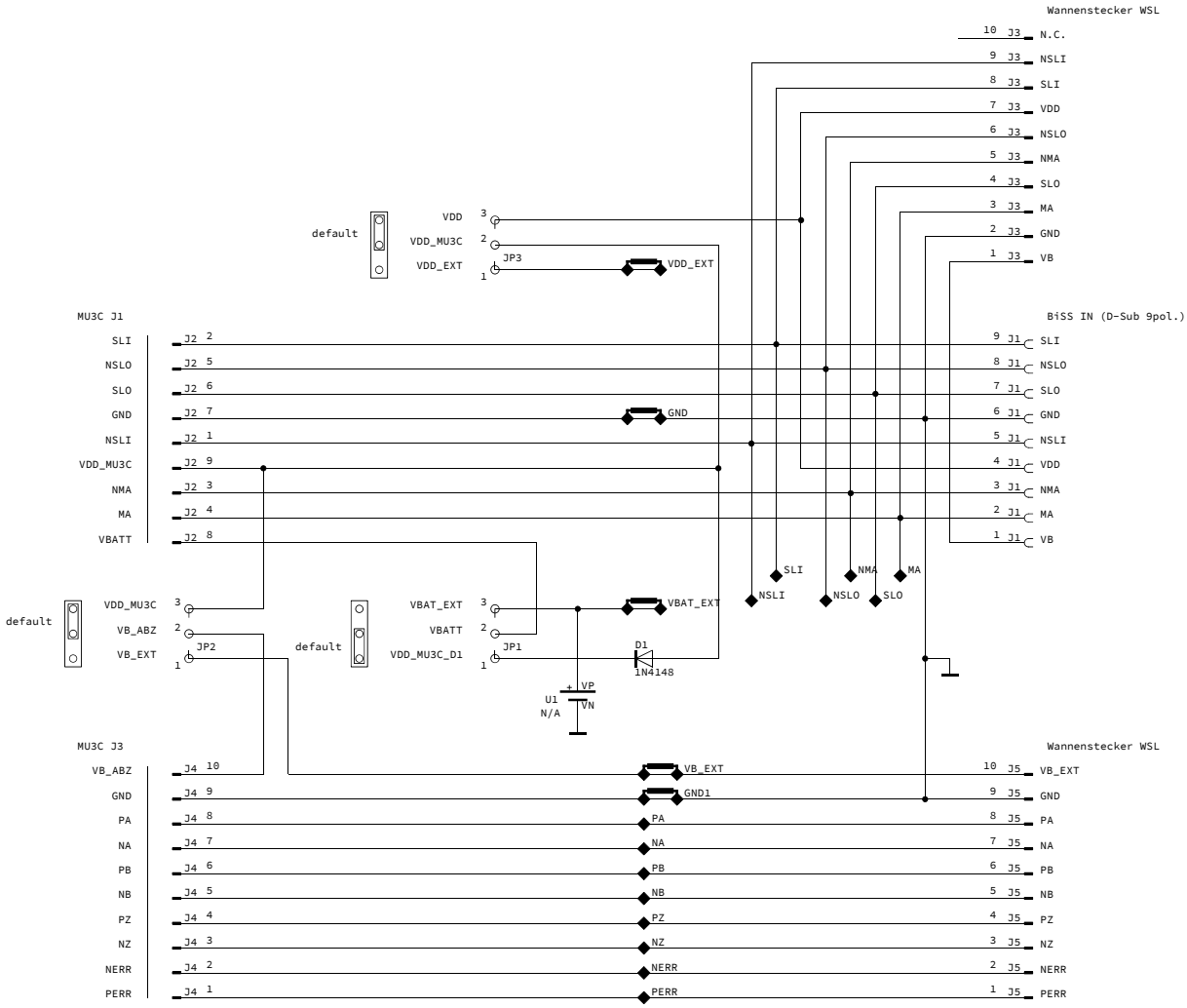

Figure 3: Circuit diagram EVAL MU5M

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.

ASSEMBLY PART LIST

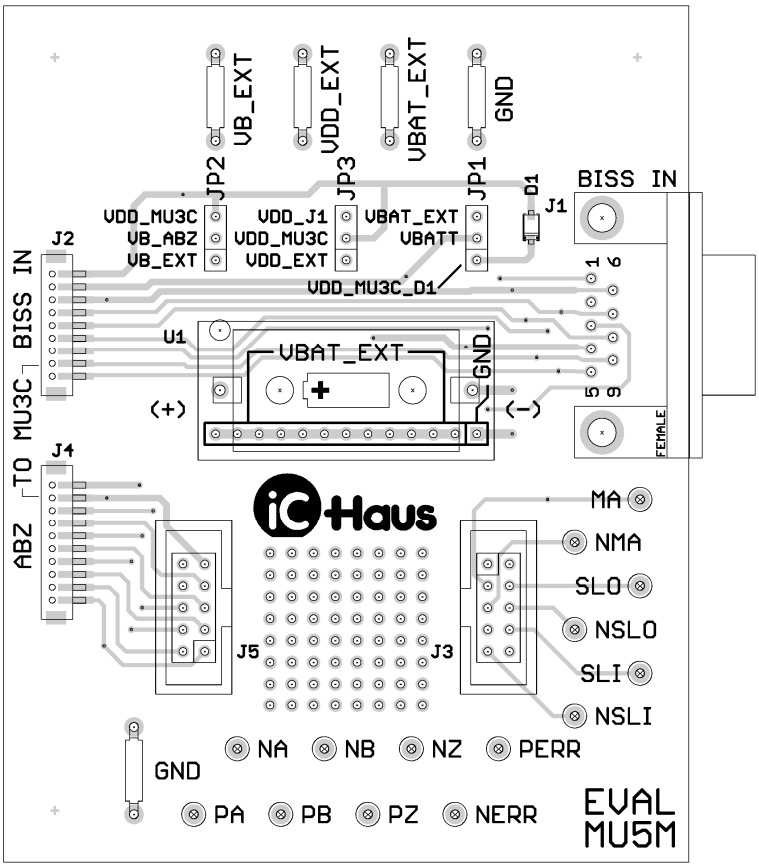

Figure 4: EVAL MU5M Top Side (80mm x 100mm)

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 **WARNING:** 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

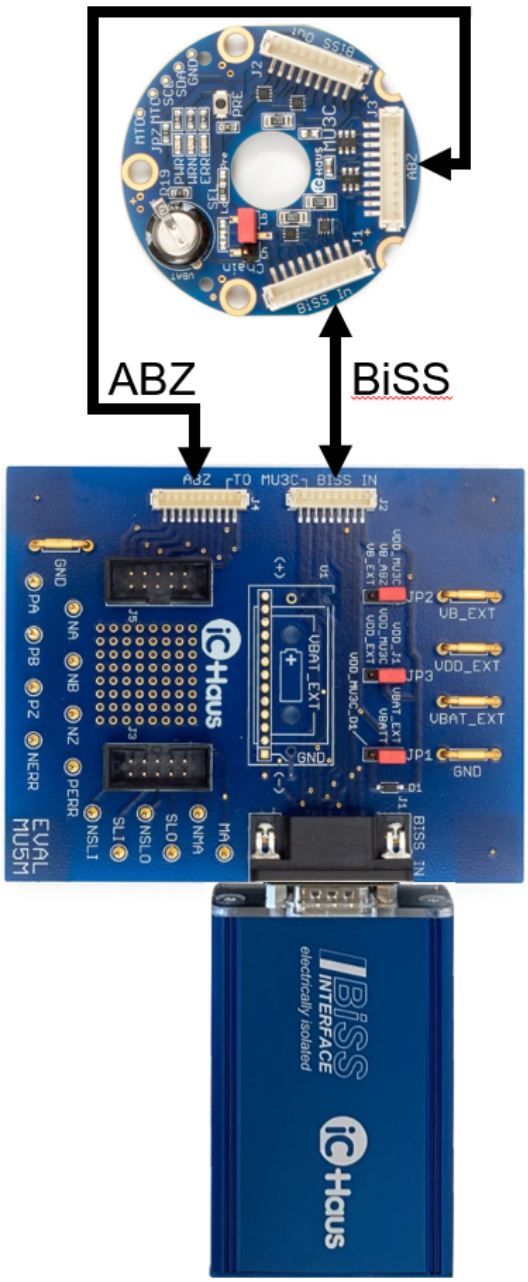

Figure 5: EVAL MU5M application example with MB5U BiSS adapter and EVAL MU3C

Required Evaluation Kit parts:

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

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

Rel.	Rel. Date*	Chapter	Modification	Page
A3	2021-10-15	BOARD EVAL MU5M, APPLICATION EXAMPLE	Updated pictures	1, 8

* Release Date format: *YYYY-MM-DD*