

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

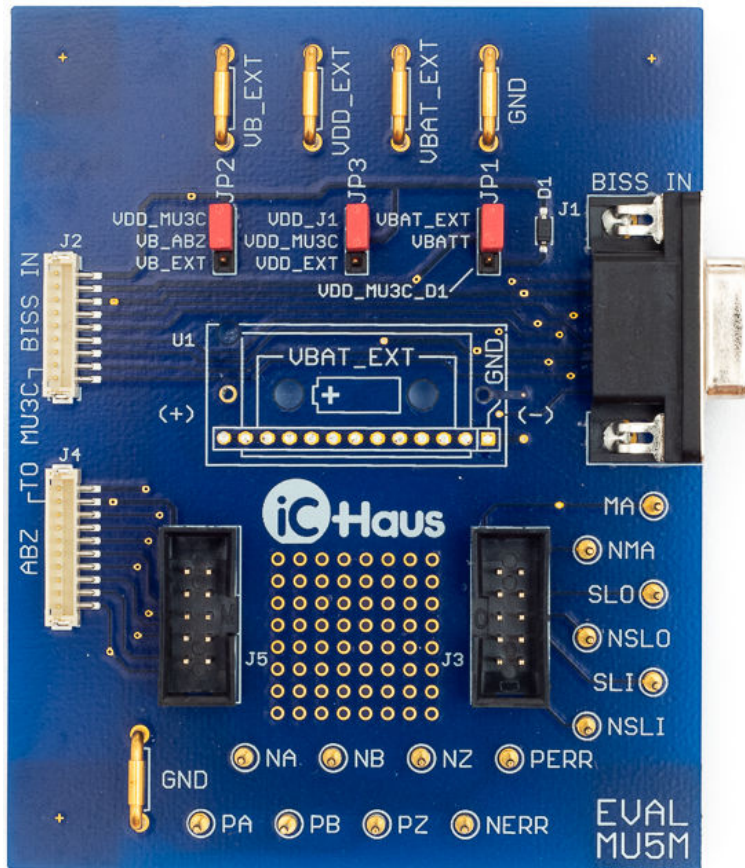


Figure 1: EVAL MU5M Top Side

RELATED PRODUCTS AND DOCUMENTATION

- iC-MU EVAL MU3C Description
→ www.ichaus.de/MU3C
- 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

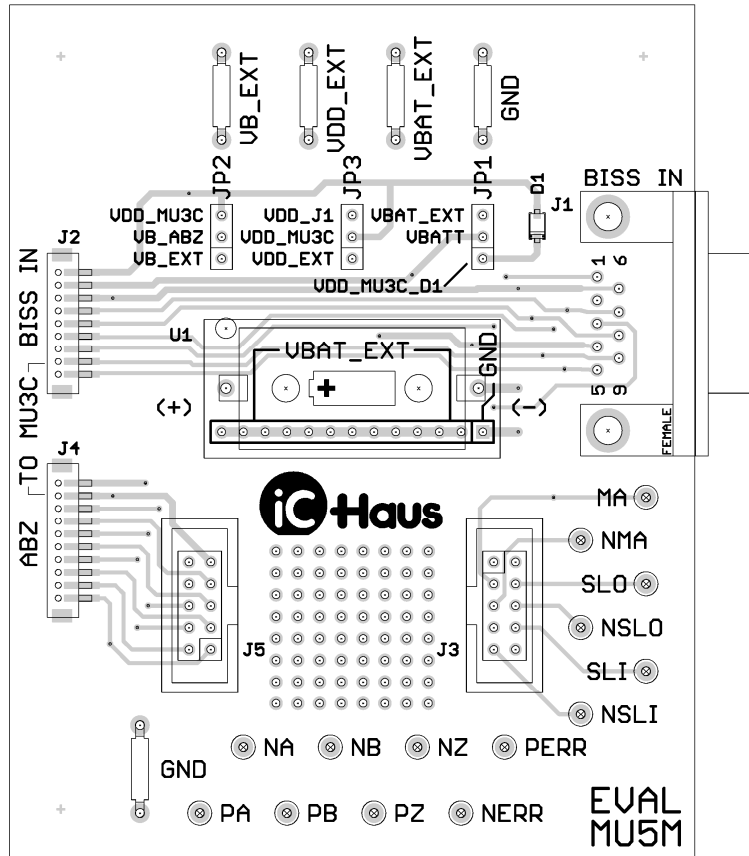


Figure 2: EVAL MU5M Top Side (80 mm x 100 mm)

TERMINAL DESCRIPTION

| | |
|----------|-----------------------------|
| VB_EXT | External line driver supply |
| VDD_EXT | 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 | VBATT - iC-PVL battery supply selector | VBAT_EXT | iC-PVL battery supply via terminal VBAT_EXT |
| |  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. | 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

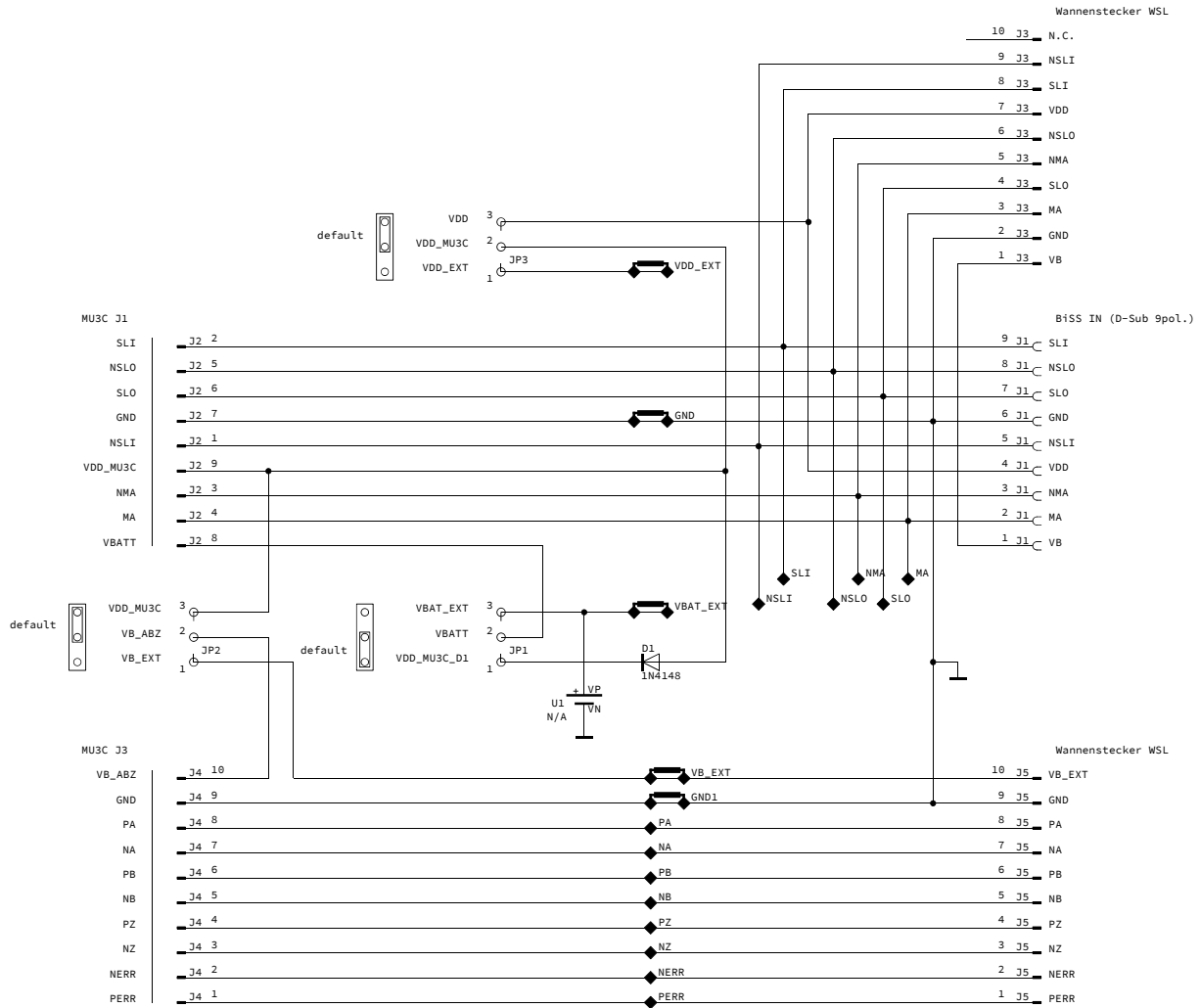


Figure 3: Circuit diagram EVAL MU5M



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.

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ASSEMBLY PART LIST

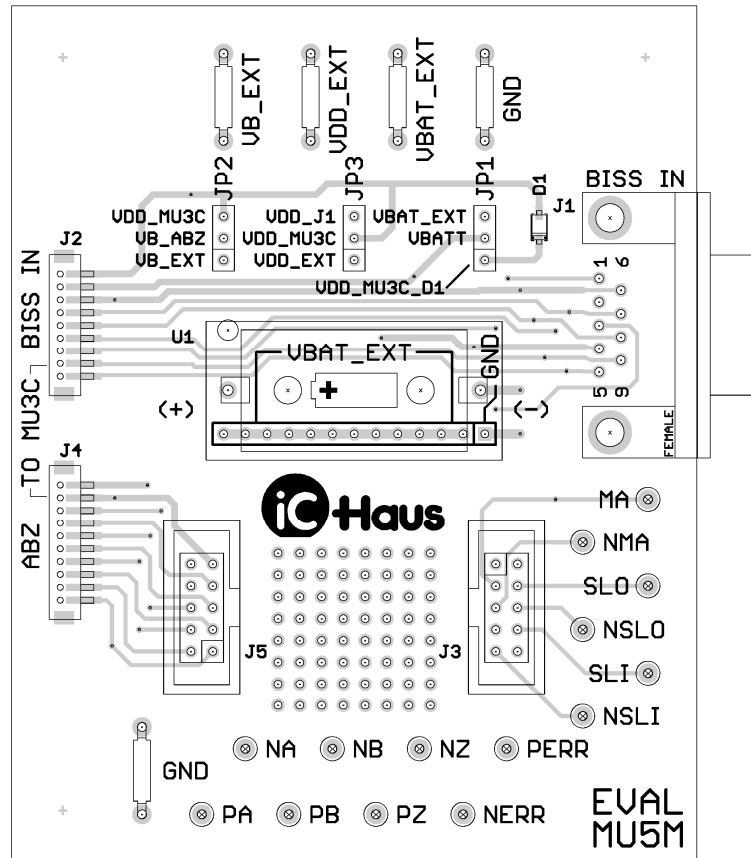


Figure 4: EVAL MU5M Top Side (80mm x 100mm)


| 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  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

iC-MU EVAL MU5M

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APPLICATION EXAMPLE

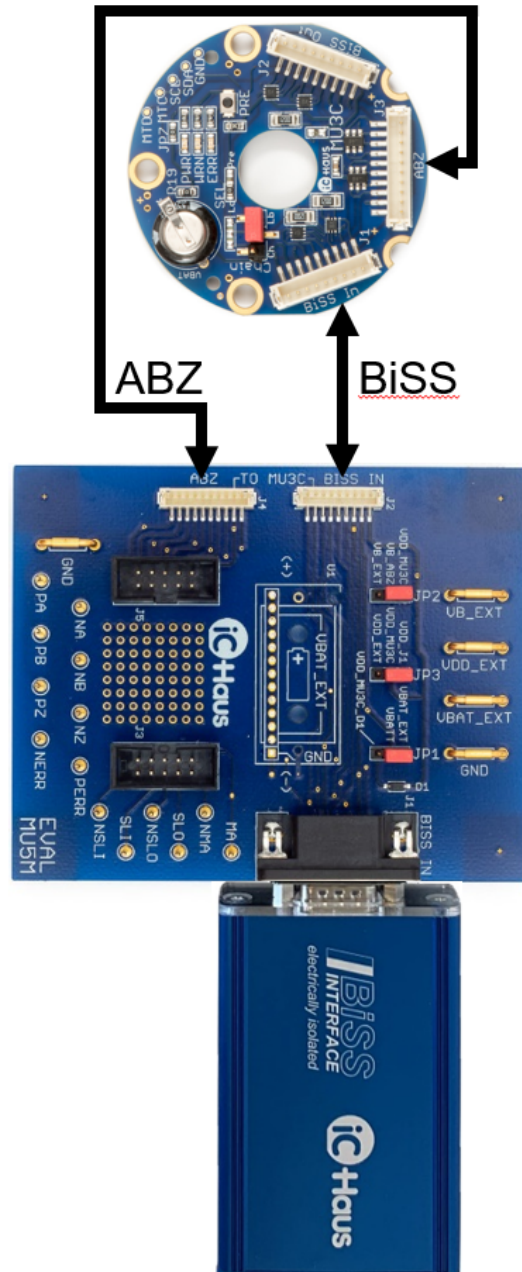


Figure 5: EVAL MU5M application example with MB5U BiSS adapter and EVAL MU3C

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 |

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

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* Release Date format: YYYY-MM-DD