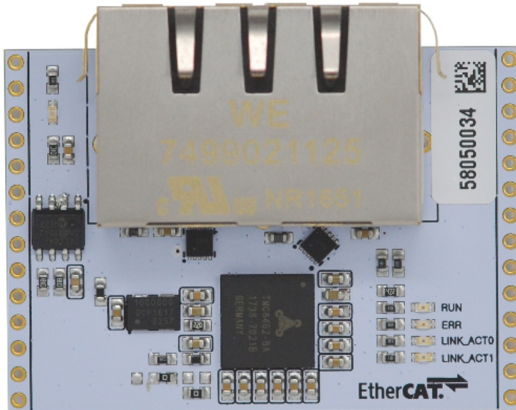


TMC8462 RJ45 BOB Description

Document Revision V1.20 • 2018-May -04

Module Top View



Pin List

Left	Signal	Right	Signal
1	VCC (3.3V / = VCCIO)	15	PDI_SPL_SCK
2	GND	16	PDI_SPL_MISO
3	nRESET	17	PDI_SPL_MOSI
4	SYNC_OUT0	18	PDI_SPL_CSN
5	RESET_OUT	19	MFC_CTRL_SPL_CSN
6	LATCH_IN0	20	PDI_SPL_IRQ
7	LATCH_IN1	21	PROM_INIT
8	PDI_SOF	22	MFCIO00
9	PDI_EOF	23	MFCIO01
10	PDI_WDSTATE	24	MFCIO02
11	PDI_WDTRIGGER	25	MFCIO03
12	MFCIO09	26	MFCIO04
13	MFCIO08	27	MFCIO05
14	MFCIO07	28	MFCIO06

Bill of Materials

Pcs.	MPN	Value	Footprint	Description
17	MC0603B104K100CT	100nF, 10V	0603	Cap, Multicomp
2	LMK107BJ106MALTD	10uF, 10V	0603	Cap, Taiyo Yuden
1	MC0603B103K500CT	10nF	0603	Cap, various manufacturers
3	LTST-C191KGKT	$V_f = 2V @ I_f = 20mA$	0603	LED, Lite-On
1	LTST-C191KRKT	$V_f = 2V @ I_f = 20mA$	0603	LED, Lite-On
1	LTST-C191KBKT	$V_f = 2V @ I_f = 20mA$	0603	LED, Lite-On
1	24LC64-I/SN	24LC64-I/SN	SO8 (150mil)	EEPROM, Microchip
1	7499021125	dual RJ45 conn.	dual RJ45 conn.	Würth Elektronik
1	TMC8462-BA	TMC8462-BA	BGA121 (9x9)	ECAT Slave Controller, TRINAMIC Motion Control
2	MPZ1608S101A	100R@100MHz	0603	Ferrite bead, TDK
1	742792641	300R@100MHz	0603	Ferrite bead, Würth
1	74279265	600R@100MHz	0603	Ferrite bead, Würth
2	SP3304NUTG	3.3V, 20A	10-UFDFN	TVS, Littelfuse
1	ASFLMB-100.000MHZ-LR-T	100MHz, 25ppm, 1.8V-3.3V	4-SMD, no lead	Oscillator, Abracon LLC
2	MCWR06X000PTL	0R	0603	Res, Multicomp
1	MCWR06W1R00FTL	1R, 1/10W, 1%	0603	Res, Multicomp
1	MCWR06X22R0FTLV	22R, 1/10W, 1%	0603	Res, Multicomp
2	WR06X4701FTL	4k7, 1/10W, 1%	0603	Res, Walsin
2	MC0063W060311K	1k, 1/10W, 1%	0603	Res, Multicomp
7	MCWR06X1800FTL	180R, 1/10W, 1%	0603	Res, Multicomp

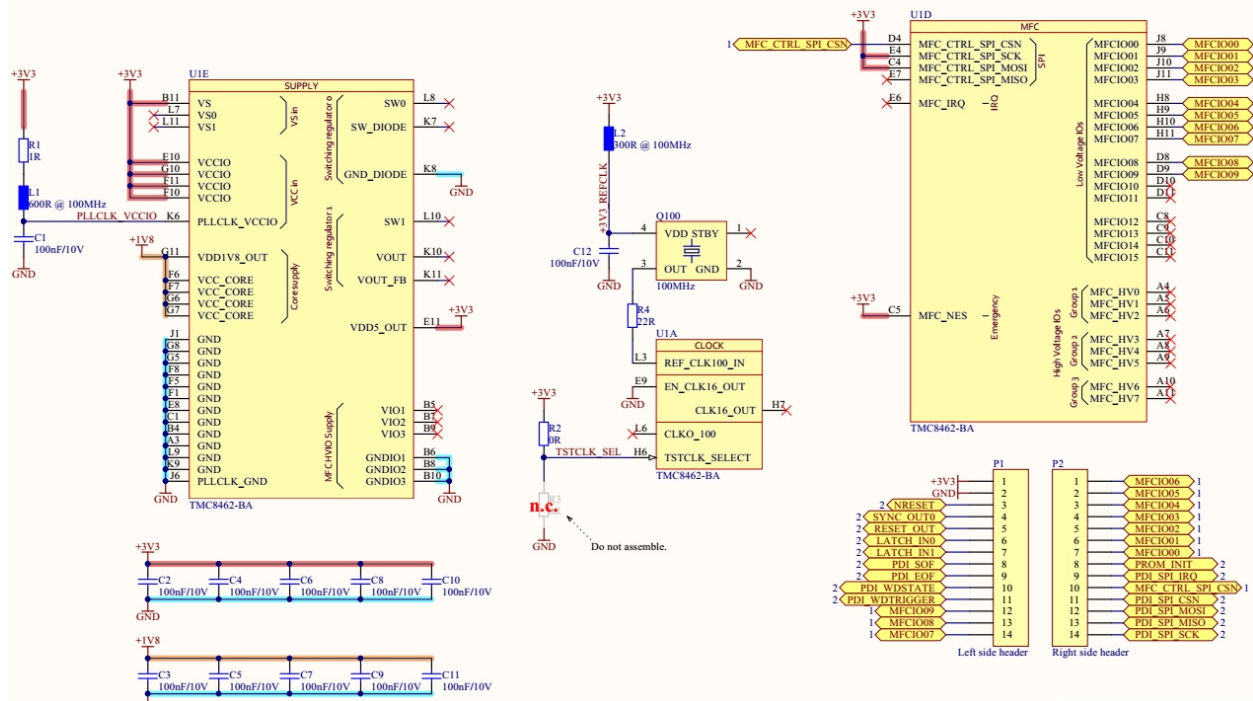
Features and additional Resources

- TMC8462-BA Advanced EtherCAT Slave Controller
- Supply and I/O voltage 3.3V (with blue LED indicator)
- 2x RJ45 TPC connector
- EtherCAT link activity, run, and error LEDs
- Configuration and control via Process Data Interface (PDI) SPI, ECAT, and SII-EEPROM
- Device emulation mode or controller mode via solder option (R5/R6)
- Board width 2.0", board height 1.5"
- 2x14 pin 0.1" header rows for pins/connectors, distance of rows 1.9"
- Link to [additional information and IC data sheet](#)
- Link to [evaluation kit](#)

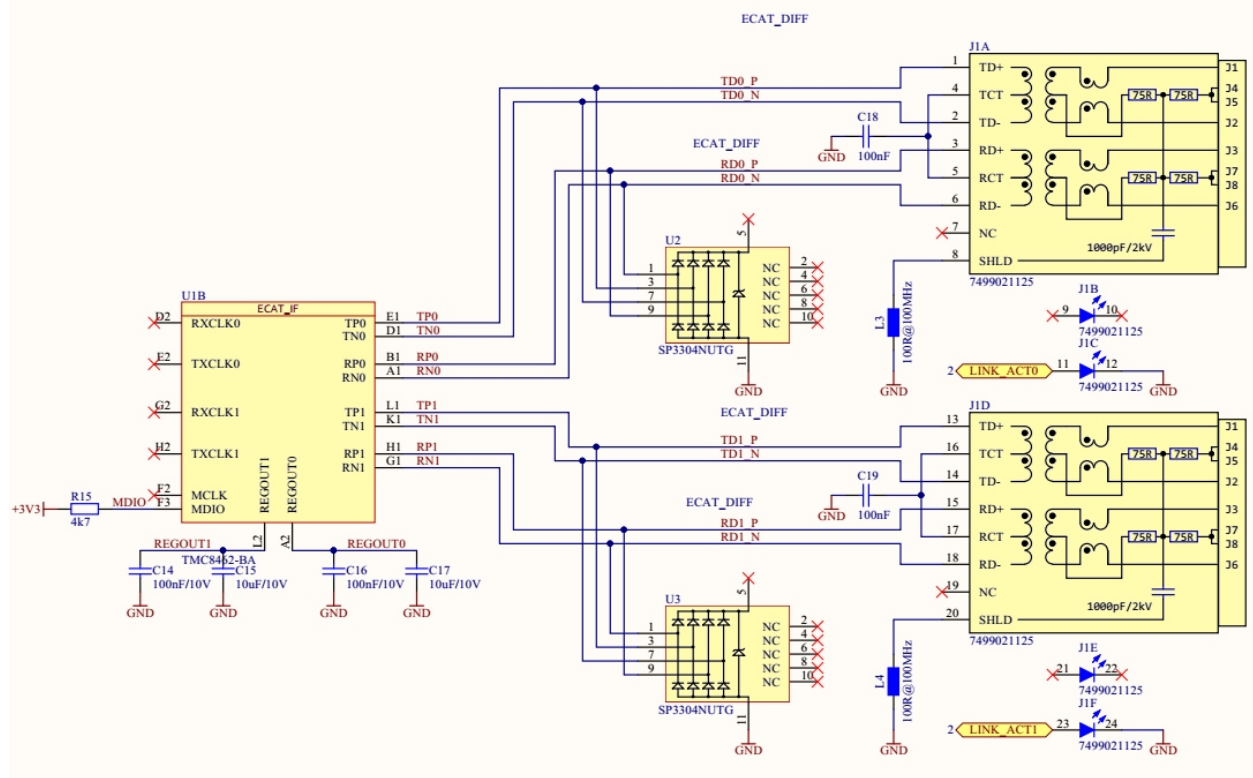


BOB Schematics

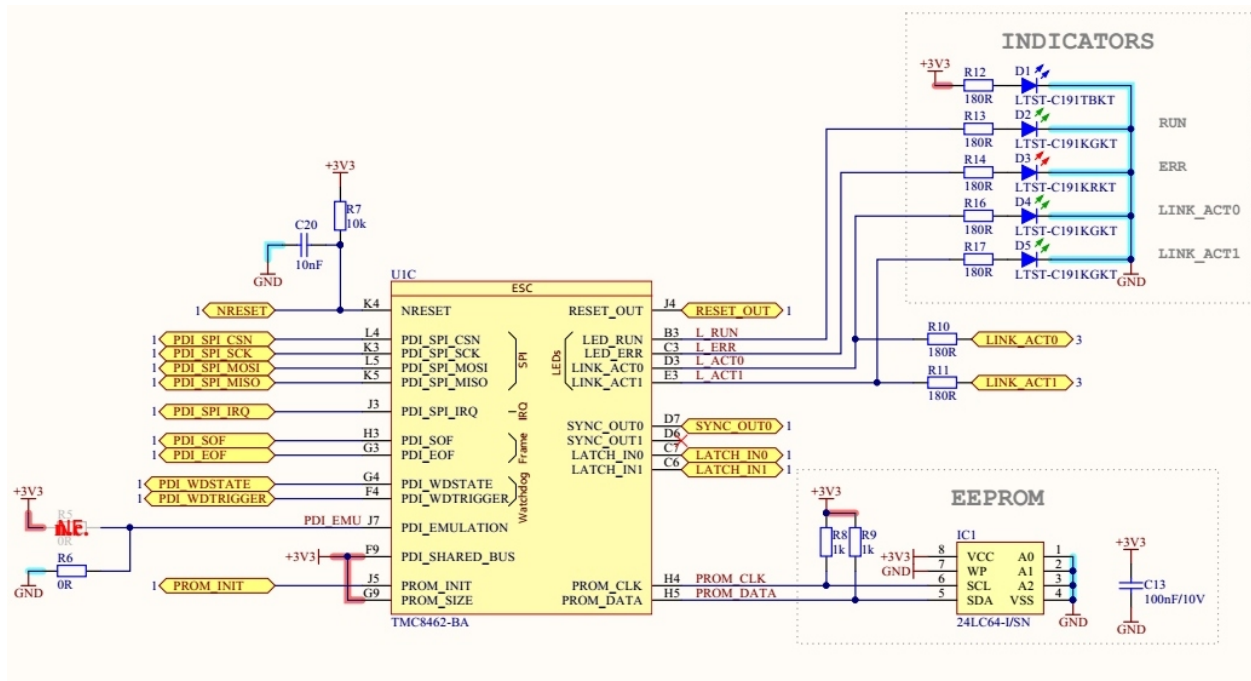
PSU, Reference Clock, PinHeaders, MFC



EtherCAT, RJ45

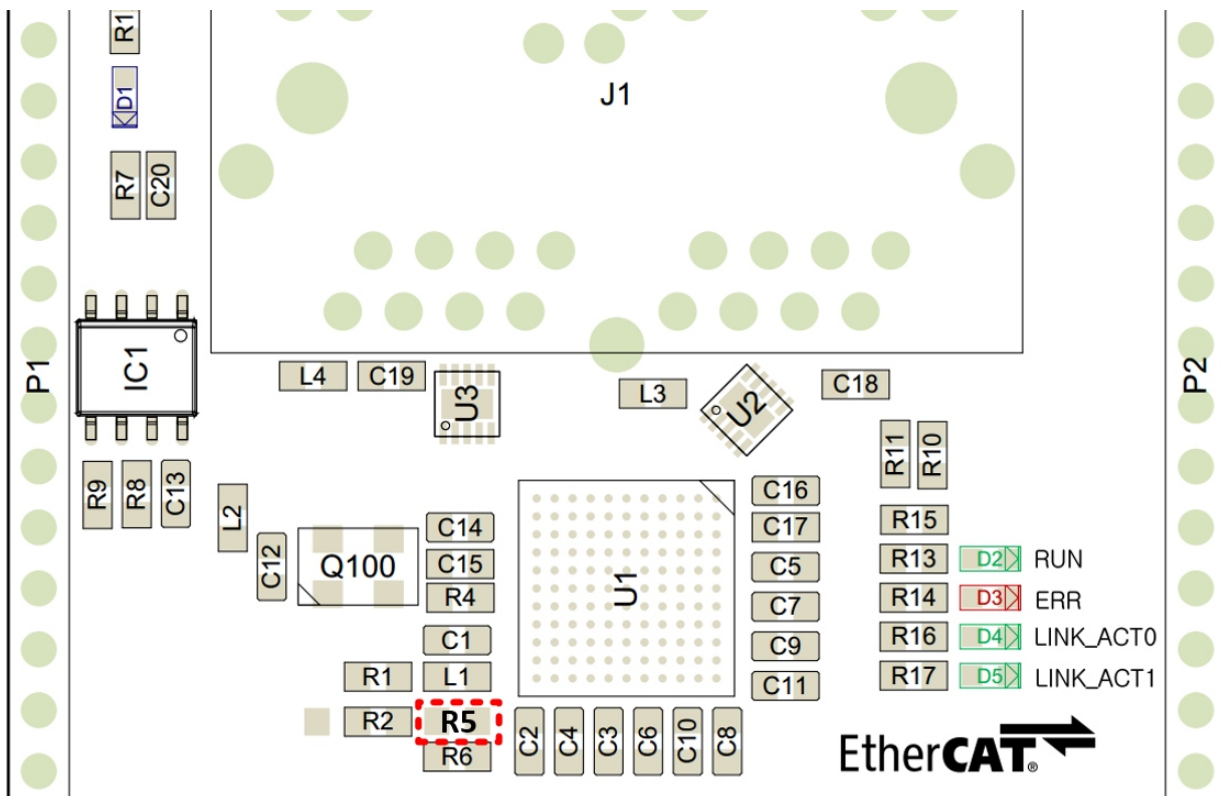


BOB Schematics



Mode Selection

- Soldering R5 / not R6 = PDI Emulation by the ESC, no microcontroller required
- Soldering R6 / not R5 = Controller mode, EtherCAT State Machine inside microcontroller




```

49 <Name LcId="1033">TMC8462 - BOB Default</Name>
    <Name LcId="1031">TMC8462 - BOB Default</Name>
51 <Info>
    <StateMachine>
53 <Timeout>
        <PreopTimeout>2000</PreopTimeout>
55 <SafeopOpTimeout>9000</SafeopOpTimeout>
        <BackToInitTimeout>5000</BackToInitTimeout>
57 <BackToSafeopTimeout>200</BackToSafeopTimeout>
    </Timeout>
59 </StateMachine>
    <Mailbox>
61 <Timeout>
        <RequestTimeout>100</RequestTimeout>
63 <ResponseTimeout>2000</ResponseTimeout>
    </Timeout>
65 </Mailbox>
</Info>
67 <GroupType>TrinamicEVAL</GroupType>

69 <Dc>
    <OpMode>
71 <Name>Synchron</Name>
        <Desc>FreeRun/SM-Synchron</Desc>
73 <AssignActivate>#x0</AssignActivate>
    </OpMode>
75 <OpMode>
        <Name>DC</Name>
77 <Desc>DC-Synchron</Desc>
        <AssignActivate>#x300</AssignActivate>
79 <CycleTimeSync0 Factor="1">0</CycleTimeSync0>
        <ShiftTimeSync0>0</ShiftTimeSync0>
81 <CycleTimeSync1 Factor="1">0</CycleTimeSync1>
        <ShiftTimeSync1>0</ShiftTimeSync1>
83 </OpMode>
</Dc>
85

87 <Eeprom>
    <ByteSize>2048</ByteSize>
    <ConfigData>050F034EC40900000000</ConfigData>
89
    <!-- Category 1 data is required for MFC IO configuration parameter
        loading from memory area 0x0580:0x05FF (ESC Parameter RAM) -->
91 <Category>
    <CatNo>1</CatNo>
93 <Data>0000000000000000000000000000000000000000000000000000000000000000
        0000000000000000000000000000000000000000000000000000000000000000
95 0000000000000000000000000000000000000000000000000000000000000000
        000000000000000000
97 </Data>
    </Category>
99 </Eeprom>
101
    <ImageData16x14>424dd60200000000000003600000028000000100000000e00000001

```



```

    </ImageData16x14>
</Device>
</Devices>
</Descriptions>
</EtherCATInfo>

```

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Trinamic:

TMC8462-EVAL