



Ethernet Connector Daughter Card User Guide

ETHERNET-DC-UG-v1.2
December 2022
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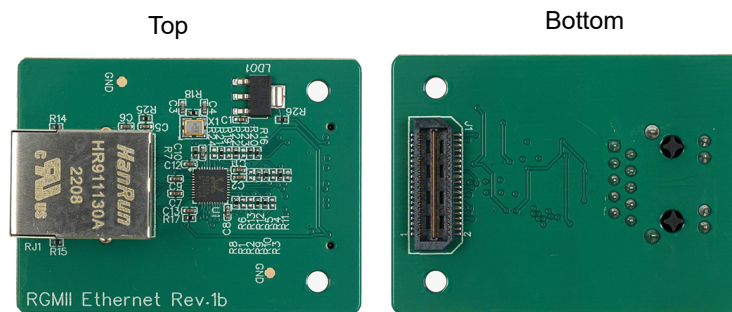
Introduction

The Ethernet Connector Daughter Card (part number: EFX_RGMII) adds Ethernet connectivity to the development board. The Ethernet Connector Daughter Card has a Gigabit Ethernet transceiver from Realtek (part number: RTL8211FD-CG) which is compliant with 10Base-T, 100Base-TX, and 1000Base-T IEEE 802.3 standards.



Learn more: Refer to the [Ethernet Connector Daughter Card Schematics and BOM](#) for the part details and schematics.

Figure 1: Ethernet Connector Daughter Card



Warning: The board can be damaged without proper anti-static handling.

Supported Development Boards

You can use Ethernet Connector Daughter Card with:

- 钛金系列 Ti60 F225 Development Board
- 钛金系列 Ti180 M484 Development Board (with FMC-to-QSE Adapter Card)

Features

- Realtek RTL8211FD-CG transceiver
- Single-port RJ-45 connector with integrated magnetics and LEDs
- Power supplied from the development board; no external power required

What's in the Box?

The Ethernet Connector Daughter Card includes:

- Ethernet Connector Daughter Card
- 2 standoffs
- 2 screws
- 2 nuts

Installing Standoffs

Before using the board, attach the standoffs with the screws provided in the kit.



Warning: You can damage the board if you over tighten the screws. Tighten all screws to a torque between 4 ± 0.5 kgf/cm and 5 ± 0.5 kgf/cm.

Headers

Table 1: Ethernet Connector Daughter Card Headers

Reference Designator	Description
RJ1	RJ-45 Ethernet connector
J1	40-pin QTE connector bringing GPIO signals and power from the development board.

J1 (QTE Connector)

J1 is a 40-pin QTE connector to connect the daughter card to the QSE connector on the development board.

Table 2: J1 Pin Assignments

Pin Number	Pin Name	Description	Pin Number	Pin Name	Description
1	3V3	3.3 V supply	2	RCLK	RGMIJ receive clock
3	N.C.	No connect	4	N.C.	No connect
5	GND	Ground	6	GND	Ground
7	N.C.	No connect	8	TXD3	RGMIJ transmit data
9	N.C.	No connect	10	TXD2	RGMIJ transmit data
11	GND	Ground	12	GND	Ground
13	RXD3	RGMIJ receive data	14	TXD1	RGMIJ transmit data
15	RXD2	RGMIJ receive data	16	TXD0	RGMIJ transmit data
17	GND	Ground	18	GND	Ground
19	RXD1	RGMIJ receive data	20	TX_CTL	Transmit control signal
21	RXD0	RGMIJ receive data	22	N.C.	No connect
23	GND	Ground	24	GND	Ground
25	N.C.	No connect	26	TCLK	RGMIJ transmit clock
27	RX_CTL	Receive control signal	28	N.C.	No connect
29	GND	Ground	30	GND	Ground
31	RCLK	RGMIJ receive clock	32	PMEB	No connect
33	N.C.	No connect	34	N.C.	No connect
35	GND	Ground	36	GND	Ground
37	MDIO	Serial data line	38	INTB	Interrupt signal
39	MDC	Serial clock line	40	RSTN	PHY reset

RJ1 (Ethernet)

RJ1 is an RJ-45 receptacle.

Table 3: RJ1 Pin Assignments

Pin Number	Signal Name	U1 Pin Name	Description
P1	GND	-	Ground
P2	MDI0+	MDIP0	Transmitter data pair 0
P3	MDI0-	MDIN0	
P4	MDI1+	MDIP1	Transmitter data pair 1
P5	MDI2+	MDIP2	
P6	MDI2-	MDIN2	Transmitter data pair 2
P7	MDI1-	MDIN1	
P8	MDI3+	MDIP3	Transmitter data pair 3
P9	MDI3-	MDIN3	
P10	GND	-	Ground
11	LED Green	CFG_EXT	External power source mode configuration
12	GND	-	Ground
13	GND	-	Ground
14	LED Yellow	CFG_LDO0	LDO output voltage selection

Revision History

Table 4: Revision History

Date	Version	Description
December 2022	1.2	Corrected J1 Pin Assignments description. (DOC-1086)
November 2022	1.1	Corrected part number.
November 2022	1.0	Initial release.