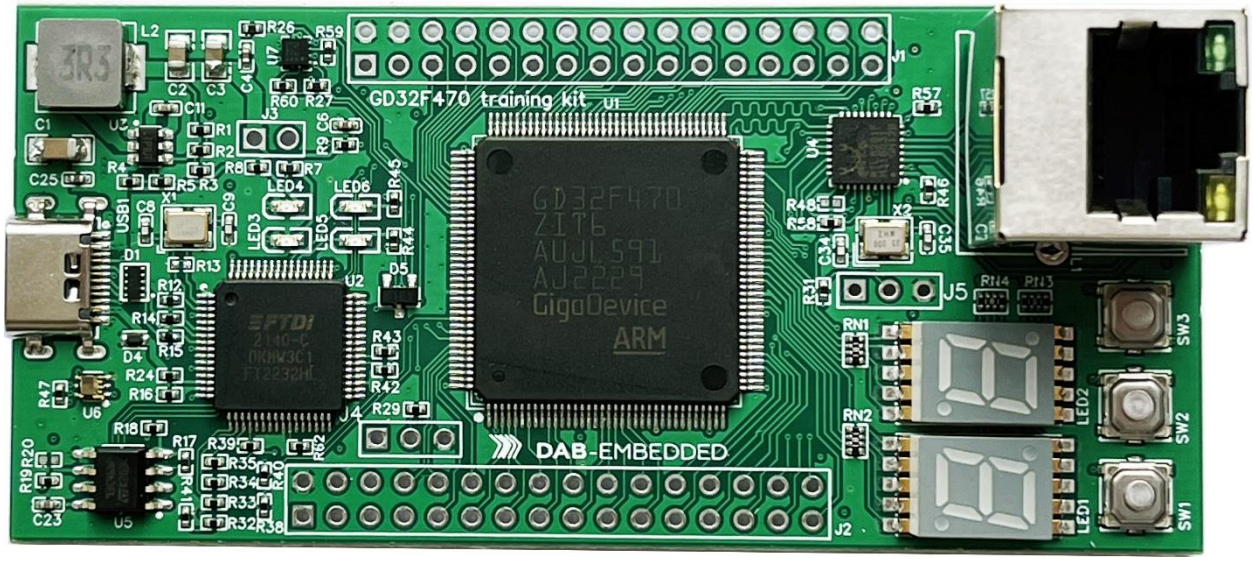
DAB-EMBEDDED



Gigadevice GD32F470 Training kit

User manual

V1.2

Contents

1. General information

The GD32F470 Training kit board has been designed as training material for learning Gigadevice GD32F4 platform.

2. Board content

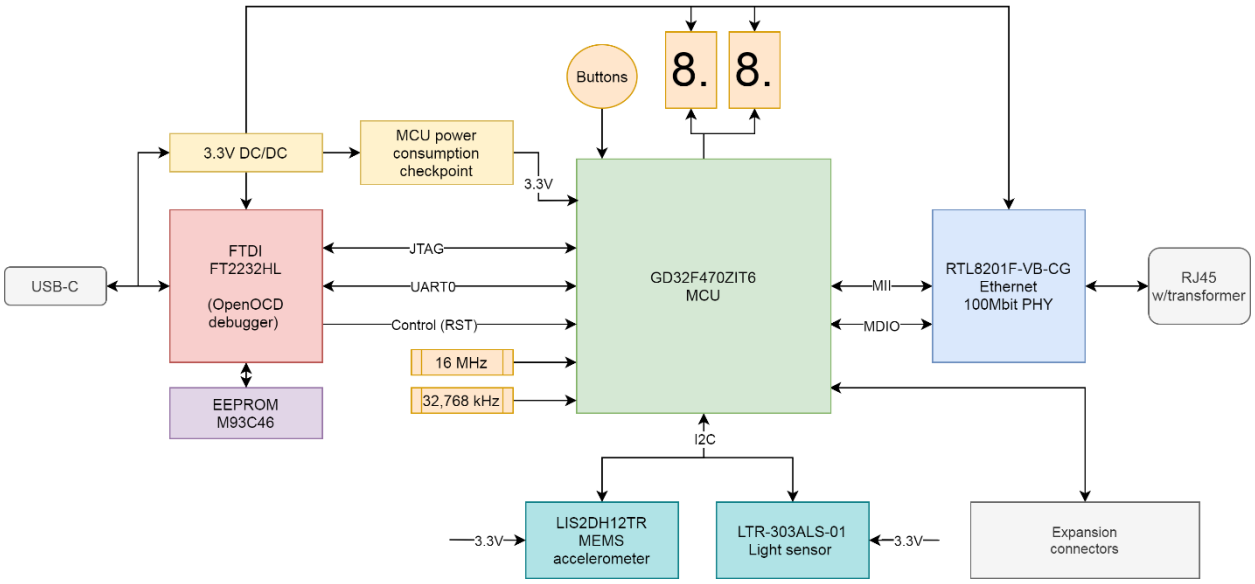


Figure 1: Board block schematic

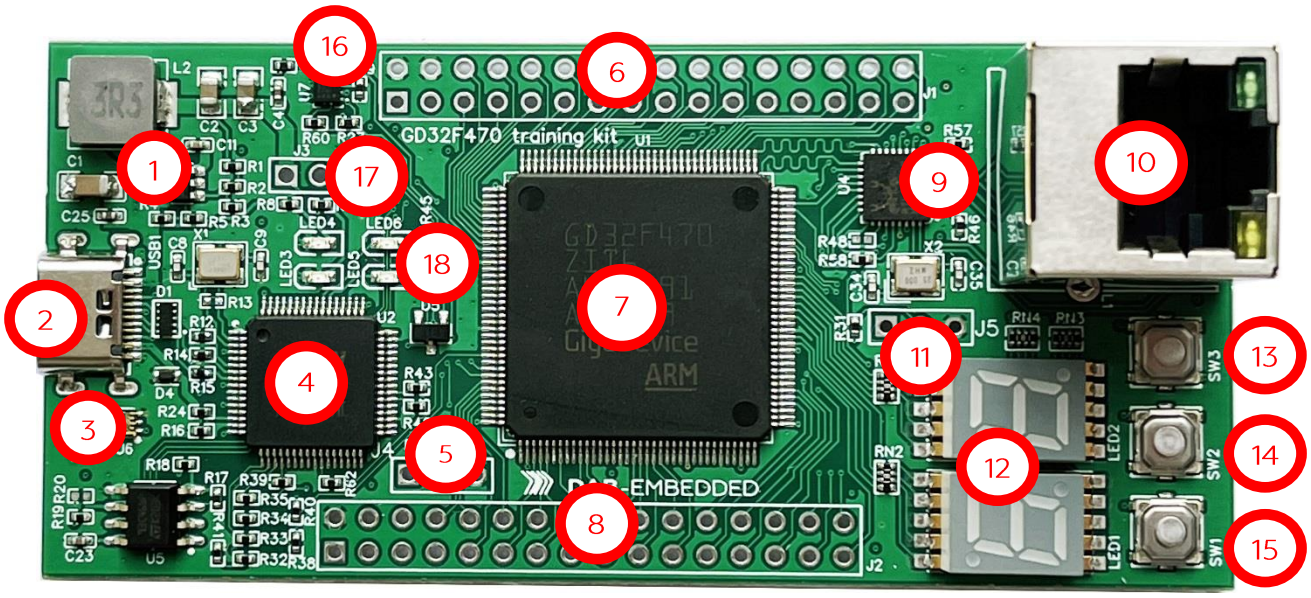


Figure 2: Photo of the board

Number	Description
1	Power supply (5V to 3.3V, DC/DC, 3A)
2	USB-C input (JTAG, Virtual COM port, power)
3	Light sensor LTR-303ALS-01
4	FTDI FT2232HL (OpenOCD JTAG, COM port, Reset control)
5	BOOT0 selector (1-2 BOOT0=1, 2-3 BOOT0=0 (pull down)) for GD32F470
5	BOOT0 selector (1-2 BOOT=1, 2-3 BOOT=0) for GD32F470
6	J1 expansion connector
7	MCU GD32F470
8	J2 expansion connector
9	Ethernet PHY, Realtek RTL8201F (100Mbit)
10	Ethernet RJ45 connector with transformers and LEDs
11	BOOT1 selector (1-2 BOOT1=1, 2-3 BOOT1=0) for GD32F470
12	2x 7-segment LED display (Sunlight SLS0281FR1A1GD)
13	Reset button
14	User 1 button (PC0)
15	User 0 (Wakeup) button (PA0)
16	Accelerometer LIS2DH12TR
17	Header for power consumption measurement (MCU power)
18	4x LED indicators (LED3 is 3.3V, LED4 is 5V, LED5 is UART0 TX, LED6 is UART0 RX).

Main MCU of the board is Gigadevice GD32F470ZIT6. It's an ARM® Cortex™-M4F code based MCU with rich number of peripheral blocks (details in GD32F470xx Datasheet). There 2 crystal resonators connected to the board: 16MHz (PF0-OSCIN, PF1-OSCOUT) and 32,768kHz (RTC clock, PC14-OSC32IN, PC15-OSC32OUT). By default, internal Flash bootmode of GD32F470 selected (by pulling down BOOT0 pin).

FTDI FT2232HL Multipurpose IC used as USB<->JTAG converter with USB<->UART support. Using software package OpenOCD is possible to upload firmware to GD32F470 MCU and debug it step-by-step.

For I2C bus evaluation, there 2 devices connected to I2C0 bus: Light sensor LTR-303ALS-01 and accelerometer LIS2DH12TR.

Board also has the 100M Ethernet PHY with RJ45 connector including transformers. Connection between MCU and PHY are MII and MDIO buses. PHY has his own 25MHz crystal resonator.

More details you can find in a board schematic.

SDK for the board including schematic can be found in:
https://github.com/DAB-Embedded/GD32F470_Training_board_SDK