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PCF85053ATK-ARD – PCF85053ATK Evaluation Board

PCF85053ATK-ARD [Receive alerts](#) ⓘ

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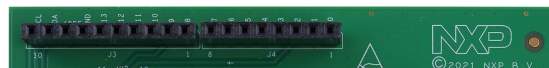
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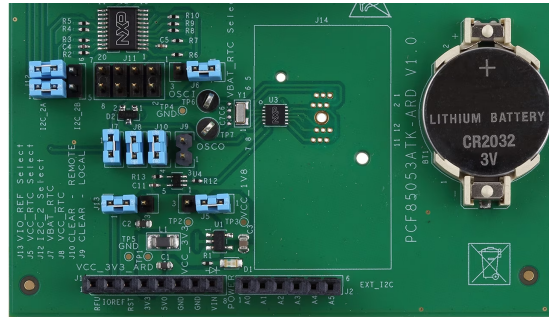
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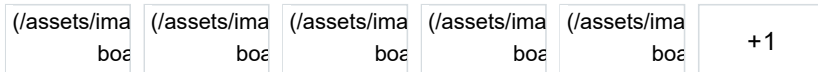
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PCF85053ATK-ARD is used to evaluate the functions and performances of PCF85053A through the use of Arduino Shield connector. PCF85053A is a CMOS real-time clock (RTC) and calendar optimized for low power consumption and automatic switching to battery on primary power loss. Featuring clock output, alert interrupt output and 128-byte battery backed-up SRAM.

The PCF85053A includes two I²C buses: the primary I²C bus has the read/write capability on RTC and SRAM registers; the second I²C bus also can read/write most registers with the control bits set by primary I²C master. PCF85053A offers clock output calibration-related registers such as crystal capacitive load (CL) configuration and offset register setting.

DESIGN FILES

Product Details

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Supported Devices

Peripherals and Logic

RTCs with I²C-bus

- **PCF85053A** (/products/peripherals-and-logic/signal-chain/real-time-clocks/rtcs-with-ic-bus/bootable-cpu-rtc-with-two-ic-buses-128-byte-sram-and-alarm-function:PCF85053A): Bootable CPU RTC with Two I²C Buses, 128 Byte SRAM and Alarm Function

Features

Arduino Shield

- Equipped with Arduino Uno R3 compatible headers for direct connection to Arduino compatible MCU EVKs
- On-board connector for external access and monitoring for I²C-bus / Alert / CLKOUT
- 1.8 V / 3.3 V selectable power supply
- On-board backup battery cell
- Fully with MIMXRT1050-EVK board, including GUI (Windows 10)
- Fully compatible with LPCXpresso55S69 dev. board, including GUI (Windows 10)
- Fully compatible with MIMXRT685-EVK board, including GUI (Windows 10)

Operating Voltage

- Supply voltage: 1.7 V to 3.6 V
- Battery supply voltage: 1.55 V to 3.6 V

Communication Interface

- Two independent I²C interfaces:
 - Primary I²C bus: Read/write capability on RTC and SRAM registers
 - Second I²C bus: Read/write capability on RTC and SRAM registers enabled by primary I²C

- I²C device addresses:
 - RTC: 1101 111
 - SRAM: 1010 111
 - I²C clock features:
 - Max CLK frequency 400 kHz
 - Max CLK Timeout 35ms
 - I²C bus not active when switch over to battery
-

Real Time Clock Features

- Real-time clock and calendar
 - Provides year, month, day, weekday, hours, minutes and seconds based on a 32.768 kHz quartz crystal
 - Support both binary mode and BCD mode
 - Support 24-hour and 12-hour mode
 - Support daylight saving mode
 - Oscillator fail flag
 - RTC clear flag
 - RTC fail flag
 - Alarm flag
-

Extra Features

- Active low alert interrupt output
- Register definition aligned to MC146818B (0 to 09h)
- Configurable oscillator circuit for a wide variety of quartzes: CL = 6 pF, CL = 7 pF and CL = 12.5 pF
- Operating temperature range -40 °C to 85 °C
- Battery-backed 128 byte SRAM
- SRAM clear to '0' by RTC_CLR# Pin
- Frequency adjustment via programmable offset register