LPC1774FBD144

128kB flash, 40kB SRAM, USB, LQFP144 package

The LPC1774 is a Cortex-M3 microcontroller for embedded applications featuring a high level of integration and low power consumption at frequencies of 120 MHz. Features include 128 kB of flash memory, 40 kB of data memory, USB 2.0 Device , 8-channel DMA controller, 4 UARTs, 2 CAN channels, 3 SSP/SPI, 3 I2C, I2S, 8-channel 12-bit ADC, 10-bit DAC, motor control PWM, 4 general purpose timers, 6-output general purpose PWM, ultra-low power Real-Time Clock with separate battery supply, and up to 109 general purpose I/O pins.

Features and benefits

- Functional replacement for LPC23xx and 24xx family devices
- ARM Cortex-M3 processor, running at frequencies of up to 120 MHz
- ARM Cortex-M3 built-in Nested Vectored Interrupt Controller (NVIC)
- Multilayer AHB matrix interconnect provides a separate bus for each AHB master
- Split APB bus allows for higher throughput
- Cortex-M3 system tick timer, including an external clock input option
- Standard JTAG test/debug interface, Serial Wire Debug and Serial WireTrace Port
- Emulation trace module supports real-time trace
- Boundary scan for simplified board testing
- Non-maskable Interrupt (NMI) input
- 128 kB on-chip flash program memory
- 40 kB on-chip SRAM
- 2 kB on-chip EEPROM
- In-System Programming (ISP) and In-Application Programming (IAP) capabilities
- External Memory Controller (EMC)
- Eight channel General Purpose DMA controller (GPDMA)
- USB 2.0 full-speed dual port device controller with on-chip PHY and DMA
- Four UARTs with fractional baud rate generation
- Three SSP controllers with FIFO and multi-protocol capabilities
- Three enhanced I2C-bus interfaces
- I2S (Inter-IC Sound) interface for digital audio input or output
- CAN controller with two channels
- Up to 109 General Purpose I/O (GPIO) pins
- Two external interrupt inputs configurable as edge/level sensitive
- Four general purpose timers/counters
- Two standard PWM/timer blocks with external count input option
- Real-Time Clock (RTC) with a separate power domain
- Windowed Watchdog Timer (WWDT)
- CRC Engine block
- 12-bit Analog-to-Digital Converter (ADC) with conversion rates up to 400 kHz
- 10-bit Digital-to-Analog Converter (DAC)
- Four reduced power modes: Sleep, Deep-sleep, Power-down, and Deep power-down
- Wake-up Interrupt Controller (WIC)
- Processor wake-up from Power-down mode via any interrupt
- Brownout detect with separate threshold for interrupt and forced reset
- On-chip Power-On Reset (POR)
- On-chip crystal oscillator with an operating range of 1 MHz to 25 MHz
- 12 MHz Internal RC oscillator (IRC) trimmed to 1% accuracy
- Unique device serial number for identification purposes
- Single 3.3 V power supply (2.4 V to 3.6 V)

Applications

- eMetering
- Lighting
- Industrial networking
- Alarm systems
- White goods
- Motor control

- **Parametric search** all LPC1700