8-bit MCUs Feature Advanced Analog and Integrated Communication Peripherals

Microchip Technology Inc. announced the expansion of its 8-bit PIC16F(LF)178X enhanced Mid-range core microcontroller (MCU) family to include advanced analog and integrated communication peripherals, such as on-chip 12-bit analog-to-digital converters (ADCs), 8-bit digital-to-analog converters (DACs), operational amplifiers, and high-speed comparators, along with EUSART (including LIN), I2C and SPI interface peripherals. The MCUs also feature the industry's best level of advanced PWM control and accuracy, according to the company, via the new programmable switch-mode controllers (PSMCs). This combination of features enables high efficiency and performance, along with cost and space reductions in applications such as closed-loop control in power supplies, and lighting. The "LF" versions of the MCUs feature eXtreme Low Power Technology, for active and sleep currents of just 32 µA/MHz and 50 nA, respectively, helping to extend battery life and reduce standby current consumption. Low power consumption and advanced analog and digital integration make the general-purpose PIC16F(LF)178X MCUs ideal for LED lighting, battery management, digital power supply, motor control and other applications.

Environmental concerns and "green" initiatives have led to the rise of new energy-consumption legislation around the world. The PIC16F(LF)178X MCUs enable designers to create better products that consume less power. Microchip's enhanced Mid-range 8-bit core brings more performance, with 32 MHz operation, automatic context save for faster interrupt handling, more efficiency in the instruction set with better code density, plus faster and more direct-port control capabilities. Available in 28- and 40-pin packages, the MCUs' advanced analog integration includes an on-chip 12-bit ADC for very small voltage measurements, as well as enabling mTouch capacitive sensing; and an 8-bit DAC for high-resolution voltage references. Also included on-chip are fast analog comparators with 50 nS response time, Capture Compare Peripherals, and I2C, SPI and EUSART interfaces for communications. Additionally, the MCUs feature a 32 MHz internal oscillator, 2 - 8K Words (3.5 - 14K Bytes) of Flash, 128 – 512 Bytes of RAM, and 256 Bytes of data EEPROM. The PSMC peripherals are 16-bit Pulse-Width Modulators (PWMs) with 64 MHz operation and

advanced control capabilities.

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