



PIC18(L)F2X/4X/5XK42

Highly Integrated 8-Bit PIC[®] Microcontrollers in 28- to 48- Pins

Description

The PIC18(L)F2X/4X/5XK42 microcontroller family is available in 28/40/44/48-pin devices. This family features a 12-bit ADC with Computation (ADC²) automating Capacitive Voltage Divider (CVD) techniques for advanced touch sensing, averaging, filtering, oversampling and threshold comparison. Additionally, Vectored Interrupt Controller with fixed latency for handling interrupts, System Bus Arbiter, Direct Memory Access capabilities, UART with support for Asynchronous, DMX, DALI and LIN protocols, SPI, I²C, memory features like Memory Access Partition (MAP) to support customers in data protection and bootloader applications, Device Information Area (DIA) which stores factory calibration values to help improve temperature sensor accuracy.

Core Features

- C Compiler Optimized RISC Architecture
- Operating Speed:
 - Up to 64 MHz clock input
 - 62.5 ns minimum instruction cycle
- Two Direct Memory Access (DMA) Controllers:
 - Data transfers to SFR/GPR spaces from either Program Flash Memory, Data EEPROM or SFR/GPR spaces
 - User programmable source and destination sizes
 - Hardware and software triggered data transfers
- Vectored Interrupt Capability:
 - Selectable high/low priority
 - Fixed Interrupt latency
 - Programmable vector table base address
- 31-Level Deep Hardware Stack
- Low-Current Power-on Reset (POR)
- Configurable Power-up Timer (PWRT)
- Brown-Out Reset (BOR)
- Low-Power BOR (LPBOR) Option
- Windowed Watchdog Timer (WWDT):
 - Variable prescaler selection
 - Variable window size selection
 - Configurable in hardware or software
- Programmable Code Protection:
 - Configurable Boot and App region sizes

Memory

- Up to 128 KB Flash Program Memory
- Up to 8 KB Data SRAM Memory
- Up to 1 KB Data EEPROM
- Memory Access Partition (MAP):
 - Bootloader write-protect
 - Configurable partition
- Device Information Area (DIA) Stores:
 - Temp sensor factory calibrated data
 - Fixed Voltage Reference
 - Device ID

Operating Characteristics

- Operating Voltage Range:
 - 1.8V to 3.6V (PIC18LF2X/4X/5XK42)
 - 2.3V to 5.5V (PIC18F2X/4X/5XK42)
- Temperature Range:
 - Industrial: -40°C to 85°C
 - Extended: -40°C to 125°C

Power-Saving Functionality

- DOZE mode: Ability to run CPU core slower than the system clock
- IDLE mode: Ability to halt CPU core while internal peripherals continue operating
- Sleep mode: Lowest power consumption
- Peripheral Module Disable (PMD):
 - Ability to disable peripherals to minimize power consumption

eXtreme Low-Power (XLP) Features

- Sleep mode: 50 nA @ 1.8V, typical
- Watchdog Timer: 500 nA @ 1.8V, typical
- Secondary Oscillator: 500 nA @ 32 kHz
- Operating Current:
 - 8 uA @ 32 kHz, 1.8V, typical
 - 32 uA/MHz @ 1.8V, typical

Digital Peripherals

- Three 8-Bit Timers (TMR2/4/6) with Hardware Limit Timer (HLT)
- Four 16-Bit Timers (TMR0/1/3/5)
- Four Configurable Logic Cell (CLC):
 - Integrated combinational and sequential logic
- Three Complementary Waveform Generators (CWGs):
 - Rising and falling edge dead-band control
 - Full-bridge, half-bridge, 1-channel drive
 - Multiple signal sources
 - Programmable dead band
 - Fault-shutdown input
- Four 16-Bit Capture/Compare/16-Bit PWM (CCP) modules
- Four 10-bit Pulse Width Modulators (PWMs)

PIC18(L)F2X/4X/5XK42

Digital Peripherals (Continued)

- Numerically Controlled Oscillator (NCO):
 - Generates true linear frequency control and increased frequency resolution
 - Input Clock: $0 \text{ Hz} < f_{\text{NCO}} < 64 \text{ MHz}$
 - Resolution: $f_{\text{NCO}}/220$
- DSM: Data Signal Modulator:
 - Multiplex two carrier clocks, with glitch prevention feature
 - Multiple sources for each carrier
- Programmable CRC with Memory Scan:
 - Reliable data/program memory monitoring for fail-safe operation (e.g., Class B)
 - Calculate CRC over any portion of Flash
- Two UART Modules:
 - Asynchronous UART, RS-232, RS-485 compatible.
 - One of the UART modules supports LIN master and slave, DMX mode, DALI gear and device protocols
 - Automatic and user timed BREAK period generation
 - DMA compatible
 - Automatic checksums
 - Programmable 1, 1.5, and 2 Stop bits
 - Wake-up on BREAK reception
- One SPI module:
 - Configurable length bytes
 - Arbitrary length data packets
 - Receive-without-transmit option
 - Transmit-without-receive option
 - Transfer byte counter
 - Separate transmit and receive buffers with 2-byte FIFO and DMA capabilities
- Two I²C modules, SMBus, PMBus™ compatible:
 - Dedicated address, transmit and receive buffers
 - Bus collision detection with arbitration
 - Bus time-out detection and handling
 - I²C, SMBus 2.0 and SMBus 3.0, and 1.8V input level selections
 - Multi-Master mode, including self-addressing
- Device I/O Port Features:
 - 25 I/O pins (PIC18(L)F24/25/26/27K42)
 - 36 I/O pins (PIC18(L)F45/46/47K42)
 - 44 I/O pins (PIC18(L)F55/56/57K42)
 - One input-only pin
 - Individually programmable I/O direction, controlled current, open-drain, slew rate, weak pull-up control
 - Interrupt-on-change
 - Three external interrupt pins
- Peripheral Pin Select (PPS):
 - Enables pin mapping of digital I/O

- Signal Measurement Timer (SMT):
 - 24-bit timer/counter with prescaler

Analog Peripherals

- Analog-to-Digital Converter with Computation (ADC²):
 - 12-bit with up to 43 external channels
 - Automated post-processing
 - Automates math functions on input signals: averaging, filter calculations, oversampling and threshold comparison
 - Operates in Sleep
 - Temperature Sensor
 - Internal connection to ADC
 - Can be calibrated for improved accuracy
 - Hardware Capacitive Voltage Divider (CVD):
 - Automates touch sampling and reduces software size and CPU usage when touch or proximity sensing is required
 - Adjustable sample and hold capacitor array
 - Two guard ring output drives
- Two Comparators:
 - Comparator Hysteresis enable
 - Invert output polarity
 - Comparator outputs externally accessible
- 5-Bit Digital-to-Analog Converter (DAC):
 - 5-bit resolution, rail-to-rail
 - Unbuffered I/O pin output
 - Internal connections to ADCs and comparators
- Voltage Reference:
 - Fixed Voltage Reference with 1.024V, 2.048V and 4.096V output levels
 - Connection to ADC, Comp and DAC

Flexible Oscillator Structure

- High-Precision Internal Oscillator:
 - Selectable frequency range up to 64 MHz
 - Safe clock switching while running
 - $\pm 1\%$ at calibration (nominal)
- Low-Power Internal 32 kHz Oscillator (LFINTOSC)
- External 32 kHz Crystal Oscillator
- External Oscillator Block with:
 - x4 PLL with external sources
 - Three crystal/resonator modes up to 20 MHz
 - Three external clock modes up to 20 MHz
- Fail-Safe Clock Monitor
 - Allows for safe shutdown if peripherals clock stops
- Oscillator Start-up Timer (OST)
 - Ensures stability of crystal oscillator sources

TABLE 1: PIC18(L)F2X/4X/5XK42 FAMILY TYPES

Device	Data Sheet Index	Program Flash Memory (KB)	Data EEPROM (B)	Data SRAM (bytes)	I/O Pins	12-bit ADC ² (ch)	5-bit DAC	Comparator	8-bit/16-bit Timer	Window Watchdog Timer (WWDT)	Signal Measurement Timer (SMT)	CCP/10-bit PWM	CWG	NCO	CLC	Zero-Cross Detect	Direct Memory Access (DMA) (channels)	Memory Access Partition	Vectored Interrupts	UART/JUART with LIN, DMX, DALI Protocol Support	I ² C/SPI	Peripheral Pin Select	Peripheral Module Disable	Debug ⁽¹⁾
PIC18(L)F24K42	A	16	256	1024	25	24	1	2	3/4	Y	Y	4/4	3	1	4	Y	2	Y	Y	1/1	2/1	Y	Y	I
PIC18(L)F25K42	A	32	256	2048	25	24	1	2	3/4	Y	Y	4/4	3	1	4	Y	2	Y	Y	1/1	2/1	Y	Y	I
PIC18(L)F26K42	B	64	1024	4096	25	24	1	2	3/4	Y	Y	4/4	3	1	4	Y	2	Y	Y	1/1	2/1	Y	Y	I
PIC18(L)F27K42	C	128	1024	8192	25	24	1	2	3/4	Y	Y	4/4	3	1	4	Y	2	Y	Y	1/1	2/1	Y	Y	I
PIC18(L)F45K42	B	32	256	2048	36	35	1	2	3/4	Y	Y	4/4	3	1	4	Y	2	Y	Y	1/1	2/1	Y	Y	I
PIC18(L)F46K42	B	64	1024	4096	36	35	1	2	3/4	Y	Y	4/4	3	1	4	Y	2	Y	Y	1/1	2/1	Y	Y	I
PIC18(L)F47K42	C	128	1024	8192	36	35	1	2	3/4	Y	Y	4/4	3	1	4	Y	2	Y	Y	1/1	2/1	Y	Y	I
PIC18(L)F55K42	B	32	1024	2048	44	43	1	2	3/4	Y	Y	4/4	3	1	4	Y	2	Y	Y	1/1	2/1	Y	Y	I
PIC18(L)F56K42	B	64	1024	4096	44	43	1	2	3/4	Y	Y	4/4	3	1	4	Y	2	Y	Y	1/1	2/1	Y	Y	I
PIC18(L)F57K42	C	128	1024	8192	44	43	1	2	3/4	Y	Y	4/4	3	1	4	Y	2	Y	Y	1/1	2/1	Y	Y	I

Note 1: I – Debugging integrated on chip.

Data Sheet Index:

- A:** Future Release [PIC18\(L\)F24/44K42 Data Sheet, 28-Pin](#)
B: Future Release [PIC18\(L\)F26/45/55/46/56K42 Data Sheet, 48-Pin](#)
C: Future Release [PIC18\(L\)F27/47/57K42 Data Sheet, 48-Pin](#)

Note: For other small form-factor package availability and marking information, please visit www.microchip.com/packaging or contact your local sales office.

PIC18(L)F2X/4X/5XK42

TABLE 2: PACKAGES

Device	(S)PDIP	SOIC	SSOP	UQFN (4x4)	QFN (6x6)	TQFP	QFN (8x8)	UQFN (5x5)	UQFN (6x6)
PIC18(L)F24K42	X	X	X	X	X	—	—	—	—
PIC18(L)F25K42	X	X	X	X	X	—	—	—	—
PIC18(L)F26K42	X	X	X	X	—	—	—	—	—
PIC18(L)F27K42	X	X	X	—	X	—	—	—	—
PIC18(L)F45K42	X	—	—	—	—	X	X	X	—
PIC18(L)F46K42	X	—	—	—	—	X	X	X	—
PIC18(L)F47K42	X	—	—	—	—	X	X	X	—
PIC18(L)F55K42	X	—	—	—	—	X	X	—	X
PIC18(L)F56K42	X	—	—	—	—	X	X	—	X
PIC18(L)F57K42	X	—	—	—	—	X	X	—	X

Note: Pin details are subject to change.

PIC18(L)F2X/4X/5XK42

PIN DIAGRAMS

FIGURE 1: 28-PIN SPDIP, SOIC, SSOP FOR PIC18(L)F2XK42

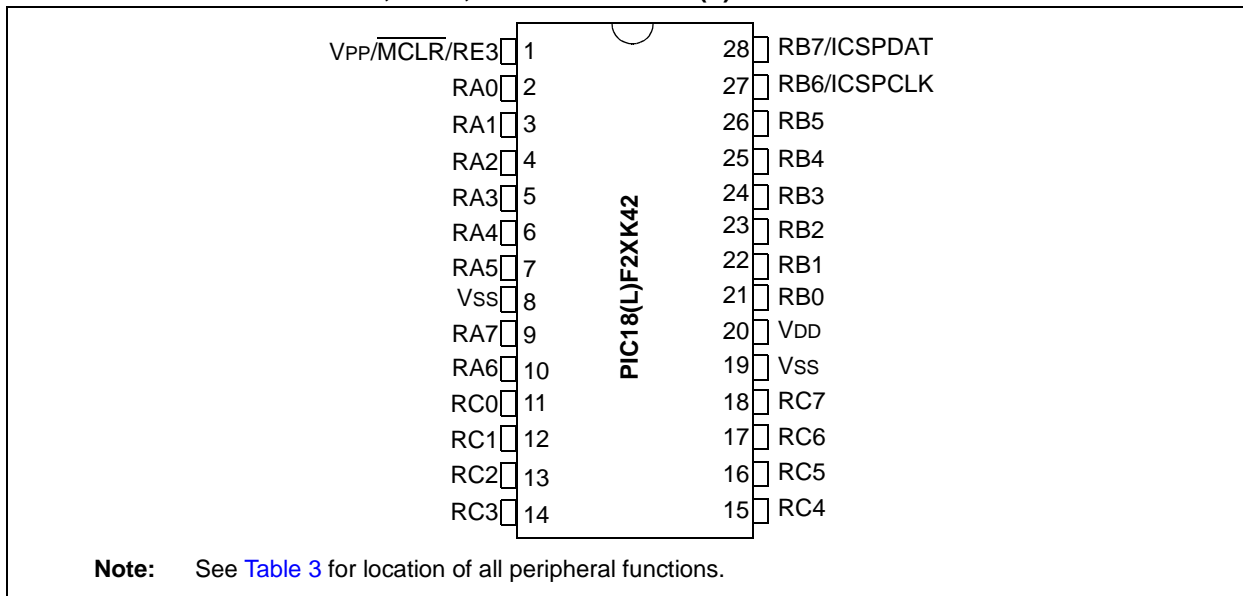
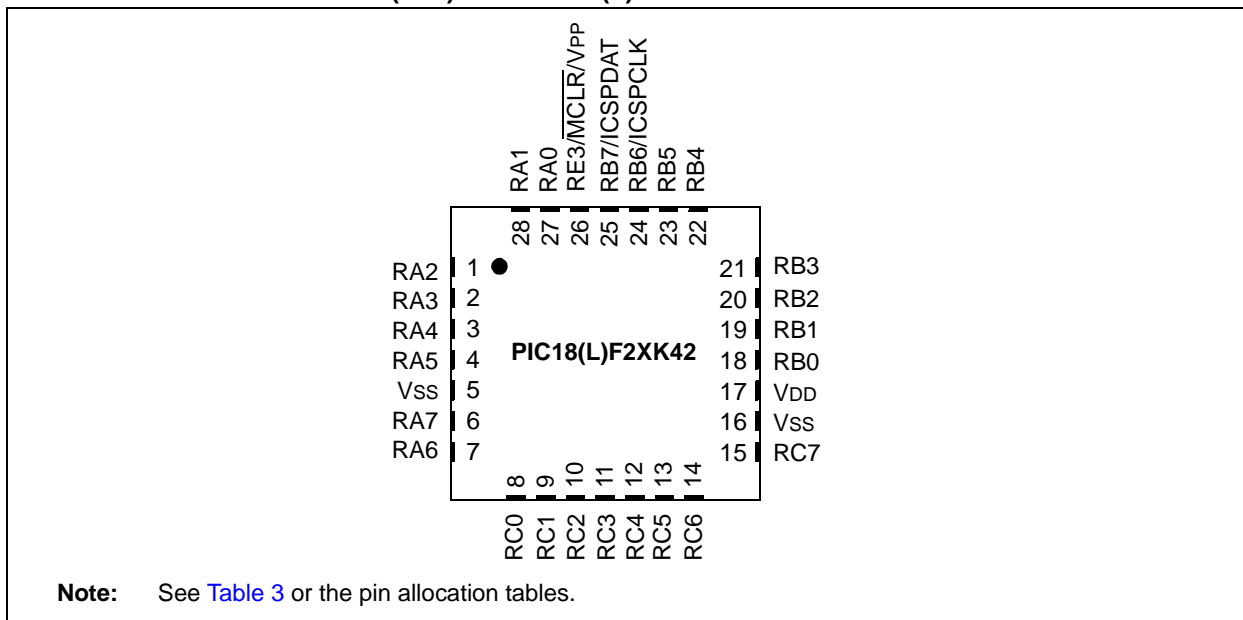


FIGURE 2: 28-PIN UQFN (4X4) FOR PIC18(L)F2XK42



PIC18(L)F2X/4X/5XK42

FIGURE 3: 28-PIN QFN (6X6X0.9 mm) FOR PIC18(L)F2XK42



FIGURE 4: 40-PIN PDIP FOR PIC18(L)F4XK42



PIC18(L)F2X/4X/5XK42

FIGURE 5: 40-PIN UQFN (5X5X0.5 mm) FOR PIC18(L)F4XK42



FIGURE 6: 44-PIN QFN (8X8X0.9 mm) FOR PIC18(L)F5XK42



PIC18(L)F2X/4X/5XK42

FIGURE 7: 44-PIN TQFP FOR PIC18(L)F4XK42



FIGURE 8: 48-PIN TQFP/UQFN FOR PIC18(L)F5XK42



PIN ALLOCATION TABLES

TABLE 3: 28-PIN ALLOCATION TABLE (PIC18(L)F2XK42)

I/O	28-Pin SPDIP/SOIC/SSOP	28-Pin (U)QFN	ADC	Voltage Reference	DAC	Comparators	Zero Cross Detect	I ² C	SPI	UART	DSM	Timers/SMT	CCP and PWM	CWG	CLC	NCO	Clock Reference (CLKR)	Interrupt-on-Change	Basic
RA0	2	27	ANA0	—	—	C1IN0- C2IN0-	—	—	—	—	—	—	—	—	CLCIN0 ⁽¹⁾	—	—	IOCA0	—
RA1	3	28	ANA1	—	—	C1IN1- C2IN1-	—	—	—	—	—	—	—	—	CLCIN1 ⁽¹⁾	—	—	IOCA1	—
RA2	4	1	ANA2	VREF-	DAC1OUT1	C1IN0+ C2IN0+	—	—	—	—	—	—	—	—	—	—	—	IOCA2	—
RA3	5	2	ANA3	VREF+	—	C1IN1+	—	—	—	—	MDCARL ⁽¹⁾	—	—	—	—	—	—	IOCA3	—
RA4	6	3	ANA4	—	—	—	—	—	—	—	MDCARH ⁽¹⁾	T0CKI ⁽¹⁾	—	—	—	—	—	IOCA4	—
RA5	7	4	ANA5	—	—	—	—	—	SS1 ⁽¹⁾	—	MDSRC ⁽¹⁾	—	—	—	—	—	—	IOCA5	—
RA6	10	7	ANA6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	IOCA6	OSC2 CLKOUT
RA7	9	6	ANA7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	IOCA7	OSC1 CLKIN
RB0	21	18	ANB0	—	—	C2IN1+	ZCD	—	—	—	—	—	CCP4 ⁽¹⁾	CWG1IN ⁽¹⁾	—	—	—	INT0 ⁽¹⁾ IOCB0	—
RB1	22	19	ANB1	—	—	C1IN3- C2IN3-	—	SCL2 ^(3,4)	—	—	—	—	—	CWG2IN ⁽¹⁾	—	—	—	INT1 ⁽¹⁾ IOCB1	—
RB2	23	20	ANB2	—	—	—	—	SDA2 ^(3,4)	—	—	—	—	—	CWG3IN ⁽¹⁾	—	—	—	INT2 ⁽¹⁾ IOCB2	—
RB3	24	21	ANB3	—	—	C1IN2- C2IN2-	—	—	—	—	—	—	—	—	—	—	—	IOCB3	—
RB4	25	22	ANB4 ADCACT ⁽¹⁾	—	—	—	—	—	—	—	—	T5G ⁽¹⁾	—	—	—	—	—	IOCB4	—
RB5	26	23	ANB5	—	—	—	—	—	—	—	—	T1G ⁽¹⁾	CCP3 ⁽¹⁾	—	—	—	—	IOCB5	—
RB6	27	24	ANB6	—	—	—	—	—	—	CTS2 ⁽¹⁾	—	—	—	—	CLCIN2 ⁽¹⁾	—	—	IOCB6	ICSPCLK
RB7	28	25	ANB7	—	DAC1OUT2	—	—	—	—	RX2 ⁽¹⁾	—	T6IN(1)	—	—	CLCIN3 ⁽¹⁾	—	—	IOCB7	ICSPDAT

- Note**
- 1: This is a PPS remappable input signal. The input function may be moved from the default location shown to one of several other PORTx pins.
 - 2: All output signals shown in this row are PPS remappable.
 - 3: This is a bidirectional signal. For normal module operation, the firmware should map this signal to the same pin in both the PPS input and PPS output registers.
 - 4: These pins are configured for I²C and SMBus 3.0/2.0 logic levels; The SCLx/SDAx signals may be assigned to any of the RB1/RB2/RC3/RC4 pins. PPS assignments to the other pins (e.g., RA5) will operate, but input logic levels will be standard TTL/ST as selected by the INLVL register, instead of the I²C specific or SMBus input buffer thresholds.

TABLE 3: 28-PIN ALLOCATION TABLE (PIC18(L)F2XK42) (CONTINUED)

I/O	28-Pin SPDIP/SOIC/SSOP	28-Pin (U)QFN	ADC	Voltage Reference	DAC	Comparators	Zero Cross Detect	I ² C	SPI	UART	DSM	Timers/SMT	CCP and PWM	CWG	CLC	NCO	Clock Reference (CLKR)	Interrupt-on-Change	Basic
RC0	11	8	ANC0	—	—	—	—	—	—	—	—	T1CK ⁽¹⁾ T3CK ⁽¹⁾ T3G ⁽¹⁾ SMTWIN1 ⁽¹⁾	—	—	—	—	—	IOCC0	SOSCO
RC1	12	9	ANC1	—	—	—	—	—	—	—	—	SMTSIG1 ⁽¹⁾	CCP2 ⁽¹⁾	—	—	—	—	IOCC1	SOSCI
RC2	13	10	ANC2	—	—	—	—	—	—	—	—	T5CK1 ⁽¹⁾	CCP1 ⁽¹⁾	—	—	—	—	IOCC2	—
RC3	14	11	ANC3	—	—	—	—	SCL1 ^(3,4)	SCK1 ⁽¹⁾	—	—	T2IN ⁽¹⁾	—	—	—	—	—	IOCC3	—
RC4	15	12	ANC4	—	—	—	—	SDA1 ^(3,4)	SDI1 ⁽¹⁾	—	—	—	—	—	—	—	—	IOCC4	—
RC5	16	13	ANC5	—	—	—	—	—	—	—	—	T4IN ⁽¹⁾	—	—	—	—	—	IOCC5	—
RC6	17	14	ANC6	—	—	—	—	—	—	CTS1 ⁽¹⁾	—	—	—	—	—	—	—	IOCC6	—
RC7	18	15	ANC7	—	—	—	—	—	—	RX1 ⁽¹⁾	—	—	—	—	—	—	—	IOCC7	—
RE3	1	26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	IOCE3	MCLR V _{PP}
VDD	20	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
VSS	8, 19	5, 16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
OUT ⁽²⁾	—	—	ADGRDA ADGRDB	—	—	C1OUT C2OUT	—	SDA1 SCL1 SDA2 SCL2	SS1 SCK1 SDO1	RTS1 TXDE1 TX1 RTS2 TXDE2 TX2	DSM	TMR0	CCP1 CCP2 CCP3 CCP4 PWM5OUT PWM6OUT PWM7OUT PWM8OUT	CWG1A CWG1B CWG1C CWG1D CWG2A CWG2B CWG2C CWG2D CWG3A CWG3B CWG3C CWG3D	CLC1OUT CLC2OUT CLC3OUT CLC4OUT	NCO	CLKR	—	—

- Note**
- 1: This is a PPS remappable input signal. The input function may be moved from the default location shown to one of several other PORTx pins.
 - 2: All output signals shown in this row are PPS remappable.
 - 3: This is a bidirectional signal. For normal module operation, the firmware should map this signal to the same pin in both the PPS input and PPS output registers.
 - 4: These pins are configured for I²C and SMBus 3.0/2.0 logic levels; The SCLx/SDAx signals may be assigned to any of the RB1/RB2/RC3/RC4 pins. PPS assignments to the other pins (e.g., RA5) will operate, but input logic levels will be standard TTL/ST as selected by the INLVL register, instead of the I²C specific or SMBus input buffer thresholds.

TABLE 4: 40/44-PIN ALLOCATION TABLE FOR PIC18(L)F4XK42, PIC18(L)F5XK42

I/O	40-Pin PDIP	44-Pin TQFP	40-Pin UQFN	44-Pin QFN	ADC	Voltage Reference	DAC	Comparators	Zero Cross Detect	I ² C	SPI	UART	DSM	Timers/SMT	CCP and PWM	CWG	CLC	NCO	Clock Reference (CLKR)	Interrupt-on-Change	Basic
RA0	2	19	17	19	ANA0	—	—	C1IN0- C2IN0-	—	—	—	—	—	—	—	—	CLCIN0 ⁽¹⁾	—	—	IOCA0	—
RA1	3	20	18	20	ANA1	—	—	C1IN1- C2IN1-	—	—	—	—	—	—	—	—	CLCIN1 ⁽¹⁾	—	—	IOCA1	—
RA2	4	21	19	21	ANA2	VREF-	DAC1OUT1	C1IN0+ C2IN0+	—	—	—	—	—	—	—	—	—	—	—	IOCA2	—
RA3	5	22	20	22	ANA3	VREF+	—	C1IN1+	—	—	—	—	MDCARL ⁽¹⁾	—	—	—	—	—	—	IOCA3	—
RA4	6	23	21	23	ANA4	—	—	—	—	—	—	—	MDCARH ⁽¹⁾	TOCK1 ⁽¹⁾	—	—	—	—	—	IOCA4	—
RA5	7	24	22	24	ANA5	—	—	—	—	—	SS1 ⁽¹⁾	—	MDSRC ⁽¹⁾	—	—	—	—	—	—	IOCA5	—
RA6	14	31	29	33	ANA6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	IOCA6	OSC2 CLKOUT
RA7	13	30	28	32	ANA7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	IOCA7	OSC1 CLKIN
RB0	33	8	8	9	ANB0	—	—	C2IN1+	ZCD	—	—	—	—	—	CCP4 ⁽¹⁾	CWG1IN ⁽¹⁾	—	—	—	INT0 ⁽¹⁾ IOCB0	—
RB1	34	9	9	10	ANB1	—	—	C1IN3- C2IN3-	—	SCL2 ^(3,4)	—	—	—	—	—	CWG2IN ⁽¹⁾	—	—	—	INT1 ⁽¹⁾ IOCB1	—
RB2	35	10	10	11	ANB2	—	—	—	—	SDA2 ^(3,4)	—	—	—	—	—	CWG3IN ⁽¹⁾	—	—	—	INT2 ⁽¹⁾ IOCB2	—
RB3	36	11	11	12	ANB3	—	—	C1IN2- C2IN2-	—	—	—	—	—	—	—	—	—	—	—	IOCB3	—
RB4	37	14	12	14	ANB4 ADCACT ⁽¹⁾	—	—	—	—	—	—	—	—	T5G ⁽¹⁾	—	—	—	—	—	IOCB4	—
RB5	38	15	13	15	ANB5	—	—	—	—	—	—	—	—	T1G ⁽¹⁾	CCP3 ⁽¹⁾	—	—	—	—	IOCB5	—
RB6	39	16	14	16	ANB6	—	—	—	—	—	—	CTS2 ⁽¹⁾	—	—	—	—	CLCIN2 ⁽¹⁾	—	—	IOCB6	ICSPCLK
RB7	40	17	15	17	ANB7	—	DAC1OUT2	—	—	—	—	RX2 ⁽¹⁾	—	T6IN ⁽¹⁾	—	—	CLCIN3 ⁽¹⁾	—	—	IOCB7	ICSPDAT
RC0	15	32	30	34	ANC0	—	—	—	—	—	—	—	—	T1CK1 ⁽¹⁾ T3CK1 ⁽¹⁾ T3G ⁽¹⁾ SMTWIN1 ⁽¹⁾	—	—	—	—	IOCC0	SOSCO	
RC1	16	35	31	35	ANC1	—	—	—	—	—	—	—	—	SMTSIG1 ⁽¹⁾	CCP2 ⁽¹⁾	—	—	—	—	IOCC1	SOSCI

- Note**
- 1: This is a PPS remappable input signal. The input function may be moved from the default location shown to one of several other PORTx pins.
 - 2: All output signals shown in this row are PPS remappable.
 - 3: This is a bidirectional signal. For normal module operation, the firmware should map this signal to the same pin in both the PPS input and PPS output registers.
 - 4: These pins are configured for I²C and SMBus 3.0/2.0 logic levels; The SCLx/SDAx signals may be assigned to any of the RB1/RB2/RC3/RC4 pins. PPS assignments to the other pins (e.g., RA5) will operate, but input logic levels will be standard TTL/ST as selected by the INLVL register, instead of the I²C specific or SMBus input buffer thresholds.

TABLE 4: 40/44-PIN ALLOCATION TABLE FOR PIC18(L)F4XK42, PIC18(L)F5XK42 (CONTINUED)

I/O	40-Pin PDIP	44-Pin TQFP	40-Pin UQFN	44-Pin QFN	ADC	Voltage Reference	DAC	Comparators	Zero Cross Detect	I ² C	SPI	UART	DSM	Timers/SMT	CCP and PWM	CWG	CLC	NCO	Clock Reference (CLKR)	Interrupt-on-Change	Basic
RC2	17	36	32	36	ANC2	—	—	—	—	—	—	—	—	T5CK1 ⁽¹⁾	CCP1 ⁽¹⁾	—	—	—	—	IOCC2	—
RC3	18	37	33	37	ANC3	—	—	—	—	SCL1 ^(3,4)	SCK1 ⁽¹⁾	—	—	T2IN ⁽¹⁾	—	—	—	—	—	IOCC3	—
RC4	23	42	38	42	ANC4	—	—	—	—	SDA1 ^(3,4)	SDI1 ⁽¹⁾	—	—	—	—	—	—	—	—	IOCC4	—
RC5	24	43	39	43	ANC5	—	—	—	—	—	—	—	—	T4IN ⁽¹⁾	—	—	—	—	—	IOCC5	—
RC6	25	44	40	44	ANC6	—	—	—	—	—	—	CTS1 ⁽¹⁾	—	—	—	—	—	—	—	IOCC6	—
RC7	26	1	1	1	ANC7	—	—	—	—	—	—	RX1 ⁽¹⁾	—	—	—	—	—	—	—	IOCC7	—
RD0	19	38	34	38	AND0	—	—	—	—	— ⁽⁴⁾	—	—	—	—	—	—	—	—	—	—	—
RD1	20	39	35	39	AND1	—	—	—	—	— ⁽⁴⁾	—	—	—	—	—	—	—	—	—	—	—
RD2	21	40	36	40	AND2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RD3	22	41	37	41	AND3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RD4	27	2	2	2	AND4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RD5	28	3	3	3	AND5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RD6	29	4	4	4	AND6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RD7	30	5	5	5	AND7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE0	8	25	23	25	ANE0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE1	9	26	24	26	ANE1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE2	10	27	25	27	ANE2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE3	1	18	16	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	IOCE3	MCLR VPP
VDD	11, 32	7, 28	7, 26	8, 28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
VSS	12, 31	6, 29	6, 27	6, 31, 30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

- Note**
- 1: This is a PPS remappable input signal. The input function may be moved from the default location shown to one of several other PORTx pins.
 - 2: All output signals shown in this row are PPS remappable.
 - 3: This is a bidirectional signal. For normal module operation, the firmware should map this signal to the same pin in both the PPS input and PPS output registers.
 - 4: These pins are configured for I²C and SMBus 3.0/2.0 logic levels; The SCLx/SDAx signals may be assigned to any of the RB1/RB2/RC3/RC4 pins. PPS assignments to the other pins (e.g., RA5) will operate, but input logic levels will be standard TTL/ST as selected by the INLVL register, instead of the I²C specific or SMBus input buffer thresholds.

TABLE 4: 40/44-PIN ALLOCATION TABLE FOR PIC18(L)F4XK42, PIC18(L)F5XK42 (CONTINUED)

I/O	40-Pin PDIP	44-Pin TQFP	40-Pin UQFN	44-Pin QFN	ADC	Voltage Reference	DAC	Comparators	Zero Cross Detect	I ² C	SPI	UART	DSM	Timers/SMT	CCP and PWM	CWG	CLC	NCO	Clock Reference (CLKR)	Interrupt-on-Change	Basic
OUT ⁽²⁾	—	—	—	—	ADGRDA ADGRDB	—	—	C1OUT C2OUT	—	SDA1 SCL1 SDA2 SCL2	SS1 SCK1 SDO1	RTS1 TXDE1 TX1 RTS2 TXDE2 TX2	DSM	TMR0	CCP1 CCP2 CCP3 CCP4 PWM5OUT PWM6OUT PWM7OUT PWM8OUT	CWG1A CWG1B CWG1C CWG1D CWG2A CWG2B CWG2C CWG2D CWG3A CWG3B CWG3C CWG3D	CLC1OUT CLC2OUT CLC3OUT CLC4OUT	NCO	CLKR	—	—

- Note**
- 1: This is a PPS remappable input signal. The input function may be moved from the default location shown to one of several other PORTx pins.
 - 2: All output signals shown in this row are PPS remappable.
 - 3: This is a bidirectional signal. For normal module operation, the firmware should map this signal to the same pin in both the PPS input and PPS output registers.
 - 4: These pins are configured for I²C and SMBus 3.0/2.0 logic levels; The SCLx/SDAx signals may be assigned to any of the RB1/RB2/RC3/RC4 pins. PPS assignments to the other pins (e.g., RA5) will operate, but input logic levels will be standard TTL/ST as selected by the INLVL register, instead of the I²C specific or SMBus input buffer thresholds.

TABLE 5: 48-PIN ALLOCATION TABLE FOR PIC18(L)F5XK42

I/O	48-Pin TQFP	48-Pin UQFN	ADC	Voltage Reference	DAC	Comparators	Zero Cross Detect	I ² C	SPI	UART	DSM	Timers/SMT	CCP and PWM	CWG	CLC	NCO	Clock Reference (CLKR)	Interrupt-on-Change	Basic
RA0	21	21	ANA0	—	—	C1IN0- C2IN0-	—	—	—	—	—	—	—	—	CLCIN0 ⁽¹⁾	—	—	IOCA0	—
RA1	22	22	ANA1	—	—	C1IN1- C2IN1-	—	—	—	—	—	—	—	—	CLCIN1 ⁽¹⁾	—	—	IOCA1	—
RA2	23	23	ANA2	VREF-	DAC1OUT1	C1IN0+ C2IN0+	—	—	—	—	—	—	—	—	—	—	—	IOCA2	—
RA3	24	24	ANA3	VREF+	—	C1IN1+	—	—	—	—	MDCARL ⁽¹⁾	—	—	—	—	—	—	IOCA3	—
RA4	25	25	ANA4	—	—	—	—	—	—	—	MDCARH ⁽¹⁾	T0CKI ⁽¹⁾	—	—	—	—	—	IOCA4	—
RA5	26	26	ANA5	—	—	—	—	—	SS1 ⁽¹⁾	—	MDSRC ⁽¹⁾	—	—	—	—	—	—	IOCA5	—
RA6	33	33	ANA6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	IOCA6	OSC2 CLKOUT
RA7	32	32	ANA7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	IOCA7	OSC1 CLKIN
RB0	8	8	ANB0	—	—	C2IN1+	ZCD	—	—	—	—	—	CCP4 ⁽¹⁾	CWG1IN ⁽¹⁾	—	—	—	INT0 ⁽¹⁾ IOCB0	—
RB1	9	9	ANB1	—	—	C1IN3- C2IN3-	—	SCL2 ^(3,4)	—	—	—	—	—	CWG2IN ⁽¹⁾	—	—	—	INT1 ⁽¹⁾ IOCB1	—
RB2	10	10	ANB2	—	—	—	—	SDA2 ^(3,4)	—	—	—	—	—	CWG3IN ⁽¹⁾	—	—	—	INT2 ⁽¹⁾ IOCB2	—
RB3	11	11	ANB3	—	—	C1IN2- C2IN2-	—	—	—	—	—	—	—	—	—	—	—	IOCB3	—
RB4	16	16	ANB4 ADCACT ⁽¹⁾	—	—	—	—	—	—	—	—	T5G ⁽¹⁾	—	—	—	—	—	IOCB4	—
RB5	17	17	ANB5	—	—	—	—	—	—	—	—	T1G ⁽¹⁾	CCP3 ⁽¹⁾	—	—	—	—	IOCB5	—
RB6	18	18	ANB6	—	—	—	—	—	—	CTS2 ⁽¹⁾	—	—	—	—	CLCIN2 ⁽¹⁾	—	—	IOCB6	ICSPCLK
RB7	19	19	ANB7	—	DAC1OUT2	—	—	—	—	RX2 ⁽¹⁾	—	T6IN ⁽¹⁾	—	—	CLCIN3 ⁽¹⁾	—	—	IOCB7	ICSPDAT
RC0	34	34	ANC0	—	—	—	—	—	—	—	—	T1CKj ⁽¹⁾ T3CKj ⁽¹⁾ T3G ⁽¹⁾ SMTWIN1 ⁽¹⁾	—	—	—	—	—	IOCC0	SOSCO
RC1	35	35	ANC1	—	—	—	—	—	—	—	—	SMTSIG1 ⁽¹⁾	CCP2 ⁽¹⁾	—	—	—	—	IOCC1	SOSCI

Note

- 1: This is a PPS remappable input signal. The input function may be moved from the default location shown to one of several other PORTx pins.
- 2: All output signals shown in this row are PPS remappable.
- 3: This is a bidirectional signal. For normal module operation, the firmware should map this signal to the same pin in both the PPS input and PPS output registers.
- 4: These pins are configured for I²C and SMBus 3.0/2.0 logic levels; The SCLx/SDAx signals may be assigned to any of the RB1/RB2/RC3/RC4 pins. PPS assignments to the other pins (e.g., RA5) will operate, but input logic levels will be standard TTL/ST as selected by the INLVL register, instead of the I²C specific or SMBus input buffer thresholds.

TABLE 5: 48-PIN ALLOCATION TABLE FOR PIC18(L)F5XK42 (CONTINUED)

I/O	48-Pin TQFP	48-Pin UQFN	ADC	Voltage Reference	DAC	Comparators	Zero Cross Detect	I ² C	SPI	UART	DSM	Timers/SMT	CCP and PWM	CWG	CLC	NCO	Clock Reference (CLKR)	Interrupt-on-Change	Basic
RC2	40	40	ANC2	—	-	—	—	—	—	—	—	T5CK1 ⁽¹⁾	CCP1 ⁽¹⁾	—	—	—	—	IOCC2	—
RC3	41	41	ANC3	—	-	—	—	SCL1 ^(3,4)	SCK1 ⁽¹⁾	—	—	T2IN ⁽¹⁾	-	—	—	—	—	IOCC3	—
RC4	46	46	ANC4	—	—	—	—	SDA1 ^(3,4)	SDI1 ⁽¹⁾	—	—	—	—	—	—	—	—	IOCC4	—
RC5	47	47	ANC5	—	—	—	—	—	—	—	—	T4IN ⁽¹⁾	—	—	—	—	—	IOCC5	—
RC6	48	48	ANC6	—	—	—	—	—	—	CTS1 ⁽¹⁾	—	—	—	—	—	—	—	IOCC6	—
RC7	1	1	ANC7	—	—	—	—	—	—	RX1 ⁽¹⁾	—	—	—	—	—	—	—	IOCC7	—
RD0	42	42	AND0	—	—	—	—	— ⁽⁴⁾	—	—	—	—	—	—	—	—	—	—	—
RD1	43	43	AND1	—	—	—	—	— ⁽⁴⁾	—	—	—	—	—	—	—	—	—	—	—
RD2	44	44	AND2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RD3	45	45	AND3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RD4	2	2	AND4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RD5	3	3	AND5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RD6	4	4	AND6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RD7	5	5	AND7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE0	27	27	ANE0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE1	28	28	ANE1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE2	29	29	ANE2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE3	20	20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	IOCE3	MCLR V _{PP}
RF0	36	36	ANF0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RF1	37	37	ANF1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RF2	38	38	ANF2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RF3	39	39	ANF3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RF4	12	12	ANF4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RF5	13	13	ANF5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RF6	14	14	ANF6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RF7	15	15	ANF7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
V _{DD}	7, 30	7, 30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

- Note**
- 1: This is a PPS remappable input signal. The input function may be moved from the default location shown to one of several other PORTx pins.
 - 2: All output signals shown in this row are PPS remappable.
 - 3: This is a bidirectional signal. For normal module operation, the firmware should map this signal to the same pin in both the PPS input and PPS output registers.
 - 4: These pins are configured for I²C and SMBus 3.0/2.0 logic levels; The SCLx/SDAx signals may be assigned to any of the RB1/RB2/RC3/RC4 pins. PPS assignments to the other pins (e.g., RA5) will operate, but input logic levels will be standard TTL/ST as selected by the INLVL register, instead of the I²C specific or SMBus input buffer thresholds.

TABLE 5: 48-PIN ALLOCATION TABLE FOR PIC18(L)F5XK42 (CONTINUED)

I/O	48-Pin TQFP	48-Pin UQFN	ADC	Voltage Reference	DAC	Comparators	Zero Cross Detect	I ² C	SPI	UART	DSM	Timers/SMT	CCP and PWM	CWG	CLC	NCO	Clock Reference (CLKR)	Interrupt-on-Change	Basic
Vss	6, 31	6, 31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
OUT ⁽²⁾	—	—	ADGRDA ADGRDB	—	—	C1OUT C2OUT	—	SDA1 SCL1 SDA2 SCL2	SS1 SCK1 SDO1	RTS1 TXDE1 TX1 RTS2 TXDE2 TX2	DSM	TMR0	CCP1 CCP2 CCP3 CCP4 PWM5OUT PWM6OUT PWM7OUT PWM8OUT	CWG1A CWG1B CWG1C CWG1D CWG2A CWG2B CWG2C CWG2D CWG3A CWG3B CWG3C CWG3D	CLC1OUT CLC2OUT CLC3OUT CLC4OUT	NCO	CLKR	—	—

- Note**
- 1: This is a PPS remappable input signal. The input function may be moved from the default location shown to one of several other PORTx pins.
 - 2: All output signals shown in this row are PPS remappable.
 - 3: This is a bidirectional signal. For normal module operation, the firmware should map this signal to the same pin in both the PPS input and PPS output registers.
 - 4: These pins are configured for I²C and SMBus 3.0/2.0 logic levels; The SCLx/SDAx signals may be assigned to any of the RB1/RB2/RC3/RC4 pins. PPS assignments to the other pins (e.g., RA5) will operate, but input logic levels will be standard TTL/ST as selected by the INLVL register, instead of the I²C specific or SMBus input buffer thresholds.

Note the following details of the code protection feature on Microchip devices:

- Microchip products meet the specification contained in their particular Microchip Data Sheet.
- Microchip believes that its family of products is one of the most secure families of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of these methods, to our knowledge, require using the Microchip products in a manner outside the operating specifications contained in Microchip's Data Sheets. Most likely, the person doing so is engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as “unbreakable.”

Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our products. Attempts to break Microchip's code protection feature may be a violation of the Digital Millennium Copyright Act. If such acts allow unauthorized access to your software or other copyrighted work, you may have a right to sue for relief under that Act.

Information contained in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that your application meets with your specifications. MICROCHIP MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING BUT NOT LIMITED TO ITS CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE. Microchip disclaims all liability arising from this information and its use. Use of Microchip devices in life support and/or safety applications is entirely at the buyer's risk, and the buyer agrees to defend, indemnify and hold harmless Microchip from any and all damages, claims, suits, or expenses resulting from such use. No licenses are conveyed, implicitly or otherwise, under any Microchip intellectual property rights unless otherwise stated.

Microchip received ISO/TS-16949:2009 certification for its worldwide headquarters, design and wafer fabrication facilities in Chandler and Tempe, Arizona; Gresham, Oregon and design centers in California and India. The Company's quality system processes and procedures are for its PIC® MCUs and dsPIC® DSCs, KEELoQ® code hopping devices, Serial EEPROMs, microperipherals, nonvolatile memory and analog products. In addition, Microchip's quality system for the design and manufacture of development systems is ISO 9001:2000 certified.

**QUALITY MANAGEMENT SYSTEM
CERTIFIED BY DNV
= ISO/TS 16949 =**

Trademarks

The Microchip name and logo, the Microchip logo, AnyRate, AVR, AVR logo, AVR Freaks, BeaconThings, BitCloud, CryptoMemory, CryptoRF, dsPIC, FlashFlex, flexPWR, Heldo, JukeBlox, KEELoQ, KEELoQ logo, Kleer, LANCheck, LINK MD, maXStylus, maXTouch, MediaLB, megaAVR, MOST, MOST logo, MPLAB, OptoLyzer, PIC, picoPower, PICSTART, PIC32 logo, Prochip Designer, QTouch, RightTouch, SAM-BA, SpyNIC, SST, SST Logo, SuperFlash, tinyAVR, UNI/O, and XMEGA are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

ClockWorks, The Embedded Control Solutions Company, EtherSynch, Hyper Speed Control, HyperLight Load, IntelliMOS, mTouch, Precision Edge, and Quiet-Wire are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Adjacent Key Suppression, AKS, Analog-for-the-Digital Age, Any Capacitor, AnyIn, AnyOut, BodyCom, chipKIT, chipKIT logo, CodeGuard, CryptoAuthentication, CryptoCompanion, CryptoController, dsPICDEM, dsPICDEM.net, Dynamic Average Matching, DAM, ECAN, EtherGREEN, In-Circuit Serial Programming, ICSP, Inter-Chip Connectivity, JitterBlocker, KleerNet, KleerNet logo, Mindi, MiWi, motorBench, MPASM, MPF, MPLAB Certified logo, MPLIB, MPLINK, MultiTRAK, NetDetach, Omniscient Code Generation, PICDEM, PICDEM.net, PICKit, PICtail, PureSilicon, QMatrix, RightTouch logo, REAL ICE, Ripple Blocker, SAM-ICE, Serial Quad I/O, SMART-I.S., SQI, SuperSwitcher, SuperSwitcher II, Total Endurance, TSHARC, USBCheck, VariSense, ViewSpan, WiperLock, Wireless DNA, and ZENA are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SQTP is a service mark of Microchip Technology Incorporated in the U.S.A.

Silicon Storage Technology is a registered trademark of Microchip Technology Inc. in other countries.

GestIC is a registered trademark of Microchip Technology Germany II GmbH & Co. KG, a subsidiary of Microchip Technology Inc., in other countries.

All other trademarks mentioned herein are property of their respective companies.

© 2016, Microchip Technology Incorporated, All Rights Reserved.
ISBN: 978-1-5224-1158-1



MICROCHIP

Worldwide Sales and Service

AMERICAS

Corporate Office
2355 West Chandler Blvd.
Chandler, AZ 85224-6199
Tel: 480-792-7200
Fax: 480-792-7277
Technical Support:
<http://www.microchip.com/support>
Web Address:
www.microchip.com

Atlanta
Duluth, GA
Tel: 678-957-9614
Fax: 678-957-1455

Austin, TX
Tel: 512-257-3370

Boston
Westborough, MA
Tel: 774-760-0087
Fax: 774-760-0088

Chicago
Itasca, IL
Tel: 630-285-0071
Fax: 630-285-0075

Dallas
Addison, TX
Tel: 972-818-7423
Fax: 972-818-2924

Detroit
Novi, MI
Tel: 248-848-4000

Houston, TX
Tel: 281-894-5983

Indianapolis
Noblesville, IN
Tel: 317-773-8323
Fax: 317-773-5453
Tel: 317-536-2380

Los Angeles
Mission Viejo, CA
Tel: 949-462-9523
Fax: 949-462-9608
Tel: 951-273-7800

Raleigh, NC
Tel: 919-844-7510

New York, NY
Tel: 631-435-6000

San Jose, CA
Tel: 408-735-9110
Tel: 408-436-4270

Canada - Toronto
Tel: 905-695-1980
Fax: 905-695-2078

ASIA/PACIFIC

Asia Pacific Office
Suites 3707-14, 37th Floor
Tower 6, The Gateway
Harbour City, Kowloon

Hong Kong
Tel: 852-2943-5100
Fax: 852-2401-3431

Australia - Sydney
Tel: 61-2-9868-6733
Fax: 61-2-9868-6755

China - Beijing
Tel: 86-10-8569-7000
Fax: 86-10-8528-2104

China - Chengdu
Tel: 86-28-8665-5511
Fax: 86-28-8665-7889

China - Chongqing
Tel: 86-23-8980-9588
Fax: 86-23-8980-9500

China - Dongguan
Tel: 86-769-8702-9880

China - Guangzhou
Tel: 86-20-8755-8029

China - Hangzhou
Tel: 86-571-8792-8115
Fax: 86-571-8792-8116

China - Hong Kong SAR
Tel: 852-2943-5100
Fax: 852-2401-3431

China - Nanjing
Tel: 86-25-8473-2460
Fax: 86-25-8473-2470

China - Qingdao
Tel: 86-532-8502-7355
Fax: 86-532-8502-7205

China - Shanghai
Tel: 86-21-3326-8000
Fax: 86-21-3326-8021

China - Shenyang
Tel: 86-24-2334-2829
Fax: 86-24-2334-2393

China - Shenzhen
Tel: 86-755-8864-2200
Fax: 86-755-8203-1760

China - Wuhan
Tel: 86-27-5980-5300
Fax: 86-27-5980-5118

China - Xian
Tel: 86-29-8833-7252
Fax: 86-29-8833-7256

ASIA/PACIFIC

China - Xiamen
Tel: 86-592-2388138
Fax: 86-592-2388130

China - Zhuhai
Tel: 86-756-3210040
Fax: 86-756-3210049

India - Bangalore
Tel: 91-80-3090-4444
Fax: 91-80-3090-4123

India - New Delhi
Tel: 91-11-4160-8631
Fax: 91-11-4160-8632

India - Pune
Tel: 91-20-3019-1500

Japan - Osaka
Tel: 81-6-6152-7160
Fax: 81-6-6152-9310

Japan - Tokyo
Tel: 81-3-6880-3770
Fax: 81-3-6880-3771

Korea - Daegu
Tel: 82-53-744-4301
Fax: 82-53-744-4302

Korea - Seoul
Tel: 82-2-554-7200
Fax: 82-2-558-5932 or
82-2-558-5934

Malaysia - Kuala Lumpur
Tel: 60-3-6201-9857
Fax: 60-3-6201-9859

Malaysia - Penang
Tel: 60-4-227-8870
Fax: 60-4-227-4068

Philippines - Manila
Tel: 63-2-634-9065
Fax: 63-2-634-9069

Singapore
Tel: 65-6334-8870
Fax: 65-6334-8850

Taiwan - Hsin Chu
Tel: 886-3-5778-366
Fax: 886-3-5770-955

Taiwan - Kaohsiung
Tel: 886-7-213-7830

Taiwan - Taipei
Tel: 886-2-2508-8600
Fax: 886-2-2508-0102

Thailand - Bangkok
Tel: 66-2-694-1351
Fax: 66-2-694-1350

EUROPE

Austria - Wels
Tel: 43-7242-2244-39
Fax: 43-7242-2244-393

Denmark - Copenhagen
Tel: 45-4450-2828
Fax: 45-4485-2829

Finland - Espoo
Tel: 358-9-4520-820

France - Paris
Tel: 33-1-69-53-63-20
Fax: 33-1-69-30-90-79

France - Saint Cloud
Tel: 33-1-30-60-70-00

Germany - Garching
Tel: 49-8931-9700

Germany - Haan
Tel: 49-2129-3766400

Germany - Heilbronn
Tel: 49-7131-67-3636

Germany - Karlsruhe
Tel: 49-721-625370

Germany - Munich
Tel: 49-89-627-144-0
Fax: 49-89-627-144-44

Germany - Rosenheim
Tel: 49-8031-354-560

Israel - Ra'anana
Tel: 972-9-744-7705

Italy - Milan
Tel: 39-0331-742611
Fax: 39-0331-466781

Italy - Padova
Tel: 39-049-7625286

Netherlands - Drunen
Tel: 31-416-690399
Fax: 31-416-690340

Norway - Trondheim
Tel: 47-7289-7561

Poland - Warsaw
Tel: 48-22-3325737

Romania - Bucharest
Tel: 40-21-407-87-50

Spain - Madrid
Tel: 34-91-708-08-90
Fax: 34-91-708-08-91

Sweden - Gothenberg
Tel: 46-31-704-60-40

Sweden - Stockholm
Tel: 46-8-5090-4654

UK - Wokingham
Tel: 44-118-921-5800
Fax: 44-118-921-5820

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Microchip:

[PIC18F24K42-I/ML](#) [PIC18F25K42-E/ML](#) [PIC18F25K42-I/SP](#) [PIC18F24K42-E/SS](#) [PIC18LF24K42-E/SP](#)
[PIC18LF24K42-E/SO](#) [PIC18LF24K42-I/SS](#) [PIC18LF25K42-I/MV](#) [PIC18F25K42-I/MV](#) [PIC18F24K42T-I/SO](#)
[PIC18F25K42-I/SS](#) [PIC18F25K42T-I/MV](#) [PIC18LF24K42-E/SS](#) [PIC18LF25K42-I/SP](#) [PIC18F24K42T-I/ML](#)
[PIC18LF25K42T-I/SS](#) [PIC18LF24K42T-I/MV](#) [PIC18LF25K42-E/ML](#) [PIC18LF25K42-I/ML](#) [PIC18LF25K42T-I/MV](#)
[PIC18F25K42-E/SO](#) [PIC18F25K42T-I/SS](#) [PIC18LF25K42-I/SO](#) [PIC18F24K42T-I/MV](#) [PIC18F25K42-E/MV](#)
[PIC18F24K42-E/SP](#) [PIC18LF24K42-E/ML](#) [PIC18LF25K42-E/SO](#) [PIC18F24K42-I/SO](#) [PIC18LF24K42-I/ML](#)
[PIC18LF24K42-I/SO](#) [PIC18LF24K42T-I/ML](#) [PIC18F25K42T-I/SO](#) [PIC18LF24K42-I/SP](#) [PIC18LF24K42T-I/SO](#)
[PIC18LF25K42-I/SS](#) [PIC18F24K42-I/SS](#) [PIC18LF24K42-I/MV](#) [PIC18F24K42-I/MV](#) [PIC18F25K42-E/SP](#)
[PIC18F25K42-I/ML](#) [PIC18F25K42-E/SS](#) [PIC18F24K42T-I/SS](#) [PIC18F24K42-E/SO](#) [PIC18F24K42-E/MV](#)
[PIC18F25K42-I/SO](#) [PIC18LF24K42T-I/SS](#) [PIC18LF25K42T-I/ML](#) [PIC18LF24K42-E/MV](#) [PIC18F24K42-I/SP](#)
[PIC18F24K42-E/ML](#) [PIC18F25K42T-I/ML](#) [PIC18LF25K42-E/SS](#) [PIC18LF25K42-E/MV](#) [PIC18LF25K42-E/SP](#)
[PIC18LF25K42T-I/SO](#) [PIC18F25K42-E/SSVAO](#) [PIC18F25K42T-E/SSVAO](#) [PIC18F24K42-E/SSVAO](#) [PIC18F24K42T-E/SSVAO](#)

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А