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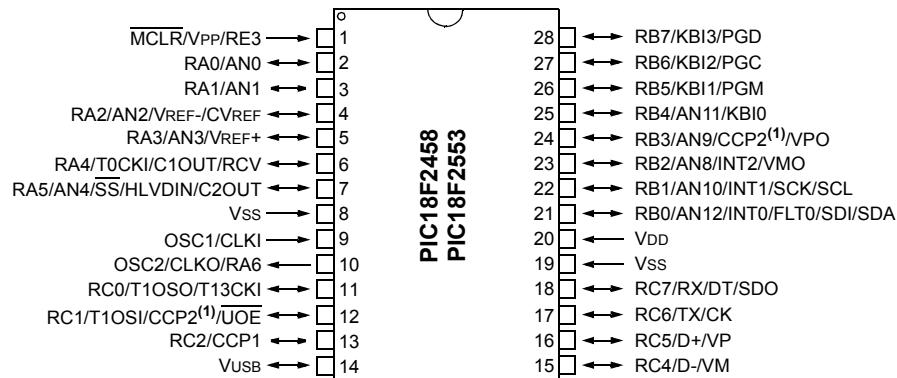
Details

Product Status	Active
Core Processor	PIC
Core Size	8-Bit
Speed	40MHz
Connectivity	I ² C, SPI, UART/USART, USB
Peripherals	Brown-out Detect/Reset, HLVD, POR, PWM, WDT
Number of I/O	24
Program Memory Size	32KB (16K x 16)
Program Memory Type	FLASH
EEPROM Size	256 x 8
RAM Size	2K x 8
Voltage - Supply (Vcc/Vdd)	2V ~ 5.5V
Data Converters	A/D 10x12b
Oscillator Type	Internal
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	28-SOIC (0.295", 7.50mm Width)
Supplier Device Package	28-SOIC
Purchase URL	https://www.e-xfl.com/product-detail/microchip-technology/pic18lf2553-i-so

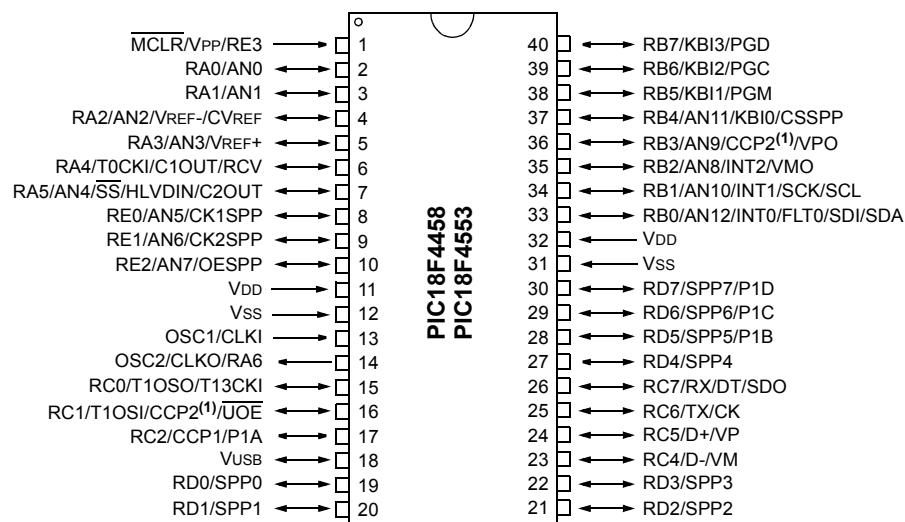
PIC18F2458/2553/4458/4553

Pin Diagrams

28-Pin SPDIP, SOIC



40-Pin PDIP



Note 1: RB3 is the alternate pin for CCP2 multiplexing.

PIC18F2458/2553/4458/4553

Table of Contents

1.0 Device Overview	7
2.0 12-Bit Analog-to-Digital Converter (A/D) Module	21
3.0 Special Features of the CPU	31
4.0 Electrical Characteristics	33
5.0 Packaging Information.....	37
Appendix A: Revision History.....	39
Appendix B: Device Differences.....	39
Appendix C: Migration From Mid-Range to Enhanced Devices.....	40
Appendix D: Migration From High-End to Enhanced Devices	40
Index	41
The Microchip Web Site	43
Customer Change Notification Service	43
Customer Support	43
Reader Response	44
Product Identification System.....	45

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PIC18F2458/2553/4458/4553

TABLE 1-2: PIC18F2458/2553 PINOUT I/O DESCRIPTIONS

Pin Name	Pin Number	Pin Type	Buffer Type	Description
	SPDIP, SOIC			
MCLR/VPP/RE3 MCLR	1	I	ST	Master Clear (input) or programming voltage (input). Master Clear (Reset) input. This pin is an active-low Reset to the device.
VPP RE3		P I	ST	Programming voltage input. Digital input.
OSC1/CLKI OSC1 CLKI	9	I I	Analog Analog	Oscillator crystal or external clock input. Oscillator crystal input or external clock source input. External clock source input. Always associated with pin function OSC1. (See OSC2/CLKO pin.)
OSC2/CLKO/RA6 OSC2 CLKO RA6	10	O O I/O	— — TTL	Oscillator crystal or clock output. Oscillator crystal output. Connects to crystal or resonator in Crystal Oscillator mode. In select modes, OSC2 pin outputs CLKO which has 1/4 the frequency of OSC1 and denotes the instruction cycle rate. General purpose I/O pin.

Legend: TTL = TTL compatible input CMOS = CMOS compatible input or output

ST = Schmitt Trigger input with CMOS levels I = Input

O = Output P = Power

Note 1: Alternate assignment for CCP2 when CCP2MX Configuration bit is cleared.

2: Default assignment for CCP2 when CCP2MX Configuration bit is set.

PIC18F2458/2553/4458/4553

TABLE 1-2: PIC18F2458/2553 PINOUT I/O DESCRIPTIONS (CONTINUED)

Pin Name	Pin Number	Pin Type	Buffer Type	Description
	SPDIP, SOIC			
RA0/AN0 RA0 AN0	2	I/O I	TTL Analog	PORTA is a bidirectional I/O port. Digital I/O. Analog input 0.
RA1/AN1 RA1 AN1	3	I/O I	TTL Analog	Digital I/O. Analog input 1.
RA2/AN2/VREF-/CVREF RA2 AN2 VREF- CVREF	4	I/O I I O	TTL Analog Analog Analog	Digital I/O. Analog input 2. A/D reference voltage (low) input. Analog comparator reference output.
RA3/AN3/VREF+ RA3 AN3 VREF+	5	I/O I I	TTL Analog Analog	Digital I/O. Analog input 3. A/D reference voltage (high) input.
RA4/T0CKI/C1OUT/RCV RA4 T0CKI C1OUT RCV	6	I/O I O I	ST ST — TTL	Digital I/O. Timer0 external clock input. Comparator 1 output. External USB transceiver RCV input.
RA5/AN4/SS/ HLVDIN/C2OUT RA5 AN4 SS HLVDIN C2OUT	7	I/O I I I O	TTL Analog TTL Analog —	Digital I/O. Analog input 4. SPI slave select input. High/Low-Voltage Detect input. Comparator 2 output.
RA6	—	—	—	See the OSC2/CLKO/RA6 pin.

Legend: TTL = TTL compatible input CMOS = CMOS compatible input or output
 ST = Schmitt Trigger input with CMOS levels I = Input
 O = Output P = Power

Note 1: Alternate assignment for CCP2 when CCP2MX Configuration bit is cleared.

2: Default assignment for CCP2 when CCP2MX Configuration bit is set.

PIC18F2458/2553/4458/4553

TABLE 1-3: PIC18F4458/4553 PINOUT I/O DESCRIPTIONS (CONTINUED)

Pin Name	Pin Number			Pin Type	Buffer Type	Description
	PDIP	QFN	TQFP			
RA0/AN0 RA0 AN0	2	19	19	I/O I	TTL Analog	PORTA is a bidirectional I/O port. Digital I/O. Analog input 0.
RA1/AN1 RA1 AN1	3	20	20	I/O I	TTL Analog	Digital I/O. Analog input 1.
RA2/AN2/VREF-/CVREF RA2 AN2 VREF- CVREF	4	21	21	I/O I I O	TTL Analog Analog Analog	Digital I/O. Analog input 2. A/D reference voltage (low) input. Analog comparator reference output.
RA3/AN3/VREF+ RA3 AN3 VREF+	5	22	22	I/O I I	TTL Analog Analog	Digital I/O. Analog input 3. A/D reference voltage (high) input.
RA4/T0CKI/C1OUT/RCV RA4 T0CKI C1OUT RCV	6	23	23	I/O I O I	ST ST — TTL	Digital I/O. Timer0 external clock input. Comparator 1 output. External USB transceiver RCV input.
RA5/AN4/SS/ HLVDIN/C2OUT RA5 AN4 SS HLVDIN C2OUT	7	24	24	I/O I I I O	TTL Analog TTL Analog —	Digital I/O. Analog input 4. SPI slave select input. High/Low-Voltage Detect input. Comparator 2 output.
RA6	—	—	—	—	—	See the OSC2/CLKO/RA6 pin.

Legend: TTL = TTL compatible input

ST = Schmitt Trigger input with CMOS levels

O = Output

CMOS = CMOS compatible input or output

I = Input

P = Power

Note 1: Alternate assignment for CCP2 when CCP2MX Configuration bit is cleared.

2: Default assignment for CCP2 when CCP2MX Configuration bit is set.

3: These pins are No Connect unless the ICPRT Configuration bit is set. For NC/ICPORTS, the pin is No Connect unless ICPRT is set and the DEBUG Configuration bit is cleared.

PIC18F2458/2553/4458/4553

TABLE 1-3: PIC18F4458/4553 PINOUT I/O DESCRIPTIONS (CONTINUED)

Pin Name	Pin Number			Pin Type	Buffer Type	Description
	PDIP	QFN	TQFP			
RC0/T1OSO/T13CKI RC0 T1OSO T13CKI	15	34	32	I/O O I	ST — ST	PORTC is a bidirectional I/O port. Digital I/O. Timer1 oscillator output. Timer1/Timer3 external clock input.
RC1/T1OSI/CCP2/ UOE RC1 T1OSI CCP2 ⁽²⁾ UOE	16	35	35	I/O I I/O O	ST CMOS ST —	Digital I/O. Timer1 oscillator input. Capture 2 input/Compare 2 output/PWM2 output. External USB transceiver OE output.
RC2/CCP1/P1A RC2 CCP1 P1A	17	36	36	I/O I/O O	ST ST TTL	Digital I/O. Capture 1 input/Compare 1 output/PWM1 output. Enhanced CCP1 PWM output, channel A.
RC4/D-/VM RC4 D- VM	23	42	42	I	TTL — TTL	Digital input. USB differential minus line (input/output). External USB transceiver VM input.
RC5/D+/VP RC5 D+ VP	24	43	43	I	TTL — TTL	Digital input. USB differential plus line (input/output). External USB transceiver VP input.
RC6/TX/CK RC6 TX CK	25	44	44	I/O O I/O	ST — ST	Digital I/O. EUSART asynchronous transmit. EUSART synchronous clock (see RX/DT).
RC7/RX/DT/SDO RC7 RX DT SDO	26	1	1	I/O I I/O O	ST ST ST —	Digital I/O. EUSART asynchronous receive. EUSART synchronous data (see TX/CK). SPI data out.

Legend: TTL = TTL compatible input

ST = Schmitt Trigger input with CMOS levels

O = Output

CMOS = CMOS compatible input or output

I = Input

P = Power

Note 1: Alternate assignment for CCP2 when CCP2MX Configuration bit is cleared.

2: Default assignment for CCP2 when CCP2MX Configuration bit is set.

3: These pins are No Connect unless the ICPRT Configuration bit is set. For NC/ICPORTS, the pin is No Connect unless ICPRT is set and the DEBUG Configuration bit is cleared.

2.0 12-BIT ANALOG-TO-DIGITAL CONVERTER (A/D) MODULE

The Analog-to-Digital (A/D) Converter module has 10 inputs for the 28-pin devices and 13 for the 40-pin and 44-pin devices. This module allows conversion of an analog input signal to a corresponding 12-bit digital number.

The module has five registers:

- A/D Result High Register (ADRESH)
- A/D Result Low Register (ADRESL)
- A/D Control Register 0 (ADCON0)
- A/D Control Register 1 (ADCON1)
- A/D Control Register 2 (ADCON2)

The ADCON0 register, shown in Register 2-1, controls the operation of the A/D module. The ADCON1 register, shown in Register 2-2, configures the functions of the port pins. The ADCON2 register, shown in Register 2-3, configures the A/D clock source, programmed acquisition time and justification.

REGISTER 2-1: ADCON0: A/D CONTROL REGISTER 0

U-0	U-0	R/W-0	R/W-0	R/W-0	R/W-0	R/W-0	R/W-0
—	—	CHS3	CHS2	CHS1	CHS0	GO/DONE	ADON
bit 7							bit 0

Legend:

R = Readable bit

W = Writable bit

U = Unimplemented bit, read as '0'

-n = Value at POR

'1' = Bit is set

'0' = Bit is cleared

x = Bit is unknown

bit 7-6 **Unimplemented:** Read as '0'

bit 5-2 **CHS3:CHS0:** Analog Channel Select bits

- 0000 = Channel 0 (AN0)
- 0001 = Channel 1 (AN1)
- 0010 = Channel 2 (AN2)
- 0011 = Channel 3 (AN3)
- 0100 = Channel 4 (AN4)
- 0101 = Channel 5 (AN5)^(1,2)
- 0110 = Channel 6 (AN6)^(1,2)
- 0111 = Channel 7 (AN7)^(1,2)
- 1000 = Channel 8 (AN8)
- 1001 = Channel 9 (AN9)
- 1010 = Channel 10 (AN10)
- 1011 = Channel 11 (AN11)
- 1100 = Channel 12 (AN12)
- 1101 = Unimplemented⁽²⁾
- 1110 = Unimplemented⁽²⁾
- 1111 = Unimplemented⁽²⁾

bit 1 **GO/DONE:** A/D Conversion Status bit

When ADON = 1:

1 = A/D conversion in progress

0 = A/D Idle

bit 0 **ADON:** A/D On bit

1 = A/D Converter module is enabled

0 = A/D Converter module is disabled

Note 1: These channels are not implemented on 28-pin devices.

2: Performing a conversion on unimplemented channels will return a floating input measurement.

PIC18F2458/2553/4458/4553

REGISTER 2-2: ADCON1: A/D CONTROL REGISTER 1

U-0	U-0	R/W-0	R/W-0	R/W-0	R/W ⁽¹⁾	R/W ⁽¹⁾	R/W ⁽¹⁾
—	—	VCFG1	VCFG0	PCFG3	PCFG2	PCFG1	PCFG0
bit 7							bit 0

Legend:

R = Readable bit
-n = Value at POR

W = Writable bit
'1' = Bit is set

U = Unimplemented bit, read as '0'
'0' = Bit is cleared
x = Bit is unknown

bit 7-6 **Unimplemented:** Read as '0'

bit 5 **VCFG1:** Voltage Reference Configuration bit (VREF- source)

1 = VREF- (AN2)
0 = Vss

bit 4 **VCFG0:** Voltage Reference Configuration bit (VREF+ source)

1 = VREF+ (AN3)
0 = VDD

bit 3-0 **PCFG3:PCFG0:** A/D Port Configuration Control bits:

PCFG3: PCFG0	AN12	AN11	AN10	AN9	AN8	AN7 ⁽²⁾	AN6 ⁽²⁾	AN5 ⁽²⁾	AN4	AN3	AN2	AN1	AN0
0000 ⁽¹⁾	A	A	A	A	A	A	A	A	A	A	A	A	A
0001	A	A	A	A	A	A	A	A	A	A	A	A	A
0010	A	A	A	A	A	A	A	A	A	A	A	A	A
0011	D	A	A	A	A	A	A	A	A	A	A	A	A
0100	D	D	A	A	A	A	A	A	A	A	A	A	A
0101	D	D	D	A	A	A	A	A	A	A	A	A	A
0110	D	D	D	D	A	A	A	A	A	A	A	A	A
0111 ⁽¹⁾	D	D	D	D	D	A	A	A	A	A	A	A	A
1000	D	D	D	D	D	D	A	A	A	A	A	A	A
1001	D	D	D	D	D	D	A	A	A	A	A	A	A
1010	D	D	D	D	D	D	D	A	A	A	A	A	A
1011	D	D	D	D	D	D	D	D	A	A	A	A	A
1100	D	D	D	D	D	D	D	D	D	D	A	A	A
1101	D	D	D	D	D	D	D	D	D	D	D	A	A
1110	D	D	D	D	D	D	D	D	D	D	D	D	A
1111	D	D	D	D	D	D	D	D	D	D	D	D	D

A = Analog input

D = Digital I/O

Note 1: The Reset value of the PCFG bits depends on the value of the PBADEN Configuration bit. When PBADEN = 1, PCFG<3:0> = 0000; when PBADEN = 0, PCFG<3:0> = 0111.

2: AN5 through AN7 are available only on 40-pin and 44-pin devices.

PIC18F2458/2553/4458/4553

REGISTER 2-3: ADCON2: A/D CONTROL REGISTER 2

R/W-0	U-0	R/W-0	R/W-0	R/W-0	R/W-0	R/W-0	R/W-0
ADFM	—	ACQT2	ACQT1	ACQT0	ADCS2	ADCS1	ADCS0
bit 7	bit 0						

Legend:

R = Readable bit

W = Writable bit

U = Unimplemented bit, read as '0'

-n = Value at POR

'1' = Bit is set

'0' = Bit is cleared

x = Bit is unknown

bit 7 **ADFM:** A/D Result Format Select bit

1 = Right justified

0 = Left justified

bit 6 **Unimplemented:** Read as '0'

bit 5-3 **ACQT2:ACQT0:** A/D Acquisition Time Select bits

111 = 20 TAD

110 = 16 TAD

101 = 12 TAD

100 = 8 TAD

011 = 6 TAD

010 = 4 TAD

001 = 2 TAD

000 = 0 TAD⁽¹⁾

bit 2-0 **ADCS2:ADCS0:** A/D Conversion Clock Select bits

111 = FRC (clock derived from A/D RC oscillator)⁽¹⁾

110 = Fosc/64

101 = Fosc/16

100 = Fosc/4

011 = FRC (clock derived from A/D RC oscillator)⁽¹⁾

010 = Fosc/32

001 = Fosc/8

000 = Fosc/2

Note 1: If the A/D FRC clock source is selected, a delay of one Tcy (instruction cycle) is added before the A/D clock starts. This allows the SLEEP instruction to be executed before starting a conversion.

PIC18F2458/2553/4458/4553

The analog reference voltage is software selectable to either the device's positive and negative supply voltage (VDD and Vss), or the voltage level on the RA3/AN3/VREF+ and RA2/AN2/VREF-/CVREF pins.

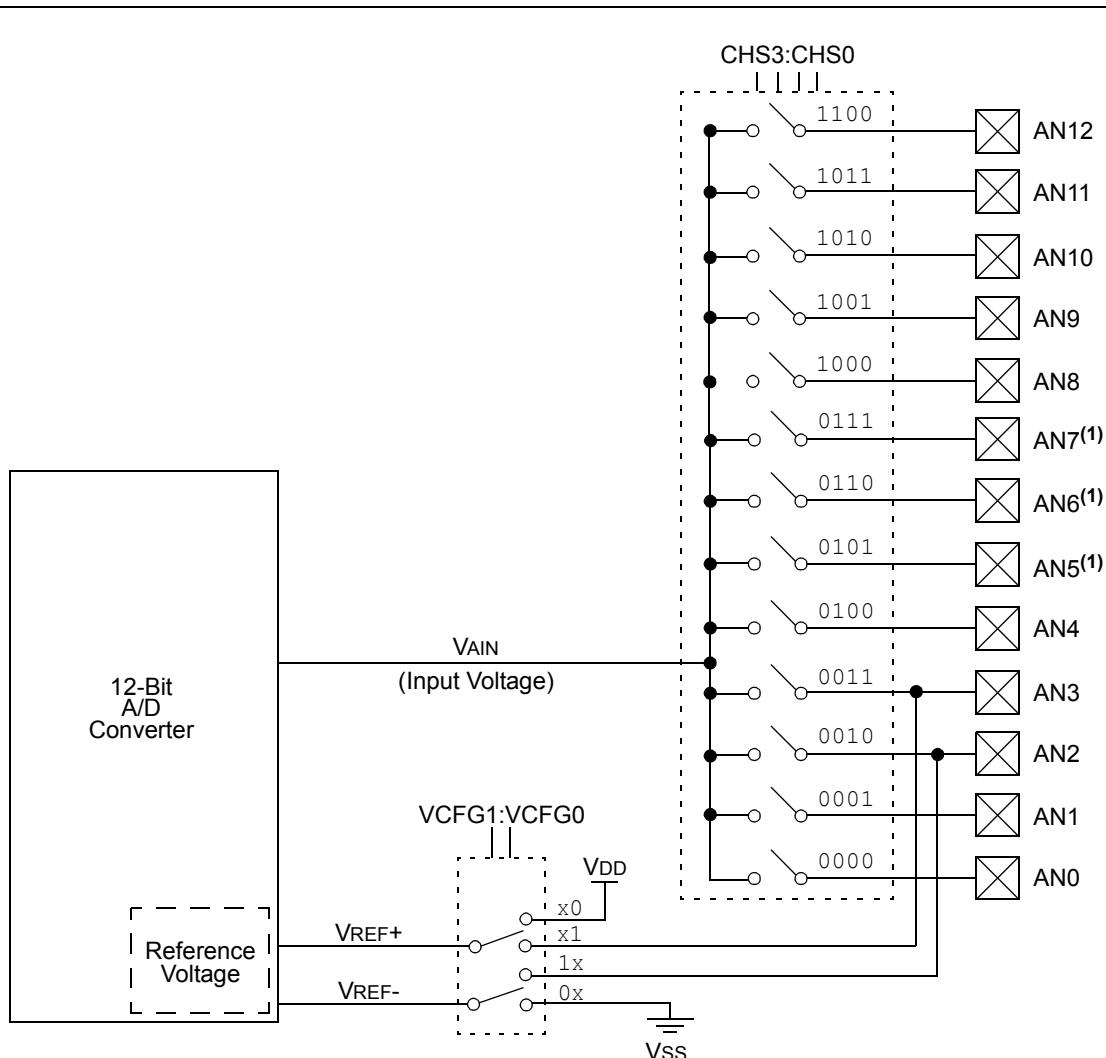
The A/D Converter has a unique feature of being able to operate while the device is in Sleep mode. To operate in Sleep, the A/D conversion clock must be derived from the A/D's internal RC oscillator.

The output of the sample and hold is the input into the Converter, which generates the result via successive approximation.

A device Reset forces all registers to their Reset state. This forces the A/D module to be turned off and any conversion in progress is aborted.

Each port pin associated with the A/D Converter can be configured as an analog input or as a digital I/O. The ADRESH and ADRESL registers contain the result of the A/D conversion. When the A/D conversion is complete, the result is loaded into the ADRESH:ADRESL register pair, the GO/DONE bit (ADCON0 register) is cleared and the A/D Interrupt Flag bit, ADIF, is set. The block diagram of the A/D module is shown in Figure 2-1.

FIGURE 2-1: A/D BLOCK DIAGRAM



Note 1: Channels AN5 through AN7 are not available on 28-pin devices.

The value in the ADRESH:ADRESL registers is unknown following Power-on and Brown-out Resets, and is not affected by any other Reset.

After the A/D module has been configured as desired, the selected channel must be acquired before the conversion is started. The analog input channels must have their corresponding TRIS bits selected as an input. To determine acquisition time, see **Section 2.1 “A/D Acquisition Requirements”**. After this acquisition time has elapsed, the A/D conversion can be started. An acquisition time can be programmed to occur between setting the GO/DONE bit and the actual start of the conversion.

The following steps should be followed to perform an A/D conversion:

1. Configure the A/D module:
 - Configure analog pins, voltage reference and digital I/O (ADCON1)
 - Select A/D input channel (ADCON0)
 - Select A/D acquisition time (ADCON2)
 - Select A/D conversion clock (ADCON2)
 - Turn on A/D module (ADCON0)
2. Configure A/D interrupt (if desired):
 - Clear ADIF bit
 - Set ADIE bit
 - Set GIE bit
3. Wait the required acquisition time (if required).
4. Start conversion:
 - Set GO/DONE bit (ADCON0 register)

5. Wait for A/D conversion to complete, by either:
 - Polling for the GO/DONE bit to be cleared
 - OR
 - Waiting for the A/D interrupt
6. Read A/D Result registers (ADRESH:ADRESL); clear bit ADIF, if required.
7. For next conversion, go to step 1 or step 2, as required. The A/D conversion time per bit is defined as TAD. A minimum wait of 2 TAD is required before the next acquisition starts.

FIGURE 2-2: A/D TRANSFER FUNCTION

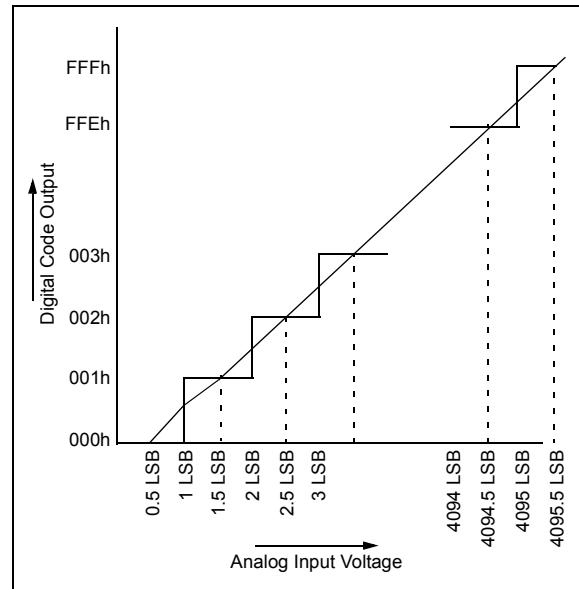
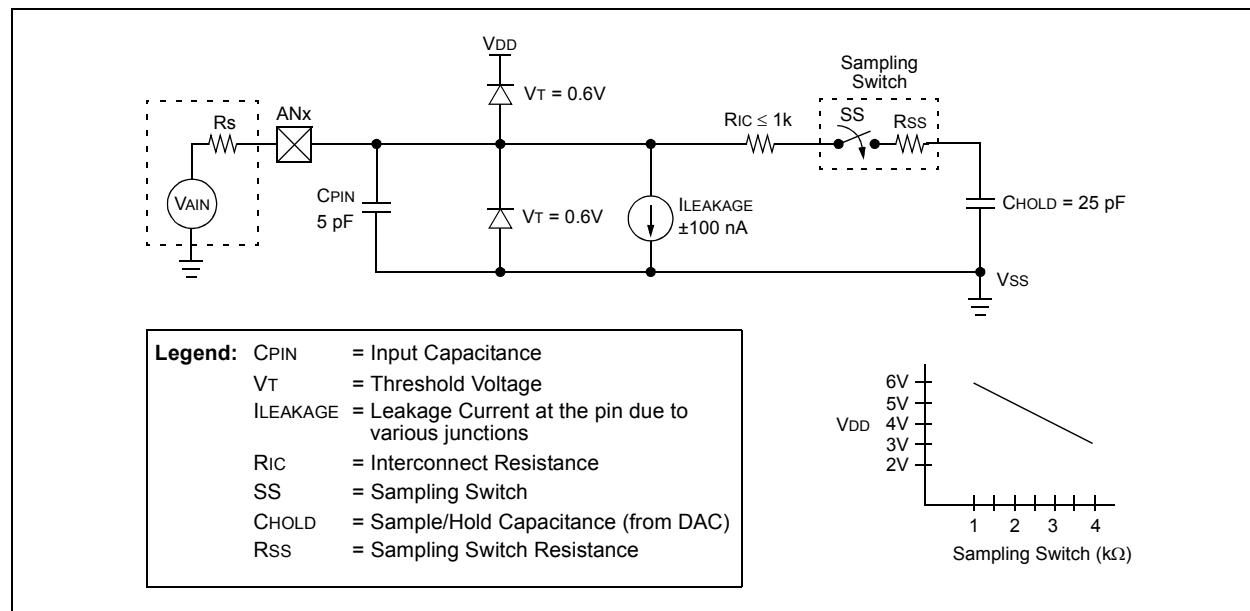


FIGURE 2-3: ANALOG INPUT MODEL



2.6 A/D Conversions

Figure 2-4 shows the operation of the A/D Converter after the GO/DONE bit has been set and the ACQT2:ACQT0 bits are cleared. A conversion is started after the following instruction to allow entry into Sleep mode before the conversion begins.

Figure 2-5 shows the operation of the A/D Converter after the GO/DONE bit has been set and the ACQT2:ACQT0 bits are set to '010', and selecting a 4 TAD acquisition time before the conversion starts.

Clearing the GO/DONE bit during a conversion will abort the current conversion. The A/D Result register pair will NOT be updated with the partially completed A/D conversion sample. This means the ADRESH:ADRESL registers will continue to contain the value of the last completed conversion (or the last value written to the ADRESH:ADRESL registers).

After the A/D conversion is completed or aborted, a 2 TCY wait is required before the next acquisition can be started. After this wait, acquisition on the selected channel is automatically started.

Note: The GO/DONE bit should **NOT** be set in the same instruction that turns on the A/D. Code should wait at least 2 μ s after enabling the A/D before beginning an acquisition and conversion cycle.

2.7 Discharge

The discharge phase is used to initialize the value of the holding capacitor. The array is discharged before every sample. This feature helps to optimize the unity gain amplifier, as the circuit always needs to charge the capacitor array, rather than charge/discharge based on previous measure values.

FIGURE 2-4: A/D CONVERSION TAD CYCLES (ACQT<2:0> = 000, TACQ = 0)

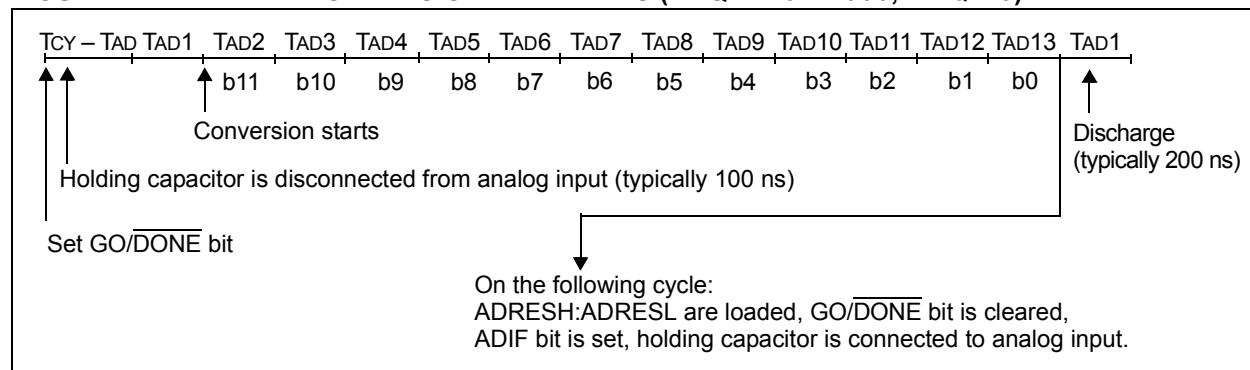
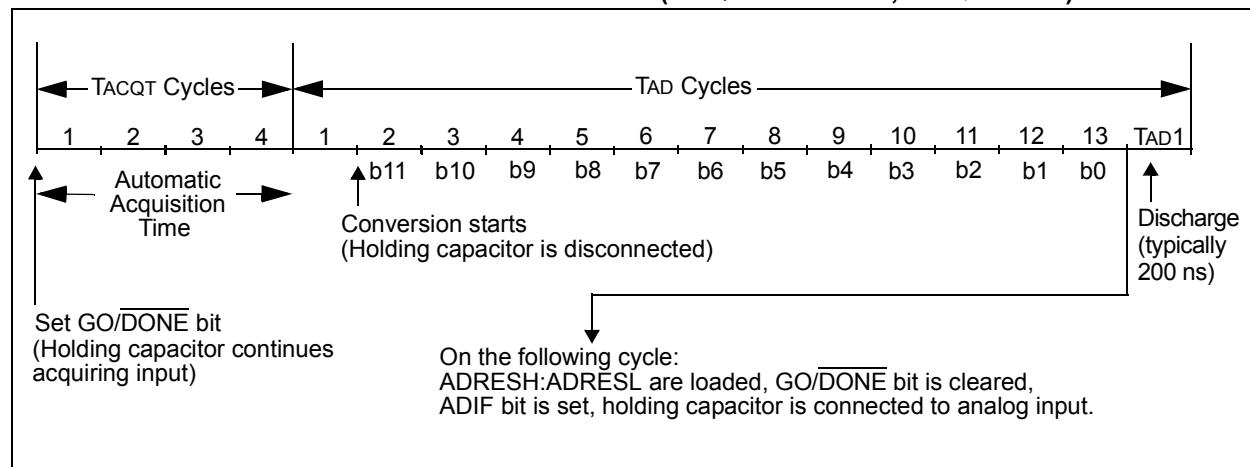


FIGURE 2-5: A/D CONVERSION TAD CYCLES (ACQT<2:0> = 010, TACQ = 4 TAD)



PIC18F2458/2553/4458/4553

REGISTER 3-1: DEVID1: DEVICE ID REGISTER 1 FOR PIC18F2458/2553/4458/4553 DEVICES

R	R	R	R	R	R	R	R
DEV2	DEV1	DEV0	REV4	REV3	REV2	REV1	REV0
bit 7	bit 0						

Legend:

R = Read-only bit P = Programmable bit U = Unimplemented bit, read as '0'
-n = Value when device is unprogrammed u = Unchanged from programmed state

bit 7-5 **DEV2:DEV0:** Device ID bits

See Register 3-2 for a complete listing.

bit 4-0 **REV3:REV0:** Revision ID bits

These bits are used to indicate the device revision.

REGISTER 3-2: DEVID2: DEVICE ID REGISTER 2 FOR PIC18F2458/2553/4458/4553 DEVICES

R	R	R	R	R	R	R	R
DEV10	DEV9	DEV8	DEV7	DEV6	DEV5	DEV4	DEV3
bit 7	bit 0						

Legend:

R = Read-only bit P = Programmable bit U = Unimplemented bit, read as '0'
-n = Value when device is unprogrammed u = Unchanged from programmed state

bit 7-0 **DEV10:DEV3:** Device ID bits

DEV10:DEV3 (DEVID2<7:0>)	DEV2:DEV0 (DEVID1<7:5>)	Device
0010 1010	011	PIC18F2458
0010 1010	010	PIC18F2553
0010 1010	001	PIC18F4458
0010 1010	000	PIC18F4553

4.0 ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings ([†])

Ambient temperature under bias.....	-40°C to +125°C
Storage temperature	-65°C to +150°C
Voltage on any pin with respect to Vss (except VDD and <u>MCLR</u>)	-0.3V to (VDD + 0.3V)
Voltage on VDD with respect to Vss	-0.3V to +7.5V
Voltage on <u>MCLR</u> with respect to Vss (Note 2)	0V to +13.25V
Total power dissipation (Note 1)	1.0W
Maximum current out of Vss pin	300 mA
Maximum current into VDD pin	250 mA
Input clamp current, I _{IK} (V _I < 0 or V _I > V _{DD}).....	±20 mA
Output clamp current, I _{OK} (V _O < 0 or V _O > V _{DD})	±20 mA
Maximum output current sunk by any I/O pin.....	25 mA
Maximum output current sourced by any I/O pin	25 mA
Maximum current sunk by all ports	200 mA
Maximum current sourced by all ports	200 mA

Note 1: Power dissipation is calculated as follows:

$$P_{dis} = V_{DD} \times \{I_{DD} - \sum I_{OH}\} + \sum \{(V_{DD} - V_{OH}) \times I_{OH}\} + \sum (V_{OL} \times I_{OL})$$

2: Voltage spikes below V_{SS} at the MCLR/VPP/RE3 pin, inducing currents greater than 80 mA, may cause latch-up. Thus, a series resistor of 50-100Ω should be used when applying a "low" level to the MCLR/VPP/RE3 pin, rather than pulling this pin directly to V_{SS}.

† NOTICE: Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at those or any other conditions above those indicated in the operation listings of this specification is not implied. Exposure to maximum rating conditions for extended periods may affect device reliability.

PIC18F2458/2553/4458/4553

FIGURE 4-1: PIC18F2458/2553/4458/4553 VOLTAGE-FREQUENCY GRAPH (INDUSTRIAL)

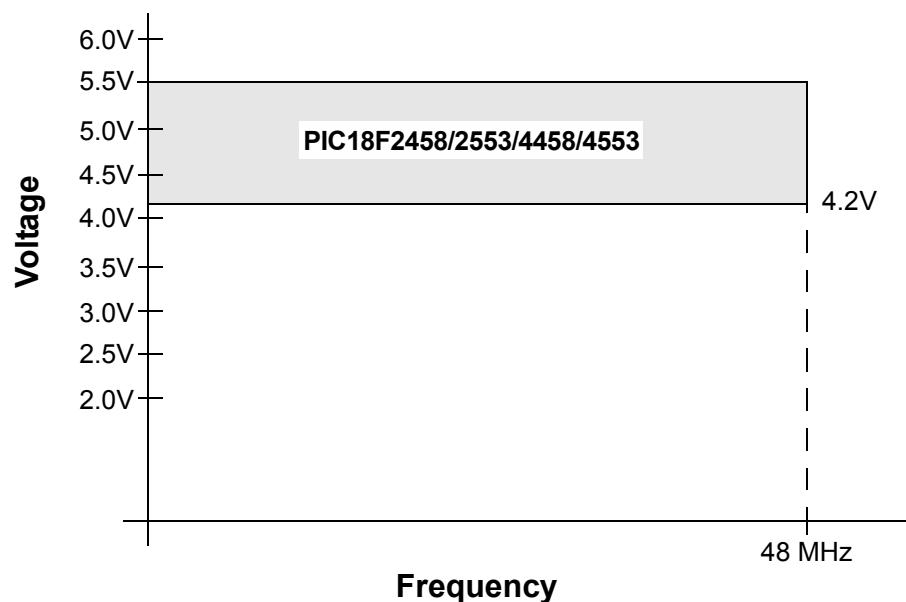
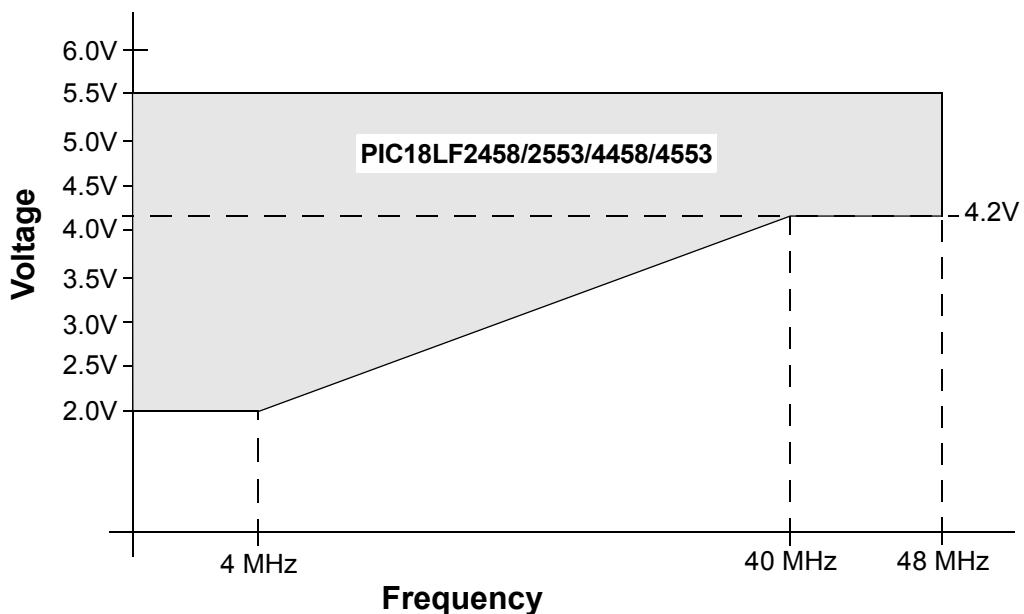


FIGURE 4-2: PIC18LF2458/2553/4458/4553 VOLTAGE-FREQUENCY GRAPH (INDUSTRIAL)



For $2.0V \leq VDD < 4.2V$: $F_{MAX} = (16.36 \text{ MHz/V}) (V_{DDAPPMIN} - 2.0V) + 4 \text{ MHz}$
For $4.2V \leq VDD$: $F_{MAX} = 48 \text{ MHz}$

Note: $V_{DDAPPMIN}$ is the minimum voltage of the PIC® device in the application.

PIC18F2458/2553/4458/4553

NOTES:

PIC18F2458/2553/4458/4553

APPENDIX A: REVISION HISTORY

Revision A (May 2007)

Original data sheet for the PIC18F2458/2553/4458/4553 devices.

Revision B (June 2007)

Changes to Figure 4-2: PIC18LF2458/2553/4458/4553 Voltage-Frequency Graph (Industrial).

Revision C (October 2009)

Removed “Preliminary” marking.

APPENDIX B: DEVICE DIFFERENCES

The differences between the devices listed in this data sheet are shown in Table B-1.

TABLE B-1: DEVICE DIFFERENCES

Features	PIC18F2458	PIC18F2553	PIC18F4458	PIC18F4553
Program Memory (Bytes)	24576	32768	24576	32768
Program Memory (Instructions)	12288	16384	12288	16384
Interrupt Sources	19	19	20	20
I/O Ports	Ports A, B, C, (E)	Ports A, B, C, (E)	Ports A, B, C, D, E	Ports A, B, C, D, E
Capture/Compare/PWM Modules	2	2	1	1
Enhanced Capture/Compare/PWM Modules	0	0	1	1
Parallel Communications (SPP)	No	No	Yes	Yes
12-Bit Analog-to-Digital Module	10 Input Channels	10 Input Channels	13 Input Channels	13 Input Channels
Packages	28-Pin SPDIP 28-Pin SOIC	28-Pin SPDIP 28-Pin SOIC	40-Pin PDIP 44-Pin TQFP 44-Pin QFN	40-Pin PDIP 44-Pin TQFP 44-Pin QFN

PIC18F2458/2553/4458/4553

APPENDIX C: MIGRATION FROM MID-RANGE TO ENHANCED DEVICES

A detailed discussion of the differences between the mid-range MCU devices (i.e., PIC16CXXX) and the enhanced devices (i.e., PIC18FXXX) is provided in *AN716, "Migrating Designs from PIC16C74A/74B to PIC18C442"*. The changes discussed, while device specific, are generally applicable to all mid-range to enhanced device migrations.

This Application Note is available as Literature Number DS00716.

APPENDIX D: MIGRATION FROM HIGH-END TO ENHANCED DEVICES

A detailed discussion of the migration pathway and differences between the high-end MCU devices (i.e., PIC17CXXX) and the enhanced devices (i.e., PIC18FXXX) is provided in *AN726, "PIC17CXXX to PIC18CXXX Migration"*.

This Application Note is available as Literature Number DS00726.

PIC18F2458/2553/4458/4553

INDEX

A

A/D	21
A/D Converter Interrupt, Configuring	25
Acquisition Requirements	26
ADCON0 Register	21
ADCON1 Register	21
ADCON2 Register	21
ADRESH Register	21, 24
ADRESL Register	21
Analog Port Pins, Configuring	28
Associated Registers	30
Calculating the Minimum Required Acquisition Time	26
Configuring the Module	25
Conversion Clock (TAD)	27
Conversion Status (GO/DONE Bit)	24
Conversions	29
Converter Characteristics	35
Discharge	29
Operation in Power-Managed Modes	28
Selecting and Configuring Acquisition Time	27
Special Event Trigger (CCP)	30
Use of the CCP2 Trigger	30
Absolute Maximum Ratings	33
ADCON0 Register	21
GO/DONE Bit	24
ADCON1 Register	21
ADCON2 Register	21
ADRESH Register	21
ADRESL Register	21, 24
Analog-to-Digital Converter. <i>See A/D.</i>	

B

Block Diagrams	
A/D	24
Analog Input Model	25
PIC18F2458/2553	9
PIC18F4458/4553	10

C

Compare (CCP Module)	
Special Event Trigger	30
Customer Change Notification Service	43
Customer Notification Service	43
Customer Support	43

D

Device Differences	39
Device ID Registers	31
Device Overview	7
Other Special Features	7

E

Electrical Characteristics	33
Equations	
A/D Acquisition Time	26
A/D Minimum Charging Time	26
Errata	6

I

Internet Address	43
Interrupt Sources	
A/D Conversion Complete	25

M

Microchip Internet Web Site	43
Migration from High-End to Enhanced Devices	40
Migration from Mid-Range to Enhanced Devices	40

P

Packaging Information	37
-----------------------------	----

Pin Functions

MCLR/V _{PP} /RE3	11
MCLR/V _{PP} /RE3	15
NC/ICCK/ICPGC	20
NC/ICDT/ICPGD	20
NC/ICPORTS	20
NC/ICRST/ICVPP	20
OSC1/CLKI	11, 15
OSC2/CLKO/RA6	11, 15
RA0/AN0	12, 16
RA1/AN1	12, 16
RA2/AN2/V _{REF} /CVREF	12, 16
RA3/AN3/V _{REF} +	12, 16
RA4/TOCKI/C1OUT/RCV	12, 16
RA5/AN4/SS/HLDIN/C2OUT	12, 16
RB0/AN12/INT0/FLT0/SDI/SDA	13, 17
RB1/AN10/INT1/SCK/SCL	13, 17
RB2/AN8/INT2/VMO	13, 17
RB3/AN9/CCP2/VPO	13, 17
RB4/AN11/KBI0	13
RB4/AN11/KBI0/CSSPP	17
RB5/KBI1/PGM	13, 17
RB6/KBI2/PGC	13, 17
RB7/KBI3/PGD	13, 17
RC0/T1OSO/T13CKI	14, 18
RC1/T1OSI/CCP2/UOE	14, 18
RC2/CCP1	14
RC2/CCP1/P1A	18
RC4/D-/VM	14, 18
RC5/D+/VP	14, 18
RC6/TX/CK	14, 18
RC7/RX/DT/SDO	14, 18
RD0/SPP0	19
RD1/SPP1	19
RD2/SPP2	19
RD3/SPP3	19
RD4/SPP4	19
RD5/SPP5/P1B	19
RD6/SPP6/P1C	19
RD7/SPP7/P1D	19
RE0/AN5/CK1SPP	20
RE1/AN6/CK2SPP	20
RE2/AN7/OESPP	20
VDD	14, 20
VSS	14, 20
V _{USB}	14, 20

Pinout I/O Descriptions

PIC18F2458/2553	11
PIC18F4458/4553	15

Power-Managed Modes

and A/D Operation	28
-------------------------	----

R

Reader Response	44
-----------------------	----

Registers

ADCON0 (A/D Control 0)	21
------------------------------	----



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