PIC16C55 → PIC16C55A Migration

DEVICE MIGRATIONS

This document is intended to describe the functional differences and the electrical specification differences that are present when migrating from one device to the next.

Note:	Even though compatible devices are specified to be tested to the same electrical specification, the characteristics of the devices may be different from each other (due to process difference). For systems that were designed to the device specifications, these process differences should not cause any issues in the application. For systems that did not tightly meet the electrical specifications, the process differences may cause the device to behave differently in the application.

Table 1 shows the considerations that must be taken into account when migrating from the PIC16C55 to the PIC16C55A.

TABLE 1: PIC16C55 → PIC16C55A DIFFERENCES

Functional Differences				
No.	**Difference**	**H/W**	**S/W**	**Prog.**
1	Master Clear Filter added, PIC16C55A. See Electrical Specification #30	✔	—	—
2	Programming algorithm change, PIC16C55A uses a new programming algorithm	—	—	✔
4	Oscillator configuration bits are user selectable on the PIC16C55A	—	✔	—

Electrical Specification Differences										
Parm. No.	Sym.	Characteristic	PIC16C55 Data Sheet			PIC16C55A Data Sheet			Units	Conditions
			Min	Typ	Max	Min	Typ	Max		
	V_{DD}	**Supply Voltage**								
		XT, RC Options	3.0	—	6.25	3.0	—	5.5	V	
		LP Option	2.5	—	6.25	2.5	—	5.5	V	Note 4
		HS option	4.5	—	5.5	4.5	—	5.5	V	
		XT, RC Opt. Extended	3.25	—	6.0	3.0	—	5.5	V	
		LP Option Extended	2.5	—	6.0	3.0	—	5.5	V	Note 4
	I_{DD}	**Supply Current**								
		XT and RC options	—	1.8	3.3	—	1.8	2.4	mA	Note 1
		HS option	—	4.8	10	—	4.5	16	mA	Note 2
		LP Option, Commercial	—	15	32	—	14	32	µA	Note 3
		LP Option, Industrial	—	15	40	—	17	40	µA	Note 3
	I_{PD}	**Power Down Current**								V_{DD}=3.0V
		Industrial	—	4.0	14	—	4.0	14	µA	WDT Enabled
			—	0.6	12.0	—	0.25	5.0	µA	WDT Disabled
		Extended	—	5.0	22	—	4.5	22	µA	WDT Enabled
			—	0.8	18	—	0.3	18	µA	WDT Disabled
	V_{IL}	**Input Low Voltage**								
		I/O Ports	V_{SS}	—	0.2 V_{DD}					4.0V<V_{DD}≤5.5V For all V_{DD}
						V_{SS}	—	0.8	V	4.5V<V_{DD}≤5.5V
						V_{SS}	—	0.15 V_{DD}	V	Otherwise
	V_{IH}	**Input High Voltage**								
		I/O Ports	2.0	—	V_{DD}					4.0V<V_{DD}≤5.5 For all V_{DD}
			0.45V_{DD}	—	V_{DD}					
						2.0	—	V_{DD}	V	4.5V<V_{DD}≤5.5V
						0.25 V_{DD}+.8V	—	V_{DD}	V	Otherwise

Note 1: F_{OSC}=4.0MHz, V_{DD}=5.5V

2: F_{OSC}=20MHz, V_{DD}=5.5V

3: F_{OSC}=32kHz, V_{DD}=3.0V, WDT disabled

4: The LP oscillator option is specified for the PIC16C55 up to 40kHz.

Note: If you change from one device to another device, please verify oscillator characteristics in your application.

NOTES:

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