PIC16C56 → PIC16C56A 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 PIC16C56 to the PIC16C56A.

TABLE 1: PIC16C56 → PIC16C56A DIFFERENCES

Functional Differences				
No.	**Difference**	**H/W**	**S/W**	**Prog.**
1	Master Clear Filter added, PIC16C56A. See Electrical Specification #30	✔	—	—
2	Code protection change, PIC16C56A now reads as 0 (from 0x040 to 0x3FF) when code protect enabled	—	—	✔
3	Programming algorithm change, PIC16C56A uses a new programming algorithm	—	—	✔
4	Oscillator configuration bits are user selectable on the PIC16C56A	—	✔	—

Electrical Specification Differences										
Parm. No.	Sym.	Characteristic	PIC16C56 Data Sheet			PIC16C56A Data Sheet			Units	Conditions
			Min	Typ	Max	Min	Typ	Max		
	VDD	**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
	IDD	**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
	IPD	**Power Down Current**								VDD=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
	VIL	**Input Low Voltage**								
		I/O Ports	VSS	—	0.2 VDD					4.0V<VDD≤5.5V For all VDD
						VSS	—	0.8	V	4.5V<VDD≤5.5V
						VSS	—	0.15 VDD	V	Otherwise
	VIH	**Input High Voltage**								
		I/O Ports	2.0	—	VDD					4.0V<VDD≤5.5 For all VDD
			0.45 VDD	—	VDD					
						2.0	—	VDD	V	4.5V<VDD≤5.5V
						0.25 VDD+.8V	—	VDD	V	Otherwise

Note 1: FOSC=4.0MHz, VDD=5.5V
2: FOSC=20MHz, VDD=5.5V
3: FOSC=32kHz, VDD=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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