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:	This device has been designed to perform to the parameters of its data sheet. It has been tested to an electrical specification designed to determine its conformance with these parameters. Due to process differences in the manufacture of this device, this device may have different performance characteristics than its earlier version. These differences may cause this device to perform differently in your application than the earlier version of this device.

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
			0.45V_{DD}	—	V_{DD}					For all 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: The user should verify that the device oscillator starts and performs as expected. Adjusting the loading capacitor values and /or the oscillator mode may be required.

Note the following details of the code protection feature on PICmicro® MCUs.

- The PICmicro family meets the specifications contained in the Microchip Data Sheet.
- Microchip believes that its family of PICmicro microcontrollers is one of the most secure products 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 PICmicro microcontroller in a manner outside the operating specifications contained in the data sheet. The person doing so may be 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 product.

If you have any further questions about this matter, please contact the local sales office nearest to you.

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