

Design Considerations	Team Project-Specific Requirements	PIC Option 1 <u>PIC18F27J53-I /SO</u>	PIC Option 2 <u>PIC18F27Q10</u>	PIC Option 3
GPIO Pin #	6	28	24	18
Built in Analog to Digital Converter. #	2	2	2	2
Built-in Hardware PWM. #	2	2	2	2
Built in I2C or SPI. #	2	2, 2	2, 2	2, 2
Built in UART. #	2	2	1	2

Microcontroller Considerations	PIC Option 1	PIC Option 2 <u>PIC18F27Q10</u>	PIC Option 3
Part Number	PIC18F27j53-I/SO	PIC18F27Q10	PIC18F14Q40-I/SS
Link to product page	Link	Product Link	Link
Link to Data Sheet	Data Sheet	Data Sheet	Data Sheet
Link to Application Notes	Notes	Application Notes	Application Notes
Link to Code Examples	Code Ex.	Code Ex.	Code Ex.
Link to External	Resources	Resources	Resources

Resources			
Production Unit Cost	\$5.24	\$1.62	\$1.23
Supply Voltage Range	1.8 - 9 V	1.8 - 5.5 V	1.8 - 5.5 V
Absolute Max Current	350 mA	350 mA	350 mA
Max GPIO Pin Current	250 mA	250 mA	250 mA
8-bit or 16-bit	16-bit	16 bit	8bit
Footprints	Surface Mount	Surface Mount	Surface Mount
Supports External Interrupts	yes	Yes	yes
In-System Programming Capability and Type	yes	Yes	yes
Programming Hardware and Cost	\$5.24	\$1.62	\$1.23
Works with MPLAB X IDE	yes	Yes	yes
Works with Microchip Code Configurator	yes	Yes	yes

Overall Pros	1. Exceeds all requirements 2. Powerful for what we need	1. Meets all the necessary requirements 2. Inexpensive	1. Meets all requirements 2. Is cheap
Overall Cons	1. Not cheap.	1. Doesn't have much room for adding potential extra components 2. There isn't much external info on it	1. Pins are somewhat small.
Ranking	1	3	2

Final Choice: We are choosing option 1 because it fits best for our project. Option 3 does not meet all our requirements, and 2 is an inadequate version of 1. Thus, option 1 is the preferable choice between these 3 options.