

## Programming Reference

Joystick/Cortex Return Value Ranges (and Default Types)	
Joystick Stick 1 (left to right)	-127 to 127 (int)
Joystick Stick 2 (back to fwd)	-127 to 127 (int)
Joystick Stick 3 (left to right)	-127 to 127 (int)
Joystick Stick 4 (back to fwd)	-127 to 127 (int)
Joystick Tilt (left to right)	-127 to 127 (int)
Joystick Tilt (back to fwd)	-127 to 127 (int)
Joystick Button (pressed)	1 (unsigned char)
Joystick Button (released)	0 (unsigned char)
Cortex Analog Port (I)	0 to 1023 (unsigned int)
Cortex Digital Port (I/O)	0 or 1 (unsigned char)
Cortex Data Port Return Values	
Analog Open	less than 100
Analog Grounded	0 (approximate)
Analog 5V	1023 (maximum)
Digital Open	1
Digital Grounded	0
Digital less than 1V	0
Digital 2V to 5V	1

Cortex Motor Port Command Values	
Motor 127	Battery V (motor) or 60° Rotation (servo)
Motor -127	Reversed Battery V (motor) or -60° Rotation (servo)
Cortex Digital Port Command Values	
Digital 0	0.0V
Digital 1	3.3V

Whole Number Variable Range	
char	-128 to 127 (8 bits)
unsigned char	0 to 255 (8 bits)
int	-2,147,483,648 to 2,147,483,647 (32 bits)
unsigned int	0 to 4,294,967,295 (32 bits)
short	-32,768 to 32,767 (16 bits)
unsigned short	0 to 65,535 (16 bits)
long	-2,147,483,648 to 2,147,483,647 (32 bits)
unsigned long	0 to 4,294,967,295 (32 bits)
Decimal Number Variable Range	
float	1e-38 to 1e+38 (32 bits)
double	1e-308 to 1e+308 (64 bits)