1.0 SPI Header:

The SPI header consists of 4 bits with the least significant holding the size of variable being received and the most significant bits giving information on whether more variables are going to be received.

4 bit Value:
0x00: Null value, check for response
0x01: 8 bit integer
0x10: 16 bit integer
0x11: 32 bit integer
00xx: 1 more value to be received
01xx: 2 more values to be received
10xx: 3 more values to be received
11xx: Many more values to be received, new header will be transmitted at end of 3

2.0 SPI Master:

void spi_Master ();
Constructor for the spi_Master class, sets up all the necessary pins for the use of SPI on pins 1.3, 1.4, 1.5 and 2.0.

void spiMaster::spiSend_Header(unsigned short int spi_data_out);

Sends a 4 bit value to the slave device containing instructions for the values to be received, information on the header can be seen above in section 1.0.

void spiMaster::spiSend_uX(unsigned short int spi_data_out);

Send an 8, 16, or 32 bit unsigned integer value to the slave device similar to the header however with only raw data.

3.0 SPI Slave:

void spi_Slave();

Constructor for the spi_Slave class, sets up all the necessary pins for the use of SPI on pins 1.3, 1.4, 1.5 and 2.0

unsigned short int spiReceive_header();

Receives a header from the master device with information of values to be received.

unsigned short int spiReceive_uX();

Receives an 8, 16, or 32 bit unsigned integer value to the master device similar to the header however with only raw data.