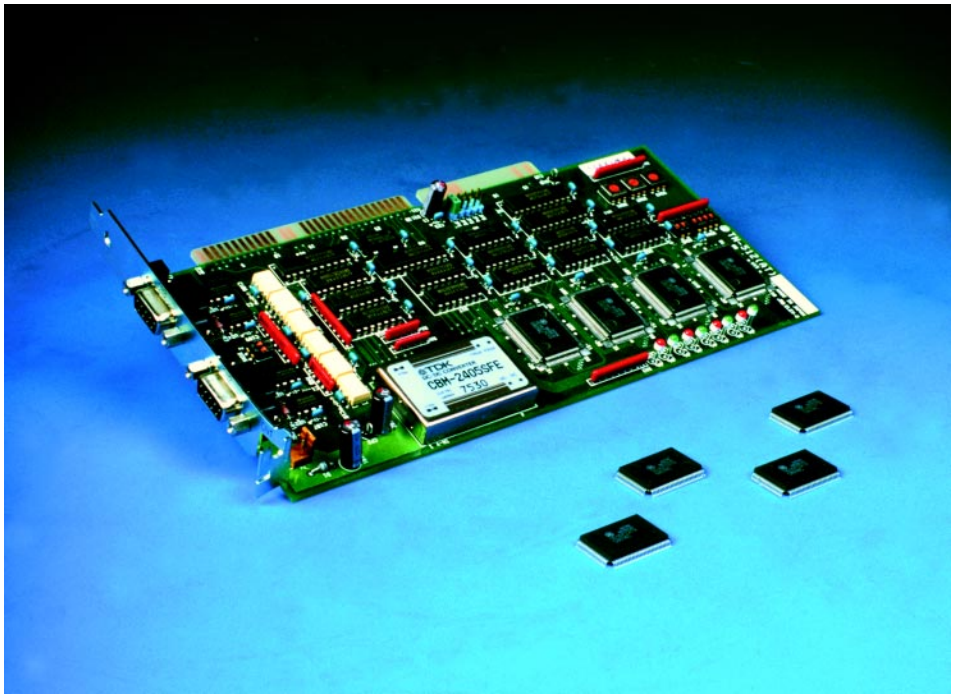


Network System for Motion Control
(G Series Communication Chips)

After many years of design and manufacturing experience with multi-axis equipment and motion control components, Nippon Pulse Motor has developed their own networking protocol for motion control. This solution is two new serial communication chips - **G8014C** and **G8015** - for your motion control network needs.

The **G8014C** is a high speed, high performance serial communication interface LSI designed to minimize the wiring. The parallel signal into the chip can be transmitted serially to another G8014C chip. The chip has 16 inner ports and handles a maximum of 128 points of input and output signal controls with a single line between the two chips.

The **G8015** is a high speed pulse generating motion control LSI. Its features are constant speed profile, trapezoidal profit, S-curve acceleration/deceleration, programmable positioning, home positioning, and more. In conjunction with G8014C, you can control up to 16 axis.

G-8014C Features:

1. Transmission speed: 2.0 Mbps
2. Transmission delay: 1 msec max
3. Maximum 16 ports (128 bits) of I/O signal control
4. I/O ports of 4ch
5. ACK hi-quality error detection function

G-8014C Specifications:

1. Power source: +5V ±5%DC
2. Clock frequency: 20MHz
3. Operation ambient temperature: 0 to 70°C
4. Storage temperature: -40° to 125°C
5. QFP 100 pin

G-8015 Features:

1. Interface to **G8014C**
2. Maximum pulse output frequency: 6.5 Mpps
3. S-curve acceleration/deceleration in motion profile
4. Interface to pulse-input-type servo & stepper motors
5. Phase distributing function (full or half-step mode) for 2- or 4-phase stepper motor included

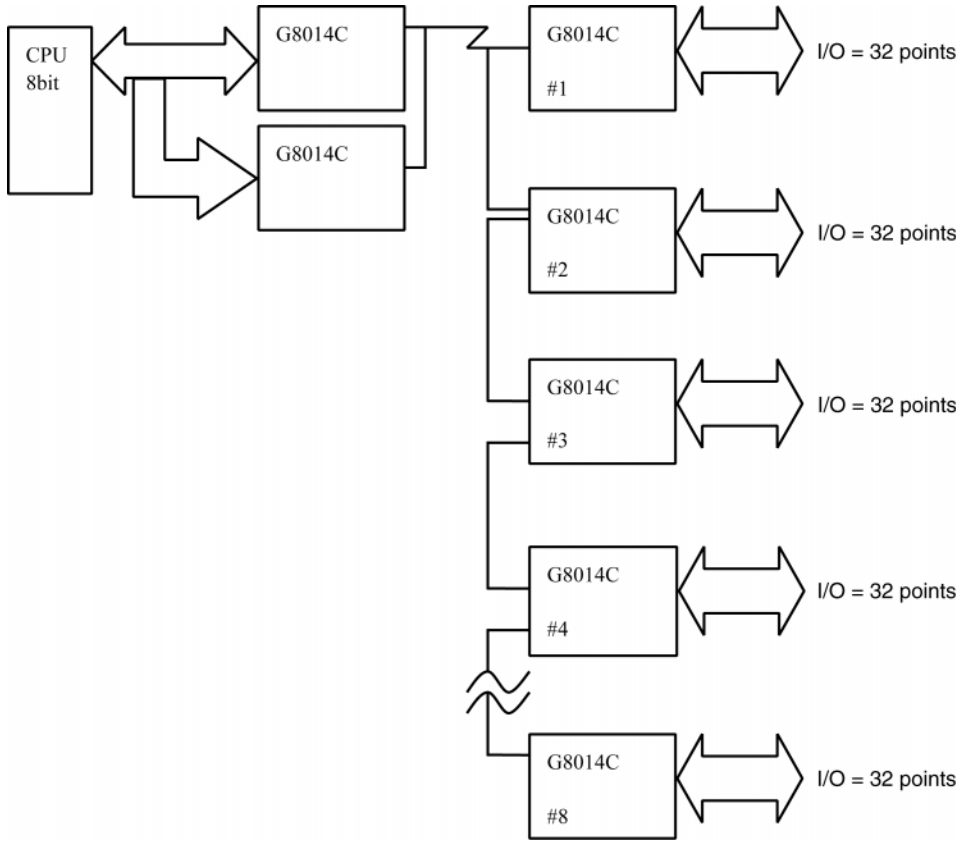
G-8015 Specifications:

1. Power source: +5V ±10%DC
2. Clock frequency: 19.6608 MHz or 20 MHz
3. Operation ambient temperature: 0 to 70°C
4. Storage temperature: -40 to 125°C
5. QFP 60 pin

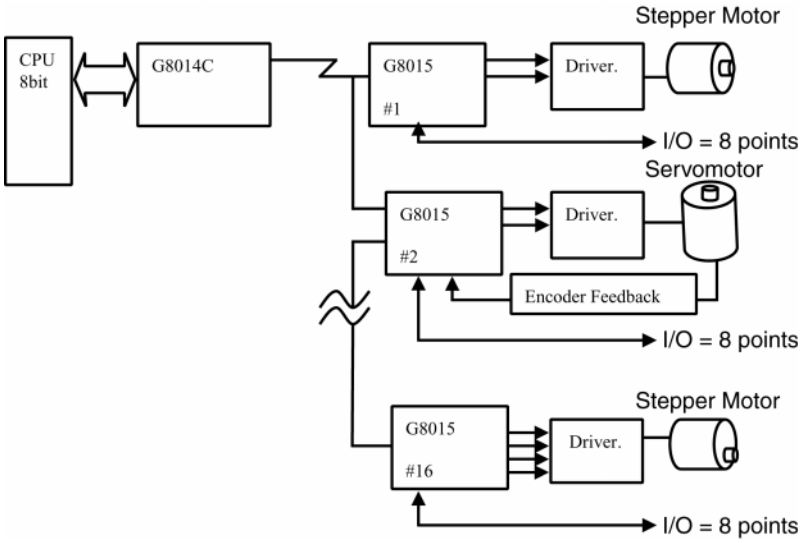
Here are some examples of how to connect chips to make a motion control network.

1. G8014C ↔ G8014C

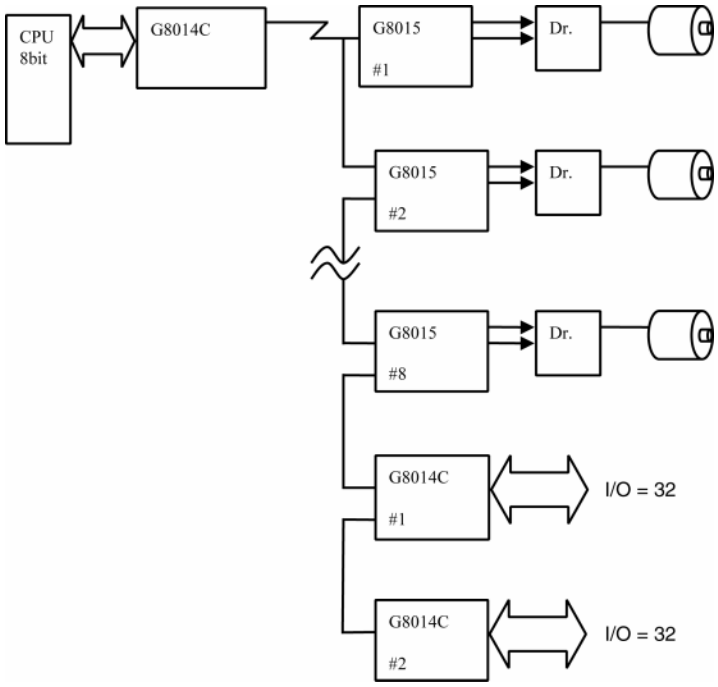
Using RS-485 serial communication method, you can control a maximum of 256 points of I/O signal (Note: two G8014C chips are required to main control.)



2. G8014C ↔ G8015



3. G8014C ↔ G8014C and G8015



Connection Table

Connection		Maximum Point (/1 Line)
Master	Slave	
G8014C(X1)	G8014C(X4)	I/O = 128
G8014C(X2)	G8014C(X6)	I/O = 256
G8014C (X1)	G8015(X16)	16 axis
G8014C(X2)	G8015(X32)	32 axis
G8014C(X1)	G8014C(X2) and G8015(X16)	I/O = 64 and 8 axis
G8014C(X2)	G8014C(X4) and G8015(X32)	I/O - 128 and 16 axis