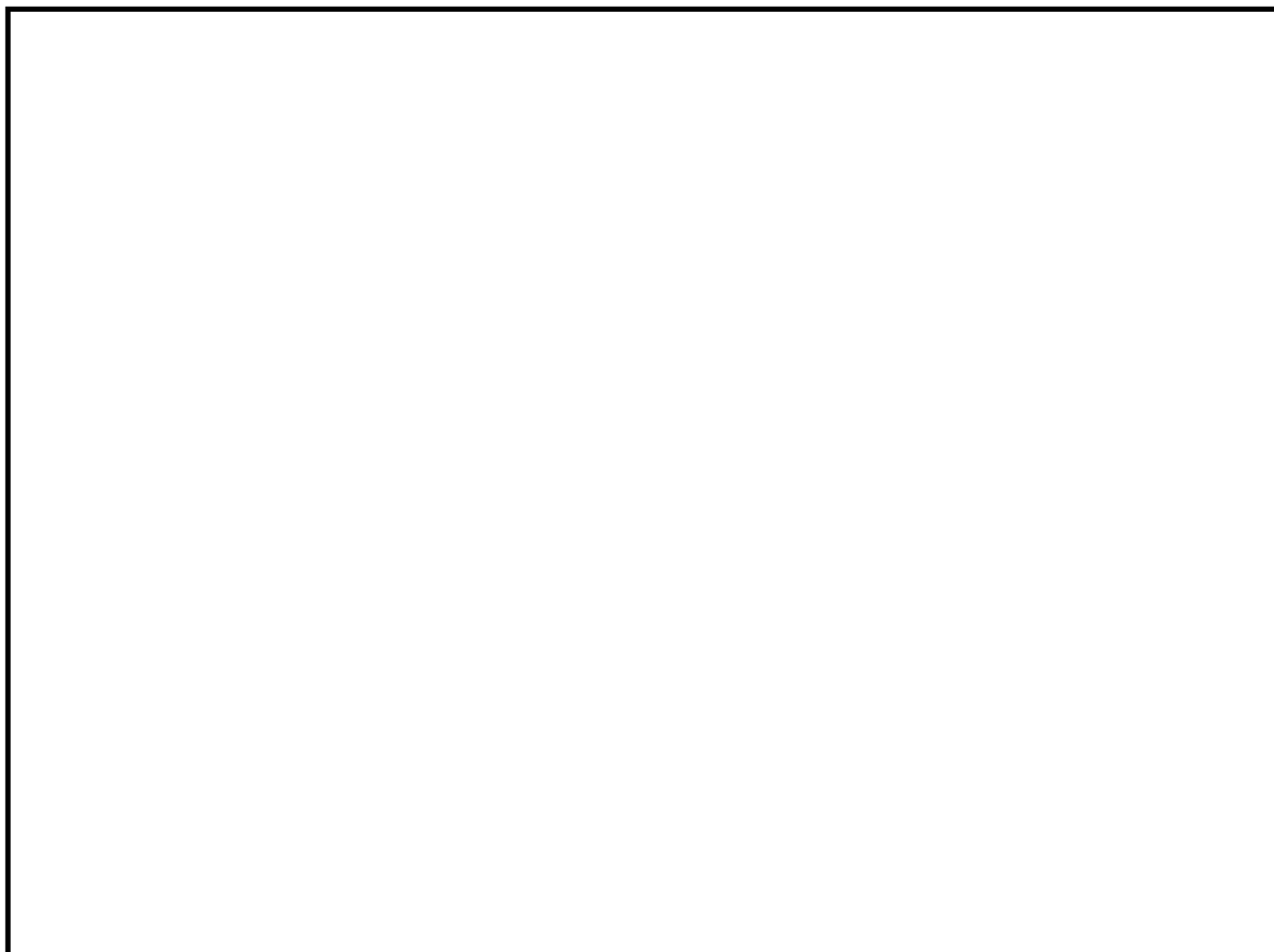


## **SPGMR11**

# **Serial Programmer for M68HC11 Microcontrollers**

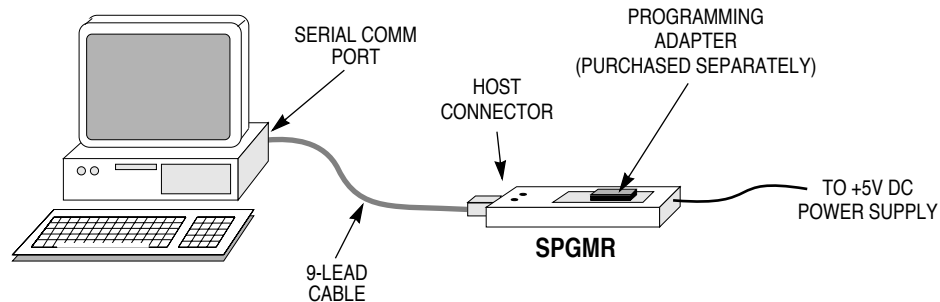


### **Serial Programmer Features**

- Programs M68HC11 family devices that contain an EPROM or EEPROM array.
- Can be operated as a stand-alone programmer connected to a host computer, or connected between a host computer and the M68HC11 Modular Development System (MMDS11) station module.
- Uses plug-in programming adapters to accommodate a variety of MCU devices and packages.
- On-board programming-voltage circuit eliminates the need for an external 12-volt supply.
- Includes programming software and a user's manual.
- Includes a +5-volt power cable and a DB9 to DB25 connector adapter.

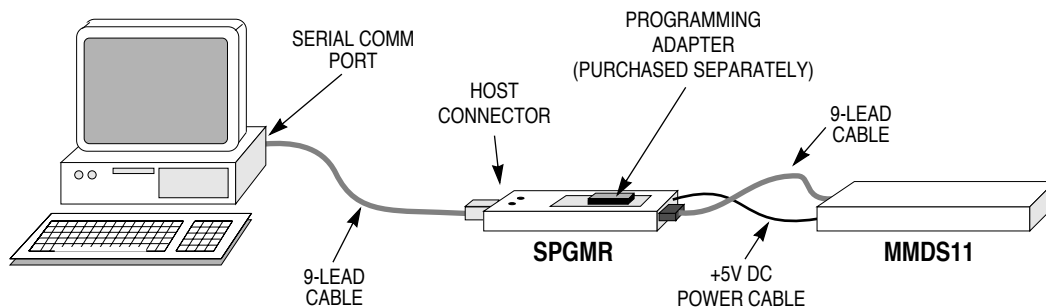
## Serial Programmer Configuration and Operation

The SPGMR11 can be configured as a stand-alone programmer, as shown in Figure 1, or it can be used with the MMDS11 Modular Development System, as shown in Figure 2. One or two standard DB9 male/female cables are required to make system connections.



SPGMR CONN

**Figure 1 Stand-Alone Hookup**



SPGMR/MMDS11 CONN

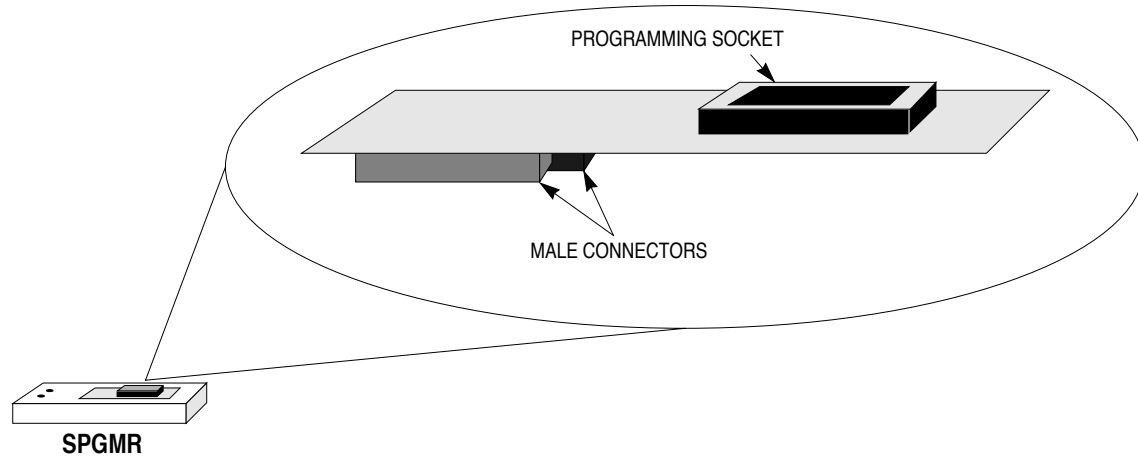
**Figure 2 MMDS11 Hookup**

The SPGMR11 includes a programming voltage circuit that makes an external 12-volt supply unnecessary. When the SPGMR11 is used with an MMDS11, 5-volt power is supplied by the MMDS11 station module; when the SPGMR11 is used as a stand-alone programmer, a 5-volt power supply must be connected to it.

Programming software resides in the host computer. Neither the software nor the programmer affects host system operation until MCU programming begins. Programming commands are selected from a computer screen display, using either keyboard or mouse. These commands allow the user to blank check, erase, program, and verify memory bytes and memory ranges, as well as display memory contents, upload memory contents, and reset the MCU.

## Programming Adapters for the Serial Programmer

Programming adapters enable the SPGMR11 to program a variety of M68HC11 microcontroller devices in a number of package configurations. As shown in Figure 3, connectors on the bottom of the programming adapter plug into connectors in the top of the serial programmer case.



SPGMR SOCKET

**Figure 3 Programming Adapter**

Adapters are made with high-quality sockets that stand up to insertion and removal of microcontroller devices. Table 1 cross-references currently-available devices and packages to adapter part number.

**Table 1 Device and Package to Adapter Cross Reference**

MCU	Package	Adapter
MC68HC11A1, -A8, -811E2	48-pin DIP	M68PA11A8P48
MC68HC11D3 <sup>1</sup> , -711D3	44-pin PLCC, CLCC	M68PA11D3FN44
	44-pin QFP	M68PA11D3FB44
	40-pin DIP, CerDIP	M68PA11D3P40
MC68HC11E1, -E9, -711E9	56-pin SDIP	M68PA11E9B56
MC68HC11A1, -A8, -E1, -E9, -E20, -711E9, -711E20, -811E2	52-pin PLCC, CLCC	M68PA11E20FN52
MC68HC11A1, -A8, -E1, -E9, -E20, -711E9, -711E20	64-pin QFP	M68PA11E20FU64
MC68HC11F1	68-pin PLCC	M68PA11F1FN68
	80-pin QFP	M68PA11F1PU80
MC68HC11G5 <sup>1</sup> , -G7 <sup>1</sup> , -711G5	84-pin PLCC, CLCC	M68PA11G5FN84
MC68HC11K4, -P2, -711K4, -711P2	84-pin PLCC, CLCC	M68PA11K4FN84
MC68HC11K4, -M2 <sup>1</sup> , -N4, -711K4, -711M2, -711N4	80-pin QFP	M68PA11K4FU80
MC68HC11L6, -711L6	68-pin PLCC, CLCC	M68PA11L6FN68
	64-pin QFP	M68PA11L6FU64
MC68HC11KA4, -711KA4	68-pin PLCC, CLCC	M68PA11KAFN68

**NOTES:**

1. MCU has no programmable memory. SPGMR11 provides read access to ROM and CONFIG register.

## Ordering Information

The serial programmer and programming adapters must be purchased separately. A single part number includes the serial programmer, programming software, a power cable, a DB9 to DB25 connector adapter, and a user's manual. Each programming adapter comes in a kit that includes instructions for inserting and removing microcontroller devices.

**Table 2 Ordering Information**

Motorola Part Number	Product Description
M68SPGMR11	Serial Programmer Programming Software 5-Volt Power Supply Cable DB9 to DB25 Adapter
M68PA11A8P48	Device/Package Adapter Kit (Must Be Purchased Separately)
M68PA11D3FN44	
M68PA11D3FB44	
M68PA11D3P40	
M68PA11E9B56	
M68PA11E20FN52	
M68PA11E20FU64	
M68PA11F1FN68	
M68PA11F1PU80	
M68PA11G5FN84	
M68PA11K4FN84	
M68PA11K4FU80	
M68PA11L6FN68	
M68PA11L6FU64	
M68PA11KAFN68	
M68PA11A8P48	

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