

Build Your Own Matrix

Features

Plug and Go switching solution that allows the user to design a RF system using any CANbus coaxial switches together with a kit or a plug-and-go unit.

Packages: Silver or Gold package
CANbus Coaxial Switches: DC - 18 GHz or DC - 26.5 GHz or DC - 40GHz
Remote Control: ENET / RS-232 / RS-485 or GPIB / RS-232 / RS-485

Silver Package Part Numbers

5188	ENET Kit
5189	GPIB Kit
5060	CANbus Address Box

Gold Package Part Numbers

6101 - *	* ENET or GPIB Controller
5060	CANbus Address Box

Description

The Build Your Own Matrix solution offers an ideal setup for engineers who are looking for a low-cost switching solution. It allows the user to design a switching matrix in any way desired by choosing CANbus switches per Table 1 together with a package: Silver or Gold Package. Either package provides both hardware and software that allows the user to interact and control each individual switch using SCPI commands. Refer to applications notes on software control.

The **Silver Package** consists of a kit with either ENET or GPIB board, patch panel, and RJ-11 harness for the CANbus switches. The user needs to assemble the blocks together to create a communication interface between CANbus switches (purchased separately - see Table 1) and Ethernet (ENET) or GPIB protocols. Kit **Model 5188** allows the user to communicate with the RF switches through TCP/IP protocol over LAN, thus referred to as ENET solution, where on the contrary the Kit **Model 5189** offers a GPIB interface instead. Note that a +12VDC power supply is required to drive this switch solution and it is not included.

The draw back with the silver package is that it requires some tedious time of putting together the pieces and it lacks an enclosed ESD proofed system. However, it is very beneficial to be used as a partial solution to a bigger switching design and is ideal to be used within another design.

The **Gold Package** offers a more sophisticated and cleaner solution enclosed in 1U chassis that is ready to be used by plugging in

coaxial switches on the rear panel. **Model 6101** is fully equipped with dual power supply, local and remote control interfaces. A 2-line LCD display and a push-button keypad on the front panel allows the user to control the switching system locally. The rear panel of the chassis is populated with (24) CANbus interfaces and with either a RJ-45 (Ethernet interface) or a DP9 male connector (GPIB interface) for remote control. This ultimate solution requires no assembly time and is hassle free. All that is needed - plug in selected CANbus switches (purchased separately) on the rear and autoconfig the unit from the local LCD control - the system is up and running at no time.

In order for the system to distinguish between each CANbus switch, each switch needs to have its own address. **Model 5060** is a unit that allows the user to program the switches easily with different addresses. Just plug in the CANbus switch, set a unique binary address via a 8-pin dip-switch, power up the unit, and flip a mechanical switch. A solid green LED will indicate when the CANbus switch has been programmed.

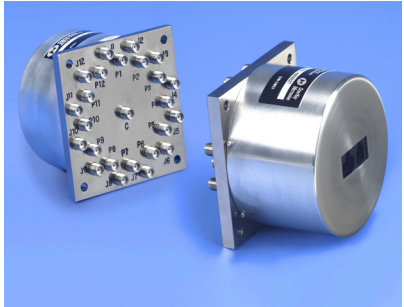
It is strongly advised to include Model 5060 in either choice of package. It gives the user total control over how to interface with each switch at software level, in addition to, providing the user a safety net to re-program switches as needed.

Note: CANbus switches are programmed to a default address by manufactures and needs to be reprogrammed to unique addresses before used with any package.

	DPDT	SP3T	SP4T	SP6T	SP8T	SP10T	SP12T
Normally Open	N/A	N/A	N/A	N/A	✓	✓	✓
Latching Self Cut-off	✓	✓	✓	✓	✓	N/A	✓
DC - 18 GHz	✓	✓	✓	✓	✓	✓	✓
DC - 26.5 GHz	✓	✓	✓	✓	✓	N/A	N/A
DC - 40 GHz	✓	N/A	N/A	N/A	N/A	N/A	N/A
50 ohm Termination	N/A	✓	✓	✓	✓	N/A	N/A
Indicator	✓	✓	✓	✓	✓	N/A	✓
Mounting Bracket	✓	✓	✓	✓	N/A	N/A	N/A

* Consult with manufacture on exact part numbers

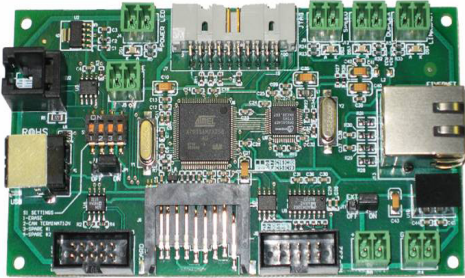
Table 1: Available CANbus Coaxial Switches



Build Your Own Matrix

Electromechanical RF Switching

Silver Package

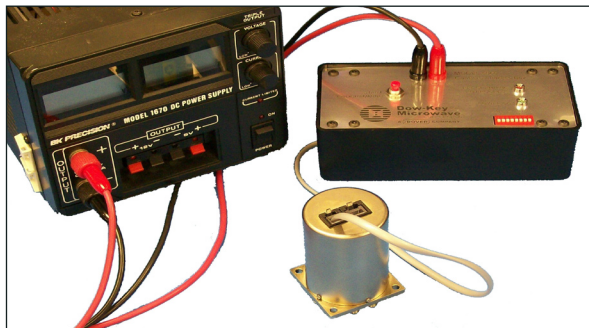
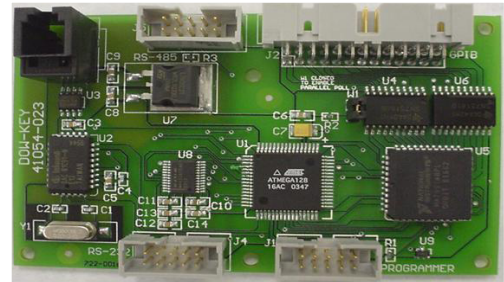


ENET Kit: 5188

- (1) Ethernet Translator Board (firmware included)
- (1) Patch Panel (can interface up to 12 CANBus switches)
- (12) RJ-11 cables with connectors (unassembled)
- (2) Feet of a 'straight-through' RJ-45 cable with connector (unassembled)
- (1) Phoenix connector plug (for connecting patch panel to Ethernet board)

GPIB Kit : 5189

- (1) GPIB Translator Board (firmware included)
- (1) Patch Panel (can interface up to 12 CANBus switches)
- (12) RJ-11 cable with connectors (unassembled)
- (1) Feet of a GPIB ribbon cable with connectors (unassembled)
- (1) Phoenix connector plug (for connecting patch panel to GPIB board)



CANBus Address Box: : 5060

Since each CANbus needs its own unique address, the CANbus Address Box allows the user to program each switch easily in four step (takes less than 5 minutes):

1. Plug in the CANbus switch vis RJ-11 cable to the address box.
2. Power up the box (+12VDC) using any power supplier.
3. Use a 8-bit dip switch to set the address.
4. Flip the programming switch on the box and wait for the blinking green light to turn solid green.

The photo on the right shows the patch panel that comes with Kit 5188 and Kit 5189, and how the CANbus switches are connected. The patch panel in turn with go to a +12 VDC power source, and either to the GPIB or the ENET translator board (provided in respective kit) via the Phoenix connectors. For more information on how to build your own matrix, refer to the following publications on our website at www.dowkey.com:

- >> "Creating Your Own RF Switching System": **AN2008-08-CYOM**
- >> "GPIB Software Configuration": **AN2008-08-GPIB**
- >> "ENET Software Configuration": **AN2008-08-ENET**



Gold Package



Model 6101:

Model 6101 is composed either with a ENET or a GPIB solution in 1U chassis, in addition to built in dual power supplies, (24) CANBus interfaces, and LCD display with keypad control. This series is the ultimate kit for creating your own matrix solution.

Note: A CANBus address box is strongly advised to be used.