

**Genmitsu**  
Genmitsu  
iMaticBox-02 PWM  
Relay Controller  
Module



# Genmitsu iMaticBox-02 PWM Relay Controller Module User Guide

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# Genmitsu

Genmitsu iMaticBox-02 PWM Relay Controller Module



## USER GUIDE

### iMaticBox-02 PWM Relay Controller Module

#### Welcome

Thank you for purchasing the Genmitsu iMaticBox-02 PWM Relay Controller Module for CNC Router from SainSmart. For technical support, please email us at [support@sainsmart.com](mailto:support@sainsmart.com). Help and support is also available from our Facebook group. (SainSmart Genmitsu CNC Users Group) Scan QR code to find information.



Scan To Find  
CNC Resource



Scan QR code  
to join the group

#### Safety Guideline

- Please read the manual carefully before installing, commissioning, and operating the product.
- PWM signal and analog signal interfaces can only be used separately, if using them at the same time there is a risk of damage.
- The maximum input voltage of 0-10V analog signal must not exceed 10V, if it exceeds 10V, it will damage the

control board.

- Please connect the power supply and other cables correctly according to the instructions in the manual, strictly prohibit unplugging or violently disassembling the terminals, and ensure that all connections are firm and reliable.
- Always disconnect the device from the power source when it is not used for long or when it is being moved.
- This product should be used in a dry environment, to avoid high temperature, humidity, and violent vibration, shock.
- Do not use unsuitable cables to connect to the relay's power outlet.

## Specifications

Model Name	iMaticBox-02
Product Name	Smart PWM Relay Controller Module for CNC Router
Console Power Supply Voltage	12 voe
PWM Signal Amplitude Input	5VDC
PWM Control Frequency	1K Hz
Minimum On PWM Duty Cycle	0.5%
Analog Voltage Control	0-10 voe
Minimum Turn-On Voltage	0.1V
AC Input	110VAC 60Hz / 220VAC 50Hz
AC Output	110VAC 60Hz / 220VAC 50Hz
AC Maximum Output	10A
Work Response Time	250ms
Operating Temperature	-20°C to 85°C
Overall Dimensions	140 x 113 x 65 mm
Weight	579 g

## Dimension



## Unboxing

### 1. G IMaticBox-02 Relay Controller Module (US/JP/EU/UK)



### 2. Power Supply (US/JP/EU/UK)



### 3. 1.5m Signal Cable A



### 4. 1.5m Signal Cable B



### 5. 1.5m Signal Cable C



### 6. 1.5m Signal Cable D

7. 1.5m Signal Cable E



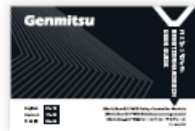
8. (4) M3x10 Socket Head Cap Screw



9. Allen Wrench

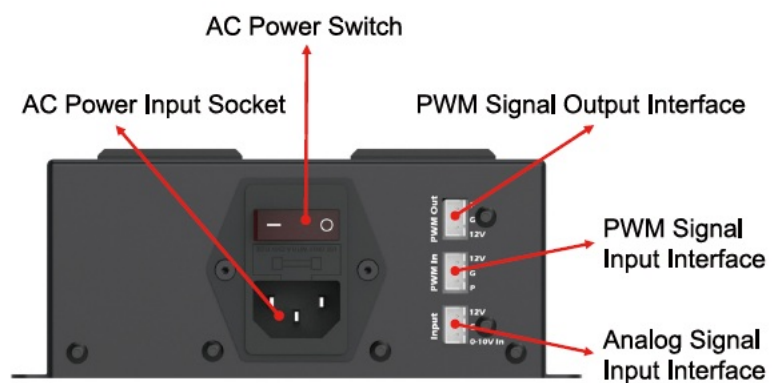
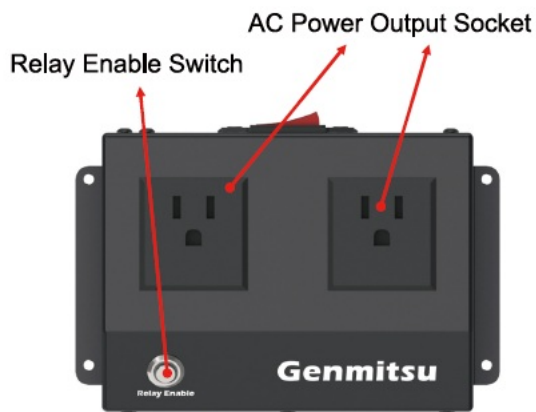


10. User Manual



## Interfaces Introduction

The following instructions are based on US/JP Relay Controller Module as an example



## Cable Connection Reference Table

Cable Marking	Applicable CNC Router Models
Signal Cable A	3018-PRO, 3018-PROVer V2, 3020-PRO MAX V2, 3030-PROVer MAX, 4040-PRO, 4040-Reno
Signal Cable B	PROVerXL 4030 V1
Signal Cable C	3018-PRO, 3020-PRO MAX
Signal Cable D	PROVerXL 4030 V2
Signal Cable E	3018-PROVer

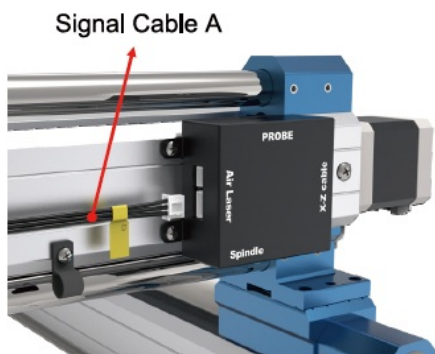
In the case of the 6050 CNC, customers will need to use the laser cables that come with the CNC for connecting to the laser port.

## Wiring and Control

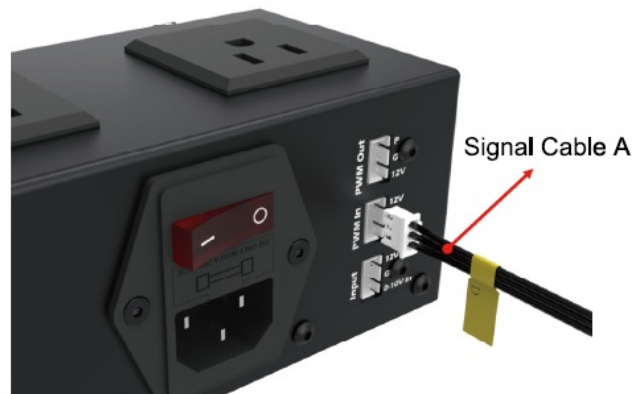
**Connect the signal cable.** (Take 4040 PRO and US as an example)

Turn off the power switch of CNC router and select the cable you need. Plug cable into the laser interface of the CNC machine and the PMW interface of the relay power supply.

(Refer to page 1 for the cable correspondence table)



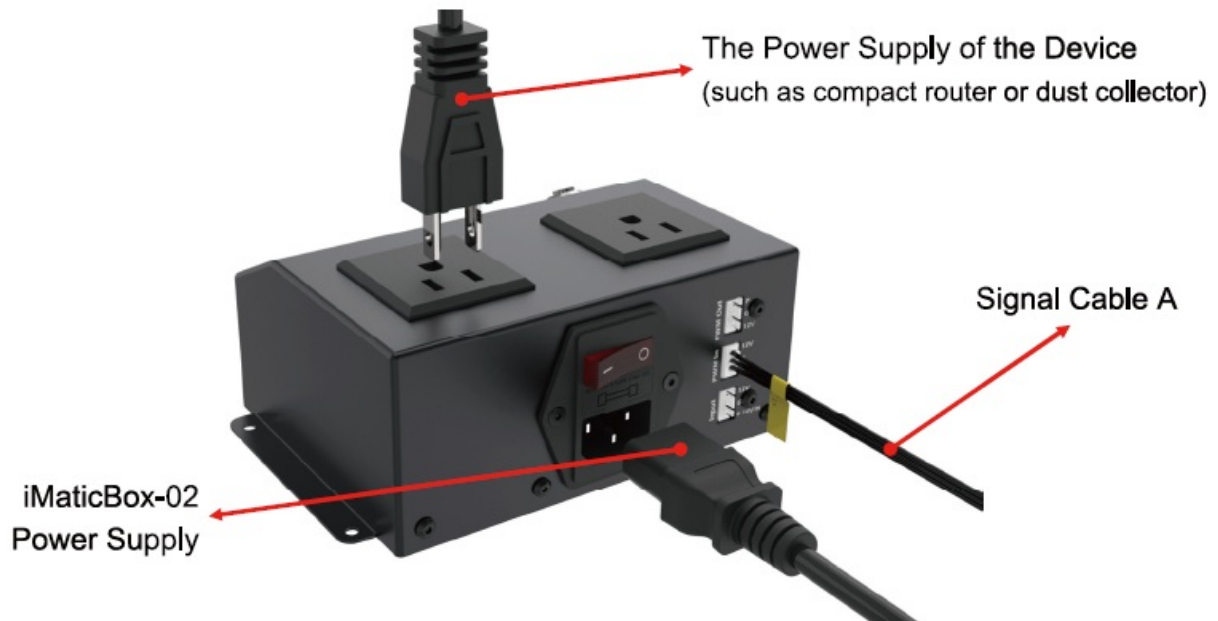
**CNC Router View**



**Relay Socket Rear View**

## Connect the power supply

Plug in the cables as shown below and make sure all cables are connected tightly.



**Relay Socket Rear View**

### Power on

After all the cables are connected successfully, turn on the power of the CNC router, then turn on the AC power switch of the iMaticBox-02, finally turn on the relay enable switch. When the relay enable switch shows a blue light, this means the signal input control is active.



**AC Power Switch**

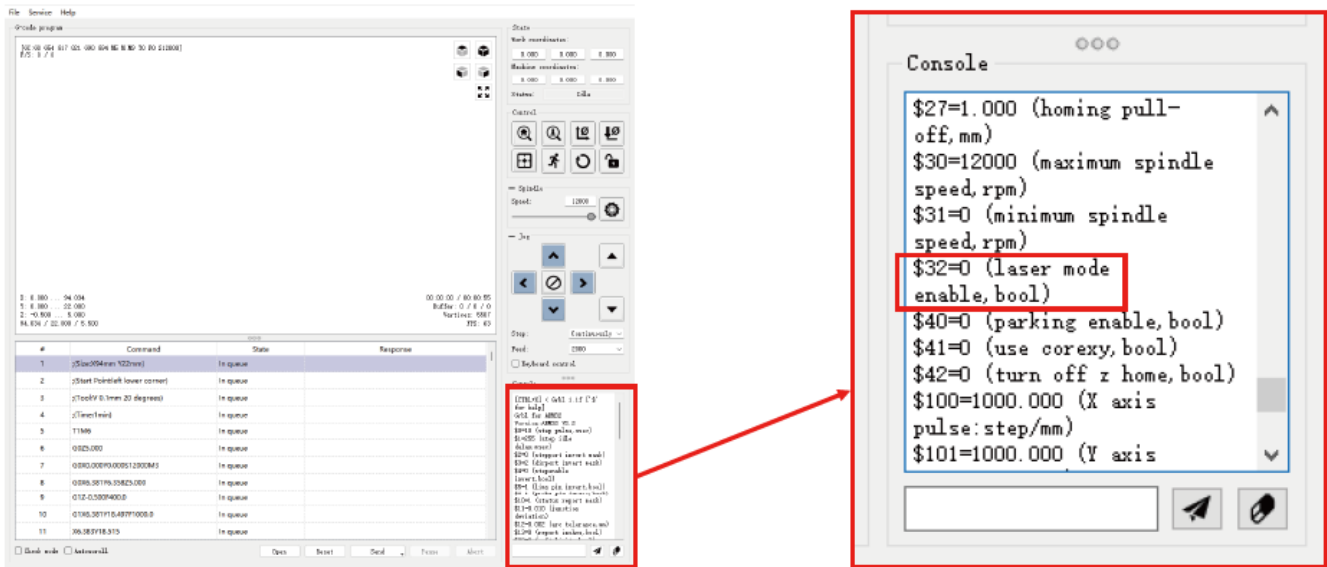


**Relay Enable Switch**

### Software Control (Candle as an example)

Open the Candle control software, then select and make sure the  $\$32=0$ .

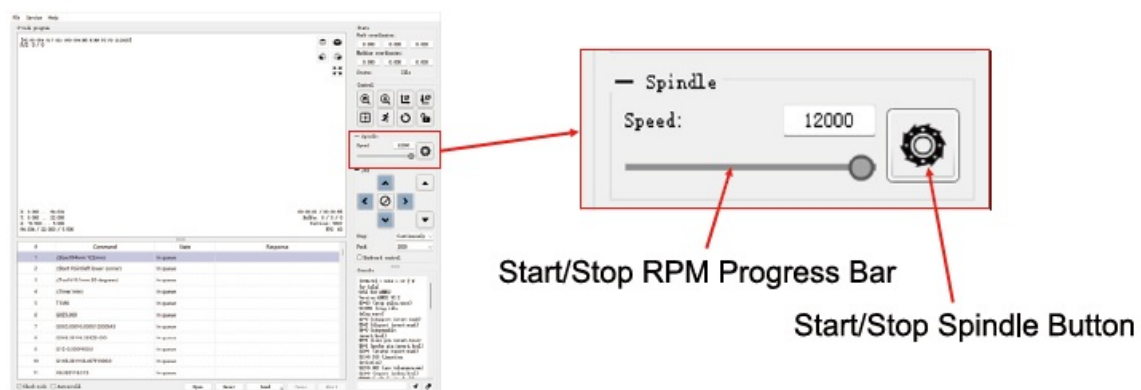
**(Note:** At this point the CNC router needs to be connected to the computer)



## Control start/stop (Candle as an example)

- In the spindle control area of Candle, click on the start/stop spindle icon to start the spindle motor on the CNC router. At the same time, the device connected to the relay power socket is energized, when the spindle motor is stopped, the device connected to the relay power socket is turned off.
- Normally, the spindle speed increases and decreases as the spindle start/stop RPM progress bar is dragged. When the spindle speed changes, the device connected to the relay power outlet does not lose power. When the spindle speed falls below about 0.5% of the maximum speed, the device connected to the relay power socket will also be turned off.

**Note:** The relay power socket will be accompanied by a “popping,.” sound of the relay when it is controlled by the signal, which is a normal phenomenon .



## Two cases when multiple devices are connected

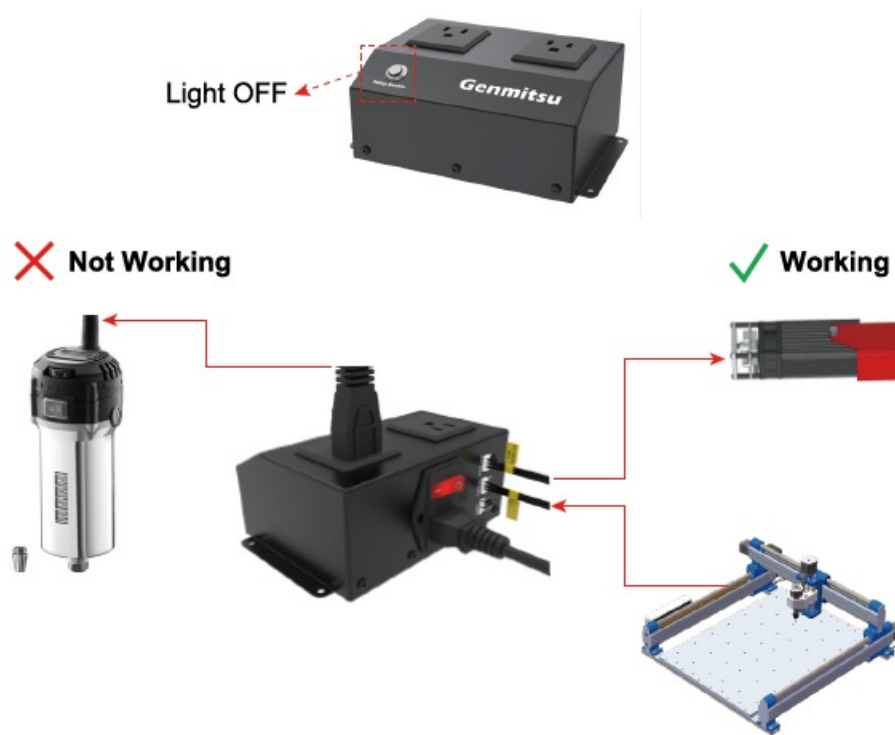
### For Using Only PWM Controlled Devices

1. If you only use a device that needs a PWM signal (like a laser module) and not the one connected to the power socket, press the relay enable switch to turn it off. You'll see the blue light turn off when it's deactivated.
2. With the relay enable switch off, the relay power socket won't receive any control signals, so the connected



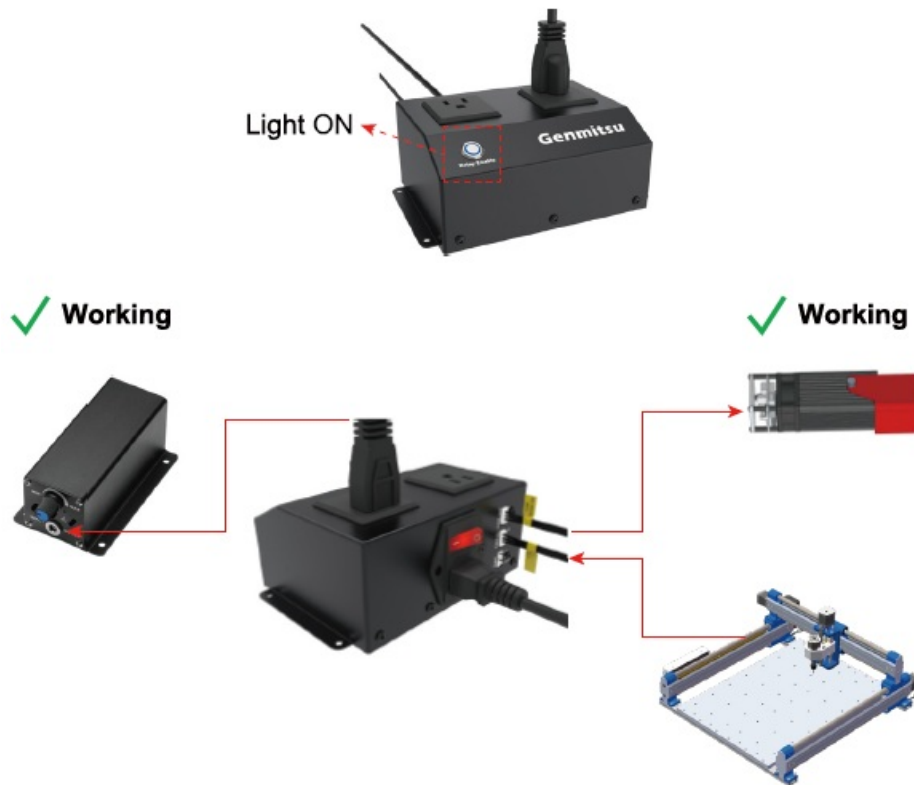
device won't have power until you turn the switch back on.

3. To set up the PWM-controlled device, connect one end of a signal cable to the PWM signal output connector at the back of the relay power outlet.
4. Then, connect the other end of the cable to the device you wish to control with the PWM signal.



#### For Using Both PWM and Power Socket Devices

1. To use both a PWM-controlled device and a device connected to the power socket, ensure the relay enable switch is on. The blue light will be on when the switch is active.
2. In this state, the relay power socket will respond to both PWM and analog signals, providing power to the connected device.
3. To connect the PWM-controlled device like a laser module, plug one end of a signal cable into the PWM signal output connector at the back of the relay power outlet.
4. Finally, connect the other end of the signal cable to the device that requires PWM signal control.



### Analog signal control

Please disconnect the power supply of the machine before connecting the signal cable. Use the signal cable that matches the machine, connect one end to the 0-10V signal output port on the engraving machine, and the other end to the analog signal input port at the back of the relay power socket; all other connection operations are the same as when using PWM signal control.

**Note:** The maximum input voltage of 0-10V analog signal should not exceed 11V, if it exceeds 11V, it will damage the control board.



### Install iMaticBox-02 Relay Controller Module

The relay controller module can be secured on the desktop using the Allen wrench and screws.

(4) M3×10 Socket Head Cap Screw



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POWER TO THE MAKERS  
by Genmitsu  
Desktop CNC & Laser


- ✉ Email: [support@sainsmart.com](mailto:support@sainsmart.com)
- f Facebook messenger: <https://m.me/SainSmart>

Help and support is also available from our Facebook Group 2330 Paseo Del Prado, C303, Las Vegas, NV 89102



Facebook Group

## Documents / Resources

	<p><a href="#">Genmitsu iMaticBox-02 PWM Relay Controller Module</a> [pdf] User Guide Genmitsu_iMaticBox_02, 101-63-IMB2-AJ, iMaticBox-02 PWM Relay Controller Module, iMatic Box-02, iMaticBox-02 Relay Controller Module, PWM Relay Controller Module, Relay Controller Module, Relay Controller, PWM Module, Module</p>
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## References

- [User Manual](#)

## **Manuals+. Privacy Policy**

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