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SainSmart 8087

SainSmart Genmitsu CNC Router Offline Control Module User Manual

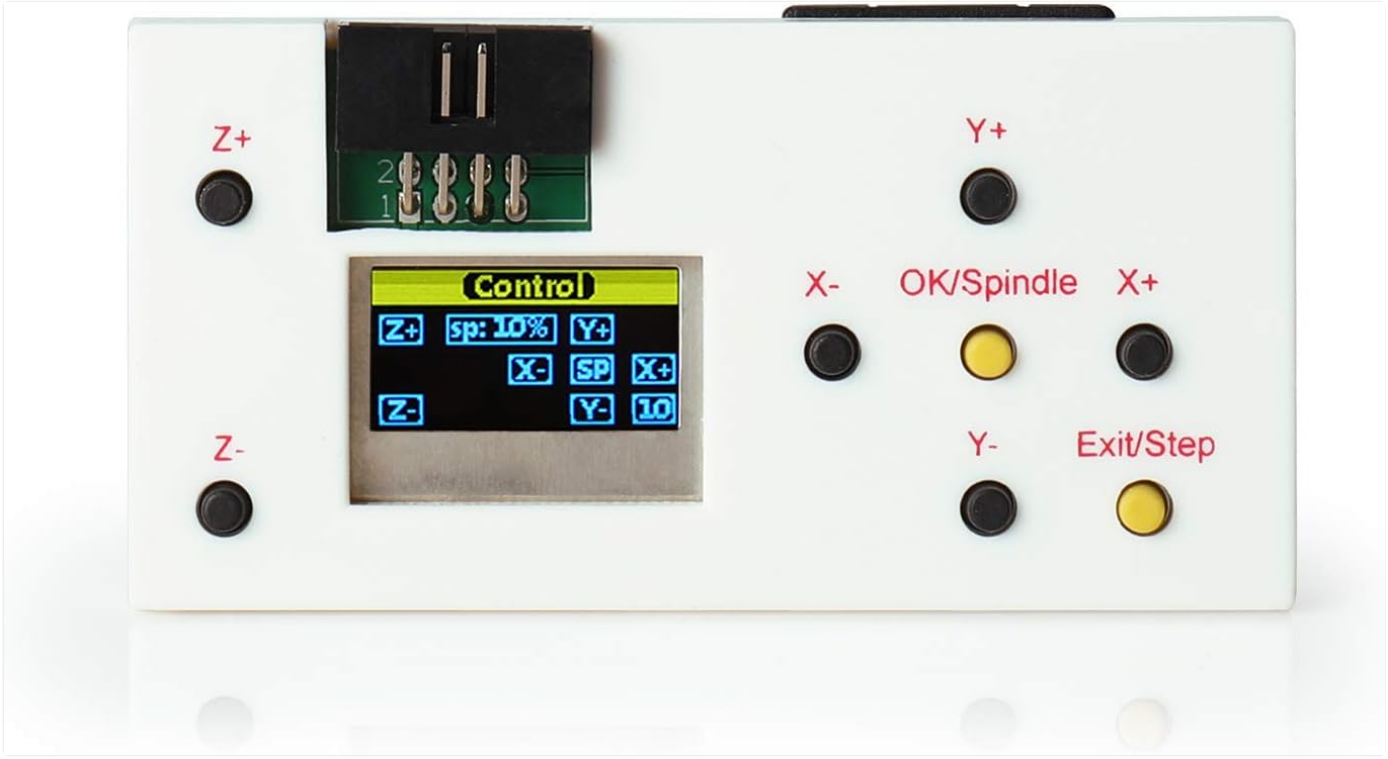
Model: 8087

Introduction

This user manual provides comprehensive instructions for the SainSmart Genmitsu CNC Router Offline Control Module. This module allows for independent operation of your CNC machine, eliminating the need for a constant computer connection during engraving tasks. It offers manual control over axis movements and spindle operation, along with convenient file management via SD card or USB.

Product Overview and Features

The SainSmart Genmitsu Offline Control Module is designed to enhance the usability and flexibility of your CNC router. It provides a compact and intuitive interface for controlling your machine.



Front view of the SainSmart Genmitsu Offline Control Module, showing the screen and control buttons.

Key Features:

- **Offline Control:** Operate your CNC router without a computer connection, offering greater flexibility in workshop placement.
- **Manual Control:** Adjust XYZ axis positions and control spindle activation directly from the module.
- **Two-way File Access:** Load engraving files directly from an SD card or transfer files from a computer via micro USB.
- **Easy to Use:** Simple plug-and-play connection to your GRBL controller board.

Specifications

Attribute	Detail
Connection	USB (USB-CH340)
Software Compatibility	GRBL controller, Universal G-code Sender
Input Voltage	12-36V
Master Chip	atmel 328P (Arduino Nano)
Stepper Motor Driver	A4988
Spindle Drive Chip	MOSFET (recommendation 12~36V, current: within 10A)
Spindle PWM Speed	Support
Supported Stepper Motor	12V, maximum current of 2A or less (recommended within 1.5A with additional heat sink). Any stepper motor 42, 57.
Laser Engraving	Support
Power Interface	5.5-2.5mm DC interface
Item Weight	2.11 ounces
Package Dimensions	3.7 x 1.89 x 1.34 inches
Model Number	8087
Material	Other

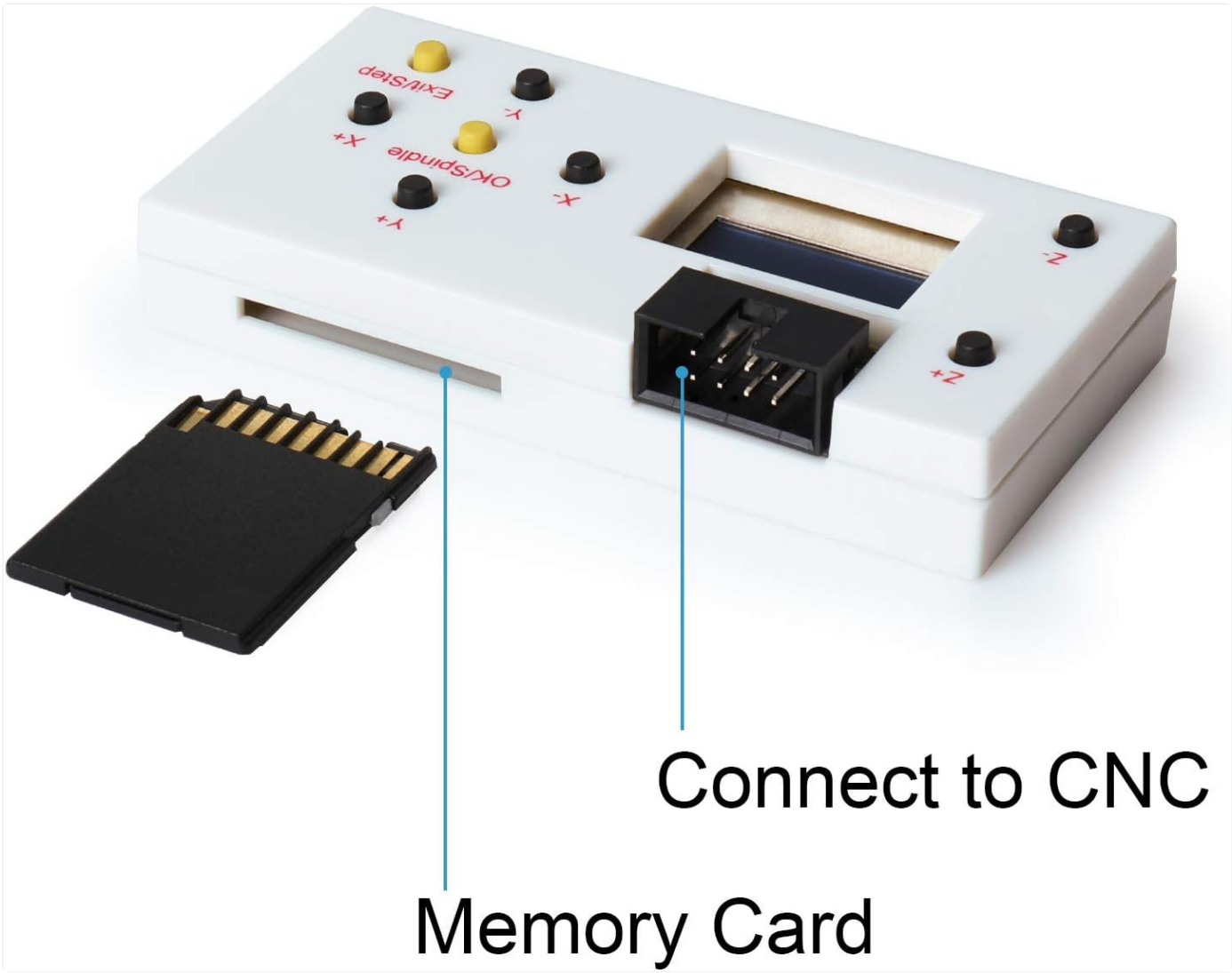


Dimensions of the offline control module: 3.27 inches (length), 1.61 inches (width), 0.55 inches (height).

Package Contents

Verify that all items are present in your package:

- 1 x Offline Controller Module
- 1 x FC 8P Cable
- 1 x SD Card

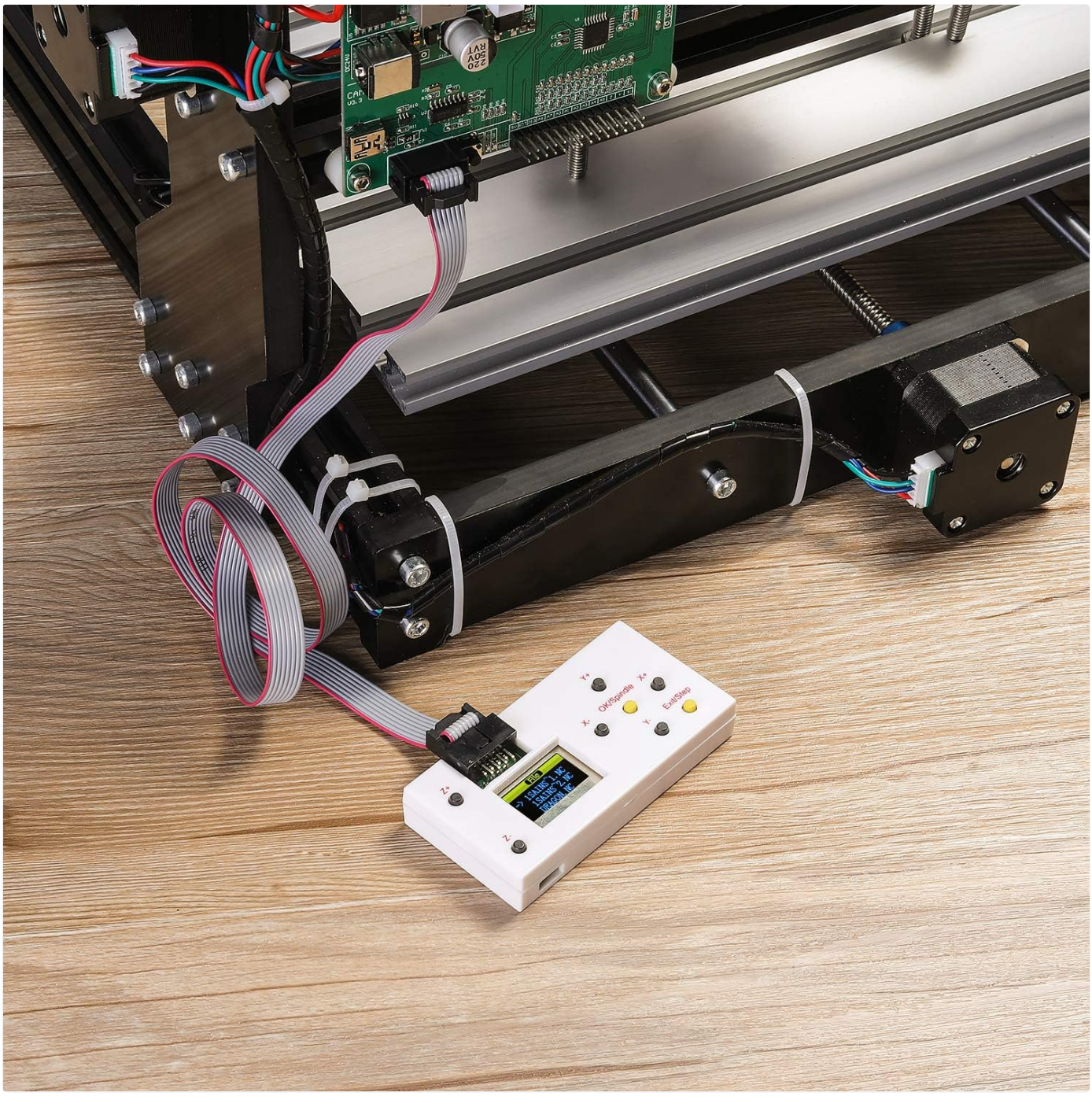


The offline control module showing the memory card slot and the port for connecting to the CNC machine.

Setup

Follow these steps to set up your offline control module:

1. **Connect the Module:** Plug the FC 8P cable into the designated port on the offline control module. Connect the other end of the cable to the GRBL controller board of your CNC machine. Ensure a secure connection.
2. **Insert SD Card:** Insert the provided SD card into the SD card slot on the side of the offline control module. Ensure it is fully seated.
3. **Power On:** Power on your CNC machine. The offline control module screen should illuminate, indicating it is ready for operation.



The offline control module connected to a CNC machine via its ribbon cable.

Operation

Interface Overview

The module features a small LCD screen and several buttons for navigation and control:

- **Directional Buttons (X+, X-, Y+, Y-, Z+, Z-):** Used for manual movement of the CNC axes.
- **OK/Spindle Button:** Confirms selections and controls spindle on/off.
- **Exit/Step Button:** Navigates back in menus or adjusts step size for axis movement.

Basic Navigation

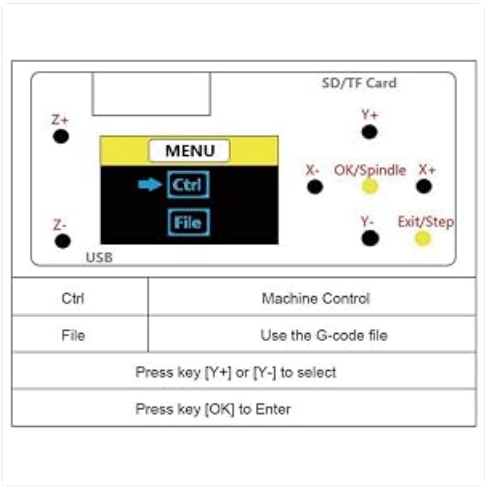
Upon powering on, the module displays the main menu. Use the Y+ and Y- buttons to navigate between options and the OK button to select.



Main Menu: Use Y+ or Y- to select 'Ctrl' for machine control or 'File' for G-code files. Press OK to enter.

Machine Control (Ctrl Menu)

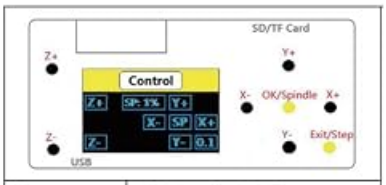
In the 'Ctrl' menu, you can manually control the CNC machine's axes and spindle.



Control Menu: X+, X-, Y+, Y-, Z+, Z- buttons control axis movement. OK/Spindle (SP) turns the spindle on/off. Long press Exit/Step to change step size (0.1, 1, 5, 10mm). SP:1% adjusts spindle power (OK + Z+ to increase, OK + Z- to decrease).

File Management (File Menu)

The 'File' menu allows you to select and run G-code files stored on the SD card.



X+	X-axis positive direction
X-	X-axis negative direction
Y+	Y-axis positive direction
Y-	Y-axis negative direction
Z+	Z-axis positive direction
Z-	Z-axis negative direction
OK/Spindle(SP)	Spindle On/Off
Exit/Step	Long press to exit, short press to change step (0.1/1/5/10mm)
SP:1%	Power to spindle (Press [OK]+[Z+]=add, Press [OK]+[Z+]=reduce)

File Menu: Use Y+ or Y- to select a G-code file. Press OK to enter and begin the engraving process.

Transferring Files via USB

You can connect the offline module to a computer using a micro USB cable to transfer G-code files directly to the SD card.



The offline control module connected to a laptop via a micro USB cable for file transfer.

Maintenance

To ensure the longevity and optimal performance of your offline control module, follow these maintenance guidelines:

- **Cleaning:** Regularly wipe the module's surface with a soft, dry cloth to remove dust and debris. Avoid using abrasive cleaners or solvents.
- **Storage:** When not in use, store the module in a clean, dry environment away from direct sunlight and extreme temperatures.
- **Cable Care:** Handle the FC 8P cable and USB cable carefully. Avoid sharp bends or excessive pulling that could damage the wires or connectors.
- **SD Card Handling:** Always eject the SD card properly from the module or computer before removing it to prevent data corruption.

Troubleshooting

If you encounter issues with your offline control module, refer to the following common problems and solutions:

- **Module Does Not Power On:**
  - Ensure the FC 8P cable is securely connected to both the module and the GRBL controller board.
  - Verify that your CNC machine is powered on and providing power to the GRBL board.
- **Buttons Are Unresponsive or Require Multiple Presses:**
  - Gently clean around the buttons to ensure no debris is obstructing their movement.
  - If the issue persists, it may indicate internal wear. Contact customer support for assistance.
- **G-code File Stops Mid-Operation or Does Not Start:**
  - Ensure the G-code file on the SD card is not corrupted. Try re-transferring the file or using a different SD card.
  - Verify that the file format is compatible with your GRBL controller.
  - Check for any loose connections between the module and the CNC machine.
- **SD Card Not Recognized:**
  - Ensure the SD card is inserted correctly and fully seated in the slot.
  - Try formatting the SD card (backing up any important data first) and re-transferring files.
  - Test with a different SD card to rule out a card issue.

Warranty and Support

SainSmart products are designed for reliability and performance. For warranty information, technical support, or any questions not covered in this manual, please visit the official SainSmart website or contact their customer service directly. Keep your purchase receipt as proof of purchase for warranty claims.
You can find more information and support resources at theSainSmart Store on Amazon.

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