

Tbest EGS002 E10 IR2110

Tbest EGS002 E10 IR2110 Pure Sine Inverter Driver Board

INSTRUCTION MANUAL

Introduction

This manual provides detailed instructions for the proper installation, operation, and maintenance of the Tbest EGS002 E10 IR2110 Pure Sine Inverter Driver Board. Please read this manual thoroughly before use to ensure optimal performance and safety.

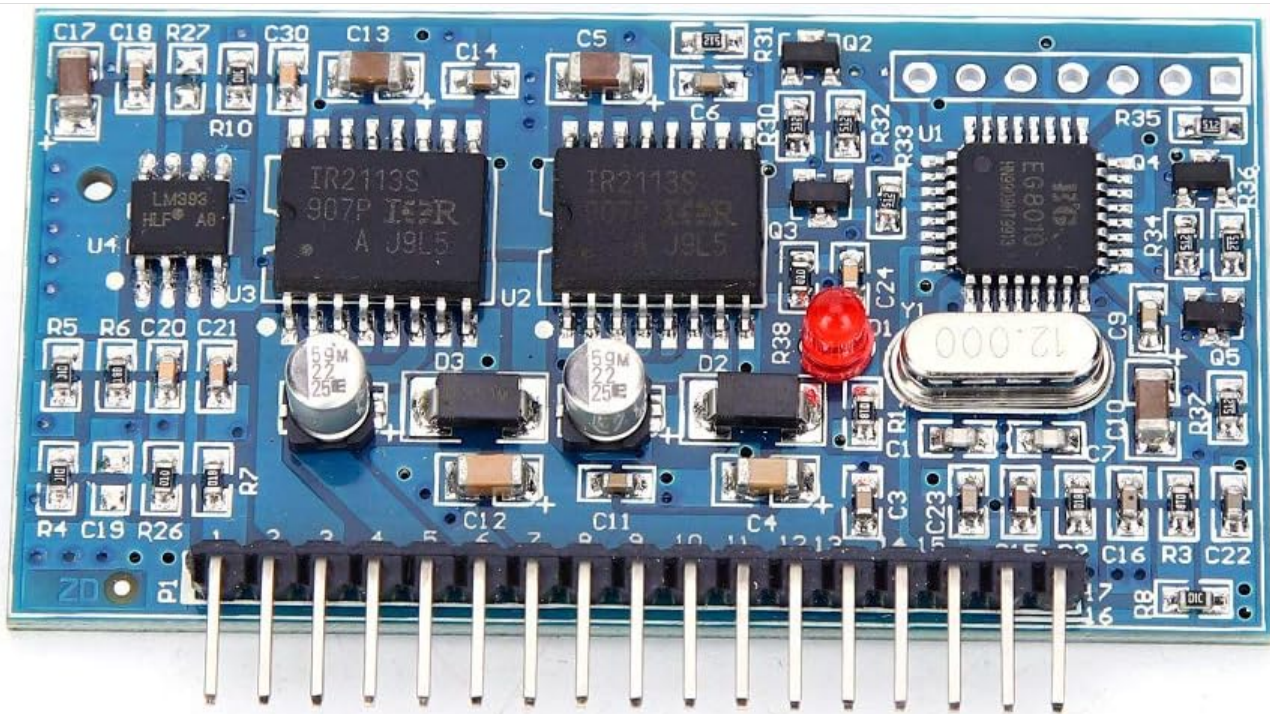
Product Overview

Key Features

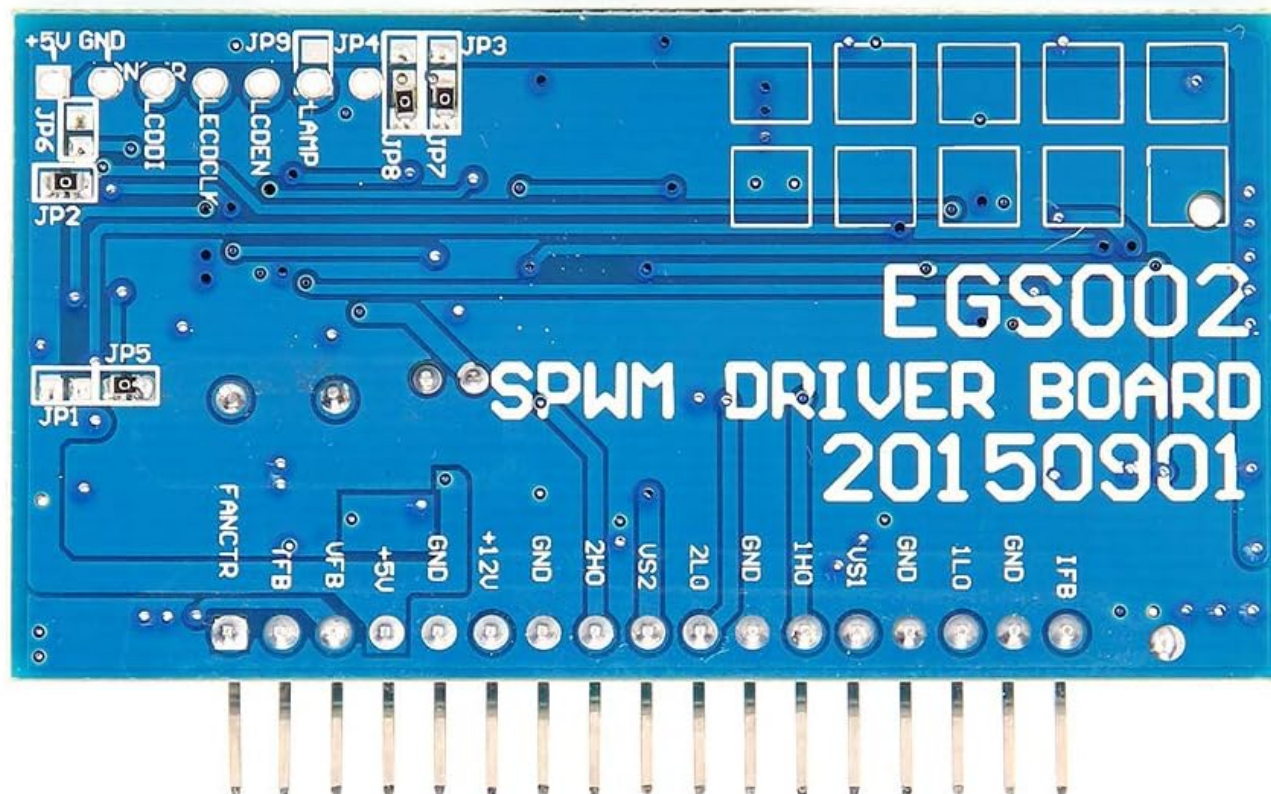
- Integrates CMOS technology for efficient operation.
- Features an SPWM sine generator for pure sine wave output.
- Includes dead time control circuit for enhanced performance.
- Incorporates an amplitude factor multiplier circuit.
- Equipped with an R32 serial communication interface.
- Supports a 12832 serial LCD driver module for display.
- Offers both uni and bi modulation capabilities.
- Provides real-time processing of voltage, current, and temperature feedback.

Component Identification

Below is a visual guide to the main components and layout of the driver board.



This image displays the top side of the inverter driver board, highlighting the main integrated circuits (IR2113S and EG8010), capacitors, resistors, and the 12.000 MHz crystal oscillator. The 20-pin header for connections is visible at the bottom.

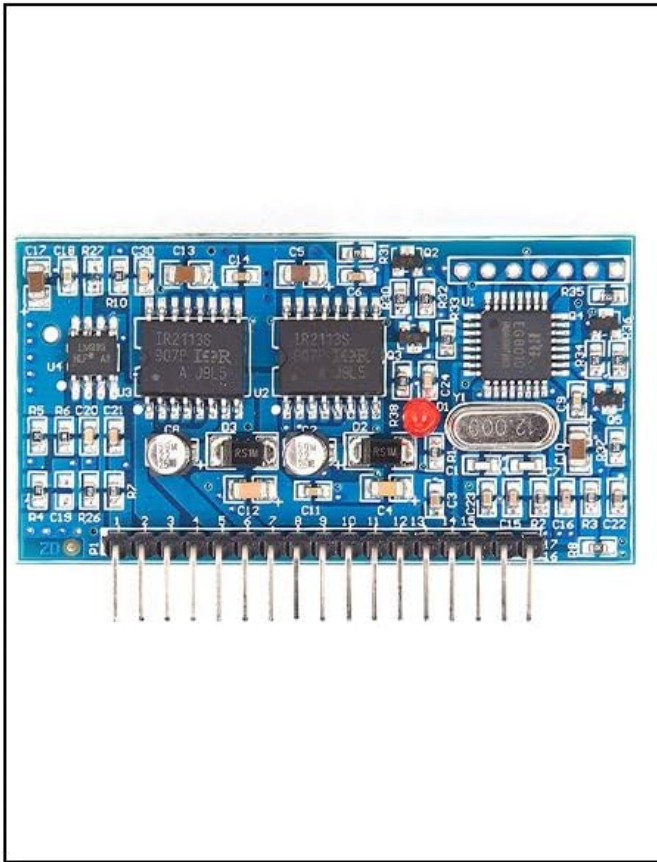


This image shows the underside of the driver board, clearly labeled 'EGS002 SPWM DRIVER BOARD 20150901'. Various connection points and pin functions such as +5V, GND, LCDCLK, LCDEN, FANCTR, UFB, VFB, US1, US2, 1H0, 2L0 are indicated, crucial for proper wiring.

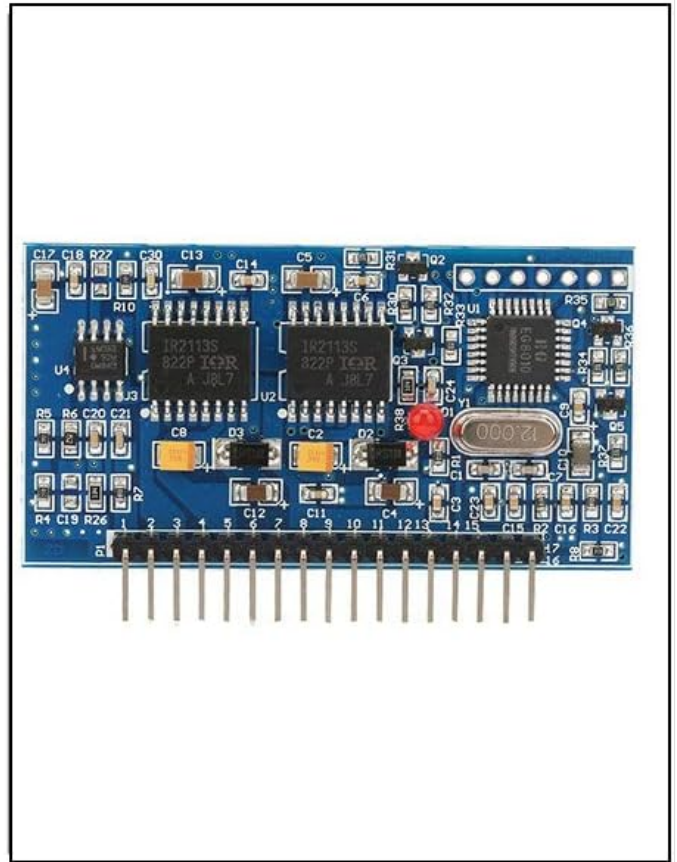
Model Variations

Please note that there might be minor variations between different production batches. Both new and old models maintain core functionality.

New and old models are shipped randomly



New Type



Old Type

This image illustrates the minor differences between the 'New Type' and 'Old Type' of the driver board, indicating that either version may be shipped. Both versions maintain the core functionality and component layout.

Setup

Power Supply Connection

Connect a stable 5V DC power supply to the designated input pins on the board. Ensure correct polarity to prevent damage. Refer to the pinout diagram in the Product Overview section for specific power input locations.

Input/Output Connections

Connect the necessary input signals and output power stages according to your specific inverter design. The board provides PWM signals to drive external power components. Carefully match the pin labels (e.g., 1H0, 2L0, US1, US2) to your circuit diagram.

LCD Module Connection

If utilizing an LCD module for display, connect it to the 12832 serial LCD driver interface pins (LCD CDI, LCD EN) as specified in your LCD module's documentation and the board's pinout.

Operating Instructions

Basic Operation

The Tbest EGS002 E10 IR2110 board generates a Pure Sine Wave Pulse Width Modulation (PWM) signal at a frequency of 23.4KHz. This signal is designed to drive external power components, such as MOSFETs, which then convert DC power into a pure sine wave AC output. The board's internal logic handles the complex waveform generation.

Feedback and Control

The board continuously monitors and processes real-time feedback for voltage, current, and temperature. This feedback is crucial for maintaining stable output, implementing protection mechanisms (e.g., over-voltage, over-current, over-temperature), and allowing for precise control adjustments within your inverter system.

Maintenance

General Care

- Keep the board clean and free from dust, dirt, and debris. Use a soft, dry brush or compressed air for cleaning.
- Avoid exposure to moisture, humidity, or extreme temperatures, as these can damage electronic components.
- Handle the board with care, especially when connecting or disconnecting wires, to prevent damage to components or pins.
- Ensure proper ventilation when the board is in operation to prevent overheating of associated power components.

Storage

When not in use, store the driver board in an anti-static bag to protect it from electrostatic discharge. Keep it in a dry, cool environment away from direct sunlight and corrosive substances.

Troubleshooting

Common Issues

- **No Output Signal:** Verify that the 5V power supply is correctly connected and stable. Check all input signals and ensure they are applied correctly according to your circuit design. Inspect all wiring for loose connections or breaks.
- **Incorrect Waveform:** If the output waveform is not a pure sine wave, review your external power stage connections, component values (e.g., inductors, capacitors), and ensure that any feedback loops are correctly implemented and calibrated.
- **Overheating:** Excessive heat can indicate issues with the external power components or an overload condition. Ensure adequate cooling (heat sinks, fans) for external power components. Check for short circuits or excessive load on the inverter system.
- **LCD Display Issues:** If the 12832 LCD module is not displaying correctly, check its power supply, data connections (LGCDCI, LCDEN), and ensure the correct communication protocol is being used.

Further Assistance

If you encounter issues that cannot be resolved using the troubleshooting steps above, it is recommended to consult relevant electronics forums, community resources, or contact the manufacturer's support for specialized assistance.

Specifications

Technical Data

Brand	Tbest
Model Name	EGS002 E10 IR2110

Manufacturer Part Number	Tbest0dc3tfb5p7
Item Type	Pure Sine Inverter Driver Board
Input Voltage	5V DC
PWM Frequency	23.4KHz
Technology	CMOS, SPWM

Warranty and Support

Warranty Information

This Tbest product is covered by a manufacturer's warranty for 90 days from the date of purchase. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

Customer Support

For technical support, troubleshooting assistance, or to inquire about warranty claims, please contact your original retailer or visit the official Tbest website for further information and contact details.

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