

Repeater Controller Ver0.3

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Hardware User Manual

Thank you for purchasing the Repeater Controller Ver0.3.

This manual explains the power supply, connector wiring, level adjustments, and the jumper required on the Ver0.3 board.

Power Supply

Supply power through a USB Type-C cable. A standard USB charger can be used.

Connect power to the USB Type-C port on the right side of the ESP32-S3 board.

Connectors

Port	Connection	Wiring and Specifications
J1	RTC	Connect the DS3231 mini RTC module.
J2	SQL signal from the receiving radio	SQL (COR) signal input. Squelch open: +5 V Left: signal; right: GND
J3	+3.3V	Not used
J4	Speaker output of the receiving radio	Received-audio input. The built-in 600 ohm to 600 ohm transformer provides a non-polarized connection.
J5	PTT and MIC terminals of the transmitting radio	Outputs to the transmitting radio. From top to bottom: GND, GND, PTT, MIC
J6	TX and RX indicator LEDs	Current-limiting resistors are built in, so LEDs can be connected directly. From left to right: TX, GND, RX, GND
J7	LCD and touch panel	Connect the 2.4-inch LCD and touch panel.

Noise Suppression

Fit clamp-on ferrite cores to the input and output cables to help suppress interference.

Except for the TX and RX LED wires.

Adjustments and Components

Reference	Function
VR1	CW tone level
VR2	Microphone level to the transmitting radio
VR3	Input level to the transmitting radio
VR4	Voice ID level
VR5	VOX / DTMF input level
U1	Optocoupler for the SQL (COR) signal from the receiving radio
U2	Optocoupler for PTT control of the transmitting radio

SQL Indicator LED

The green SQL LED lights when the SQL (COR) input signal is active.

Jumper Wiring for the Ver0.3 Board

The Ver0.3 board requires one jumper wire.

Connect a jumper from the cathode of diode D3 to RTC pin 1 (+3.3 V) on connector J1.

The Repeater Controller Ver0.4 board already includes this correction.

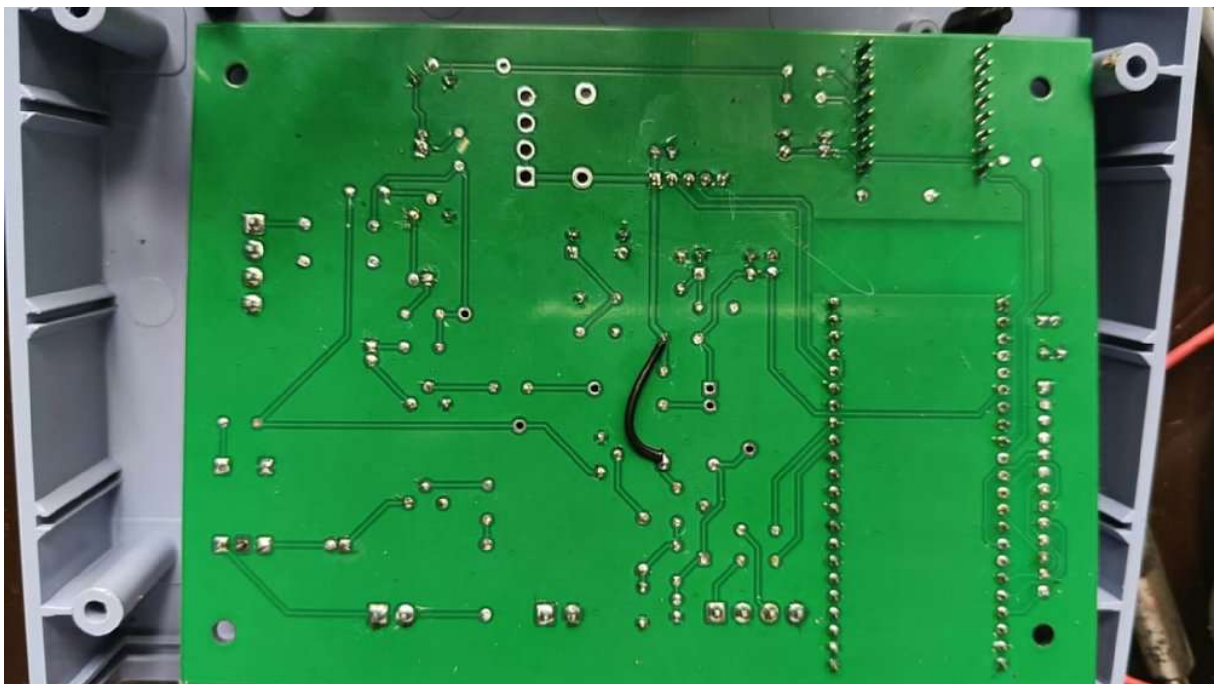


Figure 1 Jumper wiring example on the underside of the Ver0.3 board

Reference URL

<https://ji1fgx.com/261001.php>

Assembled Board



Figure 2 Component side of the assembled board