DykbRadio 5521

DykbRadio 65W Type-C USB PD Fast Charging Adapter (5521 Version) Instruction Manual

Model: 5521 Version

1. Introduction

This manual provides essential information for the safe and efficient use of your DykbRadio 65W Type-C USB PD Fast Charging Adapter module. This module is designed to convert DC input power into various fast-charging outputs via a Type-C port, supporting multiple protocols for a wide range of devices.

The adapter module supports PD3.1 (PPS), QC3.0, and SCP fast charging protocols. It incorporates comprehensive protection functions including input over-voltage and under-voltage protection, input over-current protection, output over-current short-circuit protection, and overall machine over-temperature protection to ensure safe operation.

2. Product Overview

The DykbRadio 65W Type-C USB PD Fast Charging Adapter is available in two main DC input connector versions: 5521 and 5525. This manual specifically addresses the 5521 version.

- **5521 Version:** Features a DC input jack with an outer diameter of 5.5mm and an inner diameter of 2.1mm.
- **5525 Version:** Features a DC input jack with an outer diameter of 5.5mm and an inner diameter of 2.5mm.

The 5521 model is also compatible with 5525 plugs that feature tuning fork shrapnel for a secure connection. Both the Type-C socket and the DC socket protrude approximately 1mm from the edge of the board.

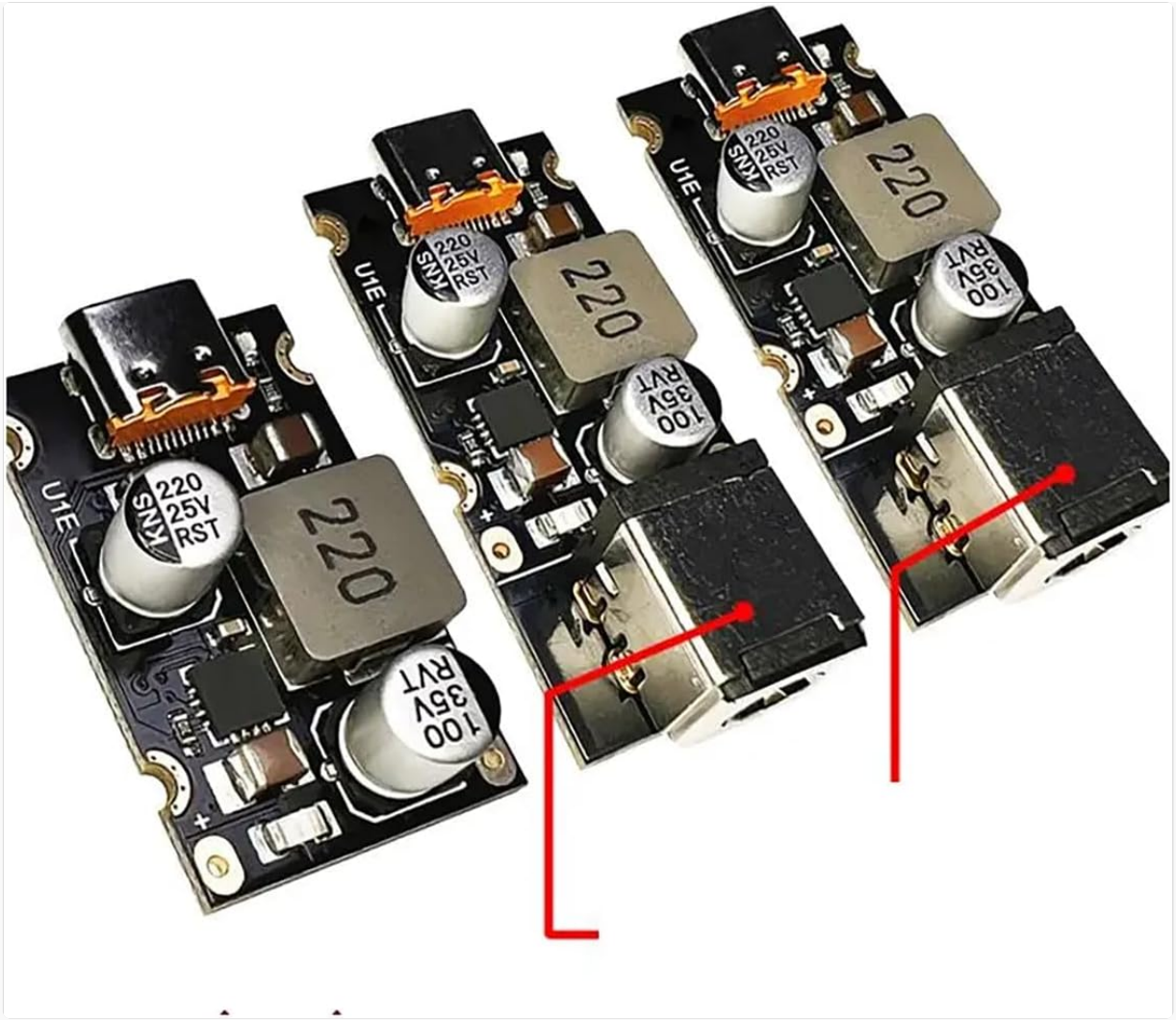


Image: Three DykbRadio 65W Type-C USB PD Fast Charging Adapter modules, illustrating the different DC input jack types (5521 and 5525 versions).



Image: Rear view of the DykbRadio 65W Type-C USB PD Fast Charging Adapter module, displaying key specifications such as 'UP TO 65W' and 'DC 8-30V' input range.

3. Setup

To set up your DykbRadio 65W Type-C USB PD Fast Charging Adapter, follow these steps:

1. **Connect Input Power:** Connect a DC power source with an input voltage between 8V and 30V to the DC input jack of the module. Ensure the polarity is correct.
2. **Power-On Sequence (Important for 20-24V input):** If using a 20V to 24V power adapter as the input, it is recommended to power on the DC power supply first, and then connect it to the module. Failure to do so may result in errors in power matching due to slow power-on of the supply, potentially preventing the module from achieving its full 65W output.
3. **Connect Output Device:** Connect your Type-C compatible device (e.g., laptop, smartphone) to the Type-C output port of the module using a suitable Type-C cable.



Image: The DykbRadio 65W Type-C USB PD Fast Charging Adapter module connected to a laptop, demonstrating a typical setup for charging.

4. Operating Instructions

Once properly set up, the DykbRadio 65W Type-C USB PD Fast Charging Adapter operates automatically:

- **Automatic Voltage Adjustment:** The module will automatically adjust its output voltage between 3.3V and 21V to match the requirements of the connected Type-C compatible power receiving device.
- **Input Voltage Requirement:** For the module to deliver a specific output voltage, the input voltage

must always be higher than the desired output voltage. For example, to trigger 20V fast charging, the input voltage must be greater than 20V.

- **Fast Charging Protocols:** The module supports various fast charging protocols including PD3.1 (PPS), QC3.0, SCP, BC1.2, Qualcomm QC2.0/QC3.0, Huawei FCP/SCP, Samsung AFC, and MTK PE+1.1/PE+2.0. It will negotiate the optimal charging protocol with the connected device.

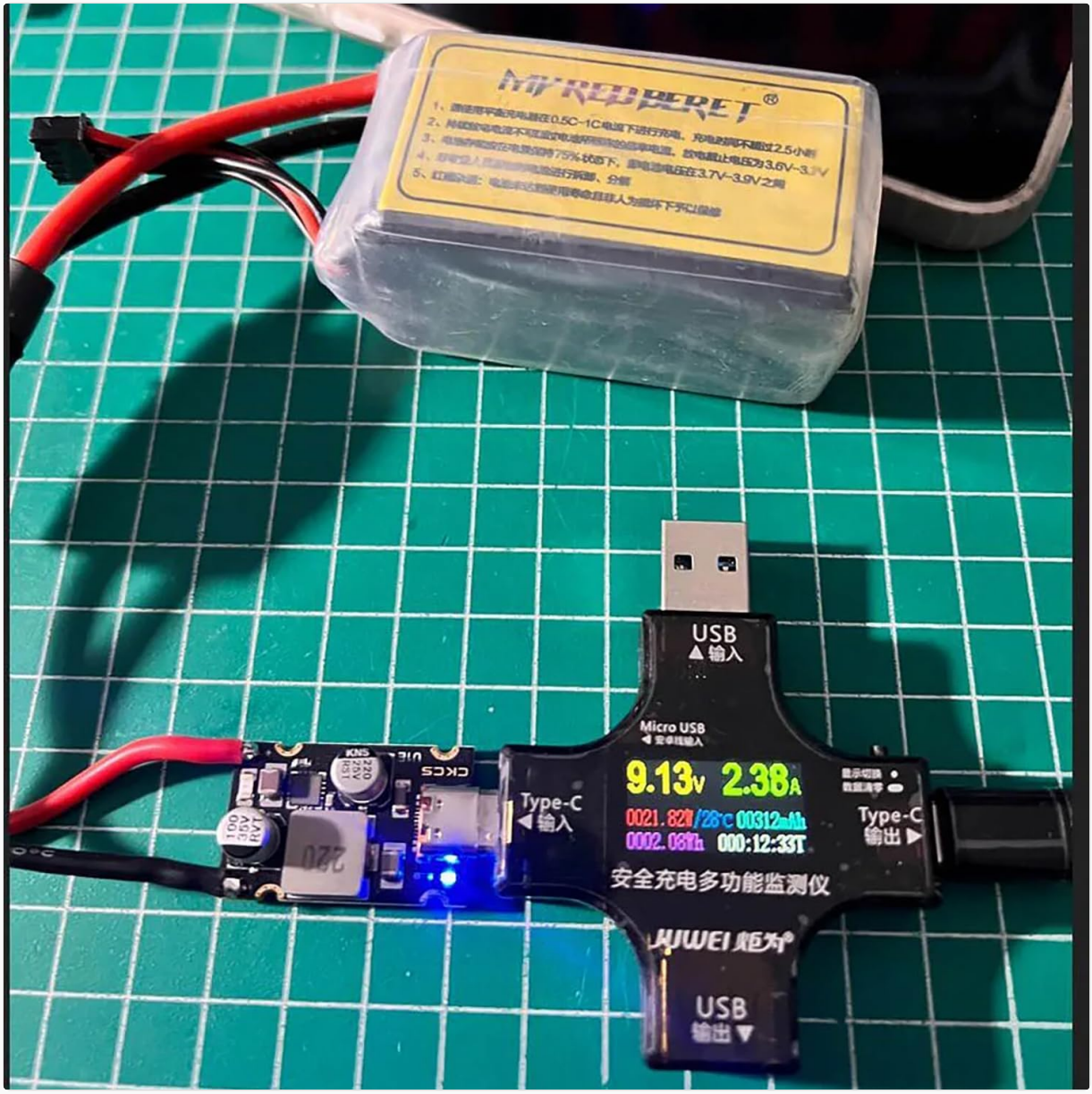


Image: The DykbRadio 65W Type-C USB PD Fast Charging Adapter module in operation, connected to a USB power meter displaying voltage and current, and a battery for charging.

5. Specifications

Parameter	Value
Input Voltage	DC 8V ~ 30V
Output Voltage	3.3V ~ 21V (Automatic Adjustment)
Output Power	Maximum 65W (e.g., 5V/3A, 9V/3A, 12V/3A, 15V/3A, 20V/3.25A)
Maximum Output Current	3.25A at 20V

Conversion Efficiency	92% ~ 97%
Output Voltage Ripple	< 200mV
No-Load Current	< 3mA
Protection Functions	Input Over-voltage/Under-voltage, Input Over-current, Output Over-current/Short-circuit, Over-temperature
Supported Charging Protocols	PD3.1 (PPS), QC3.0, SCP, BC1.2, Qualcomm QC2.0/QC3.0, Huawei FCP/SCP, Samsung AFC, MTK PE+1.1/PE+2.0, PD2.0/PD3.1(PPS)
Standard Model Dimensions	32mm × 20mm × 10mm (excluding 1mm protruding C-mount)
Model with DC Seat Dimensions	44mm × 20mm × 10mm (excluding 1mm protruding C-mount)
Item Model Number	5521 version
Manufacturer	DykbRadio

Performance Test Conditions:

- Input voltage: 24V
- Ambient temperature: 24°C
- Load: Notebook computer supporting PD65W (approximately 50% power consumption)
- Test method: Computer runs a stress test to ensure 65W power at the power supply end.

Product temperature rise and output ripple

Test conditions: Input voltage 24v, ambient temperature 24C, load support PD65W laptop (power about 50%), the computer run pressure test to ensure that the power of the power end is full 65W.

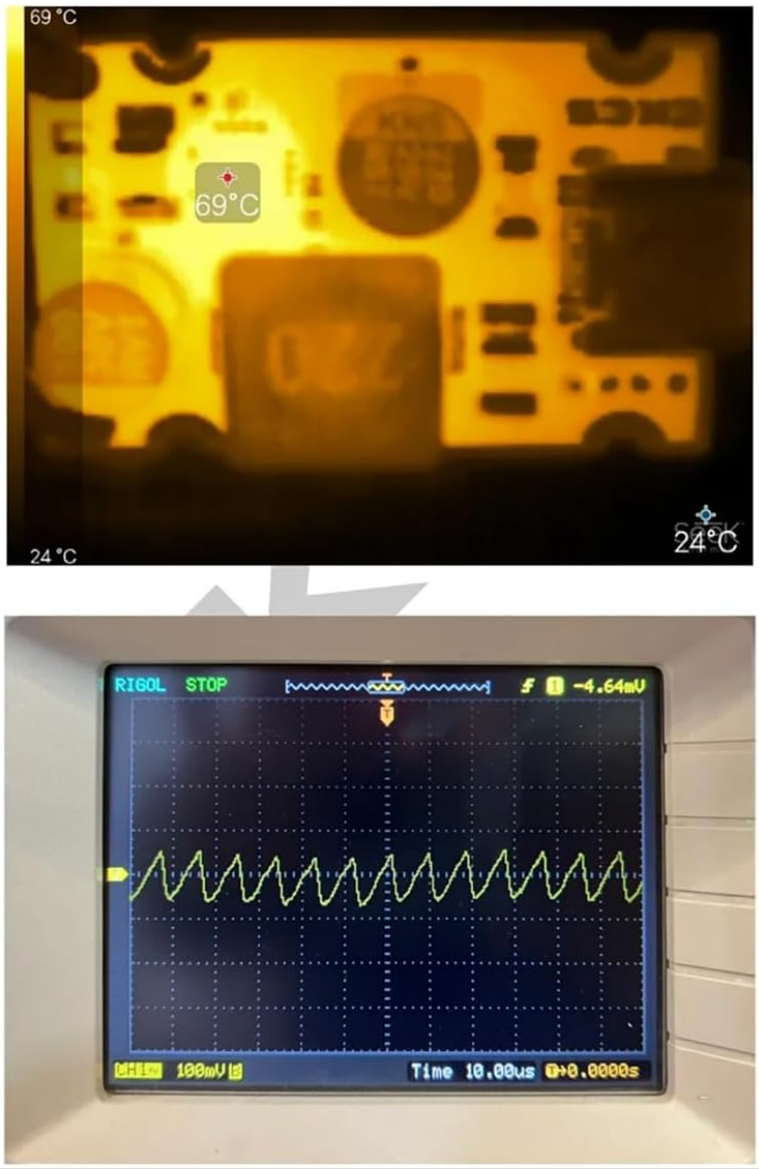


Image: Performance test results showing a thermal image of the module under load and an oscilloscope waveform illustrating the output voltage ripple.

6. Troubleshooting

- **Issue: Module not delivering full 65W output.**
  Solution: If your input power adapter is between 20V and 24V, ensure you power on the adapter first before connecting it to the module. Connecting the module to an already powered-on adapter can prevent proper power negotiation and limit output.
- **Issue: Device not fast charging.**
  Solution: Verify that your input voltage is sufficiently higher than the desired output voltage. For example, to achieve 20V fast charging, the input voltage must be above 20V. Also, ensure your connected device and cable support the fast charging protocol being used.
- **Issue: No output power.**
  Solution: Check the input DC power supply to ensure it is providing power within the 8V-30V range.

Verify all connections are secure and correctly polarized. The module has protection features; if an issue persists, disconnect and reconnect the power.

7. Maintenance

To ensure the longevity and optimal performance of your DykbRadio 65W Type-C USB PD Fast Charging Adapter, follow these maintenance guidelines:

- **Keep Dry:** Avoid exposing the module to moisture or liquids, as this can cause short circuits and damage.
- **Clean Gently:** If cleaning is necessary, use a dry, soft cloth. Do not use harsh chemicals or abrasive materials.
- **Avoid Extreme Temperatures:** Store and operate the module within a reasonable temperature range. Extreme heat or cold can affect its performance and lifespan.
- **Handle with Care:** The module contains sensitive electronic components. Avoid dropping or subjecting it to strong impacts.

8. Warranty and Support

Information regarding warranty coverage and customer support for the DykbRadio 65W Type-C USB PD Fast Charging Adapter is not available in this document. Please refer to the product packaging or contact the retailer or manufacturer directly for details on warranty terms and support options.

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