

PULME FH7621

PULME FH7621:8K HDMI2.1 Input/Output Module FMC HPC Board User Manual

Model: FH7621

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the PULME FH7621:8K HDMI2.1 Input/Output Module FMC HPC Board. Please read this manual thoroughly before using the product to ensure proper functionality and to prevent damage.

2. PRODUCT OVERVIEW

The PULME FH7621 is an advanced FMC HPC (FPGA Mezzanine Card High Pin Count) board designed for high-performance computing and video processing applications. It features HDMI 2.1 input and output capabilities, supporting 8K resolution, and is engineered for integration with compatible host systems. This module enhances data transfer rates and offers robust on-board processing for various applications.

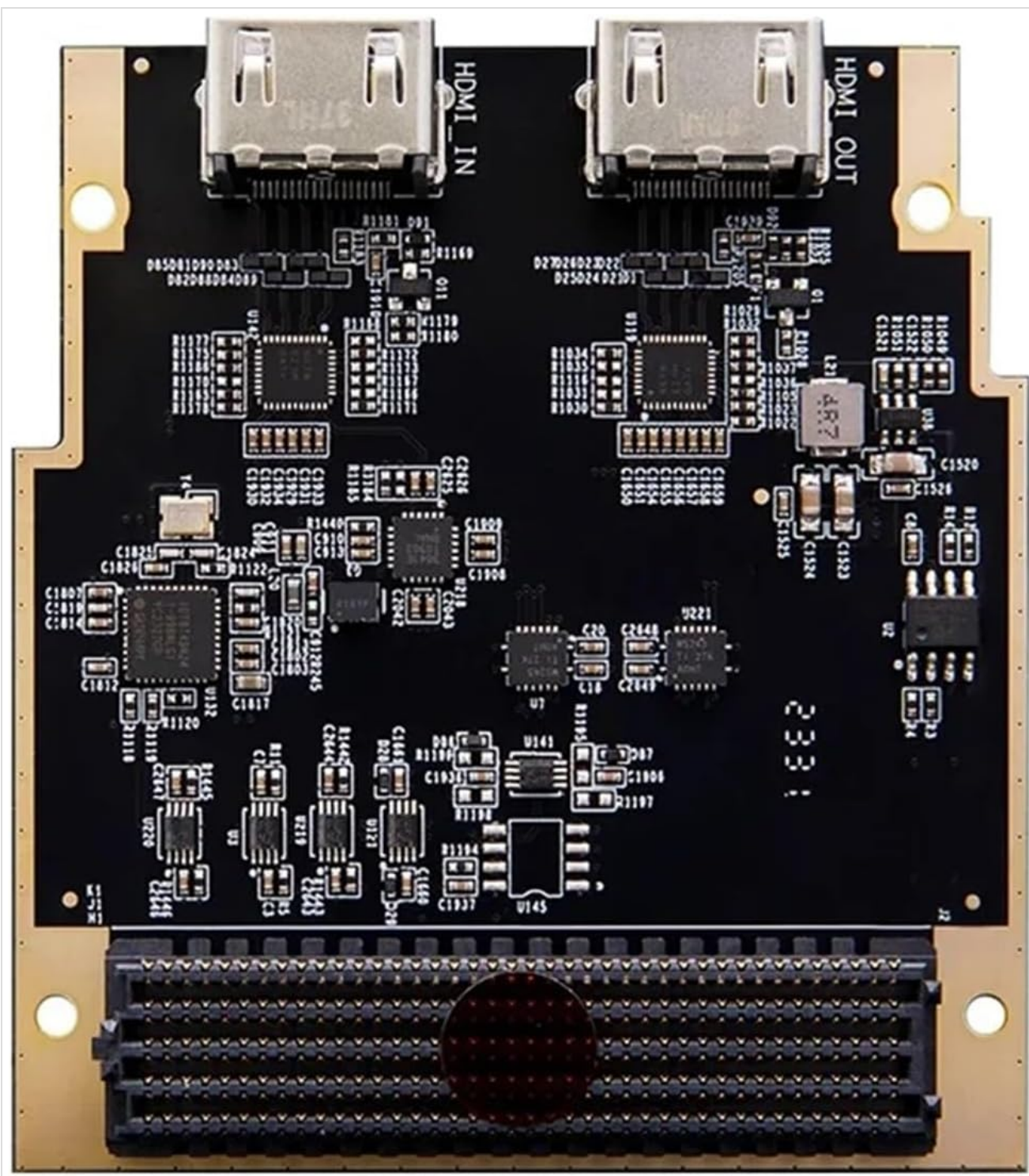


Figure 2.1: Top-down view of the PULME FH7621 HDMI module. This image displays the board's layout, including the HDMI input and output ports at the top, and the high-pin-count connector at the bottom, along with numerous integrated circuits and components.

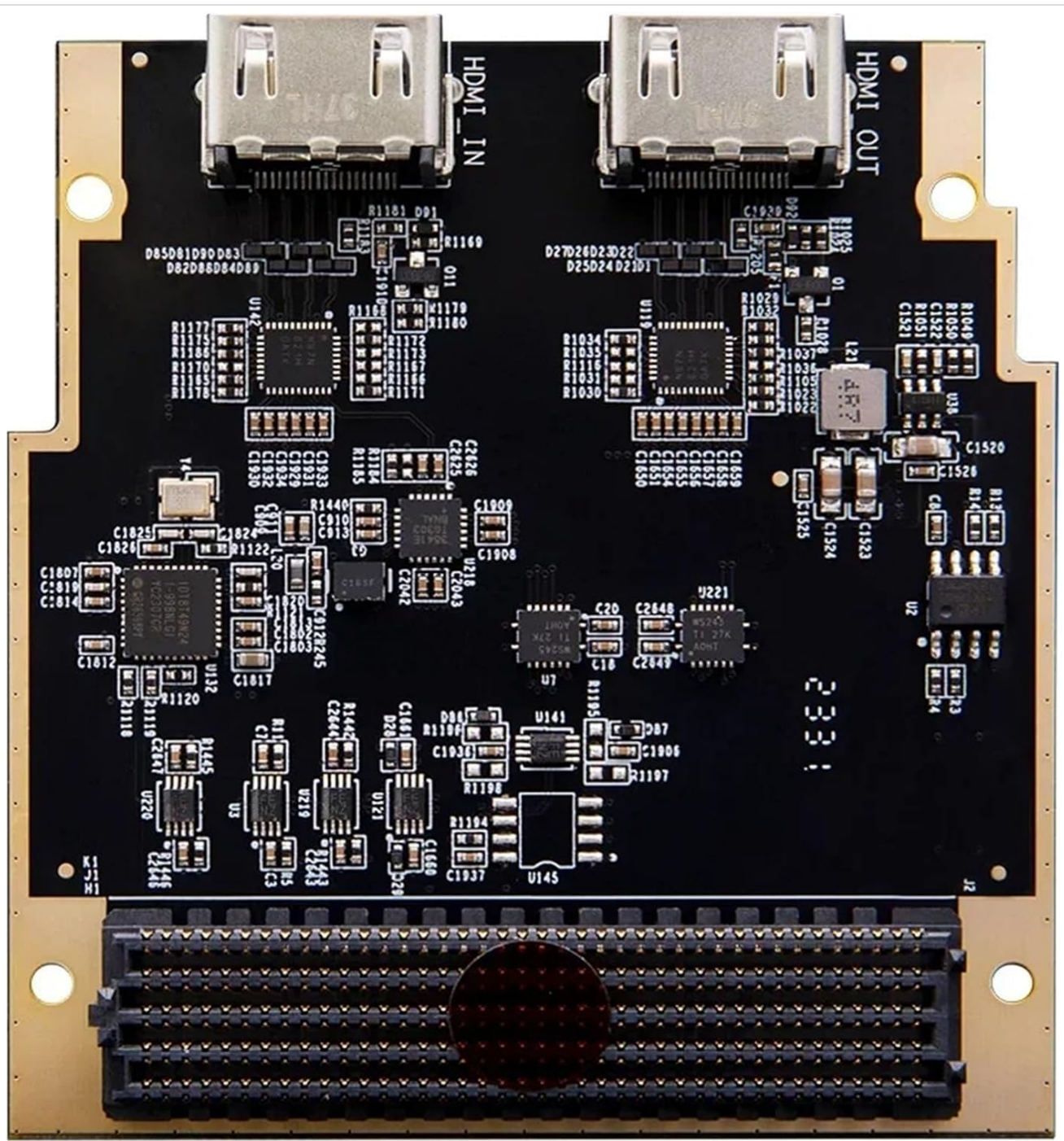


Figure 2.2: Angled view of the PULME FH7621 HDMI module. This perspective clearly labels the HDMI input and HDMI output interfaces, providing a better understanding of the board's connectivity options.

3. FEATURES

The PULME FH7621 module offers the following key features:

- **Enhanced Data Transfer Rate:** Greatly improved transfer rates for faster and more convenient operation.
- **Powerful On-board Capabilities:** Integrated storage and processing capabilities allow for seamless integration with application-specific sensors and devices, minimizing load during runtime.
- **Reliable and Scalable:** Designed for reliability and scalability across a variety of applications.
- **Environmentally Friendly Production:** Manufactured using environmentally friendly production technologies and materials.
- **Pre-packaging Testing:** Undergoes thorough function, voltage, and current testing before packaging to ensure quality.
- **Versatile Applications:** Suitable for Smart Home systems, Intelligent Building solutions, and Industrial

4. SETUP

Follow these steps to properly set up your PULME FH7621 module:

1. **Prepare Host System:** Ensure your host system (e.g., FPGA development board) is powered off and compatible with FMC HPC modules. Refer to your host system's documentation for compatibility requirements.
2. **Install Module:** Carefully align the FH7621 module's FMC connector with the corresponding FMC HPC slot on your host board. Apply gentle, even pressure to seat the module firmly. Ensure all pins are correctly engaged.
3. **Secure Module:** Use appropriate screws or fasteners (not included) to secure the module to the host board, if applicable, to prevent accidental disconnection.
4. **Connect HDMI Cables:**
 - Connect an 8K HDMI 2.1 compatible source device (e.g., computer, media player) to the **HDMI IN** port on the FH7621 module.
 - Connect an 8K HDMI 2.1 compatible display device (e.g., monitor, TV) to the **HDMI OUT** port on the FH7621 module.
5. **Power On:** Once all connections are secure, power on your host system.
6. **Driver Installation (if required):** Depending on your host system and operating environment, you may need to install specific drivers or configure FPGA bitstreams. Refer to the documentation provided with your host system or the PULME support resources for driver information.

5. OPERATING INSTRUCTIONS

After successful setup, follow these general guidelines for operating the PULME FH7621 module:

1. **Verify Connection:** Ensure both the HDMI input source and output display are powered on and correctly connected to the FH7621 module.
2. **Source Configuration:** Configure your HDMI source device to output the desired resolution and refresh rate. The FH7621 supports up to 8K resolution via HDMI 2.1.
3. **Display Configuration:** Ensure your display device is set to the correct HDMI input channel and supports the resolution and refresh rate being output by the module.
4. **Data Processing:** If using the module for data processing, refer to your host system's software development kit (SDK) and documentation for programming and configuration instructions specific to your application.
5. **Monitoring:** Monitor the status indicators (if any) on your host board or the FH7621 module for operational status.

6. MAINTENANCE

To ensure the longevity and optimal performance of your PULME FH7621 module, observe the following maintenance practices:

- **Keep Clean:** Regularly clean the module and surrounding areas with a soft, dry, anti-static cloth. Avoid using liquid cleaners or solvents.
- **Handle with Care:** Always handle the board by its edges to avoid touching components or connectors, which can cause damage from static electricity or physical stress.
- **Environmental Conditions:** Operate and store the module within recommended temperature and humidity

ranges. Avoid extreme temperatures, direct sunlight, and high humidity.

- **Firmware Updates:** Check the PULME website or your host system manufacturer's support page for any available firmware updates for the FH7621 module.
- **Inspect Connections:** Periodically inspect HDMI cables and the FMC connector for any signs of wear or damage. Ensure connections remain secure.

7. TROUBLESHOOTING

If you encounter issues with your PULME FH7621 module, consider the following troubleshooting steps:

- **No Display Output:**
 - Verify that the HDMI cables are securely connected to both the input source, the FH7621 module, and the output display.
 - Ensure both the source and display devices are powered on and functioning correctly.
 - Check if the display is set to the correct HDMI input.
 - Test with different HDMI cables or a different display to rule out cable or display issues.
 - Confirm that the host system is powered on and the FH7621 module is properly seated in its slot.
- **Intermittent Signal/Poor Quality:**
 - Ensure you are using high-quality, 8K HDMI 2.1 certified cables, especially for longer runs.
 - Check for electromagnetic interference (EMI) from other electronic devices.
 - Verify that the source device's output resolution and refresh rate are supported by both the FH7621 module and the display.
- **Module Not Detected by Host System:**
 - Power off the host system, reseal the FH7621 module, and power it back on.
 - Ensure the host system's firmware or FPGA bitstream is correctly configured to recognize the FMC HPC module.
 - Consult your host system's documentation for specific FMC module detection procedures.

If problems persist, contact PULME technical support or your vendor for further assistance.

8. SPECIFICATIONS

The following table details the technical specifications of the PULME FH7621 module:

Specification	Value
Model Number	FH7621
Brand	PULME
HDMI Standard	HDMI 2.1
Max Resolution Support	8K
Interface Type	FMC HPC (FPGA Mezzanine Card High Pin Count)
Package Dimensions	1.18 x 0.79 x 0.39 inches
Item Weight	1.1 pounds
Manufacturer	PULME

Specification	Value
Assembly Required	No (for the module itself)
Number of Pieces	1

9. WARRANTY AND SUPPORT

Specific warranty terms and support contact information for the PULME FH7621 module are not provided in the product data. Please refer to the retailer or manufacturer's official website for detailed warranty policies and customer support options. Keep your purchase receipt as proof of purchase for any warranty claims. For technical inquiries, you may also consult the documentation of your host system or the PULME support resources if available.