Raidon RMiU1776-P4: M.2 NVMe SSD Extension Kit

With MCIO adapter and swappable 3.5" enclosure

Overview
The MiU1776-P4 from RAIDON Technology, Inc. is a comprehensive storage solution for enthusiasts and professionals seeking high-speed performance from M.2 NVMe SSDs. It includes the MAP6-EZ adapter and the iU1776-U6P3 NVMe enclosure, converting your M.2 socket into an MCIO (SFF-TA-1016) connector with data transfer speeds up to 64Gb/s. This setup extends your motherboard's M.2 socket to an enclosure that fits a standard 3.5-inch hard drive bay, making M.2 NVMe SSDs swappable and ensuring seamless system integration. The package also includes a 50cm MCIO cable for optimal data transmission, offering an efficient and reliable solution for advanced computing needs.

Key Features

Comprehensive Storage Solution

- **All-in-One Package**: Includes the MAP6-EZ adapter, iU1776-U6P3 M.2 NVMe enclosure, and a 50cm MCIO cable – everything you need for a complete setup.
- **Seamless Integration**: The iU1776-U6P3 fits into a standard 3.5-inch hard drive bay, making it easy to incorporate into existing systems.

High-Speed Performance

- **MCIO (SFF-TA-1016) Connector**: The MAP6-EZ adapter converts your M.2 socket into an MCIO connector, enabling data transfer speeds of up to 64Gb/s.
- **PCIe 3.0 and 4.0 Support**: Compatible with the latest PCIe standards for maximum throughput and efficiency.

Enhanced Flexibility

- **Swappable M.2 NVMe SSDs:** The iU1776-U6P3 allows for easy swapping of SSDs, providing convenience and flexibility for upgrades or maintenance.
- **Universal M.2 Support**: Accommodates all sizes of M.2 NVMe SSDs (2280, 2260, 2242), giving you the freedom to choose the capacity that best fits your needs.

Advanced Connectivity

- **50cm MCIO Cable**: A high-speed, high-density connector (Micro Connector I/O) for connecting storage, servers, and network equipment in data centers, ensuring fast, reliable data transfer.
- **Mini SAS (SFF-8643) Connector:** The iU1776-U6P3 features a Mini SAS connector, offering compatibility with PCIe Gen 3 and Gen 4 interfaces.

User-Friendly Design

- **Easy Installation**: The MAP6-EZ adapter installs effortlessly into the motherboard's M.2 socket, while the iU1776-U6P3 enclosure shares the form factor of a 3.5″ HDD for straightforward integration.
- **Plug-and-Play Compatibility**: Works seamlessly with current host systems without the need for additional drivers, ensuring a hassle-free setup.

Enhanced Security (iU1776-U6P3)

- **Key Lock Tray**: Prevents unauthorized removal of the SSD, effectively securing your data.

Effective Thermal Management (iU1776-U6P3)

- **Silent Cooling Fan**: Maintains optimal performance during heavy workloads by efficiently dissipating heat.
- **Thermal Silicone Pad**: An ultra-soft thermal pad enhances heat dispersion, ensuring your SSD operates at peak performance.

Versatility (iU1776-U6P3)

- **U.2 SSD Compatibility**: Supports 9.5mm U.2 SSDs and is compatible with RAIDON's UBOX Mini Converter for added flexibility.

Benefits

The RAIDON MiU1776-P4 offers a range of benefits for enthusiasts and professionals seeking to enhance their storage solutions:

1. High-Speed Data Transfer

- **Up to 64Gb/s**: Experience blazing-fast data transfer speeds, ideal for data-intensive tasks like video editing, 3D rendering, and large-scale data analysis.
- **PCIe 3.0 and 4.0 Support**: Compatibility with the latest PCIe standards ensures maximum throughput and future-proofs your setup.

2. Enhanced Storage Capacity and Flexibility

- **Swappable M.2 NVMe SSDs**: Easily upgrade or replace SSDs without downtime, providing flexibility for storage expansion or maintenance.
- **Universal M.2 Support**: Accommodates various M.2 NVMe SSD sizes (2280, 2260, 2242), allowing you to choose the best capacity and performance for your needs.
- **U.2 SSD Compatibility**: Supports 9.5mm U.2 SSDs and works with RAIDON's UBOX Mini Converter, adding versatility to your storage options.

3. Seamless Integration and User-Friendly Design

- **Easy Installation**: The MAP6-EZ adapter and iU1776-U6P3 enclosure are designed for straightforward setup, fitting into a standard 3.5-inch hard drive bay.
- **Plug-and-Play Compatibility:** No additional drivers required, ensuring a hassle-free setup and immediate usability.

4. Enhanced Security

- **Key Lock Tray**: Protects your SSDs from unauthorized removal, safeguarding sensitive data and providing peace of mind.

5. Effective Thermal Management

- **Silent Cooling Fan**: Maintains optimal SSD performance by efficiently dissipating heat during heavy workloads.

- **Thermal Silicone Pad**: Enhances heat dispersion to prevent overheating, extending the lifespan of your SSDs.

6. Advanced Connectivity

- **MCIO (SFF-TA-1016) Connector**: Converts your M.2 socket into an MCIO connector, improving connectivity and performance.
- **50cm MCIO Cable**: Ensures reliable and high-speed data transmission between components.
- **Mini SAS (SFF-8643) Connector**: Offers compatibility with PCIe Gen 3 and Gen 4 interfaces, expanding your connectivity options.

7. Improved System Performance

- **Optimized for High-Performance Tasks**: Ideal for applications that require fast read/write speeds, reducing bottlenecks and enhancing overall system efficiency.
- **Data Reliability**: High-speed data transfer and effective thermal management contribute to data integrity and reduce the risk of data loss.

8. Cost-Effective Solution

- **All-in-One Package**: Provides all necessary components in one package, potentially reducing costs compared to purchasing separate adapters and enclosures.

9. Versatility

- **Suitable for Various Applications**: Whether for gaming, professional content creation, or enterprise environments, the MiU1776-P4 adapts to diverse computing needs.

By integrating the RAIDON MiU1776-P4 into your system, you can significantly enhance your storage capabilities, improve data transfer speeds, and enjoy greater flexibility and security in managing your SSDs.

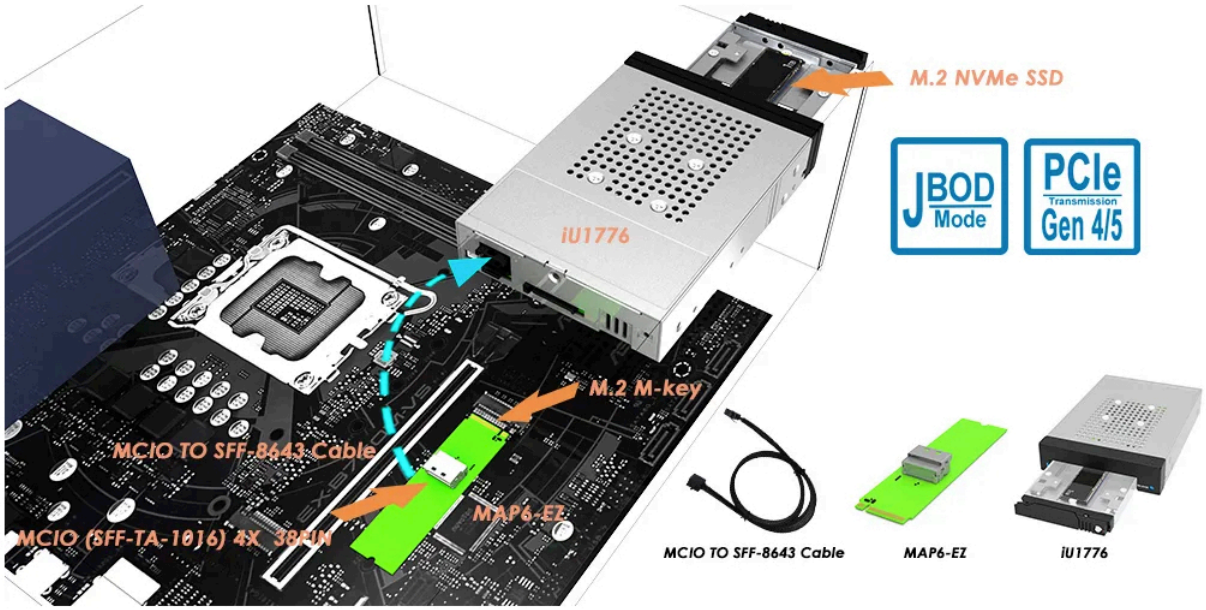
Comprehensive Storage Solution

All-in-One Package: The MiU1776-P4 provides everything you need for a complete and efficient storage setup in one convenient package. It includes the MAP6-EZ adapter, which transforms your motherboard’s M.2 socket into an MCIO (SFF-TA-1016) connector capable of ultra-high data transfer speeds up to 64Gb/s. The package also contains the iU1776-U6P3 M.2 NVMe enclosure, allowing you to house your M.2 NVMe SSD securely while making it easily swappable for upgrades or maintenance. Additionally, a 50cm MCIO cable is included to ensure optimal data transmission and reliable connectivity between the adapter and the enclosure. This all-in-one solution eliminates the need to purchase separate components, saving you time and ensuring compatibility across all parts of your storage expansion.

Seamless Integration: Designed with user convenience in mind, the iU1776-U6P3 enclosure fits effortlessly into a standard 3.5″ HDD bay. This means you can incorporate high-speed M.2 NVMe SSDs into your existing system without any modifications or the need for specialized mounting hardware. The enclosure maintains the traditional form factor of a 3.5″ HDD, allowing for straightforward installation into desktop PCs, workstations, or servers. This seamless integration ensures that you can upgrade your storage capabilities without disrupting your current system setup, providing a smooth and hassle-free enhancement to your computing environment.

User-Friendly Design

- **Easy Installation**: The MAP6-EZ adapter is engineered for simplicity, allowing it to be installed effortlessly into your motherboard's M.2 socket. Its design ensures a secure connection without the need for additional tools or complex procedures. Meanwhile, the iU1776-U6P3 enclosure mirrors the form factor of a standard 3.5″ HDD, making integration into your existing system straightforward. This familiar size means it can easily slide into standard drive bays without any modifications or special mounting hardware. Whether you're a tech enthusiast building a new rig or a professional upgrading an existing setup, the ease of installation saves time and reduces potential frustrations, allowing you to get your system up and running quickly.
- **Plug-and-Play Compatibility**: The MiU1776-P4 is designed to work seamlessly with current host systems right out of the box. There's no need to install additional drivers or software—simply connect the components, and your system will automatically recognize and configure the new hardware. This true plug-and-play functionality ensures a hassle-free setup experience, minimizing downtime and technical hurdles. It enables users of all skill levels to enhance their storage capabilities without the usual complexities associated with high-performance hardware installations. By eliminating unnecessary steps, the MiU1776-P4 allows you to focus on what matters most: leveraging the enhanced speed and capacity of your upgraded storage solution.



- **High-Speed Performance**

  MCIO (SFF-TA-1016) Connector: The MAP6-EZ adapter transforms your motherboard's M.2 socket into an MCIO (Micro Connector Input/Output) connector, enabling high data transfer speeds of up to 64 Gb/s. The MCIO connector is designed for high-density, high-speed data transmission, making it ideal for demanding applications that require rapid access to large amounts of data. By leveraging this advanced connector technology, the MiU1776-P4 ensures minimal signal loss and interference, providing a reliable and efficient pathway for data. This means faster read and write speeds for your M.2 NVMe SSDs, significantly improving system performance in tasks such as large file transfers, real-time data processing, and high-resolution video editing. The use of the MCIO connector not only maximizes the potential of your SSDs but also enhances overall system responsiveness and efficiency.

- **PCIe 3.0 and 4.0 Support**: The MiU1776-P4 is fully compatible with the latest PCIe (Peripheral Component Interconnect Express) standards, including PCIe 3.0 and PCIe 4.0.

PCIe 4.0 offers a bandwidth of up to 16 GT/s per lane, doubling the speed of PCIe 3.0. This compatibility ensures maximum throughput and efficiency, allowing your storage solution to handle the most data-intensive tasks with ease. By supporting these cutting-edge PCIe standards, the MiU1776-P4 provides a future-proof solution that can keep pace with evolving technology and the increasing demands of modern applications. Whether you're running complex simulations, engaging in high-end gaming, or managing large databases, the support for PCIe 3.0 and 4.0 ensures that your system's storage will not be a bottleneck, delivering unparalleled performance and reliability.

Performance test result for reference. The test result will vary depend on the test environment.

Advanced Connectivity

- **50cm MCIO Cable**: The MiU1776-P4 includes a 50cm MCIO (Micro Connector Input/Output) cable that serves as a critical link between the MAP6-EZ adapter and the iU1776-U6P3 enclosure. This high-quality cable is engineered to support ultra-high-speed data transmission, ensuring that you can fully exploit the potential of your M.2 NVMe SSD with transfer speeds of up to 64Gb/s. The 50cm length provides ample flexibility for various system configurations, allowing you to position your components optimally within your computer chassis without experiencing signal degradation. Its design minimizes electromagnetic interference and crosstalk, maintaining signal integrity and ensuring reliable connectivity between your SSD and the motherboard. By including this cable in the package, the ompany eliminates the need for you to source compatible cables separately, simplifying the installation process and ensuring that all components work together seamlessly for optimal performance.
- **Mini SAS (SFF-8643) Connector**: The iU1776-U6P3 enclosure is equipped with a Mini SAS (SFF-8643) connector, a high-performance interface known for its robust data transfer capabilities and reliability. This connector facilitates advanced connectivity by providing compatibility with PCIe Gen 3 and PCIe Gen 4 interfaces, allowing you to harness the high bandwidth offered by these standards. The Mini SAS connector supports multiple lanes of data transmission, enabling efficient and simultaneous data flows that are essential for high-speed storage applications. Its secure locking mechanism ensures a stable connection, reducing the risk of disconnections or data loss during operation. By utilizing this connector, the iU1776-U6P3 enhances the versatility of the MiU1776-P4, making it suitable for integration into a wide range of systems, including servers and workstations that demand reliable and fast storage solutions. This advanced connectivity option ensures that your storage setup can keep pace with the demands of modern computing tasks, from large-scale data processing to high-definition media editing.

Enhanced Flexibility

- **Swappable M.2 NVMe SSDs**: The iU1776-U6P3 enclosure is engineered for maximum convenience, allowing users to easily swap out M.2 NVMe SSDs without the need for complex disassembly or specialized tools. This design is particularly advantageous for professionals who require frequent access to their storage drives for upgrades, data transfer, or maintenance purposes. With just a simple removal of two screws, you can replace or upgrade your SSD in minutes, minimizing downtime and keeping your workflow uninterrupted. This swappable feature not only enhances productivity but also extends the usability of your storage solution by making it adaptable to changing storage needs over time. Whether you're expanding your storage capacity or replacing an SSD, the iU1776-U6P3 makes the process straightforward and efficient.
- **Universal M.2 Support:** The iU1776-U6P3 enclosure offers unparalleled versatility by accommodating all standard sizes of M.2 NVMe SSDs, including 2280, 2260, and 2242 form

factors. This universal support provides you with the freedom to select from a range of SSDs based on your specific capacity requirements and performance preferences. Whether you need a high-capacity drive for extensive data storage or a high-speed SSD for performance-critical applications, the enclosure adapts to your needs. This flexibility is particularly beneficial for users who anticipate future upgrades or changes in storage demands, as it eliminates the need to purchase new enclosures for different SSD sizes. By supporting multiple form factors, the iU1776-U6P3 ensures that your investment remains relevant and valuable across various projects and technological advancements.

Effective Thermal Management

- **Silent Cooling Fan**: To maintain optimal performance during heavy workloads, the iU1776-U6P3 enclosure incorporates a silent cooling fan. This fan is specifically designed to operate quietly while effectively dissipating heat generated by high-speed M.2 NVMe SSDs. Efficient cooling is crucial for SSDs, as excessive heat can lead to thermal throttling, reduced performance, and potentially shorten the lifespan of the drive. The silent fan ensures that the SSD remains within safe operating temperatures, even during intensive tasks such as large file transfers, video rendering, or gaming sessions. By keeping the enclosure cool without adding noticeable noise to your environment, it provides a balance between performance and comfort, making it suitable for both professional and personal use.
- **Thermal Silicone Pad**: In addition to active cooling, the iU1776-U6P3 features an ultra-soft thermal silicone pad that enhances heat dispersion from the SSD. This pad is placed directly in contact with the SSD and the enclosure, facilitating efficient thermal conductivity. The thermal silicone pad absorbs heat from the SSD and transfers it to the enclosure’s outer surfaces, where it can be dissipated more effectively. This passive cooling method works in tandem with the silent fan to ensure that your SSD operates at peak performance levels without overheating. The use of a high-quality thermal pad minimizes thermal resistance, reduces the risk of thermal throttling, and contributes to the overall longevity of your SSD by maintaining stable operating temperatures. This comprehensive thermal management system ensures that your high-speed storage solution remains reliable and efficient under any workload.

Enhanced Security

- **Key Lock Tray**: The iU1776-U6P3 enclosure is equipped with a key lock tray mechanism that significantly enhances the security of your valuable data. This feature physically locks the SSD within the enclosure, preventing unauthorized access or removal of the drive. In environments where multiple users have physical access to the hardware – such as shared workspaces, data centers, or public areas – the key lock tray acts as a deterrent against theft or tampering. By securing the SSD in place, it ensures that sensitive information stored on the drive remains protected from unauthorized individuals. This added layer of physical security complements software-based encryption methods, providing a comprehensive approach to data protection. The key lock is easy to use, requiring only a simple turn of the key to lock or unlock the tray, offering both convenience and peace of mind for users who prioritize data security.

Versatility

- **Detachable UBOX Mini for U.2 SSD Compatibility**: The iU1776-U6P3 enclosure is designed with a detachable UBOX Mini mounted on the drive tray, providing exceptional versatility for your storage needs. The UBOX Mini simplifies the installation of M.2 NVMe SSDs by acting as an adapter within the enclosure, however, if you require the use of a 2.5″ U.2 SSD (with a height of up to 9.5mm), you can easily detach the UBOX Mini from the drive tray after unloading it. This straightforward removal process allows you to install a standard 2.5″ U.2 SSD without the need for additional adapters or modifications. This feature is particularly beneficial for users who work with different types of SSDs or anticipate future upgrades. By accommodating both M.2 NVMe and U.2 SSDs, the iU1776-U6P3 offers a flexible storage solution that adapts to your evolving needs, ensuring that your investment remains valuable over time.
- **Status Monitoring with LED Indicators**: The iU1776-U6P3 is equipped with separate LED indicators for each SSD or hard disk installed in the enclosure. These LED displays provide clear and immediate feedback on the data access status and the overall condition of your storage devices. The indicators allow users to monitor the activity and health of their SSDs or HDDs at a glance, without the need for additional software tools or interfaces. This real-time monitoring capability enhances user awareness and aids in the early detection of potential issues, contributing to the reliability and maintenance of your storage system. Whether you’re transferring large files, running intensive applications, or simply checking operational status, the LED indicators keep you informed, ensuring efficient and effective management of your storage devices.

Applications

The RAIDON MiU1776-P4 is a versatile storage expansion solution suitable for a wide range of applications that require high-speed data transfer, flexibility, and reliable performance. Below are some key areas where this product can be effectively utilized:

1. HPC

- **Scientific Research and Simulations**: For computational tasks that require rapid data processing, such as climate modeling, physics simulations, and genomic sequencing.
- **Engineering Applications**: Supports complex computations in fields like computational fluid dynamics (CFD) and finite element analysis (FEA).

2. Professional Content Creation

- **Video Editing and Post-Production**: Provides the high-speed storage necessary for editing high-resolution videos (4K, 8K) and real-time rendering.
- **3D Animation and Graphics Design**: Enhances performance in rendering and managing large graphics files.

3. Gaming Systems

- **High-End Gaming PCs**: Reduces game load times and improves overall system responsiveness, enhancing the gaming experience.
- **VR and AR Applications**: Supports the data throughput required for virtual and augmented reality applications.

4. Enterprise Storage Solutions

- **Servers and Data Centers**: Suitable for server environments that require swappable and high-capacity storage solutions with minimal downtime.
- **Database Management:** Optimizes performance for database servers handling large volumes of transactions.

5. Virtualization and Cloud Computing

- **VM Hosting**: Improves storage performance for hosting virtual machines, leading to better resource utilization.
- **Cloud Storage Gateways**: Acts as a fast cache or buffer for cloud-based storage systems.

6. Big Data Analytics

- **Real-Time Data Processing**: Facilitates rapid analysis of large datasets in fields like finance, marketing analytics, and IoT data streams.
- **ML and AI**: Enhances the performance of systems training complex ML models.

7. Surveillance Systems

- **High-Resolution Video Recording**: Supports the storage demands of surveillance systems that record high-definition video continuously.
- **Data Archiving**: Provides reliable and secure storage for archived footage.

8. Medical Imaging and Healthcare

- **MRI and CT Scans**: Handles large imaging files efficiently, improving access times for diagnostics.
- **Electronic Health Records (EHR)**: Ensures quick retrieval and updating of patient data.

9. Broadcast and Media Production

- **Live Streaming**: Supports high-speed data transfer for live broadcasting applications.
- **Content Delivery Networks (CDNs)**: Enhances the speed of content distribution to end-users.

10. Industrial Automation

- **Real-Time Control Systems:** Provides reliable storage for systems that require real-time data logging and retrieval.

- **Edge Computing Devices**: Enhances performance for industrial IoT devices processing data at the edge.

11. Educational and Research Institutions

- **Data Labs:** Supports the storage needs of academic research labs dealing with large datasets.
- **E-Learning Platforms**: Improves performance of platforms hosting rich multimedia content.

12. Backup and Disaster Recovery

- **Fast Backup Solutions**: Speeds up the process of backing up critical data.
- **Redundant Storage Systems**: Acts as a reliable component in redundant storage configurations.

13. Law Enforcement and Forensics

- **Digital Evidence Management**: Provides secure and fast storage for digital evidence collection and analysis.
- **Forensic Computing**: Facilitates the rapid processing of data during investigations.

14. Web and Application Servers

- **High-Traffic Websites**: Enhances the performance of servers hosting high-traffic websites and applications.
- **Content Management Systems**: Improves backend performance for systems like WordPress, Joomla, and Drupal.

15. Financial Services

- **High-Frequency Trading**: Supports systems that require low latency and high-speed data access.
- **Transaction Processing**: Enhances the speed and reliability of transaction processing systems.

16. Audio Production

- **Recording Studios**: Provides fast access to large audio files and projects.
- **Audio Editing and Mixing**: Improves the responsiveness of digital audio workstations (DAWs).

17. Personal Workstations

- **Power Users**: Ideal for users who require high-performance storage for tasks like software development, graphic design, and data analysis.
- **System Upgrades**: Allows for significant performance improvements in existing systems without major overhauls.

18. Test and Development Environments

- **Software Testing**: Facilitates rapid deployment and testing of software builds.
- **Development Servers**: Enhances performance for continuous integration and deployment pipelines.

19. Multimedia Libraries

- **Digital Asset Management**: Efficiently stores and retrieves large collections of photos, videos, and other media assets.
- **Media Archiving**: Provides a reliable solution for long-term storage of media files.

20. Cryptocurrency Mining and Blockchain Applications

- **Mining Rigs**: Enhances data recording and retrieval speeds in mining operations.
- **Blockchain Nodes**: Improves synchronization times for blockchain nodes requiring fast storage access.

By integrating the RAIDON MiU1776-P4 into your system, you can significantly enhance your storage capabilities across various applications. Its high-speed data transfer, swappable SSDs, advanced connectivity, and effective thermal management make it a valuable asset for both professional and personal computing needs.

Spec

Model No	**MiU1776-P4**
Interfaces	**1 x M.2 M-key**
Compatible Drive	**1 x M.2 NVMe SSD (2242/2260/2280)** **1 x U.2 SSD (height 9.5mm)** **Tray with lock**
Storage Mode	**JBOD**
System Monitoring	**LED Indicators**
Operating System	**Windows, Linux**
Cooling System	**4 cm Low noise fan**
Electrical and Operating Requirements	*** Line voltage: 12V + 5V DC** *** Operating temperature: 32° to 104° F (0° to 40° C)** *** Storage temperature: -4° to 116° F (-20° to 47° C)** *** Relative humidity: 5% to 95% noncondensing**
Size	**102(W)×26(H)×147(L) mm**
Package Accessories	*** iU1776-U6P3 x 1** *** MAP6-EZ x 1** *** MCIO to SFF-8643 cable x 1** *** Accessory kit** *** Quick Installation Guide**