



Complete Guide to the Bitmain [Antminer S21 XP Immersion \(300Th\)](#)

Introduction

The Bitmain [Antminer S21 XP Immersion \(300Th\)](#) is a next-generation **ASIC miner** designed for high-performance mining with an impressive **hashrate of 300 TH/s** for **SHA-256-based cryptocurrencies**. Released in **October 2024**, this powerful miner is designed to offer excellent performance and efficiency for mining **Bitcoin (BTC)** and other **SHA-256 coins**. With its **oil-cooling technology**, **low noise level**, and highly efficient **power consumption of 4050W**, the [Antminer S21 XP Immersion](#) is the ideal choice for serious miners looking to maximize their profitability in a variety of SHA-256 coins.

This guide provides an in-depth look at the **technical specifications**, **mining capabilities**, **setup**, **maintenance tips**, and **optimization techniques** for getting the best results from the [Antminer S21 XP Immersion \(300Th\)](#).

Technical Specifications of the [Bitmain Antminer S21 XP Immersion \(300Th\)](#)

Main Features

Feature	Details
Manufacturer	Bitmain
Model	Antminer S21 XP Immersion (300Th)
First Release	October 2024
Mining Algorithm	SHA-256
Maximum Hashrate	300 TH/s \pm 5%
Power Consumption	4050W \pm 5%
AC Input Voltage	200-240V AC
Interface	Ethernet 10/100M
Cooling	Oil Cooling
Dimensions	400 mm x 195 mm x 290 mm
Weight	14,400 g
Operating Temperature	5°C - 45°C
Operating Humidity	5% - 95%
Noise Level	50 db

- **Power Consumption:** The [Antminer S21 XP Immersion](#) operates at **4050W**, delivering exceptional efficiency for its high hashrate. The oil-cooling system helps optimize power usage while ensuring cooling efficiency.
- **Cooling System:** **Oil cooling** significantly improves the thermal management of the miner, preventing overheating even during prolonged mining sessions.
- **Noise Level:** At **50 dB**, the noise level is relatively low, though it is important to consider that oil cooling systems generally create less noise than traditional air cooling.

Mineable Coins

The **Bitmain [Antminer S21 XP Immersion](#)** supports mining the following **SHA-256** coins:

Cryptocurrency Symbol Algorithm

Bitcoin	BTC	SHA-256
Joulecoin	XJO	SHA-256
Peercoin	PPC	SHA-256
eMark	DEM	SHA-256
Acoin	ACOIN	SHA-256
Curecoin	CURE	SHA-256

- **Bitcoin (BTC)**: The world's most popular cryptocurrency, mined using the **SHA-256** algorithm.
- **Joulecoin (XJO)**: A lesser-known coin, also using the **SHA-256** algorithm.
- **Peercoin (PPC)**: A long-standing coin that uses **SHA-256** for proof of work.
- **eMark (DEM)**: Another **SHA-256**-based coin that is mineable with the **Antminer S21 XP**.
- **Acoin (ACOIN)**: A coin based on the **SHA-256** algorithm, suitable for mining with this ASIC.
- **Curecoin (CURE)**: A coin focused on scientific research, also mineable with the **SHA-256** algorithm.

By supporting a broad range of **SHA-256** coins, the **[Antminer S21 XP Immersion](#)** is versatile for miners seeking to mine various cryptocurrencies using the same hardware.

Where to Buy the Bitmain Antminer S21 XP Immersion (300Th)

Purchase Options

You can buy the [Antminer S21 XP Immersion \(300Th\)](#) directly from **Bitmain**'s official store or through authorized resellers. Always ensure you are purchasing from trusted sources to guarantee product authenticity and customer support.

Purchase Platform	Link	Note
Bitmain Official Store	bitmain.com	Direct purchase from the manufacturer
Premium Resellers	minerasic.com	Authorized resellers with warranty support

- **Bitmain Official Store:** Purchasing from Bitmain's official store guarantees the best customer service and warranty support.
- **Premium Resellers:** Authorized resellers like [MinerASIC](#) offer trusted support, warranties, and after-sales service for your hardware.

Maintenance of the Bitmain [Antminer S21 XP Immersion \(300Th\)](#)

1. Regular Cleaning

- **Oil-Cooling Maintenance:** With the **oil cooling** system, regular maintenance is necessary to prevent the oil from becoming contaminated with dust or debris. Periodically check the oil levels and ensure it is clean and free from particles.

- **Method:** Clean external parts, such as the miner's body and filters (if applicable), to prevent dust buildup. Ensure the oil cooling system is functioning properly and that no oil leaks are present.

2. Temperature and Humidity Monitoring

- The miner operates optimally between **5°C and 45°C**, with a humidity range of **5% to 95%**. Overheating or excessive humidity can reduce performance or damage the internal components.
- **Solution:** Keep the miner in a cool, dry environment. If operating in high-humidity areas, consider using dehumidifiers to maintain ideal humidity levels.

3. Cooling System Checks

- The **oil-cooling** system requires less frequent maintenance compared to traditional air-cooling systems. However, it is crucial to periodically check that the oil remains at the correct level and that the cooling system is functioning without leaks.
- **Maintenance:** Ensure that the oil is clean, topped up, and free of debris. Monitor the temperature and make adjustments to the cooling system if necessary.

4. Firmware Updates

- **Firmware** is vital for optimizing the performance of your miner. Always check for updates from **Bitmain** and ensure your miner is running the latest version for enhanced efficiency and bug fixes.
- **Frequency:** Regularly visit the miner's interface to check for updates and install them as needed.

What is Overclocking?

Overclocking involves adjusting the miner's clock speeds to increase performance. For the [Antminer S21 XP Immersion \(300Th\)](#), this means potentially increasing the hashrate, but it comes at the cost of higher energy consumption and heat production.

Overclocking Procedure

1. **Access the Miner's Web Interface:** Log into the miner via a web browser using the IP address.
2. **Navigate to the Overclocking Settings:** In the settings menu, gradually increase the clock frequency by **5% increments**.
3. **Monitor Performance:** After each change, monitor the temperature, hashrate, and power consumption.
4. **Stability Test:** Run the miner for several hours after each adjustment to ensure stability and make sure the system is not overheating.

Precautions for Overclocking

- **Cooling:** Overclocking generates additional heat. Ensure that the oil-cooling system is working optimally.
- **Power Supply:** Ensure that your power supply can handle the additional load resulting from overclocking.

Tips for Optimal Use

1. **Initial Setup and Installation**

- **Location:** Install the miner in a well-ventilated area with proper temperature and humidity controls. Avoid placing it near heat sources or in areas with excessive dust or moisture.
- **Power Supply:** Use **certified power supplies** to avoid issues with voltage fluctuations and ensure stable operation.

2. Troubleshooting Common Issues

- **Connection Issues:** If the miner is not connecting to the network or mining pool, check the Ethernet connection and verify IP settings.
- **Hardware Failures:** Identify any faulty components such as fans, oil pumps, or power supply units and replace them promptly to avoid damage.
- **Software Issues:** If experiencing crashes or errors, restart the miner or reset the firmware.

3. Device Security

- **VPN Protection:** Use a **VPN** when managing the miner remotely to enhance security and protect it from cyber threats.
- **Firewall Configuration:** Ensure the miner is behind a firewall to prevent unauthorized access.

4. Regular Maintenance

- **Check for Leaks:** Given the oil cooling system, regularly inspect the miner for any oil leaks. Maintain the oil levels and ensure the cooling system is functioning correctly.
- **Cooling System:** Ensure that the cooling system is free of contaminants, and the oil is kept clean to maximize the cooling efficiency.

The [Bitmain Antminer S21 XP Immersion \(300Th\)](#) is a powerful and highly efficient **ASIC miner** designed for mining **SHA-256 coins** like **Bitcoin (BTC)** and **Joulecoin (XJO)**. With its **300 TH/s hashrate**, **oil-cooling technology**, and **low noise level**, it is a perfect choice for professional miners seeking maximum profitability

and reliability. By adhering to regular maintenance, optimizing cooling, and ensuring secure and stable operation, you can make the most out of your mining operation and maximize your returns over time.