

# BitOoda

## The Weekly Hash, 7/19/21:

### Hashrate Bottoming Near ~98EH/s

Hashrate appears to be bottoming following China's mining ban, with observed Hashrate at 100 EH/s, slightly above the current target Hashrate of ~98EH/s. Last Saturday's reset brought difficulty down 4.8%. We recently lowered our year-end target Hashrate estimate to ~145EH/s (see [here](#)), with an upward bias if electrical infrastructure bottlenecks prove more transient than our model currently indicates.

The market has shifted from being semiconductor constrained to being power / infrastructure constrained. Given the long lead times on the power infrastructure side, we assess it will take several quarters for the infrastructure deployment to be complete. As a result, Hashrate will likely be below our prior forecasts for the next ~10 quarters.

Bitcoin fell 7.4% week-on-week to \$31,708 as of 7/18 midnight UTC. Price is near a one-month low, despite recently-improved miner economics on increased BTC / PH/s flow following the weekend reset. Furthermore, we assess equipment prices should fall significantly over the next few months, given the shortage of sites into which to plug future deliveries; this should also accelerate an upgrade cycle of still-profitable S9 or S17 equipment to latest-generation rigs.

Total BTC earnings per PH/s are ~9.32 mBTC, up from ~8.96 mBTC / PH/s last week following the reset. (1mBTC or milliBTC = 1/1000 BTC.) Improved BTC earnings have not fully offset price declines.

Transaction fees fell 92 bps WoW to 1.3% of miner rewards, or 0.12 BTC per block, with very low congestion levels in the "Mempool".

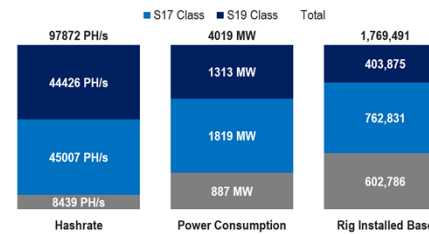
Bitcoin mining revenue fell to \$296 / PH/s per day and \$440/MWh as price fell and the reset offset decreases in transaction fees. The network has mostly normalized from the recent China ban, and we expect Hashrate to begin rising again.

The BitOoda North American Hash Spread™ dropped 4.1% from \$418 to \$401. We define the BitOoda Hash Spread™ as the difference between the cost of power per MWh and the Bitcoin mining revenue per MWh. This gives miners a quick sense of the surplus generated by their business to cover personnel, overhead, depreciation, and profit. The weighted average around the clock U.S. wholesale industrial power price (5 markets) of \$38.90 / MWh leads to an aggregate spread of \$401.

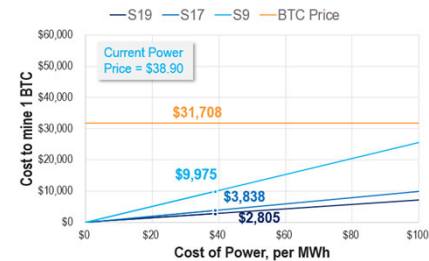
	S9 Class	S17 Class	S19 Class
Hash Spread	\$84.76	\$282.54	\$400.89
Week on Week	(5.3%)	(4.2%)	(4.1%)

Older-gen S9-class devices saw their Hash Spread™ down ~5.3% to \$85/MWh. S17-class devices, the bulk of the installed base, saw a hash spread of about \$283/ MWh.

We estimate that the Bitcoin mining network currently consumes about 4GW of power. Excess rigs over available power should accelerate the retirement of older-gen equipment in the coming months.



The 72 MWh required to mine 1 BTC with S19-class rigs translates into \$2,805 in power expense. It costs \$9,975 using S9 rigs, a 65%+ margin, excluding labor.



#### Takeaways

- Mining economics have improved in BTC terms but weakened in USD terms following Saturday's reset
- Hashrate may be bottoming and likely will begin to tick back up from here
- Miners continue to face infrastructure bottlenecks, which should lead to 2+ years of better mining economics relative to our prior estimates
- We assess this presents an opportunity for US-based miners to gain share and acquire rigs and new hosting customers at attractive terms

## Research

Sam Doctor<sup>ac</sup>  
 Chief Strategy Officer | Head of Research  
 sam@bitooda.io  
 @CryptoSamDoctor | @Sam\_Doc

Mark Chin | mchin@bitooda.io

BTC Price (7/19 at 10am EDT) \$30,675

Obs Hashrate 102.7EH/s

### Key Takeaways

- Mining economics have improved in BTC terms but weakened in USD terms following Saturday's reset
- Hashrate may be bottoming and likely will begin to tick back up from here
- Miners continue to face infrastructure bottlenecks, which should lead to 2+ years of better mining economics relative to our prior estimates
- We assess this presents an opportunity for US-based miners to gain share and acquire rigs and new hosting customers at attractive terms
- Email [info@bitooda.io](mailto:info@bitooda.io) to subscribe to our paid research tier

# BitOoda Hash™ Dashboard

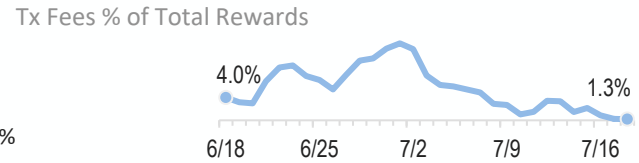
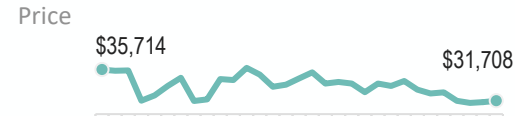
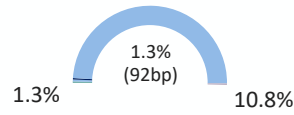
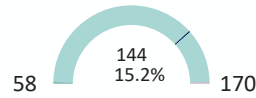
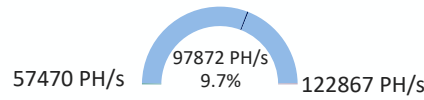
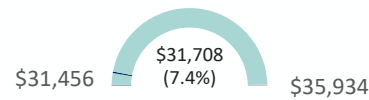
July 19, 2021

### Definitions

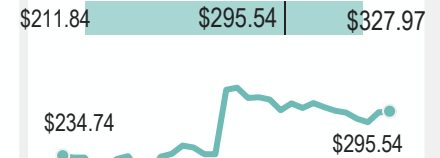
**Hash Spread:** the difference between the revenue per MWh from mining BTC and the weighted average cost of peak and off-peak power across 8 US zones. It is a quick measure of the profitability of US-based latest-generation mining rigs.

**MWh:** Megawatt hour  
**PH/s:** Petahash per second  
**Tx Fees:** Fees for BTC transactions

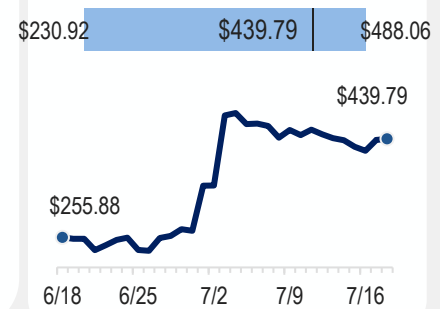
### 30 Day Range and 7-day % change



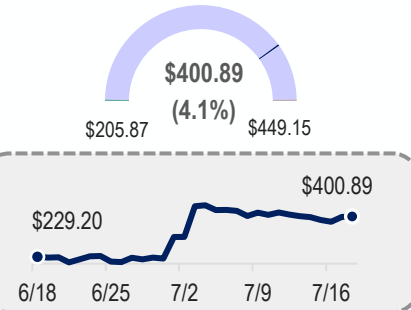
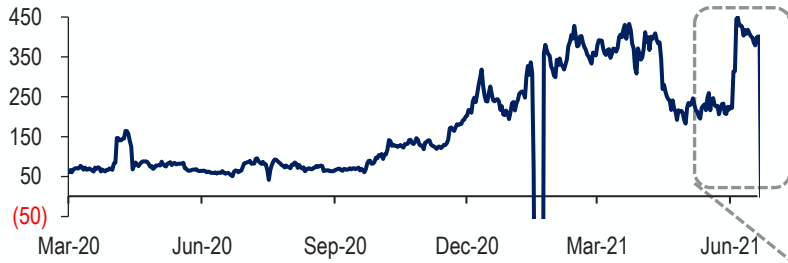
### Daily Revenue per PH/s



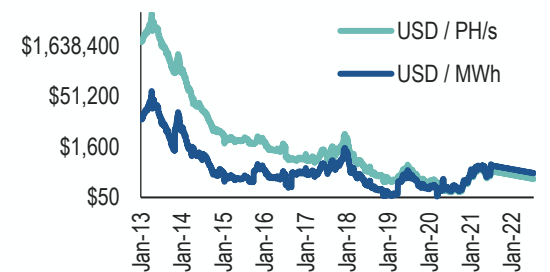
### Revenue per MWh (\$19 Class)



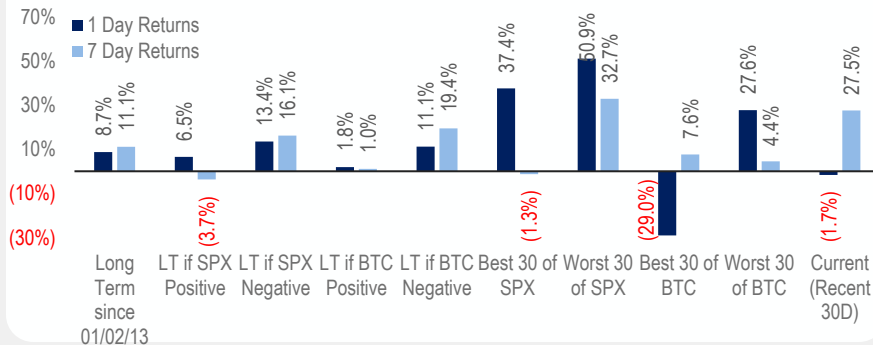
### BitOoda North American Hash Spread™



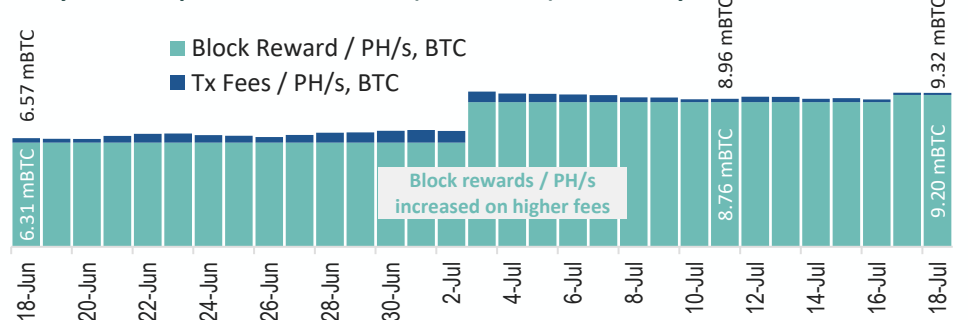
### Revenue, since 2013



### Historical BTC Correlation to S&P500



### Daily Rewards per PH/s, in millibTC (1/1000 BTC), last 30 days





# Disclosures

## Purpose

This research is only for the clients of BitOoda. This research is not intended to constitute an offer, solicitation, or invitation for any securities and may not be distributed into jurisdictions where it is unlawful to do so. For additional disclosures and information, please contact a BitOoda representative at [info@bitooda.io](mailto:info@bitooda.io).

## Analyst Certification

Sam Doctor, the research analyst denoted by an “AC” on the cover of this report, hereby certifies that all of the views expressed in this report accurately reflect his personal views, which have not been influenced by considerations of the firm’s business or client relationships.

## Conflicts of Interest

This research contains the views, opinions, and recommendations of BitOoda. This report is intended for research and educational purposes only. We are not compensated in any way based upon any specific view or recommendation.

## General Disclosures

Any information (“Information”) provided by BitOoda Holdings, LLC, BitOoda Digital, LLC, BitOoda Technologies, LLC or Ooda Commodities, LLC and its affiliated or related companies (collectively, “BitOoda”), either in this publication or document, in any other communication, or on or through <http://www.bitooda.io/>, including any information regarding proposed transactions or trading strategies, is for informational purposes only and is provided without charge. BitOoda is not and does not act as a fiduciary or adviser, or in any similar capacity, in providing the Information, and the Information may not be relied upon as investment, financial, legal, tax, regulatory, or any other type of advice. The Information is being distributed as part of BitOoda’s sales and marketing efforts as an introducing broker and is incidental to its business as such. BitOoda seeks to earn execution fees when its clients execute transactions using its brokerage services. BitOoda makes no representations or warranties (express or implied) regarding, nor shall it have any responsibility or liability for the accuracy, adequacy, timeliness or completeness of, the Information, and no representation is made or is to be implied that the Information will remain unchanged. BitOoda undertakes no duty to amend, correct, update, or otherwise supplement the Information.

The Information has not been prepared or tailored to address, and may not be suitable or appropriate for the particular financial needs, circumstances or requirements of any person, and it should not be the basis for making any

investment or transaction decision. The Information is not a recommendation to engage in any transaction. The digital asset industry is subject to a range of inherent risks, including but not limited to: price volatility, limited liquidity, limited and incomplete information regarding certain instruments, products, or digital assets, and a still emerging and evolving regulatory environment. The past performance of any instruments, strategies, products or digital assets addressed in the Information is not a guide to future performance, nor is it a reliable indicator of future results or performance. Commodity trading involves substantial risk of loss.

Ooda Commodities, LLC is a member of NFA and is subject to NFA’s regulatory oversight and examinations. However, you should be aware that NFA does not have regulatory oversight authority over underlying or spot virtual currency products or transactions or virtual currency exchanges, custodians or markets.

BitOoda Technologies, LLC is a member of FINRA.

“BitOoda”, “BitOoda Difficulty”, “BitOoda Hash”, “BitOoda Compute”, and the BitOoda logo are trademarks of BitOoda Holdings, Inc.

Copyright 2021 BitOoda Holdings, Inc. All rights reserved. No part of this material may be reprinted, redistributed, or sold without prior written consent of BitOoda.