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SRC20 vs BRC20 vs Runes The Battle of Permanence, Cost, and Efficiency

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[17/5/24] In the evolving landscape of cryptocurrency tokens on the Bitcoin blockchain, the SRC20 protocol is emerging as a robust contender due to its unparalleled permanence and future cost reduction upgrade. As the cryptocurrency community continues to seek innovative and efficient solutions, understanding the key differences between SRC20, BRC20, and Runes is essential. This article delves into the specifics of each protocol, highlighting why SRC20 could be the next significant focus.

Bitcoin as a blockchain is widely used not for the efficiency or low cost of its transactions, but for its unparalleled security, permanence and store of value. These attributes make it a preferred choice for most crypto users, and SRC20 exemplifies these qualities better than its counterparts. Despite being undervalued in the current market, SRC20's inherent permanence makes it a highly secure and resilient option for long-term projects and investments.

SRC20: The Most Permanent

SRC20 stands out for its data permanence. Unlike BRC20 and Runes, which can have their balances erased under certain conditions, SRC20 stores data permanently in the UTXO set. This means that balances cannot be erased, making SRC20 the most resilient option against ledger destruction. The protocol ensures that account balance data is stored in inaccessible UTXOs, making it impossible to lose tokens due to user errors or attacks. This unmatched permanence aligns with the primary reason people use Bitcoin: its security and immutability.

BRC20: The Most Economical

BRC20 is recognized for its cost-effectiveness. By leveraging Witness data, BRC20 can attach balances to sats, benefiting from the Witness discount. This results in the lowest transaction costs among the three protocols. However, this economy comes at the cost of permanence, as balances can be erased if node operators prune the data. This trade-off makes BRC20 less suitable for those prioritizing long-term security and permanence.

Runes: The Most Efficient in UTXO Management

Runes offer a balanced approach, distributing balances in UTXOs using OP_RETURN. This method provides an efficient way of managing the UTXO set, albeit with the risk of token loss if mistakes are made during transactions. Despite these risks, Runes maintain a medium cost profile and are suitable for users looking for a balance between economy and permanence.

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SECURITY	BRC20	RUNES	SRC20
	The most economical.	The lower on-chain footprint	The most permanent.
Storage - Balances	Balances attached to sats and inscribed in Witness data	Balances distributed in UTXO using OP_RETURN	Balances stamped in UTXO using account balance instead of tracking sats
Permanence - Ledger destruction	Data is stored in witness data permanently unless nodes decide to prune, users make mistakes or get attacked. Balances can be erased if: • **Node operators:** prune this data from their nodes as are not required to rebuild the blockchain and to compute hashes.	Data it´s in active UTXOs, where it's stored permanetly unless the users make mistakes or attacks. Balances can be erased if: • **User's mistakes or attacks:** UTXOs are spent by using a wallet that doesn't follow runes specifications or tokens are burn if using an application or platform not using the last version of the code, creating a Cenotaph.	Data is stored permanently in the UTXO set. Balances can't be erased if: • **Node Operators:** it's required to rebuild the blockchain and to compute hashes. User cant spent this UTXOs. • **User mistakes:** UTXOs are inactive and data it's stamped in them so it's not possible to spend them or even move them unless using a wallet that follow the specifications. No risk using that address with other wallet not suitable for src20 as they wont move.
Permanence - Token destruction/ spend	Token can be erased if: • **User mistakes:** Dosn´t use a wallet or platform that can detect sats and follow ordinals specifications. Example: send inscriptions to non ordinal compatible wallet taproot addresses or using tools that inscribe to themselves first then forward it to the customer (thus because the intermediate inscription service owned address has no balance and the transfer function is wasted). • To burn a BRC-20 asset send the transfer inscription to an OP_RETURN script that contains no data.	Token can be erased if: • An active UTXO can be spent if not interacting correctly. • Instances where your Runes will be burned (cenotaph): ◦ Encountering a non-data push opcode after OP_RETURN OP_13. ◦ If a LEB128 varint (data push) exceeds 18 bytes, causing a u128 overflow, or gets truncated before the continuation bit. ◦ When an edict output surpasses the total number of outputs in the transaction. ◦ Encountering an edict rune ID with block zero and a non-zero transaction index. ◦ Dealing with unrecognized event tags. ◦ If the value of the flags field, after recognized flags are removed, remains non-zero. ◦ Encountering a malformed varint. Encountering a tag without a subseque	Token can´t be erased: • Account balance stored in unaccesible UTXOs makes not possible to spend.

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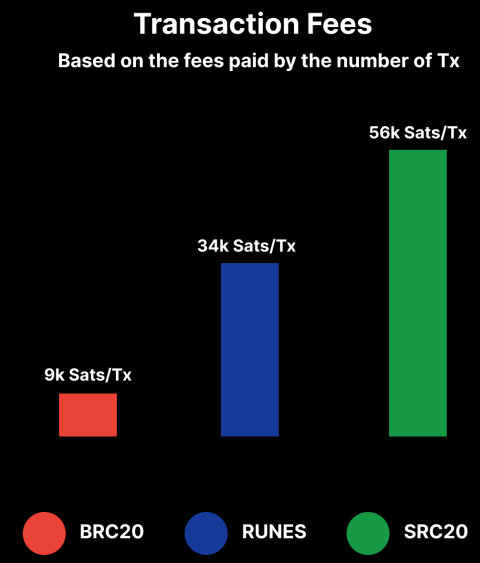
Costs

Transaction Costs and On-Chain Footprint

SRC20 initially incurs higher transaction costs compared to BRC20 and Runes. However, with the anticipated Olga update, these costs are projected to be reduced by 85%, aligning SRC20 more closely with its competitors. Additionally, SRC20 has the lowest on-chain footprint, contributing only 193.69 MB, which is 0.034% of Bitcoin storage. This efficiency is crucial for the future scalability and sustainability of the Bitcoin network.



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Minting Transactions:

Transaction	Price (10 sats/vB)	Percentage vs BRC20 Mint
BRC20 Mint	338-388 sats	100%
RUNES Mint	1200-1300 sats	317.5% - 384.1%
SRC20 Mint	1300 sats	334.5% - 384.6%

Transfer Transactions:

Transaction	Price (10 sats/vB)	Percentage vs BRC20 Transfer
BRC20 Transfer	338-383 sats	100%
RUNES Transfer	1260 sats	329.2% - 372.5%
SRC20 Transfer	3690-4500 sats	963.3% - 1331.7%

Transaction	Virtual Size (bytes)	Price (10 sats/vB)	Price (30 sats/vB)
BRC20 Mint	135-155	338-388 sats	1013-1163 sats
BRC20 Transfer	135-153	338-383 sats	1013-1148 sats
RUNES Mint	120-130	1200-1300 sats	3600-3900 sats
SRC20 Mint	130	1300 sats	3900 sats
RUNES Transfer	126	1260 sats	3780 sats
SRC20 Transfer	369-450	3690-4500 sats	11070-13500 sats

Number of Transactions Needed

The operational efficiency of SRC20 is evident in its requirement of only three transactions for deployment, minting, and listing/selling. In comparison, both BRC20 and Runes require two transactions specifically for listing and selling. This means that while SRC20 aligns closely with its competitors in terms of total transaction count, it maintains a slight edge in simplifying the process, ensuring that SRC20 remains competitive in terms of transaction throughput.

		BRC20	RUNES	SRC20	SOURCES
		The most economical.	The lower on-chain footprint	The most permanent.	
COSTS	Cost x TX	Cheap: Benefiting from the Witness discount (-75% of normal tx) *comparing the tx at 10 sats/vB	Medium: Mint: +350% brc20 mints Transfers: +350% brc20 transfers *comparing the tx at 10 sats/vB	High: Mint: +350% brc20 mints Transfers: +1100% brc20 transfers *comparing the tx at 10 sats/vB • With Olga update to the protocol (already implemented in art stamps, but not yet in src20) costs are reduced by 85%, keeping the same security.	1
	User Friendliness - N° of Tx for functions.	Average • 1 tx to deploy • 1 tx to mint • 2 tx to list/sell* *Need to create transfer inscription wen making transfers from one wallet to another	Average • 1 tx to deploy (and mint if wanted) • 1 tx to mint • 2 tx to list/sell* *Need to split utxos wen listing small batches of tokens.	Easy • 1 tx to deploy • 1 tx to mint • 1 tx to list/sell	
	Total tx & fees paid (All time)	4,986 BTC 54,770,472 Tx 9K sats per Tx in fees	2,291 BTC 6,688,796 Tx 34K sats per Tx in fees	198 BTC 353,267 Tx 56K sats per Tx in fees	2
	On-chain footprint	HISTORICALLY: HIGH FOR THE FUTURE: HIGH Have the highest impact on the blockchain, increasing the number of UTXOs and overall data storage requirements. Contribution since its inception is now 29.349 GB, 5.13% of Bitcoin storage	HISTORICALLY: MEDIUM FOR THE FUTURE: LOW Have the lowest impact on the Bitcoin blockchain, designed to minimize UTXO bloat and improve efficiency. Contribution since its inception is now 3,584 GB, 0.626% of Bitcoin storage	HISTORICALLY: LOW FOR THE FUTURE: MEDIUM Also aim to reduce blockchain bloat, with a more efficient data storage method than BRC20. Contribution since its inception is now 193.69 MB 0.0344% of Bitcoin storage	2

SOURCES:
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1, 2, 5. Stamps: https://indexer.srcpad.pro/api/v2/src20/info & https://sqrr.xyz/reports/StampsUpdateAprilRelease/ & https://github.com/mikeinspace/stamps/blob/main/OLGA.md?plain=1
2. BRC20: https://dune.com/cryptokoryo/brc20
2. Runes & BRC20: Estimation based in the n° of tx and average virtual size per Tx.

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Utility and Compatibility

Functionality and Ecosystem Integration

SRC20 supports a range of functions including deployment, minting (both fair and launchpad), claiming, buying/selling, and the upcoming vesting and airdrop features. These functionalities are quite similar across the three protocols, with SRC20 and Runes offering more features compared to BRC20.

User Experience Comparison

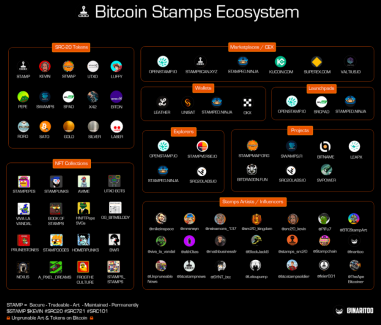
- **BRC20:** Requires creating a transfer inscription when making transfers from one wallet to another.

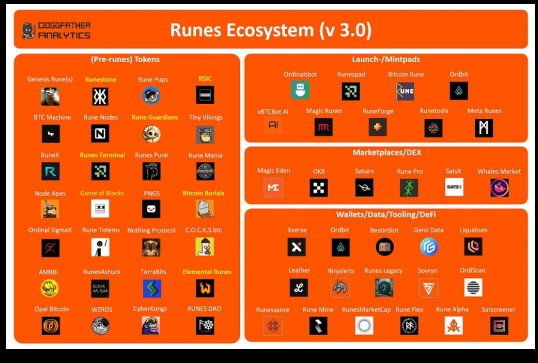
- **Runes:** Needs to split UTXOs when listing small batches of tokens. For example, if user A buys 2 million tokens in the market, they are transferred as 2 million tokens to his wallet. Without splitting UTXOs, he can only list the 2 million tokens in one go. To list 500k tokens, the user must use a platform to split UTXOs into smaller chunks.

- **SRC20:** Does not have any of the bad user experiences like the other two. There is no need for transfer inscriptions or splitting UTXOs. This makes SRC20 not only permanent but also user-friendly when it comes to trading.

Existing Infrastructure and Wallet Support

SRC20 benefits from existing infrastructure support and compatibility with various wallets including Leather, OKX Wallet or UniSat. While BRC20 and Runes currently have a higher level of infrastructure and wallet support, SRC20 is rapidly catching up. BRC20 enjoys high existing infrastructure and wallet support with platforms like Xverse, UniSat, Leather, and more. Runes also have significant wallet support but slightly lower than BRC20.





Market Potential

Investment and Market Capitalization

SRC20 has attracted significant interest from the investment community, with venture capital investments between $5M-$10M. Its market capitalization and trading volume indicate a growing acceptance and adoption within the cryptocurrency ecosystem. The anticipated cost reduction and ongoing improvements further enhance its appeal to investors and users alike. However, it is important to note that BRC20 and Runes currently have a larger market presence and higher levels of investment. BRC20 boasts a total market cap of $1,818M, while Runes have a total market cap of $702M.

Community and Influencer Support

The SRC20 community is backed by influential figures and dedicated projects, ensuring continuous development and innovation. This support is crucial for driving adoption and maintaining the protocol's relevance in the competitive crypto space. BRC20 and Runes also have strong community support, with notable influencers and a broad base of dedicated users. However, SRC20's unique attributes and ongoing enhancements position it well for future growth and increased community engagement. Conclusion

The SRC20 protocol, with its unmatched data permanence and forthcoming cost reduction upgrade, offers significant potential in the cryptocurrency market. As BRC20 continues to be the most economical and Runes the most efficient in UTXO management, SRC20's unique attributes make it a compelling choice for long-term projects and investments. Its high level of security and permanence aligns well with why users choose Bitcoin.

		BRC20	RUNES	SRC20	SOURCES
		The most economical.	**The lower on-chain footprint**	**The most permanent.**	
UTILITY	Functions	Deploy Mint (fair & launchpad) Claim Sell/buy	Deploy Mint (fair & launchpad) and premint. Claim Sell/buy Airdrop	Deploy Mint (fair & launchpad) Claim Sell/buy Vesting & Aridrop (developed / not implemented)	
	Compatibility	Ordinals supported wallet only	Compatible with lightning and DLCs. Support SPV wallets and Light clients.	Compatible with all Bitcoin wallets.	
MARKET	Existing infrastructure	High	Low	Medium	
	Wallets	XVerse UniSat Leather Magic Eden Wallet OKX WEb3 Wallet Ordinals Wallet Bitget Wallet	XVerse UniSat Leather Magic Eden Wallet OKX WEb3 Wallet	Leather OKX Wallet Unisat Stamped Ninja	
	VCs Investments	Medium (Between >20M$)	Low (Between 5-10M$)	Low (Between 5-10M$)	
	Mkt Cap top token	Total Market: 1,818M$ Ordi - 776M$	Total Market: 702M$ DOG•GO•TO•THE•MOON - 223M$	Total Market: 409M$ STAMP - 78M$	3
	All time volume	72,144M$ 165M$/day	151M$ 4,8M$/day	141M$ 371k$/day	4
	N° Wallets	534K	526K	26k	5
	CEX	Tier 1 & 2: OKX, Biance, Gate, Bitget, KuCoin, Bybit, HTX, MEXC, Crypto.com Others: And many others.	Tier 1: OKX, Gate, Others: Magic Eden, Saturn, Coinex, Bitmart, Bitrue, CoinW, Cube.	Tier 1: KuCoin Others: Superex, Openstamp, Stampscan.	
	Biggest influencers specialize in the niche (x.com)	@udiWertheimer - 197K @BitGod21 - 112k @TO - 144k @domodata - 83k (creator) Other bigger accounts non exclusive to brc20	@LeonidasNFT - 212K @BitGod21 - 112k @TO - 144k @rodarmor - 130k (creator) @0xNefu - 62k Other bigger accounts non exclusive to Runes	@mikeinspace - 27k (creator) @SYNT_btc - 11k @inscriptioner - 12k Other bigger accounts non exclusive to src20	
	Creation	March 8th, 2023	April 20th, 2024	May 5th, 2023	

SOURCES:
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1, 2, 5. Stamps: https://rideswr.xrcpad.pro/api/v2/src20/info & https://sqrr.xyz/reports/StampsUpdateAprilRelease/ & https://github.com/mikeinspace/stamps/blob/main/OLGA.md?plain=1
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"Having developed within the Ordinals and EVM ecosystems, we recognized the potential of the SRC20 protocol for its greater permanence. To date, not a single token has been burned, lost, or erased within the SRC20 ecosystem, unlike other protocols that have experienced such losses. This underscores the importance of permanence and security, which are fundamental for sustainable and reliable cryptocurrency development. At Universelle, we are committed to advancing SRC20 through initiatives like SRCPAD to enhance user experience and ecosystem growth."

— Ángel Haro, Co-Founder of Universelle

This analysis and infographics were developed by Universelle, a leading consulting firm deeply involved in the SRC20 and Bitcoin Stamps ecosystem, has conducted this comprehensive analysis. Universelle.io is known for its significant contributions to the SRC20 protocol's open-source code and the development of one of the first marketplaces. Recently, they launched SRCPAD, a robust launchpad designed to enhance the SRC20 user experience. For more insights and updates, follow Universelle.io on Twitter @universelle_io or @srcpad_pro.

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