451PCBcom (PCB)

TRC-20 token

whitepaper v2

INDEX:

1.- Intro

451PCBcom (PCB) is a TRON TRC-20 token created by our non-profit association to promote, develop, make, reward, share and exchange open source hardware.

The PCB token is a privately issued currency, which is a unit of value that the association creates to self-govern, and empower open source hardware users to interact with us, while facilitating the exchange, distribution and sharing of open source hardware, with rewards and benefits to all of its holders.

TRC-20 is the basic code standard for a token in the TRON blockchain to implement some minimal token functions using a smart contract.

The PCB token will be distributed to our association members to use it in our headquarter as a tool to exchange open source hardware, rank and reward the community who support open source hardware and promote it collabolating with us.

The PCB token is not an speculation token, it has some utility functions in the real world for the members of our open source hardware community of supporters.

When you hold PCB tokens, you are a member of our community of supporters and you are collaborating to make open source hardware. Your community ranking depends on how many PCB token you hold.

When we send rewards to our community it is based on their holder ranking, knowlenge and collaboration to promote open source hardware, and never by lucky or competitive games.

We don't know any other project of a tokenized open source hardware desing at this moment. We will be happy to know about other open source hardware makers with blockchain projects.

We are ready to develop our project in a blockchain company, but it's not in our road map now because it's not necessary for a mostly local use and low transfer volume now. The future and our community is open. Join us.

2.- Utility

The PCB token is distributed to reward our community with tokens which can be held or exchanged to win community reputation (check holders ranking in the smart contract info link) and rewards as open source hardware.

The PCB token can be utilized to participate in our community of open source hardware supporters with the TRON decentralized blockchain ecosystem of message boards, forums, chats, lists, file and code sharing, to make proposals and vote about decisions, etc.

The PCB token can be exchanged for physical open source hardware and use the TRC-20 token for securitize the exchange of hardware, including between our community members of PCB token holders who can create and distribute open source hardware.

This PCB token of open source code will close the process of desing open source hardware with open source code using this open source token to distribute the physical hardware maked by the community of open source hardware supporters.

The amount of tokens in circulation never will be more than the amount of all physical Printed Circuit Boards in stock ready to distribute to our community members, because the PCB token will be changed for physical open source hardware Printed Circuit Boards as the last version of our "451PCB Protoshield Board for Arduino" which give to the PCB token the value 1 to 1.

One PCB token ever will be exchanged by 451PCB.COM for the reward of one physical "451PCB Protoshield Board for Arduino" (shipping cost included). This process is manual by mail now. The PCB token will be exchanged for more kind of open source hardware with diferent values when it will be make and ready to distribute.

With the PCB token our community of supporters will set the value of the open source hardware distributed by 451PCB or between our community members who can utilize the PCB token to exchange open source hardware, TRX and other TRON tokens, including the option to utilize the smart contract as a deposit escrow account for the open source hardware swap, exchange or distribution secured by 451PCB, if necessary.

open source hardware

PCB

3.- Roadmap

We will continue rewarding our community of supporters with free PCB tokens, but never with more than our stock of physical hardware boards which is the PCB token circulating supply.

2018

- First version of the whitepaper approved.
- PCB Token creation and the start to test it.

2019

- Whitepaper v1.0 and v1.1 released.
- Some PCB tokens distributed to the community.
- Whitepaper v1.2 released in English and Spanish.
- "451PCB Protoshield board v2" open source hardware released.
- Some PCB tokens distributed to the community.
- Whitepaper v1.3 released in English and Web page updates.
- PCB tokens and some physical boards of open source hardware distributed to our communty of supporters and PCB token holders.

2020

- Web page and Smart contract update released.
- Whitepaper v2 released in English and Spanish.
- Release our voting system to self-organize.
- We will release the open source hardware code of the "451PCB Protoshield board v2.1". Other open source hardware code by the community is wellcome.
- We will improve our web page, publishing more info about our open source hardware, documents, pictures and use examples for the community and with their collaboration.
- We will distribute more PCB tokens and physical boards of open source hardware to our community of supporters and PCB token holders.

2021

- Try to apply the decisions selected with our voting system updating our whitepaper and the continuous development of the project with the PCB tokens and physical boards distribution to the community members.

4.- PCB Token

The 451PCBcom (PCB) TRC-20 token was updated with an automatic swap to the community and have been made with this TRON smart contract address:

TMBshXBbETM9UPU4XJPueJR1o8PVm5NMDd

The PCB token creator address was updated to:

TE3SPKYq2EZsFfaXp4uSX4gw9hrxa3Ayi8

The PCB token total supply is mintable depending of the stock of physical boards in stock ready to distribute.

All the PCB token smart contract info is in tronscan.org:

https://tronscan.org/#/token20/TMBshXBbETM9UPU4XJPueJR1o8PVm5NMDd

The solidity code of the PCB token is open source code too:

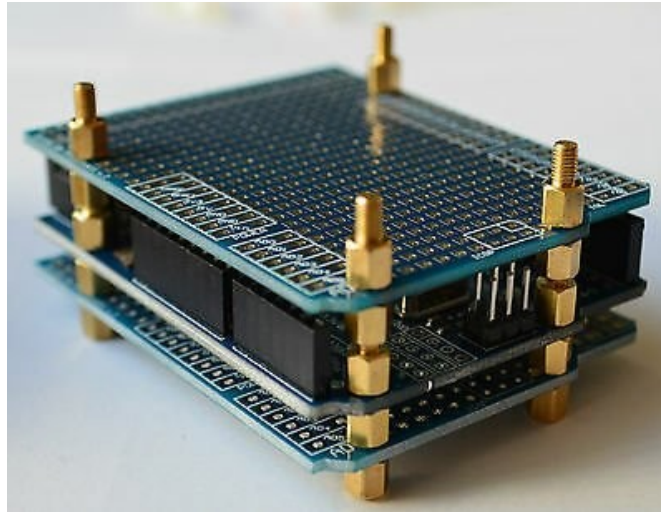https://github.com/451PCBCOM/PCB-TRC20/blob/master/CODE/451PCBcom.sol

The PCB token creator address and the smart contract in the TRON blockchain is under the control of 451PCB.COM which is a NON-Profit association to promote open source hardware, art and tecnology.

All the token holder addresses and balances are public on the TRON blockchain network, as the events of transfers and approvals, to check the token activity by the community.

The use of this PCB TRC-20 token have a 5% of the necessary execution cost of tron energy to be discounted to the user and the other 95% of the energy cost is supported by the PCB token creator to avoid spam and other security purposes. This is a user cost of around 500 to 2000 units of energy for the smart contract execution and around 500 units of bandwidth. This amount of energy and bandwidth will be recovered in a short time, so the smart contract execution will be ever free for the user with some TRX frozen for energy and bandwidth. If the user and the smart contract haven't got the necessary energy or bandwidth with his frozen TRX, the transfer will cause to the user the burnt by TRON a maximal amount of around 0.3 TRX to cover the cost of energy and bandwidth. But it depends of the TRON blockchain network execution flow and we ever try to cover this cost with TRX in our contract.

5.- Protoshield board

The "451PCB ProtoShield Board" v1,v2 and v2.1 is a PCB made in FR-4, copper and HASL lead free finished, with solder mask and silk screen in both sides of the board. All the PCB physical boards are Pb free and ROSH compliant.

The board is only composed by the Printed Circuit Board, and the materials value of the boards use to increase every year, and the manufacturing costs use to increase too, so the value of the boards is stable but increasing every year.

By all this, the physical PCB "451PCB Protoshield Board" is a very good reference value for the PCB token. More with the basic shipping costs of the boards included in the PCB token value which is stable but use to increase every year too.

A decentralized network for local distribution of physical boards between our community members should be created in the future to decrease the expenses of a global distribution shipping costs and creating benefits to the community of local makers, distributors and users who receipt it faster.

All the "451PCB ProtoShield Board" source hardware code files are open source in a github repository:

https://github.com/451PCBCOM/Arduino-Protoshield-Board

You can help us developing more documents related to the project and you will be rewarded with PCB tokens.

6.- About us

451PCB.COM is the web page of a legalized non-profit association based in Spain to promote open source hardware, art and technology which is self financed with donations by the members and the open source hardware distribution to our members as an open source hardware consumers group when it will be necessary.

We make and tokenized a open source hardware desing deploying and controlling smart contracts on TRON's blockchain to self-organizing our non-profit association and to promote open source hardware. We developed a voting system with PCB tokens to do it.

Our community of members, users and supporters is formed by the PCB token holders. The ranking of PCB token holders can be checked following the token info link.

451PCB.COM doesn't store the users private data. So, all user private data sent to us will be readed, used and destroyed to preserve the user privacy rights. When we have access to data stored in other platforms it will be managed by their own rights and rules, but we will preserve it private and never shared.

451PCB.COM can't take actions against people who test our codes, including when they are searching code vulnerabilities in our code, but our network providers will take their own actions. We can't give them any info or data related, we don't store it becouse we don't need it. Our code is secure and our code is law.

If you have any question about the 451PCBcom (PCB) TRC-20 token, don't hesitate to contact with us sending e-mails to:

info@451pcb.com

For more info visit www.451pcb.com and join us.