

1/25/2024

Revised: 1/25/24

Previous revision: 1/12/24

## Self Custody - Peace by Design

Summary: This open source Multi sig Bitcoin self custody cold storage [routine](#) includes three different unknown ledger locations and pins, plus 2 factor authentication including at bank, Electrum, and [Coinbase](#). It relies on an interdependence based on [Spirit-centered community](#). Send proposed changes to [processorinfo1@gmail.com](mailto:processorinfo1@gmail.com). Combined with Bitcoin-blockchain-proof-of-work's demonstrated 100% impenetrability, this routine seeks best practice, self-custody, ultimate security. Truth, justice, security and protection bring... peace.

## Start of Your Procedure to enable purchasing bitcoin self custody.

1. Hint: When you are working on this routine, keep your desk clear, and only work on the step in front of you. Proceed step by step. When referring to the digital version of this routine, highlight the step you are working on with your mouse so you do not lose your place.
2. This is open source, plain English, trust based, documentation. Open source means users help each other to keep the documentation current by emailing changes and suggestions to [processorinfo1@gmail.com](mailto:processorinfo1@gmail.com).
  - a. No person is responsible.
  - b. Any person is free to use or propose upgraded documentation.
  - c. You and any user of this open source documentation absolves, indemnifies and holds harmless Loquate from any matter which you may dispute.
3. What is a **wallet**? A wallet is a multi-signature address where your Bitcoin is stored. Processor 2 holds a third private key. The wallet is yours. Your wallet requires 2 of 3 private keys to access your address where your Bitcoin is stored. We

recommend Electrum Wallet (no annual fees, just a very small in/out fee).

## Open a Savings account in your name, not joint name, as a segregated in/out vehicle for Bitcoin funds.

4. Only move into savings account as much funds as you wish to purchase bitcoin plus for example \$50.

## We recommend multi sig 2 of 3 private keys and a Processor with a third key.

5. You need to buy 2 Ledger Nano S Plus (“Ledger”) wallets, one black and one orange.
  - a. You will loan your orange one to processor 1. (Processor 1 may be yourself or another trusted person at another location for ultimate security.) You still own it. You can always get it back.
  - b. You will always retain your black one in your possession.
  - c. Processor 2 owns a third Ledger. (Processor 2 is another trusted person at a third location for ultimate, ultimate security.)
    - i. Processor 2 is only needed in the ginning.
  - d. 2 of 3 multi sig means sending Bitcoin can only be executed from your private Bitcoin address when 2 of the 3 Ledgers are present.

## To Buy Your 2 Ledgers: Black and Orange

6. Open Google Chrome browser
7. Hover your mouse over this hyperlink: <https://shop.ledger.com/products/ledger-nano-s-plus>
  - a. Right-click “Open link in new tab”
8. Click the black tile to select the “Matte Black” Nano S Plus
9. Click the Add to Cart button
10. Click the orange tile to select the “BTC Orange” Nano S Plus
11. Click the Add to Cart button
12. X out of “accept all cookies”
13. Click the black Checkout button

14. Enter your email address and shipping address
15. Click the black Continue button
16. Click the black Continue button
  - a. Hint: there is only Express Shipping options available
17. Enter your credit card information
18. Click the black Complete Order button

You have now purchased two Ledger Nano S Plus devices. You will receive emails from Ledger regarding approximate delivery.

**You Open a Coinbase Account at Coinbase.com 888-908-7930 24/7, or generally follow below. Coinbase is the largest volume exchange for trading Bitcoin.**

**Start of Open Coinbase Account Sub Routine**

Take a picture of your driver’s license front and back. Email from smart phone to computer. Save as jpg or png on your computer. You will need them to open your Coinbase account.

19. Hover your mouse over this hyperlink: <https://www.Coinbase.com/>
  - a. Right-click “Open link in new tab”
20. Click Sign up button
  - a. Individual
  - b. Get started
21. Enter the following fields:
  - a. First name
  - b. Last name
  - c. Email
22. Check the box verifying that you are 18 years of age or older and agree to the User Agreement and Privacy Policy
23. Click Continue button
24. Click Continue button on next screen
25. Open a new tab in Google Chrome browser
26. Navigate to your email account
27. Open email from Coinbase titled “Please Verify Your Email Address”
28. Click Verify Email Address button in email
  - a. Hint: click this link confirms your email address to Coinbase
29. Select your state
30. Submit
31. continue
32. Toggle back to Coinbase tab in Google Chrome

33. Enter your mobile phone number in the Phone number field
34. Click Send code button
  - a. Hint: you will receive a 7-digit code in a text message from Coinbase
35. Open the text message you just received on your smartphone
36. Enter the 7-digit code into the Coinbase field where it says “Enter authentication code”
37. Click Submit button
38. Select the country of your citizenship
  - a. Hint: if you are a citizen of multiple countries, pick only one
39. Click Submit button
40. Enter the following fields:
  - a. Date of birth
  - b. Street Address
  - c. What will you use Coinbase for? Pick “Trading on Coinbase.”
    - i. Hint: you will be buying Bitcoin at Coinbase.
  - d. What is your source of funds? Pick “Occupation” if your primary source is your job, pick “Savings” if your primary source is your savings, etc.
  - e. Employment status
  - f. Last 4 digits of Social Security Number
41. Click Continue button
42. Select answer to question “How much crypto do you expect to trade per year?” from drop-down, for example “\$10,000 - \$99,999”
43. Select answer to question “What industry do you work in?” for example “Transportation”
44. Click Submit button
45. Complete your verification as prompted
  - a. Upload your driver’s license front and back.
46. Coinbase password, enter and save in a secure location.
47. Back to Google Chrome browser, you may see a “Verifying identity” window with a spinning icon
  - a. Hint: this will complete within 5 minutes as Coinbase verifies your driver’s license
  - b. Once verification is complete a new screen will pop up, click the Continue button
48. Plaid
  - a. Select your bank from the list shown.
49. Bank ID; this is your on-line sign in at your bank, chosen in the previous step.

50. Bank PW; this is your on-line password at your bank
51. Select means choose the bank account which you wish to use to fund your Bitcoin purchase.
52. Plaid sends you a text
53. Enter Plaid security code.
54. Click Continue button
55. Done. You have opened your Coinbase account. You will fund it at a later time.

### **End of Open Coinbase Account Sub Routine**

## **Set Up Ledger Nano S Plus devices**

### **Start of Nano S Plus Subroutine**

(Hint: Multisig and cold storage of Bitcoin is superior protection against loss or theft. That is why you go through the trouble to establish initial set up. This is a detailed list of steps to be done step by step.)

56. Print out this write-up
  - a. Enter a check on each completed step using a good black pen.
  - b. Hint: gives confidence you did each step and allows you to step away and resume precisely where you left off.
  - c. Hint: you will use the same pen to record “Your personal recovery seed.”
57. Start with black Ledger Nano S Plus device
  - a. Hint: the orange Ledger Nano S Plus device will have an orange dot on the back of its package, so choose the box without the orange dot
58. Remove Ledger Nano S Plus device from package
59. Remove the envelope labeled “Secret Recovery Sheet” from the package
60. Open the envelope and set all three “Confidential My 24-word recovery phase” cards to the side
61. Remove the “Ledger.com/Start” envelope from the package and set aside.
62. Remove the USB cable from the package, found in the black envelope.
63. Remove plastic screen protector form Ledger.
64. Flip open the Ledger Nano S Plus to expose the USB port and connect the USB cable to desktop and close all programs.
65. Connect the other end of the USB cable to your computer
  - a. Hint: the screen on the Ledger Nano S Plus will light up when connected
66. Open Google Chrome browser
67. For Laptop
  - a. Right click menu on the top far right
  - b. Left click “App and Services”
  - c. Click “ledger live”
  - d. Hint: all the rest of the directions are for desktop. You may have to improvise if you use a laptop)
68. Hover your mouse over this hyperlink: <https://www.ledger.com/start>
  - a. Right-click “Open link in new tab”
69. Click the Download button and select your computer type (Windows, Mac, or Linux)
70. Click the “ledger-live-deskto...exe” button that appears in the bottom left corner of Google Chrome
  - a. Press “Save”
  - b. Hint: this will install version 2.49.0 or greater of Ledger Live
71. Click on the .exe file to open.
72. Click Yes to allow this app to make changes to your computer
73. Click the Install button
  - a. Hint: Ledger Live software will install itself on your computer
74. Check the box next to “Run Ledger Live”
75. Click the Finish button
  - a. Hint: the Ledger Live app will appear
76. Click the Get started button
77. Set up a new Nano Plus.
78. Continue
79. Click the right chevron “>” button
  - a. You will click this right chevron “>” button three more times
80. Click the Let’s do this! Button
  - a. Hint: if you did not get a pen in the beginning of this routine, get one now because you will need it
81. Click the OK, I’m ready! button
82. Click the Next step > button
83. Check the box next to “I understand that I must choose my PIN code myself and keep it private”
84. Click the Set up PIN code > button
85. Pick up your Ledger Nano S Plus device
  - a. Hint: there are two buttons on the device
  - b. Hint: Assume that these buttons are on the top and when flipped open the silver shield is on the right and the black body with screen is on the left
  - c. Hint: the button further to the right will be called “right button” and the button

- further to the left will be called “left button”
86. Push the right button until the screen reads “Set up as new device”
  87. Push both buttons at the same time
  88. The screen will now say “Choose PIN”
  89. Push both buttons at the same time again
  90. You will now enter a PIN of your choosing
    - a. Hint: this PIN must be between 4 and 8 digits long
    - b. Hint: do not use an obvious combination that an attacker could find like your birthday or the last four digits of your phone number
    - c. Write down the pin you propose to use on a separate piece of paper. Hint: electronically store your pin in an encrypted location.
  91. Use the right button to increment the number and the left button to decrement
  92. When you have incremented / decremented to the first number you want for your PIN, push both buttons to move on to the second number
    - a. Repeat until you have entered at least four numbers
  93. Once you have at least four numbers, a check mark will appear in the number space, if you are finished with your PIN push both buttons with the check mark to signal that you have completed entering your PIN or keep incrementing / decrementing until you reach 8 digits
  94. Your Ledger Nano S Plus screen will now read “Write down your recovery phrase”,
  95. Switch back to your computer and click the Next step > button
  96. “Get started” appears
  97. Next step
  98. Next step
  99. “Get Started”
  100. Hint: ignore computer screen as you follow on your Ledger device
  101. Click the Recovery phase > button
  102. Pick up your Ledger Nano S Plus again
    - a. Push both buttons, device will say “Your device will generate 24 words, they are your Recovery Phrase”
  103. Push the right button
    - a. Push the right button four more times as the screens describe the next step, which is writing down the 24-word recovery phrase
  104. Push both buttons
  105. Grab all three “My 24-word recovery phrase” cards from the envelope included in the Ledger Nano S Plus package as you will fill them all out in the next step
  106. The Ledger Nano S Plus screen is now displaying the first word of your 24-word recovery phrase
  107. Write this word down carefully and clearly on each of your three “My 24-word recovery phrase” cards
    - a. Prove that you wrote the word down with the correct spelling and in the correct # space for each card
  108. Once you have proven that the word is correctly ordered and correctly spelled, push the right button to receive the next word
  109. Repeat this process for each of the 24 words
  110. Once you have written down all 24 words in order on each of the three cards, use the left and right buttons to cycle through all 24 words again one last time for each card
    - a. Hint: this 24-word recovery phrase is the only way to recover your Bitcoin in case you lose your Ledger Nano S Plus, so this extra diligence and care is worth the time
  111. Push the right button until your screen says “Confirm your Recovery phrase”
  112. Push both buttons
  113. Confirm your 24-word recovery phrase one last time by using card you just filled out:
    - a. Push both buttons on top of ledger
    - b. The Ledger Nano S Plus screen will prompt you to select the first word
    - c. Read the first word from your card
    - d. Push the right / left buttons until you find that first word
    - e. When you find the first word, push both buttons
    - f. Repeat for each of the 24 words in order
  114. Your recovery phrase is set.
  115. Push the right button and read the prompts on your Ledger Nano S Plus
    - a. Push the right button 3 times
  116. When the Ledger Nano S Plus screen reads “Press both buttons to continue”, push both buttons
  117. Switch back to your computer
  118. Click the Next step > button
  119. Click the Next step > button again
  120. “Check my Nano”

121. Allow Ledger manager
122. Press both buttons
123. “All Good”
124. Continue.
125. Terms of use
126. Continue
127. Click the Continue > button
128. Click the Add account button
129. Choose Bitcoin from the drop-down menu
130. Continue
131. Pick up your Ledger Nano S Plus and enter your PIN
132. Switch back to your computer and click the Continue button
133. The Ledger Live app will update your Ledger Nano S Plus
134. Pick up your Ledger Nano S Plus and verify that the screen reads “Open app Bitcoin”
135. Push both buttons on your Ledger Nano S Plus
136. Your Ledger Nano S Plus screen should read “Bitcoin is ready”
137. Switch back to your computer
138. The Ledger Live app will synchronize for approximately one minute
139. Click the Add account button
140. Click the Done button
141. Your Ledger Nano S Plus device is now ready for use with Bitcoin
142. Repeat this routine for your second Nano Ledger S Plus device (the orange one that you will loan to processor 1)
  - a. Hint: installing the Bitcoin app on your Ledger Nano S Plus is slightly different the second time
  - b. Eject the black Ledger Nano S Plus
  - c. Plug in your Orange Ledger Nano S Plus
  - d. With your orange Ledger Nano S Plus device connected to your computer, in the Ledger Live app
  - e. Click My Ledger, receive message “Your device is not ready to use yet”
  - f. Click Setup Device button
  - g. Choose Ledger Nano S Plus
  - h. Setup a New Nano S Plus
  - i. Continue through all steps as above until the step where you enter your PIN (step 87 above), then continue below
  - j. Click My Ledger
  - k. Click the Install button next to Bitcoin
  - l. The Ledger Live app on your computer will display Bitcoin

143. Eject the Orange Ledger Nano S Plus
  - a. Safely eject
144. Close out of Ledger Live app on your computer
145. Mail your orange Ledger to processor 1
146. Hide 3 recovery sheets in places that only you and a person you trust know where to find them.

## **Download and Install Electrum Wallet Software (free, open-source software)**

Hint: before beginning these steps, ask processor 2 to email you the master public key of the blue Ledger Nano S.

Hint: even if an evil person were to gain access to this master public key, he cannot steal the Bitcoin without also successfully stealing 2 of 3 Ledgers undetected, cracking their codes and Electrum pins and your phone for 2 step authentication, statistically highly unlikely.

147. Toggle to Google Chrome browser
148. Hover your cursor over this hyperlink: <https://Electrum.org/#download>
  - a. Right click “Open link in new tab”
149. Click the link associated with your computer
  - a. For Windows, click the “Windows Installer” link
  - b. For mac, click the “Executable for OS X” link
  - c. Hint: you will be installing version 4.3.2 or later of Electrum
150. When the file finishes downloading, click “Electrum...” in the bottom left corner of Google Chrome
151. Click the Install button
  - a. Hint: installation will begin after you click “Yes”
  - b. On “Choose Install Location” screen, leave everything as-is and click “Install”
  - c. Click “Close” when the text “Completed” appears above the green bar
152. Open Electrum
  - a. On Windows: Start > Electrum
  - b. On Mac: upper-right Spotlight, search “Electrum”, click Electrum icon
153. Enter a name for your wallet, for example “wagdaj02” where “wag” are the first three letters of your last name, “da” are the first two letters of your first name, “j” is the first letter of your middle name, and “02” is which number wallet you are creating

154. Click the Next button
  155. Click the button next to “Multi-signature wallet” then click the Next button
  156. Slide the “From X cosigners” up from 2 to 3
  157. Slide the “Require Y signatures” down from 3 to 2
  158. Click Next
  159. Select “Use a hardware device” then click Next
  160. Plug your black Ledger Nano S Plus into your computer
  161. Enter the black Nano PIN into the black Ledger Nano S Plus
  162. Push the right button until the Bitcoin screen appears
  163. There are two buttons on the black Ledger Nano S Plus, push both buttons to open the Bitcoin app
  164. “Bitcoin is ready”
    - a. Hint: screen says “Bitcoin is ready” when the Bitcoin app is running
  165. Switch back to computer
  166. Click “Electrum – Install” button
  167. Click the Next button
  168. Click the button next to “[Ledger Nano S Plus, initialized, hid]”
    - a. Click the Next button
  169. “native segwit multisig (p2wsh)”
    - a. Click the Next button
    - b. Hint: do not make any changes to the derivation path
  170. Click the Next button
  171. If Electrum says “Your Ledger is locked, please unlock it”, then:
    - a. Press both buttons on the black Ledger Nano S Plus
    - b. Enter the black Nano PIN into the black Ledger Nano S Plus
    - c. Hint: black Nano Ledger screen should read “Bitcoin is ready”
  172. Click Next
  173. Select “Cosign with hardware device” then click Next
  174. Plug your orange Ledger Nano S Plus into your computer
  175. Enter the orange Nano PIN into the orange Ledger Nano S Plus
  176. Push the right button until the Bitcoin screen appears
  177. There are two buttons on the orange Ledger Nano S Plus, push both buttons to open the Bitcoin app
  178. “Bitcoin is ready”
    - a. Hint: screen says “Bitcoin is ready” when the Bitcoin app is running
  179. Switch back to computer
  180. Click “Electrum – Install” button
  181. Click the Next button
  182. Click the button next to “[Ledger Nano S Plus, initialized, hid]”
    - a. Click the Next button
  183. “native segwit multisig (p2wsh)”
    - a. Click the Next button
    - b. Hint: do not make any changes to the derivation path
  184. Click the Next button
  185. If Electrum says “Your Ledger is locked, please unlock it”, then:
    - a. Press both buttons on the orange Ledger Nano S Plus
    - b. Enter the orange Nano PIN into the orange Ledger Nano S Plus
    - c. Hint: orange Nano Ledger screen should read “Bitcoin is ready”
  186. Click Next
  187. Select “Cosign with a master key”
  188. Toggle to email from processor 2 containing master key
    - a. Copy full text of master key
  189. Toggle back to Electrum
    - a. Paste into box
  190. Click the Next button
  191. If you would like, add a password to the Electrum Wallet
    - a. Hint: adding a password to Electrum Wallet is optional since an evil person cannot steal Bitcoin without successfully stealing 2 of 3 Ledgers and Ledger PIN numbers
    - b. If you want to use a password, enter the requested password in the “Password:” and “Confirm Password:” fields
    - c. Store password in an encrypted file
  192. Click Next
  193. Click No two times when prompted for other hardware devices
  194. Click File > Save backup
    - a. Select directory
    - b. Click “OK”
    - c. Hint: wallet backup is saved
- You are now seeing transactions in your 2 of 3 multi-sig wallet via Electrum.

# End of Your Procedure to enable purchasing bitcoin self custody.

## Buy Bitcoin on Coinbase

Hint: this subroutine works for the first time you purchase Bitcoin, as well as all subsequent purchases. This means you will not need ever again 2 of 3 Ledgers to complete buying Bitcoin. If you are a Bitcoin “buy and hold” person your hard setup work is over once initial buying capability is established as above.

Coinbase is the largest volume Bitcoin exchange in the world. Once you have completed your purchase at Coinbase immediately send your Bitcoin to the Electrum Wallet.

Bitcoin resides on the blockchain via your Electrum Wallet in cold storage. Cold storage is not connected to the internet and is a best practice.

The Electrum Wallet is like a cold storage trap; you can send Bitcoin to it with no Ledgers, but in order to sell Bitcoin, or transfer out Bitcoin, you will need 2 of 3 Ledgers.

Hint: to complete a Bitcoin purchase enter onto a piece of paper:

1. your Coinbase login email and password
2. Electrum Wallet name and password
3. your savings bank acct number with password
4. Caution: a best practice is to not leave your passwords open electronically on your screen while transacting in Bitcoin

195. Hint: prepare ahead of time by first reading below; then when you are ready to act, highlight each step on your digital copy of this routine so you do not lose your place.

196. Place cursor over this hyperlink:

<https://www.Coinbase.com/dashboard>

- a. Right-click “Open link”

- i. Verify your name appears beneath Home at the very top of the page; if so skip to next step “Buy&Sell”
- b. On Coinbase page
  - i. Enter your email then click “Continue”
  - ii. Enter your password then click “Continue”
- c. Check your phone for a text message from Coinbase
  - i. Enter the 6 digit number you received from Coinbase into the screen
  - ii. Click “Login”
- d. On the pop-up that says “Trust this device for 30 days?” click “Not Now”
- e. Confirm your phone and email for 2-step authentication if prompted
- f. Close any pop-ups, for example “Refer Friends”

## 197. “Buy&Sell”

- a. Click button “Buy&Sell”
- b. “Buy” set to Bitcoin
- c. “Pay With” set to your bank account
- d. Enter the amount of USD you would like to purchase Bitcoin with, for example \$500
- e. Click Preview Buy button
  - i. Hint: you will be charged a “taker” fee based on the size of your order, the amount and ranges can be found here: <https://help.Coinbase.com/en/exchange/trading-and-funding/exchange-fees>
- f. Click Buy Now button
- g. If you receive error message “Your purchase was declined due to a suspicious activity warning”
  - i. Call Coinbase Customer Service at 1-888-908-7930 and they will walk you through the steps
- h. If you receive error message “This account was recently unlinked”
  - i. Click “Relink now”
  - ii. Click Continue
  - iii. Where would you like Plaid to send your security code, select “text”
  - iv. Click Continue

- v. Enter the code you received by text message
- vi. Click OK
  - 1. Success: your account has been successfully reconnected
- vii. Click Continue
- viii. Click “Relink”

198. Error message “Your purchase failed” click retry

199. At Coinbase, click “My History” and collect all the data on the Coinbase transaction.

- a. Highlight Name, Total Balance, Price, and Performance.
- b. Hover over highlighted section, right click “print”
- c. Write date of transaction on print out.
- d. Set aside Coinbase transaction printed sheet for later use.

R109-Open Source Multisig Bitcoin routine.

## **Transfer Bitcoin from Coinbase to Electrum ASAP**

Start Transfer Subroutine

You will need:

- 1. Highlight this writeup from “Start transfer subroutine” through “end transfer subroutine,” and print for ease of use.
- 2. On an old school piece of paper, have handy your Log in and password from Coinbase, and Electrum, and your bank and routing number of savings account.
- 3. It is a best practice to have no sensitive data files like passwords but ok to have up electrum wallet and Coinbase up on your computer screen
- 4. Clear your desk.
- 5. Gather and have handy each printed sheet from Coinbase showing cost basis of Bitcoin and corresponding amount of Bitcoin purchased.

Hint: Coinbase and Electrum are intuitive. Steps, and prompts may change. Your goal is to send your Bitcoin to Electrum from Coinbase as soon as it is available to transfer, that is after clearing at Coinbase. Keep your goal in mind to help ensure success but navigate thru this subroutine.

Hint: If you find changes are needed to this routine, enter them onto a printed copy of the write-up, scan and send [jeff@loquate.tv](mailto:jeff@loquate.tv). No one is responsible for this write up but peer to peer keeps it current.

200. Open Electrum

- a. Show the desktop
- b. Click on Electrum app
- c. Enter your Electrum password
- d. Next
- e. You will not need your ledgers.
  - i. Hint: only later will 2 of 3 ledgers be required to get Bitcoin out of Electrum.

201. Click “X” out of “Insert your Ledger” pop up each time one appears.

- a. Hint: 2 x

202. Verify the bottom left corner of Electrum reads BTC

- a. If not Click Tools > Preferences in Electrum
- b. Select “BTC” from the dropdown menu labeled “Base unit:”
  - i. Hint: BTC means full Bitcoin, compared to mBTC (1 / 1,000 of a Bitcoin) or sats (1 / 100,000,000 of a Bitcoin)
  - ii. Hint: this routine assumes full Bitcoin
    - 1. Click Close
  - iii. Hint: You should only need to complete this once as Electrum will remember your preference

### **Send Receive Subroutine start**

203. At Electrum, click receive button

- a. Enter BTC amount of 1<sup>st</sup> transfer using 1st printed sheet
- b. In note section above enter for example 2024-0115 date of purchase, .23059588 BTC, 9853.19 subtotal, 10000 cost basis
- c. Create request
  - i. Hint: your clipboard will have a code added to it
  - ii. Hint: place your cursor in notepad, and paste to verify receipt of code

204. Enter Coinbase.com into google: url

- a. Sign in if not already signed in.
- b. Transfer
  - i. If this is your last transfer or if you have no more transfers to make

after this transfer, you must choose Max

ii. Repeat **Send Receive Subroutine start**

1. You must enter Max BTC amount in electrum wallet

a. Change note from subtotal amount to haircut amount; the haircut amount is the extra fees you are being charged of which your previously were not aware; this means in your personal records adjust the BTC amount to Max amount.

- c. Does top row beneath send read BTC?
- a. Click double up down arrow until you see BTC in top row beneath send button
- d. Enter BTC amount from printed sheet
- i. Prove
- ii. Hint: if BTC amount from printed sheet is greater than the BTC amount available, your transaction will not go thru, if so
- iii. Repeat as above **Send Receive Subroutine start, except choose Max at Coinbase found to the right of Transfer**
- e. to
- b. Click “to” pointy arrow on right
- c. Paste code
- d. Back arrow
- e. Preview
- f. Send
- g. Click double up down arrow until you see BTC in top row beneath send button
- h. Paste code
- i. Preview code
- j. Send now
- k. From mobile device enter number at Coinbase
- l. send

205. Repeat process **Send Receive Subroutine start**

206. When last transfer has been completed

**Send Receive Subroutine end**

207. After transaction is complete, record transaction in B610 excel spread sheet.

- a. First use, download excel from second download position or Open Source Multi Sig routine.
- i. Hint: keep the original file to use as a template for calculating cost basis.
- ii.
- b. “Save as” select a personal location on your computer to store your cost basis of Bitcoin.
- i. You will only be accountable for the Bitcoin you actually received net of fees as follows.

208. In latest excel B610 file Page A enter

- a. “Electrum Wallet lower left total BTC amount =” into cell J6
- b. “Electrum prev balance =” into cell J7
- c. Copy cell J8 and paste special formulas as value into next row Column H corresponding to this latest transaction
- d. Go to <https://finance.yahoo.com/quote/BTC-USD/>
- e. Copy BTC usd price
- f. Paste into google search bar
- g. Copy price shown
- h. Enter into cell B10 BTC usd mkt px
- i. Enter mkt px date into cell B8
- j. Copy H10 and paste special formulas as value into C10.
- k. Gain/(loss) over cost is shown in cell E10

209. For cost basis of accounting follow Page B

Last In First Out; a simpler accounting method is First In First Out.

- a. Print Page A of excel B610
- b. Staple all Coinbase paper work together by transaction with B610 on top.
- i. Caution: no pwds in folder
- c. When you sell Bitcoin give records to your accountant.

**End of Transfer Subroutine**

# Appendix for Transactions:

## Hold Bitcoin in Cold Storage

210. Done. It's in your Electrum Wallet.

## Sell Bitcoin for US Dollars

### Send Bitcoin from Electrum to Coinbase – all Ledgers are in different locations

#### Processor 1 creates and partially signs transaction

211. Open Google Chrome
212. Hover your mouse over this hyperlink:  
<https://www.Coinbase.com/signin>
  - a. Right-click “Open link in new tab”
213. Enter your email address and password
214. Check your smartphone for a text message from Coinbase
215. Enter the code from the text message into the field on Coinbase then click the Verify button
216. Click the Send / Receive button
217. Click the Receive tab
218. Click the “Asset” text and select Bitcoin
219. Click the small dark grey boxes to copy the address
220. If Electrum is open, close it
221. Connect your orange Ledger to the computer
222. Enter the orange Nano PIN into the orange Ledger
223. Push the right button until you arrive at the Bitcoin app
224. There are two buttons on the orange Ledger, push both buttons to open the Bitcoin app
  - a. Hint: screen will read “Bitcoin is ready” when the Bitcoin app is running
225. Re-open Electrum
  - a. Hint: Must close and re-open wallet to clear cache of previously-used devices
226. Enter Password then click Next
227. Click “No” two times
  - a. Hint: these prompts are for the other two Ledgers associated with this wallet, clicking “No” does not harm this process
228. Click the “Send” tab
229. Paste the address from Coinbase into the “Pay to” field

230. Enter a description of the transaction, for example “Send 1 Bitcoin to Coinbase for sale per request on 2022-0606”
231. Enter the amount of Bitcoin to be sent to Coinbase in the “Amount” field
232. Click “Pay...”
233. Prove
  - a. Confirm the amount of Bitcoin to be sent matches what you expect
234. Click “Send”
235. Pick up orange Ledger
236. Push the right button three times on the orange Ledger to see “Approve”
  - a. Hint: Ledger device is warning that this transaction is unusual, but nothing is wrong
237. Push both buttons on the orange Ledger to approve
238. Push right button once on orange Ledger
239. Prove: confirm that the amount of Bitcoin displayed on the Ledger screen matches what you typed into the Electrum screen
  - a. After proven, push right button once on orange Ledger
240. Prove: confirm the address displayed on the screen matches what is shown on Coinbase site
  - a. After proven, push right button twice on orange Ledger
241. Push both buttons on orange Ledger to accept
242. Push right button five times on orange Ledger
  - a. Hint: this screen displays the full Extended Public Key, shortened “XPub”, for this transaction
243. Push both buttons on orange Ledger to accept
244. Push right button two times on orange Ledger
  - a. Hint: this screen shows the fees in Bitcoin associated with this transaction
245. Push both buttons on orange Ledger to “Accept and send”
246. Toggle back to Electrum on your computer
247. Click “No” twice
  - a. Hint: Electrum expects one of the other Ledgers to sign this transaction, but we need the Processor to complete this from the Processor’s computer
248. Click the “Export” button in the bottom left corner
249. Select “For hardware device; include xpubs” > “Export to file”
250. Save the file with the exact name created by Electrum to your desktop

- a. Hint: should be wallet-ID, for example wagdaj02-1234abcd.psbt
- 251. Click “OK”
- (If you are using outside processors follow steps below or if not, do them yourself.)**
- 252. Open email
- 253. Compose new message
- 254. Attach the saved file, for example wagdaj02-1234abcd.psbt
- 255. Attach the wallet file associated with this transaction, for example wagdaj02
  - a. Hint: wallet files can be found at C:\Users\\AppData\Roaming\Electrum\wallets\wagdaj02
- 256. Subject: Transaction
- 257. Send email to Processor

### **Processor 2 second signature on transaction**

- 258. Processor 2 receives email and downloads files to desktop
  - a. Hint: two files, wagdaj02-1234abcd.psbt (the transaction) and wagdaj02 (the wallet, has no file extension)
- 259. If Electrum is open, close it
- 260. Connect your blue Ledger to the computer
- 261. Enter the blue Nano PIN into the blue Ledger
- 262. Push the right button until you arrive at the Bitcoin app
- 263. There are two buttons on the blue Ledger, push both buttons to open the Bitcoin app
  - a. Hint: screen will read “Bitcoin is ready” when the Bitcoin app is running
- 264. Re-open Electrum
  - a. Hint: Must close and re-open Electrum to clear cache of previously used devices
- 265. Click “Choose...” button
- 266. Select the downloaded file, for example wagdaj02, then click OK
- 267. Call processor 1 for password, before hanging up get the amount of Bitcoin to be sent for proof
- 268. Enter Password then click Next
- 269. Click “No” twice
  - a. Hint: Electrum expects the other Ledgers to be connected but you will only need the blue Ledger
- 270. Tools > Load Transaction > From File
- 271. Select downloaded file, for example wagdaj02-1234abcd.psbt, then click OK
- 272. Click “Sign”

- 273. Pick up blue Ledger
- 274. Push the right button three times on the blue Ledger to see “Approve”
  - a. Hint: Ledger device is warning that this transaction is unusual, but nothing is wrong
- 275. Push both buttons on the blue Ledger to approve
- 276. Push right button once on blue Ledger
- 277. Prove: confirm that the amount of Bitcoin displayed on the screen matches what Processor 1 told you
  - a. After proven, push right button once on orange Ledger
- 278. Prove: confirm the address displayed on the screen matches what is shown on Coinbase site
  - a. After proven, push right button twice on orange Ledger
- 279. Push both buttons on blue Ledger to accept
- 280. Push right button five times on blue Ledger
  - a. Hint: this screen displays the full Extended Public Key, shortened “XPub”, for this transaction
- 281. Push both buttons on blue Ledger to accept
- 282. Push right button two times on blue Ledger
  - a. Hint: this screen shows the fees in Bitcoin associated with this transaction
- 283. Push both buttons on blue Ledger to “Accept and send”
- 284. Toggle back to Electrum on your computer
- 285. Click “Broadcast”
- 286. Click “OK” on screen that says “Payment Sent”
- 287. The Bitcoin has been sent to your Coinbase account.
  - a. Hint: it may take up to a half hour to appear in Coinbase while the Bitcoin network processes the transaction
  - b. Hint: this transaction took less than five minutes during the writing of this routine

## **Appendix B**

### **You lose black Ledger**

Your Ledger = black  
 Your Ledger = orange on loan to processor 1  
 Processor 2 Ledger = blue owned by processor 2

Warning: assume an evil person has access to the black Ledger

Warning: assume this evil person also has the PIN code to the black Ledger

Hint: Bitcoin is still safe since evil person does not have access to 2 of 3 Multisig wallet in Electrum

Hint: Even if evil person were to gain access to 2 of 3 Multisig wallet in Electrum, Bitcoin is still safe because evil person must have 2 Ledgers to send Bitcoin.

288. You purchase new black Ledger

289. You receive new black Ledger

290. Follow the steps in “Buy a New Black Ledger and Recreate the Old Black Ledger” for the new black Ledger

291. You, processor 1, and processor 2 meet with Ledgers

- a. Hint: processor 1 still has the original orange Ledger and processor still has the original blue Ledger

292. Create a new 2 of 3 Multisig wallet in Electrum following the steps in “Create a Multisignature (“Multisig”) 2 of 3 Wallet with Electrum – Ledgers separate”

- a. Hint: use your new black Ledger, processor 1 original orange Ledger, and processor 2 original blue Ledger to create a new 2 of 3 Multisig Electrum Wallet

293. Follow the steps in “Send Bitcoin from Your Multisig Wallet to Coinbase through Electrum”, using an address from the new 2 of 3 Multisig wallet in Electrum instead of the Coinbase address, to send all Bitcoin from the old 2 of 3 Multisig wallet to the new 2 of 3 Multisig wallet

- a. Hint: 2 of 3 Multisig wallet in Electrum allows processor 1’s original orange Ledger and processor 2’s original blue Ledger to be used together to send Bitcoin

## Processor 1 loses orange Ledger

Your Ledger = black

Your Ledger = orange on loan to processor 1

Processor 2 Ledger = blue owned by processor 2

Warning: assume an evil person has access to the orange Ledger

Warning: assume this evil person also has the PIN code to the orange Ledger

Hint: Bitcoin is still safe since evil person does not have access to 2 of 3 Multisig wallet in Electrum

Hint: Even if evil person were to gain access to 2 of 3 Multisig wallet in Electrum, Bitcoin is still safe because evil person must have 2 Ledgers to send Bitcoin.

294. Processor 1 purchases new orange Ledger

295. Processor 1 receives new orange Ledger

296. Follow the steps in “Buy a New Orange Ledger and Recreate the Old Orange Ledger” for the new orange Ledger

297. You, processor 1, and processor 2 meet with Ledgers

- a. Hint: you still have original black Ledger and processor 1 still has original blue Ledger of yours on loan to the processor.

298. Create a new 2 of 3 Multisig wallet in Electrum following the steps in “Create a Multisignature (“Multisig”) 2 of 3 Wallet with Electrum – Ledgers separate”

- a. Hint: use your original black Ledger, processor 1’s new orange Ledger, and processor 2’s original blue Ledger to create a new 2 of 3 Multisig Electrum Wallet

299. Follow the steps in “Send Bitcoin from Your Multisig Wallet to Coinbase through Electrum”, using an address from the new Electrum Wallet instead of the Coinbase address, to send all Bitcoin from the old Electrum Wallet to the new Electrum Wallet

- a. Hint: 2 of 3 Multisig wallet in Electrum allows original your black Ledger and processor 1’s original blue Ledger to be used together to send Bitcoin

## Recovery – Processor 2 loses blue Ledger

Your Ledger = black

Your Ledger = orange on loan to processor 1

Processor 2 Ledger = blue owned by processor 2

Warning: assume an evil person has access to the blue Ledger

Warning: assume this evil person also has the PIN code to the blue Ledger

Hint: Bitcoin is still safe since evil person does not have access to 2 of 3 Multisig wallet in Electrum

Hint: Even if evil person were to gain access to 2 of 3 Multisig wallet in Electrum, Bitcoin is still safe because evil person must have 2 Ledgers to send Bitcoin.

- 300. Processor 2 purchases blue Ledger
- 301. Processor 2 receives new blue Ledger
- 302. Follow the steps in “Set Up Ledger Nano S Plus devices” for the new blue Ledger

Warning: the processor 2’s original blue Ledger was used to create every Electrum Wallet, so the following steps must be taken for every Electrum Wallet managed by processor 2.

- 303. You, processor 1, and processor 2 meet with Ledgers
  - a. Hint: you still have original black Ledger and processor 1 still has original orange Ledger
- 304. Create a new 2 of 3 Multisig wallet in Electrum following the steps in “Create a Multisignature (“Multisig”) 2 of 3 Wallet with Electrum – Ledgers separate”
  - a. Hint: use your original black Ledger, processor 1’s original orange Ledger, and processor 2’s new blue Ledger to create a new 2 of 3 Multisig wallet in Electrum
- 305. Follow the steps in “Send Bitcoin from Your Multisig Wallet to Coinbase through Electrum”, using an address from the new Electrum Wallet instead of the Coinbase address, to send all Bitcoin from the old Electrum Wallet to the new Electrum Wallet
  - a. Hint: 2 of 3 Multisig wallet in Electrum allows your original black Ledger and processor 1’s original orange Ledger to be used together to send Bitcoin
- 306. Repeat these steps for every Electrum Wallet created with the old blue Ledger
- 307. After all Electrum Wallets are recreated, processor destroys all “My 24-word recovery phrase” cards for old blue Ledger
  - a. Hint: this is an extra safety precaution

### **Recovery – You lose black Ledger and Processor 1 loses orange Ledger**

Your Ledger = black  
 Your Ledger = orange on loan to processor 1  
 Processor 2 Ledger = blue owned by processor 2

Warning: assume an evil person has access to both the black Ledger and the orange Ledger

Warning: assume this evil person also has the PIN codes to both the black Ledger and the orange Ledger  
 Hint: Bitcoin is still safe since evil person does not have access to Electrum

- 308. Processor 1 purchases orange Ledger and you purchase black Ledger
- 309. Processor 1 receives new orange Ledger and you receive new black Ledger
- 310. You follow the steps in “Set Up Ledger Nano S Plus devices” for the new black Ledger
- 311. Processor 1 recreates old orange Ledger with new orange Ledger by following the “Recreate old (lost) Ledger” steps
- 312. Create a new Electrum Wallet following the steps in “Create a Multisignature (“Multisig”) 2 of 3 Wallet with Electrum – Ledgers separate”
  - a. Hint: use your new black Ledger, processor 1’s recreated orange Ledger, and processor 2’s original blue Ledger to create a new 2 of 3 Multisig wallet in Electrum
- 313. Follow the steps in “Send Bitcoin from Your Multisig Wallet to Coinbase through Electrum”, using an address from the new Electrum Wallet instead of the Coinbase address, to send all Bitcoin from the old Electrum Wallet to the new Electrum Wallet
  - a. Hint: 2 of 3 Multisig wallet in Electrum allows processor 1’s recreated original orange Ledger and processor’s original blue Ledger to be used together to send Bitcoin
- 314. You destroy all “My 24-word recovery phrase” cards for old black Ledger
  - a. Hint: this is an extra safety precaution

### **Recovery – You lose black Ledger and Processor 2 loses blue Ledger**

Your Ledger = black  
 Your Ledger = orange on loan to processor 1  
 Processor 2 Ledger = blue owned by processor 2

Warning: assume an evil person has access to both the black Ledger and the blue Ledger  
 Warning: assume this evil person also has the PIN codes to both the black Ledger and the blue Ledger  
 Hint: Bitcoin is still safe since evil person does not have access to Electrum

- 315. Processor 2 purchases two blue Ledgers and you purchase one black Ledger
- 316. Processor 2 receives two new blue Ledgers and you receive one new black Ledger
- 317. You follow the steps in “Set Up Ledger Nano S Plus devices” for the new black Ledger
- 318. Processor 2 recreates old blue Ledger with new blue Ledger by following the “Recreate old (lost) Ledger” steps
- 319. Processor 2 follows the steps in “Set Up Ledger Nano S Plus devices” for the second new blue Ledger
  - a. Hint: will use recreated blue Ledger to access old 2 of 3 Multisig wallets and new blue Ledger to create new 2 of 3 Multisig wallets

Warning: processor 2’s original blue Ledger was used to create every Electrum Wallet, so the following steps must be taken for every Electrum Wallet managed by processor 2.

- 320. Create a new 2 of 3 Multisig wallet in Electrum following the steps in “Create a Multisignature (“Multisig”) 2 of 3 Wallet with Electrum – Ledgers separate”
  - a. Hint: use your new black Ledger, processor 1’s original orange Ledger, and processor 2’s new blue Ledger to create a new 2 of 3 Multisig wallet in Electrum
- 321. Follow the steps in “Send Bitcoin from Your Multisig Wallet to Coinbase through Electrum”, using an address from the new 2 of 3 Multisig wallet instead of the Coinbase address, to send all Bitcoin from the old 2 of 3 Multisig wallet to the new 2 of 3 Multisig wallet
  - a. Hint: 2 of 3 Multisig wallet in Electrum allows processor 1’s original orange Ledger and processor 2’s recreated blue Ledger to be used together to send Bitcoin

## Recovery – Processor 1 loses orange Ledger and Processor 2 loses blue Ledger

Your Ledger = black

Your Ledger = orange on loan to processor 1

Processor 2 Ledger = blue owned by processor 2

Warning: assume an evil person has access to both the blue Ledger and the orange Ledger

Warning: assume this evil person also has the PIN codes to both the blue Ledger and the orange Ledger

Hint: Bitcoin is still safe since evil person does not have access to Electrum

- 322. Processor 2 purchases two blue Ledgers and processor 1 purchases one orange Ledger
- 323. Processor 2 receives two new blue Ledgers and processor 1 receives one new orange Ledger
- 324. Processor 1 follows the steps in “Set Up Ledger Nano S Plus devices” for the new orange Ledger
- 325. Processor 2 recreates old blue Ledger with new blue Ledger by following the “Recreate old (lost) Ledger” steps
- 326. Processor 2 follows the steps in “Set Up Ledger Nano S Plus devices” for the second new blue Ledger
  - a. Hint: will use recreated blue Ledger to access old 2 of 3 Multisig wallets and new blue Ledger to create new 2 of 3 Multisig wallets

Warning: Processor 2’s original blue Ledger was used to create every 2 of 3 Multisig wallet in Electrum, so the following steps must be taken for every 2 of 3 Multisig wallet managed by processor 2.

- 327. You, processor 1, and processor 2 meet with Ledgers
  - a. Hint: processor 2 has recreated old blue Ledger
  - b. Hint: processor 2 has new blue Ledger
  - c. Hint: processor 1 has new orange Ledger
  - d. Hint: you have original black Ledger
- 328. Create a new Electrum Wallet following the steps in “Create a Multisignature (“Multisig”) 2 of 3 Wallet with Electrum – Ledgers separate”
  - a. Hint: use your original black Ledger, processor 1’s recreated orange Ledger, and processor 2’s new blue Ledger to create a new 2 of 3 Multisig Electrum Wallet
- 329. Follow the steps in “Send Bitcoin from Your Multisig Wallet to Coinbase through Electrum”, using an address from the new Electrum Wallet instead of the Coinbase address, to send all Bitcoin from the old Electrum Wallet to the new Electrum Wallet

- a. Hint: 2 of 3 Multisig wallet in Electrum allows your original black Ledger and processor 2's recreated blue Ledger to be used together to send Bitcoin

## **Recovery – Processor 1 loses orange Ledger, Processor 2 loses blue Ledger, and you lose black ledger**

Your Ledger = black

Your Ledger = orange on loan to processor 1

Processor 2 Ledger = blue owned by processor 2

- 330. Processor 1 purchases one orange Ledger, processor 2 purchases two blue Ledgers, and you purchase one black Ledger
- 331. Processor 1 receives one new orange Ledgers, processor 2 receives two new orange Ledgers, and you receive one new black Ledger
- 332. You follow the steps in “Set Up Ledger Nano S Plus devices” for the new black Ledger
- 333. Processor 2 recreates original blue Ledger with new blue Ledger by following the “Recreate old (lost) Ledger” steps
- 334. Processor 1 recreates original orange Ledger with new orange Ledger by following the “Recreate old (lost) Ledger” steps
- 335. Processor 2 follows the steps in “Set Up Ledger Nano S Plus devices” for the second new blue Ledger
  - a. Hint: will use recreated blue Ledger to access old Electrum Wallets and new blue Ledger to create new Electrum Wallets

Warning: the processor 2's old blue Ledger was used to create every Electrum Wallet, so the following steps must be taken for every Electrum Wallet managed by processor 1.

- 336. Create a new Electrum Wallet following the steps in “Create a Multisignature (“Multisig”) Wallet with Electrum”
  - a. Hint: use your new black Ledger, processor 1's recreated orange Ledger, and processor 2's new blue Ledger to create a new 2 of 3 Multisig wallet in Electrum
- 337. Follow the steps in “Send Bitcoin from Your Multisig Wallet to Coinbase through Electrum”,

using an address from the new Electrum Wallet instead of the Coinbase address, to send all Bitcoin from the old Electrum Wallet to the new Electrum Wallet

- a. Hint: 2 of 3 Multisig wallet in Electrum allows processor 1's recreated orange Ledger and processor 2's recreated blue Ledger to be used together to send Bitcoin

## **Buy a New Black Ledger and Recreate the Old Black Ledger**

Hint: requires the “My 24-word recovery phrase” card from the original Ledger

Hint: following these steps on a new Ledger will recover the private key associated

- 338. Hover your mouse over this hyperlink: <https://shop.ledger.com/products/ledger-nano-s-plus>
  - a. Right-click “Open link in new tab”
- 339. Click the black tile to select the “Matte Black” Nano S Plus
- 340. Click the Add to Cart button
- 341. Click the black Checkout button
- 342. Enter your email address and shipping address
- 343. Click the black Continue button
- 344. Click the black Continue button
  - a. Hint: there is only one Shipping option available
- 345. Enter your credit card information
- 346. Click the black Complete Order button

Hint: you have now ordered a new black Ledger Nano S, you will use your 24-word recovery phrase from the old black Ledger to recreate the old black Ledger using this newly-purchased black Ledger when it arrives.

Resume this subroutine when you receive the black Ledger Nano S Plus device in the mail.

- 347. Remove black Ledger Nano S Plus device from package
- 348. Remove the envelope labeled “Hello” from the package

349. Open the envelope and set all three “Confidential My 24-word recovery phase” cards to the side
  - a. Hint: you will not need these new cards and they can be thrown out since you already have your old cards containing the 24-word recovery phrase
350. Remove the USB cable from the package
351. Flip open the black Ledger Nano S Plus to expose the USB port and connect the USB cable
352. Connect the other end of the USB cable to your computer
  - a. Hint: the screen on the black Ledger Nano S Plus will light up when connected
353. Press the right button 5 times until “Restore from recovery phrase” is on the screen
354. Push both buttons at the same time
355. The screen will now say “Choose PIN”
356. Push both button at the same time again
357. You will now enter a PIN of your choosing
  - a. Hint: this PIN must be between 4 and 8 digits long
  - b. Hint: do not use an obvious combination that an attacker could find like your birthday or the last four digits of your phone number
358. Use the right button to increment the number and the left button to decrement the
359. When you have incremented / decremented to the first number you want for your PIN, push both buttons to move on to the second number
  - a. Repeat until you have entered at least four numbers
360. Once you have at least four numbers, a check mark will appear in the number space, if you are finished with your PIN push both buttons with the check mark to signal that you have completed entering your PIN or keep incrementing / decrementing until you reach 8 digits
361. Re-enter the PIN to confirm
362. Push both buttons at the same time on the screen that says “Enter your recovery phrase”
363. Push both buttons at the same time on “24 words”
364. Use the left – right buttons to enter in the first word letter-by-letter, pushing both buttons at the same time to confirm a letter and move on to the next
  - a. Hint: Ledger screen will eventually suggest a word, if the suggested word

matches your word then press both buttons to select it

365. Push both buttons to confirm the word
366. Repeat for the next 23 words
367. Once the final word is entered, screen will read “Your device is ready”
368. The private key of the old black Ledger has been restored and this new black Ledger can now be used to access your Electrum Wallet

## Buy a New Orange Ledger and Recreate the Old Orange Ledger

Hint: requires the “My 24-word recovery phrase” card from the original Ledger

Hint: following these steps on a new Ledger will recover the private key associated

369. Hover your mouse over this hyperlink: <https://shop.ledger.com/products/ledger-nano-s-plus>
  - a. Right-click “Open link in new tab”
370. Click the black tile to select the “BTC Orange” Nano S Plus
371. Click the Add to Cart button
372. Click the black Checkout button
373. Enter your email address and shipping address
374. Click the black Continue button
375. Click the black Continue button
  - a. Hint: there is only one Shipping option available
376. Enter your credit card information
377. Click the black Complete Order button

Hint: you have now ordered a new orange Ledger Nano S, you will use your 24-word recovery phrase from the old black Ledger to recreate the old orange Ledger using this newly-purchased blue Ledger when it arrives.

Resume this subroutine when you receive the orange Ledger Nano S Plus device in the mail.

378. Remove orange Ledger Nano S Plus device from package
379. Remove the envelope labeled “Hello” from the package
380. Open the envelope and set all three “Confidential My 24-word recovery phase” cards to the side

- a. Hint: you will not need these new cards and they can be thrown out since you already have your old cards containing the 24-word recovery phrase
- 381. Remove the USB cable from the package
- 382. Flip open the orange Ledger Nano S Plus to expose the USB port and connect the USB cable
- 383. Connect the other end of the USB cable to your computer
  - a. Hint: the screen on the orange Ledger Nano S Plus will light up when connected
- 384. Press the right button 5 times until “Restore from recovery phrase” is on the screen
- 385. Push both buttons at the same time
- 386. The screen will now say “Choose PIN”
- 387. Push both button at the same time again
- 388. You will now enter a PIN of your choosing
  - a. Hint: this PIN must be between 4 and 8 digits long
  - b. Hint: do not use an obvious combination that an attacker could find like your birthday or the last four digits of your phone number
- 389. Use the right button to increment the number and the left button to decrement the
- 390. When you have incremented / decremented to the first number you want for your PIN, push both buttons to move on to the second number
  - a. Repeat until you have entered at least four numbers
- 391. Once you have at least four numbers, a check mark will appear in the number space, if you are finished with your PIN push both buttons with the check mark to signal that you have completed entering your PIN or keep incrementing / decrementing until you reach 8 digits
- 392. Re-enter the PIN to confirm
- 393. Push both buttons at the same time on the screen that says “Enter your recovery phrase”
- 394. Push both buttons at the same time on “24 words”
- 395. Use the left – right buttons to enter in the first word letter-by-letter, pushing both buttons at the same time to confirm a letter and move on to the next
  - a. Hint: Ledger screen will eventually suggest a word, if the suggested word matches your word then press both buttons to select it
- 396. Push both buttons to confirm the word
- 397. Repeat for the next 23 words

- 398. Once the final word is entered, screen will read “Your device is ready”
- 399. The private key of the old orange Ledger has been restored and this new orange Ledger can now be used to access your Electrum Wallet

## **Buy a New Blue Ledger and Recreate the Old Blue Ledger**

Hint: requires the “My 24-word recovery phrase” card from the original Ledger

Hint: following these steps on a new Ledger will recover the private key associated

- 400. Hover your mouse over this hyperlink: <https://shop.ledger.com/products/ledger-nano-s-plus>
  - a. Right-click “Open link in new tab”
- 401. Click the black tile to select the “Deepsea Blue” Nano S Plus
- 402. Click the Add to Cart button
- 403. Click the black Checkout button
- 404. Enter your email address and shipping address
- 405. Click the black Continue button
- 406. Click the black Continue button
  - a. Hint: there is only one Shipping option available
- 407. Enter your credit card information
- 408. Click the black Complete Order button

Hint: you have now ordered a new blue Ledger Nano S, you will use your 24-word recovery phrase from the old black Ledger to recreate the old blue Ledger using this newly-purchased blue Ledger when it arrives.

Resume this subroutine when you receive the blue Ledger Nano S Plus device in the mail.

- 409. Remove blue Ledger Nano S Plus device from package
- 410. Remove the envelope labeled “Hello” from the package
- 411. Open the envelope and set all three “Confidential My 24-word recovery phase” cards to the side
  - a. Hint: you will not need these new cards and they can be thrown out since you already have your old cards containing the 24-word recovery phrase

412. Remove the USB cable from the package
413. Flip open the blue Ledger Nano S Plus to expose the USB port and connect the USB cable
414. Connect the other end of the USB cable to your computer
  - a. Hint: the screen on the blue Ledger Nano S Plus will light up when connected
415. Press the right button 5 times until “Restore from recovery phrase” is on the screen
416. Push both buttons at the same time
417. The screen will now say “Choose PIN”
418. Push both button at the same time again
419. You will now enter a PIN of your choosing
  - a. Hint: this PIN must be between 4 and 8 digits long
  - b. Hint: do not use an obvious combination that an attacker could find like your birthday or the last four digits of your phone number
420. Use the right button to increment the number and the left button to decrement the
421. When you have incremented / decremented to the first number you want for your PIN, push both buttons to move on to the second number
  - a. Repeat until you have entered at least four numbers
422. Once you have at least four numbers, a check mark will appear in the number space, if you are finished with your PIN push both buttons with the check mark to signal that you have completed entering your PIN or keep incrementing / decrementing until you reach 8 digits
423. Re-enter the PIN to confirm
424. Push both buttons at the same time on the screen that says “Enter your recovery phrase”
425. Push both buttons at the same time on “24 words”
426. Use the left – right buttons to enter in the first word letter-by-letter, pushing both buttons at the same time to confirm a letter and move on to the next
  - a. Hint: Ledger screen will eventually suggest a word, if the suggested word matches your word then press both buttons to select it
427. Push both buttons to confirm the word
428. Repeat for the next 23 words
429. Once the final word is entered, screen will read “Your device is ready”

430. The private key of the old blue Ledger has been restored and this new blue Ledger can now be used to access your Electrum Wallet.

#### Appendix C

Transfer large (>\$2000) cash to Coinbase

488. google: Coinbase procedure for cash transfers to and from bank account

#### “Depositing via Fedwire

To verify your bank account, we recommend you make an initial deposit of at least \$50 to your Exchange USD wallet.”

489. Follow Coinbase instructions. Coinbase instructions to rule.

a. Hint: Depositing via Fedwire

To verify your bank account, we recommend you make an initial deposit of at least \$50 to your Exchange USD wallet.

b. Hint: confirm with your bank president or branch manager that they have no size limits for example from a dedicated savings acct for Depositing via Fedwire.

c. Hint: since it is your money in your account, you should be able to do anything you want with your money.

End