Rough Steps I used to "recover" my Sharp Aquos S2 4GB/64GB

1. Create account with GSMSERVER and buy 20 ntool credits. only 10 are used but 20 is the min you can buy. Either that, or go halves on 20 credits with another Ozbargainer.
2. Pay with PayPal (Use a card with no currency conversion fees!)
3. Download ntool (scroll to the bottom, click "Get the latest Tool").
4. Open (install) - you'll probably get a virus threat when opening/installing from windows defender. I allowed it.
5. Username and password took about 18 hours to arrive in my inbox from "GsmServer". Open ntool. In "Settings" tab, type Username and Password from the GsmServer email. Clicking "INFORMATION" will show you your credit (should be 20/0. Will show 10/10 after used)
   a. When attempting to check username/password (in ntool), if you get "unspecified server error [0x2746]", it means too many wrong attempts with username/password. try again in 1 hour with correct username/password. (see here: http://forum.gsmhosting.com/vbb/f473/setool-unspecified-server-error-0x2746-1900523/)
   b. Tried again on 14 Sep around 11am SYD time. Took about 1 hour to receive.
6. On Sharp Aquos S2, go to "About Phone" in Settings. Tap ~7 times on "build number" to enable developer settings
7. Press back. Go to developer settings and enable USB debugging.
8. In ntool, enter details into HMD Smartphones tab for IMEI1 and S/N. Look on the back of your Sharp Aquos S2, the box, or open phone dialer and dial *#06# for IMEI, and this app for S/N, or Serial Number. It may be easier to download from here, given you probably have no Play Store.
9. Ensure the username and password you received via email is entered into USERNAME and PASSWORD in "Settings" tab.
10. Click "BOOT UNLOCK" - a file will be generated - this is your "unlock" file which you will be using in next steps below.
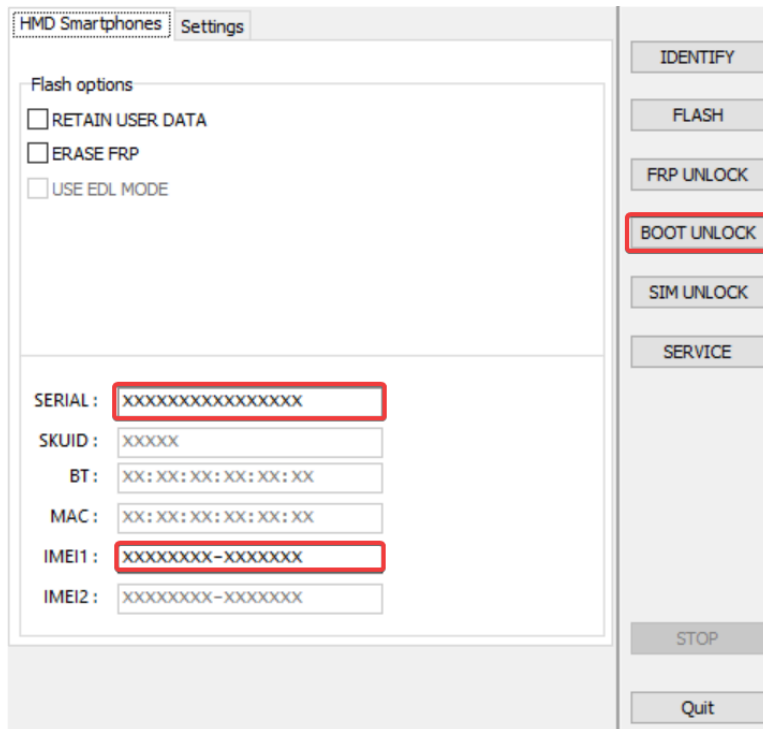
11. Install OST portable - can test that adb is working by following russian guide (devices.cmd)
12. Reboot into download mode (either from ADB using command, or by pressing volume down + power from off state with phone plugged in to PC)
13. Open cmd.exe from Run menu (or windows button + R   ), and use "cd" command to change to folder where OST Portable/SUT has been exported to, e.g. "C:\Users\illumination\Downloads\Aquos S2\OST Portable\SUT". So the command will look like "cd C:\Users\Wayne\Downloads\Aquos S2\OST Portable\SUT"
14. With phone connected in Download Mode, type "adb devices" or "fastboot devices" in CMD with CMD in the relevant folder where OST Portable\SUT has been extracted to. Your device's serial number should appear from "fastboot devices" command. If no issues here, skip past "No device appears…" section below (just past the horizontal line)

No device appears when running command "fastboot devices"/"adb devices"?

1. If your device is not listed, install this:
   https://androidfilehost.com/?fid=385035244224393810
2. extract. run setup. open it. then "INSTALL DRIVERS". Failed..? I'm stuck
3. ok. download this instead (latest_usb_driver_windows.zip) -
   https://developer.android.com/studio/run/win-usb
4. extract. open android_winusb.inf in Notepad and add these lines under the "Google.NTamd64" section

;Sharp S2

%SingleAdbInterface% = USB_Install, USB\VID_0489&PID_C009
%CompositeAdbInterface% = USB_Install, USB\VID_0489&PID_C009&MI_01

5. go to device manager. right-click on your android devices. might be under "other devices" or "portable devices"
6. Right-click on the Android device and update drivers
7. Select location on your computer and select where the driver was extracted by you above
8. Failed? Not working? Hash check failure? You probably need to do this: https://www.technipages.com/enable-disable-device-driver-signing (turn off device driver signing)
9. Also not working? Error: "The value is protected by secure boot policy"? Ok, follow the instructions in this Youtube video: https://www.youtube.com/watch?v=S0sY0DWtRNw
   a. You may need to look for your specific manufacturer's instructions. For example, mine is an Acer and needed me to set a supervisor password before I could disable secure boot.
10. Go and repeat. Still can't turn off device driver signing? My next error was "The boot configuration data store could not be opened". You might ght need to run CMD with
11. admin rights. Admin rights didn't work for me. This did though:
12. https://www.dinolite.us/support/using-older-models-with-windows-8-10
13. Follow the link above, only then will the drivers install. Make sure you press ok to the big red warning that asks you to confirm if you wish to install, because "Windows can't verify the validity"
14.
15. ────────────
16.
17. The .bin file that was generated into ntool\Backup, make a copy and rename it
18. "unlockkey.bin". Paste this file into the SUT folder of OST Portable.
19. Now type command "fastboot flash unlock unlockkey.bin" into cmd. You'll see the
20. following:
21. sending 'unlock' (1 KB)...
22. OKAY [0.002s]
23. writing 'unlock'...
24. OKAY [0.007s]
25. finished. total time: 0.022s
26. 16.Next, "fastboot-android flashing unlock_critical" – none of the guides say to do this.
27. a.One says to use fastboot-android.exe which opens up and closes by itself
28. when I try that, and another one says "fastboot flashing unlock_critical" which
29. just gives me a list of commands, but "fastboot-android flashing
30. unlock_critical" worked for me.

31. 17.Leave CMD open - you'll need it below. Your phone, after running "fastboot-android

32. flashing unlock_critical" should now have a big warning icon and ask you to confirm

33. you wish to unlock the bootloader. Use arrow keys and power button to confirm this.

34. It'll then restart after you select "unlock booloader" and you will momentarily see, a

35. circular icon with "Erasing". It will restart again – takes about 2 minutes. After

36. restarting, you'll be prompted to pick a language – I think it's basically just factory

37. reset your phone.

38. 18.USB debugging is now off because everything's been reset. Go through initial setup.

39. No need to set anything up, so skip through most of the things as quickly as you can.

40. Turn USB debugging back on in Developer Options (tap Build number 7 times)

41. 19.Notice "OEM unlocking" is "off"? See what happens after the steps below.

42. 20.From the same CMD window from before, do the following:

43. a.   adb reboot bootloader (restarts your phone into Download mode)

44. b.   fastboot flash unlock unlockkey.bin

45. c.   fastboot oem unlock-go

46. ●Again, you will see the warning asking for confirmation to

47. unlock the bootloader. Use volume keys/power button to

48. confirm this just like above

49. d.   What's the difference between this and fastboot-android flashing

50. unlock_critical steps above? I have no idea, but there is definitely a

51. difference.

52. 20.Orange text: "Your device has been unlocker and cann't be trusted" with some ID

53. thing below it. This will now be a mainstay on your device every time you switch it on.

54. Circular thing with "erasing" again. Took 2 mins to restart again

55. 21.How to confirm if your bootloader has been unlocked (besides the orange text above)

56. – go to Settings -> About -> Tap Build Number multiple times again to unlock

57. Developer Options

58. 22.Go to Developer Options and scroll to "OEM unlocking" – notice it's now greyed out

59. and you can't am ays "Bootloader is already unlocked"! Compare this

60. to just after you did "fastboot-android flashing unlock_critical" – it was still an option
61. you could toggle after that.
62. 23.Next – I followed this to install OST:
63. https://forum.xda-developers.com/showpost.php?p=76008680&postcount=81
64. 24.Download full OST from the link. Install it by extracting the zip and then opening
65. setup.bat.
66. 25.Say yes to all the things it asks you to install (there are quite a number!)
67. 26.Restart phone into download mode (I did button combo – volume down + power,
68. otherwise "adb reboot bootloader" from CMD with USB debugging on). Make sure it's
69. plugged into computer.
70. 27.Open OST 6.0.4 FIH Mobile from start menu. Press Next.
71. 37.After this, open OST 6.0.4 FIH Mobile, select
72. SS2-SIUI_v3_1_trebled_by_heineken.nb0 (extract the .zip) and select options 1, 3
73. and 4 which are Normal Download, Erase User Data and Erase error data.
74. 38.This process took me 10-11 mins. Your phone will restart into download mode about
75. twice in the first 2 mins. I noticed flashing partition "system_a" (system_v3.img) took
76. some time (~3 mins?). system_b also took some time (another 3-4 mins?). After
77. done, the phone will reboot itself (and you will see Rebooting device on OST). If
78. successful, you'll see, "The update completed successfully."
79.
80. You can now click Finish.
81. 39.Phone will now take ~3 mins to reboot. You will notice that the boot screen now just
82. shows the red "SHARP" text without "android" below it. You'll now be at the setup
83. screen, and you may now setup your phone as normal.
84.

85. Installing Magisk

86. Assumptions

87. ●You have followed the steps above
88. ●This means you have an unlocked bootloader, have OST V3 Treble ROM installed,
89. and have TWRP Recovery

90.
91. 1.Go to the official Magisk Thread
92. 2.Download the latest Magisk.zip file (at the time of writing, this is Magisk-v17.1.zip)
93. 3.Connect your phone to your computer
94. 4.From the notifications bar, change the mode to "transfer files"
95. 5.Transfer Magisk-v17.1.zip from your computer to your phone
96. 6.Switch off your phone (to prepare for it to be switched on into TWRP Recovery)
97. 7.With your phone plugged in, hold volume up and power button together. Release
98. after you see the SHARP logo/feel vibration.
99.
100.　　need to run CMD with admin rights. Admin rights didn't work for me. This did though: https://www.dinolite.us/support/using-older-models-with-windows-8-10
101.　　Follow the link above, only then will the drivers install. Make sure you press ok to the big red warning that asks you to confirm if you wish to install, because "Windows can't verify the validity"

---

15. The .bin file that was generated into ntool\Backup, make a copy and rename it "unlockkey.bin". Paste this file into the SUT folder of OST Portable.
Now type command "fastboot flash unlock unlockkey.bin" into cmd. You'll see the following:

```
sending 'unlock' (1 KB)...
OKAY [  0.002s]
writing 'unlock'...
OKAY [  0.007s]
finished. total time: 0.022s
```

16. Next, "fastboot-android flashing unlock_critical" – none of the guides say to do this.
    a. One says to use fastboot-android.exe which opens up and closes by itself when I try that, and another one says "fastboot flashing unlock_critical" which just gives me a list of commands, but "fastboot-android flashing unlock_critical" worked for me.
17. Leave CMD open - you'll need it below. Your phone, after running "fastboot-android flashing unlock_critical" should now have a big warning icon and ask you to confirm you wish to unlock the bootloader. Use arrow keys and power button to confirm this. It'll then restart after you select "unlock booloader" and you will momentarily see, a circular icon with "Erasing". It will restart again – takes about 2 minutes. After restarting, you'll be prompted to pick a language – I think it's basically just factory reset your phone.
18. USB debugging is now off because everything's been reset. Go through initial setup. No need to set anything up, so skip through most of the things as quickly as you can. Turn USB debugging back on in Developer Options (tap Build number 7 times)
19. Notice "OEM unlocking" is "off"? See what happens after the steps below.

20. From the same CMD window from before, do the following:
    a. adb reboot bootloader (restarts your phone into Download mode)
    b. fastboot flash unlock unlockkey.bin
    c. fastboot oem unlock-go
        ● Again, you will see the warning asking for confirmation to unlock the bootloader. Use volume keys/power button to confirm this just like above
    d. What's the difference between this and fastboot-android flashing unlock_critical steps above? I have no idea, but there is definitely a difference.
20. Orange text: "Your device has been unlocker and cann't be trusted" with some ID thing below it. This will now be a mainstay on your device every time you switch it on. Circular thing with "erasing" again. Took 2 mins to restart again
21. How to confirm if your bootloader has been unlocked (besides the orange text above) – go to Settings -> About -> Tap Build Number multiple times again to unlock Developer Options
22. Go to Developer Options and scroll to "OEM unlocking" – notice it's now greyed out and you can't amend it? It also says "Bootloader is already unlocked"! Compare this to just after you did "fastboot-android flashing unlock_critical" – it was still an option you could toggle after that.
23. Next – I followed this to install OST: https://forum.xda-developers.com/showpost.php?p=76008680&postcount=81
24. Download full OST from the link. Install it by extracting the zip and then opening setup.bat.
25. Say yes to all the things it asks you to install (there are quite a number!)
26. Restart phone into download mode (I did button combo – volume down + power, otherwise "adb reboot bootloader" from CMD with USB debugging on). Make sure it's plugged into computer.
27. Open OST 6.0.4 FIH Mobile from start menu. Press Next.
37. After this, open OST 6.0.4 FIH Mobile, select SS2-SIUI_v3_1_trebled_by_heineken.nb0 (extract the .zip) and select options 1, 3 and 4 which are Normal Download, Erase User Data and Erase error data.
38. This process took me 10-11 mins. Your phone will restart into download mode about twice in the first 2 mins. I noticed flashing partition "system_a" (system_v3.img) took some time (~3 mins?). system_b also took some time (another 3-4 mins?). After done, the phone will reboot itself (and you will see Rebooting device on OST). If successful, you'll see, "The update completed successfully."
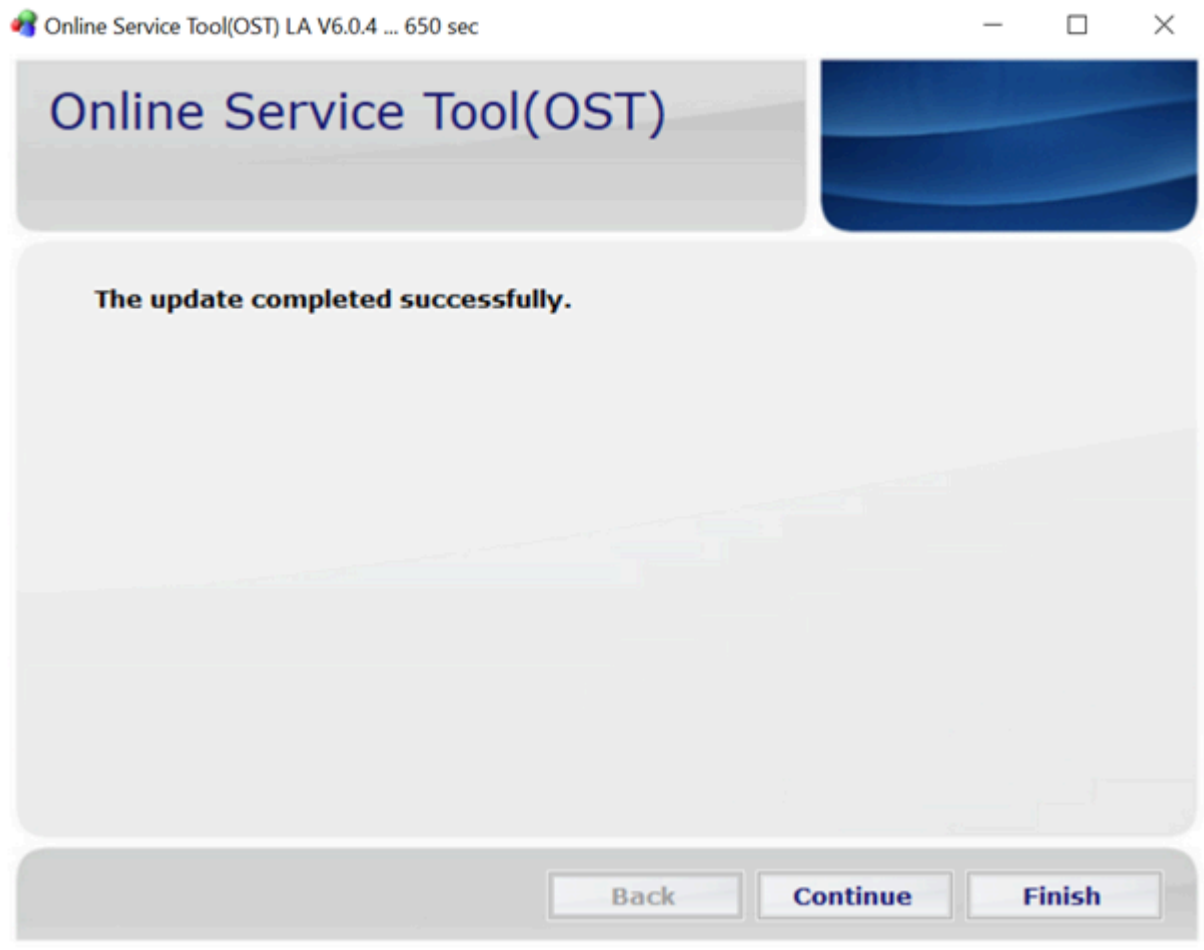
You can now click Finish.

39. Phone will now take ~3 mins to reboot. You will notice that the boot screen now just shows the red "SHARP" text without "android" below it. You'll now be at the setup screen, and you may now setup your phone as normal.

Installing Magisk

Assumptions

- You have followed the steps above
- This means you have an unlocked bootloader, have OST V3 Treble ROM installed, and have TWRP Recovery

1. Go to the official [Magisk Thread](#)
2. Download the latest Magisk.zip file (at the time of writing, this is Magisk-v17.1.zip)
3. Connect your phone to your computer
4. From the notifications bar, change the mode to "transfer files"
5. Transfer Magisk-v17.1.zip from your computer to your phone
6. Switch off your phone (to prepare for it to be switched on into TWRP Recovery)
7. With your phone plugged in, hold volume up and power button together. Release after you see the SHARP logo/feel vibration.

8. TWRP should appear after ~5 seconds. "Swipe to allow modifications"
9. Personally, I made a backup of my system - so I selected Backup, left all the settings as default, and proceeded to commence backup. This took about 1 minute.
10. I then went back to the TWRP "home screen", tapped Install and selected Magisk-v17.1.zip
11. Leave settings as default -> Flash the file (swipe to confirm)
12. I got a "Failed to mount '/system' (Device or resource busy)" in red text, but it still seemed to work.
13. Reboot to System
14. Install Official TWRP? I selected Do Not Install
15. Confirm this works by seeing if an app called "Magisk Manager" is installed
16. Tap it to open - you may be prompted to install an updated version of Magisk Manager - feel free to Install
17. Once completed, press Open to reopen Magisk Manager
18. Once download is completed, it will automatically initiate a reinstallation process and ask if you wish to confirm replacing Magisk Manager. Press Yes.
19. Yes? Your phone is now ROOTED, and you have Magisk. This gives you the ability to keep using your phone with Google Pay, and other apps (e.g. 7-Eleven Fuel, Beem It) that don't like phones with unlocked bootloaders/root, yet still have the benefits of root

Installing Google Camera

Assumptions
- You have followed the above steps
- You now have:
  - Treble V3 OST ROM
  - Magisk & Magisk Manager
  - Root (as a result of Magisk)
  - Unlocked Bootloader

1. Go to this link
2. Ctrl+f (or F3) for "MGC_5.2.022_FINAL_1.0.apk"
3. Download this APK
4. Plug your phone into your computer and switch to transfer files mode (from notifications bar)
5. Drag and drop the APK above
6. Use a File Manager to browse to this apk, tap it and install it
7. Done
8. Can you use one of the more recent versions? Possibly, but I used MGC_5.2.022_FINAL_1.0.apk because that was the only one I could see that other people had used successfully with the Sharp Aquos S2

Also, see this text below (source) about what the Google Camera apk is:

tl;dr: This is not the typical app you find in the Play Store. It needs to be configured, there are no "universal settings", some phones support all features and others don't, it's stable on some phones but crashes on others, and it's updated regularly.

To make your life easier, I suggest some versions, but *this port is hard* and I can't say for sure that they are the best versions for your phone. The same is true when it comes to settings/configuration.

You should find other people using the same phone as you and see which port/version/settings they're using. See if there's a GCam thread for your phone on XDA or posts on your phone's subreddit. Discuss your issues, try to find stable versions and see which dev/version/settings are better for you. I've compiled a few links, check the Useful Files and Links page.

Installing AdAway (for system-wide adless experience)

Pre-Requisites

- You have:
    - Magisk & Magisk Manager
    - Root (as a result of Magisk)

1. Open Magisk Manager -> tap the "hamburger" (menu button in the top left) -> Settings
2. Toggle "Systemless hosts" to ON
3. Restart your phone
4. Download AdAway: Go to your browser and navigate to adaway.org
5. Scroll down to "Installation" and tap the "F-Droid" button/link. You'll be re-directed to f-droid
6. You can either choose to
    a. Download "F-Droid" to download AdAway (it's kind of like a "black market" play store) - advantage of doing this is that you'll supposedly get notifications etc. if new versions of AdAway and if any other apps you choose to download through F-Droid get updated through here; or
    b. Download AdAway apk file under the latest version "Download APK 5.9MiB" - this is Version 3.3 (61), "Added on 2018-03-19" and current as at 12 Aug 2018. Saves you from installing an app to install an app - but there might be things that you'll want in the future from F-Droid.

From F-Droid

1. Download F-droid from the steps above and install F-droid. You may need to "force" Android to accept F-droid being installed because you're trying to install an app from outside the Play Store. Force accept it if necessary
2. Open F-Droid. Once the app loads properly, tap the magnifying glass in the bottom right corner to begin searching, and type "adaway". It should be the first result. Tap it.
3. Tap the blue "Install" button to install the app
4. Download will commence and you can follow the progress

5. You may encounter a warning/popup once the download completes saying "F-Droid. For your security, your phone is not allowed to install unknown apps from this source". Tap "Settings", and you'll be taken to an "Install unknown apps" screen with F-Droid visible. "Allow from this source" is currently off - toggle this to ON and go back.
6. You'll be back at the installing "AdAway" screen - tap Install to confirm installation of AdAway.

From [the link](#)

1. Click "Download APK" under the latest version of AdAway above
2. Open it to install - you may need to configure your Android settings to allow installations of apks from Unknown sources, as this is an app that is trying to be installed from outside the Play Store.

Configuring AdAway

1. After installing from either method above, tap "Download Files and Apply Ad Blocking"
2. If successful, you should see "Applying successful" and says it may be necessary to reboot for the changes to take effect. I'm not sure whether this is true or not, but I have done so.
3. After this, you can test to see if it works by opening an app that you previously knew had ads. Does it still have ads? It shouldn't!
4. Refer to FAQ section of the app, or FAQ section at the [bottom of AdAway homepage](#) if you're noticing that you're still getting some ads - for example, there's a known issue with having ads still displaying when on mobile data vs when on WiFi