
Hear Back PRO - Hub Bootloader Update Instructions

Pre Update Procedure:

1. Turn the Hear Back PRO hub power off.
2. Connect a USB cable to your computer.
3. Short the J7 jumper on the main card. You can do this by putting a jumper on it (you can borrow a jumper from an analog input card, MADI card, AES/EBU card, etc) or you can unscrew the lid of the Hear Back PRO Hub and hold something metal against the pins while powering on. **See diagram A*
4. Power the Hear Back PRO Hub on to do the firmware update.

Software Update Procedure:

1. Double click the **bsl-scripter-mac** program. (A warning will pop up that says: *"bsl-scripter-mac" cannot be opened because it is from an unidentified developer.*)
2. Navigate to **System Preferences > Security & Privacy**
3. Under **Allow Apps Downloaded From:** there should be a prompt that reads: *"bsl-scripter-mac" was blocked from use because it is not from an identified developer.*
4. Click **Open Anyway**.
5. Click **Open** when the additional dialog box appears saying: *macOS cannot verify the developer of "bsl-scripter-mac". Are you sure you want to open it?*
6. A prompt will open inside Terminal that states: *Enter the name of file script :*
7. Drag and drop the *script_5xx_usb.txt* file into the open program and hit the **Enter** key
8. The program will read off its list of commands as it runs, when it is finished it will show *[Process Completed]* at the bottom of the terminal window. **See Diagram B*

Post Update Procedure:

1. Wait a couple seconds, and power off the hub.
2. Disconnect the USB cable from the Hub and remove the jumper from the main card.
3. Power the hub back on, after the Hub logo turns blue the update is complete.

Hear Back PRO - Hub Bootloader Update Diagrams

Diagram A:

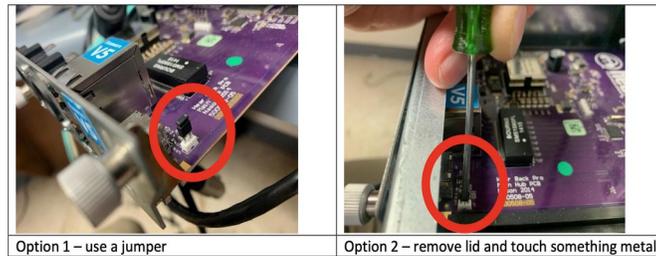
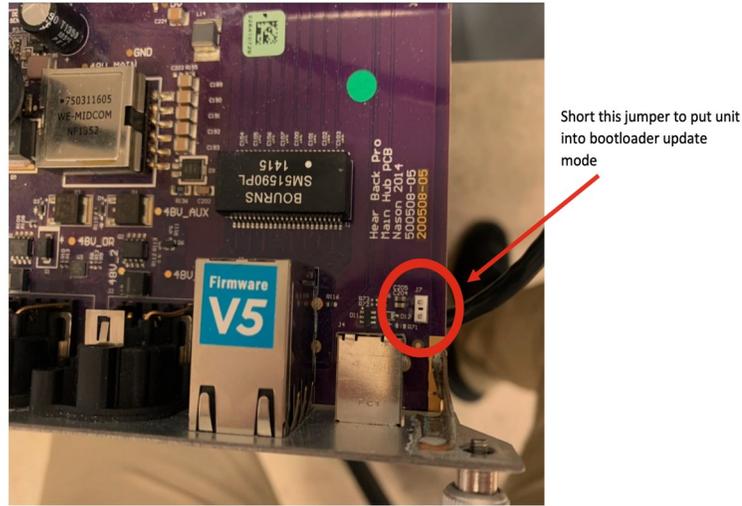


Diagram B:

```
Input file script is : //Users/hearttechnologies/Downloads/Scripter/script_5xx_usb.txt

//
//Script example 5xx USB BSL
//Device tested: MSP430F529
//
//
LOG
//=====
//Write RAM USB BSL to the device
//=====
MODE 5xx USB
//gives wrong password to do
//mass erase in the memory
RX_PASSWORD pass32_wrong.txt
  Read Txt File : //Users/hearttechnologies/Downloads/Scripter/pass32_wrong.txt
  [ERROR_MESSAGE]BSL Password is error!
RX_PASSWORD pass32_default.txt
  Read Txt File : //Users/hearttechnologies/Downloads/Scripter/pass32_default.txt
  BSL Password is correct!
RX_DATA_BLOCK_FAST_RAM_BSL_USB.txt
  Read Txt File : //Users/hearttechnologies/Downloads/Scripter/RAM_BSL_USB.txt
  Time elapsed of writing 3328 bytes : 0.1048 seconds
  Speed of writing data :31.01(kB/s)
SET_PC 0x2504
DELAY 3000
  Delay 3000 ms
//=====
//Start the RAM USB BSL application
//to download the Hub Firmware application
//=====
MODE 5xx USB
RX_PASSWORD pass32_default.txt
  Read Txt File : //Users/hearttechnologies/Downloads/Scripter/pass32_default.txt
  BSL Password is correct!
RX_DATA_BLOCK_Hub_Bootloader_Firmware_v2.10.txt
  Read Txt File : //Users/hearttechnologies/Downloads/Scripter/Hub_Bootloader_Firmware_v2.10.t
  xt
  Time elapsed of writing 26682 bytes : 1.945 seconds
  Speed of writing data :13.4(kB/s)
SET_PC 0x4400
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

Hear Back PRO – Hub Bootloader Firmware Release Versions

Bootloader Release 2.10 – February 2, 2022

NOTE: This version is V2.7f with a bug fix. V2.8 and V2.9 are unreleased versions and will only work with V6.7 or later firmware.

CHANGES:

- Fixed bug with naming channels 31 and 32 would try to write 33,34,35,36 to memory but the array was not that big so it would crash the microcontroller

Bootloader Release 2.9 – December 2, 2021

CHANGES:

- Added TDM2, TDM4, TDM8 format setting in the config.txt file for the new 6.13 Hub firmware that supports multiple card audio formats so that it can support the 16 channel cards and also the newer 32 channel cards (MADI, Waves, Dante).

Bootloader Release 2.8 – August 13, 2021

CHANGES:

- Removes the ability to remotely change the clock source to external. Erroneous data was reported to cause the clock to change to external, rendering the whole system useless until it was discovered that the clock source was changed. Now the only way to change the clock to external is to edit the CONFIG.TXT file on the hub.

Bootloader Release 2.7 – March 16, 2021

CHANGES:

- Fixes a bug with external clock for input B not working after the config.txt file is generated by the hub after a mixer updates stereo channel links or if the iOS app updates channel names or stereo linking.
 - Also changes the way the USB mass storage works because it was not working reliably on Mac OSX. A USB disconnect and reconnect is sequenced after the config file is modified, forcing the operating system to remount and reload the files so that they refresh. We do not recommend keeping USB connecting all the time. It should be connected to make changes and then ejected. The hub and the USB now have mutually exclusive code for reading and writing from the mass storage to prevent file corruption when they are both connected and accessing the drive.
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Bootloader Release 2.5 – August 12, 2020

CHANGES:

- Bug fixes for Mixer Digital Overlay. Added support for symbols in channel names. Added temperature readings and power supply monitoring that was removed in version 2.4 due to memory issues.
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Bootloader Release 2.4 – April 21, 2020

CHANGES:

- Added support for storing channel names for new Mixer Digital Overlay
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Bootloader Release 2.3 – July 10, 2018

CHANGES:

- Added stereo linking capability to the CONFIG.txt file (shows up on mass-store drive when you plug the USB into hub) to support the new 128 CH firmware. Channels are now linked globally.
 - Added UDP support for stereo link set and status messages.
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Bootloader Release 2.2 – February 13, 2018

CHANGES:

- Discontinued the use of the STEREO.txt configuration file (shows up on mass-storage drive when you plug the USB into hub)
 - Added support for new Word-Clock card to input and output Word-Clock (goes in slot 2 for input A or slot 4 for input B)
 - Added a new CONFIG.txt file that contains settings for new Word-Clock card internal/external settings for input A and input B (shows up on mass-storage drive when you plug the USB into hub)
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Bootloader Release 2.1 – August 4, 2017

CHANGES:

- Changed A,B,C,D Error LEDs on back of Hub main card to blink twice on boot to indicate V2.1 bootloader
 - Increased Hub status UDP packet transmit rate to 16 updates per second to make iOS Status look more real time.
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Bootloader Release 2.0 - June 1, 2017

CHANGES:

- Support for iOS app communication to allow level metering of audio inputs, and feedback of input source, sampling rate, clock status, & internal temperature.
 - USB mass storage updated to fix issues with file modification and unmounting the drive (used when USB is connected to hub).
 - Added firmware file backup copy feature which copies the firmware if boot is successful (if boot is not successful it will revert to the backup copy).
 - Added stereo.txt settings file for editing which channels are stereo
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Bootloader Release 1.0 - October 29, 2014

NOTE: Initial Release
