

# Procedure for updating CD401XX-SB Multi repeaters/Control unit.

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Versions with SW < 1.18 need this procedure

There are 3 ways to update a CD401MR unit. Depending on the access you have to the unit, and which test equipment you have:

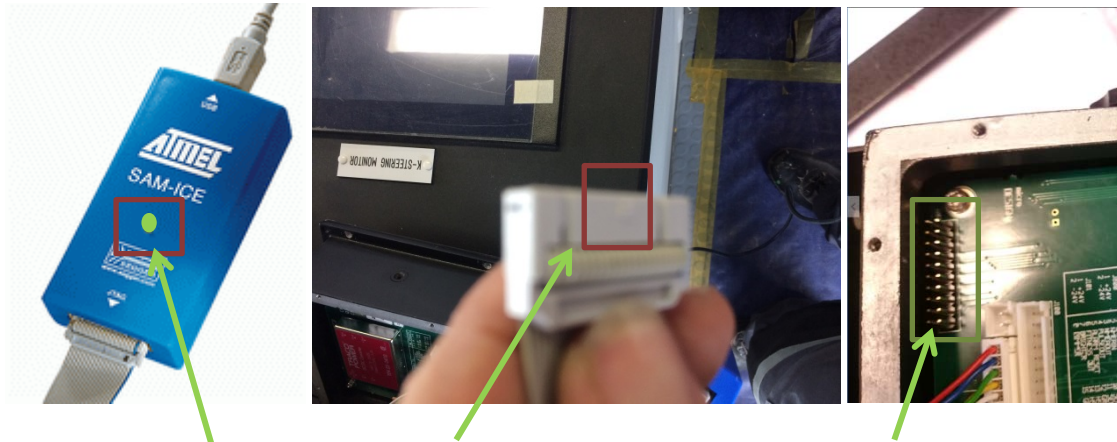
1. If you have a JTAG programmer
2. If you have a set of chips (available from SKIPPER)
3. IF you have access to both input and output of the repeater, and a RS422-PCadapter (NOTE ETT does not work for this)

## 1. If you have a JTAG programmer

Check the CD491 software version by pressing MENU/SET together, and scrill to DIAG ress set and info and press set. If the CD401MR has version below 1.18, then a bootloader upgrade is also required.

### Bootloader upgrade

A JTAG adapter is needed. These can be purchased from FARNELL or RS components for about 200 dollars, search for ATMEL SAM-ICE



Cut the 'notch' off one end of the cable plug so that the cable can be plugged onto the Back of the CD401XX with the notch side into the metal housing. If connected correctly and power is on you should see green light on the SAM-ICE module

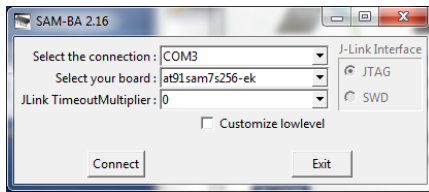
Search for 'SAM-BA ATMEL Download' and install the latest released version (Currently 2.16) you should get an icon like this on screen



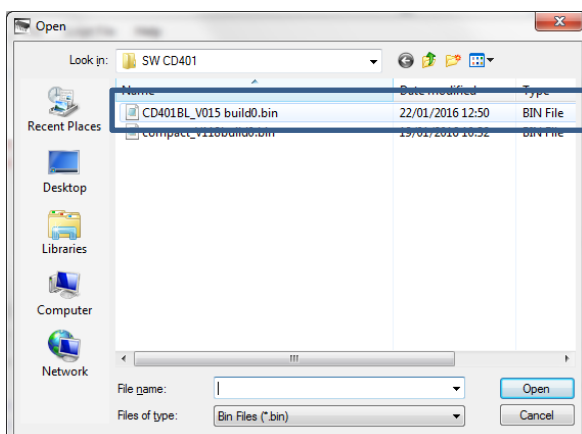
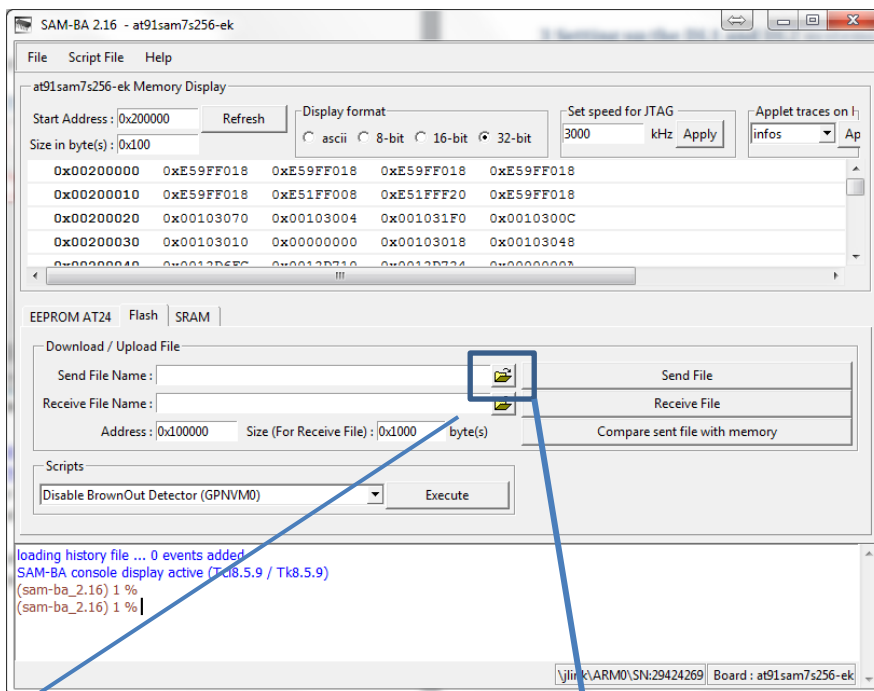
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Once the SAM-ICE is installed and connected to a CD401 with power on, start this program

You will get a window like this; Select the chip type AT91SAM7S256-EK, as shown.

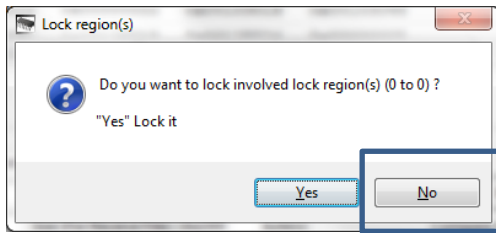


Press ok and wait for the program to load.

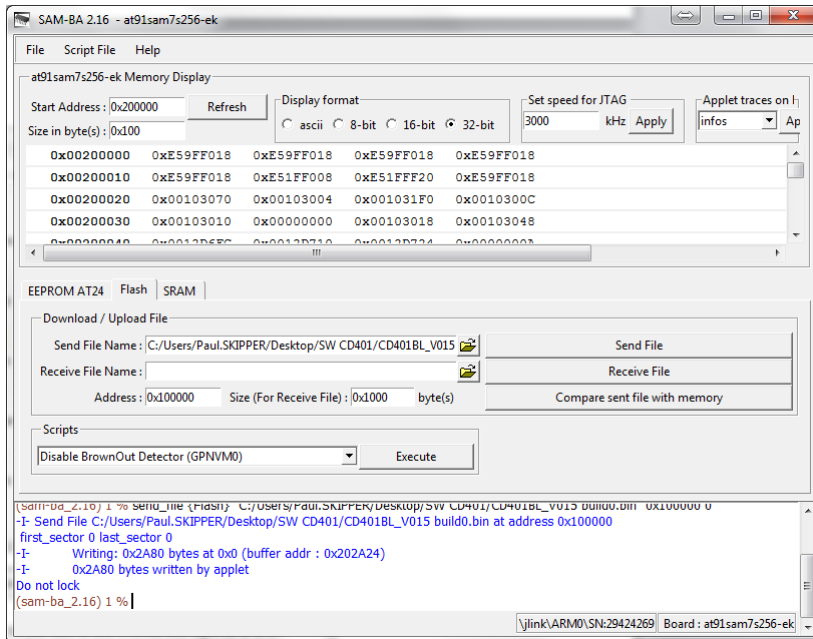


Select bootloader file.

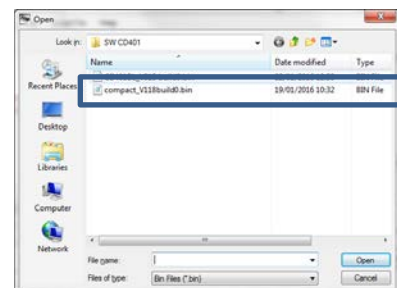
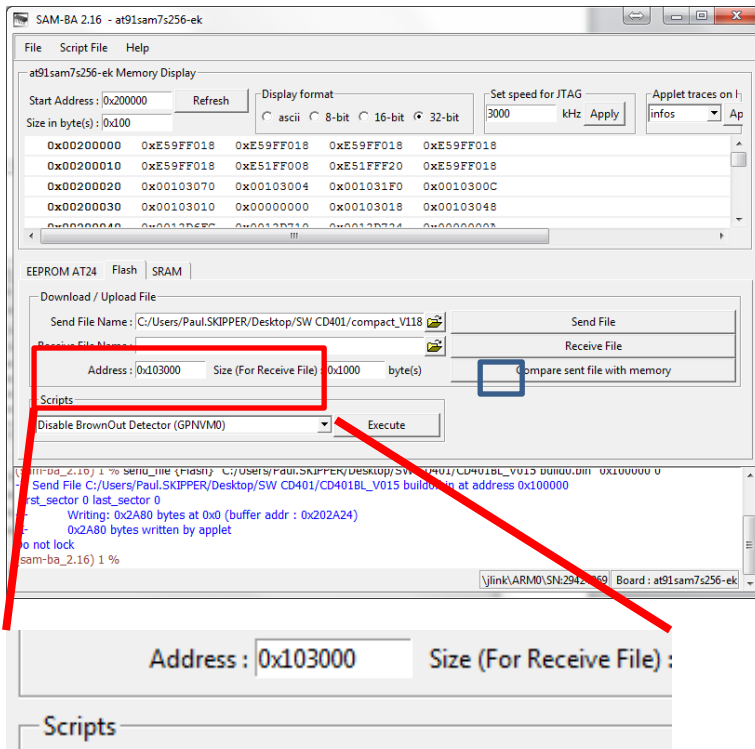
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Select 'No' When asked to lock

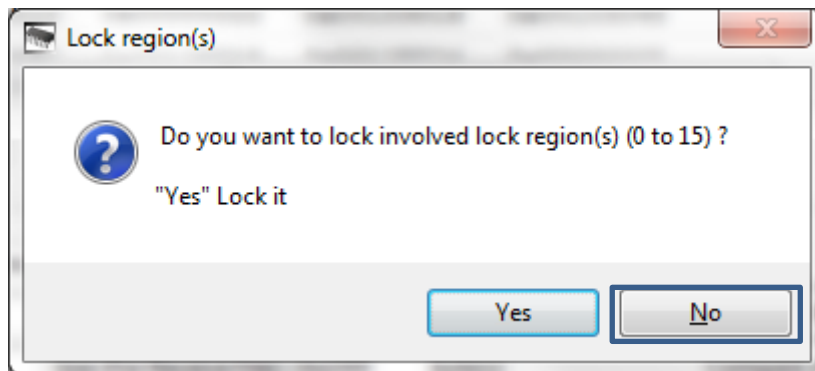
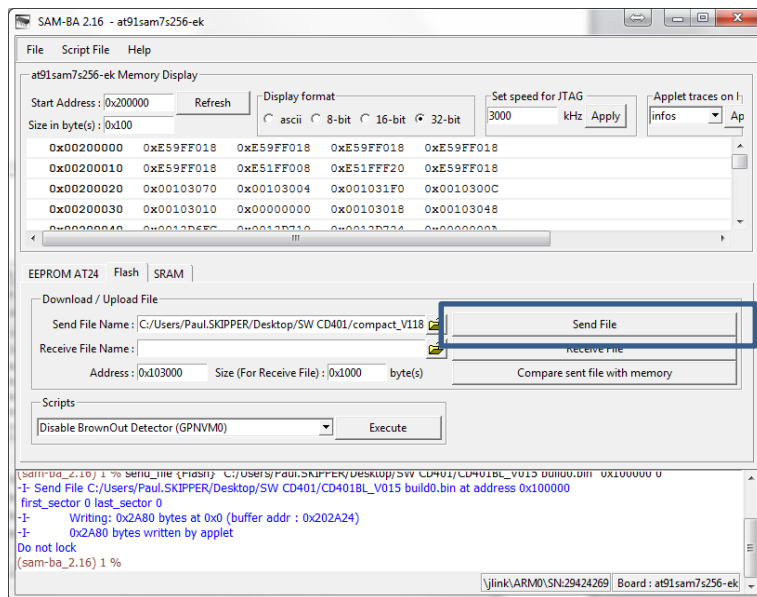


When complete search for the Program file for The main software



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Change the Start Address to 0x103000 and press Send file



Select no for locking

Select file 'CD401BL\_V015 build0.bin' and make sure the start address is set to 100000 (as shown)

When asked do you want to lock the chip answer 'NO'

Remove the cable and restart the Repeater. (take out power cable and replace) The unit should start with the new software. Check by going to SET/MODE – DIAG- INFO and read the software version

### SW upgrade

To upgrade just software Select file 'compact\_V118build0.bin' (or later version) and make sure start address is set to 103000 as shown. Press program

When asked do you want to lock the chip answer 'NO'

Remove the cable and restart the Repeater. (take out power cable and replace) The unit should start with the new software. Check by going to SET/MODE – DIAG- INFO and read the software version

Close the back being careful that the 'o'ring is correctly placed.

## 2. If you have a set of chips (available from SKIPPER)

**IMPORTANT: Turn off any units with inputs to the Repeater (Splitter or Echosounder/Speedlog)**

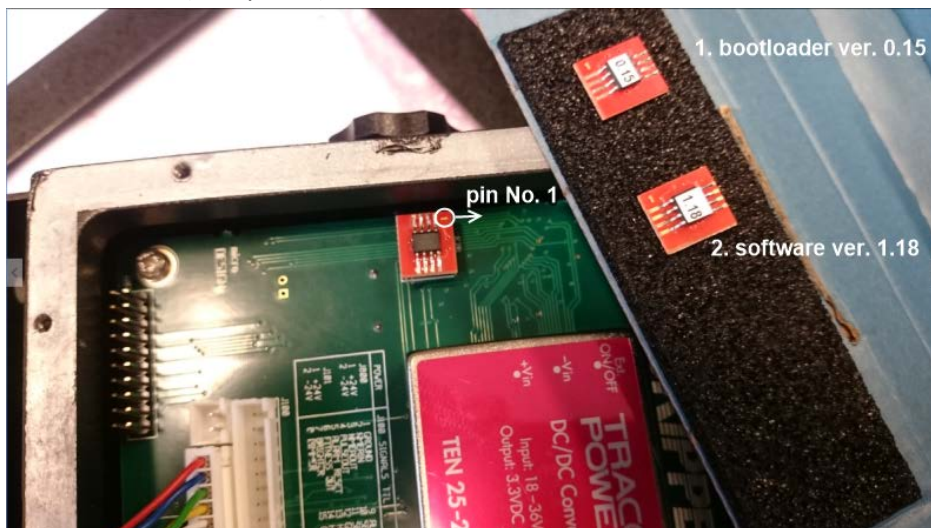
Unscrew the backplate

Remove the power cable

If your current SW is under 1.18, or you know the bootloader needs updating, do the following.

### Upgrading the bootloader

Swap out the existing chip with the new chip marked '0.15' Be careful to make sure pin 1 is in the correct corner ( see photo)



Replace the power plug, (*HINT try not to make the power switch on and off a lot as you push the cable in*)

The system will start within a minute with the bootloader software version (0.15) on the info page

### Upgrading the software (1.18)

Swap out the existing chip with the new chip marked '1.18'

Replace the power plug, (*HINT try not to make the power switch on and off a lot as you push the cable in*)

The system will start within a 2 minutes with the new software version (1.18) on the info page

Check the version in MENU/SET – DIAG – INFO

Replace the original chip ( it will not downgrade) and close the back being careful that the oring is correctly placed.

( *If this does not happen, then the only way to fix is to use the JTAG method (1) above.*

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*Follow the steps in section 1. And then replace the existing chip and restart,. Wait up to 5 minutes and the system will restart with the old software. You can then use the SW chip to update the software safely.)*

### **3. Using the Cable and software**

This method can currently not upgrade the Bootloader. If you need to, contact SKIPPER

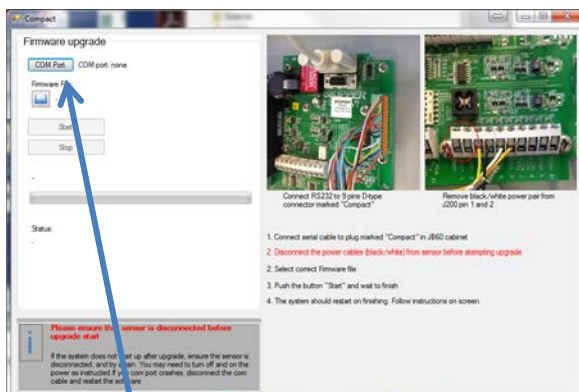
To do this method you will need a RS422 converter and the SKIPPER service software.

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Download service software from [www.skipper.no](http://www.skipper.no) and upgrade if required ( upgrade option is on first page.)



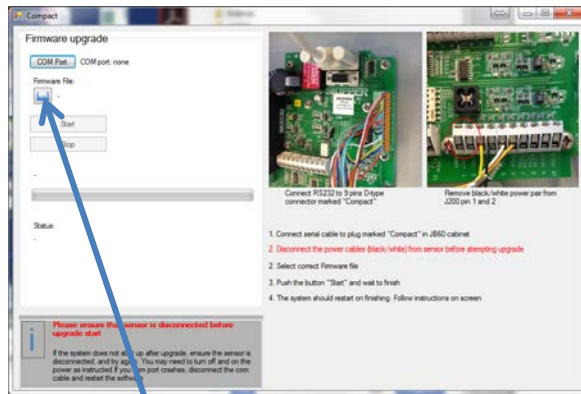
Go into the CD401-SB APP



Connect the cable of the Multirepeater to your RS422 adapter, input and output and add 24V power.

Click on Com port and select your adapter

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Select the file to be downloaded (from SKIPPER website)

Press start and follow the progress bar.

After finishing restart the unit. Check SET/MENU – DIAG - INFO