

Required Before Upgrade

- Ensure that you have reviewed the NXTCam-v3 User Guide, and followed steps to install the USB drivers, NXTCamView, etc.
- Install following firmware on your NXT (this is LEGO firmware 1.29 with several improvements/bug fixes)
http://www.mindsensors.com/index.php?module=pagemaster&PAGE_user_op=view_page&PAGE_id=137
- Install Firmware Upgrader from following location on your Windows PC:
http://www.mindsensors.com/index.php?module=pagemaster&PAGE_user_op=view_page&PAGE_id=121
- Ensure that you have all the required files:
 - nxtcam-settings.rxe
 - nxtcam_gen.hex (this is also the Generic PIC firmware).
 - nxtcam_def.hex (this is the default, factory shipped PIC firmware)
 - Your own AVR firmware.(if you need any of these files, write an e-mail to mindsensors' support).

Note the Current NXTCam settings:

- Download the program nxtcam-settings.rxe to your NXT using following instructions: http://www.mindsensors.com/index.php?module=pagemaster&PAGE_user_op=view_page&PAGE_id=105
- Attach NXTCam to Port 1 of your NXT and run the program.
- Make a note of the current settings value. (See adjacent screen dump for example - the value in this example is 57).
- Terminate the program.

```
NXTCAM V3.10  
Change Settings:  
Current Value:57  
  
Use <> to change  
To commit value  
Press Orange  
Button Twice
```

Install the bootloader via PIC processor:

First change NXTCam PIC firmware with file nxtcam_gen.hex.
it will take about 8 minutes for this upgrade.

When the Firmware Upgrader shows a dialog indicating upgrade is finished (Ignore the device checksum errors). then -

- **Wait about 45 seconds,**
- Disconnect NXTCam from NXT.
- Exit Firmware Upgrader.

- Power off NXT.
- Connect NXTCam to NXT (while NXT is powered off).
- Power ON NXT and wait. (at this point the PIC firmware will install bootloader for AVR firmware - it takes about 30 seconds).
- **Wait for 30 seconds** or longer, and then power off NXT.
- **At this point your NXTCam has AVR bootloader installed, but no AVR firmware is installed.**

Now restore the PIC firmware:

Using Firmware Upgrader upgrade the NXTCam with file: nxtcam_def.hex
it will take about 8 minutes for this step.
upon finishing -

- Power off NXT and
- Disconnect NXTCam from NXT.

Restore your NXTCam settings:

- Attach NXTCam to Port 1 of your NXT and run the program nxtcam-settings.
- Use *Gray Arrow* buttons to increment or decrement the settings value for your previous value and press *Orange* button twice to commit that value to NXTCam.



Now proceed to install your AVR firmware:

Follow the instructions from *Advanced Programming Guide* to install the AVR firmware using AVR tools.