

# BlessN900

Image quality beyond the limits of mobile cameras

## Introduction

"Sorry for the quality, mobile." Almost everyone makes excuses when publishing a photo taken with a camera phone. Why do people still prefer generic cameras over those they have in mobile phones? What are the problems taking good quality pictures with camera phones and is there a way to solve them and bridge the gap between camera phones and compact cameras?

The answer is: while having enough megapixels and storage capacity, mobile cameras still suffer from too narrow apertures and lack of optical zoom. Based on high-end Blurless and SuperZoom imaging technologies developed by Almalence, Inc., BlessN900 application solves those problems, providing unbeatable quality of mobile photos.

## Shaking blur in low light – the problem and the cure

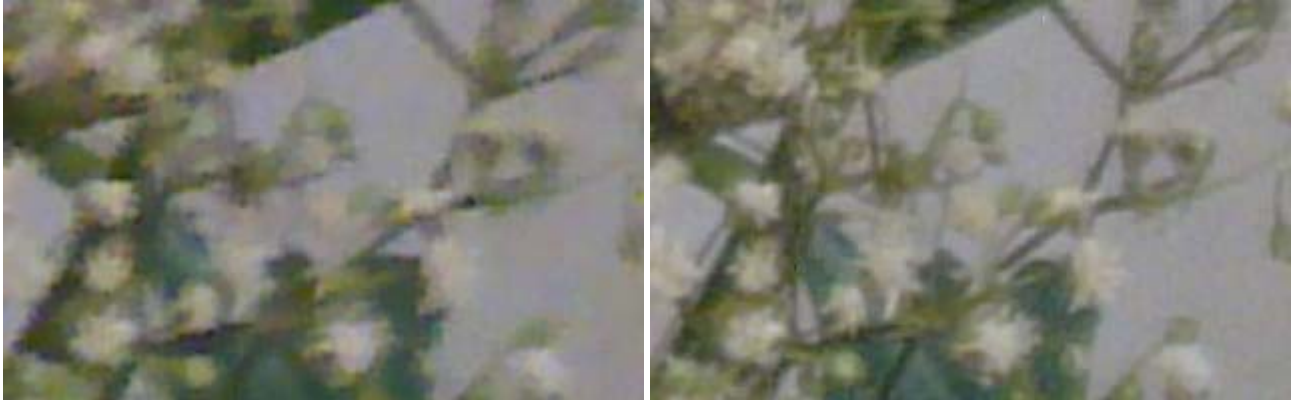
The essence of the photography is the Light. With narrow aperture, a mobile camera does not capture enough Light. So there are three bad choices: make long exposure, waiting while you shake the camera enough to get a blurry image; use high ISO, filling the image with noise; or ignite the flash, making a very unnatural image with distorted colors and flat overexposed areas.

Special exposure mode ([Blurless](#) technology) used in BlessN900 captures more light with no shaking blur. In the same lighting you will get a sharp, low-noise image, as if you have taken it with a generic consumer-level camera, not with a mobile phone.



## Zoom you'll want to use

Digital zoom is one of the worst digital things ever invented. In fact, it is not a real zoom, just a quick and rough stretching of the center area of an image. You would not use it if you wished to get an image of any quality. So, should you still have a generic camera with optical zoom in addition to your mobile phone? No. BlessN900 implements unique SuperZoom technology, providing digital zoom quality close to one a generic optical zoom would provide.



## Bonus – high dynamic range imaging on your mobile phone.

Yes, HDR on a mobile is not a joke anymore. You can now take images of high dynamic range scenes (the scenes that have both highlight and shadow areas). BlessN900 will capture an HDR image, ensuring that you do not get clipped areas and do not lose details in highlight and shadows.

More examples available at <http://blessn900.com/example>

## Drawbacks/Known issues

As BlessN900 is a complete software implementation of Blurless and SuperZoom technologies, it takes some time to process the image. Processed image appears in the Album in about 8 seconds from taking it. A hardware implementation would remove that delay.

## Usage

### Installation

Simply open the installation package from our site: <http://blessn900/download> or from local drive. You will also need to install Nokia's fcam-drivers package: [http://maemo.org/packages/package\\_instance/view/fremantle\\_extras-testing\\_free\\_armel/fcam-drivers/1.0.6-1/](http://maemo.org/packages/package_instance/view/fremantle_extras-testing_free_armel/fcam-drivers/1.0.6-1/)

You will need to reboot your phone after installing BlessN900.

NOTE: BlessN900 installer updates camera firmware.

## Starting the application

If the standard Camera application is running – close it before starting BlessN900.

## Taking a photo

1. Half-press the camera key to focus on the scene.
2. Press the camera key to take the image.
3. After taking the image you get a preview in about a second, then the image is processed before placing it into the Album. The Album icon shows if the processing is in progress and how many images are being processed. After the processing is complete (it takes about 8 seconds per image), the photo is available in the Album.

## User interface



## Modes

**Blurless:** Capture more light and suppress possible shaking blur. Use this mode in indoor and other low light conditions to get sharp, low-noise images.

**x2 Zoom:** High quality x2 zoom.

**HDR:** Capture images with exposure bracketing and fuse them into a high dynamic range image. Use this mode for scenes with both very light and very dark areas, to capture details both in highlights and in shadows and get an image with no clipped spots.

## Known Issues

Occasionally the program uses wrong exposure setting during capture.

HDR fusion uses very simple alignment algorithm, you need to keep the mobile stably enough to get good result. Improved alignment will be implemented in future versions.

BlessN900 is in experimental state; the technologies used in it are not completely polished yet. Occasionally artifacts can appear in the images. The updates will follow as we improve the application.

Sometimes BlessN900 exits on start when launched right after closing the standard Camera app, and vice versa. Just launch it again if this happens.

## Future plans

- Up to 3x speedup of processing through employing OMAP3 hardware resizer module and pushing more processing functions to DSP core
- Continuous zoom ratios 1.2x - 3x
- Burst mode
- Exposure correction setting
- Timer
- Interaction with standard Maemo applications – Album and Video recorder

## About

BlessN900 web site: <http://blessn900.com>

BlessN900 is developed by Almalence Incorporated – an innovation software company focused on research and development of new digital image processing

technologies. Learn more about our technologies at:  
<http://almalence.com/technologies.html>

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