

KoreUSBcam

QUICK USER manual

FOR MODELS:

E3500: BACK: BLACK / FRONT: BLACK

C200: BACK: LIGHT GRAY / FRONT: DARK GRAY

C250: BACK: GRAY / FRONT: BLACK



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1.2	10.11.2011	J. Tharin	Added video streaming tool

Trademark Acknowledgements:

IBM PC: International Business Machines Corp.

Macintosh: Apple Corp.

SUN Sparc-Station: SUN Microsystems Corp.

LabVIEW: National Instruments Corp.

Matlab: MathWorks Corp.

Webots: Cyberbotics

Khepera: K-Team and LAMI

Logitech: Logitech Int. SA

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- The above notwithstanding, K-Team can assume no responsibility for any error in this manual.

TABLE OF CONTENTS

1. INTRODUCTION	1
2. COMPATIBILITY	2
3. DRIVER INSTALLATION	3
4. USAGE	4
4.1 IMAGE CAPTURE	4
4.2 VIDEO STREAMING	5
5. PROGRAMMING	6
6. WARRANTY	7

1. INTRODUCTION

This quick user manual is designated to briefly explain how to install the driver of the new KoreUSBCam module and how to use that module for taking images and programming.

2. COMPATIBILITY

Requirements:

- KoreUSBCam (models with Logitech E3500, C200, C250)
- Korebot II
- drivers software files (see next chapters)

3. DRIVER INSTALLATION

The drivers should be already installed with your Korebot II. If it is not the case, you have to install the new driver:

- Firstly remove the old driver by running the following command on the Korebot II:

```
ipkg remove -force-depends linux-uvc
```

- Copy the driver to the Korebot and install it with the commands:

```
ipkg install LINUX_UVC.IPK  
depmod -a  
reboot
```

where *LINUX_UVC.IPK* is:

for KoreUSBCam E3500 : *linux-uvc_1.1-r3_gumstix-custom-verdex.ipk*

for KoreUSBCam C200, C250: *linux-uvc_1.3-r0_gumstix-custom-verdex.ipk*

You can get these files from there:

<http://ftp.k-team.com/KorebotII/software/common>

4. USAGE

4.1 Image capture

For capturing images, use the program *uvccapture* as following by running:

- *uvccapture*
capture an image named *snap.jpg* (Jpeg format, RGB, 320x240 pixels)
- parameters: get the parameters with the command: *uvccapture -h*

Usage is: *uvccapture* [options]

Options:

- v Verbose
- o<filename> Output filename(default: snap.jpg)
- d<device> V4L2 Device(default: /dev/video0)
- x<width> Image Width(must be supported by device)
(>960 activates YUYV capture)
- y<height> Image Height(must be supported by device)
(>720 activates YUYV capture)
- c<command> Command to run after each image
capture(executed as <command>
<output_filename>)
- t<integer> Take continuous shots with <integer> seconds
between them (0 for single shot)
- q<percentage> JPEG Quality Compression Level
(activates YUYV capture)
- r Use read instead of mmap for image capture
- w Wait for capture command to finish before
starting next capture
- m Toggles capture mode to YUYV capture

Camera Settings:

- B<integer> Brightness
- C<integer> Contrast
- S<integer> Saturation
- G<integer> Gain

Remark: there is no space between the parameter and the option!

4.2 Video streaming

There is a mjpeg streamer with web server installed by default on the board.

- Firstly, set a network connection as explained in Korebot II user manual.
- Install the mjpeg-streamer prealably downloaded here:
http://ftp.k-team.com/KorebotII/software/common/camera/mjpeg-streamer_1.0-r1.0_armv5te.ipk
with the command: *ipkg install mjpeg-streamer_1.0-r1.0_armv5te.ipk*
- Then launch the mjpeg streamer with the following command on the board:
mjpg_streamer -i "input_uvc.so -yuv" -o "output_http.so -w /usr/local/mjpg-streamer/www"
- On a computer connected to the same network, you can have access to the video streaming at http://KOREBOT_IP:8080/?action=stream, where *KOREBOT_IP* is the KOREBOT network address.
- You should change brightness, contrast and saturation from 128 to 32 to have a better image at page http://KOREBOT_IP:8080/control.html.
- You can stop with the **CTRL-c** keys.
- You can configure the web server in the folder */usr/local/mjpg-streamer/www* . Some help is available in the file */usr/local/mjpg-streamer/www/README* .

5. PROGRAMMING

Required:

- Light development toolchain of Korebot II installed
- KoreUSBCam installed on the Korebot II
- file *uvccapture_dev1.0.tar.bz2* from: <http://ftp.k-team.com/KorebotII/software/common>

You can start with the *uvccapture* program as example:

- Extract the file *uvccapture_dev1.0.tar.bz2* in your Korebot II development directory:

```
cd ~/development_k2_v1.0
tar -xjf uvccapture_dev1.0.tar.bz2
```
- Enter into the *uvccapture_dev1.0* directory and source the *env.sh* to give access to the cross-compiler:

```
cd uvccapture_dev1.0
source ../env.sh
```
- Edit the main file *uvccapture.c* to fit your needs. If you modify its name, you will have to adapt accordingly the *Makefile*.
- Cross-compile the program with the *Makefile*:

```
make clean
make
```
- Transfer it on your Korebot II with *scp* or *Minicom* (See "Korebot II User manual", "Annexes").
- Execute it: *./uvccapture*
Don't forget the *./* which means "current directory", otherwise the default installed *uvccapture* program will be executed!

6. WARRANTY

K-TEAM warrants that the KoreUSBCam is free from defects in materials and workmanship and in conformity with the respective specifications of the product for the minimal legal duration, respectively one year from the date of delivery.

Upon discovery of a defect in materials, workmanship or failure to meet the specifications in the Product during the afore mentioned period, Customer must request help on K-Team Internet forum on <http://www.k-team.com/kforum/> by detailing:

- The type of KoreUSBCam used (version).
- The kernel version of the Korebot.
- The programming environment of the Korebot/robot (standard, version, OS).
- The standard use of Product before the appearance of the problem.
- The description of the problem.

If no answers have been received within two working days, Customer can contact K-TEAM support by phone or by electronic mail with the full reference of its order and KoreUSBCam serial number.

K-TEAM shall then, at K-TEAM's sole discretion, either repair such Product or replace it with the equivalent product without charging any technical labour fee and repair parts cost to Customer, on the condition that Customer brings such Product to K-TEAM within the period mentioned before. In case of repair or replacement, K-TEAM may own all the parts removed from the defective Product. K-TEAM may use new and/or reconditioned parts made by various manufacturers in performing warranty repairs and replacement of the Product. Even if K-TEAM repairs or replaces the Product, its original warranty term is not extended.

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