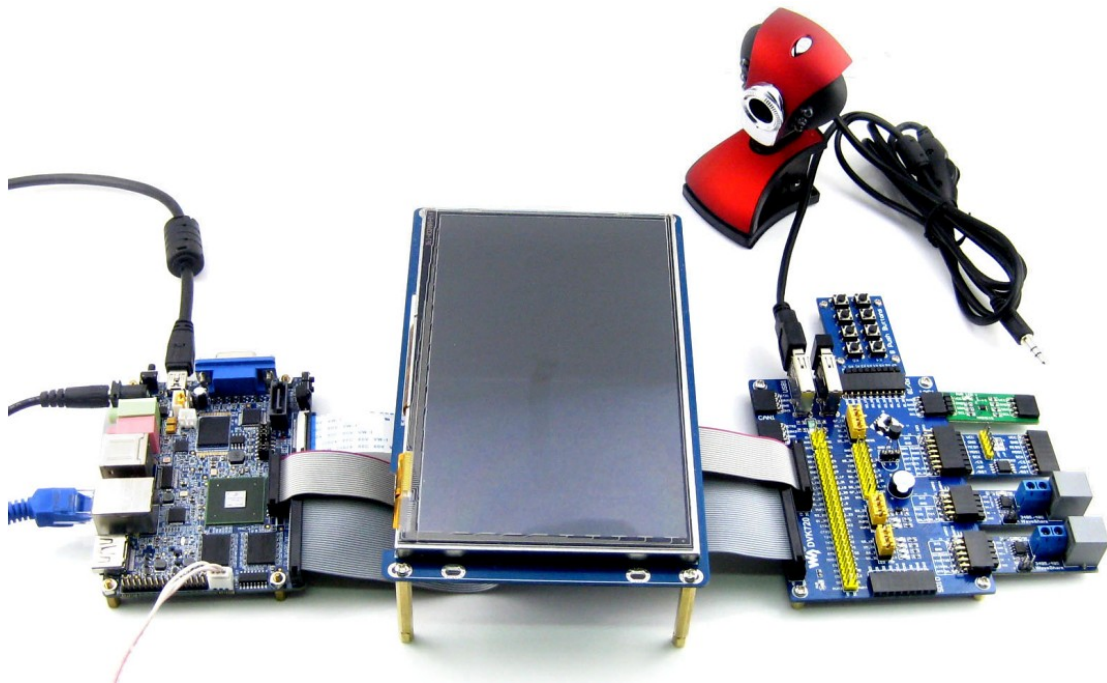


mjpg-streamer Porting User Manual

2014.02.07 V1.0



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Revision history

Version	Date	Description
V1.0	2014.04.04	Initial Release

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1. Overview

The Internet is very powerful now, many users want to browse the video screen captured by the camera via internet, we achieve this function by porting the mjpg-streamer. mjpg-streamer is an open source software, the basic principle is to build a video streaming web server in embedded systems which allow other users to view video images remotely via the website.

1.1. Porting Jpeg library

1.2. Acquire the source code bag

Copy “jpegsrc.v8b.tar.gz” under directory **/mjpg-streamer** to ubuntu system in the PC, for example copy to directory `/home/waveshare/E9/mjpg-streamer`.

Users can also download by visit: <http://www.ijg.org/files/> .

1.3. Unzip the source code bag

Unzip:

```
#cd /home/waveshare/E9/mjpg-streamer
```

```
#tar -xvf jpegsrc.v8b.tar.gz
```

Get jpeg-8b file when finished.

1.4. Configure the source code bag

Create a folder for storing the jpeg file

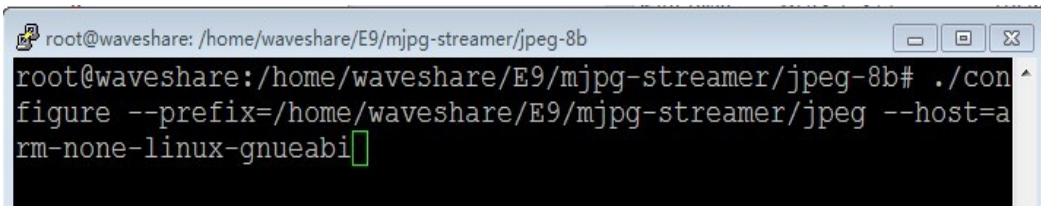
```
#mkdir/home/waveshare/E9/mjpg-streamer/jpeg
```

```
#cd jpeg-8b
```

```
#./configure
```

```
--prefix=/home/waveshare/E9/mjpg-streamer/jpeg
```

```
--host=arm-none-linux-gnueabi
```



```
root@waveshare: /home/waveshare/E9/mjpg-streamer/jpeg-8b
root@waveshare: /home/waveshare/E9/mjpg-streamer/jpeg-8b# ./con
figure --prefix=/home/waveshare/E9/mjpg-streamer/jpeg --host=a
rm-none-linux-gnueabi
```

Parameter description:

1) ./configure: configure the source tree

2) --prefix=XX: install directory

3) --host: specify compiler

1.5. Compile

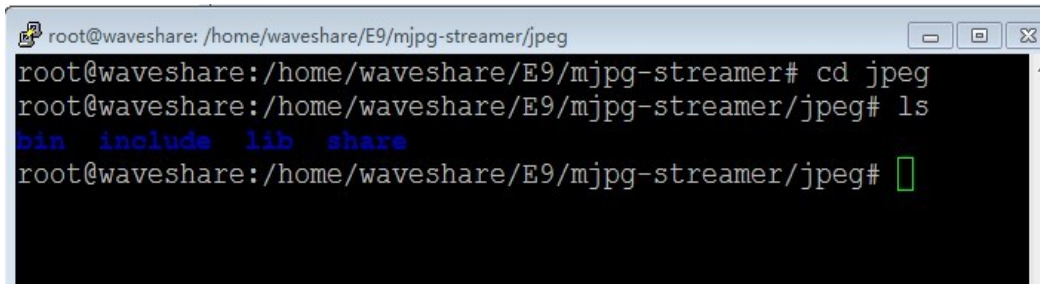
```
#make
```

1.6. Install

```
#make install
```

Bin, include, lib, share will be generated under
/home/waveshare/E9/mjpg-streamer/jpeg, which will be used

in the next chapter.

A terminal window with a title bar showing the path "/home/waveshare/E9/mjpg-streamer/jpeg". The terminal text shows the user navigating to the "jpeg" directory and listing its contents. The output shows four subdirectories: "bin", "include", "lib", and "share".

```
root@waveshare: /home/waveshare/E9/mjpg-streamer/jpeg
root@waveshare: /home/waveshare/E9/mjpg-streamer/jpeg# cd jpeg
root@waveshare: /home/waveshare/E9/mjpg-streamer/jpeg# ls
bin include lib share
root@waveshare: /home/waveshare/E9/mjpg-streamer/jpeg#
```

2. Porting mjpg-streamer

2.1. Acquire the source code bag

Copy “jpegsrc.v8b.tar.gz” under directory **/mjpg-streamer** to ubuntu system in the PC, for example copy to directory **/home/waveshare/E9/mjpg-streamer**.

Users can also download by visit: <http://www.ijg.org/files/> .

2.2. Unzip the source code bag

Unzip:

```
#tar -xvf mjpg-streamer.tar.gz
```

Get mjpg-streamer file when finished.

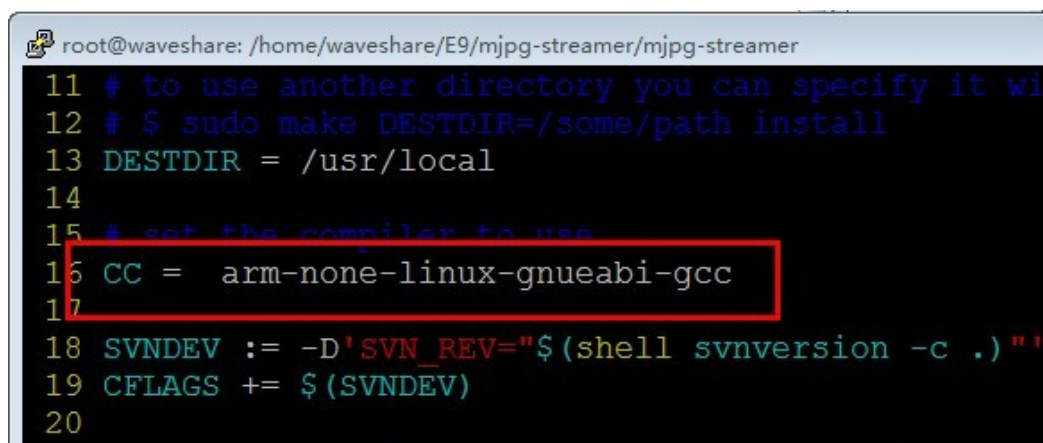
2.3. Configure the source code bag

```
#cd /home/waveshare/E9/mjpg-streamer/mjpg-streamer
```

Modify the top-level Makefile and Makefile at all levels under directory plugins, modify CC=gcc

to:

```
CC = arm-none-linux-gnueabi-gcc
```

A terminal window screenshot showing the configuration of a Makefile. The prompt is root@waveshare: /home/waveshare/E9/mjpg-streamer/mjpg-streamer. The terminal shows several lines of code being edited or displayed. Line 15 is highlighted with a red box, showing CC = arm-none-linux-gnueabi-gcc. Other lines include comments about using another directory, setting DESTDIR to /usr/local, and setting SVNDEV and CFLAGS.

```
root@waveshare: /home/waveshare/E9/mjpg-streamer/mjpg-streamer
11 # to use another directory you can specify it wi
12 # $ sudo make DESTDIR=/some/path install
13 DESTDIR = /usr/local
14
15 # set the compiler to use
16 CC = arm-none-linux-gnueabi-gcc
17
18 SVNDEV := -D'SVN_REV="$(shell svnversion -c .) "'
19 CFLAGS += $(SVNDEV)
20
```

Modify Makefile under directory plugins/input_uvc/ Makefile, specify path for mjpg graphic library ported in the second chapter:

```
#vi plugins/input_uvc/Makefile
```

Add graphics library link path after: CFLAGS += -O2 -DLINUX -D_GNU_SOURCE -Wall -shared -fPIC:

```
-I/home/waveshare/E9/mjpg-streamer/jpeg/include
```

Add lib path of the jpeg graphics library before: \$(CC) \$(CFLAGS) -ljpeg -o \$@ input_uvc.c v4l2uvc.lo

jpeg_utils.lodyncntrl.lo“-o”

-L/home/waveshare/E9/mjpg-streamer/jpeg/lib

```
root@waveshare: /home/waveshare/E9/mjpg-streamer/mjpg-streamer
13
14 CFLAGS += -O1 -DLINUX -D_GNU_SOURCE -Wall -shared -fPIC
   -I/home/waveshare/E9/mjpg-streamer/jpeg/include
15
16 ifeq ($(USE_LIBV4L2),true)
17 LFLAGS += -lv4l2
18 CFLAGS += -DUSE_LIBV4L2
19 endif
20
21 LFLAGS += -ljpeg
22
23 all: input_uvc.so
24
25 clean:
26     rm -f *.a *.o core *~ *.so *.lo
27
28 input_uvc.so: $(OTHER_HEADERS) input_uvc.c v4l2uvc.lo jpeg
   _utils.lo dyncntrl.lo
29     $(CC) $(CFLAGS) $(LFLAGS) -L/home/waveshare/E9/mjpg-
   streamer/jpeg/lib -o $@ input_uvc.c v4l2uvc.lo jpeg_util
   s.lo dyncntrl.lo
30
31 v4l2uvc.lo: huffman.h uvc_compat.h v4l2uvc.c v4l2uvc.h
32     $(CC) -o $@ $(CFLAGS) -o $@ v4l2uvc.c
```

2.4. Modify the video encoding form

#vi plugins/input_uvc/input_uvc.c

Modify “format = V4L2_PIX_FMT_MJPEG” to

format = V4L2_PIX_FMT_YUYV。


```
root@waveshare: /home/waveshare/E9/mjpg-streamer/mjpg-streamer
92 .....
93 int input_init(input_parameter *param, int id)
94 {
95     char *dev = "/dev/video0", *s;
96     int width = 640, height = 480, fps = 5, format = V4L2_PIX_FMT_YUVV, i;
97     /* initialize the mutex variable */
98     if(pthread_mutex_init(&cams[id].controls_mutex, NULL) != 0) {
99         IPRINT("could not initialize mutex variable\n");
100         exit(EXIT_FAILURE);
101     }
102
103     param->argv[0] = INPUT_PLUGIN_NAME;
104
```

2.5. Compile

#make

The dynamic library and related script needed when running the video streaming server will be generated under this directory.

2.6. Install

Copy the whole mjpg-streamer file to the development board.