

# GadgetPC

## Single Board Computer

### UVC Web Camera Quick Start Guide

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**BiPOM Electronics, Inc.**

16301 Blue Ridge Road, Missouri City, Texas 77489

Telephone: 1-713-283-9970 Fax: 1-281-416-2806

E-mail: [info@bipom.com](mailto:info@bipom.com)

Web: [www.bipom.com](http://www.bipom.com)

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## 1. Overview

Thank you for your purchase of the GadgetPC Single Board Computer. GadgetPC is a powerful computer board that is capable of running high-level operating systems such as Linux.

This document explains how to start with UVC compliant **QuickCam® 3000 for Business** WEB camera from Logitech ( [http://www.logitech.com/index.cfm/business/products/webcam\\_communications/devices/4783&cl=us,en](http://www.logitech.com/index.cfm/business/products/webcam_communications/devices/4783&cl=us,en) ).

**QuickCam® 3000 for Business**



## 2. Configure UVC camera with Linux Control Panel

In order to configure **UVC camera**, start **Linux Control Panel** software from **Start -> All Programs -> GadgetPC -> Linux Control Panel**. After **Linux Control Panel** starts, open **vars.sh** file that is located in **c:\bipom\devtools\GadgetPC\sh** ( if you installed Linux Control Panel to default path ).

Select **File à Open** from the menu and open **vars.sh** file in **sh** folder. By default, the program will start from the folder where GadgetPC release was installed.

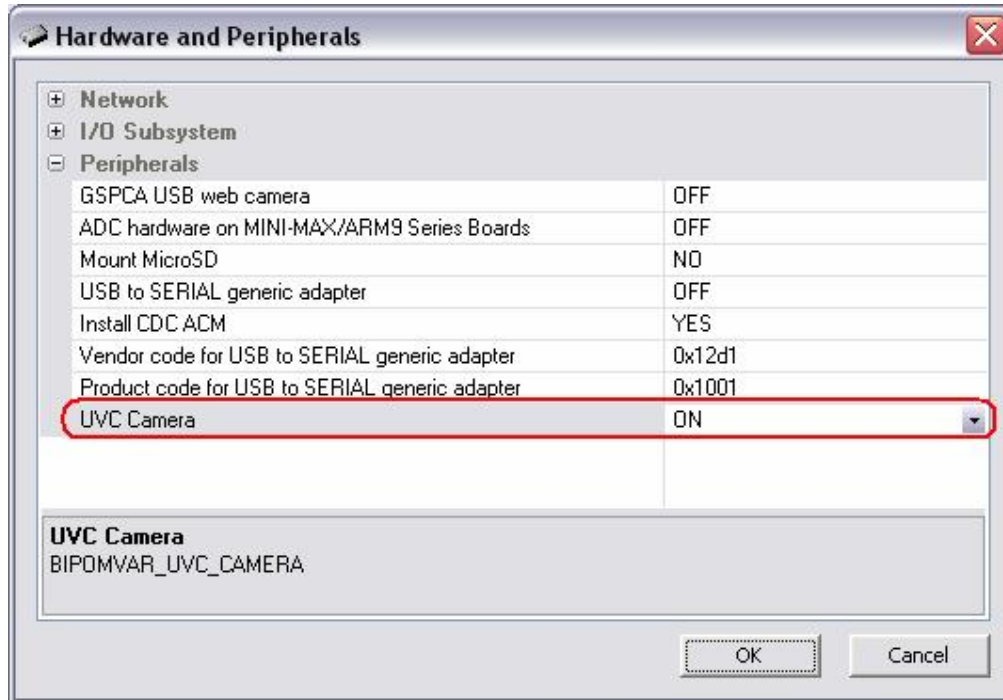
When you open **vars.sh** file, you will see configuration group icons such as **Hardware & Peripherals**, **Software**, **System** and **Network**.



## Enable and Disable UVC Camera

As next step you should enable **UVC camera** in **Hardware and Peripherals** section. Double click **Hardware and Peripherals** icon. Go to **Peripherals** group. In this group you can configure one variable:

**UVC Camera:** Select ON or OFF. If you select ON then UVC Camera will be enabled. Select OFF if you don't want to use UVC Camera.



This option allows to install appropriate drivers at boot time, so **UVC camera** can be reached when Linux is started. As next step you should configure **UVC Camera Server software**.

## Configure UVC Camera Server software

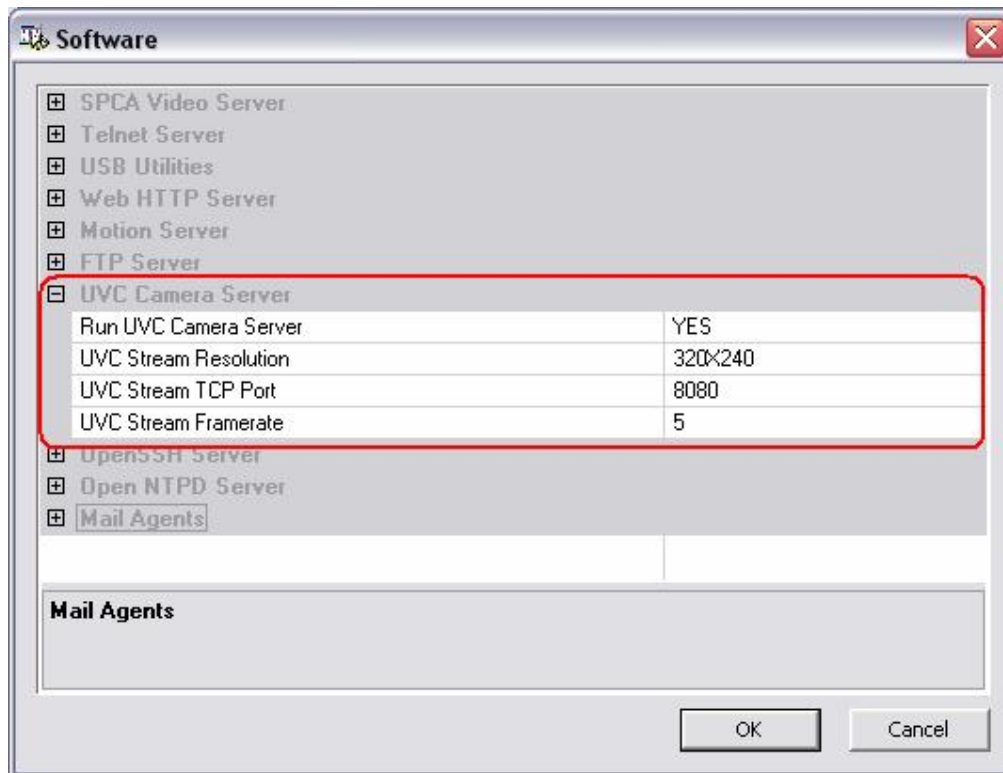
Double click **Software** icon. Go to **UVC Camera Server** group. In this group you can configure four variable:

**Run UVC Camera Server:** Select YES or NO. If you select YES then UVC camera server will run at boot time. Select NO if you want to disable UVC camera server.

**UVC Stream Resolution:** Select resolution of the stream. Available options: 320x240 and 640x480.

**UVC Stream Port:** Here you can set TCP port number for the UVC camera server. By default this is set to 8080.

**UVC Stream Framerate:** Here you can set Framerate for the UVC camera server. By default this is set to 5.



### 3. Hardware setup

The setup includes:

- GadgetPC board;
- Logitech UVC web camera;
- D-Link USB Ethernet adapter;
- 2GB USB Flash drive.



The setup allows to connect to a network WEB camera using FireFox, Opera, Chrome browsers.

**NOTE: Internet Explorer does not support the video stream.**

## 4. Software setup

4.1. Bipom provides the prepared archives under FTP server:

```
GadgetPC_USB_RootFS_BSVER107_loader.zip  
debian_rootfs_12Sep2009.tar.bz2  
linux2.60.30.4_12Sep2009.tar.bz2
```

**Account to access BiPOM FTP server:**

```
Host = www.bipom.com  
Port = 21  
User = bipomftp  
Pass = guest123!
```

### 4.2. U-boot loader.

In order to run RootFS on USB drive it is necessary to configure U-boot to provide correct arguments

to Linux kernel. Please read [GadgetPC Debian Installation Guide](#).

If you don't have access to U-boot console you are able to upgrade the loader using SAM-BA package from ATMEL.

Please read [GadgetPC System Installation Guide](#).

To obtain the loader BIN file please download

**GadgetPC\_USB\_RootFS\_BSVER107\_loader.zip** from FTP server.

The **GadgetPC\_USB\_RootFS\_BSVER107\_loader.bin** file provides the complete loader support:

- **AT91 BootStrap loader;**
- **U-boot loader;**
- **U-boot environment.**

### 4.3. Linux kernel and RootFS.

Download the packages to a native Linux machine from BiPOM FTP server.

```
debian_rootfs_12Sep2009.tar.bz2  
linux2.60.30.4_12Sep2009.tar.bz2
```

Use the following command to extract files from archive

```
sudo tar -xvjf debian_rootfs_12Sep2009.tar.bz2
```

```
sudo tar -xvjf linux2.6.30.4_12Sep2009.tar.bz2
```



Create a dual partition USB flash drive. Please read [GadgetPC Debian Installation Guide](#).

Copy all the files/folders from **FAT** folder to **/media/FAT**  
**sudo cp -R FAT/\* /media/FAT**

Copy all the files/folders from **EXT3** folder to **/media/EXT3**  
**sudo cp -R EXT3/\* /media/EXT3**

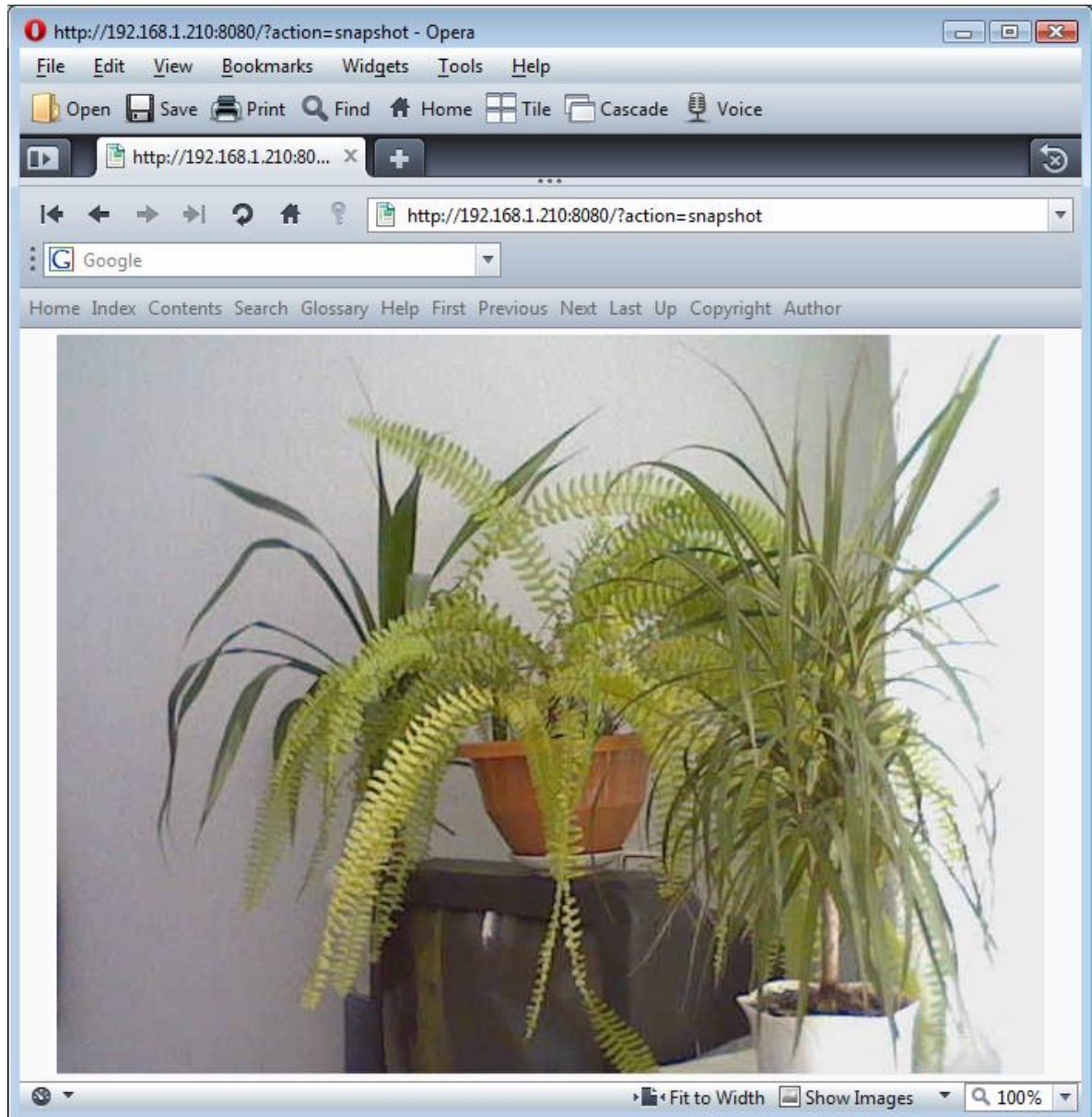
## 5. Network Web Camera

The Gadget PC is pre-configured to:

- IP address of Device: 192.168.1.210
- Subnet mask: 255.255.255.0
- IP address of Gateway: 192.168.1.1

Power the setup.

Try Opera browser to get a snapshot from a camera.



In order to get the video stream just type <http://192.168.1.210:8080/?action=stream>

## 6. How to embed the remote camera to the user's web page

You can also embed the remote UVC camera to web page.

Create your HTML page in any editor and add following HTML code:

```

```

where:

**[SERVER IP]** - IP of remote camera.

**[SERVER PORT]** - Port number what you entered when configured UVC Camera

**[UVC WIDTH]** - Width in pixels. Should be the same as you selected when configured UVC Camera

**[UVC HEIGHT]** - Height in pixels. Should be the same as you selected when configured UVC Camera

The example below show HTML code for camera installed on device with IP 192.168.1.20. The UVC Camera server used port 8080 and resolution is 640x480:

```

```

Below you can see whole HTML page which will show stream from UVC Camera:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=iso-
8859-1">
<title>Gadget PC UVC stream video</title>
</head>

<body>

<center>
<h1>Gadget PC UVC stream video</h1><br>


</center>

</body>


</html>
```

Gadget PC UVC stream video

http://localhost:8080/

localhost BIPOM Web GISMETEO Webmaster Tools UKR.NET HTML signs Золотой Дюк Other bookmarks

## Gadget PC UVC stream video



The image shows a collection of indoor plants. In the center, there is a large, bushy fern with bright green, feathery fronds, housed in a reddish-brown plastic pot. To its right, a tall, slender plant with long, thin, arching leaves is in a white pot. To the left of the central fern, another plant with long, dark, pointed leaves is visible. The plants are resting on a dark, possibly black, surface against a plain, light-colored wall.

## 7. Pre-installed software

The current package includes the pre-installed SSH and NTP servers.

### 7.1. NTP server.

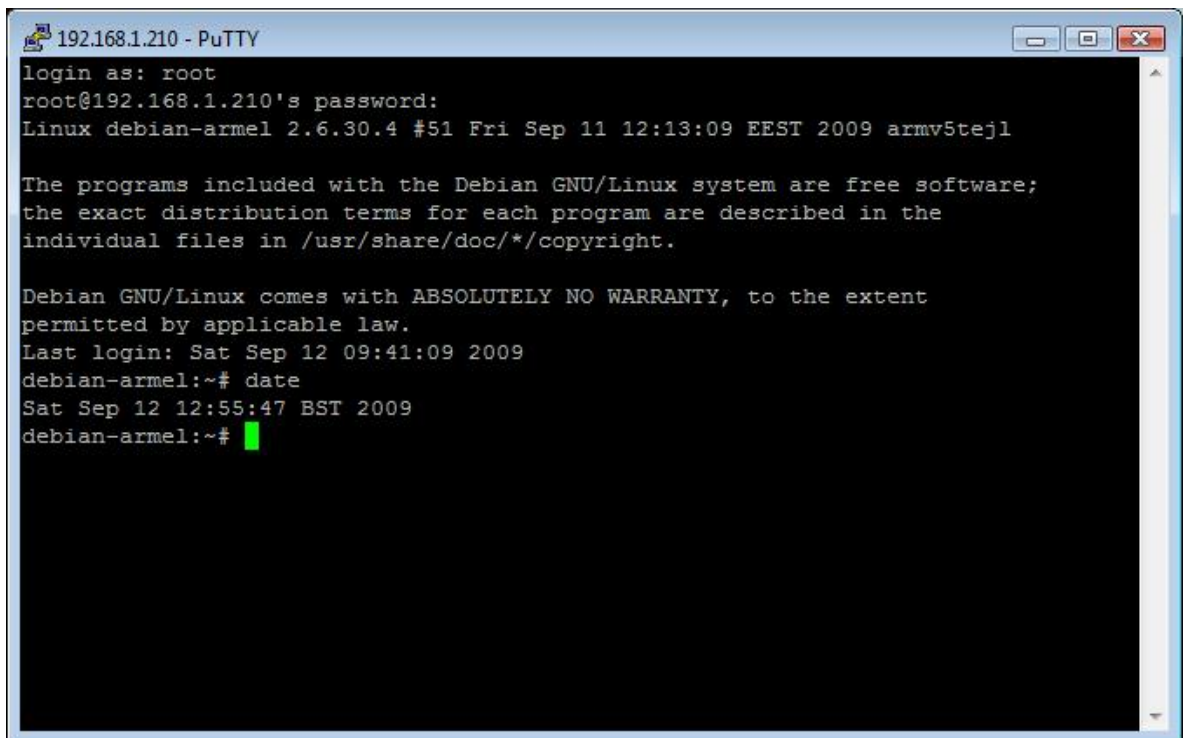
If GadgetPC is connected to a network that provides access to Internet the board will get time from the remote server.

**Note. GadgetPC does not provide a hardware clock.**

### 7.2. SSH server.

SSH server is pre-configured to default port 22.

You can login to the board as 'root' (password is root).



```
192.168.1.210 - PuTTY
login as: root
root@192.168.1.210's password:
Linux debian-armel 2.6.30.4 #51 Fri Sep 11 12:13:09 EEST 2009 armv5tej1

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sat Sep 12 09:41:09 2009
debian-armel:~# date
Sat Sep 12 12:55:47 BST 2009
debian-armel:~# █
```

