



USER MANUAL

for MVC300 camera

Version 1.02



1. Legal notice

Copyright © 2012 TELTONIKA Ltd. All rights reserved. Reproduction, transfer, distribution or storage of part or all of the contents in this document in any form without prior written permission of TELTONIKA Ltd is prohibited. The manufacturer reserves the right to modify the product and manual for the purpose of technical improvement without prior notice.

Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

2. Attention



Before using the device we strongly recommend reading this user manual first.



Do not rip open the device. Do not touch the device if the device block is broken.



The device is not water-resistant. Keep it dry.



Device is powered by a low voltage +12V DC power adaptor.

3. Table of Contents

| | |
|-------------------------------------|----|
| 1. Legal notice..... | 2 |
| 2. Attention..... | 2 |
| 3. Table of Contents..... | 3 |
| 4. SAFETY INFORMATION..... | 4 |
| 5. Introduction..... | 5 |
| 6. Specifications..... | 5 |
| 7. Setting up your camera..... | 6 |
| 7.1. Camera overview..... | 6 |
| 7.2. Configuring your computer..... | 6 |
| 7.3. Installing VLAN player..... | 7 |
| 7.4. Connecting camera to PC..... | 8 |
| 7.5. Using camera in the car..... | 8 |
| 7.6. Using RTSP..... | 9 |
| 8. Camera's user interface..... | 10 |
| 8.1. Live view..... | 10 |
| 8.2. Playback..... | 11 |
| 8.3. Advanced settings..... | 11 |
| 8.3.1. Video settings..... | 11 |
| 8.3.2. Stream settings..... | 12 |
| 8.4. Maintenance..... | 12 |
| 9. Abbreviations..... | 14 |

4. SAFETY INFORMATION

In this document you will be introduced on how to use a MVC300 camera safely. We suggest you to adhere to the following recommendations in order to avoid personal injuries and/or property damage.

You have to be familiar with the safety requirements before using the device!

To avoid burning and voltage caused traumas of the personnel working with the device please follow these safety requirements.



The device is intended to be supplied from a Limited Power Source (LPS) whose power consumption should not exceed 15VA and current rating of overcurrent protective device should not exceed 2A.



The highest transient overvoltage in the output (secondary circuit) of used PSU shall not exceed 71V peak.



The device can be used with the Personal Computer (first safety class) or Notebook (second safety class). Associated equipment: PSU (power supply unit) (LPS) and personal computer (PC) shall comply with the requirements of standard EN 60950-1.



Do not mount or service the device during a thunderstorm.



To avoid mechanical damages to the device it is recommended to transport it packed in a damage-proof pack.



Protection in primary circuits of associated PC and PSU (LPS) against short circuits and earth faults of associated PC shall be provided as part of the building installation.

To avoid mechanical damage to the device it is recommended to transport it packed in a damage-proof pack. While using the device, it should be placed so, that its indicating LEDs would be visible as they inform in which working mode the device is in and if it has any working problems.

Protection against overcurrent, short circuiting and earth faults should be provided as a part of the building installation.

Signal level of the device depends on the environment in which it is working. In case the device starts working insufficiently, please refer to qualified personnel in order to repair this product. We recommend forwarding it to a repair centre or the manufacturer. There are no exchangeable parts inside the device.

5. Introduction

Thank you for purchasing a MVC300 camera!

The MVC300 camera is a sleek and compact video recording device perfect for in-car mounting: an ideal solution if you want to capture any significant events that might occur on the road. It can also be used to augment any fleet management system with added video surveillance.

With Ethernet functionality you can take the MVC300 camera out of the car altogether and integrate it into a stationary surveillance system, in other words it can perfectly double as a fully-fledged IP network camera. Video viewing also does not elude flexibility: it can be done via our Web Users Interface or through any video player capable of processing the RTSP streaming protocol.

6. Specifications

Video

- 5Mpix CMOS sensor
- Sensor size: 1/2.5 inch
- H.264 compression
- Full HD 1080p @ 23 fps
- SXVGA (1280 x 960) @ 30 fps

Functions

- 10/100Mbps Ethernet port
- microSD card slot (cards up to 32GB are supported)
- 8 x IR LEDs (for night version only)
- Light sensor (for night version only)
- Microphone
- Powered from DC connector or USB cable
- Embedded web server for live video and configuration
- Configurable RTSP stream
- Recording to microSD card
- Configurable recording length
- Configurable On Screen Display
- Windscreen mounting

Electrical, Mechanical & Environmental:

- | | |
|--------------------------|-----------------------------|
| • Dimensions (H x W x D) | 67mm x 67mm x 45mm |
| • Weight | 80g |
| • Power supply | 8-30VDC or USB cable (5VDC) |
| • Power consumption | < 3.5W |
| • Indicators | 1 x status LED |
| • Operating temperature | 0° to 45° C |
| • Storage temperature | -20° to 60° C |
| • Operating humidity | 10% to 90% Non-condensing |
| • Storage humidity | 5% to 95% Non-condensing |

7. Setting up your camera

7.1. Camera overview

Front Panel



- 1 Microphone
- 2 Camera lens
- 3 DC power connector
- 4 IR LEDs (optional)
- 5 Light sensor (optional)

Back Panel

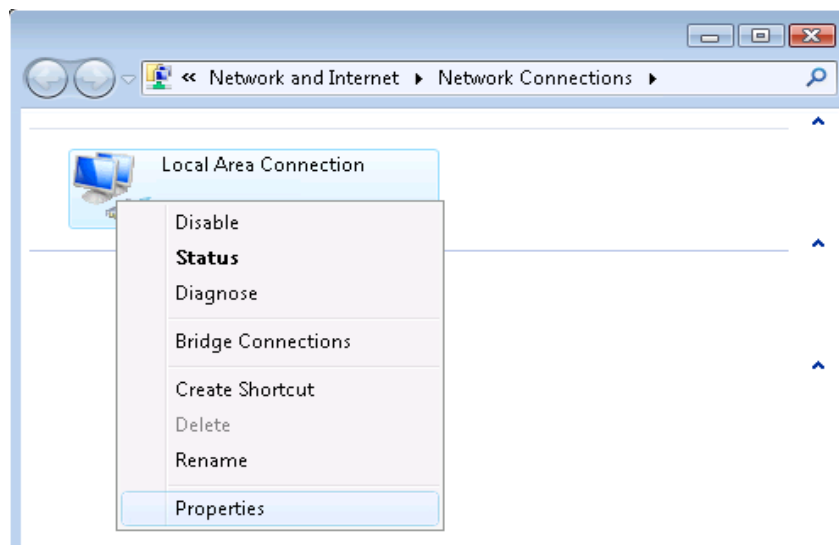


- 1 microSD card slot
- 2 USB/power connector
- 3 Status LED
- 4 Mounting connector
- 5 Ethernet connector

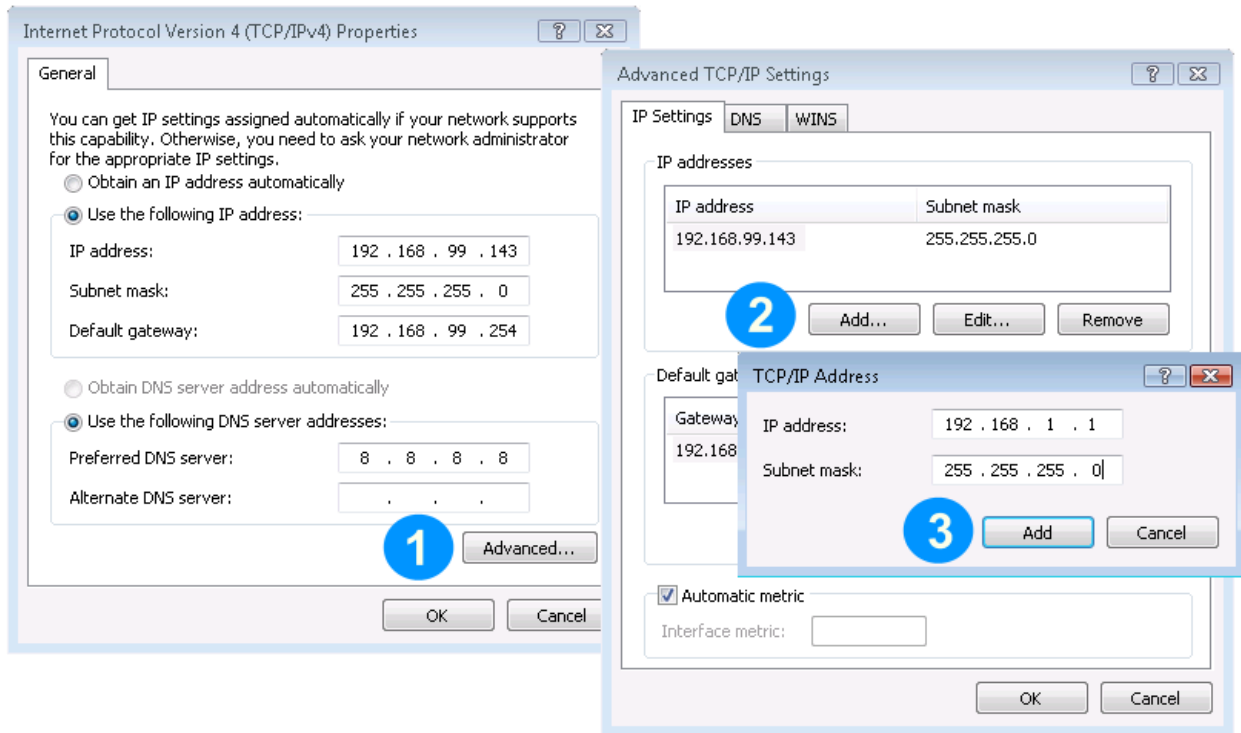
7.2. Configuring your computer

The camera can be connected to your computer via an ethernet cable. Camera's IP address is **192.168.1.10**. Your PC has to be in the same subnet.

1. Go to **Start > Control Panel > Network and Internet > Network and Sharing Center**. In the left pane click **Manage network connections** link. Right click on **Local Area Connection** and select **Properties**.



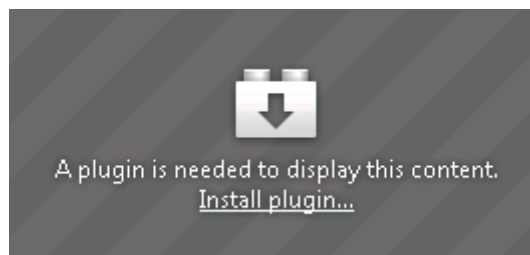
2. Choose **Internet Protocol Version 4 (TCP/IP)** and click **Properties**.
3. Check if your PC's IP address starts 192.168.1.x. If not, click **Advanced...** to bring up advanced setting. Click **Add...**, specify IP address and Subnet mask (e.g. 192.168.1.1 and 255.255.255.0), click **Add** to save changes.



4. Click **OK** to apply new network settings.

7.3. Installing VLAN player

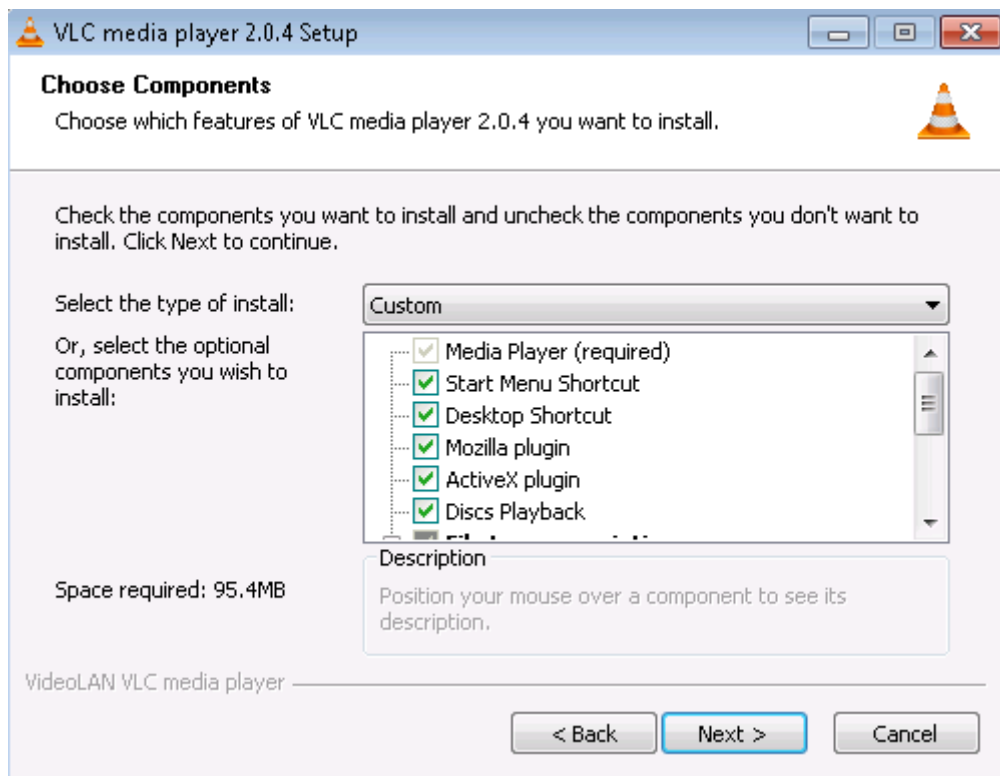
VLAN player is necessary in order to be able to see video in the **Live view** window. If the player's plugin is missing camera's WebUI won't show live video and may display a warning message:



VLAN player installation steps:

1. Acquire VideoLAN player installer from www.videolan.org.
2. Launch downloaded installer.

3. Make sure both **Mozilla plugin** and **ActiveX plugin** are selected when choosing components. This will ensure that the plugin is installed on all browsers.



4. Complete VLAN player installation process.

7.4. Connecting camera to PC

Camera can be connected to your PC for watching live video, playing back recorded files and changing settings. To connect the camera to your PC:

1. Insert microSD card.
2. Connect the camera to the PC with the USB cable in order to supply power to the device.
3. Connect Ethernet cable to the camera and PC (alternatively, you can connect both the camera and your PC to an Ethernet hub/switch).

7.5. Using camera in the car

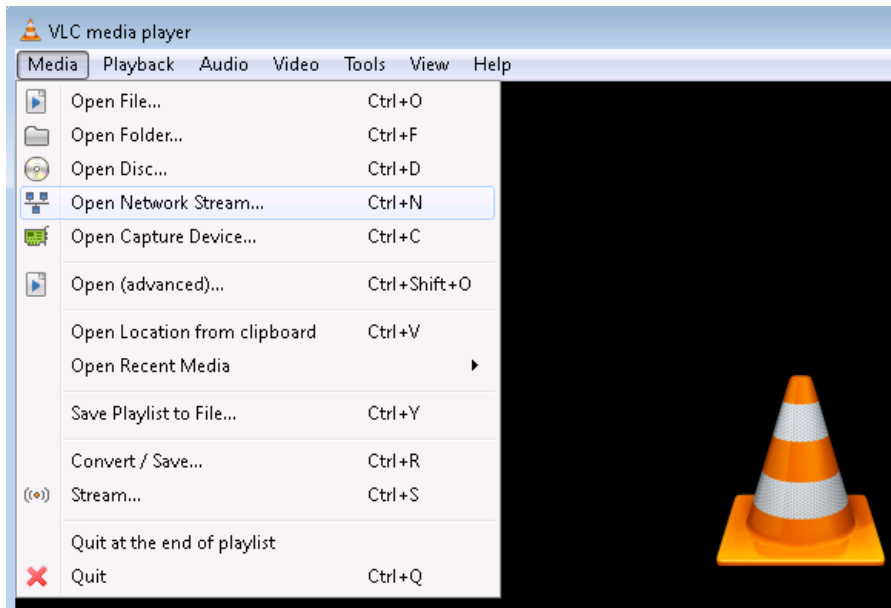
After setting the camera to the desired configuration it can be set up for use in the car:

1. Insert microSD card.
2. Attach car mount to the camera.
3. When in the car, attach camera to the windscreen.
4. Connect car power supply adapter to camera's DC power socket.
5. Camera will start recording automatically after power is supplied.

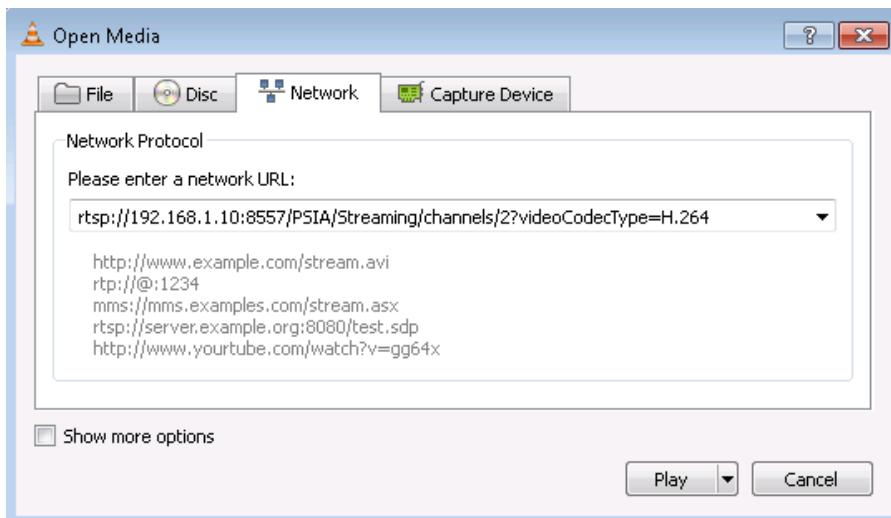
7.6. Using RTSP

Camera is capable of streaming video by RTSP protocol. After the camera is connected to the PC (or network) any RTSP capable media player can be used to see the video stream. To start an RTSP stream in VideoLAN player:

1. Go to **Media** and select **Open Network Stream** (alternatively Ctrl+N combination can be used).



2. Enter URL `rtsp://192.168.1.10:8557/PSIA/Streaming/channels/2?videoCodecType=H.264` and press **Play** to see stream video.



8. Camera's user interface

Camera's WebUI can be accessed when camera is connected to your PC. Type <http://192.168.1.10> into your internet browser's address field in order to reach the camera's WebUI.

8.1. Live view

Live view tab displays video from the camera and is used to configure basic video settings.

General settings

| | |
|-------------------|--------------------------------------------|
| Resolution | Full HD: 1080p ▼ |
| Audio | <input checked="" type="checkbox"/> Enable |
| Video clip length | 1 min ▼ |
| Video flip | None ▼ |
| OSD | <input type="checkbox"/> Time and date |
| Mode | Day ▼ |

Resolution

Specify video resolution of live stream and recorded videos. Possible options are:

| | |
|----------------|-------------|
| HD: 720p | 1280 x 720 |
| D1: 480p | 720 x 480 |
| SXVGA | 1280 x 960 |
| Full HD: 1080p | 1920 x 1080 |

Audio

When enabled live streaming and any recorded video will include audio.

Video clip length

Specify the length of the recorded video files.

Video flip

Select required video flip. Use the **Both** option if your camera is mounted upside down.

OSD

Check to include time and date information into video stream and recorded videos.

Mode

Select **Day** or **Night** mode to tune the camera to specific conditions.

Save

Press **Save** to apply new settings.

8.2. Playback

In the **Playback** tab on the WebUI you can browse, download and delete recorded video files.

Memory card Amount to display:

| | File name | Date | Time | Size |
|--------------------------|--------------------------------------------------|------------|----------|--------|
| <input type="checkbox"/> | MVC300_000009_20000101115949.avi | 2000/01/01 | 12:00:46 | 21442K |
| <input type="checkbox"/> | MVC300_000010_20000101120051.avi | 2000/01/01 | 12:01:23 | 11929K |
| <input type="checkbox"/> | MVC300_000011_20000101120158.avi | 2000/01/01 | 12:02:51 | 19651K |
| <input type="checkbox"/> | MVC300_000012_20000101120256.avi | 2000/01/01 | 12:03:28 | 12313K |
| <input type="checkbox"/> | MVC300_000013_20000101080032.avi | 2000/01/01 | 08:01:25 | 19673K |

[1-5](#) [6-10](#) [11-15](#) ... [36-40](#) [41-45](#) [46](#)

Format To be able to use memory card it should be formatted as FAT32. The card can be formatted when inserted in your PC or by pressing **Format** when inserted in the camera.

Amount to display Select number of files per page to display

Delete selected Press to permanently delete selected files from camera's SD card.

8.3. Advanced settings

Advanced setting tab allows configurations of **Video settings** and **Stream settings**.

8.3.1. Video settings

Video settings

| | |
|------------------------|-------------------------------------|
| Brightness | <input type="text" value="50"/> |
| Contrast | <input type="text" value="50"/> |
| Saturation | <input type="text" value="50"/> |
| Sharpness | <input type="text" value="50"/> |
| Backlight compensation | <input type="text" value="Medium"/> |
| Flicker compensation | <input type="text" value="50Hz"/> |
| White balance | <input type="text" value="Auto"/> |

Brightness Specify brightness of the video. Allowed range is from 0 to 100.

Contrast Specify contrast of the video. Allowed range is from 0 to 100.

Saturation Specify saturation of the video. Allowed range is from 0 to 100.

Sharpness Specify sharpness of the video. Allowed range is from 0 to 100.

Backlight compensations Select desired backlight compensation or turn it off altogether.

Flicker compensation When using the camera indoors, select correct flicker frequency to get a clean video.

White balance Adjust white balance mode to achieve the best video quality in your conditions.

8.3.2. Stream settings

Stream settings

| | | |
|-------------------|-----------------------------------------------------------------------------|----------------------------------------|
| Bit rate | <input type="text" value="3000"/> | Kbps |
| Rate control | <input type="text" value="VBR"/> | |
| OSD | <input checked="" type="checkbox"/> Text <input type="text" value="text1"/> | <input type="text" value="Top-right"/> |
| Image sensor mode | <input type="text" value="Binning"/> | |

Bit rate Increased bit rate results in better video quality while decreasing it allows for a smaller recorded file size.

Rate control Rate control mode can be constant (CBR), variable (VBR) or can be turned off.

OSD Specify additional text to be displayed in the video and select its position.

Image sensor mode Specify camera's behaviour when data from video sensor contains more pixels than specified resolution. Pixels can be bound together, skipped or window mode can be used.

8.4. Maintenance

Maintenance tab provides possibility to configure such settings as camera's name, time, authorization and update device's firmware.

Maintenance

| | |
|--------------------|-------------------------------------------------|
| Camera name | <input type="text" value="MVC300"/> |
| Current parameters | <input type="button" value="Reset to default"/> |
| Restart camera | <input type="button" value="Restart"/> |

Camera name Specify the name of the camera. Name will be used in the file name of the recorded videos.

Reset to defaults Press to reset camera's configuration to default values.

Restart Press to restart the camera.

Time settings

| | | |
|----------------|---------------------------------------------------------------------------------|---------------------------|
| Time in camera | 2012-10-24 10:57:27 | |
| Set time | Set manually Date <input type="text"/> | Time <input type="text"/> |
| | Synchronize with your computer clock <input type="button" value="Synchronize"/> | |

Time in camera Displays current camera's date and time.

Set time Specify desired date and time. Press **Save** at the bottom of the page to set the new values.

Synchronize Press to synchronize camera's date and time with your computer.

User authorization settings

| | |
|-----------------|--------------------------------------------|
| Authorization | <input checked="" type="checkbox"/> Enable |
| Password | <input type="password" value="••••"/> |
| Retype password | <input type="password" value="••••"/> |

Authorization

Check **Enable** if you want to use authorization when accessing camera's WebUI.

Password

Type password to be used when authorizing. Username is always **admin**.

Retype password

Confirm previously typed password.

Firmware update

| | |
|------------------|----------------------------------------|
| Firmware version | MVC300_T_00.01.100 |
| New firmware | <input type="button" value="Upgrade"/> |

Firmware version

Displays current camera's firmware version

Upgrade

To upgrade camera's firmware press **Upgrade** button to bring up firmware upgrade dialog described below.

Firmware update

| | | |
|-------------------------------------|----------------------|------------------------------------------|
| Browse for firmware update file: | <input type="text"/> | <input type="button" value="Browse..."/> |
| <input type="button" value="Send"/> | | |

Browse

Press **Browse** and select new firmware file.

Send

After firmware file is selected press **Send** to start firmware update process.

9. Abbreviations

| | |
|-------|-----------------------------------------|
| CBR | Constant Bit Rate |
| CMOS | Complementary Metal–Oxide–Semiconductor |
| FPS | Frames Per Second |
| HD | High Definition |
| Hz | Hertz |
| IP | Internet Protocol |
| IR | Infrared |
| Kbps | Kilobits Per Second |
| LED | Light-Emitting Diode |
| LPS | Limited Power Source |
| Mbps | Megabits Per Second |
| Mpix | Mega pixel |
| OSD | On-Screen Display |
| PC | Personal Computer |
| PSU | Power Supply Unit |
| RTSP | Real Time Streaming Protocol |
| SD | Secure Digital |
| SXVGA | Super Extended Video Graphics Array |
| USB | Universal Serial Bus |
| V | Volts |
| VBR | Variable Bit Rate |
| VDC | Volts of Direct Current |