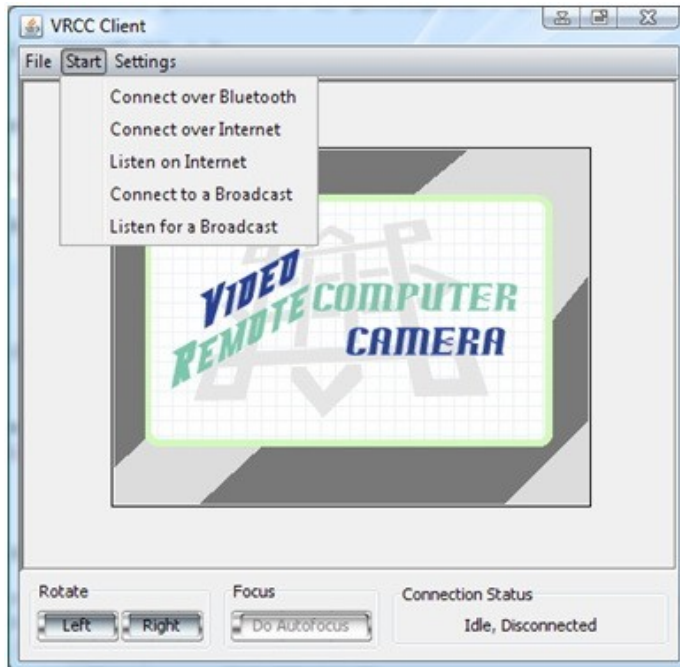# V.R.C.C. Manual (draft)
Video Remote Computer Camera

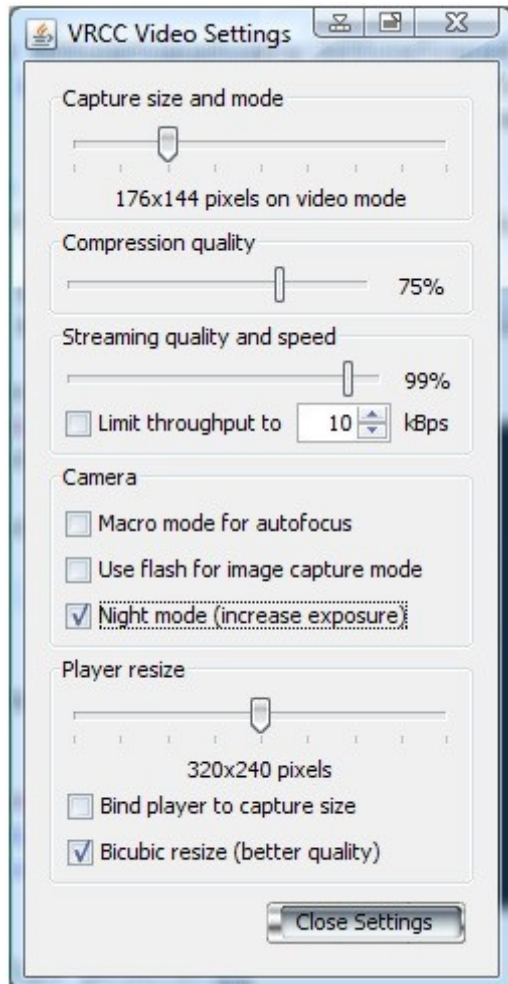## 1. Main Window of PC Client

This is the first window you see when starting the PC Client (vrcc.exe). It contains the player, most used controls, status and a menu to access functions.

We will first look at the bottom of the window, at the three frames. **Rotate** frame contains the **Left** and **Right** buttons, pressing these will rotate the player so you do not have to rotate the phone. The **Focus** frame contains a button called **Do Autofocus**, it will be enabled only when a phone is connected and pressing it will initiate focus the camera to the center object. Next to the right, **Connection Status** frame contains a text indicating the current action of connecting process or transfer rate and frame rate when a connection is active (action may not be accurate for cable connection and broadcast).

Next, the menu bar. Its first item is called **File**, this contains **Disconnect** submenu for cancelling a connect/listen action or closing an active connection and **Exit** submenu that closes the application. **Start** contains entries for initiating or listening for a connection. **Settings** menu contains submenus for opening windows that control connection parameters (**Connection**), camera features, operating mode and streaming options (**Camera and Streaming** – available only with an active connection). **Export** menu is enabled when a connection is active and provides items to export the video as a **Broadcast** or as files on disk (**Record**). The **Help** menu contains entries with information about the program, tutorials etc.

2. Settings for Camera, Streaming and Player

This window can be accessed from the menu (only when there is an active connection) by selecting **Settings – Camera and Streaming**. It contains controls related to capabilities of phone's camera, streaming and player.

The first slider in **Capture size and mode** is probably the most important. It can adjust the resolution of the camera and change capture mode. Available modes are: **video mode** – this uses the camera sensor as a camcorder, resolutions, quality and lighting will be lower but frame rate will be higher so it is suited when motion is important; **screen mode** – in this mode you will be able to control the phone and view it's screen. Clicking on the player and typing on your keyboard will be translated to stylus and key actions; **picture mode** – camera sensor is set to taking still pictures. Resolution is higher and the quality is good but fast moving objects can appear smudged, it is suited for surveillance, low light (the flash can be enabled in this mode) and when clarity is important.

The **Compression Quality** slider will adjust the tradeoff between bandwidth usage and frame rate (better for lower values) and image clarity (better for higher values).
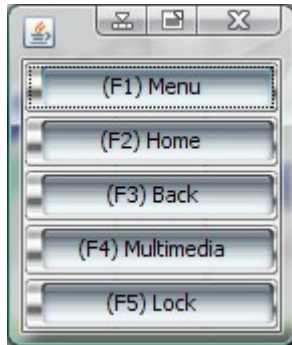
Next, **Streaming quality and speed** controls streaming properties. The slider adjusts the number of accepted errors, the default 100% is recommended, when set to this value a protocol with error correction is used. If the quality is 99% or lower, transmission is switched to an unreliable protocol that does not check for errors but uses less bandwidth and is faster, however it is should only be used for low speed and high latency connections like CSD and GPRS. This slider is only available on internet connections because Bluetooth and cable offer only protocols with error checking. **Limit throughput to** can be used to limit bandwidth usage. When enabled, the phone will limit the number of kilobytes it sends, roughly to the value in the spinner.

In **Camera** frame, there are controls related to camera's features. When **Macro mode for autofocus** is enabled, clicking **Do Autofocus** button in the main window will focus the camera on very close objects. **Use flash for image capture mode** enables the flash for each picture taken in **image mode**. Using the flash for too long will cause the LED's to heat up and some phones will delay the flash, to after the picture is taken. **Night mode (increase exposure)** will expose the sensor for a longer period to get more light, frame rate may be lower and moving objects may become unclear.

Player resize frame: The slider lets you choose the size of the player in the main window. If **Bind player to capture size** is enabled, the slider will be disabled and it will follow the value of **Capture size** slider (no resizing will take place). If **Bicubic resize (better quality)** is enabled, a better algorithm will be used for resizing, however it will use more processing power. When disabled, nearest neighbor algorithm will be enabled (should be used only on very old processors).

3. Special Device Keys

This window will appear on the left of main window when a **screen mode** is selected and a connection is active. Pressing one of the buttons will act as a special button on the phone, like multimedia key or back key on P990i's left side. When the video player is focused (i.e. you can use the keyboard to control the phone) pressing one of the keys specified in brackets (ex. F1) will also act as the button.

Note that, like on the phone, prolonged pressing of a button may serve another function. For example, on P990i, the task manager will start when keeping **Home** button pressed about a second.