

## **A simple Windows remote control program for Rotel RCX-1500, RDG-1520 and RT-09 devices.**

**v3.3**

### **History & Credits.**

This simple control program was born after inspiration from Simonb68 (htguide member) who had been working on remote control interface for his Rotel equipment in the early part of 2000's. Therefore it is only correct to acknowledge that having looked at what he was doing, gave me food for thought and a basis to start writing this control for some other devices. In fact, file structure and some methods are based closely on his original ideas.

Credit must also go to Timosoft for editctlsu.ocx, which is a unicode aware text control.

Finally, thanks must go to Mike Sheehan of Rotel USA, who took the time to test this program for me on RCX-1500 report back the results and make some valid observations.

Originally these Rotel devices communicated using hex data and checksums over their RS232 ports, but this was changed to pure ASCII code in following firmware updates. This program reflects these changes and will not work with the original hex based communication. (If anyone wants this, then my earlier version 1 is fully functional on RDG-1520 with hex code, but not tested on other devices).

### **Compability.**

The program has been tested on Windows XP and Windows 7 (32 and 64bit). It is written in VB6.

### **Why not use UPnP?**

I'm working on it! From what I can see in my tests, Reciva section does not implement UPnP fully and some of that which is implemented appears to have errors. This also appears to be the case with Rotel firmware section. There appears to be some issues where sometimes Windows can detect the Rotel device, other times not. I would need full information from Rotel in order to get it working properly. Therefore I decided to adopt a simple serial com approach for now. I am sure UPnP can be made to function because the Rotel Remote app works ok on iPad, but without detailed internal information, it is difficult for me to do.

### **Installation.**

Extract the zip, then run the setup program and select destination directory.

### **Function.**

The program is capable of controlling Rotel RCX-1500, RDG-1520 and RT-09 devices over their RS232 ports. I may look at adding other devices later. It works without problem on a pc using a USB to serial adaptor (for those pc's that do not have a serial port). It is also capable of communicating over LAN (ethernet). But to do this, it is necessary to add an RS232 to ethernet server/converter to the RS232 port of the Rotel device. The controlling pc can then connect either via cable or wifi. I am using a Hexin HXSP-2108E-A converter which, after setting up correctly in TCP/IP server mode, works

reliably. These can be purchased online and appear to be similar to Tibbo devices, which I assume will also work.

### Issues.

There appears to be a few "issues" within Rotel firmware. For example, MENU command works fine on RCX-1500, but on RDG-1520 there is an error where power option exists as a menu item in the RS232 transmitted data, but does not really exist in the Rotel RDG device. This causes the selections to be misplaced on the screen. Care needs to be taken as it is possible to inadvertently select factory defaults by mistake. This is something that must be fixed in Rotel firmware, it cannot be resolved by this software program. Hopefully Rotel software engineers will correct it in a future firmware release.

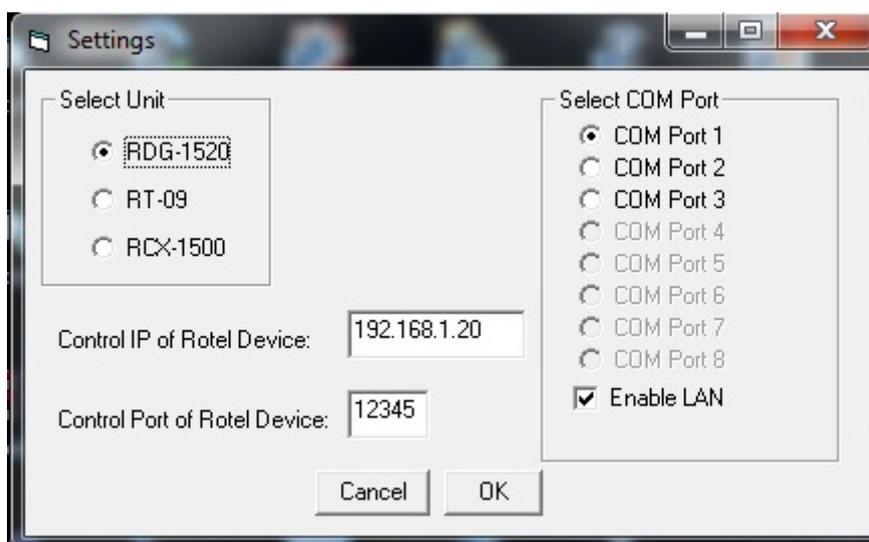
Note July 2014. Rotel have now identified this issue and will be releasing an updated firmware.

I notice that a USB stick plugged in to the front port does not always wake up when Rotel power is cycled, it is necessary to unplug and re-plug the stick in order for it to function.

Search function within this software will not work. It worked fine with the original hex firmware, but I do not know how to implement it correctly in the later ASCII firmware. I am hoping that Rotel can give me this information in the future.

Play, pause, stop buttons should light up strong yellow when selected, but the Rotel device does not send play\_status when requested. This is defined in Rotel documentation but appears not to work. Again, if Rotel firmware is corrected, then these will function correctly.

### Some screen shots.



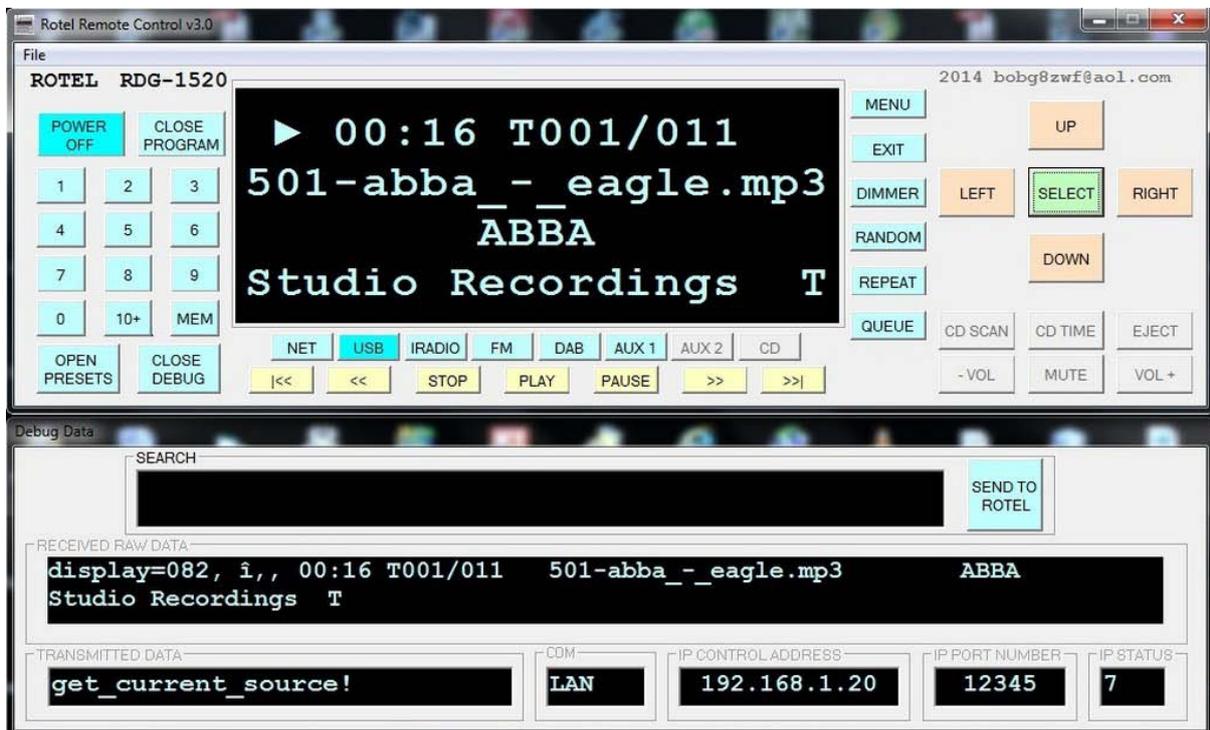
Above is shown the initial startup screen. Here can be selected the Rotel device, com port, IP address and IP port (of the converter). For operation over RS232, it is necessary to uncheck "Enable LAN".

The software will check for available com ports on the pc (up to com8) and only allow selection of available ports.

Settings are stored in Windows registry, therefore will be filled in automatically on next running of the software. They can be modified if necessary. Some of this code is from Simonb68 and I wish he should have credit for those parts.



Above is shown main screen of the software (debug window closed). Greyed out buttons are not available functions on RDG-1520 device, but will light up and be enabled for RCX-1500 device.



Above is shown main screen, with debug open. Here can be seen an mp3 is playing (characters on the screen are scrolling right to left - hence in this image text appears cut off, this is not the case in reality). In the debug area can be seen the raw data arriving from Rotel device, last data sent to Rotel device, also the com status. In this case the software is communicating over LAN, to Rotel control address and port. Note, these are the settings for the Hexin RS232 to Ethernet adaptor, NOT the Rotel ethernet port.

In the Received Raw Data can be seen "display=082, etc etc. In fact, the display is really only 80 characters long, the strange characters are a control function sent by Rotel which is converted by this software to display the play symbol. Some of the characters sent are unicode, but others not. The software attempts to trap all of these and convert them to a single printable character. The final result is intended to fit a four line by 20 display. Some of the characters which display on the Rotel device display cannot be displayed by Windows, therefore are converted to show something which has meaning. But also see below....

It is important to note that this software is designed to work with Windows non-unicode settings set to English UK or US (and probably other Western Languages). I am finding it difficult to take account of DBCS and MBCS (Asian characters), while at the same time allowing for the "semi-unicode" strings sent by Rotel. Therefore, while the software will work fine with Asian Windows settings, it will display some unintended characters on these pc's.

There may also be some special or control characters that are not trapped, these will cause the screen to mess up while they are being displayed.



Above is show main screen. In this case internet radio is playing. Greyed out buttons are not valid for iRadio mode, therefore are disabled. The software polls Rotel device every few seconds to get information. This is done in attempt to keep this software in sync with the Rotel device. For example, if someone operates the device from its front panel buttons or IR remote control. Then this software needs to reflect the changes.



Above is shown the preset screen. All presets that are stored in the Rotel device can be called and selected by clicking on the adjacent number. In this case iradio 13 is selected and playing. It should be noted that on cold power up, Rotel device selects memory 0 as the last played item. This only contains basic information and therefore is not displayed in this software.

**Finally.**

This software is by no means perfect. It is a work in progress. I am sure there are errors in my programming and unforeseen events that may cause it to crash or lock up.

I will attempt to address these if they are documented to me. Ideally a screen shot, with debug open, showing the incoming raw data and the resultant display.

Please note that I wrote this "for fun" and because I wanted a way to control my Rotel box remotely as it is installed in the lounge, yet I often listen to it while working in my home office. Please don't shoot the messenger if you don't like it! Also, please understand that you use this at your own risk, both to your pc and Rotel device.

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