

FM-Radio and IDE64 CD player for C64

Requires a RDA5807SP or RDA5807P FM-Radio chip to be connected to C64 User port as follows:

C64 UP Pin	Pin Name	RDA5807 Module pin
1	GND	GND
2	+5V	VCC
C	PB0	DAT
D	PB1	CLK

Not tested with other versions of RDA5807.

Also, the CD-player requires a IDE64 with CD or DVD drive attached.

FM-Radio specific keyboard assignments:

- SPACE - Switch Radio ON / OFF
- s - Toggle STEREO/MONO
- b - Toggle Bass Boost
- m - Toggle mute ON/OFF
- e - Toggle de-emphasis
- : - Start scanning down
- ; - Start scanning up
- u - Increase freq by 100kHz
- d - Decrease freq by 100kHz
- c - Channel store

CD-Player specific keyboard assignments:

- z - Play previous track
- x - Stop
- c - Play / Pause
- v - Play next track
- b - Eject / Load CD tray
- s - shuffle play

General keyboard assignments:

- LEFT ARROW - switch between radio and CD
- + - Increase volume
- - Decrease volume
- q - exit

- If radio state is ON it is not switched OFF if you quit the program
- CD-playing wont be stopped if you quit the program

Version history:

V.1.0 (25.12.2013) Timo V.

- Added IDE64 CD player support
- Some cosmetic changes to radio part
- Note, old cnf files wont work properly since v1.0 uses uppercase letters only

V.0.3 (28.7.2013) Timo V.

- Some small Cosmetic changes.
- Source code now included

V.0.2 (1.5.2013) Timo V.

- Added toggling of de-emphasis between 50us and 75us. Default is now 50us
- Added retries in the radio init procedure in case the chip does not respond in the first tries

V.0.1 (15.4.2013) Timo V.

- when program is started it tries to search for fmradio.cfg from disk. This configuration file does not exist initially but is generated if you store any channels to locations (1, 2, 3 ... 9, 0) and answer 'y' when exiting the program. Currently config file only supports stored channel data

Loading...

FM Radio for C64

Update 25.12.2013: SW now supports playing audio CDs as well (via IDE64)

Listen to your favourite radio stations on your Commodore.

You can get these RDA5807 based FM Radio modules from Ebay etc. with ~5 Euros.

There are at least two different modules available - one with RDA5807SP chip and one with RDA5807P.

Both of these seem to be working. The one with RDA5807P is a bit smaller than the one with RDA5807SP but it lacks the power LED... easy enough to add your own, though.



It already has all the components you really need.

Connecting this to Commodore 64 User port is done simply like this:

C64 Pin	Pin Name	RDA5807 Module pin
1	GND	GND
2	+5V	VCC
C	PB0	DAT
D	PB1	CLK

See User port pinout, for example, from here:

[Commodore 64 User port pinout](#)

It seems to be that separate pullup resistors for I2C DAT/CLK -lines are not needed and module already has resistors for this. Seems to be working just as well with or without additional pullups.

You probably want to attach an antenna (~96cm long wire should be just fine) to the antenna pad.

The module has a 3.5mm stereo audio connector to pass the audio to headphones / active speakers / your monitor's audio input connector.

Here is the module wired (experimentally) to C64 user port:



Some pictures of the module put into plastic enclosure with required connectors and power switch.



... The hole in the box cover is so that you can see the LED being lit..

Here is another one attached to my C64 Tower.



These modules are actually small enough to be easily fitted inside C64 case if you don't use user port for anything. Comments / improvement ideas are very much appreciated. I guess nobody wants to fry their precious C=64... So, if you brick your computer doing this I deny any responsibility :)

The SW part:

There are three different ways to control the chip via I2C-bus:

- a) Address 0x60 (TEA5767 compatible mode)
- b) Address 0x10 (sequential access / RDA5800 mode)
- c) Address 0x11 (Random access / RDA5807 mode)

TEA5767 compatible way is the most simple way. However this doesn't make it possible to Alter volume, set Bass Boost etc. I haven't really looked into the sequential access mode. This SW uses Random access mode since that should enable all the controls supported by the chip.

Below is a screen shot of the SW v0.1. support



This is a screenshot of v1.0 with CD player



The SW is written in C and compiled using CC65 compiler. Check the readme in the zip file. That and picture above should give a pretty good idea of the features included.

TODO:

- If somebody actually requests that there should be a way to configure this for use outside Europe (?) perhaps add config file parameters for 50/75 us de-emphasis and FM-Band (Currently only 87-108MHz supported... 76-91MHz or 76-108MHz bands are not supported)
- The audio provided by the module seems to be quite loud. With volume set to 50% it is already very loud. Also with volume set to minimum you can still here the audio quite well. Need to think if there is something to be done for this...
- There seems to be some current leak from the PB0 and PB1 when device is powered off (VCC disconnected). You can see the LED being weakly lit in the module... Perhaps use an ON-ON -switch so that when switch is set to power disabled state the VCC of the module is grounded through a resistor ???