

ICOM IC-7300

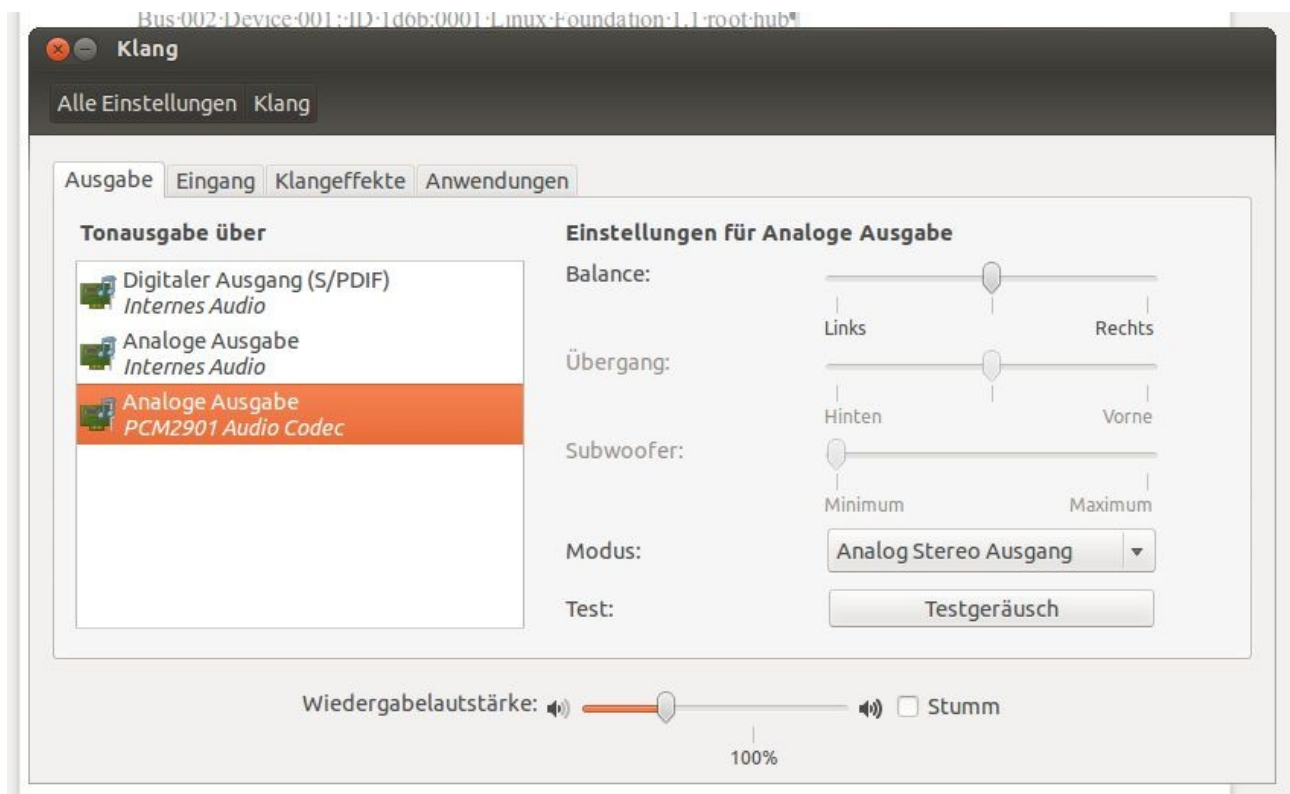
CAT&Digimodes mit Linux übers USB-Kabel

Von Ubuntu erkannte USB-Geräte:

```
tom@tom-O-E-M:~$ lsusb
```

```
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
Bus 002 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
Bus 003 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
Bus 004 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
Bus 005 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
Bus 001 Device 003: ID 05e3:0608 Genesys Logic, Inc. USB-2.0 4-Port HUB
Bus 004 Device 002: ID 04d9:1702 Holtek Semiconductor, Inc.
Bus 005 Device 002: ID 045e:076c Microsoft Corp.
Bus 001 Device 005: ID 05e3:0608 Genesys Logic, Inc. USB-2.0 4-Port HUB
Bus 002 Device 009: ID 0451:2046 Texas Instruments, Inc. TUSB2046 Hub
Bus 002 Device 010: ID 10c4:ea60 Cygnal Integrated Products, Inc. CP210x Composite Device
Bus 002 Device 011: ID 08bb:2901 Texas Instruments Japan PCM2901 Audio Codec
```

Von Ubuntu erkannte USB-Soundkarte:



Steuerung des ICOM 7100 über einen Linux Rechner

Hallo,

mein IC7100 hat eine eingebaute USB Soundkarte, die ein Linux Rechner nach Anschluss des USB Kabels gleich erkennt und so mit Fldigi gleich digitale Betriebsarten machen kann. Was fehlte war eine Moeglichkeit, gleich vom Rechner aus auf Senden zu gehen, ohne den Windows Treiber (das ist der uebliche Ansatz den man im Internet und auf der ICOM Webseite findet).

Ich hab nun eine simple Moeglichkeit gefunden: Fldigi hat eine Moeglichkeit des "RigControl" ueber "RigCat". Dort braucht man nur ein "rig description file", ein xml file, fuer den Transceiver. Fuer den IC7100 hab ich das auf der Webseite: <http://www.w1hkj.com/xmlarchives.html> gefunden, herunter geladen und in Fldigi importiert, und einen der beiden Ports mit "IC7100" im Namen gewaehlt (sichtbar ggf. nach Neustart von Fldigi). Und siehe da, der Transceiver ist nun auch vollstaendig ueber die USB Verbindung steuerbar :-), ohne Windows Treiber, nicht nur auf Senden schalten funktioniert, sondern auch die Frequenzeinstellung und Modulationsart. Nett, nicht?

Vor kurzem hab ich Neuinstallationen von Ubuntu 14.04 und Linux Mint vorgenommen, und bei beidem funktionierte die Steuerung des Transceivers nicht mehr (hoeren und decodieren ging noch). Ich hab herausgefunden dass der User kein Schreibrecht mehr auf die Seriellen Interfaces hatte, nur noch Leserechte. Ich fand dass Ubuntu 14.04 und Linux Mint den Standard-User nicht mehr zur Gruppe "dialout" zuordnete, anders als fruehere Versionen. Dies ist aber die Gruppe der die Seriellen Schnittstellen zugehoeren und die Schreibrechte beinhaltet. Nachdem ich dem User die Gruppe "dialout" gegeben hatte, funktioniert auch die Steuerung des Transceivers wieder. Man sieht seine Gruppenzugehoerigkeit durch den Befehl "groups", die von Dateien oder der Schnittstellen mit ls -l. Das Zuweisen der noetigen Gruppe erfolgt mit: sudo gpasswd -a \$USER dialout (dann neu starten)

Viele Gruesse, 73,

Gerald, DL5BBN

Yaesu FT-817 working with Linux Mint 13, fldigi and hamlib

June 24, 2012

tags: [fldigi](#), [FT-817](#), [hamlib](#), [Linux Mint](#), [USB CAT](#)

Just got a Yaesu FT-817 and wanted to get it working with Linux. So I loaded up Mint 13 on an older laptop and downloaded fldigi and hamlib.

Setting up my Signalink USB was pretty easy. After plugging it in, all you have to do is go to "Configure -> Sound Card", then select "PortAudio" and choose "USB Audio Codec" for both Capture and Playback. No problems there but getting rig control working was a little tougher.

I'm using a USB CAT cable I ordered from ebay and the laptop recognized it as /dev/ttyUSB0. Good so far. However, when I went to "Configure -> Rig Control", chose the Hamlib tab and ticked the "Use Hamlib" box, it didn't initialize. Closing fldigi and restarting it produced a cryptic hamlib error that was no help in figuring out what was wrong. Starting fldigi as root worked though so it looked like a permissions problem on /dev/ttyUSB0. After some Googling, I found some stuff to try.

Here's what ended up working for me...

Add your user to the 'dialout' group

```
sudo addgroup $USERNAME dialout
```

Next, you'll need to create a udev rule to change the permissions on /dev/ttyUSB0 (or whatever port your computer assigns). The reason for this is that if you simply change the permissions on your port, udev will change them back when you reboot. You need a udev rule to make your changes persistent.

```
sudo gedit /etc/udev/rules.d/40-permissions.rules
```

This file doesn't exist in a fresh install so gedit creates it but it will be blank. Add the next line to the file you created with the previous command.

```
KERNEL=="ttyUSB0", GROUP=="dialout", MODE=="0777"
```

You could also create more lines with ttyUSB1-9 if you wanted. This could help if you have other USB-Serial adapters that you use. The OS may also assign the next port number if you unplug and replug the one to the FT-817 and then you'll have a permissions problem until you reboot. After you're done adding lines like the one above, save the file and close gedit.

One last thing to do before rebooting, put the correct baud rate in fldigi under the Hamlib tab. My FT-817 seems to want 4800 baud so that's what I selected. It sounds slow but doesn't feel that way in use. Maybe there's a way to use a faster rate but I haven't figured that out yet.

Finally, you'll need to reboot. Restarting udev should probably be enough but it wasn't on my system. After a reboot it worked as expected though.

Once the computer's rebooted, turn on the radio, then start fldigi. You should be seeing the frequency change on the fldigi screen when you turn the VFO knob on the radio.

I found I was also able to use my CAT cable to program the FT-817 with Chirp. That'll be my next post though.

[Icom IC-7300 Digital Mode Settings](#)

[brucewampler](#)

This post shows the settings I use with my IC-7300 to use BPSK31 using Ham Radio Deluxe Digital Master 780 connected to the computer via the USB cable. It is probable that these settings will work equally well with other digital modes, and other digital mode software.

It is easiest to connect the IC-7300 using a single USB cable. Be sure that you first download and install the Icom USB driver before connecting the radio.

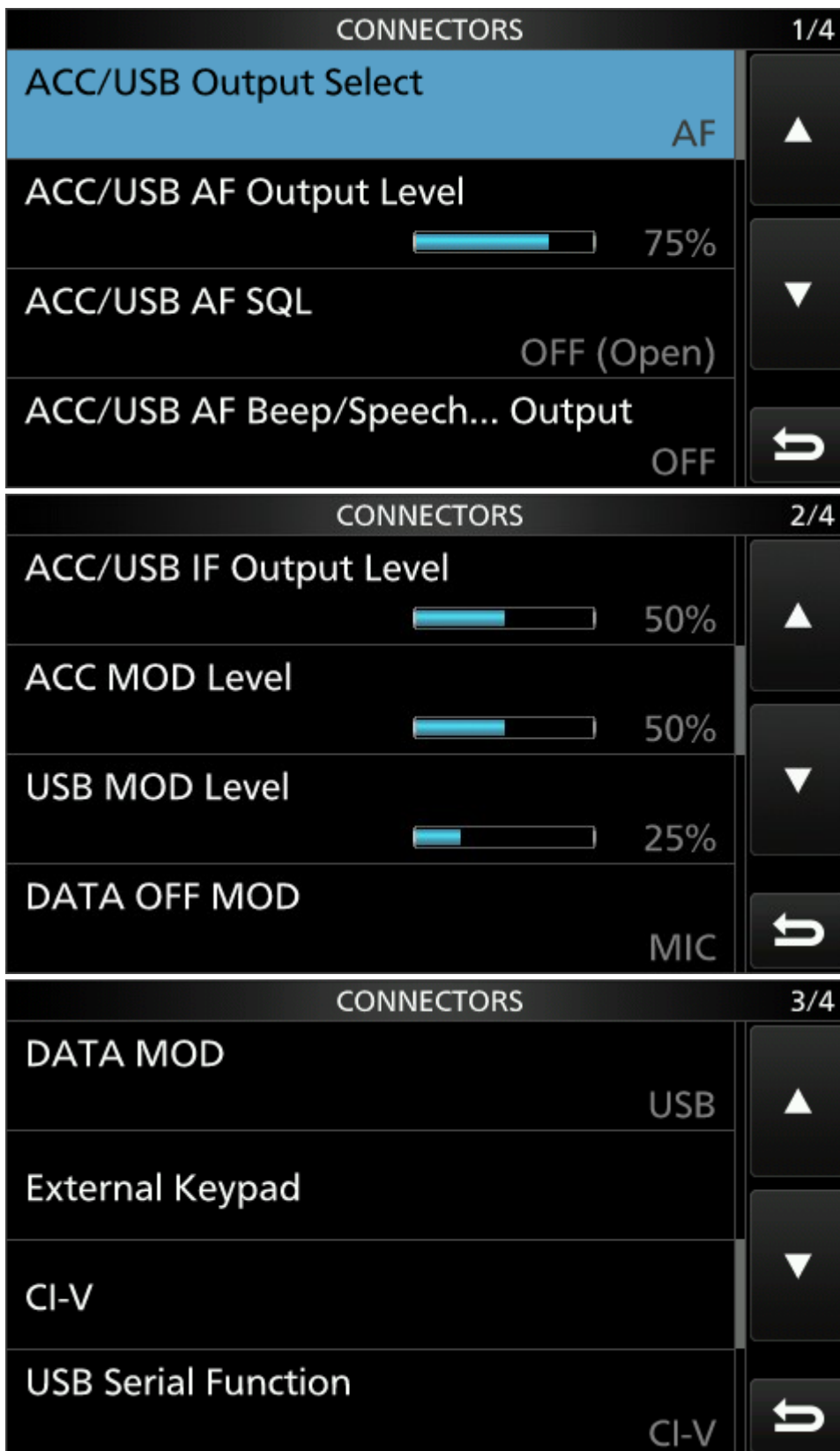
Use the context to differentiate USB (PC Universal Serial Bus) vs. USB (Upper Side Band).

Connectors Settings

Open the Settings -> Connectors menu. There are **4** important settings.

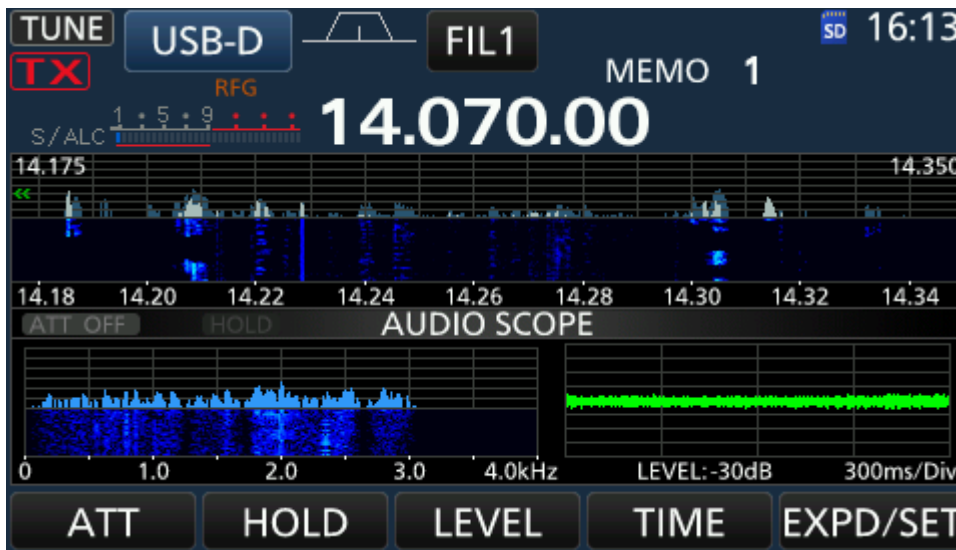
1. USB AF Output Level – 75%. This affects the Audio Level heard by your computer.

2. USB MOD Level – 25%. Set this so that you get zero ALC meter reading when transmitting. This should assure you have a clean output signal.
3. DATA OFF MOD – Mic. Use the microphone when in regular USB/LSB modes.
4. DATA MOD – USB. Use the USB connector to get your audio from your computer when in data mode (USB-D).

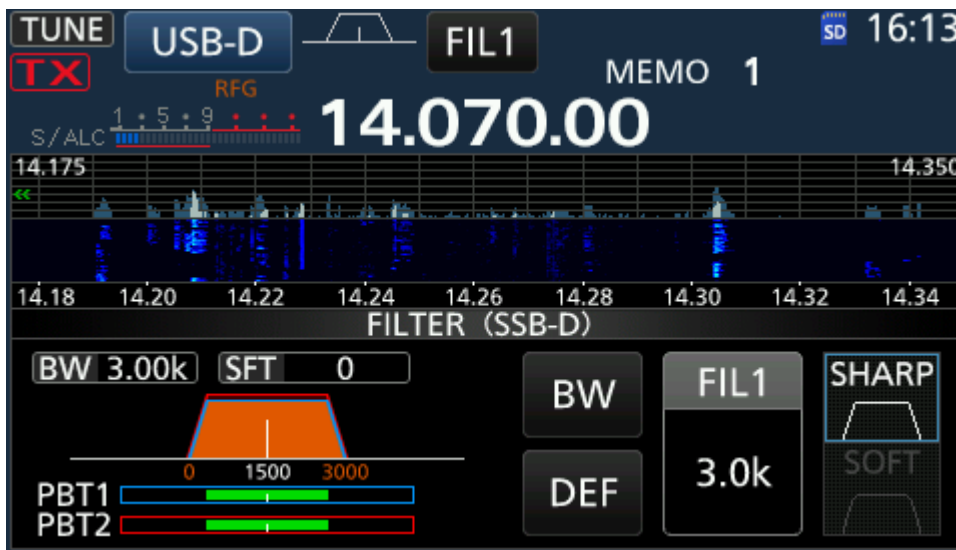


Use USB-D Mode

Now, when using a digital mode, you should use the USB-D mode. (Click the Mode label in the upper left, select USB and select DATA.) The USB-D mode is needed so that the DATA MOD option works as expected. It also lets you define a custom filter for BPSK31.



You can set the Filters (1-3) for each mode (USB, USB-D, AM, etc.). The default for the Data modes is very narrow, and this doesn't work well for BPSK31. So change the USB-D Filter 1 by long-pressing the *FIL1* button on the screen, and set the BW to 3.0K or wider. Alternatively, if you use RTTY or other narrower modes, you can use FIL2 or FIL3 instead for BPSK31.



Reduce Your Transmit Power

Don't forget to reduce your RF output power when on digital modes. The effective output power is determined by a combination of your output modulation and the RF Power Output. Other IC-7300 users seem to be finding an output power of about 50% gives about 30 watts output.

A More Refined Method of Power and ALC Control

The settings I give above seem to generate a clean signal according to my received reports. However, these settings are a bit "seat of the pants", and the power output relies on changing the power settings. I found a much more detailed and precise method of setting the ALC and power levels at this post. It is way more detailed, but may give better results.

fldigi with Icom IC-7300

[brucewampler](#)

This post describes the steps needed to get *fldigi* working with the Icom IC-7300.

1. Setup your 7300 as described in this post [Icom IC-7300 Digital Mode Settings](#).
 2. Download *fldigi* from here: [fldigi – Ham Radio Digital Modem Application](#)
 3. As of writing this post, the IC-7300 is not yet included in *fldigi's* rig definitions. So, you need to download the rig description file here: [ic-7300.xml](#).
 4. Install *fldigi* by running the file you downloaded.
 5. Configure *fldigi* for the 7300.
 1. Open the Configure menu
 2. Open the Rig Control sub-menu
 3. Select RigCAT from the left tab on the 2nd line.
 4. Click the user RigCat checkbox at the top of the box.
 5. The Rig Description File box should be blank. Click the Open... button, and then use the file selection dialog to select the ic-7300.xml file you just uploaded.
 6. Baud Rate of 19200 or 38400 should work.
 7. CAT command for PTT should be selected.
 8. Click Initialize and Save, and you should see things start working on the *fldigi* main screen.
 6. The introduction to *fldigi* is found [here](#).
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Compilieren der Hamlib-Bibliotheken aus dem Sourcecode

- Ein Patch ist immer für den Sourcecode gedacht, nicht für Binaries.
- Normalerweise enthält das Patchfile alle notwendigen Punkte für mehrere Files gleichzeitig, die zu patchen sind. Das Patchfile kommt ins hamlib-source-dir und dann: `patch -p1 < patchfile.diff` - damit werden alle notwendigen Files in einem Aufwisch gepatcht.
- `./configure --prefix=/usr --enable-shared --with-gnu-ld`
`make`
`sudo make install`
- Als erstes wäre `autogen.sh` auszuführen, welches `configure` überhaupt erst anlegt. Das alles muss als normaler User ohne root Rechte funktioniert - sofern die permissions des hamlib-dirs stimmen.
- Für mehr als `make install` brauchst Du keine root Rechte. Alle Files und Dirs sollten auf den

normalen User gehen; dann ganz normal alle commands als User ohne sudo.

- Klar, weil die files und directories jetzt schon mit root-Berechtigungen durchsetzt sind. Am besten lädst du dir die sources nochmals frisch in dein User-Homedirectory, und dann alle commands als normaler user und NUR make install mit sudo.

- /home/tom/hamlib_ic7300/build-aux/missing: Zeile 52: makeinfo: Kommando nicht gefunden.
WARNING: `makeinfo' is missing on your system. You should only need it if you modified a `.texi' or `.texinfo' file, or any other file indirectly affecting the aspect of the manual. The spurious call might also be the consequence of using a buggy `make' (AIX, DU, IRIX). You might want to install the `Texinfo' package or the `GNU make' package. Grab either from any GNU archive site.
make[1]: *** [hamlib.info] Fehler 1
make[1]: Verlasse Verzeichnis '/home/tom/hamlib_ic7300/doc'
make: *** [install-recursive] Fehler 1

- Du musst das Package 'texinfo' installieren und den Vorgang wiederholen. Wenn das während make passiert, wird der Rest des sourcecodes nicht umgesetzt, beim make install fehlen dann die verbleibenden Installationsschritte.

- Zudem solltest du das via Distribution kommende hamlib-package vor dem make install deinstallieren, damit sich da nicht zwei verschiedene Releases ins Gehege kommen. Und wirklich alles von hamlib entfernen, auch die dev-packages und die runtimes für perl oder tcl, sofern installiert.

- dpkg -l | grep hamlib
zeigt dir alle installierten hamlib-packages.