

# Guide for configuring Icom radios with USB for Digital Modes

## Introduction

With newer Icom radios now coming equipped with a USB (Universal Serial Bus) interface. No longer are you required to purchase, and use an interface (Rigblaster, Signalink) to connect your PC to your radio to allow you to use digital modes on your radio.

## Objectives

This guide is a general guide for basic computer, and radio configuration when using USB equipped Icom radios with digital modes. This guide will show you the following:

- Locate what COM Port(s) your radio is assigned by Windows
- Configure the sound devices for proper modulation, and reception
- Explain which radio settings that directly affect digital mode usage
- Show sample configurations for Ham Radio Deluxe, and FLdigi

## Definitions

- USB – Universal Serial Bus
- USB-D – Upper Sideband Data Mode

## Prerequisites

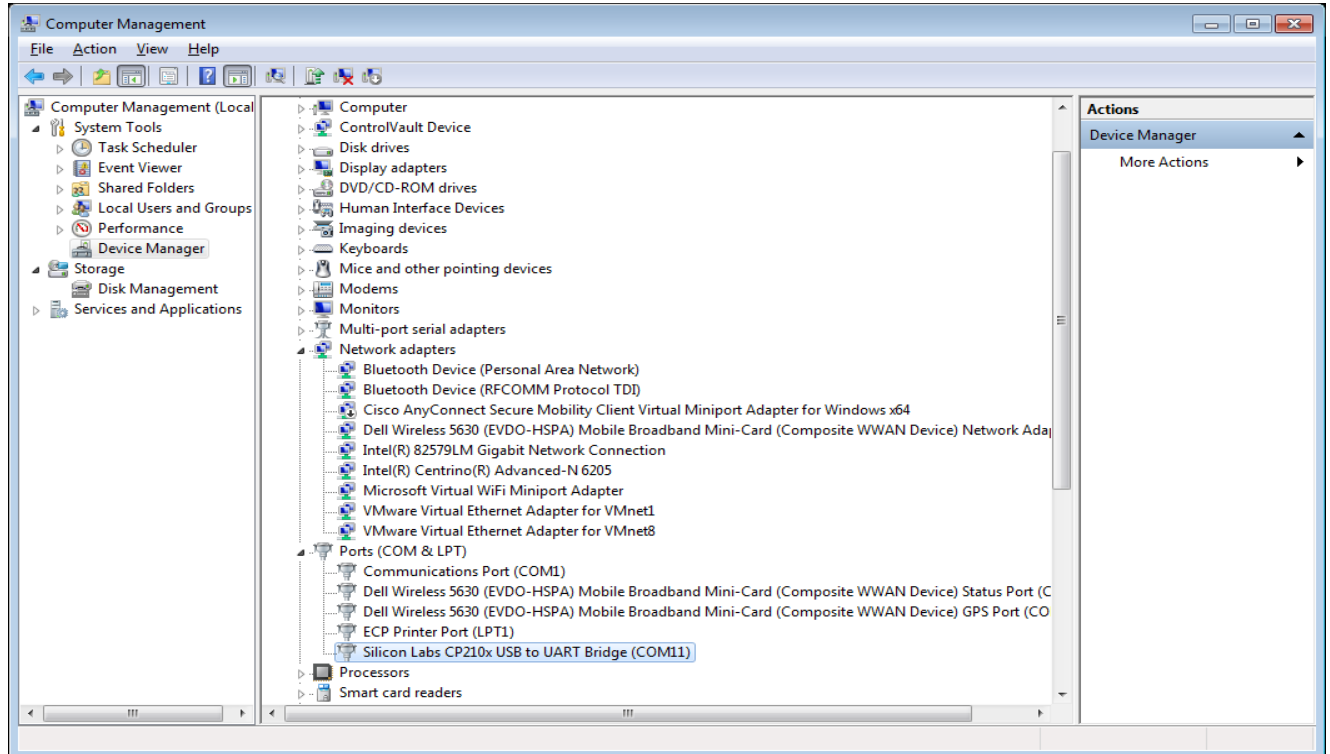
To use this guide it is required that you have:

- A basic understanding of the Windows operating system, and configuration
- Successfully installed the USB drivers for your radio
- Have your radio connected to your computer
- Have read, and understood your radios Instruction Manual (having it handy helps)

## COM Port assignment

To verify in Windows which COM Port(s) are assigned to your radio open the **Windows Device Manager**, and expand the **Ports (COM & LPT)** device tree. Make note the COM port used by the Silicon Labs CP210x device. Some radios may have two of these devices listed. **Use the top most listed/first device** as your rig control COM port.

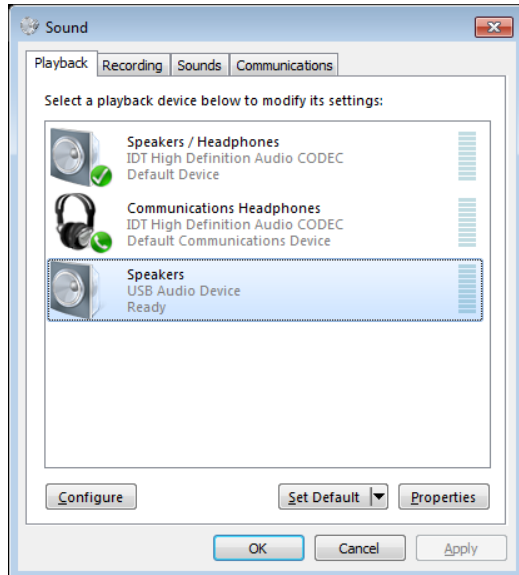
### *Windows Device Manager*



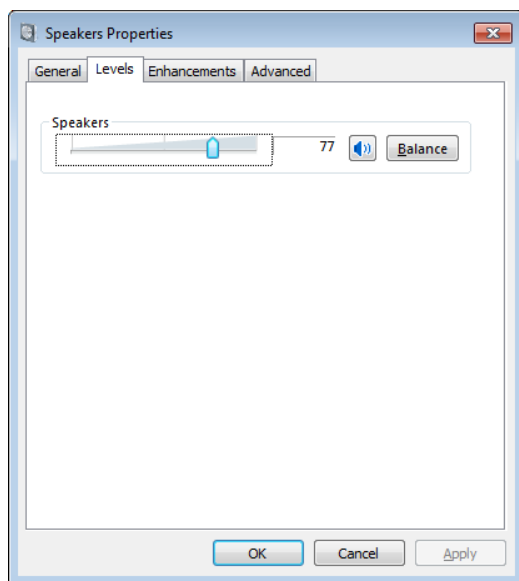
## Soundcard Settings

### *Output/Transmit device*

The **Speakers USB Audio Device Driver\*** provides sound data from your PC to your radio. This device can be found in the **Audio Device Manager** in the **Playback** tab.

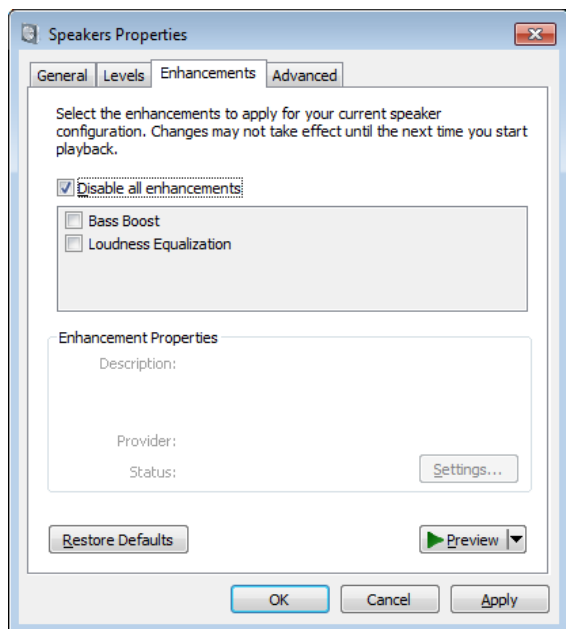


From here you can set your initial output sound level. Setting it to 50 will provide enough audio output to drive your radio. This adjustment is used in conjunction with the **USB MOD Level** setting on your radio for the most optimum signal.

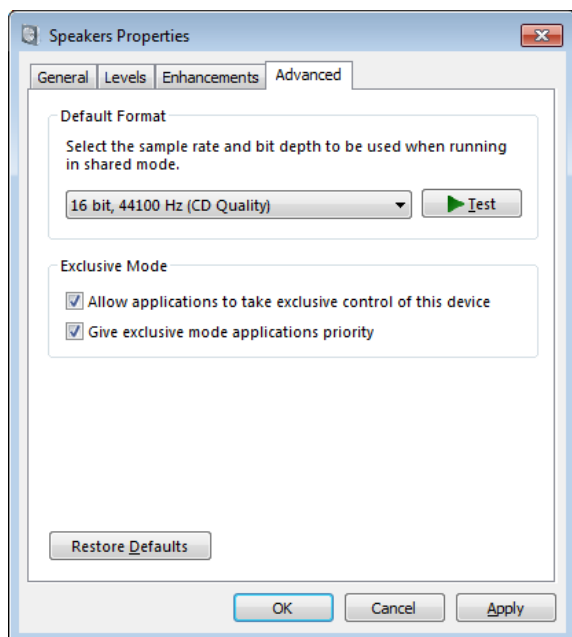


\* Please note that in some installations the USB Audio Device may be preceded by a number and dash (example: 3 – USB Audio Device).

Under the **Enhancements** tab **disable** all audio enhancements. Keeping these enabled will distort your audio to the radio making your signal unreadable to others, and cause interference.

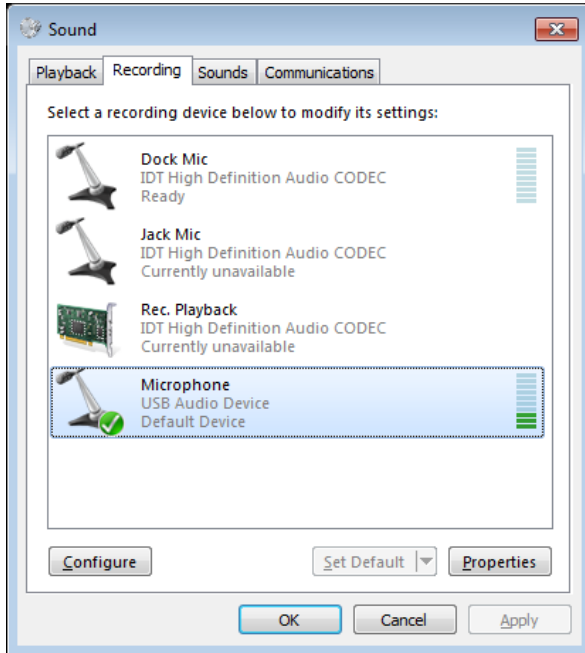


In the **Advanced** tab pictured below are the default settings. No changes are required.

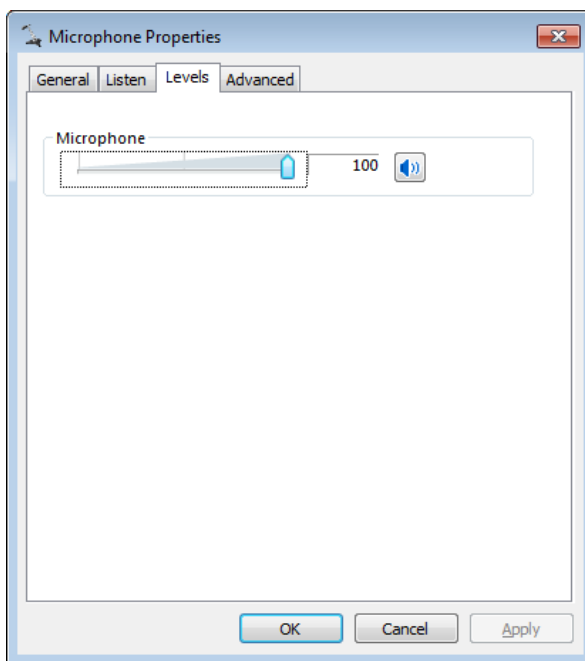


## Input/Receive Device

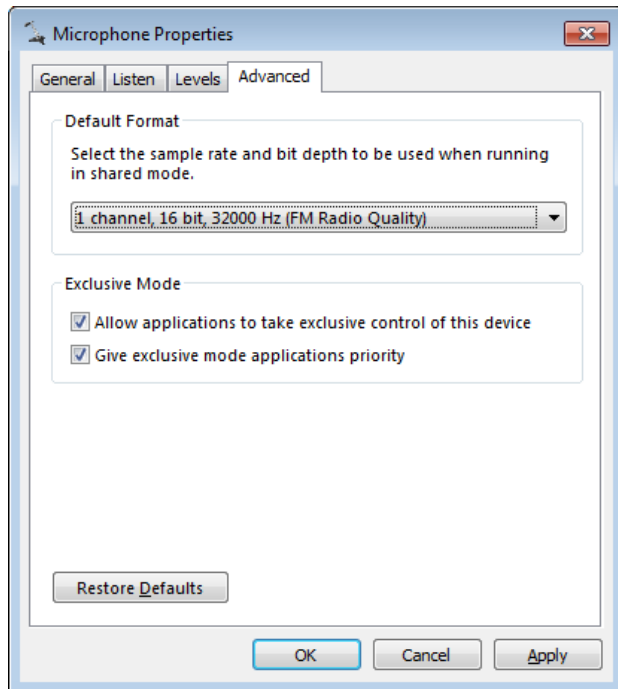
The **Microphone USB Audio Driver** receives the audio signal from your radio into your PC. It can be found in the **Audio Device Manager** under the **Recording** tab.



Under the **Levels** tab you can adjust the level of audio your PC receives from the radio. Setting the level to 50 for initial configuration then adjusting accordingly afterwards for optimum signal quality.



These are the default settings under the **Advanced** tab. No changes are required.



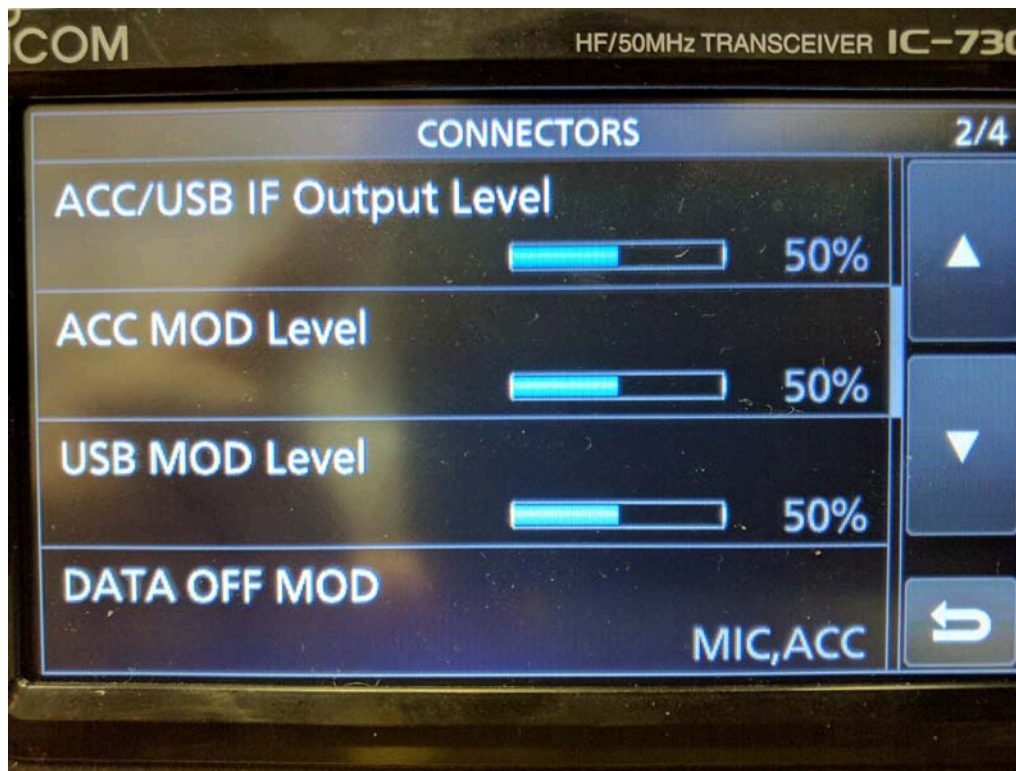
## Radio Settings

Here we will be going through the basic settings on your radio. Please refer to your radios' Instruction Manual for the location of these settings within the Set Mode menu.

*Please note that the IC-7300 is used for illustration purposes. The actual location of these settings will vary from radio to radio within the Set Mode menus.*

### *USB MOD Level / DATA OFF MOD*

The **USB MOD Level** is used in conjunction with the **Speakers USB Audio Device** output from your computer. This how you will be modulating your radio when the radio is set to **DATA MODE**. Please pay particular attention to the **DATA OFF MOD**. You should leave this set as **MIC,ACC**. Changing it will disable your hand microphone when operating in non-DATA MODE.



## DATA MOD

The **DATA MOD** setting is for when your radio is in **USB-D** (Upper Sideband – Data Mode). Here you can select which connector(s) for data modulation input in the data mode. When set to USB (Universal Serial Bus) all sound data is directed through the USB port.



## CI-V Baud Rate / CI-V Address

The **CI-V Baud Rate** sets the data transfer rate between the radio and the radio control software. When set to Auto (default setting) the radio will set itself to the data rate set in the software. The **CI-V Address** setting is the address used to communicate to the radio. The only time this should be changed is if you have more than one of the same radio connected to your PC.





### CI-V USB Baud Rate (7300 & 7851 only)

This setting sets the CI-V data transfer rate when remotely controlling the radios through the USB CI-V port. This setting is only valid when the **CI-V USB Port** setting is set to “Unlink from [REMOTE]”.



### USB-D / Filter Settings

To use digital modes your radio should be set to **USB-D**. This can be set either on the radio, or by the software that you are using. Most digital mode software will display a 3KHz waterfall. Set your filter wide enough to fully display signals within the waterfall.



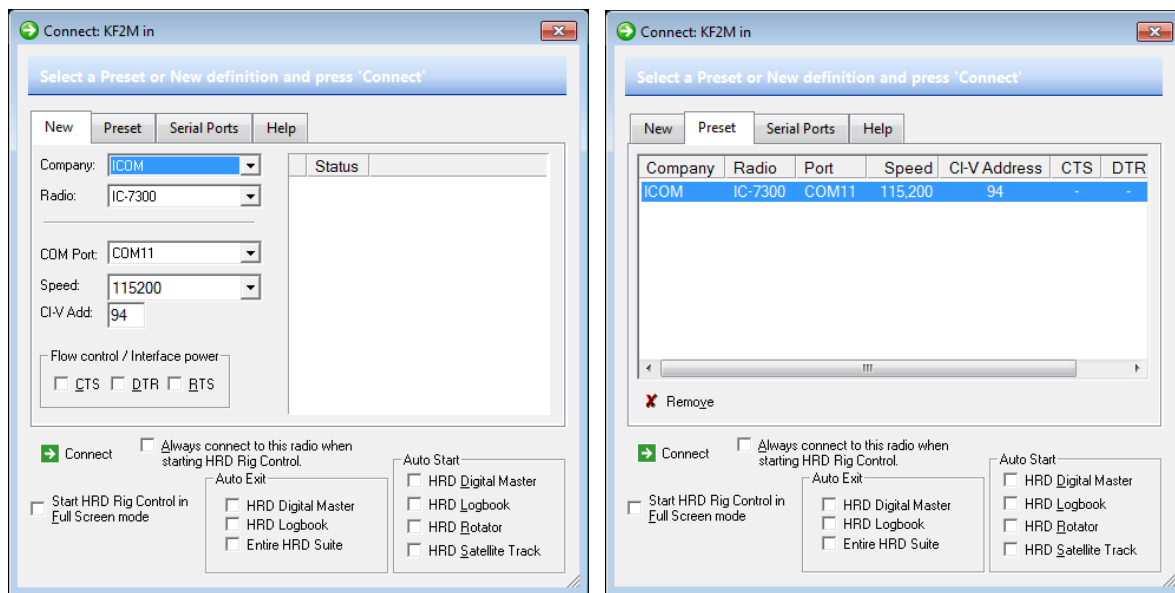
## Sample Configuration Files

Here are some sample configuration files. Please follow the developers instructions for properly configuring the software to operate with your radio.

### Ham Radio Deluxe

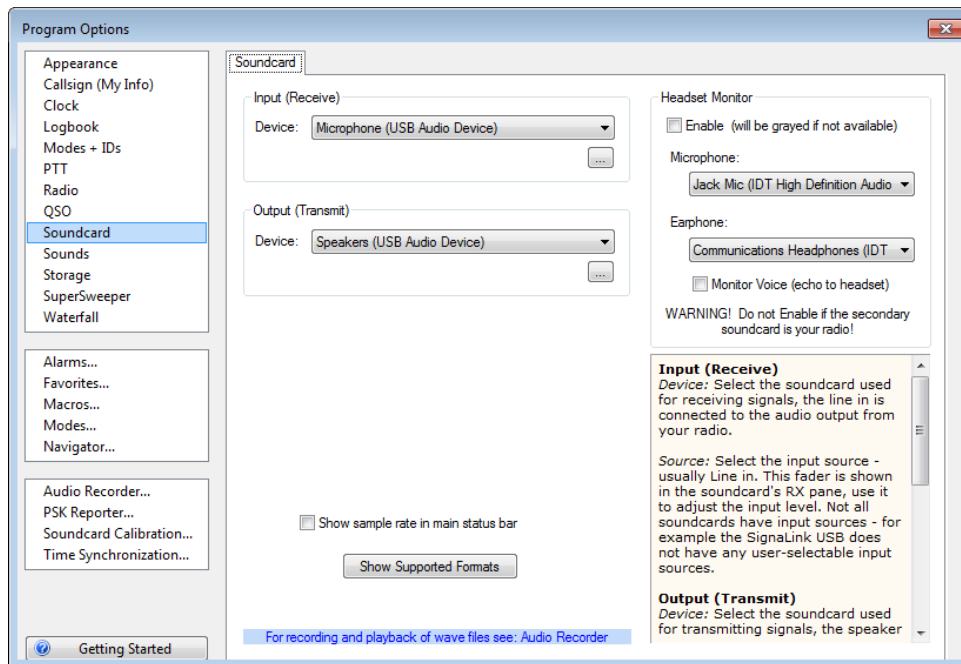
To configure HRD Rig Control to communicate with the radio you will need to set the following:

- Company (Icom)
- Radio (your radio model)
- COM Port (

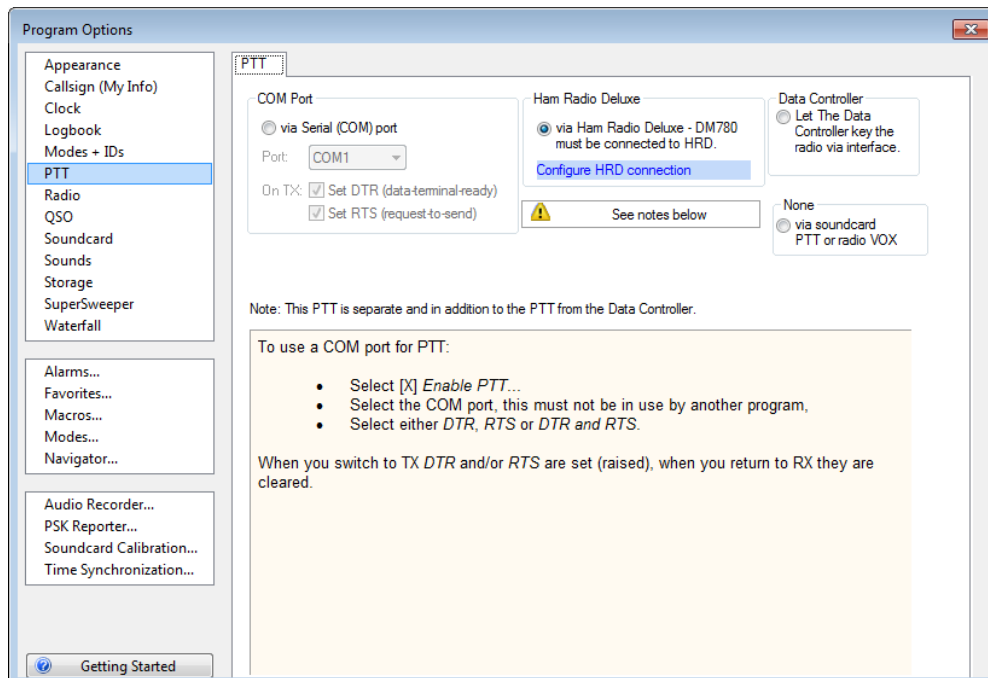


## Ham Radio Deluxe/Digital Master 780

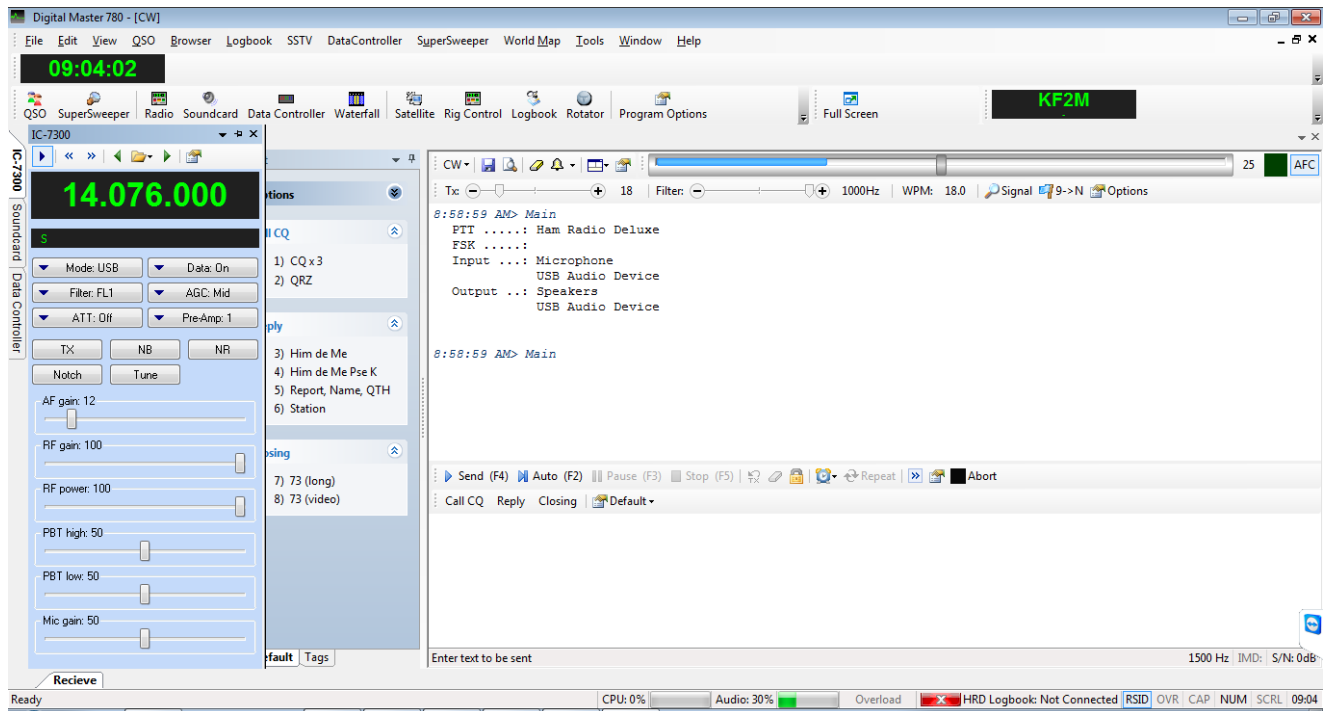
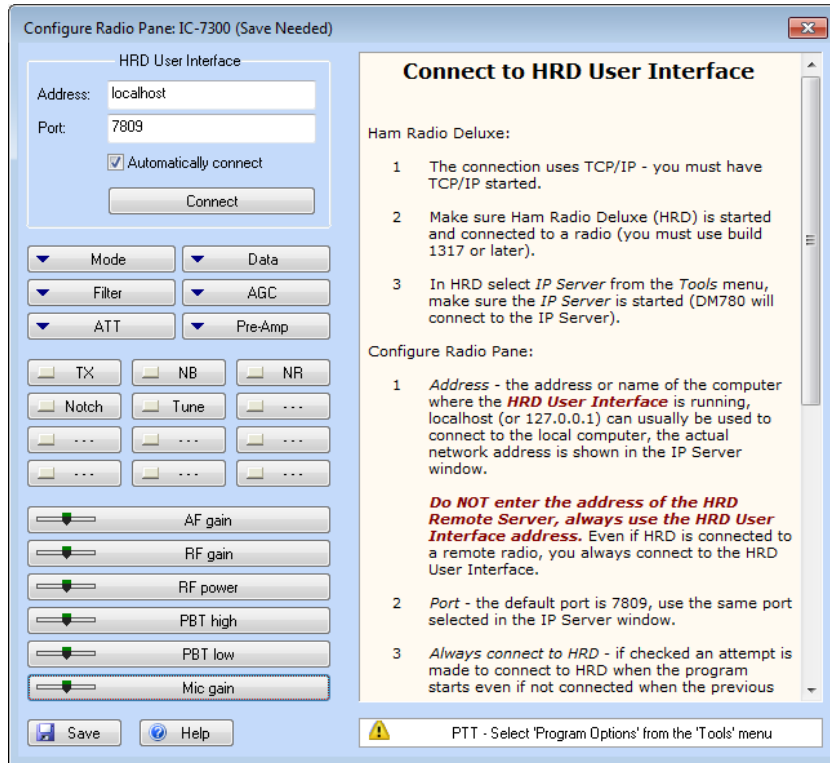
Set DM780 to use the USB Audio Devices.



Set PTT to use Ham Radio Deluxe.



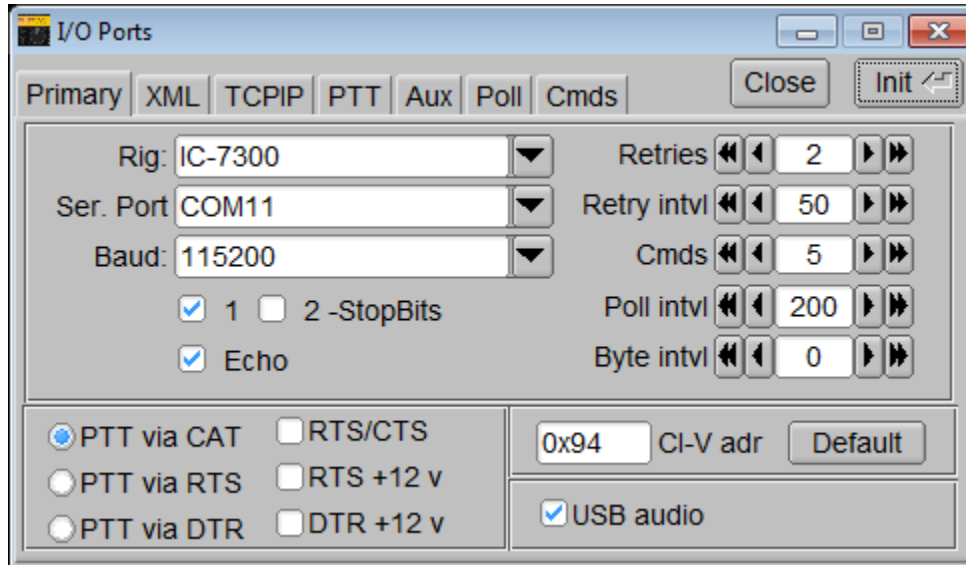
## Customize your radio interface.



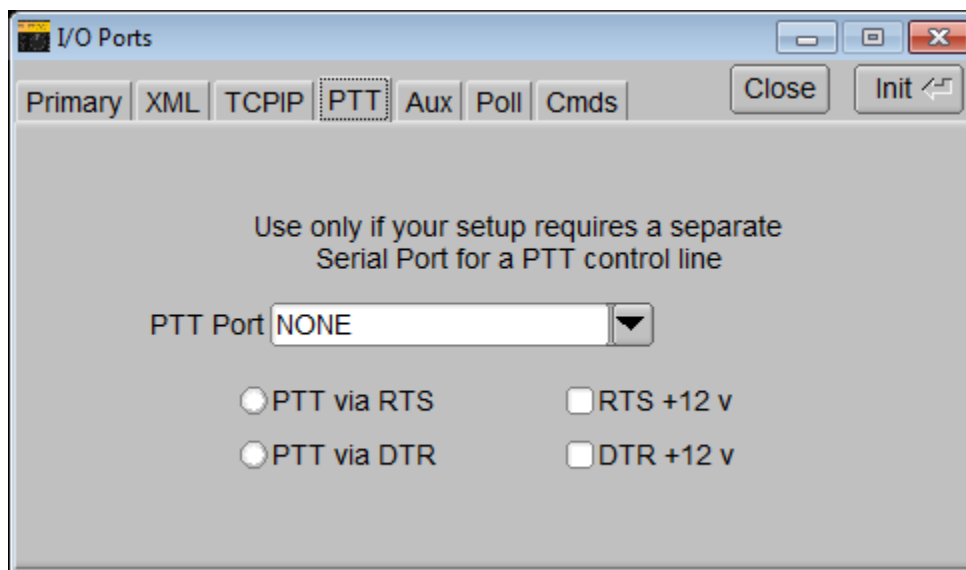
## FLRig/FLDig

### FLRig

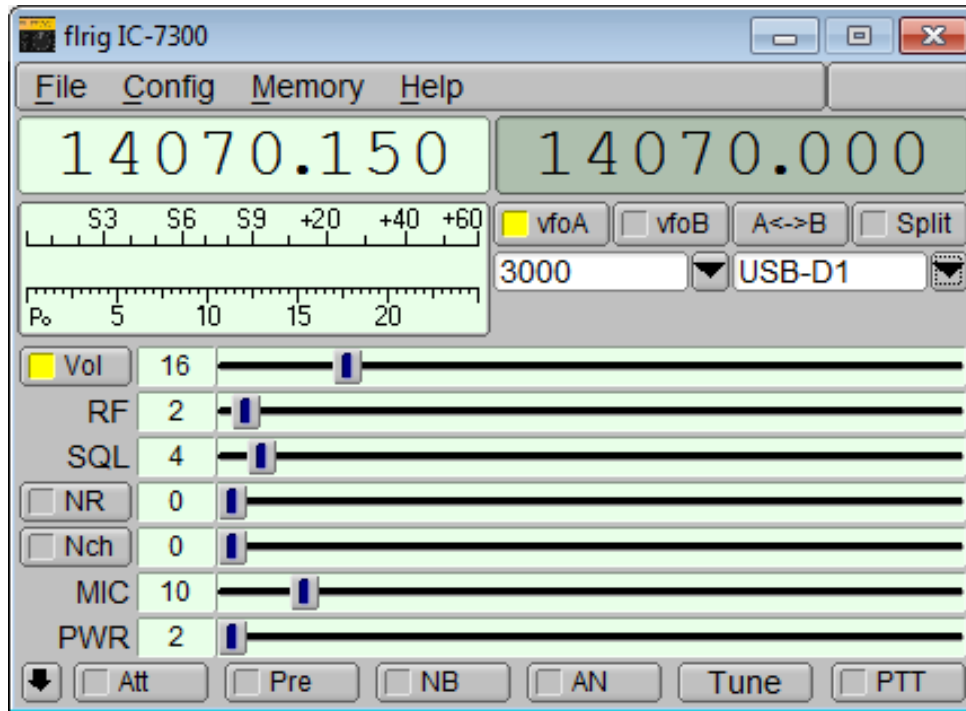
Configure FLRig to control the radio. Set **Rig**, **Serial Port**, **Baud**, and **PTT via CAT**.



PTT control set to **NONE**

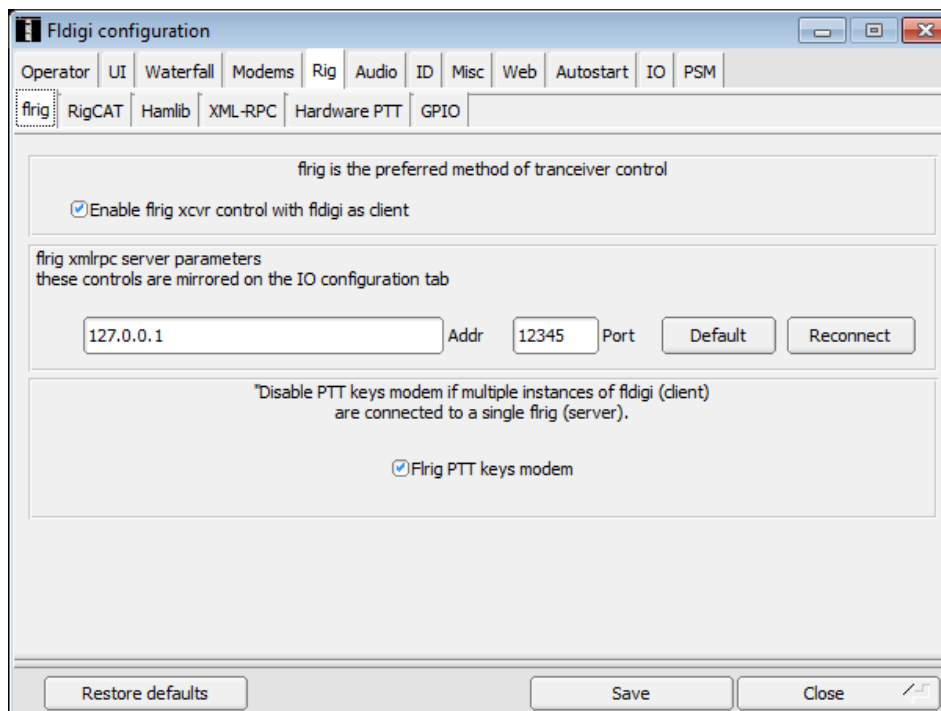


Set **Bandwidth**, and **Mode**

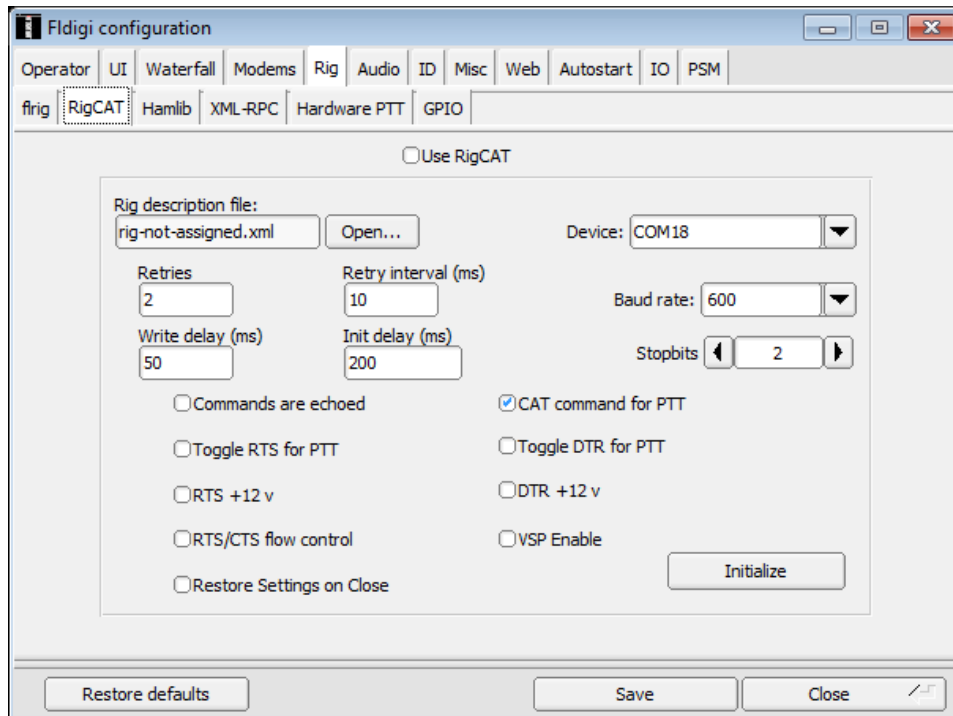


## FLDigi

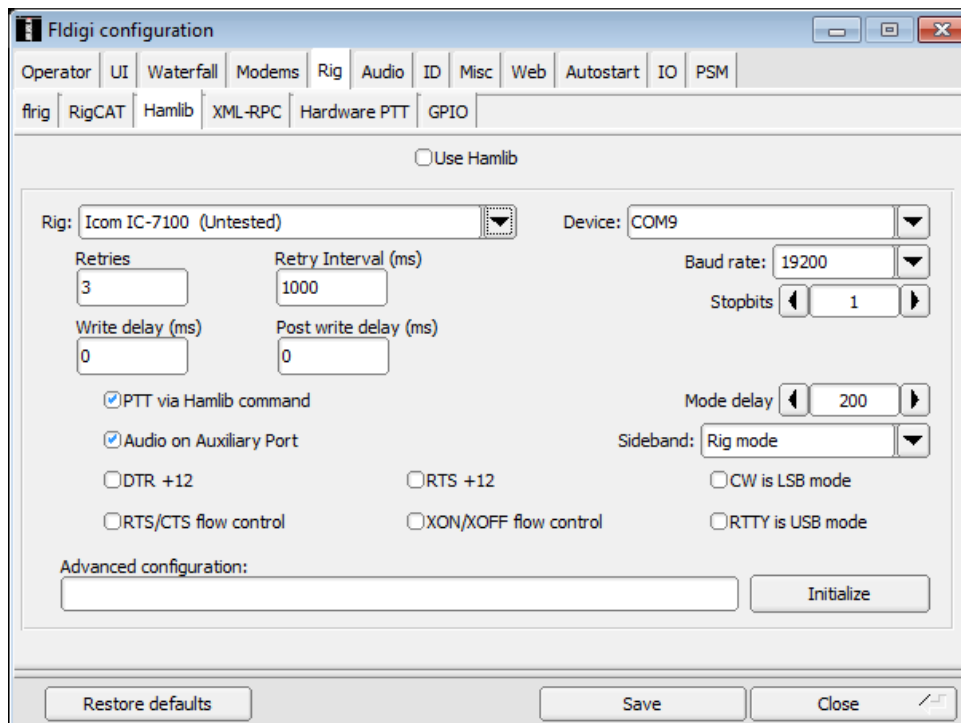
Enable FLRig radio control with FLDigi as a client.



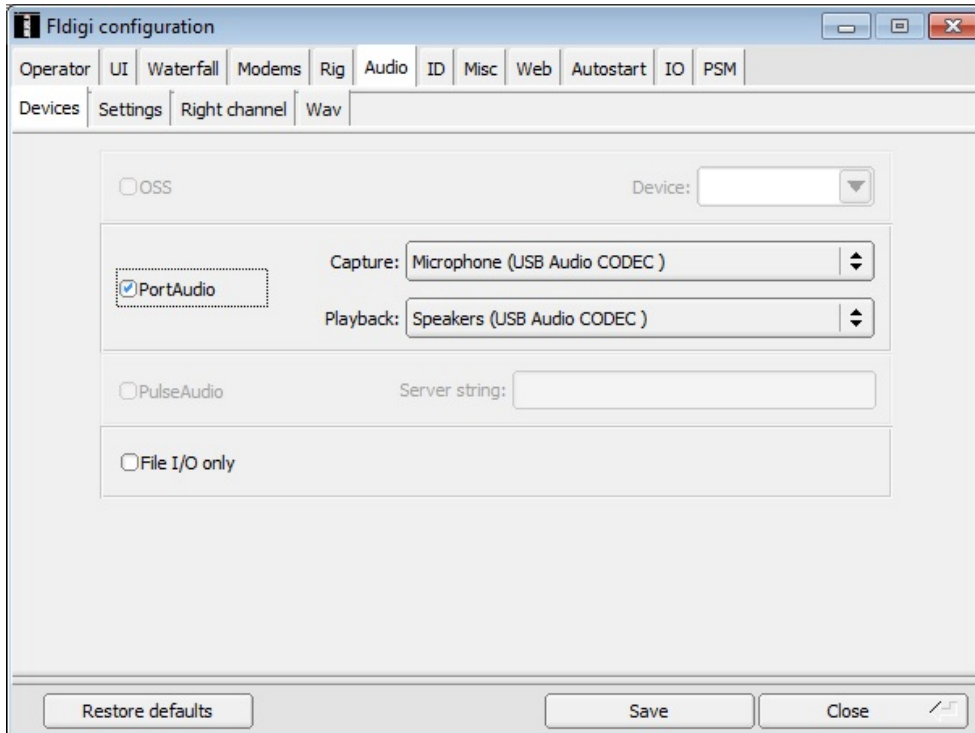
## Unselect RigCAT



## Unselect Hamlib.



## Audio configuration



## Main Screen

