Using demo15.wma File to Test Your FreeDV+ RX Setup

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November 2020

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1. Introduction

The demo15.wma file is a recording of a simulated FreeDV+ QSO useful for testing your FreeDV+ receive setup. This document will show you how to play the recording into your FreeDV (voice) and RxfftDIFF7L.exe (video) applications. The recording also might be useful as a demonstration of FreeDV+ you might share at your radio club meeting.

2. Downloads

1. Download and install Virtual Audio Cable from:

   https://vb-audio.com/Cable/

2. Download and install FreeDV 1.4 from:

   https://freedv.org

3. Download and install the FreeDV+ suite from:

   https://www.qsl.net/wa6nut/soft.html

4. Download the demo15.zip folder from:

   https://www.qsl.net/wa6nut/Demo15.zip

   Unzip and store the demo15.wma file in your Documents folder.

3.   Configuring Windows Sound

Control Panel --> Hardware and Sound --> Sound

1.   Click on the Playback tab.

Make Cable Input the default device.

2.   Click on the Recording tab.

Make Cable Output the default device.

4.   Configuring FreeDV Audio Config

Open the FreeDV application and click on the Audio Config tab (under Tools).

Configure as follows:

Click on the Receive tab.

From Radio To Computer

Device: CABLE Output (VB-Audio Virtual) Sample Rate: 48000

From Computer To Speaker/Headphones

Device: Speakers (your PC sound card)   Sample Rate: 48000

Click on the Transmit tab.

From Microphone To Computer

Device: None

From Computer to Radio

Device: None

5. **Playing the demo15.wma Test File**

1. **Open the FreeDV 1.4 application.**

   a. **Set for Spectrum display**

   b. **Set Mode to 1600**

   c. **Click on Start button**

2. **Open the RXfftDIFF7L.exe application (part of the FreeDV+ suite).**

   Check all the filter checkboxes.

3. **Play the demo15.wma file in the Windows Media application. This 136 second file will play through the FreeDV (voice) and RXfftDIFF7L.exe (video) applications.**

Once you've made adjustments for good audio and video, you're set to receive signals from a KiwiSDR or any other GPS-locked receiver, if the transmitter is also GPS-locked.

See the Appendix for instructions for setting up WinWarbler. WinWarbler is used to tune your receiver for off-frequency FreeDV+ signals (or if your receiver is not GPS-locked).

Appendix: Using WinWarbler to Tune Received FreeDV+

Setting up WinWarbler

1. **Download and install WinWarbler from:**

   http://www.dxlabsuite.com/winwarbler/

2. **Click on the Config button.**

3.   Click the Soundcard tab. Under PSK and RTTY Reception, select Windows default soundcard.

4.   Exit the WinWarbler Configuration page.

Using WinWarbler

WinWarbler is used because colors on the received FreeDV+ are very sensitive to frequency tuning errors. WinWarbler enables the user to lock the WinWarbler AFC to a video subcarrier, and provides a readout of the baseband frequency of that subcarrier, so that frequency tuning error is easily corrected.

Just click on the lowest luminance subcarrier (just above the FreeDV subcarriers) to lock the WinWarbler AFC to that subcarrier. Then tune your receiver in 1 Hz steps until the AFC readout indicates 2.175 kHz (more detailed instructions on the use of WinWarbler for tuning FreeDV+ are found in the FreeDV+ documentation supplied with the software suite).

Last revision: 11/22/20