

Operating Manual

MP3-WS



By HauntBots LLC

Date: 03-09-18
Revision: 1.0

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NOTICE

It is the user’s responsibility to determine the suitability of this product for any given application. Do not use this device in any life-critical system or hazardous areas. An understanding of electronic terminology and practices are required to use this device. Mount the unit in a way that prevents exposure to moisture and within the parameters of any applicable codes.

1. Introduction

System Overview

The MP3-WS is a simple MP3 playback device with a status output suitable for driving an LED or other low voltage device. The MP3-WS requires a low voltage power supply (12vdc – 24vdc). The player has a sturdy aluminum case with mounting tabs. An internal 40W class D amp is available as an option.

Document Overview

The following terminology appears throughout this manual.

Ground, negative, or (-) may be used interchangeably when referring to the power supply connections.

2. System Description

Specifications

- Full color 128 x 128 TFT LCD display
- 8 Meg flash memory for MP3 data
- Up to 8-1/2 minutes of audio
- 40-Watt Class D amplifier (optional)
- Stereo Line out connection
- 1 solid-state 1-amp outputs.
- Wire terminals accept wire as large as 14 gauge
- Trigger input- normally open or normally closed. Activate on +v (sourcing) or contact closure
- USB connector to download audio files
- Same rugged case as our other pro series controllers with no exposed circuit board
- 3-1/2" x 4-1/2" footprint
- Microcontroller runs 12 million instructions per second

Applications

The MP3-WS is intended for playback of MP3 audio files in props, displays and kiosks where one or more short audio clips are required.

3. Hardware

Power Supply

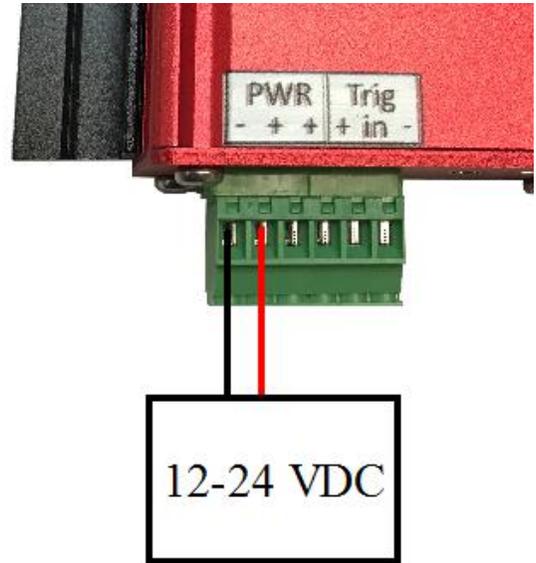
The MP3-WS will operate on 12 to 24 volts DC. Connect the power supply to the terminals in the **PWR** section marked: **+ & -**

If the optional amplifier is installed, A 24-volt 2.5-amp power supply is required to produce the full 40 watts of power. If you intend to use the same supply for powering output devices (valves, relays, etc) additional amperage is required.

There are two extra **+** terminals for convenience on the output connector. The **+** terminals are internally connected. This provides extra terminals to attach other items requiring power.

Warning: The **+** terminal in the **Triggers** section of the connector **is not** the same as the **+** terminals in the **PWR** section.

The **+** terminal in the **Triggers** section is a 12vdc **output** from the MP3-WS's internal 12v regulator. This can be used to supply triggers that require power.



Output

The output is driven by a 1amp solid state driver.

The **+** terminal carries the same voltage found at the **PWR +** terminals.

This output is on any time an audio file is playing

The MP3-WS output switches the negative side of the voltage

Note: Flyback Diodes should be installed across inductive loads like solenoid valves.



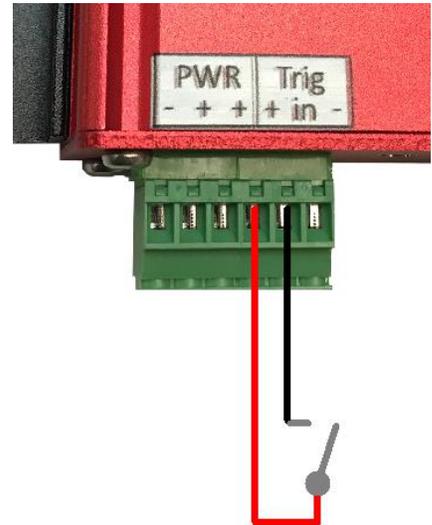
Trigger Input

The trigger input on the MP3-WS can accept a variety of trigger devices; voltage sourcing or contact closure. A normally open contact is required.

Every time a trigger pulse is received, a random audio track will play. All of the tracks in the play list will play once before the list is shuffled.

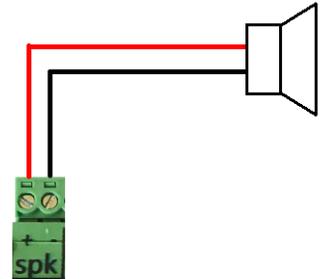
Warning: the + terminal in the Trig section is a special **12v out** terminal to provide voltage to trigger devices requiring 12 volts.

Do Not apply external voltage to this terminal.



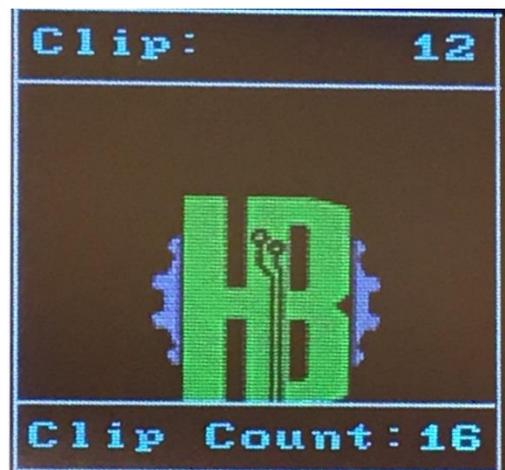
Speakers

The MP3-WS has an optional mono 40-Watt amplifier. This amp is connected to the left channel of the MP3 player. If installed, connect speaker(s) to the + & - terminals with a minimum of 4 ohms total.



LCD Display

The integrated color LCD display shows the number of audio clips loaded and the last clip played.



4. Software Operation

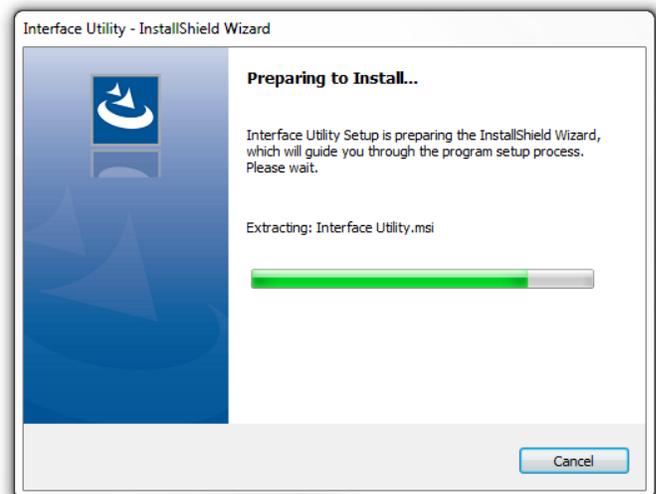
The computer interface provides tools that enable you to create an audio library for the MP3-WS. It is not possible to retrieve audio clips back out of the MP3-WS.

Software Installation

The installation package consists of a single file

- Interface Utility Setup.exe

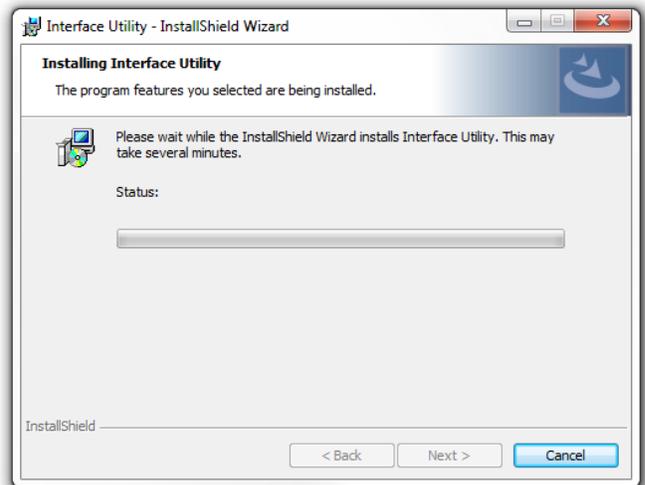
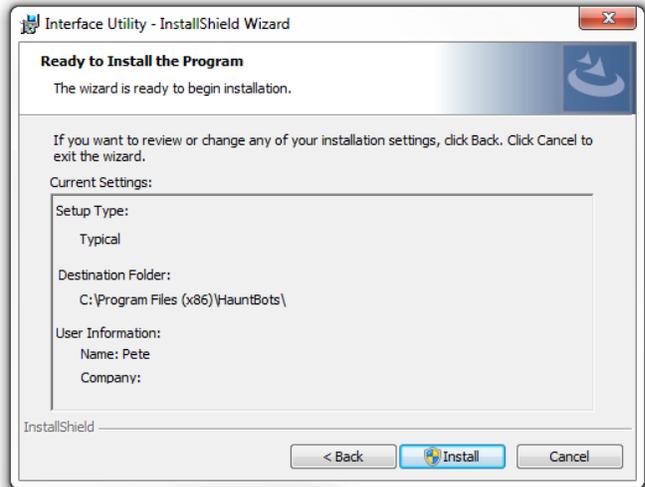
Double Click **setup.exe** to begin the installation.



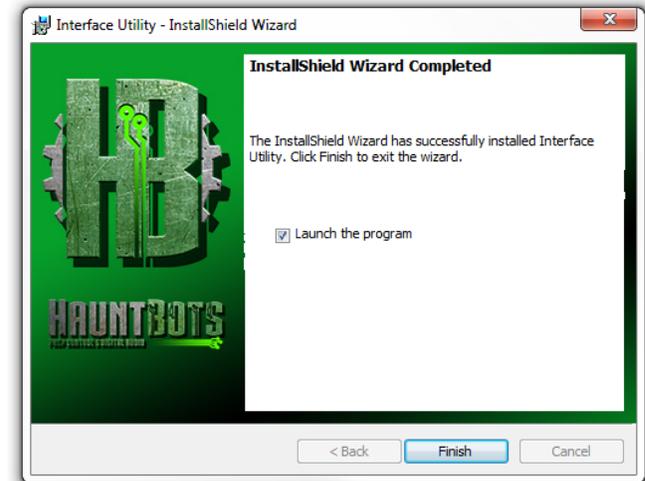
When the Welcome screen appears, click the **Next >** button.



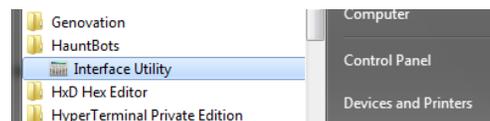
Click Install.



When the setup completes, click **Finish**



The Interface Utility will appear on your start menu in the HauntBots folder

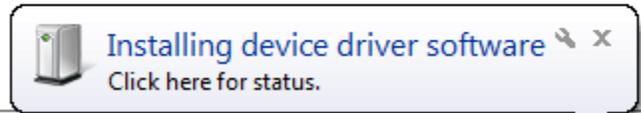


Driver Installation

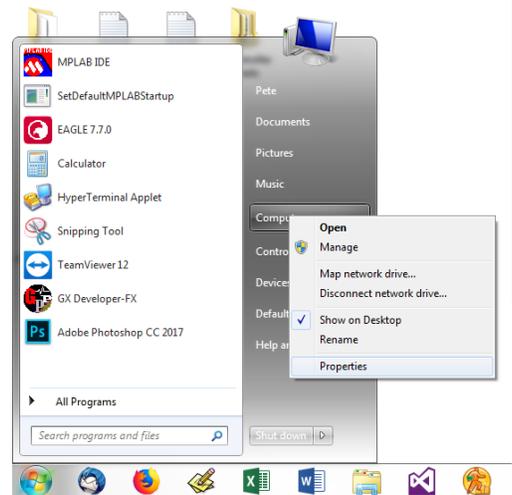
When you initially plug the MP3-WS into your computer, Windows will attempt to load an appropriate driver. If an MP3-WS or other HauntBots controller has not previously been installed, you will need to manually load the driver.

The exact screens will vary a bit between different versions of Windows. The MP3-WS will be recognized by Windows as **CCS USB to UART** rather than **HauntBots MP3-WS**. These instructions cover an install on Windows 7.

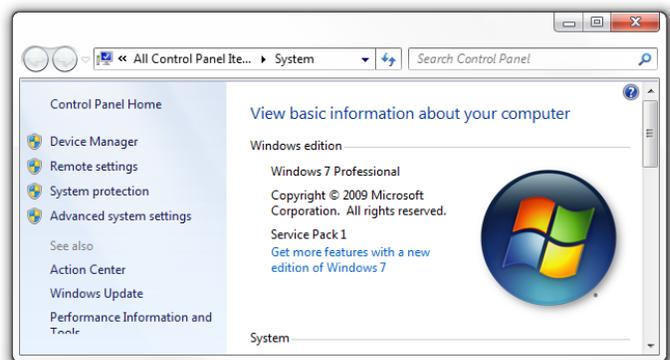
After the computer reports that the driver was not successfully installed, go to device manager to install it manually.



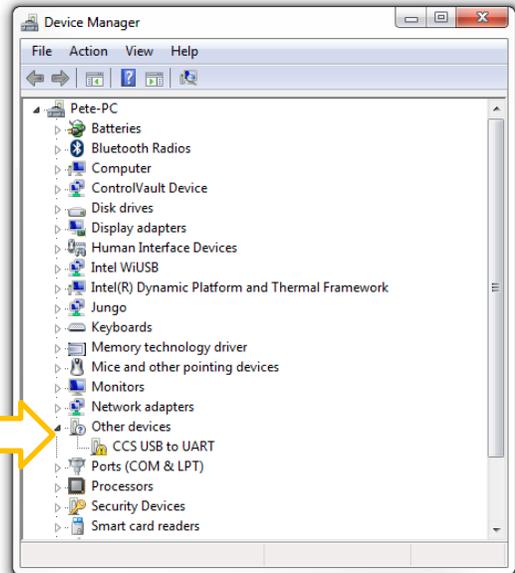
Click the Windows Start Button, right click on **Computer** then scroll down and click **Properties**.



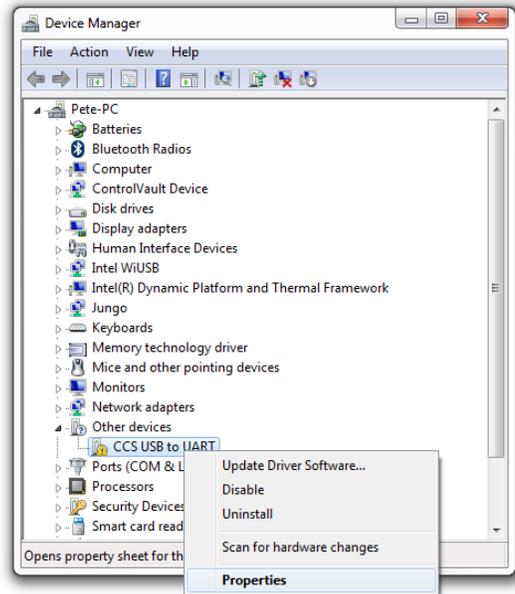
Click **Device Manager** in the top left column.



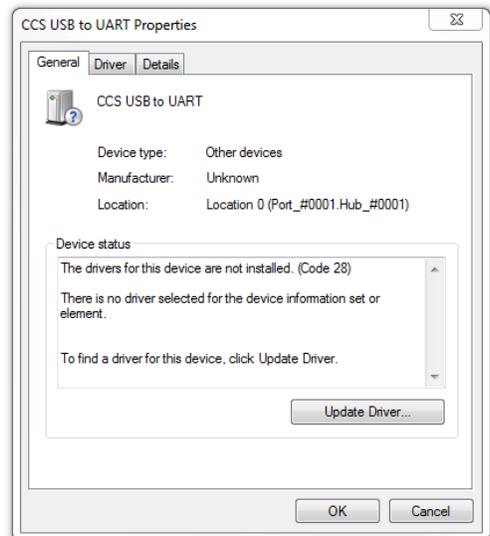
In device manager look in **Other Devices** for the **CCS USB to UART** device with the yellow exclamation point.



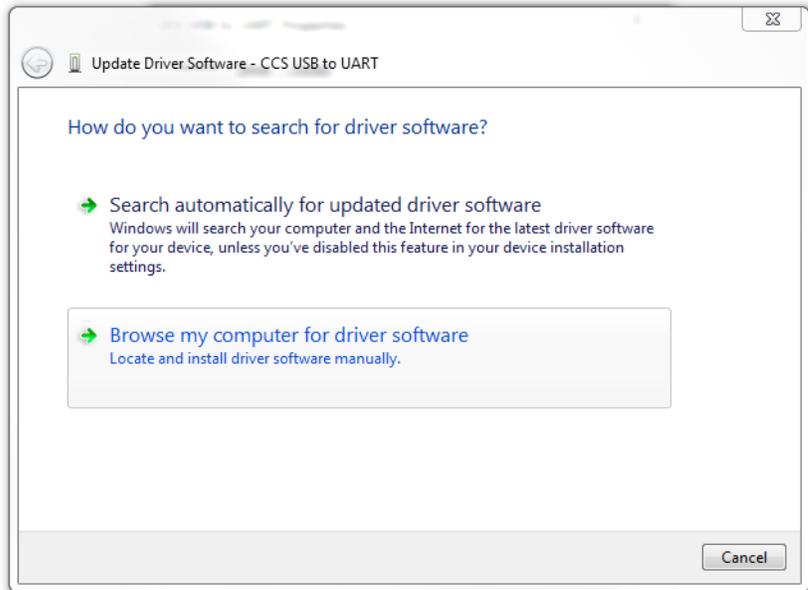
Right click on **CCS USB to UART** and choose **Properties**



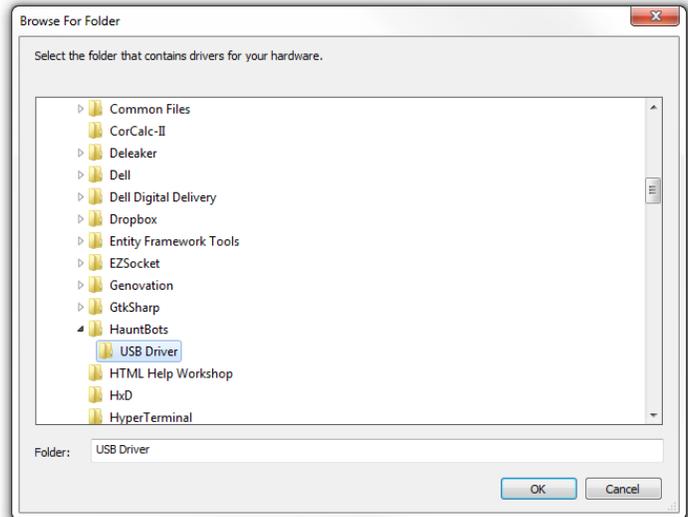
Click the **Update Driver** button



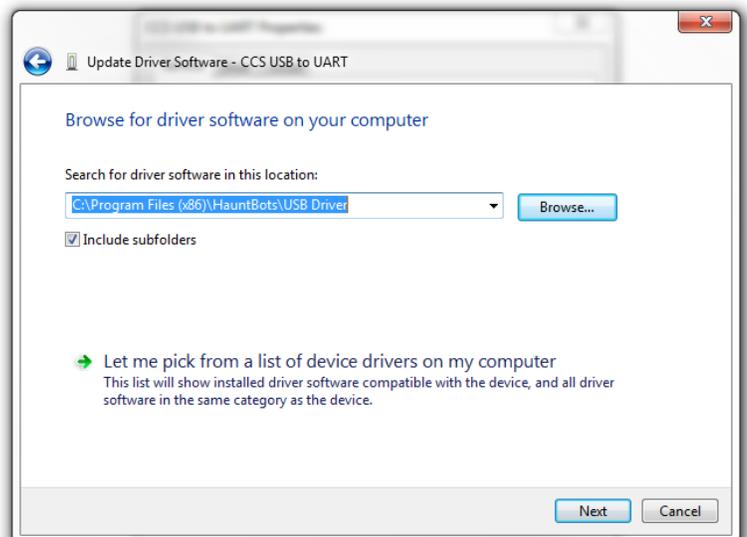
Click **Browse my computer for driver software**.



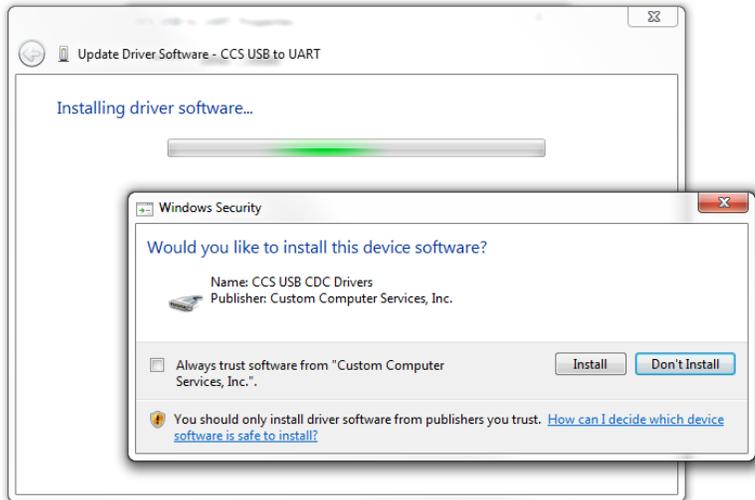
In the **Browse for Folder** window go to `C:\Program Files (x86)\HauntBots`. Select the **USB Driver** folder then click the **OK** button



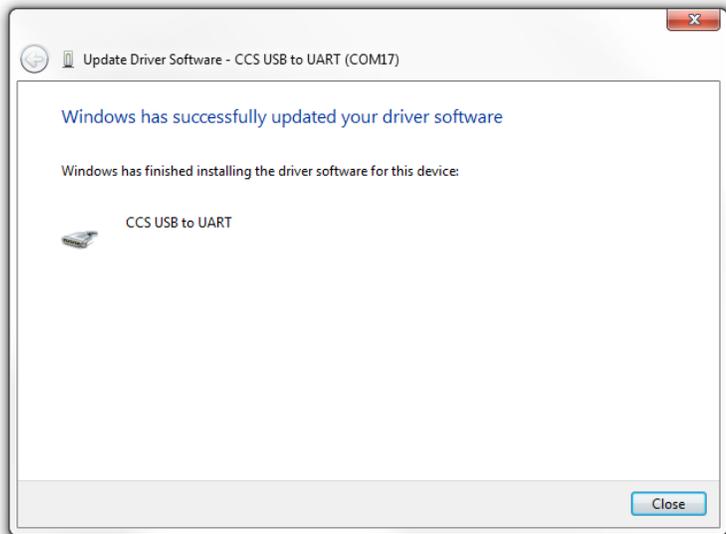
Click the **Next** button.



Click **Install** on the Windows Security screen.



The Driver installation will complete.

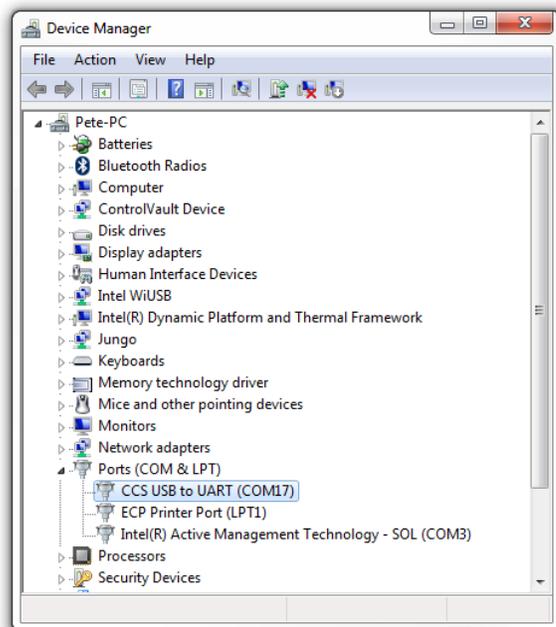


The CCS USB to UART entry will appear under:

Ports (COM & LPT)

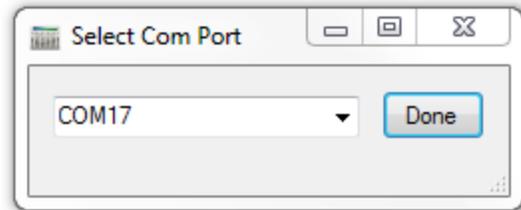
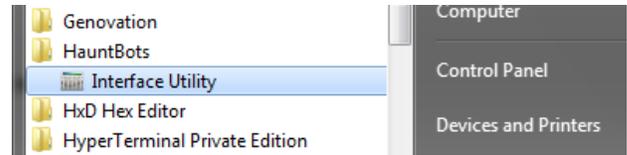
A Com number will be assigned to it. COM17 in this example.

NOTE: Earlier versions of the interface utility could only use com ports up to number 16. This new version does not suffer from this weakness.

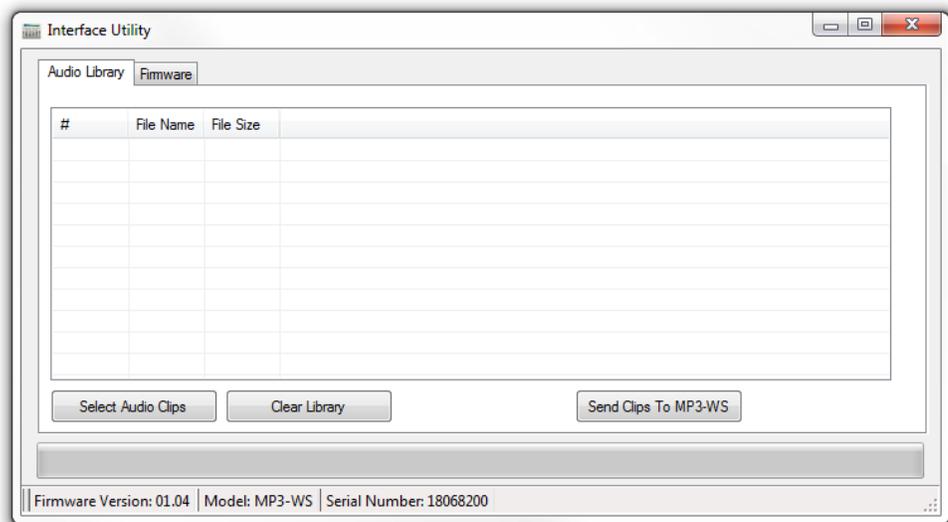


Starting the Software

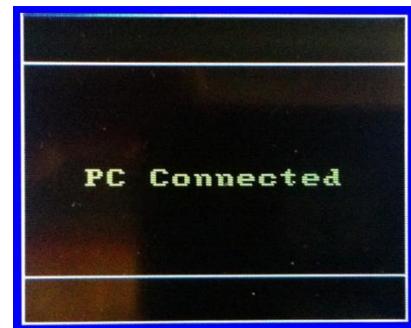
Start the “**Interface Utility**”, this can be found on the windows start menu in the HauntBots folder. A popup window will list all available com ports on your computer. Select the correct com port from the list for your MP3-WS then press “**Done**”



The main interface window will open. The screen is divided into two different tabs. The first tab handles audio library creation and downloading. The second tab transmits firmware updates to the MP3-WS. When successfully connected, the interface utility will report the Firmware Version, Model and Serial Number of the attached unit along the bottom status bar.



The MP3-WS LCD will display “PC Connected”



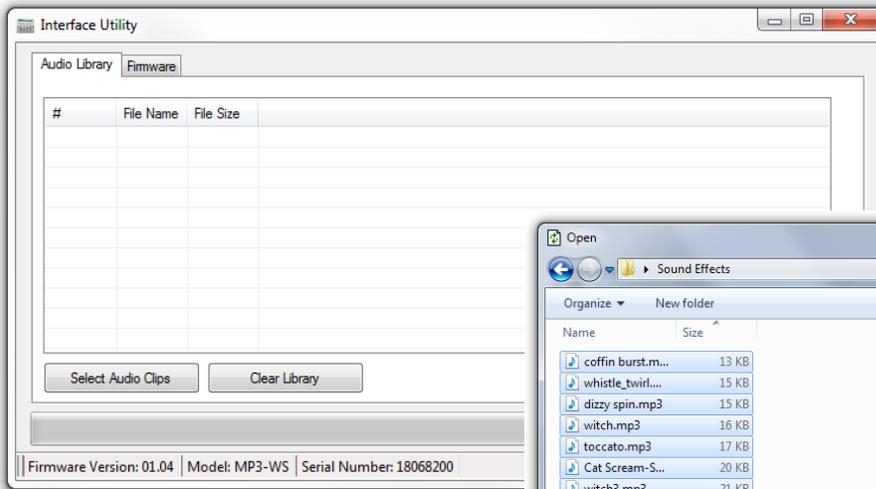
Creating Audio Library

The MP3-WS uses a library of audio clips. The library can contain a single audio file or as many files as will fit into the roughly 8 Meg of Ram space.

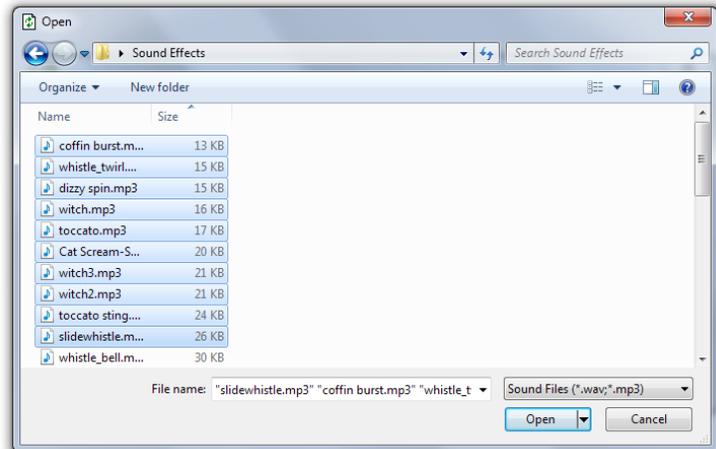
Note: Creating your own library and copying it to the MP3-WS will over-write the sample library that came with the unit.

To create a library, click the **“Select Audio Clips”** button. A computer browser window will open. Navigate to the folder containing the audio tracks you wish to use. The MP3-WS is capable of playing WAV or MP3 files; however, WAV files will consume large amounts of memory very quickly.

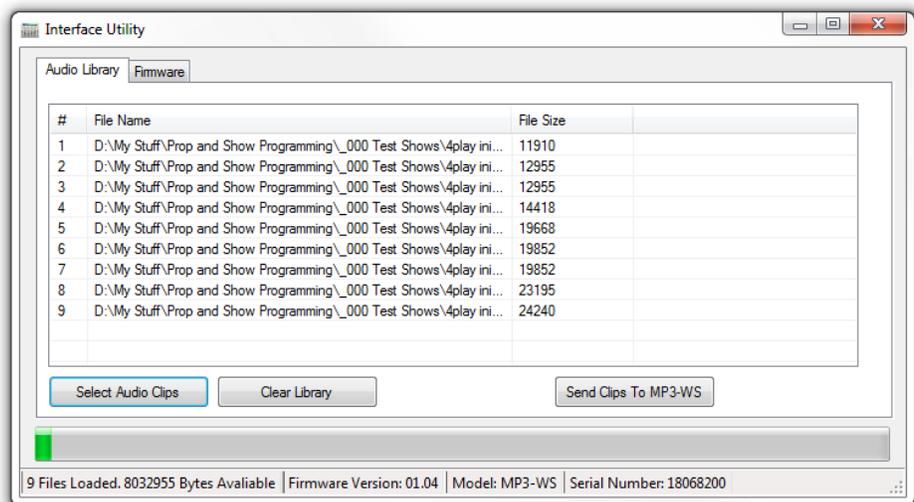
Select the audio file (or files) you wish to use. To select a list of files, click the first file then hold down the shift key while clicking the last file. To pick multiple files not in a row hold down the Ctrl key while selecting. Once all desired files are selected, press the **Open** button.



Alternately, it is possible to drag and drop audio files from your computer directly onto the Audio Library grid.



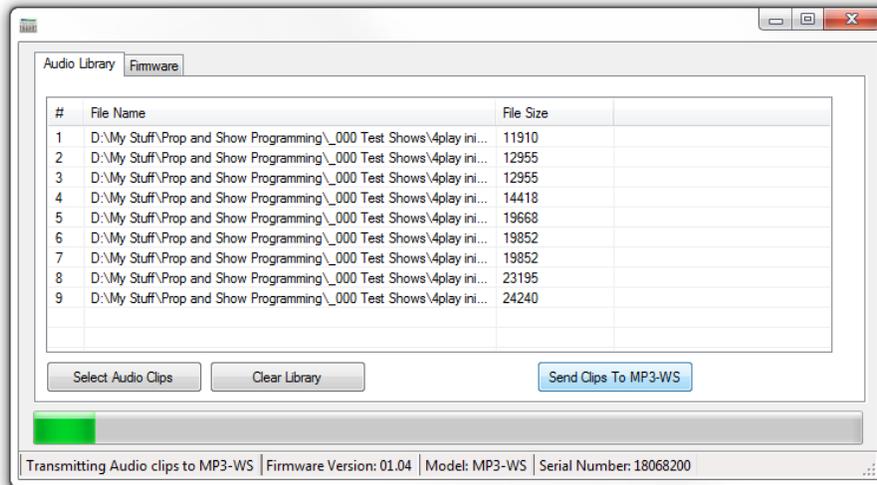
The selected files will appear in the grid. The # column will indicate the number assigned to the clip. The MP3-WS interface software keeps track of memory usage and only allows you to select files that will fit into the unit's memory.



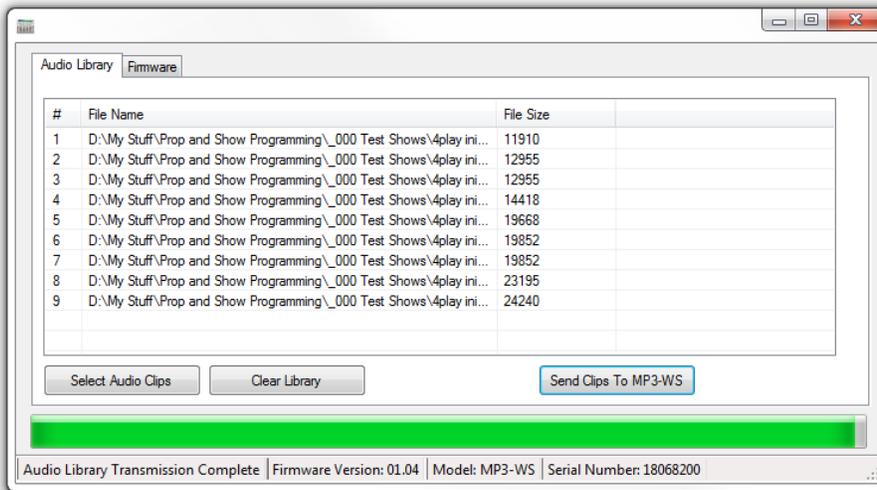
Audio Library Transfer

Click **“Send Clips To MP3-WS”**.

The computer will first open the individual audio clips and create the library package.



Then the clips will download to the MP3-WS.



Depending on the size of the library, this can take several minutes to complete.