Floyd Bell Inc
SOUND SOLUTIONS

AN454W_16VUSB

Changing and Uploading Sound Files via USB.

Introduction :

Uploading sound files and/or changing sound files on your Announcer device is a simple and easy windows function. The instructions below will walk you through how to save and upload sound files on a Windows devices. We recommend that the user download free software such as GoldWave® to manipulate and record sound files. *Audio Recording software that comes pre-installed with your operating system may not have the feature sets necessary to produce voice files for this device.* The Announcer device is designed so that it will behave similarly to a USB thumb drive when plugged into your computer. If you are familiar with transferring files on and off a USB thumb drive, you should have no problem loading and/or changing sound files on your Announcer.

Plugging your announcer into your Computer:

To plug the Announcer into your computer you will need a standard USB A to Mini B cable.

fig 1.0

Caution: If your Announcer is connected to your application equipment, and it is receiving power from your application equipment, the Announcer will not show up on your computer. We recommend that power and ground is completely disconnected from your application or test setup before plugging in your USB cord. The Announcer will be powered via the USB connection to your device.

You are now ready to plug your Announcer into your computer.

Windows Instructions:

Browsing Announcer Sound Files

Once your announcer is connected to your windows computer, a window should pop up and show you any or all files that are located on your Announcer. See fig 2.0
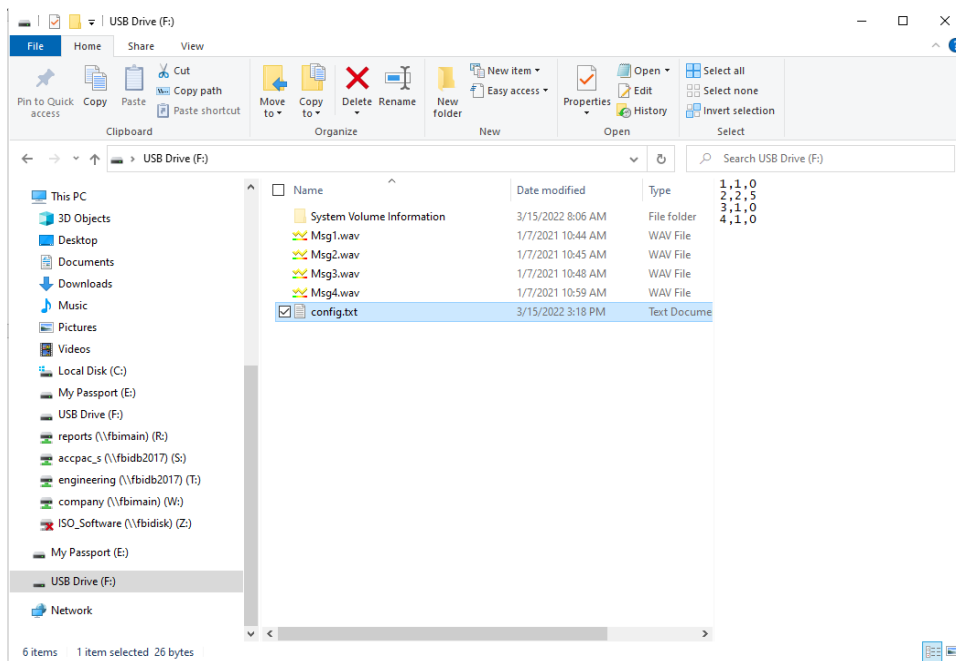

fig 2.0

If the window does not pop up?

If the window does not pop up, type "this pc" into your search box on the task bar. See fig3.0. A list of programs will appear. Select "This PC" out of the list. A window will then pop up showing you all the mapped drives on your machine as in fig 2.0.
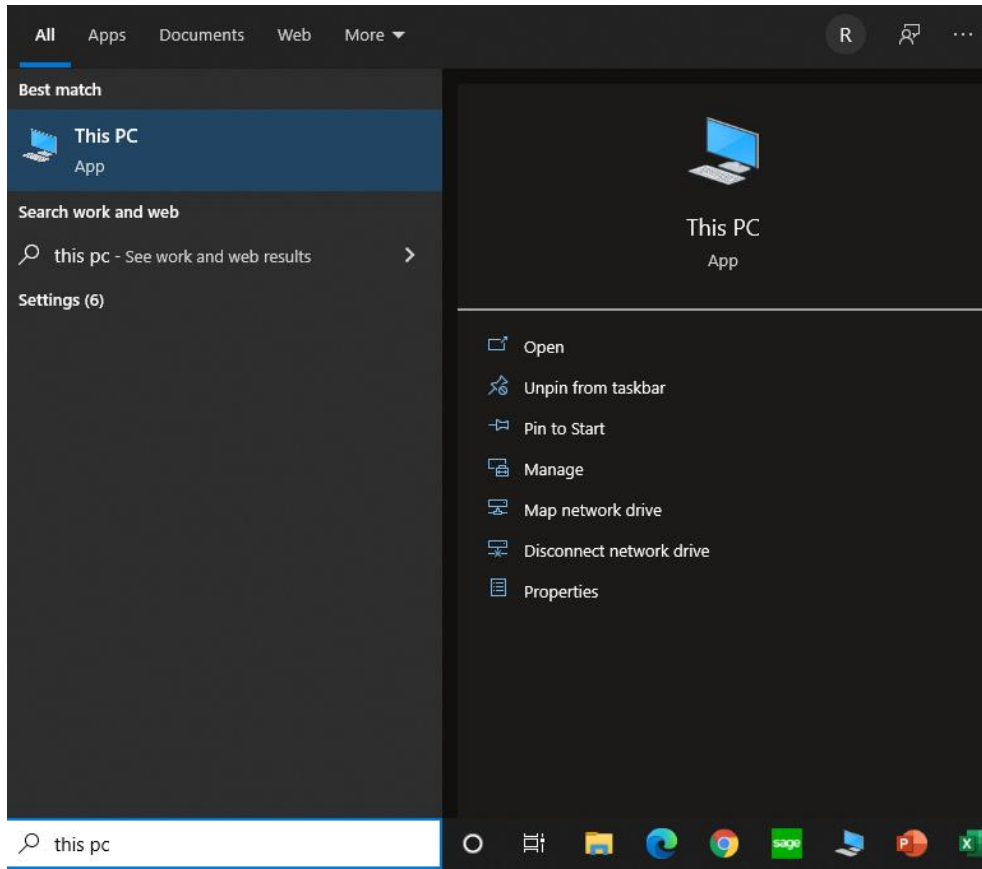
fig 3.0

In this example, the computer mapped the Announcer product as USB Drive F: See fig 2.0. The lettered drive may be different on your computer. Look for a new "USB Drive" and that should be your Announcer.

A Note about the files on this drive:

Once you can see the files on your Announcer, you are free to remove and replace them with new ones as you would on any thumb drive. If your Announcer includes a "config.txt" file. **Do not remove this file**. This file is necessary for the operation of the device as explained below.

You will notice that your audio files have a particular scheme to the names such as "Msg1.wav". These names are part of the functionality of the device and must remain. For example, if you need to replace "Msg1.wav" with a new message or sound affect, the new wave file must be named the same as the old wave file. If not, the Announcer will not play your new file.

Tests you can run before you unplug your Announcer.

Before closing your computers window, you can play any of the files that you have just manipulated and loaded into the Announcer memory. They will play over your computer speakers; however, this is a good way to check and make sure that you have the correct file in place.

Once this is done, simply unplug the USB cord and you are ready to power the Announcer from your application or test setup.

Test Your Announcer in your application.

Once you reconnect your announcer to your application or test setup, it is recommended that you test all the sound files on your Announcer. If all goes well, you're ready to put your Announcer to work.

If your Announcer does not work after manipulating the sound filed:

If failure occurs with any or all your sound files, the status indicator light will help in identifying issues with your sound files. For further details, see the section below labeled Status Indicator.

More information Concerning your Announcer product:

Below you will find more information regarding the USB connectivity for the Announcer product. Fuller explanation is found concerning specific items such as audio file types, filenames, config.txt, status indicator and many more items.

Modes of Operation

The announcer has two modes of operation, **Normal Announcing Mode** and **Memory Access Mode**. The Mode is control by the power source connection. The announcer circuitry can be powered by two different connections. It can be powered by the main 9 to 30 volt connection or 5 volts from the USB connector. The mode of operation is set by which of these power sources is powering the Announcer. When the unit is powered from the main power input (Red and Black wires), the announcer is in Normal Announcing Mode and will play messages as required. When the unit is powered from the USB port, the announcer is in Memory Access Mode. If both power sources are connected, the main power input takes precedence over the USB port so the announcer will be in Normal Announcing Mode. <u>In Normal Announcing Mode, a computer will not be able to access the memory of the Announcer.</u>

Formatting

The memory in the announcer is supplied preformatted and loaded with the factory test messages. If it becomes necessary to reformat the memory, select the FAT file system and use **4096 byte** allocation units. Reformatting will erase any stored audio and configuration files previously stored in the announcer. If you think that your memory needs to be reformatted, please follow the following procedure.

1. Right click on the USB drive assigned to your announcer device. For my example the computer gave it drive F: See fig 4.0 below
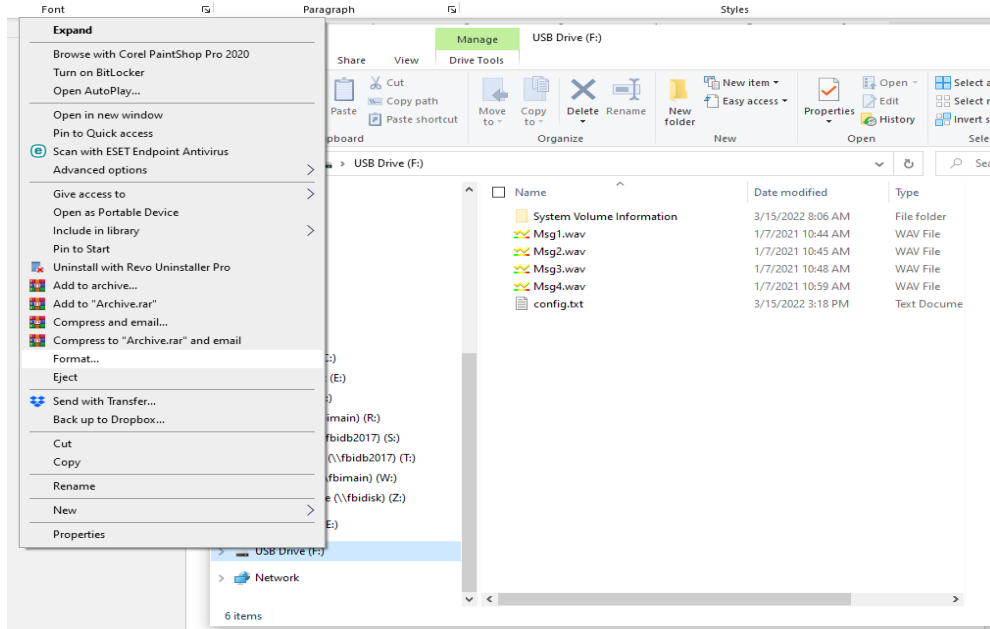
fig 4.0

2. Select format from the list and make the two adjustments to the settings as described above. Select FAT file system and select 4096 byte allocation units. See fig 4.1 below
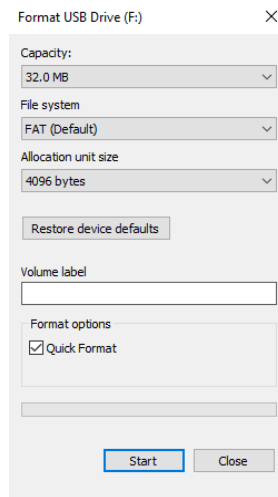

fig 4.1

3. Hit the start button and the computer or laptop will reformat your memory.

Audio File Format

The announcer only recognizes wave (.wav) audio files. The wave audio file must be mono with a 16bit sample size. The acceptable sampling rate is from 8 kHz to 44.1 kHz. We recommend 44.1 kHz for the highest quality audio. At 44.1 kHz sample rate, the announcer memory can store approximately 6 minutes of total playing time. If 6 minutes is insufficient, reducing the sample rate will extend the total play time. All audio files, in the Announcers memory, do not need to be the same sample rate.

If you need more memory space, you can always record at 44.1Khz and then down sample the file with your recording software. Once this is done, you can load the audio file in the Announcer and test it. If the quality is good enough, feel free to use the lower sampling rate. (*We have found that it is sometimes very hard to hear that a file has been down sampled*) *Keep in mind that down sampling adds distortion to the audio that cannot be removed by simply up sampling the same audio file. Because of this, we usually keep "original recordings" at the highest fidelity (16bit, 44.1Khz) and "save as" a new file name for the down sampled files.*

If you make a mistake in the formatting of an audio file your Announcer, the status light will help in troubleshooting this error. Please see section below called status light.

Audio Recording / manipulation Software:

Windows recorder is not typically capable of manipulating sampling rate and sample size. There are a lot of choices for free or low-cost software to use for this type of sound recording and manipulation. We recommend using one of the following:
Goldwave® (PC, MAC, LINUX) www.goldwave.com

Audio File Names

Play selections are facilitated by the file name. Each audio file name starts with "Msg" followed the message number and ending with the ".wav" extension. For example, the audio file to play when message 5 is solicited would be named "Msg5.wav".

Configuration File

The announcer is available with several different option to trigger messages. These options include CAN J1939, RS-485 Modbus, or discrete inputs. In the case of CAN J1939 and RS-485, the parameters to play the files are specified in the commands sent to the Announcer. In the case of the discrete inputs, a configuration file is necessary to set the parameters for the messages and the volume is set by the physical adjustment on the rear of the Announcer.

The configuration file is named "config.txt" and must be in the root directory. It is a standard text file in csv (comma separated value) format that can be created/edited with a text editor such as windows note pad. Each audio file must have an entry in the configuration file.

The values are as follows:

Message Number, Play Count, Time Before Repeat

Function of each Variable:

Message Number = the number of the message.

Play Count = Number of times to play the message when it is triggered.

Time Before Repeat – If the message is to be played more than once, this is the time, in seconds before the message replays.

Ranges of each variable:

Message Number range is 1 through 16. If your Announcer is limited to fewer messages than 16, the max message number should equal the max number of messages your Announcer can play. For example, you may own an Announcer product that is limited to 8 messages. In this case your max message range is 1 through 8. In this case, if you use a number from 9 through 16, the Announcer will not detect an error and it will not be able to play the message.

Play Count Range is 0 through 255. If play count is set to 0, the Announcer will repeat the message infinitely. If play count is set anywhere between 1 and 255, the Announcer will play the message the specified number of times and then stop.

Time Before Repeat range is 0 to 255. 0 = zero seconds and 255 = two hundred and fifty-five seconds.

Rev 0.2

Example of text in a Configuration File:

1,1,0

2,2,5

3,0,1

4,1,0

In the configuration text file above Msg1 would play one time and not repeat. Msg2 would play two times but would delay 5 seconds between repeats. Msg3 would repeat infinitely with one second time delay between repeats. Msg4 would play one time and not repeat.

Status Light

The status light is the LED that protrudes slightly out of the encapsulate. See fig. 5. Under normal operation, the light will be "on" steady. This can be useful to confirm the unit is powered. If the light is blinking, it signals abnormal conditions, identified by two-digit   status codes.

The status codes are obtained by counting "on" flashes and observing the "off" times. To obtain the status codes, first wait until the light remains "off" for 3 seconds. Count the number of blinks until the light remains "off" for 1.5 seconds. This count is the first digit of the code. Now, count the number of blinks until the light remains "off" for 3 seconds again. This count is the code's second digit. If more than one code is present, count the flashes as before, otherwise, the sequence will repeat.
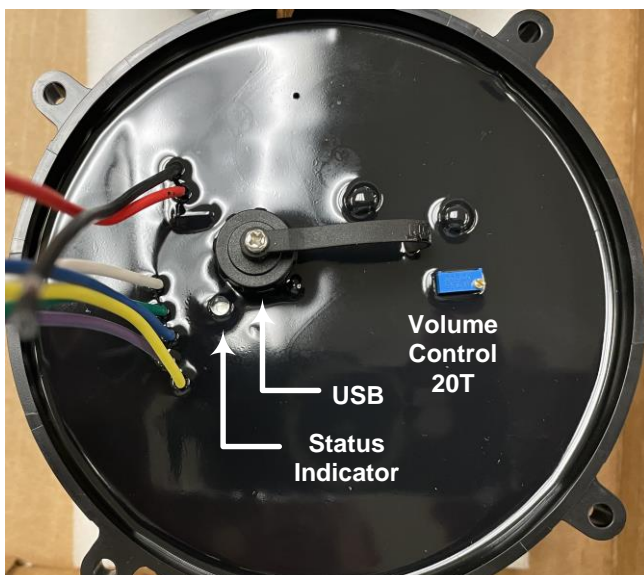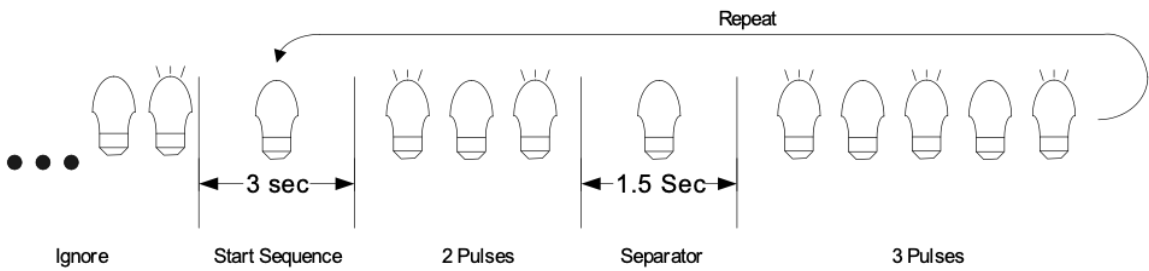
fig 5

Status Codes

11 – Can't read file "config.txt". This is a fatal error stopping the program.

22 – Message file not found.

23 – Can't read file.

32 – Not a wave file.

33 – The message file is not mono mode.

34 – The message file bits per sample is not supported.

35 – The message file sample rate is not supported

Below is an example pulse train for code 23.

Revision #	Date	Description
0.0	3/15/2022	New Document
0.1	4/22/2022	Added MacOS Instructions and updated formatting
0.2	7/13/2022	Remove MacOS Instructions add USB mini B