

## Tutorial - Making Ringtones

Most modern cell phones can be customized with the user's own ring and answer tones. This tutorial will help you to prepare suitable sound files. Many different kinds of file formats are used in cell phones, some of which cannot be created by Audacity. You need to research what file format(s) your phone accepts and how to upload it to the phone before you start to prepare the sound file. See our advice below and always consult your phone manual if in doubt.

### Step 1: What type of file does your phone require?

#### Ringtones

You need to check what type of file format your phone requires for its ringtones and whether the file needs to be mono or stereo.

There are many different ringtone formats in existence but they fall into three main categories:

- **Music ringtones** - digitally sampled audio files including MP3 and WAV formats supported by Audacity.
- **Polyphonic** - multiple notes at the same time; some phones can play true MIDI files, others rely on sp-midi or .mmf formats.
- **Monophonic** - just one note at a time, usually RTTL format. If you want a ringtone in this format it is often easiest to simply use the phone's keypad to enter it if the phone supports that.

Most modern PDA phones (*computer phones*) will support music ringtones, older phones are likely to support polyphonic ringtones, really old phones will only support monophonic ringtones.

### Step 2: Choose the ringtone source

#### Existing audio file

The source for your ringtone or IVR message will most likely be an audio file on your computer. Click File > Import > [Audio](#), select the file you want and click Open. Audacity can import MP3, MP2, WAV, AIFF, OGG and FLAC files (and MP4 files on Mac OS X) without additional libraries.

To import other file types (including MP4 on Windows) you can install the optional [FFmpeg library](#).

#### Recording an audio file

- You may wish to record your cat/dog/partner or any other sound with a [microphone](#) for a ringtone.
- Alternatively, you can play any audio file on your computer (including purchased files), a CD, or any other sound on your computer including sounds playing over the Internet, and [record the sound](#). This is not the highest quality way to grab the sound from a CD or from a purchased file, but it is probably adequate for making a ringtone as quality often needs to be compromised in a ringtone to make the file size smaller. If you want to grab a perfect digital copy of the CD track, or you cannot record it easily, extract it digitally to WAV or .AIFF as described at [Importing data from CDs](#). To make a perfect copy of a purchased file, burn it to an audio CD in the application licensed to play it, then extract the CD track in the same way.

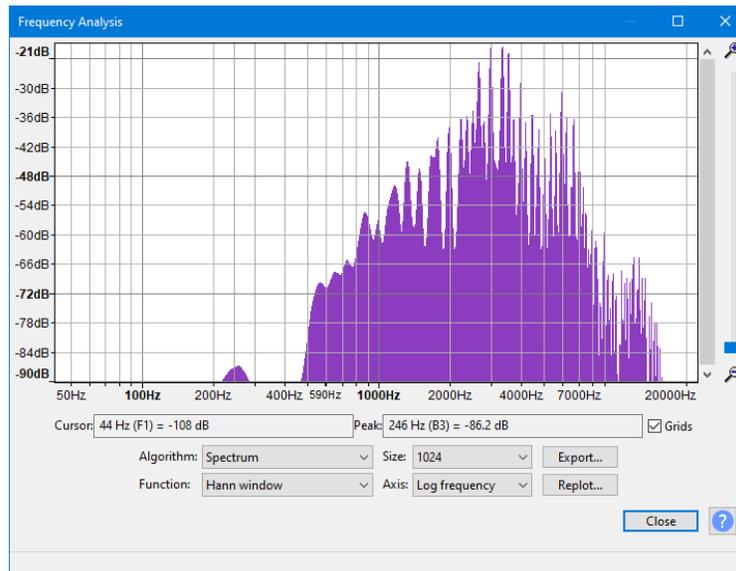
### Step 3: Edit your chosen ringtone

1. Click File > Import > [Audio](#) and import your source file; this can be any audio file Audacity opens.
2. Select the portion of audio you want to use for your ringtone (say 15-20 seconds). To do this, click in the audio track and drag a selection region to left or right with your mouse - you can see the length of the selected audio in the [Timeline](#) above the track. Many phones will loop the ringtone automatically (repeat it over and over), so choose your selection region with that in mind. To hear your selection play looped in Audacity hold down Shift while clicking the green Play button  or use the Shift + Space keyboard shortcut. To stop playback, press the Spacebar or click Stop .
3. Click Edit > Remove Special > [Trim Audio](#). This will remove the rest of the audio, leaving only the section you have selected. If you want to use the whole file, then skip this step.
4. Add any effects you may want to the ringtone by clicking in the [Track Control Panel](#) where the mute/solo buttons are to select all the track (you may also use the Edit menu or a keyboard shortcut), then choose from the **Effect** menu. Be sparing with effects, but some you may want to consider are:

### Equalization

Many phone speakers cannot reproduce very low frequencies so consider attenuating them (*a gradual reduction in the amplitude of the sound level*), especially if you are making a ringtone from an original high quality music file. On opening Effect > [Filter Curve EQ](#) you will notice a horizontal line at 0 dB, meaning that at that position, no changes are made to the volume of any frequencies. A curve can be created using the mouse, clicking at various points above or below the line. For ringtones, bring the line down to -24 dB on the vertical axis for the low frequencies from 30-300 Hz on the horizontal axis. You may want to increase the lower frequencies from 300 Hz to say 600 Hz by dragging them above 0 dB, then reduce the highest frequencies above say 10,000 Hz. This should make the sound somewhat richer and less "tinny" on a small cellphone speaker by emphasizing the frequency range it can reproduce best.

Here is an example spectrum plot from Audacity for the NOKIA 3310 - Classic Monophonic Ringtone. This ringtone is quite acute so you can hear the phone from afar, essential for a well-made ringtone.



You can view the sound level in the different frequency bands in your ringtone by clicking Analyze > [Plot Spectrum](#).

## Compressor

Using the Effect > [Compressor](#) will reduce the difference between high and low volume which allows you to make the ringtone louder overall. This suits small cellphone speakers which may not be able to handle large changes in dynamic range. You will probably want to move the *Ratio* slider to right of its default setting of 2:1 to give stronger compression.

If the "*Make-up gain*" box in Compressor is checked then after compression the audio will be set to the maximum possible level without distortion. This may be a bad idea on cellphone speakers which can give distortion before the maximum possible level is reached. Instead, use Effect > [Amplify](#) after compression and choose a "*New Peak Amplitude (dB)*" of -3 dB or -2 dB.

## Convert stereo to mono

Irrespective of the required file format, many phones will want mono ringtone files. If the track you are editing is stereo, the next step is to convert it to mono.

To convert from stereo to mono click in the Track Control Panel to select the audio, press the keyboard shortcut Ctrl + A (or  $\mathcal{H}$  + A on a Mac) or select the {Select > [All](#) menu item, then select the Tracks > Mix > [Mix Stereo down to Mono](#) menu item which mixes in data from both channels to mono without distortion.

## **Step 4: Export the file from Audacity**

Use the [Export Audio](#) dialog to export your custom ringtone or IVR message to various formats.

You can export to 16-bit PCM WAV by choosing "WAV (Microsoft) 16-bit PCM" in that dialog.

You can export to the smaller-sized MP3 format by choosing "MP3 Files" in the Export Audio dialog.

## Phones and IVR systems requiring other formats

If you add the optional [FFmpeg library](#) to your computer, you can export directly from Audacity to some additional mobile phone formats: **GSM 6.10 WAV (mobile)**, **M4A (AAC)** and **M4R (AAC)** (for M4R, add **.m4r** after the file name when you export). Steps:

1. Select menu item File > [Export Audio](#)
2. Set the required sample rate
3. Choose the format in the "Save as type" dropdown
4. If required, click Options to set the AAC bit rate, then OK
5. Enter any metadata required
6. Click Export.

If your phone requires files in other than WAV or MP3 format the best course after editing the file is to export it as a [mono](#), 16-bit 44,100 Hz PCM WAV file, then convert that WAV to the required format with an appropriate conversion application of your choice.

See [Exporting audio for ringtones and IVR messages](#) for examples of exporting audio files in various formats, including low bit rate WAV ([8,000 Hz 8-bit WAV](#)).

### Step 5: Upload your ringtone to your phone

Once you have exported your file and converted it to another format if necessary, you would typically transfer the file to your cellphone in one of the following ways:

- via a USB cable
- via a wireless Bluetooth connection
- connect a Card Reader (typically USB connected) to your computer then write the ringtone to flash memory storage, for example to a [Secure Digital](#) (SD) card which can be used in the phone
- upload it via the Internet (for example to a website, from which you can then download it to your phone).

Note that some cellphones and mobile service providers do not allow the user to download customized free ringtones to the phone. For older phones <http://cellphones.about.com/od/ringtoneshowto//blringcompi.htm> may be useful in determining if the phone allows addition of free customized ringtones. If in doubt, always look at the manual for your phone for advice on downloading ringtones.