MANUAL v1.0
ISD1700 Record Tool

ISD1700 Record Tool allows you to record a set of audio files into ISD1700 via ARDUINO board. The software consists of two parts: a sketch for ARDUINO board (*ISD1700.ino*) and standalone Windows application (*ISD1700.exe*).

The sketch in *ISD1700.ino* is written for ATMega328P-based ARUINO board (tested on ARDUINO UNO and ARDUINO NANO), but probably may also work on other boards.

List of supported ISD1700's:
1) ISD1730;
2) ISD1740;
3) ISD1750;
4) ISD1760;
5) ISD1790;
6) ISD17120;
7) ISD17150;
8) ISD17180;
9) ISD17210;
10) ISD17240.

Windows application is based on BASS audio library (http://www.un4seen.com/bass.html), which supports the most widely used formats: MP3, VAW, OGG etc.

1 Hardware connection

An example of hardware connection is shown on Fig. 1. During software development I was using ready-made recording module instead of separate ISD1700 IC. Before trying any other possible variants of connection I strongly recommend to read the original ISD1700 datasheet.

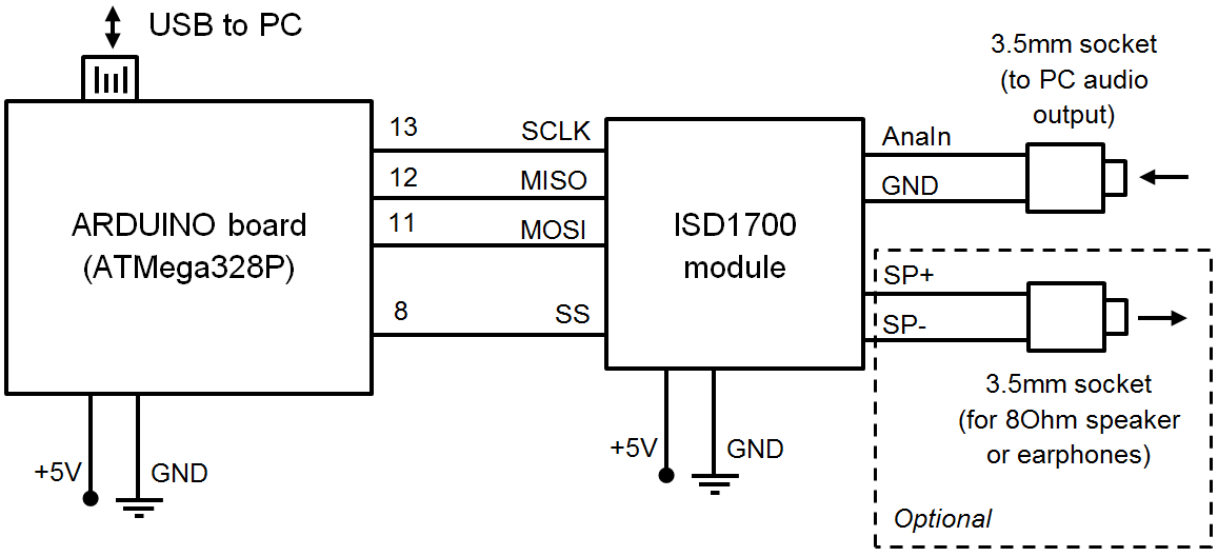

Fig. 1 – Example of hardware connection

Fig. 2–6 show my hardware set. ARDUINO NANO is used in this case.

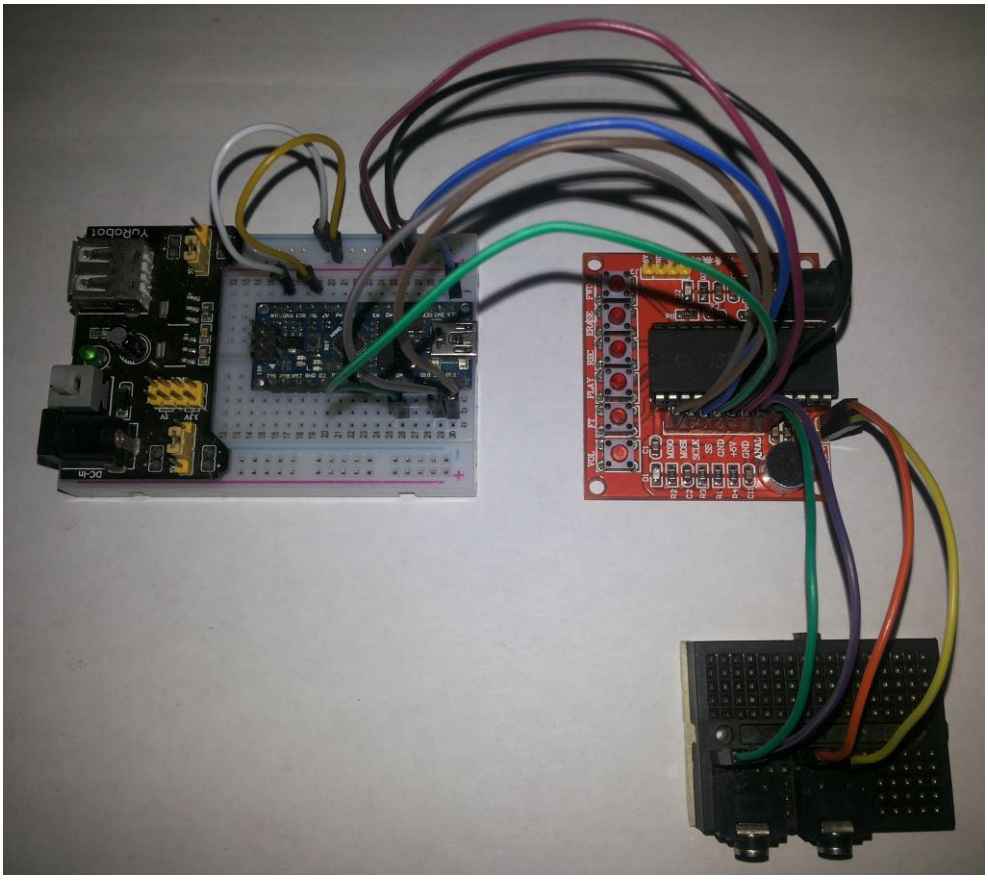

Fig. 2 – General view of author's set of hardware

On a small breadboard I put two 3.5mm sockets (Fig. 3) for audio input (left) and earphones (right).

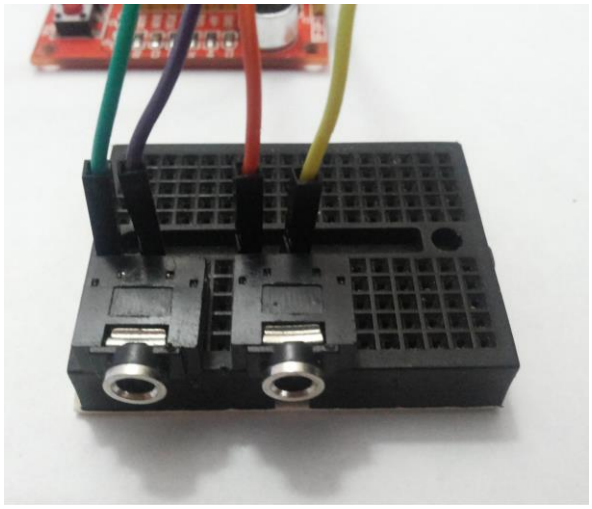

Fig. 3 – Breadboard with 3.5mm sockets

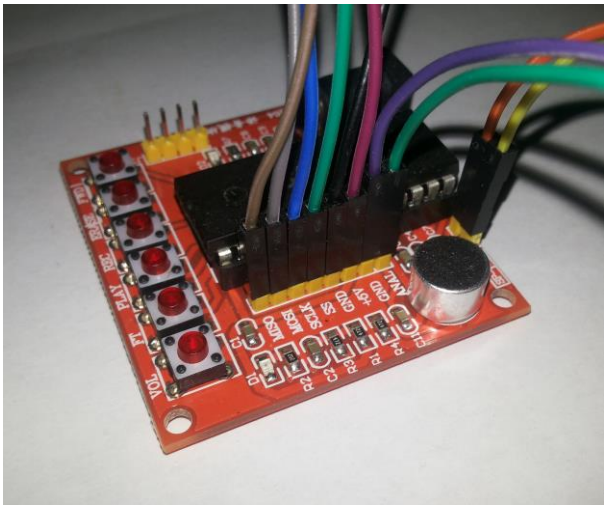

Fig. 4 – ISD1760 recording module

I recommend using an additional power supply unit rather than power all the components through the 5V-output of ARDUINO because I had many connection errors without external power source. However, this can be due to poor quality of wire connections or something else.

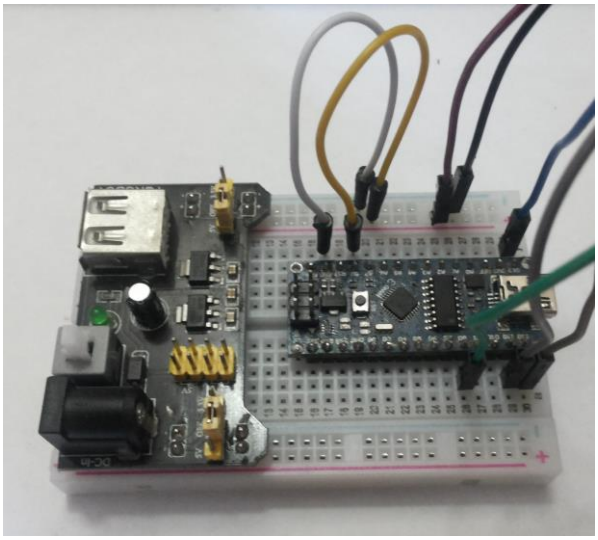

Fig. 5 – Breadboard with ARDUINO NANO and power supply module

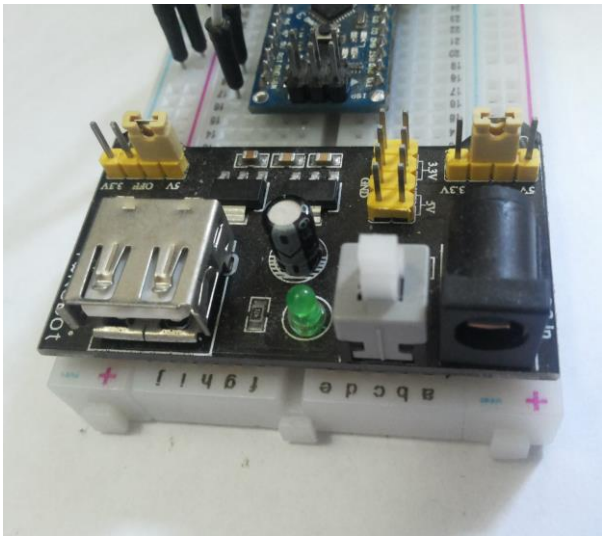

Fig. 6 – Power supply module

2 Flashing ARDUINO

Connect ARDUINO board to your PC via USB, open *ISD1700.ino* in ADUINO IDE and upload the sketch as usual (Fig. 7).

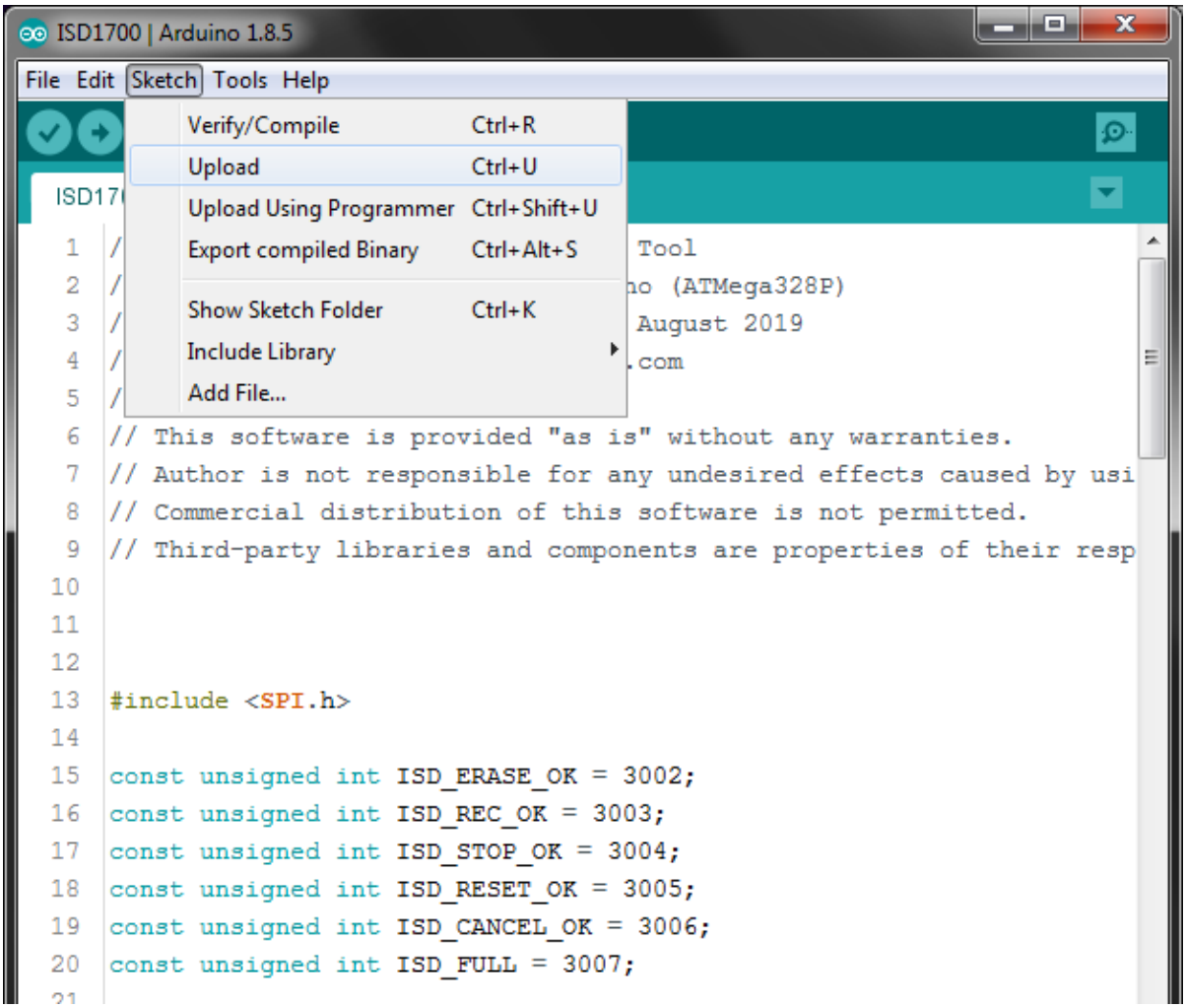

Fig. 7 – Uploading sketch into ARDUINO board

3 Application user interface

Run *ISD1700.exe*. The description of each control element is shown on Fig. 8.

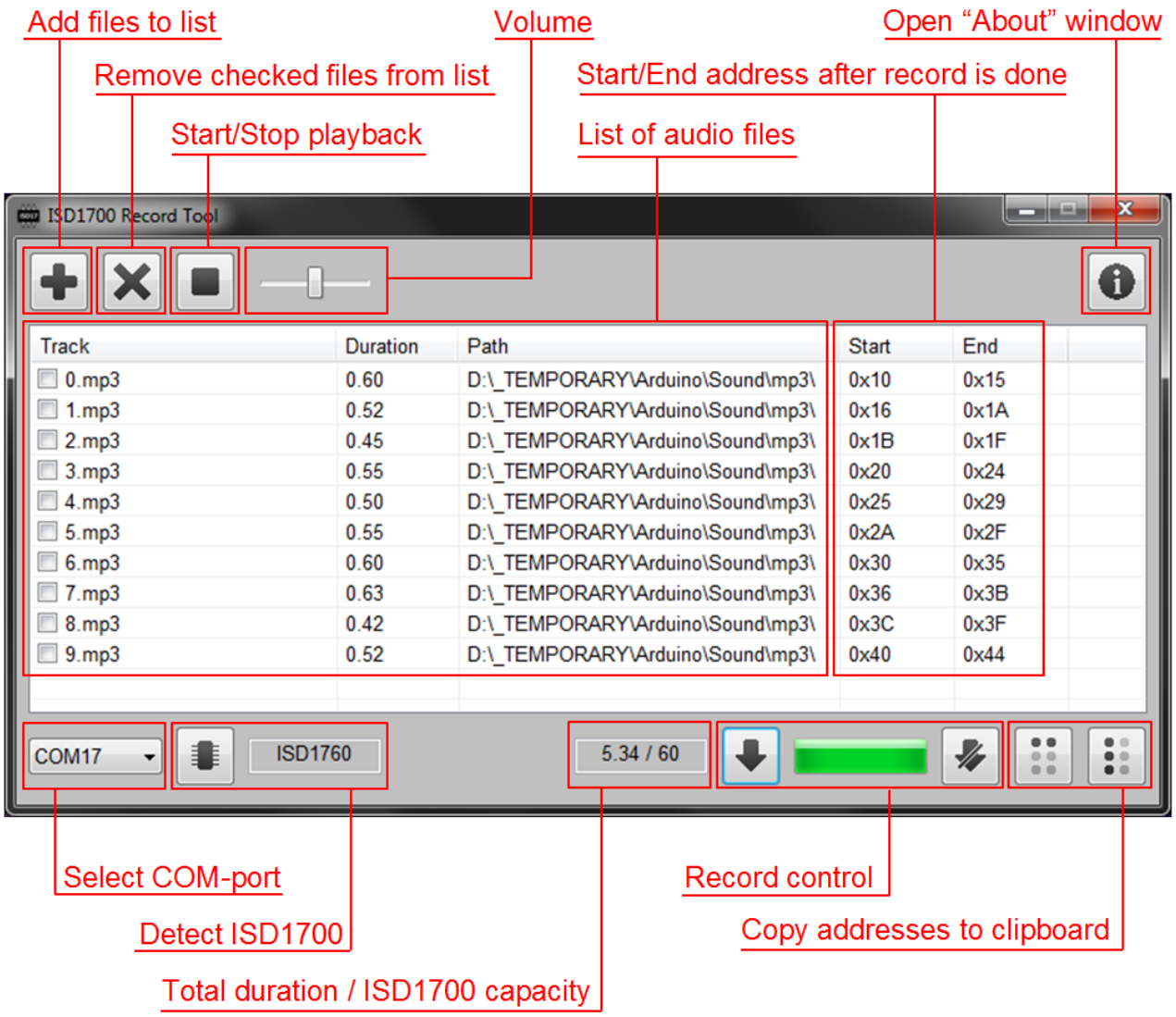

Fig. 8 – Description of control elements

4 Typical operational sequence

Fig. 9 shows typical operational sequence in Windows application.

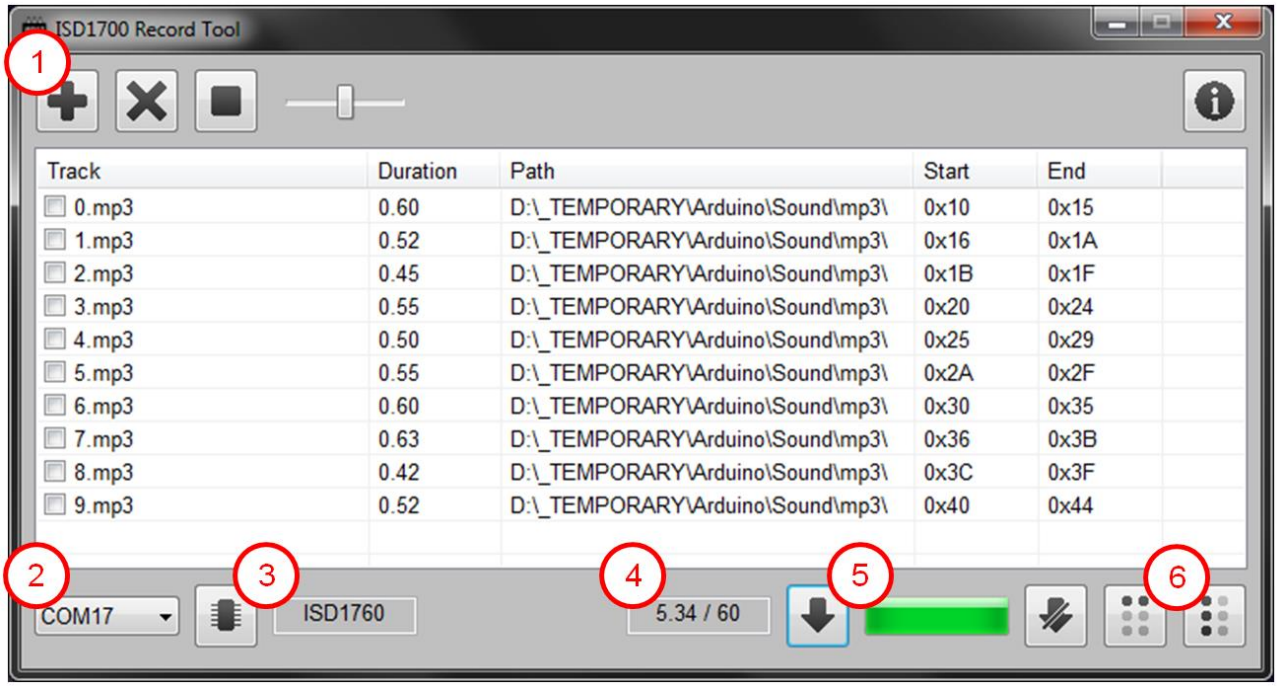

Fig. 9 – Typical operational sequence

Description:
1. Open audio files you want to record onto ISD1700. Sort them simply dragging by mouse, or delete undesired files (having checked them previously) if necessary. Also you can play each file and adjust volume level.
2. Select COM-port to which ARDUINO board is connected (Fig. 10).

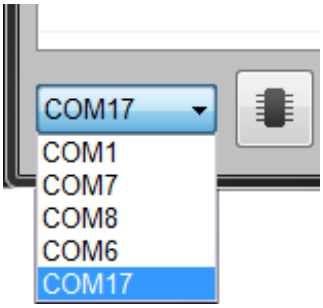

Fig. 10 – Port selection

3. Press “Detect ISD1700” button and make sure that the model of ISD1700 has been displayed in the box to the right.
4. Make sure that total duration of all audio files is less than ISD1700 capacity in seconds; otherwise you won’t be able to start recording.
5. Press “Start record” button. You can see progress on the bar. Press “Stop record” if necessary.

6. After process is done you can copy addresses of all tracks to clipboard. Fig. 11 shows the difference between two options.

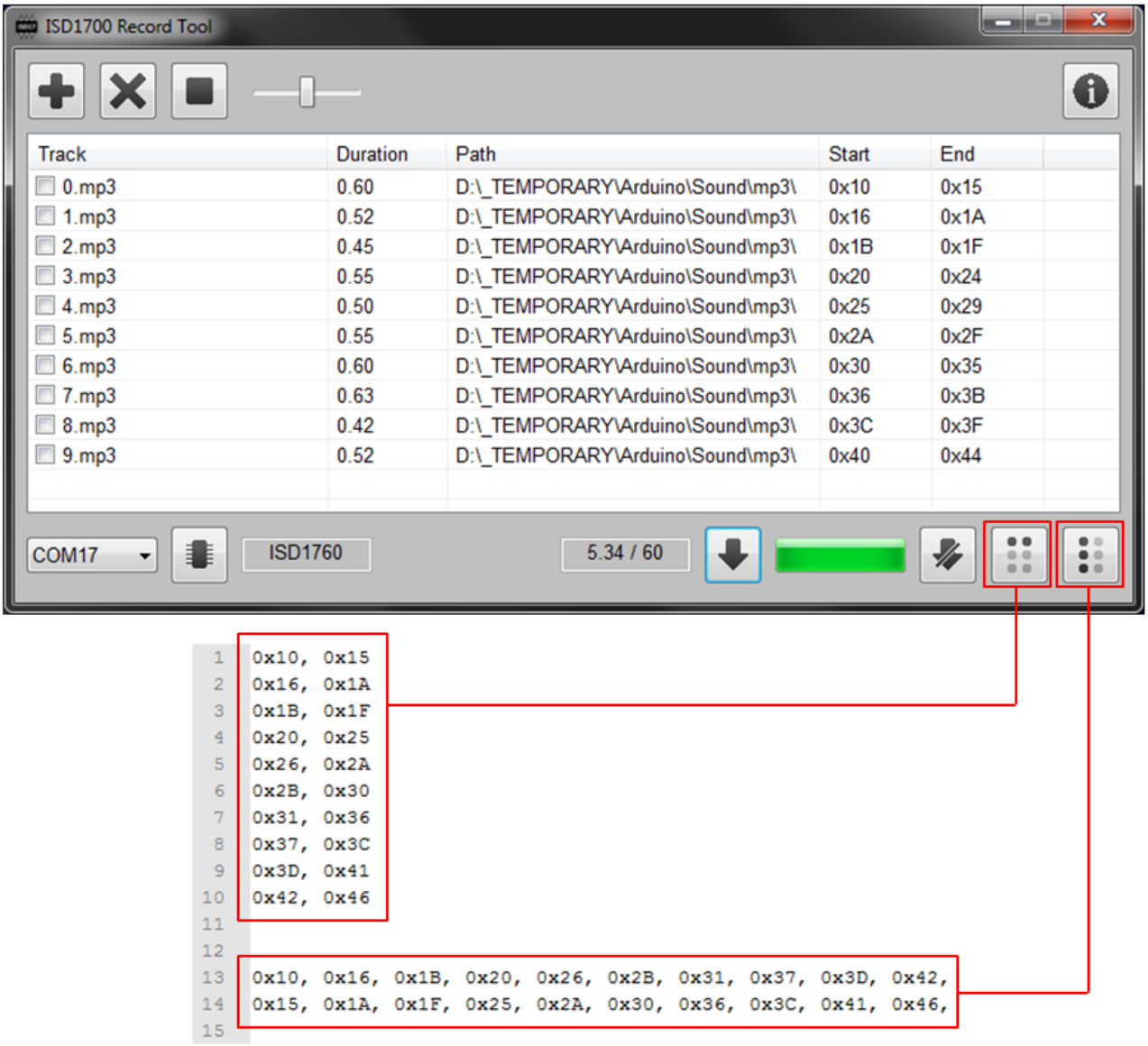

Fig. 11 – Difference between copying options:
“Copy row by row” (left button) and “Copy column by column” (right button)

Using the ISD1700 recording module makes it able to play audio files just after record process is done with the help of earphones and onboard buttons.