# Electronic bagpipes *a-pipes*

## User's guide

Februar 2022

# 1 Presentation

This document is the user's guide for electronic bagpipes *a-pipes* and its remote software.

# 2 Warning

- Because of opened holes, the *a-pipes* is sensitive to extreme moisture environment; direct contact with water shall always be avoided.
- For both plastic and wooden models, due to the fineness of the shape and the presence of holes, the chanter can split in case of violent impact or fall.

# 3 Power the a-pipes

The device is powered by a single AAA battery (rechargeable or not).
In case of using a non rechargeable battery, because of a lightly reduced length, it can be necessary to stretch the metallic spring on negative pole.

## 3.1 Battery insertion

The battery must be inserted into the battery holder with positive pole on its largest side; the positive pole should lightly exceed on this side.
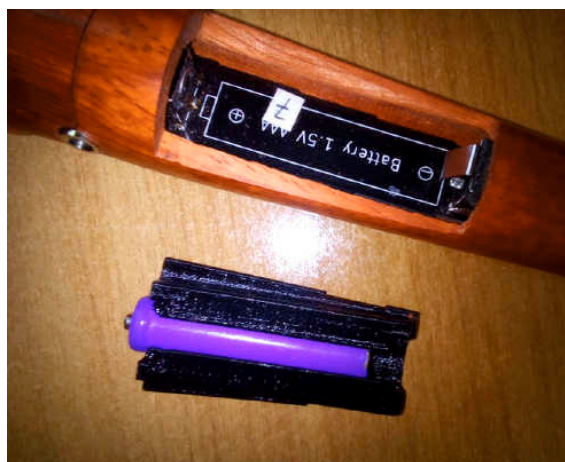


Inset the battery holder, beginning with its largest side, then press it.



A power switch is used for starting the device.

It can alternatively be powered throw a mini USB cable even if battery is drawn or absent. No switch on needed in such case.

Warning : if the power source is a smartphone, its battery could be quickly drawn.

When *a-pipes* plays no notes, no drones, no  metronome and is not connected by Bluetooth or USB, it automatically enters in snooze mode; then battery drawing is dramatically reduced. In this mode, it needs one second or more to turn back to operational mode.
 A "battery low" alert sounds when battery level reaches a low limit (one little beep every 20 seconds, then doubled, tripled and so on as available power decreases).

## 3.2    Battery choice and usage

A 1800mA rechargeable 1.5V battery theoretically allows continuous playing during 37 hours.
The *a-pipes* can play without Bluetooth even with a drawn battery (until 1V).

But when Bluetooth is active, it requires a minimum voltage of 1.3V. If the voltage falls under this limit, the *a-pipes* will always reboot at Bluetooth activation; on the other hand, the *a-pipes* remains operational for hours without Bluetooth.

For these reasons :
- A not too old 1.2V rechargeable battery, fully refuelled,  allows more than 50 minutes with Bluetooth activated.
- An 1.5V rechargeable battery, allows more than 3 hours with Bluetooth activated.
- An 1.5V non rechargeable battery, allows more than 3 hours with Bluetooth activated.

Despite the very lower battery drawn of the radio, the same rules apply. This is due to an initial short current peak at start; if battery level is low, *a-pipes* should perpetually reboot.

## 3.3    Version with DEL

The most recent *a-pipes* have an orange DEL located close to the on/off switch.
This DEL blinks every 2 seconds when playing or when plugged to USB, every 8 seconds else (sleep mode).

**With this *a-pipes* release, USB communication is only available when the switch is set to ON.**

The rechargeable through USB release has 2 additional DEL: the red one is powered during the charge, the blue one is powered when the battery is full.

## 3.4    Before playing

Before attempting to play, it is necessary to fill every holes with fingers once. Without that, holes would stay for a while in an undetermined state.

## 3.5    Environment

*A_pipes* is able to play in any situation : strongest darkness, full sunshine, stage lights and strobes ...

Fingers dryness or moisture level has no impact on it.

# 4 Standalone *a-pipes* control

*A-pipes* configuration can be set up only using the remote control software on a PC.

All others user's action are done using magic fingerings; holes are numbered from 0 (upper) to 7 (lower).

All these fingerings - but drones and chanter start commands - are allowed only when not playing.

Once fingering is applied, it is necessary to maintain it as is until action completion.

| | Covered holes | Acknowledgement | Action |
|---|---|---|---|
| | 0 7 | 5 low beeps (like an old fashion horn) | Bluetooth power on if it was off.<br>Since V2.5 : not affected by powering off. |
| | 0 7 | 2 low beeps (like an old fashion horn) | Since V2.4 : Bluetooth power on if it was on.<br>Since V2.5 : not affected by powering off. |
| | 0 6 7 | 5 higher beeps (like an old fashion horn) | Radio power on - for at least 60 seconds - if it was off.<br>Since V2.5 : not affected by powering off. |
| | 0 6 7 | 2 higher beeps (like an old fashion horn) | Since V2.4 : Radio power on if it was on.<br>Since V2.5 : not affected by powering off. |
| | 0 2 3 4 5 6 | None | Drones start after up to 2 seconds. |
| | 0 1 2 | None | Chanter + Drones start (since V1.3). |
| | 0 1 2 4 5 6 | None | Immediate chanter start on a E. |

| | Fingering | Sound | Description |
|---|---|---|---|
| | 4 5 6 | None | Instrument start indication : no note is played while this fingering is present, next valid fingering will play the relevant note. |
| | 4 5 6 7 | None | Instrument stop. |
| | 0 1 7 (first time) | 3 low beeps | Prepare the device to record. must be confirm. |
| | 0 1 7 (second time) | 5 low beeps | Confirm recording ==> recording starts. Recording ends when 500 notes have been stored or at instrument stop (5 low beeps are played). Recorded tune is saved into EEPROM, so it is not affected by powering off. |
| | 1 2 7 | None | Playback the previously recorded tune. |
| | 1 7 | 1 high bib (5 high beeps if maximum is reached) | Turn audio volume up; volume level is saved into EEPROM, so it is not affected by powering off. |
| | 2 7 | 1 low bib (5 low beeps if minimum is reached) | Turn audio volume down; volume level is saved into EEPROM, so it is not affected by powering off. |
| | 3 4 7 | None | Metronome start; metronome state and tempo are both saved into EEPROM, so they are is not affected by powering off. |
| | 3 7 | None | Metronome's tempo tuning; regularly hit hole 3, with hole 7 maintained closed, until the tempo is ok. |

| | | | |
|---|---|---|---|
| | 4 7 | 2 low beeps | metronome stop. |
| | 5 7 | 1 beep = simple gain, 2 beeps = double gain | Switch audio gain from 1 to 2 and vice versa; doubling the gain is useful when outputting sound to speakers. output gain is saved into EEPROM, so it is not affected by powering off. |
| | Until V1.7 : 6 7 | Audible sound change | Circularly switch to next instrument : great Highlands bagpipes, smallpipe in A, gaïta in C, gaïta in Bb, pratice chanter. Choice is saved into EEPROM, so it is not affected by powering off. |
| | Since V1.8 : 1 6 7 | Audible sound change | Circularly switch to next instrument. Choice is saved into EEPROM, so it is not affected by powering off. |
| | Since V2.8 : 2 6 7 | Audible pitch change | Increase global pitch. Choice is saved into EEPROM, so it is not affected by powering off. |
| | Since V2.8 : 3 6 7 | Audible pitch change | Decrease global pitch. Choice is saved into EEPROM, so it is not affected by powering off. |
| | Since V2.8 : 4 6 7 | Audible pitch change | Reset global pitch to default. Choice is saved into EEPROM, so it is not affected by powering off. |
| | Since V2.15 : 0 1 2 3 4 6 | Plays a Cnat/REb or a C#/RE | Toggles permanent accidental on C/RE. |
| | Since V2.15 : 0 1 3 4 5 6 | Plays a Fnat/SOLb or a F#/SOL | Toggles permanent accidental on F/SOL. |

# 5 Special fingerings

| | Doigté | Effet |
|---|---|---|
| | Covered holes : 0, 1, 2, 5, 6 | Vibrato on E |
| | Covered holes : 0, 1, 2, 3, 6 et 7 | Vibrato on D |
| | Covered holes : 0, 1, 2, 3, 5, 6 et 7 | Vibrato on D |
| | Hole 7 partially covered | Glissando low A |

# 6 *a-pipes* fingering in bagpipes mode

The first fingerings line shows legacy notes.
The second fingerings line shows corresponding grace notes.
The third fingerings line shows corresponding beat notes.
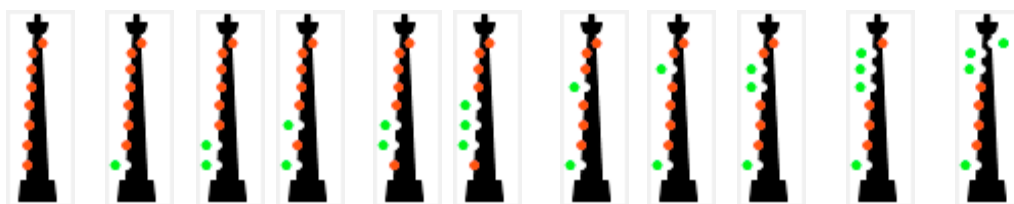


Grace notes
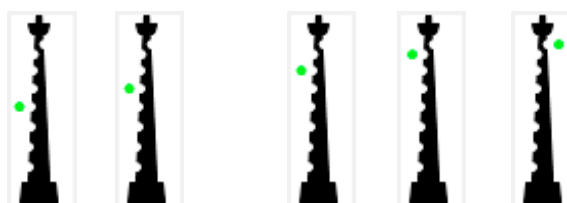
Beats
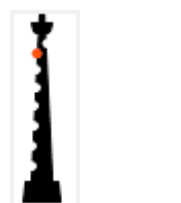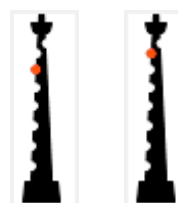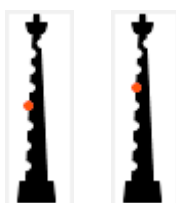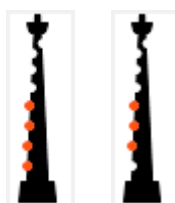
Vibrato on E/FA
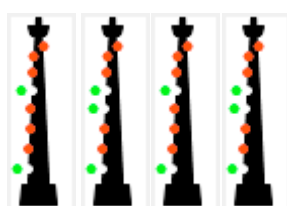
Vibrato on D/MI
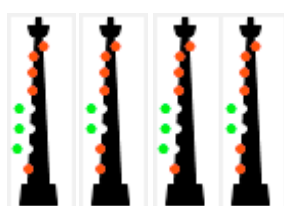
Vibrato on D/MI –
alternate fingering
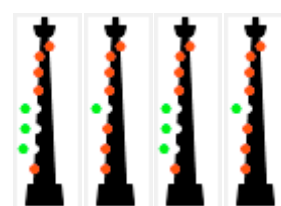
Glissando on
LowA / LA : by
progressively #7
hole uncovering

# 7  Use the *a-pipes* with a *a-box*

First connect the jack 3.5mm output of your *a-box* to a headphone or HIFI equipment using an appropriate cable – not included.
When planing to use MIDI features - if your *a-box* supports this option - connect the MIDI cable <u>before</u> powering on the *a-box*.

Power the *a-box* using the USB cable included with your *a-pipes*. This cable can be plugged into a mobile phone charging adapter.

Orient the *a-box* so that its silkscreen faces the *a-pipes*. This point is important because *a-pipes* emission power level is very low.

After some seconds, the *a-box* plays some two tones klaxon sound : it is ready to communicate with one *a-pipes*.

If *a-pipes* is not set up for automatic radio start, start it using the dedicated magic fingering (see previous table); the *a-pipes* then plays the same sound on its output jack (two tones klaxon).

A few seconds after, the *a-box* plays the beginning of « Flower of Scotland »; this means that it has recognised the *a-pipes* and is ready to playback with a tiny latency time (one millisecond) everything incoming from it : all *a-pipes* instruments, metronome, glissendi, vibrati and volume controls.
If the *a-box* was powered down, after 60 seconds, the *a-pipes* will timeout and play a quick two tones sound, indicating  that connection failed and that radio has been powered down (this timeout duration doesn't take into account snooze periods – without sound produced and fingers moves).


If the *a-box* is USB plugged to a computer or an Android device, the remote software will recognise it and will access to the *a-pipes* through the *a*-box, as usual.
Notice :
- this mode is not accessible when the MIDI cable is plugged in,
- set up actions will not always succeed when *a-pipes* plays.


After powering down the *a-pipes* or after radio shutdown, just issue the magic fingering without restarting the *a-box*.


Range can easily exceed 17 meters outdoor, without obstacles. Communication will be disturbed by player displacements.

Electric *a-pipes* drawn in radio mode is significantly lower than in Bluetooth mode.

# 8  *a-pipes* connection to a computer using USB

Connect *a-pipes* to the computer using a male type A USB ➔ male mini USB cable.

Note: in case of LIPO rechargeable over USB *a-pipes,* switch it on now.

Next, use the remote software (see §12) or a terminal emulator (see §13).

## 8.1   On Windows

If the *a-pipes* is not automaticaly recognized, let download the CH340/CH341 driver at https://www.a-pipes.com/en/download

## 8.2   On Linux

The *a-pipes* is automaticaly recognized by recent Linux distributions.
If not, let download the CH340/CH341 driver at https://www.a-pipes.com/en/download,  then install is <u>as *root*</u> :

- On 64 bits machines : first install the 32 bits libraries :
    *sudo apt-get install libasound2-plugins:i386*
    *sudo apt-get install libx11-6:i386*

- Extract the CH341 driver's tar ball *CH341SER_LINUX_NOTRACE.tgz* into */tmp* :
    *cd /tmp*
    *tar xzf <tar ball folder>/CH341SER_LINUX_NOTRACE.tgz*
    *cd CH341SER_LINUX*
    *make*
    *mv /lib/modules/2.6.32-431.el6.i686/kernel/drivers/usb/serial/ch341.ko /lib/modules/<kernel release>/kernel/drivers/usb/serial/ch341.ko.origine*
    *cp ch34x.ko /lib/modules//< kernel release >/kernel/drivers/usb/serial/ch341.ko*
    *rmmod ch341*
    *insmod /lib/modules//< kernel release >/kernel/drivers/usb/serial/ch341.ko*

- Allow access to the USB / serial device for all users :
    *echo 'KERNEL=="ttyUSB0", MODE="0666"' > /etc/udev/rules.d/10_ttyUSB0.rules*
  if this command fails, use the following, then logout:
    *adduser my_user_name dialout*


<u>**This name « */dev/ttyUSB0* » is the one used by the remote software.**</u>


## 8.3   On Mac OS X

On Mac, the *a-pipes* is automaticaly recognized since Mojave 10.14.6.
For older releases, let download the appropriate CH340/CH341 driver at https://www.a-pipes.com/en/download

# 9  *a-pipes* connection to an Android smartphone using USB

Connect *a-pipes* to the smartphone using a male mini USB ➔ male "OTG" micro USB.
Then use *a-pipes* application, available for free on *GooglePlay*.

# 10 *a-pipes* connection using the *a-box*

Connect the *a-box* to the computer or the Android device using USB.

The remote software will recognise the *a-box* and will dialog with the *a-pipes* through the *a-box*.

# 11 *a-pipes* connection using Bluetooth 2.0

Bluetooth link use is only available for communications with the remote software.
Running on a PC (Windows, Linux or MacOSX) or an Android smartphone.

No standard Bluetooth device such as headphones or speakers can be used with the *a-pipes*.

If *a-pipes* is powered through USB, *Bluetooth* communication is not supposed to work.

If *a-pipes* has not been configured for automatic Bluetooth activation at boot time, use the magic fingering on *a-pipes* for starting Bluetooth : an old fashion horn should sound; it means that Bluetooth is powered on for a period of 90 seconds.
After the timeout, if no communications with the remote software occurred, the Bluetooth is automatically powered off: a lower but similar sound is issued.

## 11.1 On Windows

Double click on the Bluetooth icon at the bottom right of screen : a configuration panel is displayed
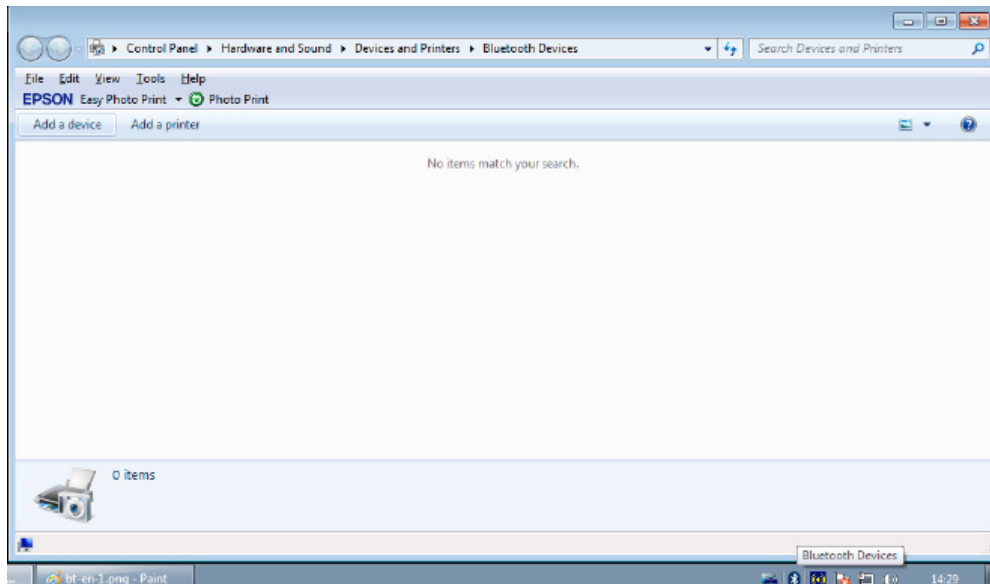
Click on the tab « Add a device »; after a while the *a-pipes* should appear :
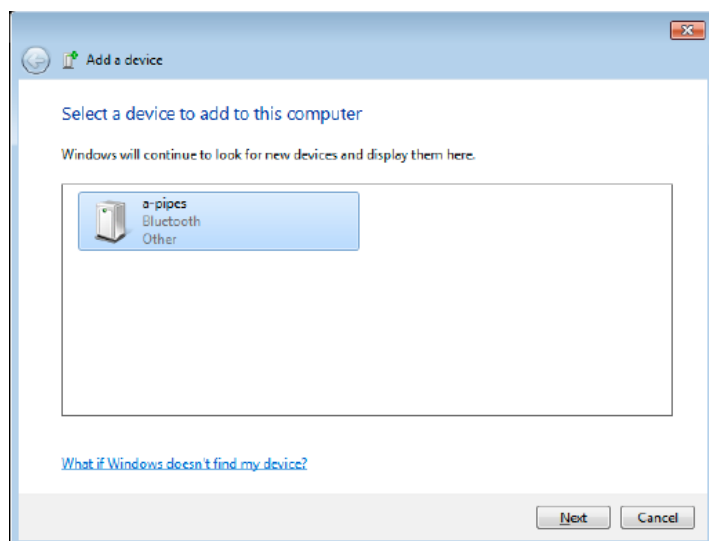


Double click the *a-pipes* icon, then select  « Enter the device's pairing code »
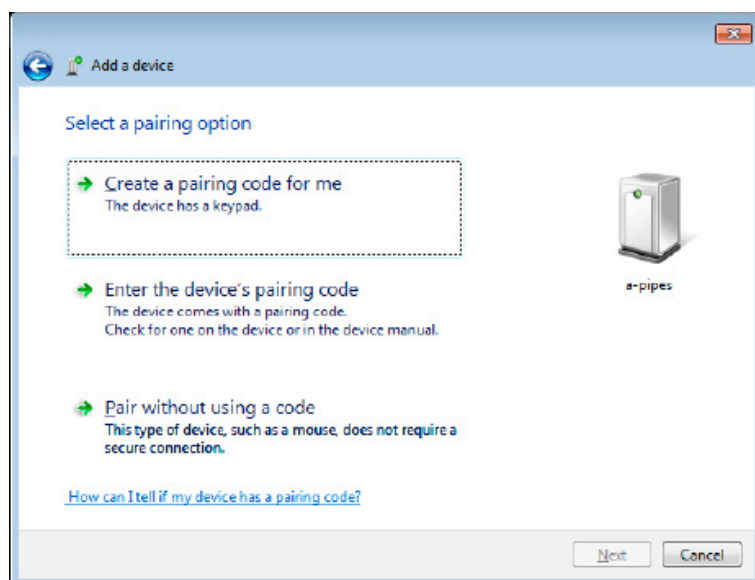


Then enter « 1234 » code :
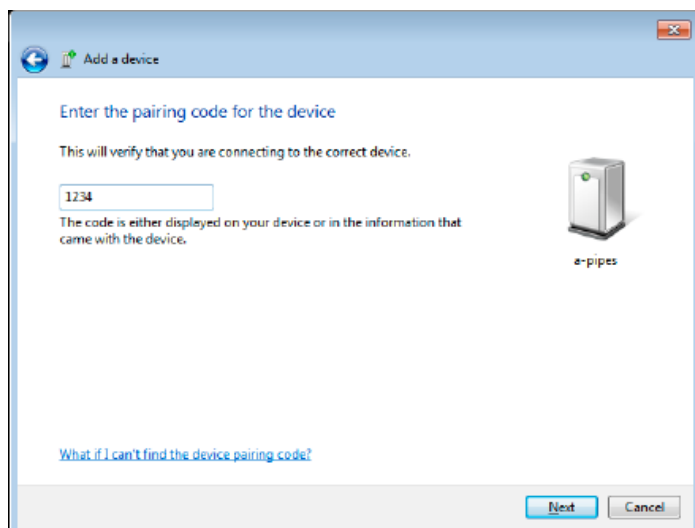
Then *a-pipes* appears as a device.
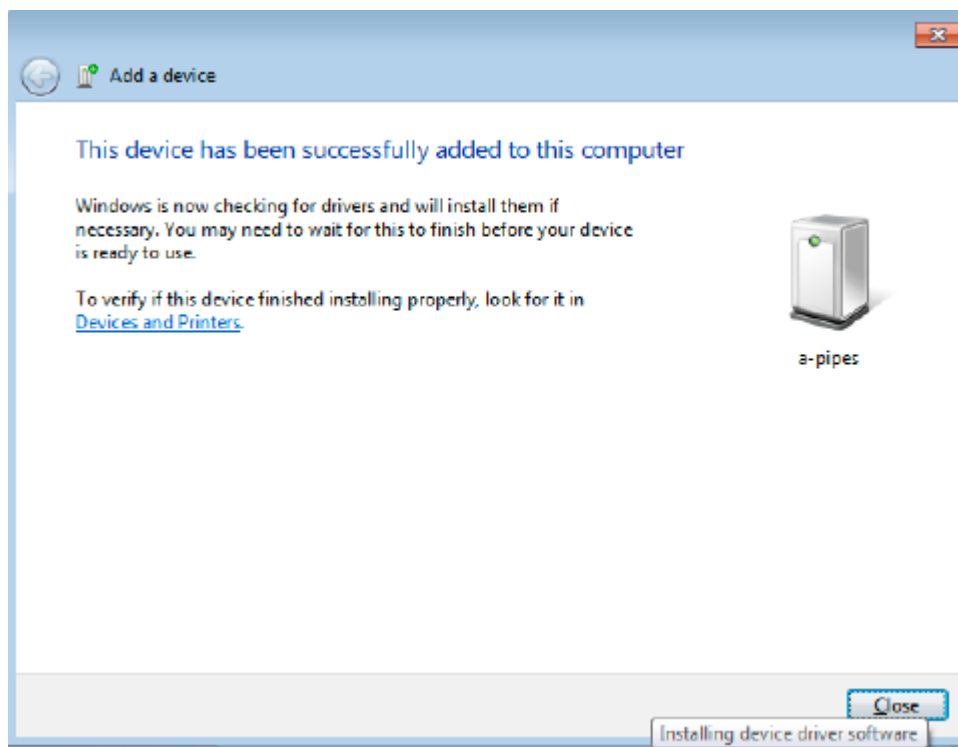


Double click on the *a-pipes* icon and get its associated COM port (COM5 here) from Hardware section.
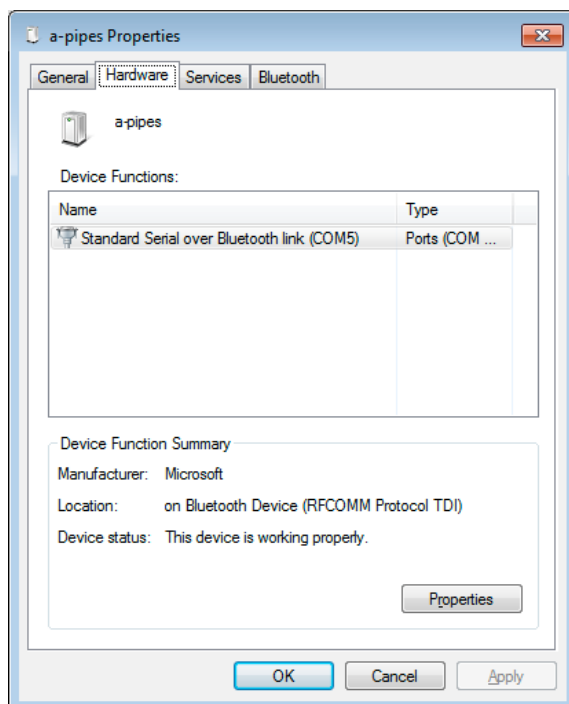


**This port name is the one used by the remote software.**

## 11.2  On Linux

As *root* :

- If Bluetooth is not already started : « *service bluetooth start* »
- Lookup at Bluetooth devices : « *hcitool scan* »
- Keep *a-pipes*  address (e.g. : 0F:15:2E:09:0C:05)
- Associate this address to a RFCOMM serial device: « *rfcomm bind /dev/rfcomm0 0F:15:2E:09:0C:05* »

**This name** *(/dev/rfcomm0*) **is the one used by the remote software.**


## 11.3  On Mac OS X

Redaction pending.


## 11.4  On Android

Start Bluetooth on *a-pipes* then on the Android device; Android will search for new Bluetooth devices and find the *a-pipes*.
Click on it and enter PIN code "1234".
Now *a-pipes* is associated to your Android device.

Use the *a-pipes* application available for free on *GooglePlay*; it will automaticaly detect the *a-pipes*.

# 12 *a-pipes* set up with the remote software

## 12.1  Software installation

### 12.1.1  On Windows

Unzip the *a-pipes_windows.zip* file.

On Windows, no proper installation is required : only the executable file « *a-pipes.exe* » is needed.

The remote software creates then maintains a user's preferences file named « *a-pipes.opt* » and located in the directory pointed by $USERPROFILE environment variable, typically "*C:\Documents and Settings\<USER>*".

### 12.1.2  On Linux

Unzip the *a-pipes_Linux.zip* file.

As the final user, create on the desktop a file named « *a-pipes.desktop* » containing these lines :
```
[Desktop Entry]
Version=1.0
Type=Application
Terminal=false
Name=a-pipes
Exec=<choosen folder>/a-pipes
Icon=< choosen folder >/a-pipes.gif
```

The remote software creates then maintains a user's preferences file named « *a-pipes.opt* » and located in the directory pointed by $HOME environment variable.

### 12.1.3  On Mac OS X

Unzip the *a-pipes_MacOSX.zi*p file.

The remote software creates then maintains a user's preferences file named « *a-pipes.opt* » and located in the directory pointed by $HOME environment variable.

### 12.1.4  On Android

The application can be automatically installed for free from GooglePlay.

## 12.2 Software's features

The remote software allows, from a graphical application, to set up *a-pipes* configuration.
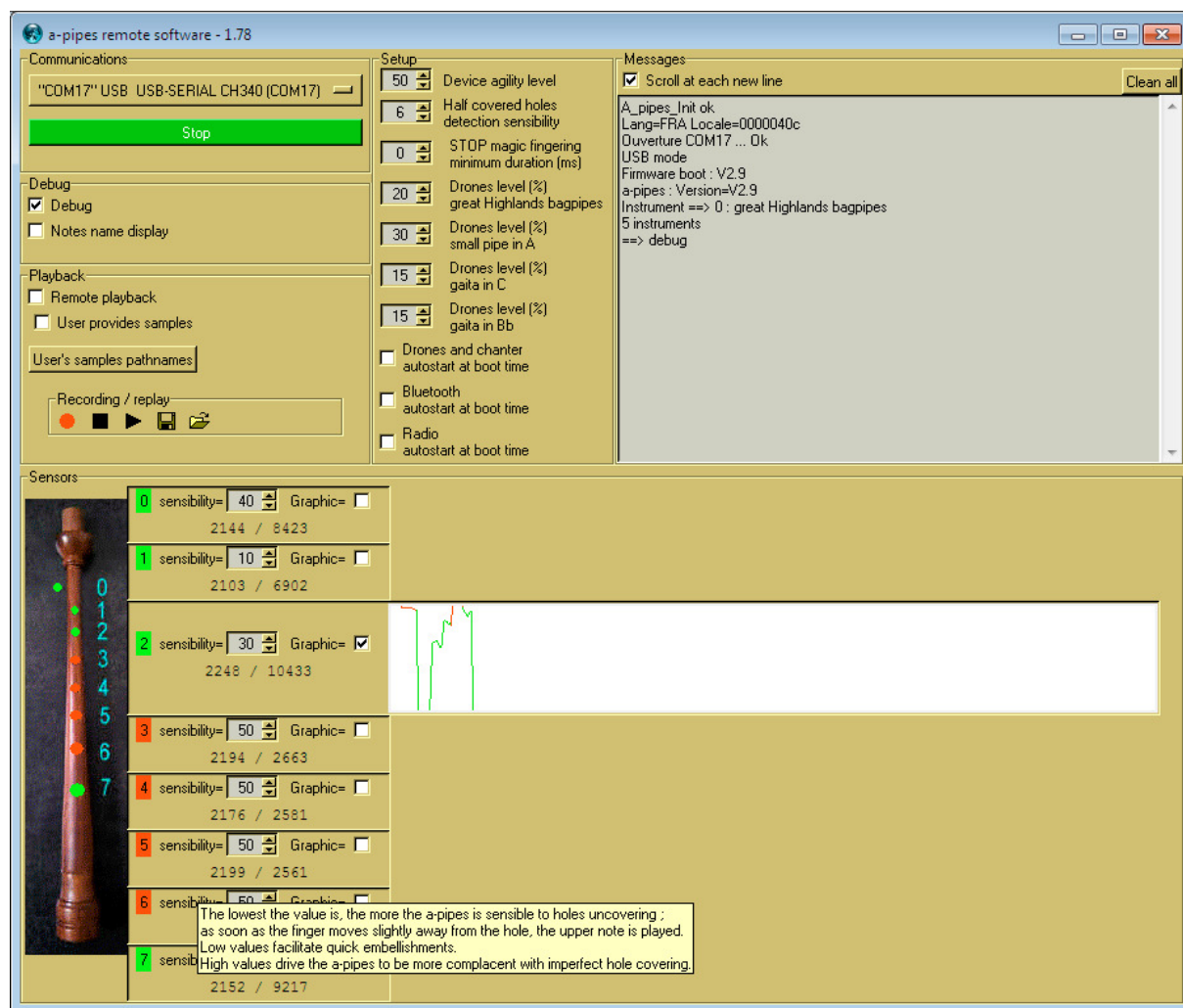


All parameters are written into the *a-pipes* EEPROM, so they don't disappear when device is powered off.

Adjustable parameters from "Setup" frame are :

- Device agility level : range 0 to 100. When reducing this value, *a-pipes* becomes less reactive (can be used by absolute beginners for masking playing faults).
  Increasing it makes the a-pipes more reactive but increase electric drawing; can be interesting for high speed jigs.

- Half covered holes detection sensibility : the sensibility level into a range 0 to 20.
  The highest the value is, the best hole's half covering is detected (applies to gaïta half covered fingerings, but also sliding notes).
  Lowering this setting makes the a-pipes more tolerant with imperfect fingerings.
  A 0 value can be adapted to high speed jigs.

- 8 hole's individual sensibilities : the lowest the value is, the more the *a-pipes* is sensible to hole's uncovering; as soon as the finger moves slightly away from the hole, the upper note is played.
  Low values facilitate quick embellishments.
  High values drive the *a-pipes* to be more complacent with imperfect hole covering; it also apply to hole #0 (HA grace note) and hole #7 (birl).

- STOP magic fingering duration : the minimum duration for the STOP magic fingering, in milliseconds. Set it to avoid unwanted device stop during approximate fingerings.
- Drones and chanter autostart at boot time : when not set, *a-pipes* plays a short "flower of Scotland" melody at boot time (with drones if battery powered, without drones else) , then waits for a magic fingering. When set, *a-pipes* plays at boot time both drones and chanter (a E note) instead.

- Bluetooth autostart at boot time or not (not operational when powered by USB).

- Radio autostart at boot time or not (not operational when powered by USB).

- Vibrato on E and vibrato on D activation (since firmware V2.13) : enable / disable the "vibrato" feature.

In complement, two options are available in the « Debug » frame :

- Debug : displays twice per second all 8 holes states (current covering value, maximum covering value); an optional realtime graph is available.

> Debug mode is incompatible with music playing, because it monopolises the *a-pipes* CPU and makes it too slow for playing.

- Notes display : displays notes names in realtime.

The « Playback » frame allows the computer to :

- Play notes issued from *a-pipes* using native sounds at 44100Hz / 16 bits
- Play notes issued from *a-pipes* using user's samples (See chapter 15 Remote playing)
- Record notes coming from *a-pipes*, play it back and store the tune into a «.a-pipes » file. The *BagPipe* composing software can import such a file and transform it automatically into an ABC music sheet. *BagPipe* software is downloadable for free at http://r.fifi.free.fr/BagPipe
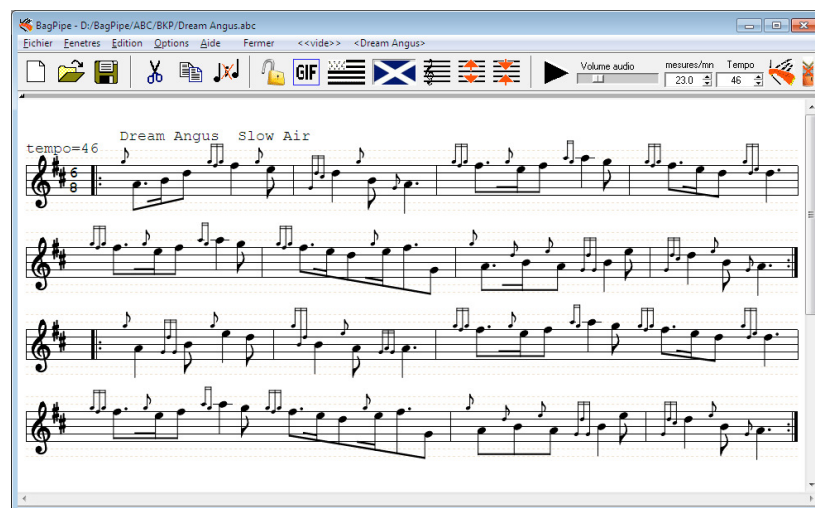
# 13 Use a MIDI software on Windows

On Windows, the remote software allows MIDI forwarding to any MIDI player like *Universal piper* running on the same system.

For that, some MIDI loopback software is needed, such as the freeware *loopMIDI.* This software creates virtual MIDI channels on the PC.

In the following example, , *loopMIDI* has been installed and the MIDI player is *Universal piper.*

User should proceed like that:

- run *loopMIDI* application,
- run the MIDI player and configure it to catch any MIDI channels,
- USB connect the *a-pipes* or the *a-box* to the *Windows* PC,
- Run the remote software,
- Finally check one by one all available MIDI channels until the *a-pipes* makes the MID software playing.
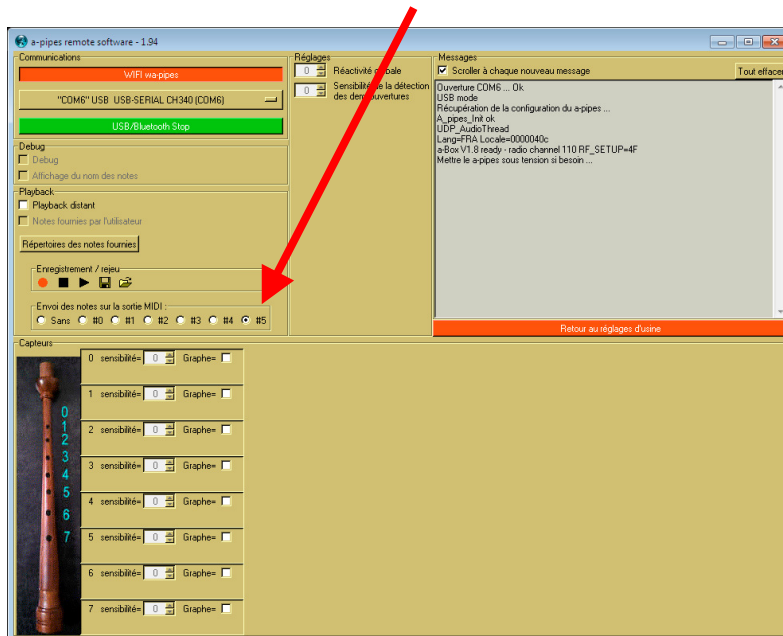


*Universal piper* MIDI configuration example:

# 14 *a-pipes* setup with a terminal emulator

**Warning : this feature is no more available since firmware release V2.10.**

Recommended terminal emulators are :
- « Droidterm » on Android,
- « Tera Term » on Windows.

Communication speed (baudrate) should be set to 115200 bauds, 8 bits, no parity.

The whole dialog mode with user is textual.

All commands are very short; each command line should be followed by an Enter keypress (CR = carriage return, LF = new line, or both).

- Command « ? » : asks for current setup.
  Notice : due to an Android bug, this command can have no answer; in such case, the user should issue a « d0 » command. This will unblock the USB driver and the answer to command « ? » will be received.

  Output example :

        e=500
        d=0
        g=50
        S=10
        B0=20
        B1=30
        B2=15
        B3=15
        i=0
        h=5
        n=5
        a=0
        A=0
        s0=110
        s1=30
        s2=40
        s3=30
        s4=30
        s5=30
        s6=30
        s7=70

- Command « v » : sensors state is continuously displayed on the upper lines of the window :
  - line 1 : sensor number,
  - line 2 : current covering value/10,
  - line 3 : max/10,
  - line 4 : sensibility,
  - line 5 : state (0=opened, 1=covered)

  Display example :

        0    1    2    3    4    5    6    7
        260  294  267  258  259  260  251  267
        260  296  269  259  261  261  252  268
        110   30   40   30   30   30   30   70
          0    0    0    0    0    0    0    0
        ------------------------------

- Command « s » : sets sensor's sensibility value for one hole.

Example for #2 hole : "s2=45"

- Command « g » : sets global agility (maximum = 50 = default value)
  Example : "g45"

- Command « a » : (since V1.3) toggles drones+notes autostart mode.

- Command « A » : (since V1.7) toggles Bluetooth autostart mode.

- Command « B » : (since V1.3) sets drones volume for one instrument numbered from 0 to 4.
  Example : « B0=30 »   30% volume for instrument #0 (great Highland bagpipes)

- Command « h » : sets half covered holes detection sensibility level (range 0 to 20)
  Example : « h18 »

- Command « S » : sets the minimum duration for STOP magic fingering (milliseconds / 10)
  Example : « S240 » : STOP magic fingering should be maintained for more than 2.4 seconds

- Command « b » : Bluetooth power on (for 90 seconds)

- Command « d0 » : end of debug mode

- Command « x » : *a-pipes* reboot

- Command « Z » : full factory reset then reboot; total duration = 1 minute

# 15 Remote playing

Let launch the remote software, then connect it to *a-pipes* using USB or Bluetooth.

Check « Remote playback » option in the « Playback » frame; now all notes will be played by the computer at HIFI quality level (44100Hz, 16 bits PCM); the *a-pipes* jack output doesn't need to be plugged.

In case of Bluetooth connection; a little latency time (5ms) appears between the fingering and the remote playback. This latency is not that disturbing.

If the user wishes to provide its own samples for remote playback (e.g. his own bagpipes recorded at 96000 Hz and 16 bits), he has to place its 11 to 20 WAV files (RIFF/PCM) into a dedicated folder, then he makes the remote software pointing to this folder.

Files count depends on instrument type : typically 11 for bagpipes and 20 for gaitas.

Every files should have the same audio format (sampling frequency, bits count) and should have one single channel.
Each file can contain a note lasting seconds, or the minimum periodic sequence of the sound; notes are played from a perpetual loop.

All fingering whose file is not provided will be ignored.

Filenames should respect the following fingering/filename associations :

| Holes state, from top to bottom (C=covered, O=open, M=half covered) | Filename | Comment |
|---|---|---|
| Drones | drones.wav | |
| C C C C C C C C | 0.wav | |
| C C C C C C C O | 1.wav | |
| C C C C C C O O | 2.wav | |
| C C C C C O O O | 3.wav | |
| C C C C O C O O | 3.wav | |
| C C C C O O O O | 4.wav | |
| C C C O O O O O | 5.wav | |
| C C O O O O O O | 6.wav | |
| C O O O O O O O | 7.wav | |
| O O O O O O O O | 8.wav | |
| C C C C C O O C | 3.wav | played if a-pipes is not in gaita mode |
| C C C C O O O C | 4.wav | played if a-pipes is not in gaita mode |
| C C C O C C C O | 5.wav | played if a-pipes is not in gaita mode |
| C C O O C C C O | 6.wav | played if a-pipes is not in gaita mode |
| C O O O C C C O | 7.wav | played if a-pipes is not in gaita mode |
| O O O C C C C O | 8.wav | played if a-pipes is not in gaita mode |
| C C C C C O C O | 9.wav | played if a-pipes is not in gaita mode |
| C O C O C C C O | 10.wav | played if a-pipes is not in gaita mode |
| C O C C C C C O | 8.wav | played if a-pipes is in gaita mode |
| C C C C C C M O | 9.wav | played if a-pipes is in gaita mode |
| C C C C C O C O | 10.wav | played if a-pipes is in gaita mode |
| C C C O C C O O | 11.wav | played if a-pipes is in gaita mode |
| C C O C O O O O | 12.wav | played if a-pipes is in gaita mode |
| C C O C O C O O | 12.wav | played if a-pipes is in gaita mode |
| C C O C O C C O | 12.wav | played if a-pipes is in gaita mode |
| C O C O O O O O | 13.wav | played if a-pipes is in gaita mode |
| O C O O O O O O | 13.wav | played if a-pipes is in gaita mode |

| | | | |
|---|---|---|---|
| `C O C O C C C O` | 13.wav | played if a-pipes is in gaita mode |
| `O O C C O O O O` | 14.wav | played if a-pipes is in gaita mode |
| `O C C C C C O O` | 14.wav | played if a-pipes is in gaita mode |
| `O C C C C C O O` | 15.wav | played if a-pipes is in gaita mode |
| `O C C C C M O O` | 16.wav | played if a-pipes is in gaita mode |
| `O C C C C O O O` | 17.wav | played if a-pipes is in gaita mode |
| `O C C C O O O O` | 18.wav | played if a-pipes is in gaita mode |
| `C C C O C C C O` | ------ | fingering reserved for bagpipes ==> not interpreted in gaita mode |

# 16 Troubleshooting

- My *a-pipes* periodically sounds short beeps sequences when not playing : battery becomes low.

- My *a-pipes* reboots continuously : battery is too low.

- My *a-pipes* becomes crazy; when using the remote software, I see a lot of aberrant settings : by mistake, the *a-pipes* stayed powered for a while until battery was fully drawn.

  It is necessary to use the remote software  for resetting all settings to default : place the pointer at messages window bottom then press « Z » + enter key; *a-pipes* reboots after one minute with its factory settings.

  If it doesn't fix, update all settings manually.

- When powered on, my *a-pipes* plays strange sounds instead of the five first notes of "Flower of Scotland"; I hear a high A followed by N low A : optical failure of sensor number N ➔ Please contact us.

- Impossible to set any parameter using USB : while Bluetooth autostart is on, USB doesn't fully work. Just disable Bluetooth (with the magic fingering or using the remote software via Bluetooth).