

# **Drive**

for solo performer or chamber ensemble,

live electronics

and

game controller

**Anne La Berge**



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live electronics  
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2003-2009

Anne La Berge

Commissioned by **Fonds voor Scheppende Toonkunst**

**Duration:** c. 25'-35'

The software patch and samples of **Drive** are available at MCN. We do our utmost to provide high quality. Please inspect the material well beforehand. If there is a problem with the material, contact MCN and we will do our best to assist you. MCN and the composer do not offer support for the software. MCN cannot be held liable for any technical or musical failures and/or their consequences.

For general software support contact [www.cycling74.com](http://www.cycling74.com)

For specific questions regarding **Drive** contact [www.annelaberge.com](http://www.annelaberge.com)

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The inspiration for *Drive* comes from "The Invention of the Windshield Wiper." I was particularly taken by the fact that the inventors of the windshield wiper were Florence Lawrence and Mary Anderson. Mary Anderson, while visiting New York, came up with the concept and the construction of the first windshield wiper in 1903 and patented it soon after. I have written an interview with Mary in which we are allowed into her fantasy world to help us understand why and how she found her way as the inventor of the windshield wiper. Later in *Drive* different texts emerge which juxtapose descriptions of the anatomy of a diesel engine and the anatomy of a girl in puberty. Near the end of the piece, a brief story about the uterus is also played. These text sections function musically as abstract songs which frame the more 'expressive' opportunities of the purely musical solo and ensemble playing. Without delving into clear narratives, information about Mary, her body and other people's bodies is thrown into the performing space somewhat like an improvising musician plays a solo. *Drive* tosses ideas around concerning why women respond to cleaning issues in such resourceful ways. The purely musical moments give us space to comment, express and reflect on whatever these ideas lead to.

The samples from *Drive* are all windshield wipers, manipulated or simply left to be what they are.

It is important that the performer or performers use filters and effects on their instruments. *Drive* is a piece that works best with the combination of acoustic and electronic instruments.

*Drive* is a commission from the Dutch Fonds voor de Scheppende Toonkunst (Fund for the Creation of Music) 2003. A major part of the piece was constructed during a Guest Artist in Residence at the Dartington College of the Arts in Totnes, England. The original version of *Drive* was made using the computer programs junXion and LiSa. Both programs were created by STEIM in Amsterdam. They can be purchased from STEIM ([www.steim.org](http://www.steim.org)). This version in Max/MSP was made in cooperation with NEAR/Donemus/KMT as part of the PSAU project 2006. The Max/MSP programming was done by Luc van Weelden with updates and modifications by Anne La Berge.

The first 2007 version was made in Max/MSP 4.6 and the latest 2009 version is in Max/MSP 5.

The voices in *Drive* are:

Mary Anderson - Misha Myers  
Puberty – Amy Walker  
Diesel engines – Josh Geffin  
Menopause and the uterus - Patrick Ozzard-Low

The text is by Anne La Berge.

Special thanks to Robert Bosch for providing the windshield wiper samples.

## Hardware needed to operate *Drive*

1. a laptop computer
2. a professional quality device for audio input and output (minimum 1 input and 2 outputs)
3. a USB game controller (such as a Speed Link Bullfrog USB controller)
4. MIDI continuous controllers: minimum 4, ideal 7.  
For most instrumentalists a combination of continuous controller pedals and desk-devices are the best solution.
5. a microphone for audio input
6. a PA system

## Extra software needed to operate *Drive*

1. Cycling '74 Max/MSP 5 Runtime or Max/MSP 5. The Runtime version is a free download available at: [www.cycling74.com](http://www.cycling74.com).
2. a software tool to process incoming data from the game controller which will output data to be routed as MIDI information to MAX/MSP. The program originally used for performing *Drive* was junXion, a USB to MIDI program created by STEIM, [www.steim.org](http://www.steim.org). The composer used a Max hi object in 2009 as a software interface for the USB controllers (not included in this package). A hi object is an input mechanism for Max/MSP that currently works with USB game controllers, keyboards, and mice.

## System Requirements

The DRIVE\_main.mxf patch is a Collective that can be used with the Max/MSP Runtime. System requirements of Max/MSP Runtime can be found at [www.cycling74.com](http://www.cycling74.com). As of August 2009 the minimum computer requirements were:  
Max 5 requires a Mac PPC or Intel machine running OS X 10.4 or later, and 1 GB RAM.  
Max 5 requires a Windows XP or Vista machine and 1 GB RAM.

Where to get help and support: [www.annelaberge.com](http://www.annelaberge.com)

## Installing and testing the settings for *Drive*

*Drive* is programmed in Max/MSP 5. It is available as a Collective that will run using Max/MSP 5 Runtime on an Apple Mac or Microsoft Windows computer. It is necessary to download Max/MSP 5 or the free Max/MSP 5 Runtime from: <http://www.cycling74.com/downloads/> to run *Drive*. Those with Max/MSP installed on their computer are welcome to make minor changes to the patch to make it more suitable to their instrument or improvising needs. Major changes to the patch are not allowed.

It is necessary to install and set up a USB to MIDI program to use the USB game controller for *Drive*. The composer used a Max hi object in 2009 as a software interface for the USB controllers (not included in this package). A hi object is an input mechanism for Max/MSP that currently works with USB game controllers, keyboards, and mice. The MIDI interface program junXion used in the first performances of *Drive*, was developed at STEIM in Amsterdam and can be purchased by contacting STEIM at [www.steim.org](http://www.steim.org). Other USB to MIDI programs will also work in place of junXion or Max/MSP.

The game controller used was a Speed Link Bullfrog with 12 buttons and 2 knobs that offer 2 continuous controllers each and a hatswitch. *Drive* uses 12 buttons and one knob to play and manipulate text samples. When *Drive* was developed there were numerous commercially available game controllers and MIDI controllers, that were equally as appropriate to play the work.

## Max/MSP Runtime Collective of *Drive*:

1. Copy the Collective called "DRIVE\_main.mxf" into the Max/MSP Runtime folder on your computer. If you are running the full Max/MSP version you will need to copy DRIVE\_main.maxpat plus the DRIVE\_patches and DRIVE\_samples folders into your Max/MSP patches folder.
2. Launch the Max/MSP Runtime application.
3. Open the Max/MSP Runtime Collective "DRIVE\_main.mxf".
4. Set up your MIDI controllers and MIDI controller software you will be using including the game controller.
5. In the DRIVE\_main patch open the MIDI settings window by clicking on MIDI settings. You can check if your game controller and other MIDI controllers are communicating with the *Drive* patch by simply using them and reading their value, controller number and MIDI channel in the MIDI input monitor. Clicking on the boxes below the parameters can change the MIDI controller numbers and your settings can be stored by clicking the "Store preset" button in the red "Presets" box. Your settings can also be recalled after stored by clicking on the "Recall preset" button in the "Presets" box. The "Text triggers" in the lower right hand corner are MIDI note-on triggers 36 – 47. These are operated from the USB game controller and will turn text samples on and off. One of the continuous controller knobs on the game controller should be set to control "Text startpoint" and "Text panning." To do this, move one of the knobs and see what the MIDI control numbers are. There will be two, one for up and down motion and one for side to side. Set these controller numbers in the number boxes under "Text startpoint" and "Text panning." Again, it is important to remember that the communication between the USB game controller and Max/MSP will have to be managed with an extra program such as a Max/MSP hi patch or junXion ([www.steim.org](http://www.steim.org)). After you setup and store your preset close the MIDI settings patch by clicking on the MIDI settings box in the DRIVE\_main patch.
6. Open the DSP Status by double clicking on DSP settings and check to see that the appropriate audio driver is chosen and that the correct audio in and out channels are selected. You can also click on the I/O Mappings button in the DSP Status window to designate the In and Out channels. Clicking on the upper left corner button of the DSP status box closes it.
7. Open the test input and output by clicking on Test Input/Output to make sure you are receiving and sending audio. The levels of both the input and output tests can be controlled by dragging the red sliders up and down with your mouse. To turn the test on, click on the "turn test on" button and the "audio on" button. To close this window, click on the upper left corner button. You will receive a reminder to ensure that the audio testing is turned off when you close the window. Clicking on the upper left corner button closes the reminder window.

## Test playing *Drive*

1. Turn *Drive* on by clicking the audio box in the lower left hand corner. This should then read "Audio ON."
2. Audio input and output levels are controlled by sliding the red sliders up and down with the mouse or by using MIDI controllers.
3. Test the presets by clicking on each preset box. The effects in the "Effects" box should change, the highlights indicating the presets in the "Sampler" box should also change.
4. Experiment with the MIDI controls for Effects. The effects modify the audio of the live instrument. It will take some rehearsal to find the appropriate in and out levels and controller changes for each effect.
5. To test the text sampler, press the buttons and turn the knob(s) of the game controller. You should be able to turn text samples on and off by pressing the buttons and by moving the knob(s) you should be able to change the "Reset startpoint" and the "Panning" of the samples. Each preset has different samples. The "Keys volume" and the "Text volume" sliders can be controlled with with the mouse or by using MIDI continuous controllers that were designated in the MIDI settings.
6. To test the windshield wiper samples press a key such as the "a" key on the computer keyboard. When you press the key again the sample should turn off. Each preset has for the most part different samples. The best way to learn them is to type the alphabet on the keyboard and develop a preference for order and which samples you prefer. The number and symbol keys do not turn samples on and off, only the alphabet keys have sample triggering assigned to them.
7. After some experimenting with, learning, and improvising on the different Presets you should feel as if you know how the DRIVE\_main patch works.

## Description of the FX

Each of the three sections is a preset in the Max/MSP patch. Each preset has a different FX for the audio received by the computer. The basic FX are as follows:

Preset 1 – a noisy vocoder with panning FX.

Preset 2 – a synthesized set of sine tones that are controlled by MIDI and influenced by the audio input.

Preset 3 – a rough, chorused sawtooth wave influenced by the volume of the audio input.

## Solo version for performer

*Drive* is a work for structured improvisation using a computer running Max/MSP Runtime with MIDI continuous controllers and one game controller.

The solo version takes on a more intimate atmosphere than the ensemble version in that the interaction with the text samples is directly related to the personal expression of the performer. The performer should seriously consider this personal relationship with the characters, however specific or abstract. Position of speakers and use of the game controller gives the theatrical aspects of the performance more weight than in the ensemble version.

The following instructions are to guide the performer through the piece. Departures are welcome, but the main time, timbral and gestural strategy should be respected. That is, the presets need to be followed in specific order, the samples (with minor personal variations) need to be played in their correct places, and the dynamic and general timbral instructions need to occur in the order given.

### Score/timeline:

"play" – play acoustic instrument

"start" – start sample(s) on the computer by pressing the indicated keyboard key. Pressing the same key can also turn these samples off. "Start" implies improvising with the samples by turning them on and off, one after the other and/or simultaneously.

"game controller" – the buttons on the game controller function in the same way as on the computer keyboard. You can assign one or both knobs as MIDI continuous controllers that control the start location and the panning of the sample fragments.

### **PRESET 1**

00.00 – 02.00

Play: Solo – simple lyrical material – no fx

02.00 – 04.00

Start: i-j – very softly

Start: l-m – very softly

leave only one or two samples on

04.00 – 10.00

Face a speaker and interview the “Mary samples” with the speaker – buttons 1-8 on the game controller are the answers that Mary gives, the questions are asked by the live performer, (see questions), Mary’s answers are the samples being played back. The order of questions and answers is fixed from 1 through 8.

10.00 – 15.00

Start: d-f – increase volume

Play - nonresonant soft consistently spitty staccato rhythmic patterns

Start gradually: g-h, add: a-c

Play: a transition with more sustained but still nonresonant – high partials

15.00 – 17.00

Start: o-r and then improvise on the computer keyboard using all samples a – r

### **PRESET 2**

17.00 – 19.00

Start: a,f, k,l

Improvise using the samples from buttons 1-12 and the knob(s) on the game controller.

19.00 – 24.00

Start: d,e, j,m, n-p and increase volume

Decrease the volume of the samples.

Play: an abstract lyrical solo leaving space for the samples to be heard.

### **PRESET 3**

24.00 – 25.00

Start: at very low volume: h, b, c

25.00 – 38.00

Start: z text

Improvise during the z text using the samples from buttons 1-12 and the knob(s) on the game controller.

Start: a, d-n and increase the volume.

28.00 – 34.00

When the uterus z text is complete turn the volume up and add the most aggressive samples.

Play: play an aggressive music coming out of the dense and loud “wall of sound.”

Play a solo coda – repeat similar material to the very beginning – no fx

## Ensemble version for 2 – 5 Players

*Drive* is a work for structured improvisation using a computer running Max/MSP Runtime with MIDI continuous controllers and one game controller.

The following instructions are to guide the performers through the piece. Departures are welcome, but the main time, timbral and gestural strategy should be respected. That is, the presets need to be followed in specific order, the samples need to be played more or less in their correct places, and the dynamic and general timbral instructions need to occur in the order given.

### Score/timeline:

"play" – play acoustic instrument

"start" – start sample(s) on the computer by pressing the indicated keyboard key. Pressing the same key can also turn these samples off. "Start" implies improvising with the samples by turning them on and off, one after the other and/or simultaneously.

"game controller" – the buttons on the game controller function in the same way as on the computer keyboard. You can assign one or both knobs as MIDI continuous controllers that control the start location and the panning of the sample fragments.

### **PRESET 1**

00.00 – 02.00

Play: Simple lyrical material or chords – no fx

02.00 – 04.00

Start: i-j – very softly

Start: l-m – very softly

Play nonresonant soft very rhythmic patterns in relation to the samples – with fx

04.00 – 10.00

All Players silent while one performer faces a speaker and interviews the "Mary samples" with the speaker – buttons 1-8 on the game controller are the answers that Mary gives, the questions are asked by the live performer. (see questions). Mary's answers are the samples being played back. The order of questions and answers is fixed from 1 through 8.

10.00 – 15.00

Start: d-f – increase volume

Play - nonresonant soft consistently spitty staccato rhythmic patterns

Start gradually: g-h, add: a-c

Play: a transition with more sustained but still nonresonant – high partials

15.00 – 17.00

Start: o-r and then improvise on the computer keyboard using all samples a-r

### **PRESET 2**

17.00 – 19.00

Start: a,f, k,l

Improvise using the samples from buttons 1-12 on the game controller and the knob controller which influences panning and sample fragment.

19.00 – 22.00

Start: d,e, j,m, n-p and increase volume

Play: minimal and constant rhythms with dramatic dynamic changes as an ensemble using different meters in counterpoint.

Turn the volume of the samples down and turn off a few samples.

22.00 – 25.00

Play: one or two players play abstract lyrical melodies that interrupt the dramatic density of the rhythmic material.

25.00 – 26.00

Turn the sample volume up suddenly

Start: b,c, g-i

Play: minimal and constant rhythms with dramatic dynamic changes as an ensemble using different meters in counterpoint.

### **PRESET 3**

26.00 – 28.00

Start: at very low volume: h, b, c

Play: very low and mostly sustained sounds. Continue to play with text samples.

Start: z text

28.00 – 30.00

Improvise during the z text using the samples from buttons 1-12 and the knob(s) on the game controller.

Start: a, d-n and adjust the volume

30.00 – 35.00

When the uterus z text is complete turn the volume up and add the most aggressive samples.

Play: play an aggressive music coming out of the dense and loud "wall of sound."

Play a coda – repeat similiar material to the very beginning – no fx

## Interview with Mary Anderson:

The questions should be rephrased to be more conversational.

1. Mary, where did you spend your childhood?

I grew up in a small town in Alabama called Luverne. I had two brothers and three sisters. Seeing that I was the oldest girl, I had a lot of responsibilities taking care of household chores and the younger ones. We went to the Methodist church every Sunday. I'm not sure how much our family believed in God, but we loved to sit there and listen to the pastor's stories. His sermons were all about God's gifts and he always found a way to tell us how God had blessed us with good bodies, good souls and good working machines in our little town. I thought the machine part was a little strange but he told such a good story that I let it all flow in one ear and out the other. His talk about our bodies and machines always made me feel kind of dreamy and confused. It seemed that I could just as well grow up to be one of those big green train engines or on the other hand that papa's new car could have turned out to be my uncle. Somewhere in there I got to believing that inside my body there were probably lots of different little engine parts and all of them were blessed by God.

2. What were your parents like?

My papa was in the furniture trade and my mama, when she could, helped him in the business. Papa had a real talent for business but he was kind of sickly. Every winter mama and us kids had to take over his duties while he was recovering from some kind of flu or pneumonia. I guess his personal machine wasn't made entirely in the model God had in mind.

3. Was your family name always Anderson?

Well yes, but Anderson is a Scandinavian name. There were no other Andersons in Luverne as far as I know. Most of my relatives lived up near the top of the Mississippi in Minnesota and Canada. That's where papa and mama were born. Papa thought the warm climate of Alabama would suit his style and his health better. After he married mama they moved their part of the business to Alabama. I guess they did all right by moving there. They made good money.

4. Were you well to do?

Papa and mama ran that furniture business real well. They had friends and contacts in big cities like New Orleans and St. Louis and kept up good relations with the family in Minnesota. They must have bought and sold furniture all the way up to Winnipeg. We lived in a big old house with a giant sized warehouse out back.

5. Did you go to school?

At first only the boys in our town headed off to school but papa and mama saw no sense in that. They liked to see themselves as folks who could set a modern example for Luverne. Soon enough we girls were going to the neighborhood school just like the boys. We learned to read, write, do arithmetic. We also had some history and geography on the side.

6. When did you first leave Alabama?

After I grew too old for school I spent a lot of my extra time fixing and cleaning the printing press in our church. Our pastor had the idea that all God's machines should be extra clean too. I was pretty handy for a girl and papa had taught me a thing or two about furniture repair. It was while I was cleaning that press that I started to dream about how my inner woman parts worked and how they always seemed to be able to keep themselves in good working order. I kept thinking about how fine it was that once a month they did their job cleaning themselves and getting ready for their next month of work. I was never exactly clear on what all their work was, but they seemed to do it just fine. I guess they were really one of those perfect machines. During those months between school and my future I got to study how clocks and other things with gears and parts worked, thinking all the time that maybe I had parts just like that inside me too. We didn't have any biology or anatomy in school so I just kept letting my fantasy make up more details as to how my insides must have worked. I dreamed up some pretty

good-looking pulleys and levers and springs figuring out how my heart kept thumping and pumping. After awhile I got kind of bored with my life in Luverne, always helping out with the house and family and keeping other people's stuff clean. My papa saw my sour moods and thought it might be good for me if I could work for him and the business. Because he was so sickly, he sent me out on the road every November to do the buying and selling for him. First I traveled up and down the Mississippi and then I started heading up the east coast, eventually as far north as New York City.

7. Tell us about your first visit to New York in 1903.

I was riding the streetcar down 7th avenue on the way to a meeting in the furniture district when I noticed that every couple of minutes the driver would have to get out and brush off all that ice and snow building up on the front window. It meant for a lot of starting and stopping, which was really getting on all our nerves as passengers. You know how those New York folks like to rush around and be in a hurry all the time. Looking at that poor guy getting in and out of the streetcar, I got to dreaming again about how my womanly parts would never put up with such a chaotic mess and would surely find a better way to clean themselves out if they got as dirty as that windshield.

It was right then that the idea came into my head that there must be a way to help that hard working man clean off his window from inside the car. That night I went back to my hotel room and drew up the plans for a kind of wooden arm with a rubber blade that could be steered from the inside of the car to wipe off the windshield. I stayed on with friends in New York that year and took care of getting my little invention patented. My friends thought I was off my rocker and I made sure I never told them all that stuff about my inner parts and God's perfect machine. By the time my wipers found their way to most cars I was living in up Minnesota and running another part of the family business.

8. Did you ever have a partner or have children?

No, that kind of life never came my direction. I had lots of friends in the business and when I missed that close kind of feeling with folks around me, I'd just dream about all my inventions and how they made up the most specials parts of me. It seemed like at the time that my inventions and my fantasies were good enough for me. In my later years when my mind wandered off and I dreamt my favorite old dreams about how my womanly parts had worked so perfectly. And then I felt kind of sad that after a time they had stopped working. They must have decided that their big job was finally over.

## Mapping for the keyboard and game controller triggers

### Preset 1 – computer keyboard

a, a wiper 49.aif;  
b, a wiper 50.aif;  
c, a wiper 51.aif;  
d, a wiper 52.aif;  
e, a wiper 53.aif;  
f, a wiper 54.aif;  
g, a wiper 55.aif;  
h, a wiper 56.aif;  
i, a wiper 57.aif;  
j, a wiper 59.aif;  
k, a wiper 60.aif;  
l, ch wiper 62.aif;  
m, ch wiper 63.aif;  
n, ch wiper 64.aif;  
o, ch wiper 65.aif;  
p, ch wiper 66.aif;  
q, ch wiper 67.aif;  
r, ch wiper 68.aif;

### Preset 1 – game controller

1, mary 36.aif;  
2, mary 37.aif;  
3, mary 38.aif;  
4, mary 39.aif;  
5, mary 40.aif;  
6, mary 41.aif;  
7, mary 42.aif;  
8, mary 43.aif;

### Preset 2 – computer keyboard

a, a wiper 48.aif;  
b, a wiper 49.aif;  
c, a wiper 50.aif;  
d, a wiper 51.aif;  
e, a wiper 52.aif;  
f, a wiper 53.aif;  
g, a wiper 54.aif;  
h, a wiper 55.aif;  
i, a wiper 56.aif;  
j, a wiper 58.aif;  
k, a wiper 59.aif;  
l, a wiper 60.aif;  
m, a wiper 60.aif;  
n, a wiper 59.aif;  
o, a wiper 58.aif;  
p, a wiper 57.aif;

### Preset 2 – game controller

1, engines 36.aif;  
2, engines 37.aif;  
3, engines 38.aif;  
4, engines 39.aif;  
5, engines 40.aif;  
6, engines 41.aif;  
7, puberty 42.aif;  
8, puberty 43.aif;  
9, puberty 44.aif;  
10, puberty 45.aif;

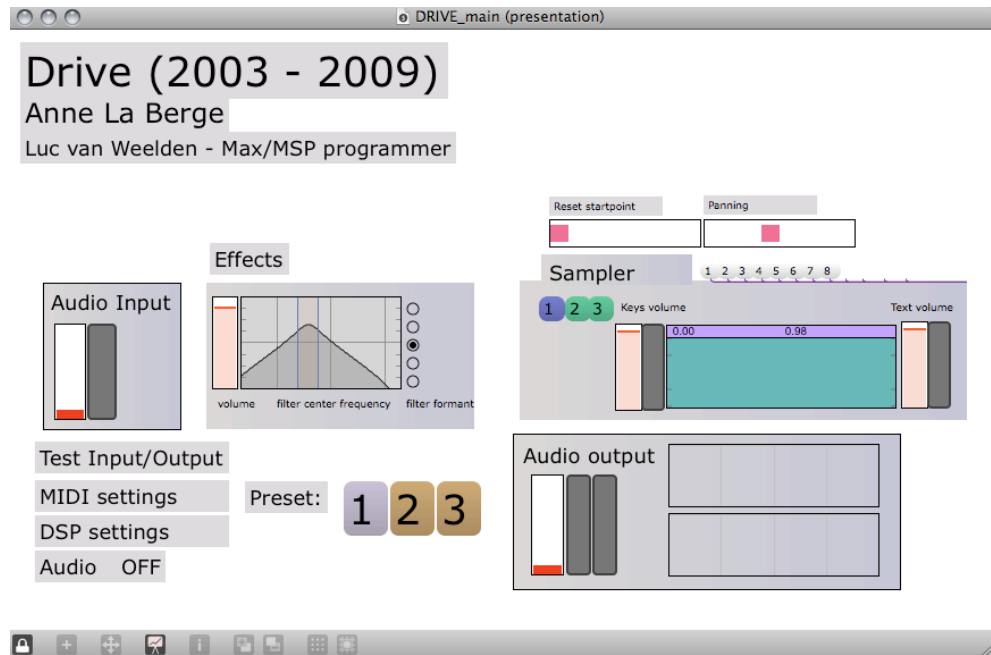
### Preset 3 – computer keyboard

a, meno 48.aif;  
b, meno 51.aif;  
c, meno 52.aif;  
d, meno 53.aif;  
e, meno 54.aif;  
f, meno 55.aif;  
g, meno 56.aif;  
h, meno 57.aif;  
i, meno 60.aif;  
j, meno 61.aif;  
k, meno 62.aif;  
l, meno 63.aif;  
m, meno 64.aif;  
n, meno 65.aif;  
z, uterus 73.aif;

### Preset 3 – game controller

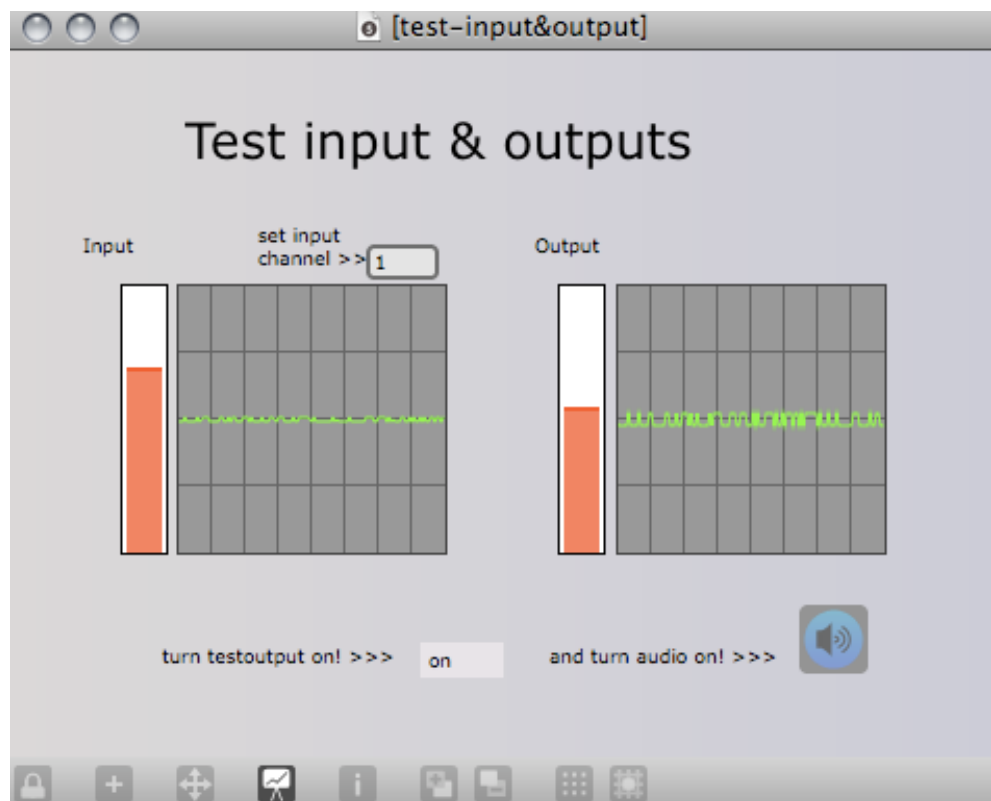
1, meno 36.aif;  
2, meno 37.aif;  
3, meno 38.aif;  
4, meno 39.aif;  
5, meno 40.aif;  
6, meno 41.aif;  
7, meno 42.aif;  
8, meno 43.aif;  
9, meno 44.aif;  
10, meno 45.aif;  
11, meno 46.aif;  
12, meno 47.aif;

## DRIVE\_main Max/MSP patch



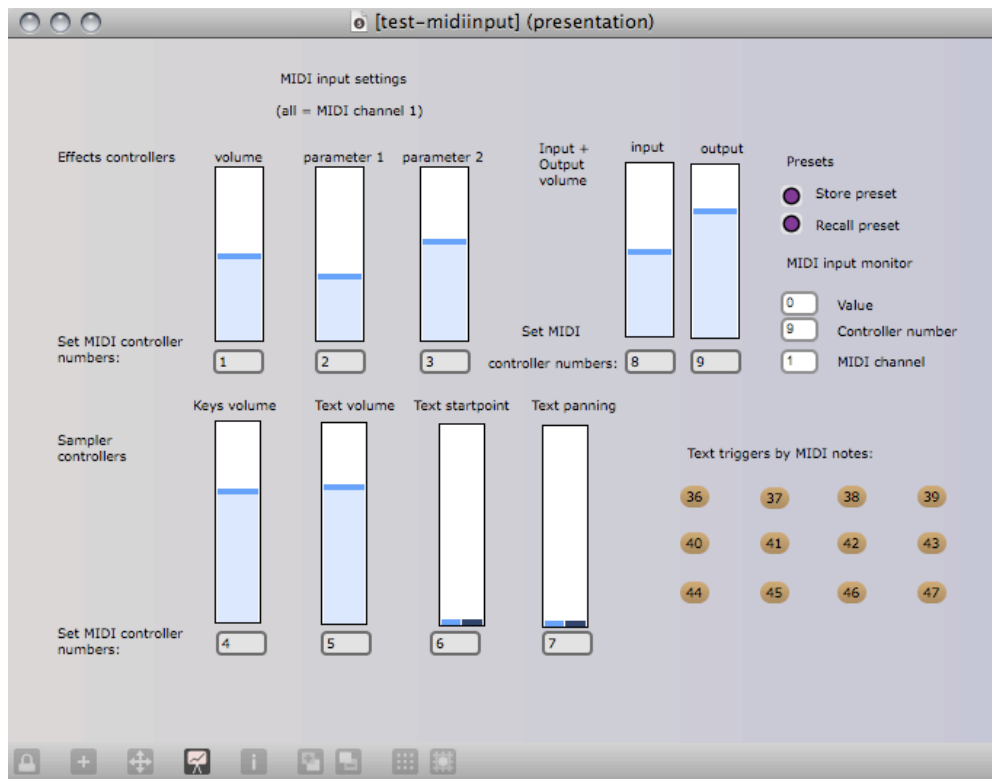
### Test audio input and output:

Use the mouse to drag the red sliders up and down to set the input and output levels.



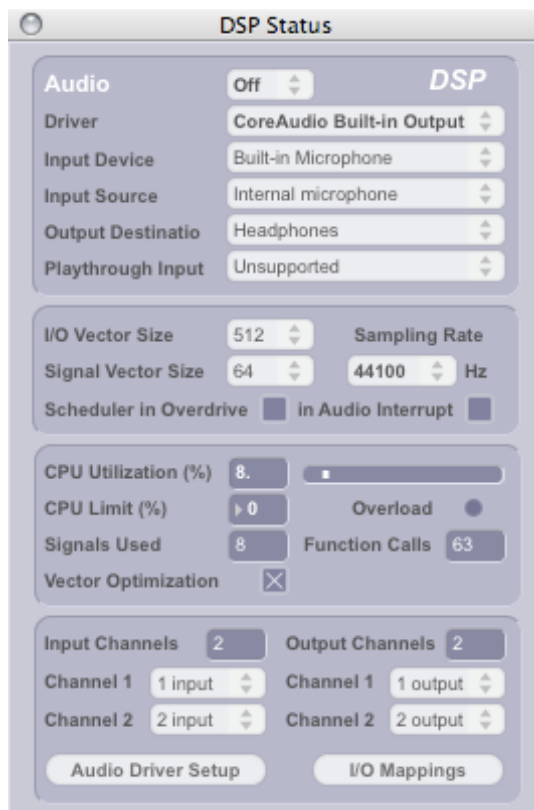
## MIDI input settings:

Input monitor shows the actual MIDI input of your controllers.  
By clicking in the boxes under the sliders you can set the controller numbers.  
By pressing the buttons on the game controller you can test the MIDI note triggers.



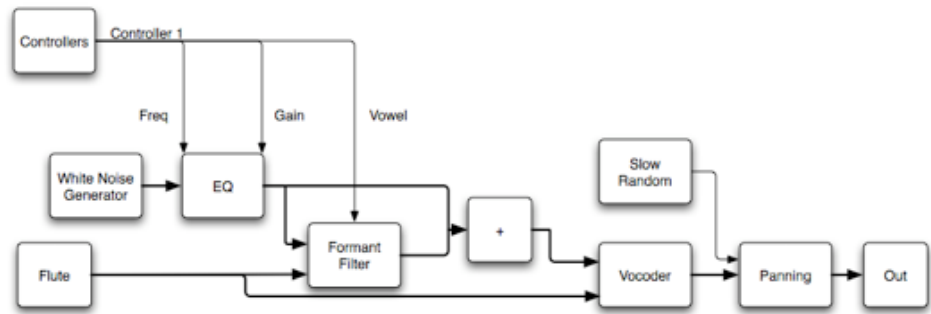
## Audio status:

Make sure the Driver is the one you're intending to use.  
Make sure the I/O mappings (in-out) are set to match your audio driver.



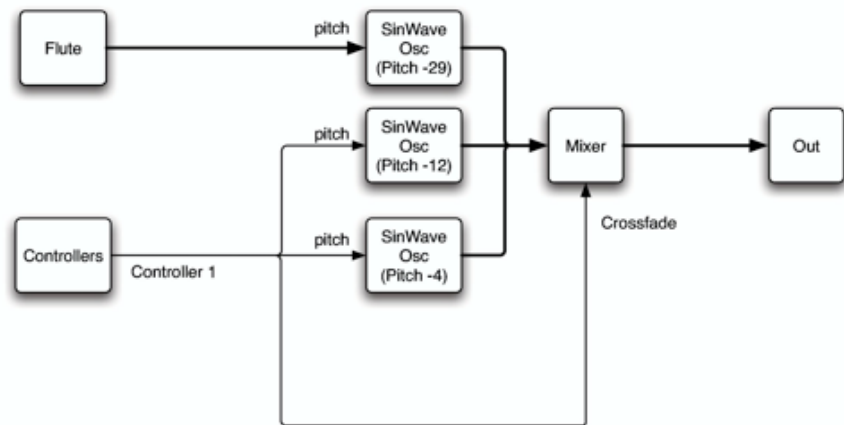
**This is the general scheme of the FX patch for preset 1.**

The controllers influence the EQ and the formant filter.



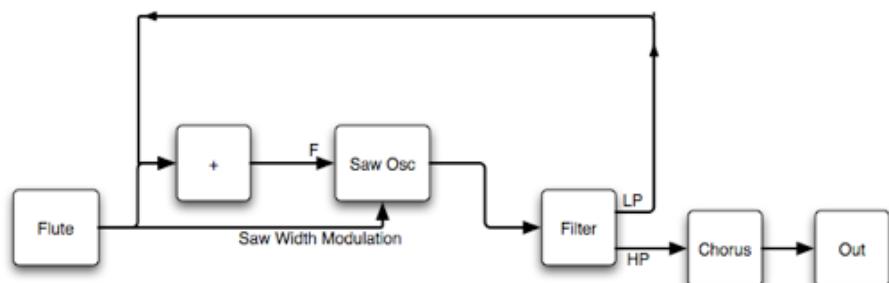
**This is the general scheme of the FX patch for preset 2.**

The controllers influence the pitches of 2 sinewaves and the mix of the waves.



**This is the general scheme of the FX patch for preset 3.**

The input of the audio-in influences the modulation of the sawtooth oscillator. This is a very sensitive FX that will feedback quite easily. Pay close attention to the audio in and out of this FX.



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<http://fac-kmt.hku.nl/hku/show>

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