Roberto Doati

ANTIDINAMICA

for Gianpaolo Antongirolami

1 to 4 saxophones and live electronics

2015-2016

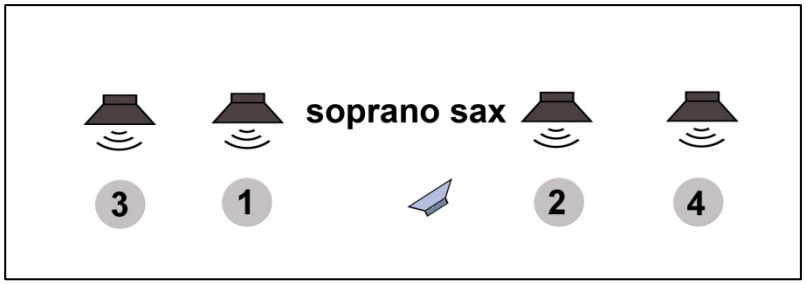
Instrumentation

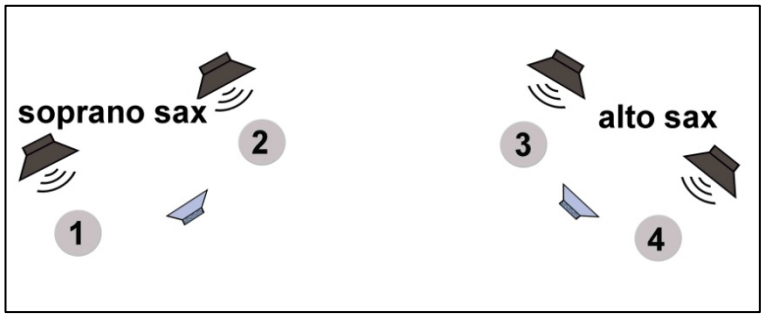
The composition can be played by three different ensembles:
1. soprano saxophone and live electronics
2. soprano, alto saxophones and live electronics
3. soprano, alto, tenor, baritone saxophones and live electronics

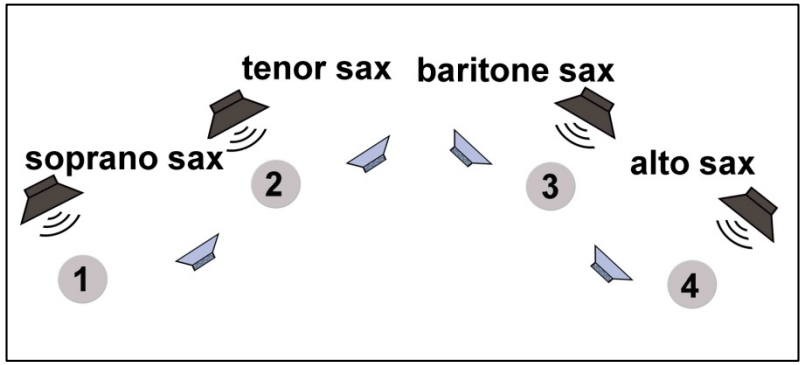
Technical requirements

- No. 1 super-cardioid condenser clip microphone (e.g. DPA 4099 or AKG C 519 M) on the bell for each saxophone
- No. 1 condenser cardioid microphone placed between 40 and 60 cm (the distance is directly proportional to the diameter of the instrument's bell) above the right shoulder of each saxophone player
- *only for the soprano saxophone version: add no. 1 condenser cardioid microphone placed at 40 cm above the right shoulder of the saxophone player who will perform the second part – the improvised one - in a place other than the one occupied during the performance of the written part, possibly sitting and in the shade*
- No. 1 audio monitor for each saxophone 
- No. 4 loudspeakers 
- Mixing desk with at least 4 buses
- No. 1 computer with Max (6.1 version or higher)
- No. 1 multichannel audio card
- No. 1 MIDI controller (e.g. BCF2000) with at least 32 continuous controls and 10 buttons
- No. 1 mute MIDI keyboard with poly pressure

Stage set-up







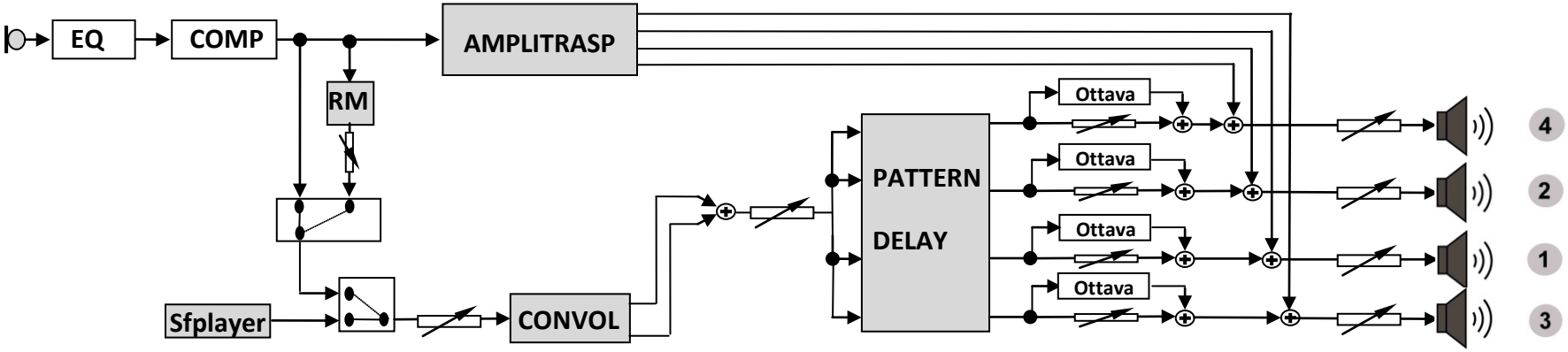
Set the loudspeakers at saxophone's bell height.

Performance notes

- **Saxophone:** the metronome is variable between 20 and 120 (crotchet). The metronome choice will depend from the number of staves per page the saxophonist would like to play, no repetition and always to the end of the page. Any number of staves is admitted (minimum one with mm = 20, maximum six with mm = 120) for each page. The total duration is therefore variable, from a minimum of 10' to a maximum of 18'. The saxophone plays the score for a duration of about 6' (maximum 12'), then improvises using just pitches, articulations, multiphonics she/he remembers from the score. The duration of this second part is *ad libitum* (between 4' and 6'). The saxophone player may change the metronome to any new staff, but always remaining within the duration range (from 6' to 12') she/he must have read at least one staff in each page. Then it is up to the performer to evaluate which metronome to choose according to the staves she/he wants to play. For the 4 saxophones version it is recommended to use very slow metronomes to compensate for the greater density of notes.

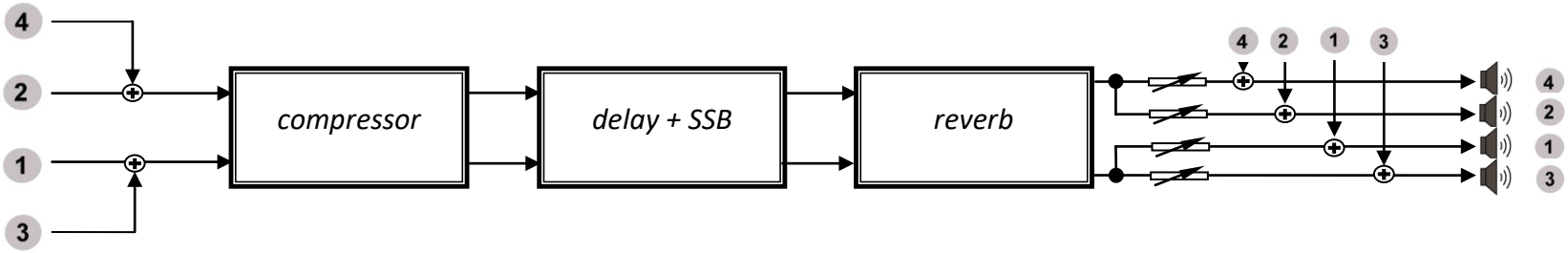
- **Live Electronics**: the player is free to improvise with the available parameters of the Max patch, first over the recorded file *1Anton_16bit.wav*, then over the live saxophone(s).

Patch and routing for the soprano saxophone version



Patch extension (optional)

In order to remove the recognizable "color" of Max (used by the author to program the performance environment), it is recommended a further process of the 4 output channels using plug-ins or even hardware according the following routing - the author uses HW/SW SCOPE (Sonic Core) platform plug-ins, whose parameters will be given further.



Microphones: the two mikes – one on the bell, one over the shoulder – are mixed until the end of the recorded file *1Anton_16bit.wav*. Then the bell's mike is muted and used only to get the saxophone pitch (raise the gain at will).

EQ

Simple one band *peak/notch* filter to adjust the timbre of the miked saxophone to be as natural as possible.

COMP

Simple compressor to raise *piano* dynamics by 6 dB, *soft knee*.

AMPLITRASP

Transparent amplification. Dry saxophone signal is routed to the loudspeakers with a delay proportional to the distance between each player and her/his loudspeaker. This delay is very important in case the stage set-up in the above figures cannot be realized. The aim is to obtain a whole saxophone + loudspeaker sound image.

Sfplayer

Sampler to read *1Anton_16bit.wav* file. The player can control the following:

- speed
- play/pause

As the end of file is reached, an automatic switch will route the live saxophone to the **CONVOL** module.

RM

Ring Modulation. It is automatically switched on as the end of file *1Anton_16bit.wav* is reached. The frequency of the sinusoidal oscillator is given by the *pitch follower* on the saxophone. It is recommend to filter the output of the *pitch follower* to reduce the amount of data. The detected frequency value is sended to the oscillator only when the player decide to trigger it.

CONVOL

8 channels convolution is first applied to *1Anton_16bit.wav* file, then to the live saxophone(s). It is charged with 8 different mono files in parallel, different according the version to be performed:

- *soprano saxophone version*: IR01comb-ss.wav, IR02comb-ss.wav, IR03comb-ss.wav, IR04comb-ss.wav, IR05comb-ss.wav, IR06comb-ss.wav, IR07comb-ss.wav, IR08comb-ss.wav
- *soprano and alto saxophones version*: IR01comb-ss_sc.wav, IR02comb-ss_sc.wav, IR03comb-ss_sc.wav, IR04comb-ss_sc.wav, IR05comb-sc_ss.wav, IR06comb-sc_ss.wav, IR07comb-sc_ss.wav, IR08comb-sc_ss.wav

- *soprano, alto, tenor, baritone saxophones version*: IR01comb-ss_satb.wav, IR02comb-ss_satb.wav, IR03comb-st_satb.wav, IR04comb-st_satb.wav, IR05comb-sb_satb.wav, IR06comb-sb_satb.wav, IR07comb-sc_satb.wav, IR08comb-sc_satb.wav

Control parameters:

- 8 gain outs
- *Dry* master
- *Wet* master.

PATTERN DELAY

It is a 4 taps delay in parallel. In the Max patch they are visualized as a 4 lines, 15 columns matrix. Each line is a delay, each column a 4/4 beat for 4 measures. Each delay has low-pass filter and a pitch shifting in the feedback.

Control parameters:

- time delay values. They are assigned on the matrix (delay line *vs* beat number, measure number) or random generated, and are also automatically calculated according the metronome (mm = 30 – 240) chosen at will by the player
- gain outs: 1 for dry signal; 4 for delayed signals (these gains can also be generated randomly according a free defined clock)
- feedback gain (-1 – +1): 1 for all the delays
- low-pass filter frequency
- pitch shifting
    - 1 for each delay, in semitones from the MIDI keyboard (range: 1 octave lower – major seventh around C4)
    - 1 for all the 4 delays, in cents from the MIDI keyboard pitch bending (range: -1 – +1 semitone)
    - 1 for all the 4 delays, in cents (range: -100 – +100 cents)
- random clock for the delays gains (to be used at will)
- random generation of time delays on the matrix (to be used at will)

Ottava

To be used only in the second part (saxophone improvisation)

Pitch shifting from MIDI keyboard. Range: 1 - 4 ((MIDI notes: 48 - 72). Its gain is controlled by poly pressure.

compressor

All the values are constant for the whole performance: ratio 4:1, attack 4.7 ms, release 111.7 ms
(*plug-in SCOPE: Vinco S*)

delay + SSB

To be used only in the second part (saxophone improvisation)
Stereo delay with *Single Side Band* modulation (frequency shifter on a positive or negative band) + low-pass and high-pass filters in the feedback.
Control parameters to be varied little during the performance:

- left channel delay: 871.87 ms
- right channel delay: 845.40 ms
- frequency shift left channel: -0.24 Hz
- frequency shift right channel: 0.24 Hz
- feedback: 94%
- Low damp: 1191 Hz
- High damp: 4538 Hz

(*plug-in SCOPE: SSB Delay S*)

reverb

To be used only in the second part (saxophone improvisation)
All the values are constant for the whole performance: set a Large Hall preset (reverberation time > 3 s)
(*plug-in SCOPE: SC-Ambience*)

Patch and routing for the soprano and alto saxophones version

The same as the soprano saxophone, but each saxophone signal is convoluted with 4 files and the output is routed to two delay lines in the Pattern Delay (soprano: delays 1 & 2; alto: delays 3 & 4). Live soprano saxophone is routed to channels 1 & 2, alto to channels 3 & 4.

Patch and routing for the soprano, alto, tenor and baritone saxophones version

The same as the soprano saxophone, but each saxophone signal is convoluted with 2 files and the output is routed to one delay line in the Pattern Delay (soprano: delay 1; alto: delay 2; tenor: delay 3; baritone: delay 4). Live soprano saxophone is routed to channel 1, alto to channel 4, tenor to channel 2, baritone to channel 3.

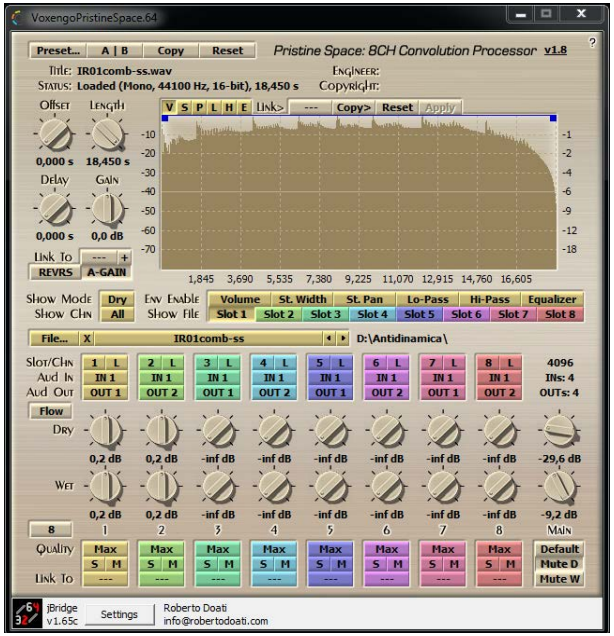
Max Patches

Max patches are available from the author, who realized them with Max 6.1 (Windows 7, 64 bits version) and the 32 bits Voxengo *Pristine Space* plug-in (© 2003-2005 Aleksey Vaneev) working at 64 bits thanks to jBridge (© 2009-2016 Joao Fernandes).

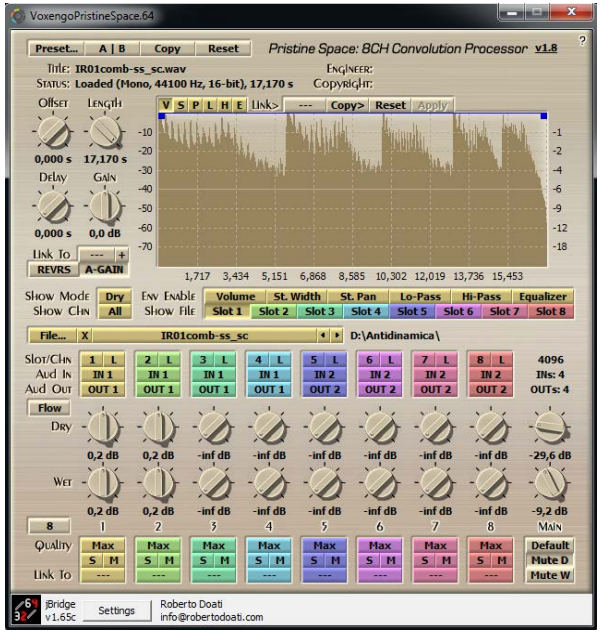
The pre-loading of audio files, Pristine and its presets is done from a folder called *Antidinamica* on drive D:. The 64 bits version of *Pristine Space* is in the folder used by jBridge application. In the author patch it is in c:\Progammi\jBridge\VoxengoPristineSpace.64.dll.
Set the *Pristine* ins = 4, outs = 8. Quality = 8.

The mono files for *Pristine Space*, if in a different folder than the author's one (D:\Antidinamica\...) can be loaded with the Load Preset button in the *Pristine Space* window (see the lists in the **CONVOL** description).

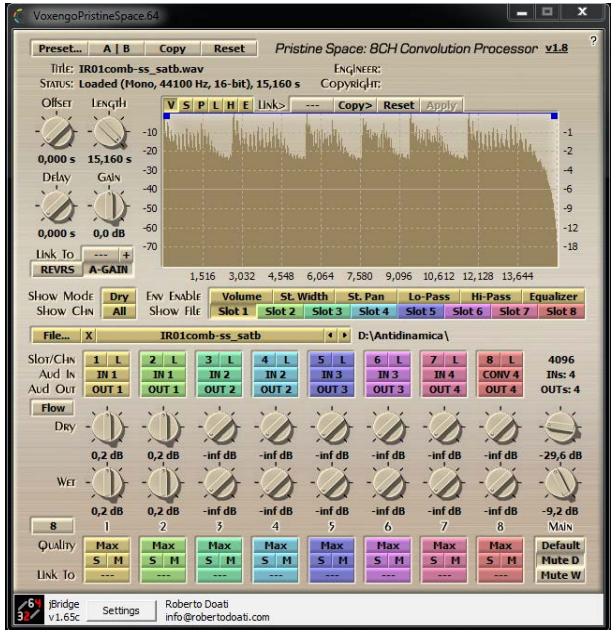
Red colors numbers stay for the MIDI cc. If a change is needed, open the *MIDIin*, *MIDIPristine* and *MIDIout* subpatches.



Soprano saxophone version

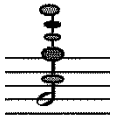


Soprano and alto saxophones version

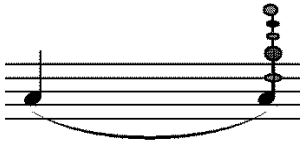


Soprano, alto, tenor, and baritone saxophones version

Saxophone score notation

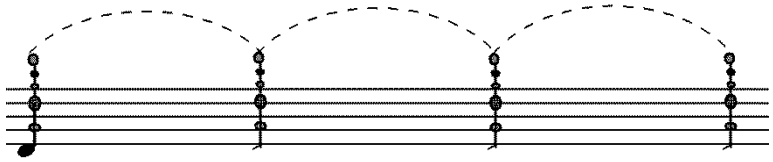


= multiphonic sound (partials at will). For good fingerings it is recommended to refer to Markus Weiss & Giorgio Netti, *The Techniques of Saxophone Playing*, Bärenreiter, 2010 and to Enzo Filippetti, *Saxatile. Il sassofono oggi*, Sconfinarte, 2011. If a good chosen fingering raises or lowers the fundamental pitch within ¼ tone, it is admitted.



= from fundamental to multiphonic (same fundamental), always *legato*.

= from partial (at will) to multiphonic (containing the same partial), always *legato*.



= interpolation, as far as possible *legato*, between different multiphonics on the same fundamental.

Little notes (notated as *acciaccature*) have to be performed always quickly.

Dynamics are *ad libitum*, but always within the same range of the electronic part, to which it has to merge with.

Parte per sax soprano

ANTIDINAMICA

da 1 a 4 sassofoni e live electronics
per Gianpaolo Antongirolami

Roberto Doati

metronomo a piacere ♩= 20 - 120