



MODERNISING LIVE ELECTRONICS TECHNOLOGY IN THE WORKS OF JONATHAN HARVEY

Jamie Bullock and Lamberto Coccioli

Birmingham Conservatoire

University of Central England

Birmingham

B3 3HG, UK

email: jamie@postlude.co.uk

website: www.conservatoire.uce.ac.uk/harvey/



MODERNISING LIVE ELECTRONICS TECHNOLOGY IN THE WORKS OF JONATHAN HARVEY

Problems

- Hardware nearing obsolescence
- Data stored in incompatible formats on outdated media
- Lack of clear/complete documentation
- Hardware is expensive to hire
- Hardware unreliable due to age
- Ambivalence of composers to longevity of works

MODERNISING LIVE ELECTRONICS TECHNOLOGY IN THE WORKS OF JONATHAN HARVEY

<i>Title</i>	<i>Date</i>	<i>Requirements</i>
Madonna of Winter and Spring	1986	Yamaha TX816 and DX1, E-mu II, ring modulation and reverberation E-mu E-64 samples on ZIP
Wheel of Emptiness	1997	Two Yamaha SY77 patches (already ported to Native Instruments FM7)
White as Jasmine	1999	SY77 and Eventide harmoniser
Soleil Noir/Chitra	1995	CD player, two E-mu E-64 digital samplers, five-octave keyboard controller, ZIP drive, effects processor (Yamaha SPX 990), four-channel specialisation
Ashes Dance Back	1997	Yamaha DX7 patch (already ported to FM7)
From Silence	1988	DX7 and Steinberg Pro24 on Atari ST
Valley of Aosta	1988	VCS3 synthesiser
Inner Light 2	1977	Four-track tape
Inner Light 3	1975	Ring modulator
Gong-Ring	1984	SY77 and two DX7s, ring modulation, artificial reverberation, and
Inquest of Love	1992	Hardware-based sampling
Calling Across Time	1998	SY77, hardware-based sampling

Fig.1 List of works requiring modernisation as agreed with the composer in order of highest-priority first.

MODERNISING LIVE ELECTRONICS TECHNOLOGY IN THE WORKS OF JONATHAN HARVEY

Project Aim

“...to modernise the technology and media used for performance whilst keeping the performance experience perceptually consistent for both audience and performer.”

MODERNISING LIVE ELECTRONICS TECHNOLOGY IN THE WORKS OF JONATHAN HARVEY

Sampling vs. Synthesis

Sampling

- Quicker and easier in the short term
- Faithful reproduction of original sound
- Simplifies process of further updates

Synthesis

- Quicker in the long term (for additional works using same technology)
- Sound is free to evolve over time
- Better sense of interaction during performance

Solution

- Use synthesis for commonly found technology (e.g. DX series)
otherwise use sampling

MODERNISING LIVE ELECTRONICS TECHNOLOGY IN THE WORKS OF JONATHAN HARVEY

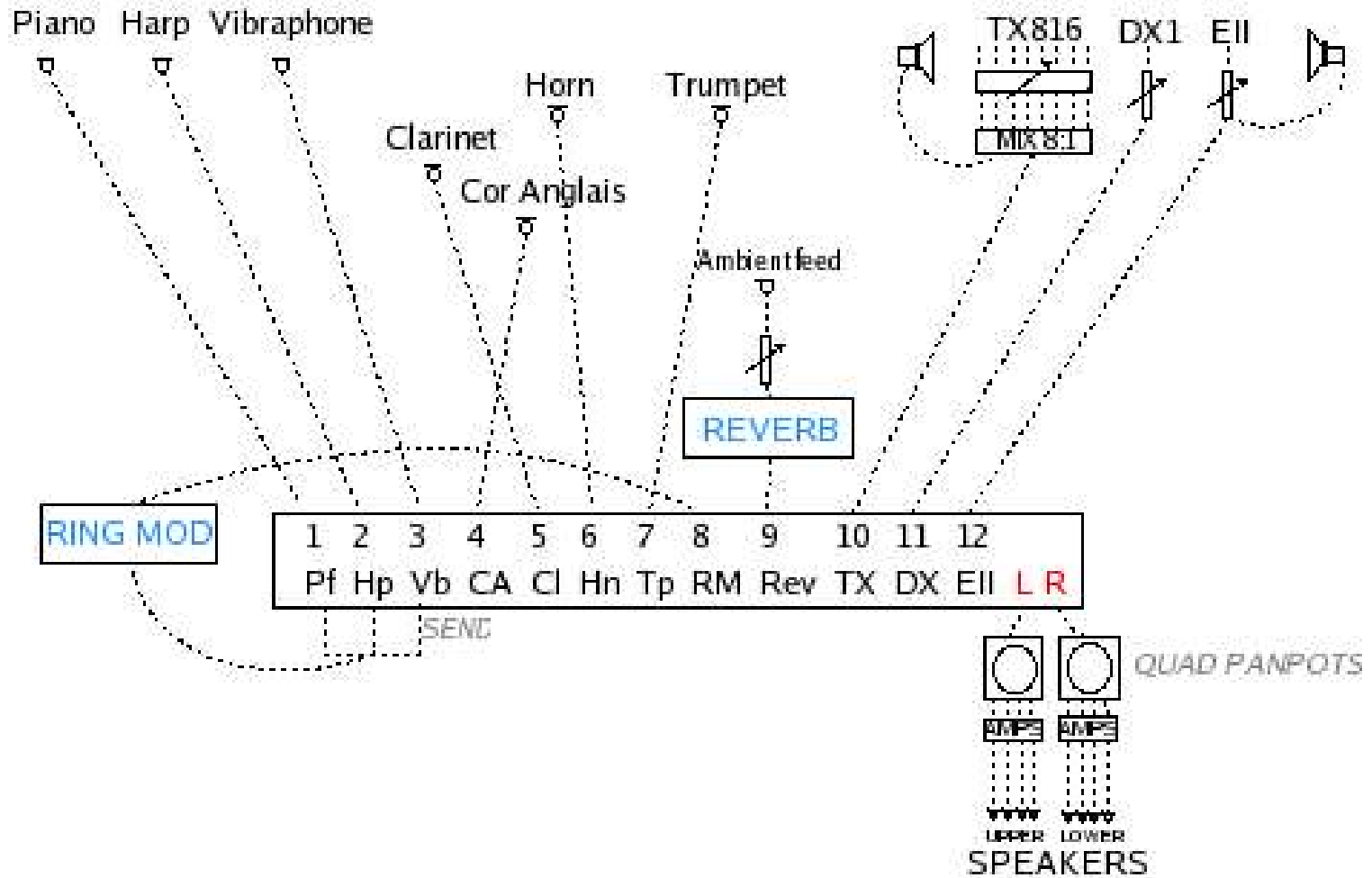


Fig. 2 Original electronics layout

MODERNISING LIVE ELECTRONICS TECHNOLOGY IN THE WORKS OF JONATHAN HARVEY

Solution

- Use PD for synthesis, and processing of control data
- Emulate synthesis and signal processing where possible (Reverb, DX1, TX816, Ring Modulation), otherwise use samples/soundfonts (Emulator II)
- PD patch created to receive MIDI inputs from two keyboard controllers, one with two foot control pedals and a 'sustain' pedal, one with one foot control pedal.
- PD Patch – 8-channel in, 8-channel out.
- Use presets and automation as much as possible to control level and pan position changes
- Good packaging and documentation for ease of installation and usage.

MODERNISING LIVE ELECTRONICS TECHNOLOGY IN THE WORKS OF JONATHAN HARVEY

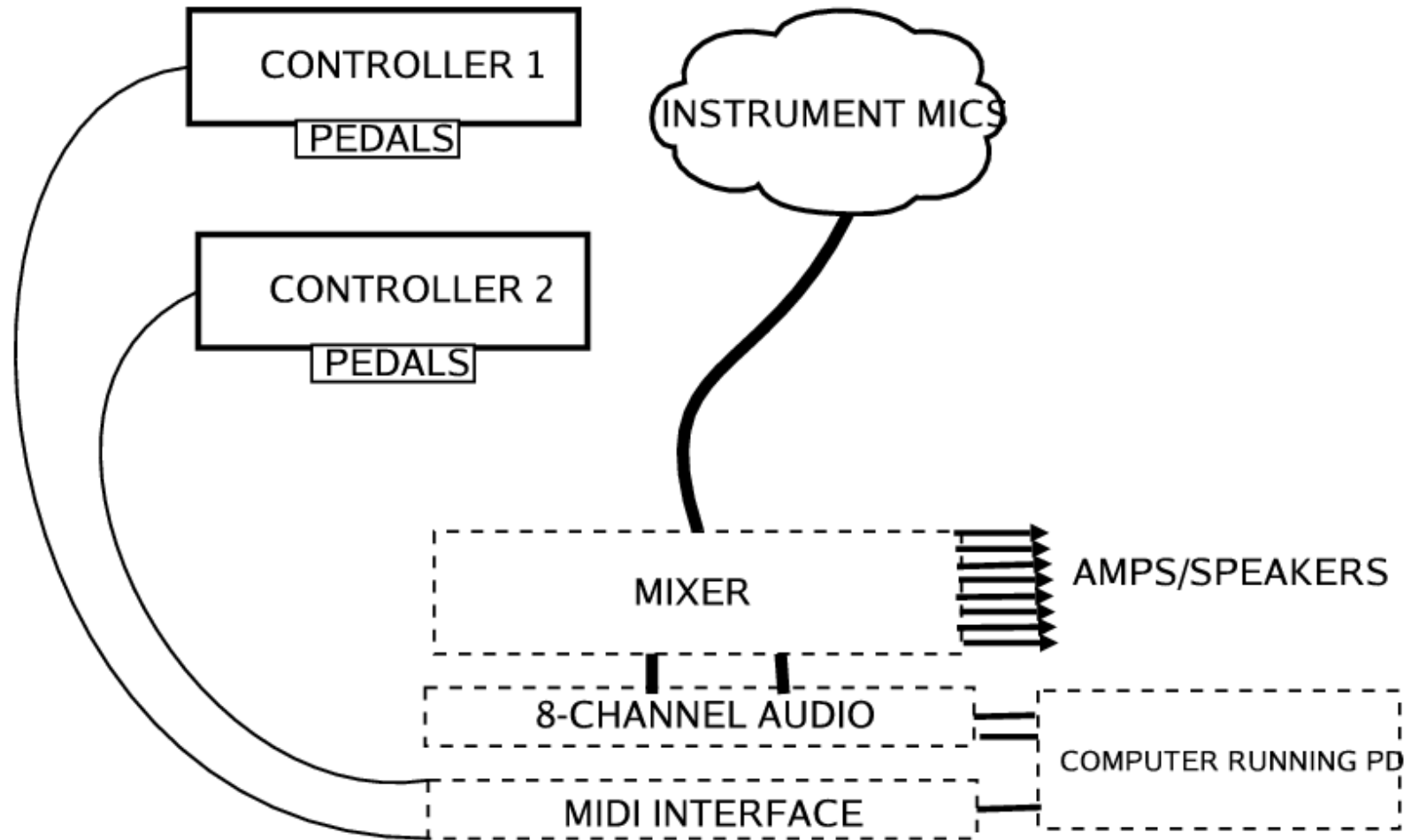


Fig. 3 Connectivity

MODERNISING LIVE ELECTRONICS TECHNOLOGY IN THE WORKS OF JONATHAN HARVEY

PD implementation

- **[dssi~] DSSI host plugin currently being written**
 - **TX816 – one [dssi~] instance supporting 8 Hexter instances**
 - **DX1 – one [dssi~] instance supporting 2 Hexter instances**
 - **EMII – one [dssi~] instance supporting fluidsynth - soundfont**
- **[freeverb~] for reverb (it has 'freeze' mode)**
- **Ring modulation as abstraction**
- **'Preset' system for MIDI control mapping and pan/volume control**



MODERNISING LIVE ELECTRONICS TECHNOLOGY IN THE WORKS OF JONATHAN HARVEY

Jamie Bullock and Lamberto Coccioli

Birmingham Conservatoire

University of Central England

Birmingham

B3 3HG, UK

email: jamie@postlude.co.uk

website: www.conservatoire.uce.ac.uk/harvey/

