OSC and Gesture features of CNMAT's Connectivity Processor
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Modular System
CNMAT Connectivity Processor

- 100BaseT
- Synch
- MIDI
- AES-3
- ADAT
- Optical
- 1000BaseT
- RAM & FPGA
- Power
- Expansion
- DACs
- 8-channel
- 24-bit
- balanced
- 1/4 inch
- headphone
Analog Audio Input Modules

8-channel 24-bit balanced 1/4inch

Roland DIN-13 and RMC 9-pin DIN hex guitar + 2 1/4inch pickup
32-channel Gesture/Sensor Input Board

- DIN Analog
- DB25 Analog
- 3rd-order filter
- 12-bit A/D
- Mux
- Connector
8-channel A/D Slice

Input Protection
Anti-aliasing
Noise Reduction
New, Versatile Gesture Board

Spartan III FPGA:
- 400K gates
- RAM
- 16 fast multipliers

Wireless

4 digital sensor network ports
2 Pedal
2 channel analog 1/8inch 4pin
OSC support in OS/X

• Modified OS/X ethernet driver primary interrupt code to:

  • upsamples gesture data to audio rate and streams as CoreAudio channels
  • routes MIDI to CoreMIDI
  • buffers gesture data as OSC bundle messages readable from /dev/OSC
OS/X Thread Priority

- Direct (hardware) interrupts
- Timers and page-out
- Real-time (multimedia, i.e. CoreAudio)
- Indirect interrupts (drivers)
- Window Manager, TCP/IP
- User Threads
Ongoing Work

- Extensions to hundreds of audio channels
- Broadcast OSC using second ethernet port
- New more gesture-oriented connectivity processor
New Connectivity Processor

- Gig Ethernet
- Wireless
- 2 channel analog
- 2 Pedal
- 4 digital sensor network ports

- Power Supply
- Slave Cards
- Prototype area
- Spartan III FPGA: 400K gates, RAM and 16 fast multipliers

- ADAT
- MIDI

- 48 channels A/D