Low-Cost One-Chip Multi-Effects DSP

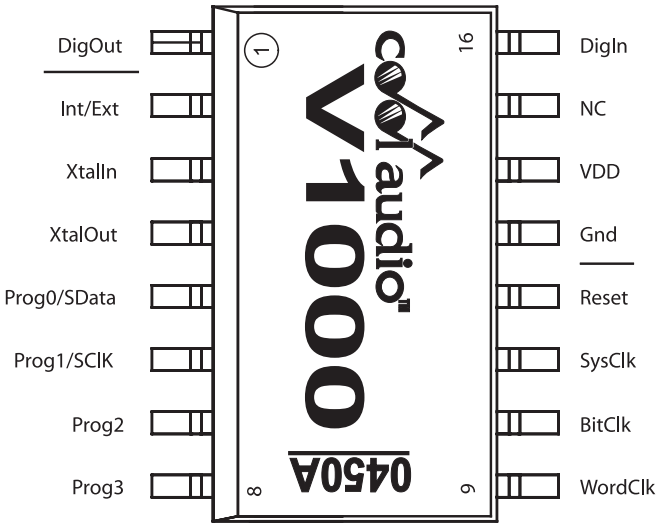
V1000

1. General Description

With 16 built-in reverb and multi-effects, the V1000 Digital Multi-Effects DSP delivers outstanding audio performance in a rapid time-to-market solution at a very affordable price. Since the V1000 incorporates its own RAM and on-board effects, a complete reverb system can be designed with only the V1000, a low-cost ADC and DAC, and a simple 4-bit controller such as a rotary encoder etc.

2. Features

- **16 internal ROM programs consisting of effects such as multiple reverbs, echo, phaser, chorus, flanger, etc.**
- **Serially programmable SRAM (Writeable Control Store - WCS) for program development or dynamically changing programs**
- **Programs run at 128 instructions per word clock. (6 MIPS @ 48 khz sampling frequency)**
- **32k location Static Ram provides over 0.68 sec of delay at 48 kHz sampling frequency**
- **Package outline: SOIC-16/300**
- **ROHS compliant (PB-free)**



16 pin SOIC
300mils wide

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Rev. 1.0

8. Internal Programs

The SCR comes with 16 internal ROM programs ready to go. By setting the chip to internal mode, the four program pins may be used to select between the different algorithms.

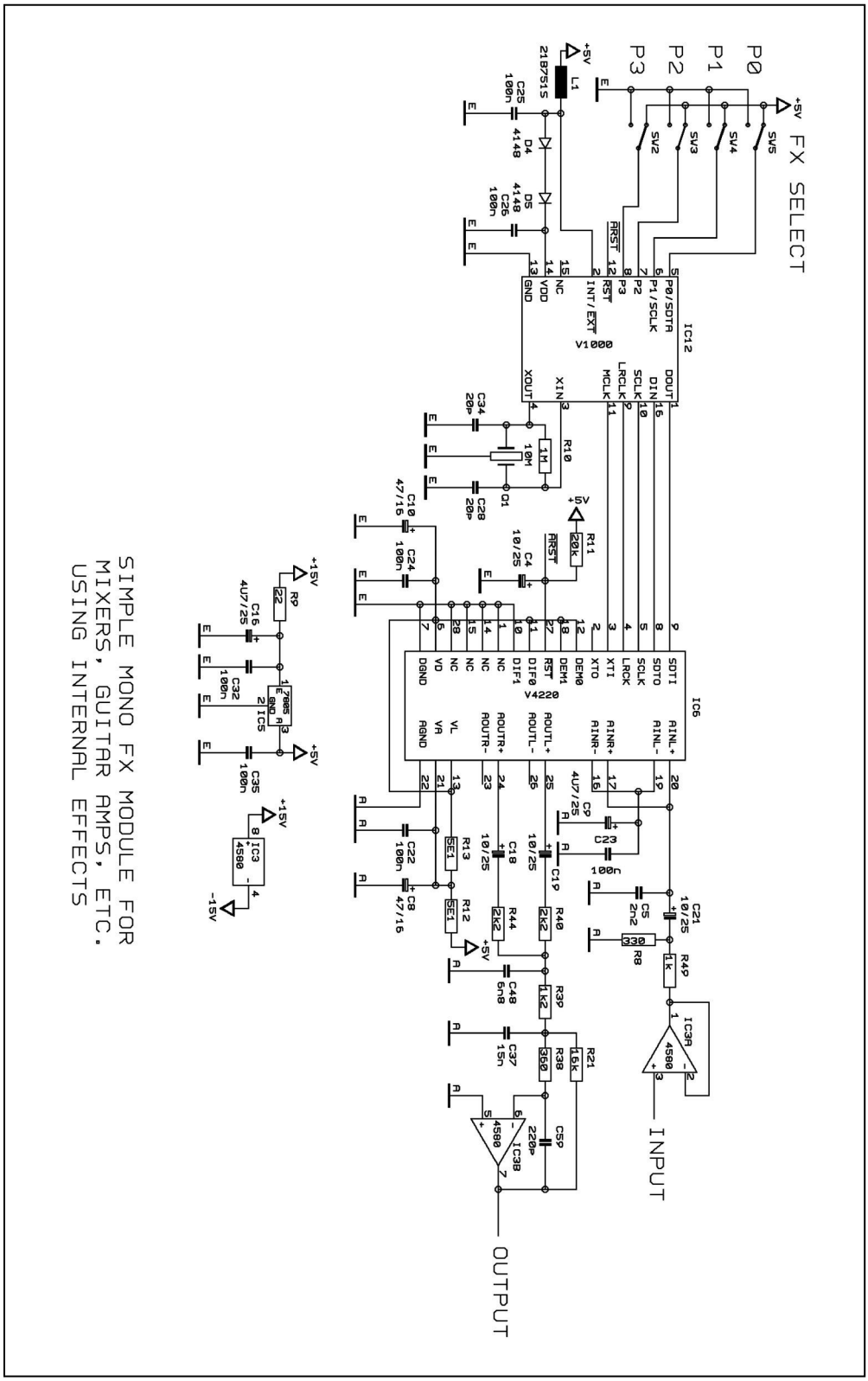
Prog[3:0]	Name	Description
0000	Medium	Reverb, Small hall (1.5 sec.)
0001	Chambr7b	Reverb, Big hall (2.8 sec.)
0010	Room3b	Reverb, Room (1.8 sec.)
0011	Chamber2	Reverb, Church (7 sec.)
0100	Revers3b	Reverb Reverse (1.2 sec.)
0101	Gated4b	Reverb Gated (0.8 sec.)
0110	Room2a	Reverb Chapel (3 sec.)
0111	Spring3b	Reverb Spring (2 sec.)
1000	Phaser1	Phaser
1001	Flanger2	Flanger
1010	Delay7	Echo
1011	Chorus4	Chorus
1100	Earlref4	Early Reflection
1101	Amb4	Big Ambience
1110	Delay3	Stereo Delay
1111	Delay1	Slap-back Delay

9. Programming the RAM

Alongside the 16 internal programs is an externally programmable SRAM that is easily accessible through the serial clock and data pins, by setting the chip to external mode, the SClk and SData pins become available for serial communication. Except for its external programmability, there is no functional difference between the SRAM and the internal ROMs.

10. Memory Map

Addr	Name		
0.127	WCS RAM	Addr	Name
		0:3	LFO Coefficients
		4:127	MAC Instructions
128	Control/Status 0		


FX SELECT
P0
P1
P2
P3
SW2
SW3
SW4
SW5
V1000
IC12
IC6
V4220
INPUT
OUTPUT
SIMPLE MONO FX MODULE FOR
MIXERS, GUITAR AMPS, ETC.
USING INTERNAL EFFECTS