SERGE MODULAR MUSIC SYSTEMS
572 Haight Street
San Francisco, CA 94117
(415) 621-6898

14 Feb 84

Jon Kjell Seljeseth
Samtun 36
105 Reykjavik
ICELAND

Dear Jon,

    I'll list the answers to your questions:

1. Standard mods are still available, and I'm sending you
the list, even if you've already got it. The BIP mod is
another jack, so both outputs are available all the time.
The OCT gives an octave up, an octave down, and off, for
three positions and three different octaves.

2. The DTG and DSG are not compensated internally for
temperature change as are the NTO and PCO. This means that
they can be expected to drift a little, and will never be as
stable as the oscillators. This is not usually apparent at
the lower frequencies of LFO's, timing clocks, envelope
follower type applications that are the most common use for
them. Although we allow them to run very fast, they are not
intended primarily as oscillators.

3. The power supply normally runs a little warm, but if it
gets too hot to touch, it may be near capacity, and you'll
have to get a second supply.

4. The DSG will retrigger with a input pulse if you connect
the pulse to the black IN jack. This might seem a strange
way to trigger the unit, but it is detailed in the User's
Manual. The use of the red TRIG IN jack is not the normal
way of patching the DSG for use as an envelope (as strange
as that may seem). The DTG, since it is the same circuit as
the DSG, can also be triggered in this way only if you have
the ACI mod.

5. Yes, the RS can be wired as you suspected. Any input
can be connected to the K pad on the SSG board as a source
for its smooth and sampled outputs. The inputs are pretty
well protected, so voltage swings of +/- 50 volts or more
could be applied, although the output swing will be limited
to about +/- 10 volts.

6. The scales of your QTKB are not functioning properly.
We have changed a capacitor value on the PC board to correct
this. The 10 pf ceramic cap as shown in the enclosed
diagram is the fix for this weird scaling problems. Check
the value of the adjacent 82 pf caps on your PC board and
change them if they are some other value. We're enclosing
parts if you need them.

7.   The small voltage offsets are normal on the quantizer
and unavoidable.   This won't be noticed of course, except
when you completely disconnect the quantizer output from
whatever you are controlling.   I know of no easy way to
avoid retuning your oscillators slightly if you change the
routing from the quantizer.

8.   The lag time you are noticing through the quantizer is a
result of its design and cannot be altered.   You may notice
that although there are 8 outputs to the unit, there is only
one DAC chip (the 7523).   The outputs are "multiplexed",
switched, one-by-one to get the DAC voltage.   The time it
takes to get around the any particular channel is the
multiplex rate times the number of output channels, and was
assigned in the design process as being an optimum time, and
is a trade-off with some other critical parameters.

9.   Yes, you can add more inputs to the oscillators by
adding more 196K resistors to pad K.   When we assemble the
PC board we use 1% resistors and we match them to about .03%
by hand selection to make the two that are on any oscillator
very close.   That means that if you add more 196K resistors
for more 1v/oct inputs, the chances are they won't match as
closely as the two normal inputs.   If you would like we
could supply you with matched sets of resistors (say 3 or 4)
and you could replace the two 196K's on board and use the
other(s) for your extra inputs.   The 1v/oct trimmer on the
PC board will have to be re-adjusted slightly for the new
resistors to maintain accurate tracking.   You may also get
satisfactory results using a 190K (or so) resistor and a 10K
(or so) trimmer to adjust each new 1v/oct input.

10.   I believe is would be possible to put +12 volts through
a 33K resistor and pushbutton to pad #15 of the 4520 on the
NCOM to reset the count as you describe.   No guarantees.

11.   32 stage / 2 row sequencers with the TKB is impossible
without some additional logic.   A few appropriate CMOS gates
could probably do it, but would involve a bit of technical
expertise to do it.   The lower left 4051 does the switching
for the ABCD output, and its output goes into one section of
a 324 (left side, pin #12) to be buffered.   The switching is
on pins 10 and 11 of the 4051, so these two logic lines
could be used to drive another couple of gates to get the 32
stage sequencing action.   I'm enclosing a portion of the
schematic in case you or someone there wants to attempt it.

12.   Enclosed is a current catalog and price list.

13.   LED's should be driven by something like our little LED
driver PC boards, but some gate and trigger outputs can be
attached to an LED through a 1K resistor without loading
down too much.   Again, no guarantees.   The power supply
won't be hurt, but the output voltage may drop at the jack.
You can try a larger resistor for less loading and
diminished brightness.

14.   Whew!   Sincerely,

                                         Darrel Johansen
                                         General Manager

4520

4051

.01
33K .01
.01 33K
33K .01
.01 33K
33K .01
.01 33K
.01

100K

311
*

1nf TANT   0431

JUMP

4520

47K   .01
.01
.01

30 K TRIM
6.8K

082

4002
1.5M
41.2K 1%
3.80M 1%
82.5K 1%

.01

.01

*do not
install
these
in their
sockets

4093

.01

1m 10p 914
10nf TANT 330
82p 330
33K   82p
82p   82p   353
82p   330
22K   22K

p16 .01

.01   82p
330   330
82p
4520   7523   *   353
.01   22K
22K

JUMP

15K
13K   51K
220p   33K
16K   15K
220p
33K   51K
230

cut trace

4051

.01 .01 .01 .01

ALL MYLAR

.01 .01 .01 .01

.01   82p
330   330
82p
353
.01   22K
22K

.01   82p
330   330
82p
353
.01   22K
22K