

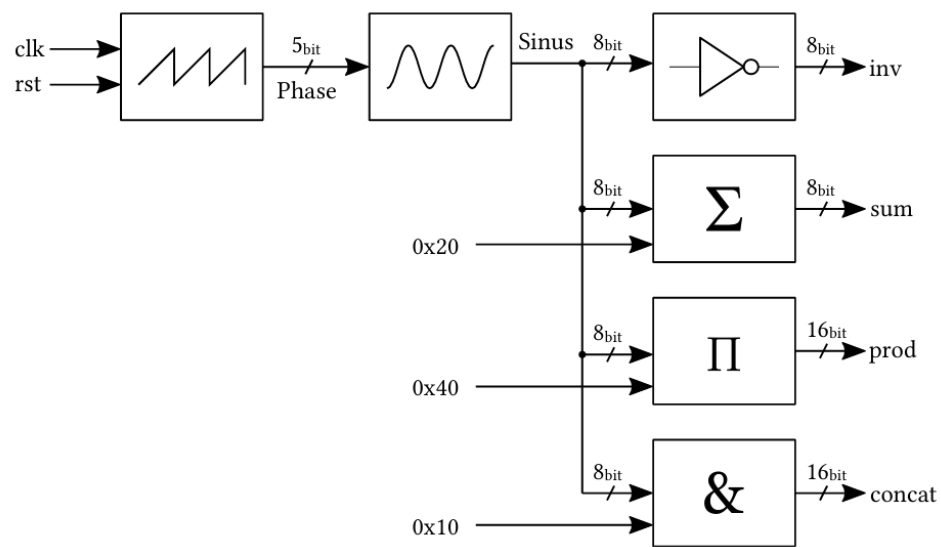
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# 1 The Circuit

The basic circuit is a sine generator composed of a counter generating a 5-bit phase and a "Sinus" block that uses a look-up table to convert the 5-bit signal into a 8-bit sinusoidal wave. The output of those two blocks is then connected in parallel to all four operations, as shown in figure 1

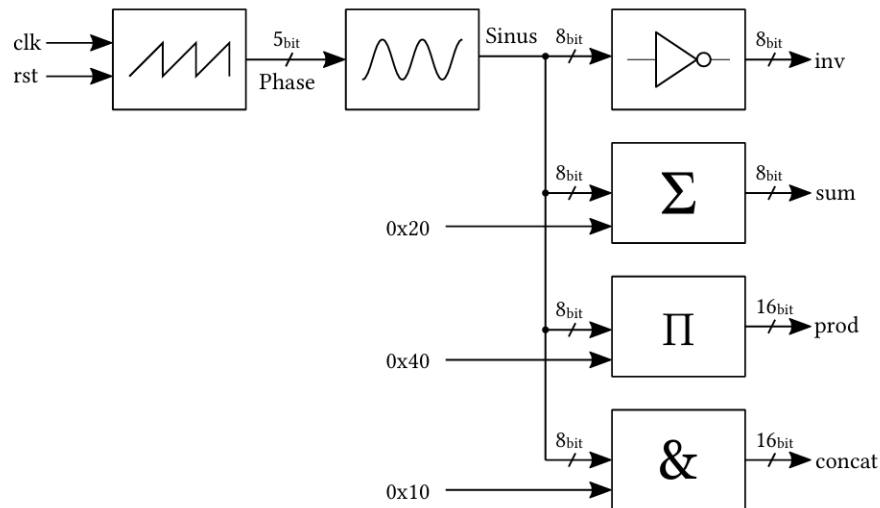


Figure 1: The basic circuit and the four operations

## 0-31 to Hex values

0	0	0	0	0 00
1	11.25	0.195090322	24.7764709	25 19
2	22.5	0.382683432	48.60079591	49 31
3	33.75	0.555570233	70.55741959	71 47
4	45	0.707106781	89.80256121	90 5A
5	56.25	0.831469612	105.5966408	106 6A
6	67.5	0.923879533	117.3327006	117 75
7	78.75	0.98078528	124.5597306	125 7D
8	90	1	127	127 7F
9	101.25	0.98078528	124.5597306	125 7D
10	112.5	0.923879533	117.3327006	117 75
11	123.75	0.831469612	105.5966408	106 6A
12	135	0.707106781	89.80256121	90 5A
13	146.25	0.555570233	70.55741959	71 47
14	157.5	0.382683432	48.60079591	49 31
15	168.75	0.195090322	24.7764709	25 19
16	180	1.22515E-16	1.55594E-14	0 00
17	191.25	-0.195090322	-24.7764709	-25 FFFFFFFFE7
18	202.5	-0.382683432	-48.60079591	-49 FFFFFFFFCF
19	213.75	-0.555570233	-70.55741959	-71 FFFFFFFFB9
20	225	-0.707106781	-89.80256121	-90 FFFFFFFFA6
21	236.25	-0.831469612	-105.5966408	-106 FFFFFFFF96
22	247.5	-0.923879533	-117.3327006	-117 FFFFFFFF8B
23	258.75	-0.98078528	-124.5597306	-125 FFFFFFFF83
24	270	-1	-127	-127 FFFFFFFF81
25	281.25	-0.98078528	-124.5597306	-125 FFFFFFFF83
26	292.5	-0.923879533	-117.3327006	-117 FFFFFFFF8B
27	303.75	-0.831469612	-105.5966408	-106 FFFFFFFF96
28	315	-0.707106781	-89.80256121	-90 FFFFFFFFA6
29	326.25	-0.555570233	-70.55741959	-71 FFFFFFFFB9
30	337.5	-0.382683432	-48.60079591	-49 FFFFFFFFCF
31	348.75	-0.195090322	-24.7764709	-25 FFFFFFFFE7

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