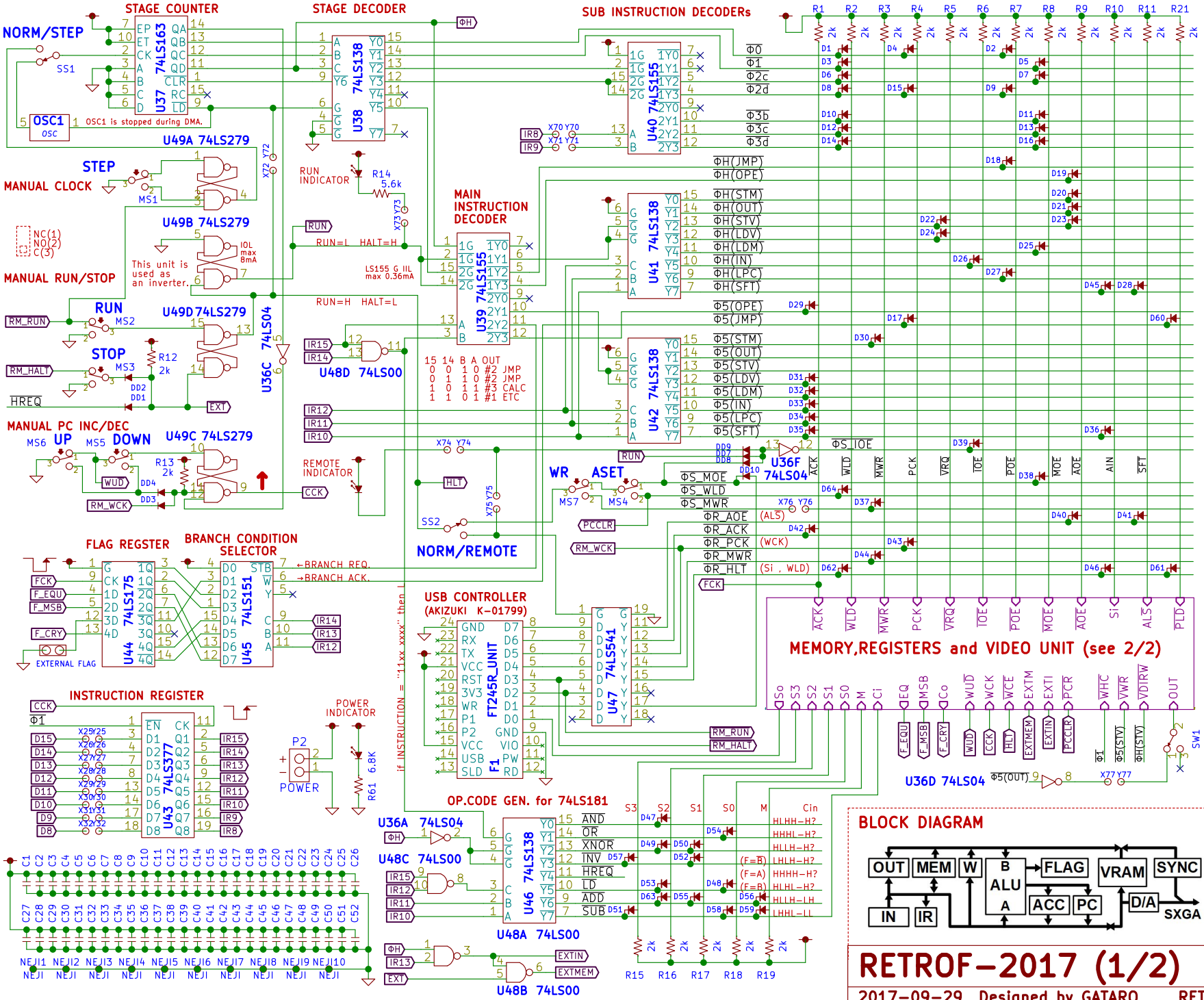

INSTRACTION SET ARCH.

xxxx xxaa (common format)

aa=00 : 8bit immediate
aa=01 : register(0-255) direct
aa=10 : register(0-255) indirect
aa=11 : 16bit immediate

0ccc ddaa JMP

ccc=000 : ALWAY
ccc=001 : EXTERNAL
ccc=010 : Jump if FULL
ccc=011 : Jump if not FULL
ccc=100 : Jump if CARRY
ccc=101 : Jump if not CARRY
ccc=110 : Jump if MINUS
ccc=111 : Jump if not MINUS

dd=00 : wait request
dd=01 : absolute jump
dd=10 : relative jump (forward)
dd=11 : relative jump (backward)

11M0 00aa STM	10-0 00aa HALT
11-0 01aa OUT	10-0 01aa LD
11-0 10aa STV	10-0 10aa ADD
11-0 11aa LDV	10-0 11aa SUB
11M1 00aa LDM	10-1 00aa AND
11P1 01-- IN	10-1 01aa OR
11-1 10-- LPC	10-1 10aa XNOR
11-1 11-- SFT	10-1 11aa INV

M=1 EXTENDED MEMORY ACCESS
P=1 EXTENDED PORT ACCESS

SXGA VIDEO TIMMING CHART

H-SYNC (H9..H0) TIMING CHART
clock 27.000MHz
19+32+32+256+1=340clock

LOAD 10 1010 1101
10 1010 1110 FRONT-PORCH
10 1010 1111 19clock
:
10 1011 1111

10 1100 0000
10 1100 0001 HS
10 1100 0010 64clock
: (79.412KHz)
10 1101 1111

10 1110 0000
10 1110 0001 BACK-PORCH
10 1110 0010 64clock
:
10 1111 1111

11 0000 0000
11 0000 0001 PICTURE
11 0000 0010 AVAILABLE
: 256clock
11 1111 1111

00 0000 0000 LOAD REQUEST

V-SYNC (V9..V0) TIMING CHART
1clock=27.000MHz/340=79.411KHz
(256+2+2+4)*4=1056clock

CLEAR 00 0000 0000
00 0000 0001
00 0000 0010 PICTURE
00 0000 0011 AVAILABLE
: 256*4clock
00 1111 1111

0100 0000 00 FRONT-PORCH
0100 0000 01 2*4clock

0100 0000 10 VS 2*4clock
0100 0000 11 (75.199Hz)

0100 0001 00
0100 0001 01 BACK-PORCH
0100 0001 10 4*4clock
0100 0001 11

0100 0100 00 CLEAR

RETROF-2017 (1/2)

REV. (2.07B)

2017-09-29 Designed by GATARO RETROF2017M.sch