

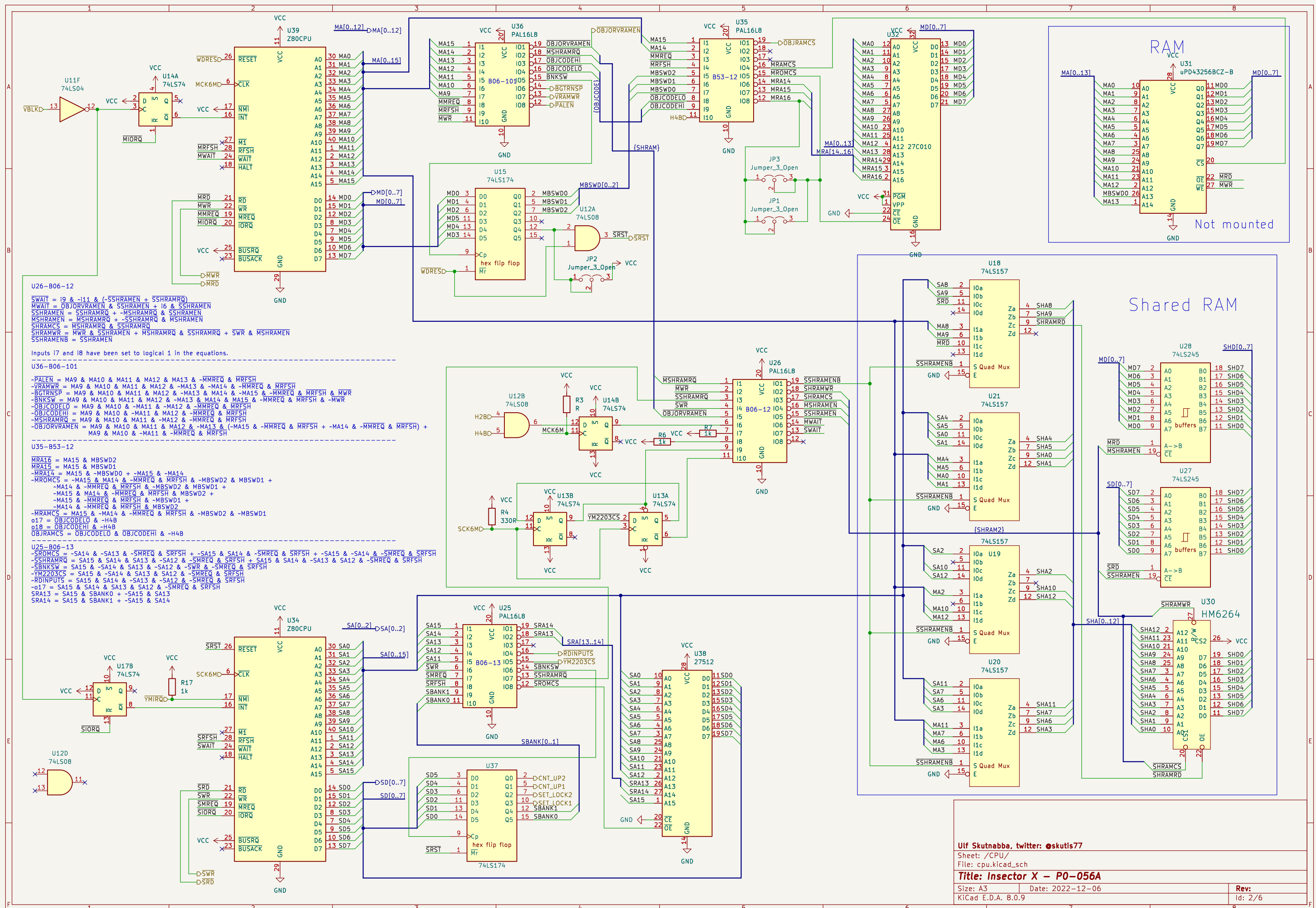
Ulf Skutnabba, twitter: [@skutis77](#)

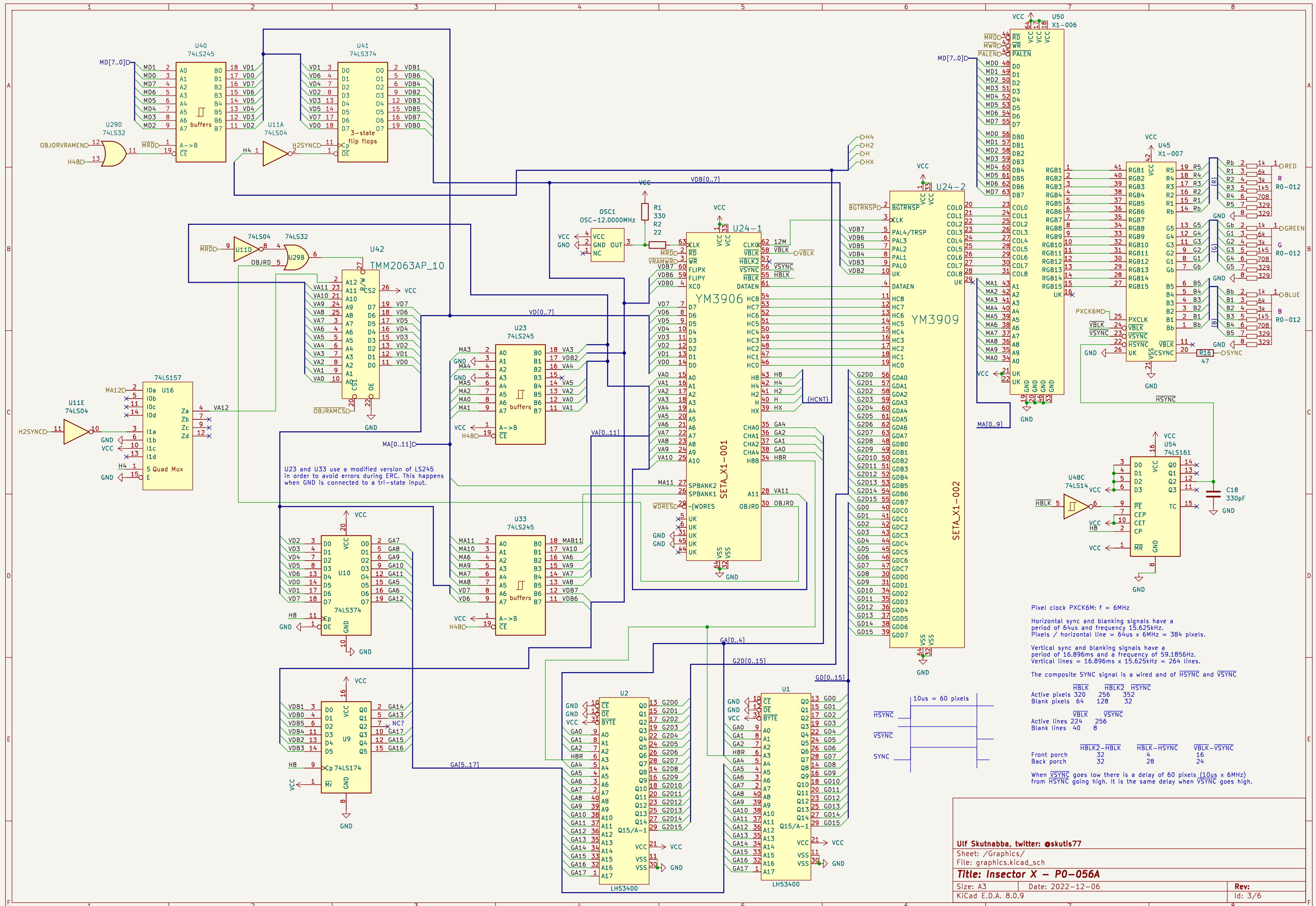
Sheet: /
File: insectx.kicad_sch

Title: Insector X - P0-056A

Size: A3 Date: 2022-12-06
KiCad E.D.A. 8.0.9

Rev:
Id: 1/6





Pixel clock PXCK6M: $f = 6\text{MHz}$

Horizontal sync and blanking signals have a period of 64us and frequency 15.625kHz.
 Pixels / horizontal line = $64\text{us} \times 6\text{MHz} = 384$ pixels.

Vertical sync and blanking signals have a period of 16.896ms and a frequency of 59.1856Hz.
 Vertical lines = $16.896\text{ms} \times 15.625\text{kHz} = 264$ lines.

The composite SYNC signal is a wired and of HSYNC and VSYNC

	HBK1	HBK2	HSYNC
Active pixels	320	256	352
Blank pixels	64	128	32

	VBLK	VSYNC
Active lines	224	256
Blank lines	40	8

	HBK2-HBK1	HBK-HSYNC	VBLK-VSYNC
Front porch	32	4	16
Back porch	32	28	24

When VSYNC goes low there is a delay of 60 pixels (10us x 6MHz) from HSYNC going high. It is the same delay when VSYNC goes high.

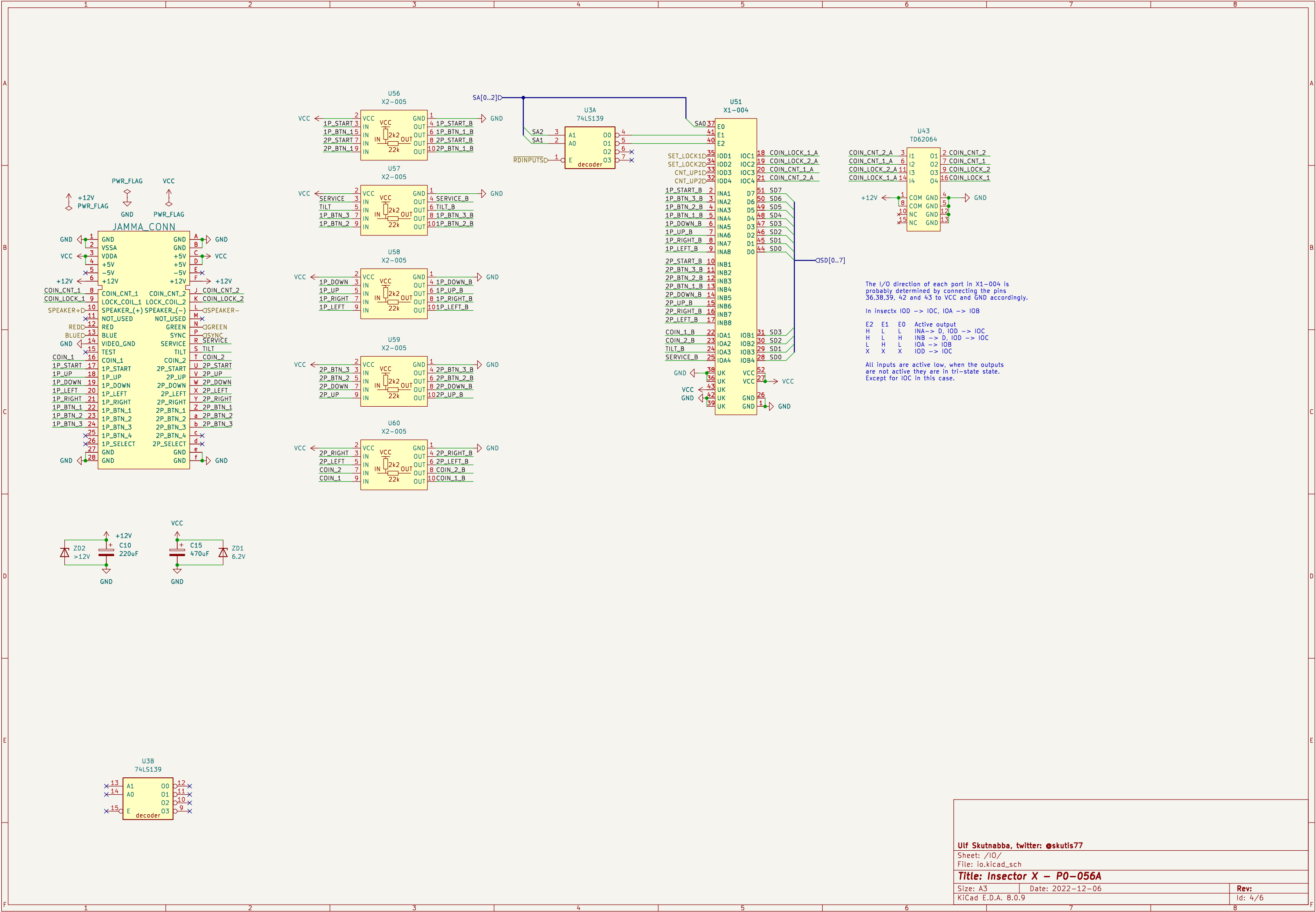
Ulf Skutnabba, twitter: @skutis77

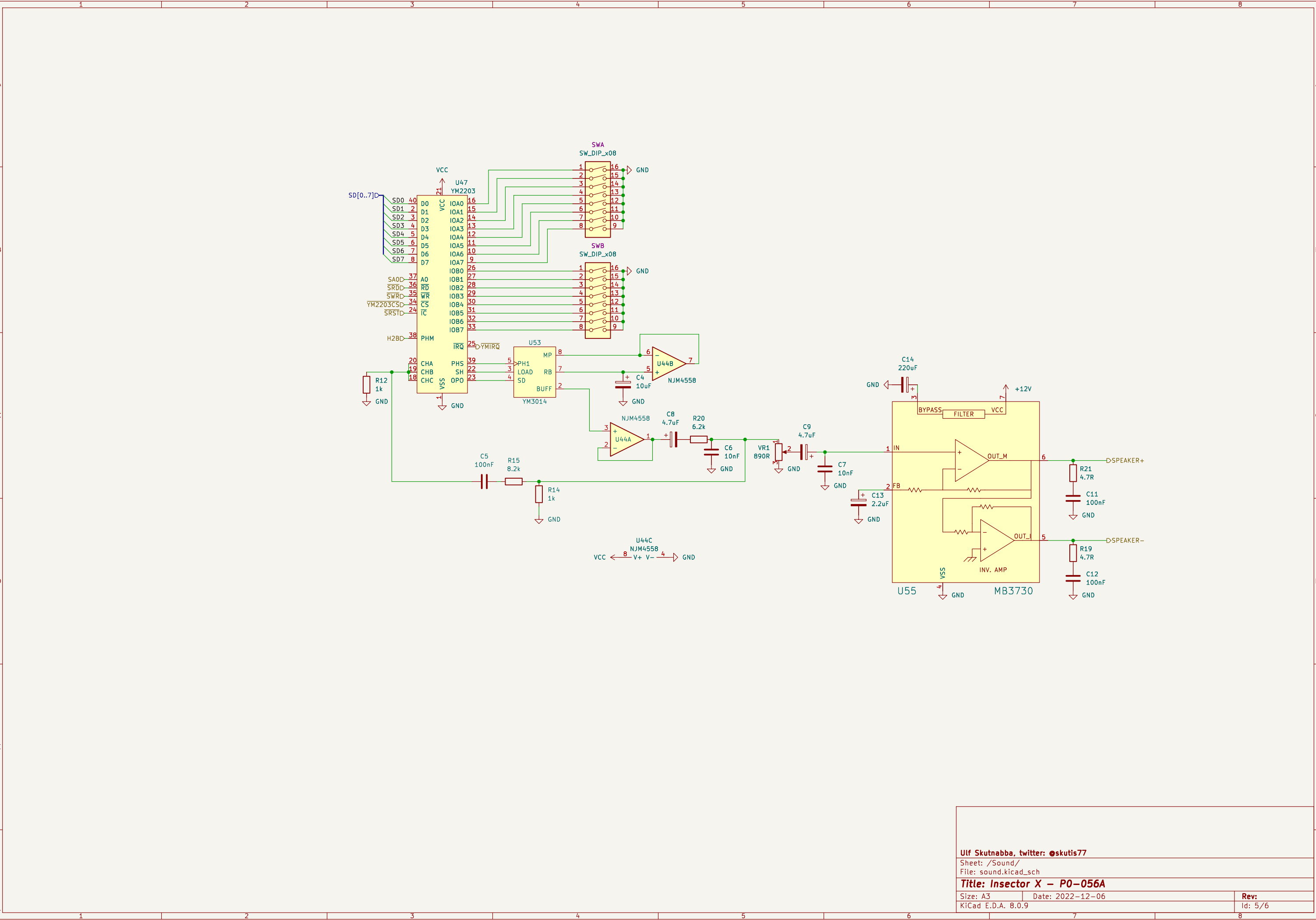
Sheet: /Graphics/
 File: graphics.kicad_sch

Title: Insector X - P0-056A

Size: A3 Date: 2022-12-06
 KiCad E.D.A. 8.0.9

Rev:
 Id: 3/6





Ulf Skutnabba, twitter: @skutis77

Sheet: /Sound/
File: sound.kicad_sch

Title: Insector X - P0-056A

Size: A3 Date: 2022-12-06
KiCad E.D.A. 8.0.9

Rev:
Id: 5/6

