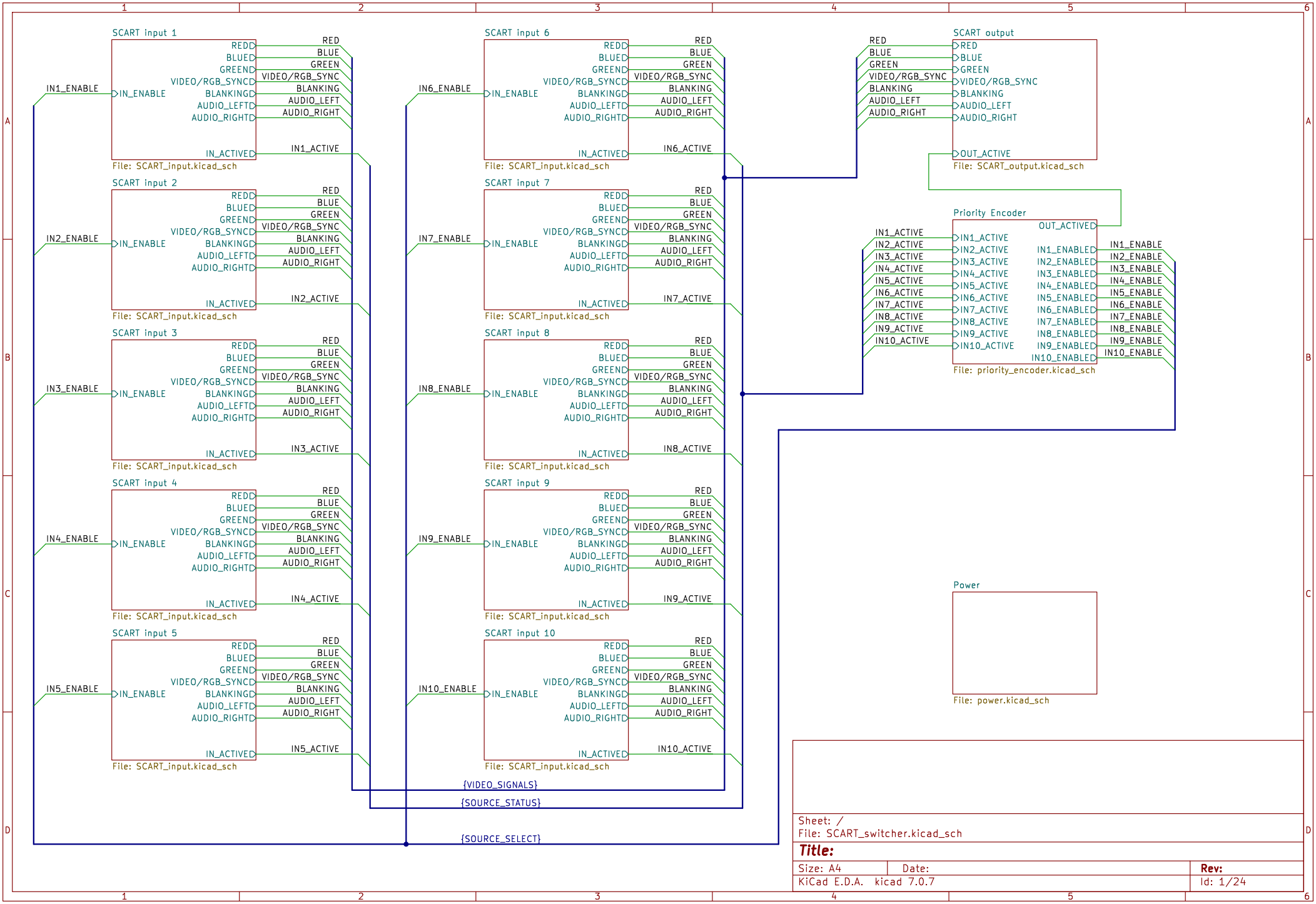
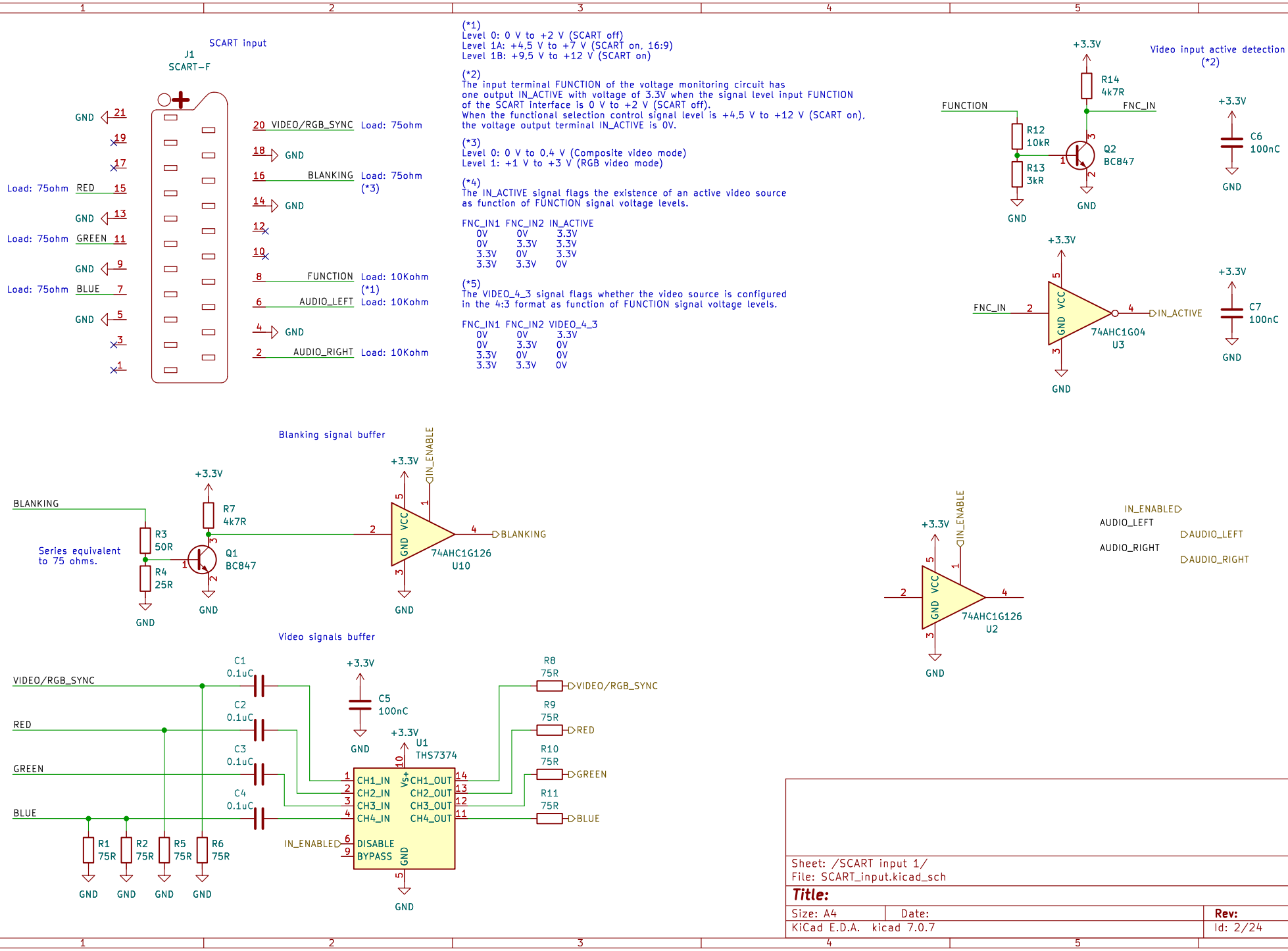

SCART input 1
SCART input 2
SCART input 3
SCART input 4
SCART input 5
SCART input 6
SCART input 7
SCART input 8
SCART input 9
SCART input 10
SCART output
Priority Encoder
Power
File: SCART_input.kicad_sch
File: SCART_output.kicad_sch
File: priority_encoder.kicad_sch
File: power.kicad_sch
IN1_ENABLE
IN2_ENABLE
IN3_ENABLE
IN4_ENABLE
IN5_ENABLE
IN6_ENABLE
IN7_ENABLE
IN8_ENABLE
IN9_ENABLE
IN10_ENABLE
IN_ENABLE
REDD
BLUED
GREEND
VIDEO/RGB_SYNCD
BLANKINGD
AUDIO_LEFTD
AUDIO_RIGHTD
IN_ACTIVED
RED
BLUE
GREEN
VIDEO/RGB_SYNC
BLANKING
AUDIO_LEFT
AUDIO_RIGHT
IN1_ACTIVE
IN2_ACTIVE
IN3_ACTIVE
IN4_ACTIVE
IN5_ACTIVE
IN6_ACTIVE
IN7_ACTIVE
IN8_ACTIVE
IN9_ACTIVE
IN10_ACTIVE
OUT_ACTIVE
OUT_ACTIVED
IN1_ENABLED
IN2_ENABLED
IN3_ENABLED
IN4_ENABLED
IN5_ENABLED
IN6_ENABLED
IN7_ENABLED
IN8_ENABLED
IN9_ENABLED
IN10_ENABLED
{VIDEO_SIGNALS}
{SOURCE_STATUS}
{SOURCE_SELECT}
Sheet: /
File: SCART_switcher.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. kicad 7.0.7
Id: 1/24


SCART input
J1
SCART-F
GND 21
19
17
Load: 75ohm RED 15
GND 13
Load: 75ohm GREEN 11
GND 9
Load: 75ohm BLUE 7
GND 5
3
1
20 VIDEO/RGB_SYNC Load: 75ohm
18 GND
16 BLANKING Load: 75ohm (*3)
14 GND
12
10
8 FUNCTION Load: 10Kohm (*1)
6 AUDIO_LEFT Load: 10Kohm
4 GND
2 AUDIO_RIGHT Load: 10Kohm
(*1)
Level 0: 0 V to +2 V (SCART off)
Level 1A: +4,5 V to +7 V (SCART on, 16:9)
Level 1B: +9,5 V to +12 V (SCART on)
(*2)
The input terminal FUNCTION of the voltage monitoring circuit has one output IN_ACTIVE with voltage of 3.3V when the signal level input FUNCTION of the SCART interface is 0 V to +2 V (SCART off).
When the functional selection control signal level is +4,5 V to +12 V (SCART on), the voltage output terminal IN_ACTIVE is 0V.
(*3)
Level 0: 0 V to 0,4 V (Composite video mode)
Level 1: +1 V to +3 V (RGB video mode)
(*4)
The IN_ACTIVE signal flags the existence of an active video source as function of FUNCTION signal voltage levels.
FNC_IN1 FNC_IN2 IN_ACTIVE
0V 0V 3.3V
0V 3.3V 3.3V
3.3V 0V 3.3V
3.3V 3.3V 0V
(*5)
The VIDEO_4_3 signal flags whether the video source is configured in the 4:3 format as function of FUNCTION signal voltage levels.
FNC_IN1 FNC_IN2 VIDEO_4_3
0V 0V 3.3V
0V 3.3V 0V
3.3V 0V 0V
3.3V 3.3V 0V
Video input active detection (*2)
+3.3V
R14 4k7R
FUNCTION
FNC_IN
R12 10kR
R13 3kR
Q2 BC847
GND
C6 100nC
FNC_IN
IN_ACTIVE
74AHC1G04 U3
C7 100nC
Blanking signal buffer
BLANKING
Series equivalent to 75 ohms.
R3 50R
R4 25R
R7 4k7R
Q1 BC847
IN_ENABLE
74AHC1G126 U10
Video signals buffer
VIDEO/RGB_SYNC
RED
GREEN
BLUE
C1 0.1uC
C2 0.1uC
C3 0.1uC
C4 0.1uC
C5 100nC
U1 THS7374
CH1_IN
CH2_IN
CH3_IN
CH4_IN
DISABLE
BYPASS
CH1_OUT
CH2_OUT
CH3_OUT
CH4_OUT
R1 75R
R2 75R
R5 75R
R6 75R
R8 75R
R9 75R
R10 75R
R11 75R
AUDIO_LEFT
AUDIO_RIGHT
74AHC1G126 U2
Sheet: /SCART input 1/
File: SCART_input.kicad_sch
Title:
Size: A4
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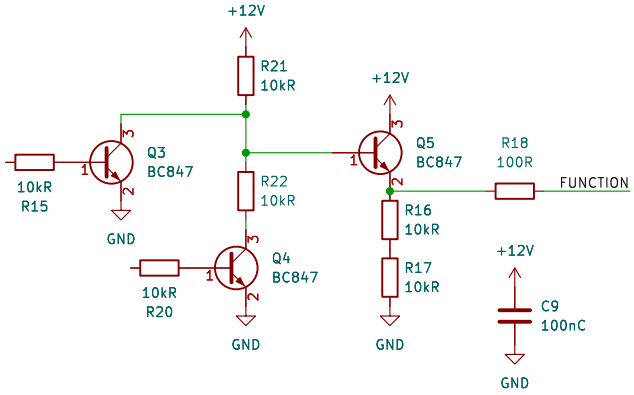
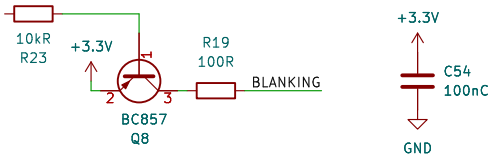
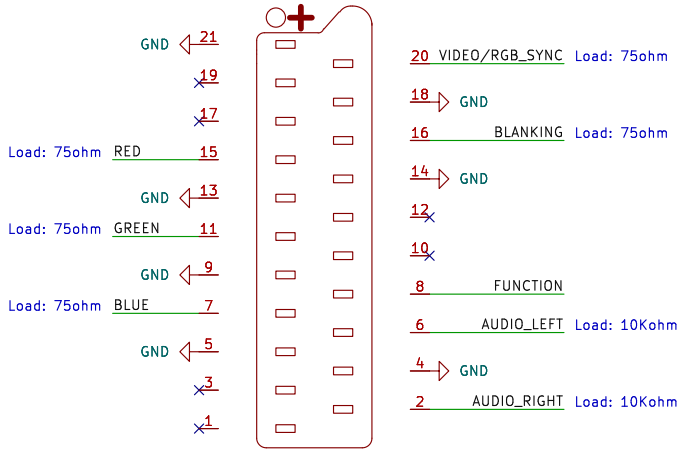
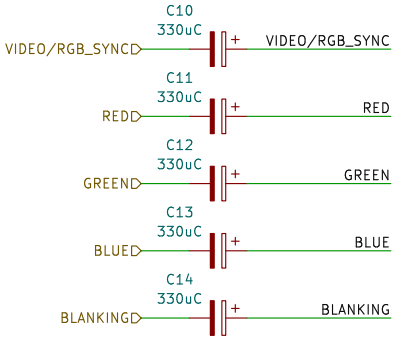
The signals FNC_IN1 and FNC_IN2 are input to the level conversion circuit of the
SCART function selection control to generate the appropriate signal levels.
When the voltage levels of both the first input terminal FNC_IN1 and the second
input terminal FNC_IN2 are 3.3V, the output voltage of the output terminal FUNCTION is 0V (SCART off).
When the voltage level of the first input terminal FNC_IN1 is 0V and the voltage level
of the second input terminal FNC_IN2 is 3.3V, the output voltage of the output terminal
FUNCTION is 7.0V (SCART on, 16:9).
When the voltage levels of both the first input terminal FNC_IN1 and the second input
terminal FNC_IN2 are 0V, the output voltage of the output terminal FUNCTION is 12V (SCART on).

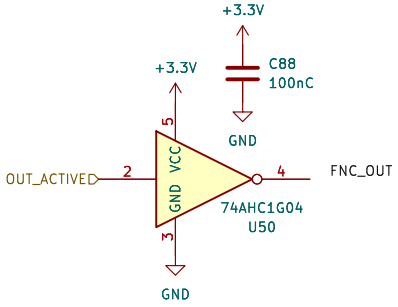




SCART output







AUDIO_LEFT
AUDIO_RIGHT

AUDIO_LEFT
AUDIO_RIGHT

Sheet: /SCART output/		
File: SCART_output.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
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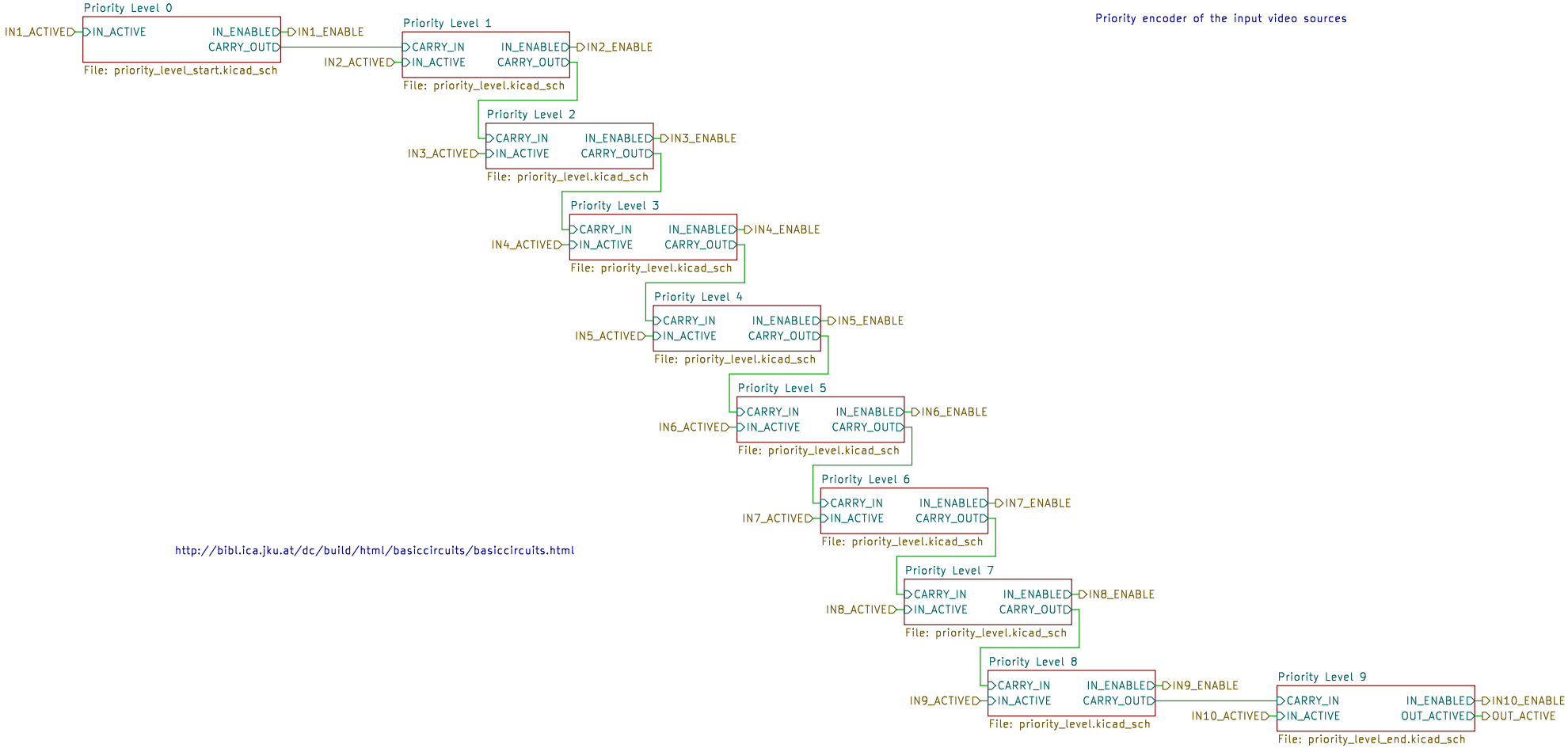
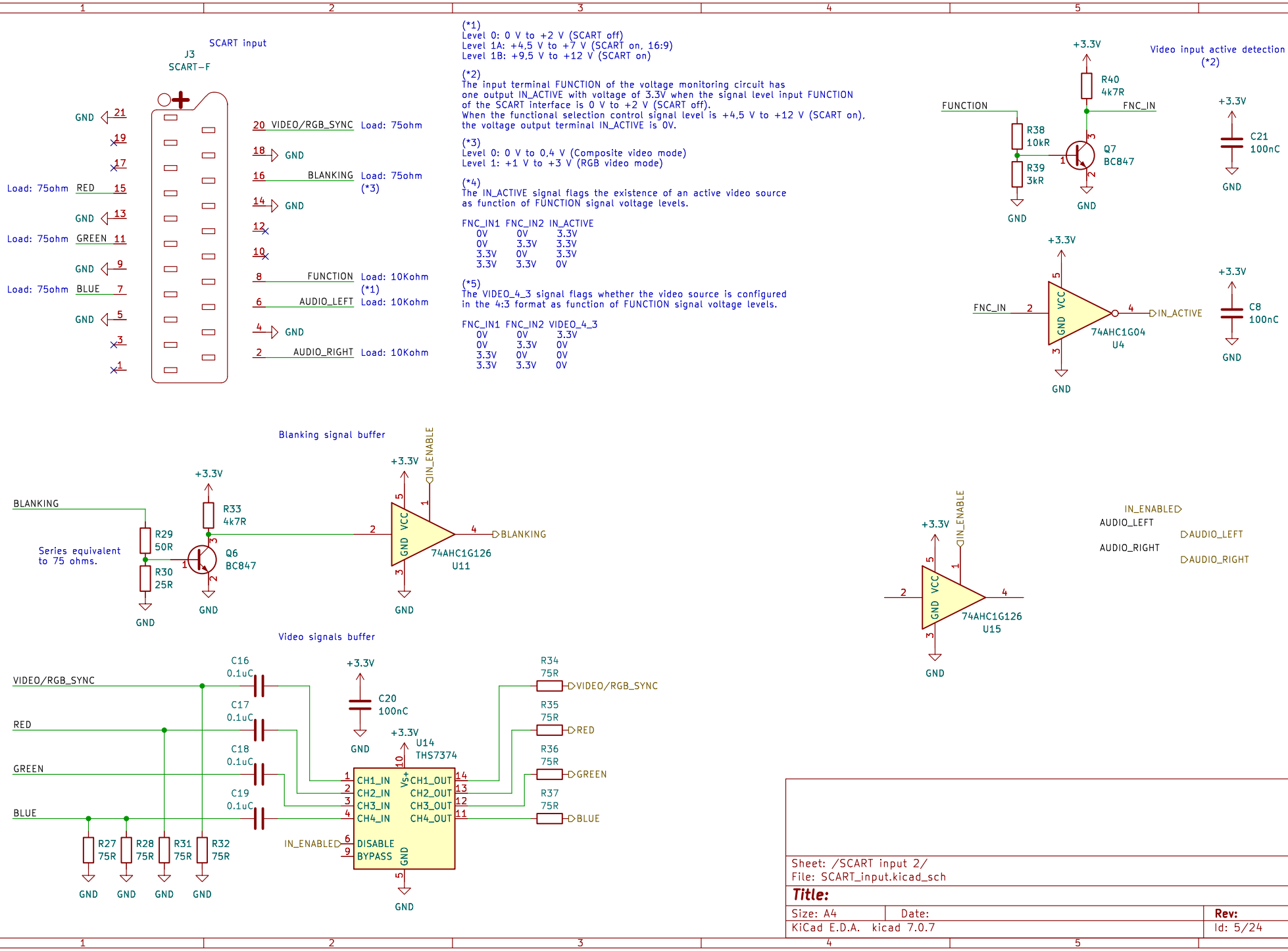


Sheet: /Priority Encoder/		
File: priority_encoder.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 4/24



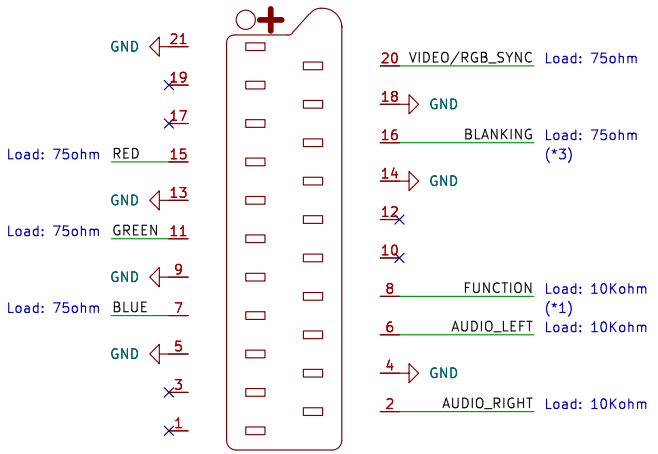
Sheet: /SCART input 2/
File: SCART_input.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 5/24

SCART input

J4
SCART-F



(*1)
Level 0: 0 V to +2 V (SCART off)
Level 1A: +4,5 V to +7 V (SCART on, 16:9)
Level 1B: +9,5 V to +12 V (SCART on)

(*2)
The input terminal FUNCTION of the voltage monitoring circuit has one output IN_ACTIVE with voltage of 3.3V when the signal level input FUNCTION of the SCART interface is 0 V to +2 V (SCART off).
When the functional selection control signal level is +4,5 V to +12 V (SCART on), the voltage output terminal IN_ACTIVE is 0V.

(*3)
Level 0: 0 V to 0,4 V (Composite video mode)
Level 1: +1 V to +3 V (RGB video mode)

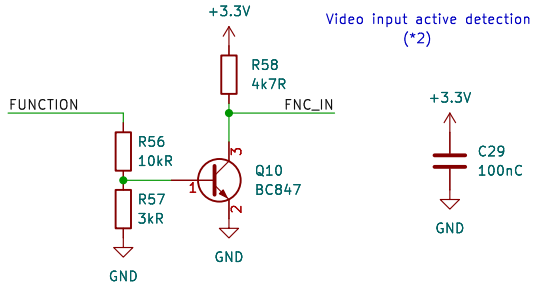
(*4)
The IN_ACTIVE signal flags the existence of an active video source as function of FUNCTION signal voltage levels.

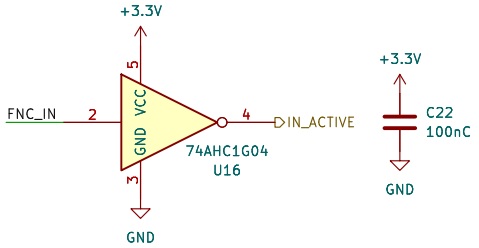
FNC_IN1	FNC_IN2	IN_ACTIVE
0V	0V	3.3V
0V	3.3V	3.3V
3.3V	0V	3.3V
3.3V	3.3V	0V

(*5)
The VIDEO_4_3 signal flags whether the video source is configured in the 4:3 format as function of FUNCTION signal voltage levels.

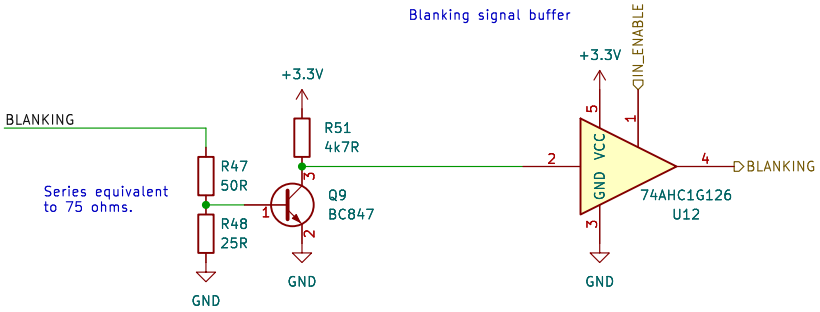
FNC_IN1	FNC_IN2	VIDEO_4_3
0V	0V	3.3V
0V	3.3V	0V
3.3V	0V	0V
3.3V	3.3V	0V

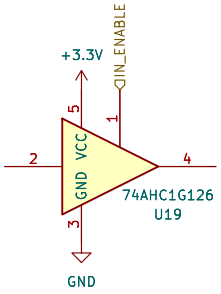
Video input active detection (*2)



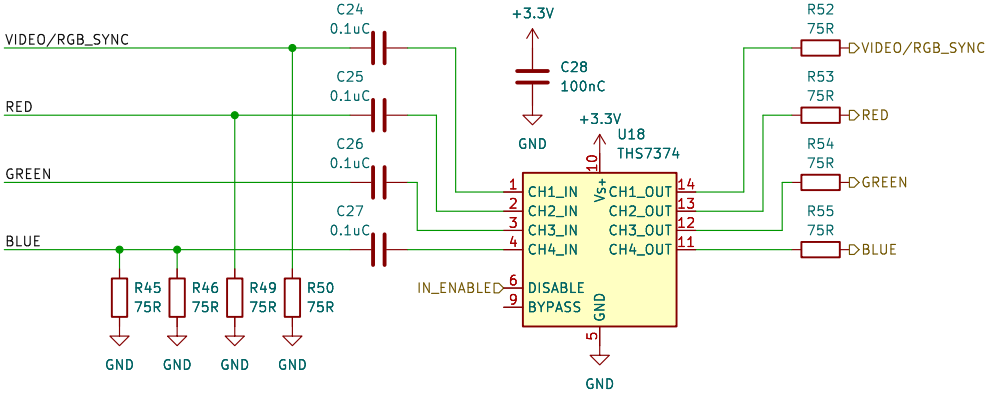


Blanking signal buffer





Video signals buffer



Sheet: /SCART input 3/		
File: SCART_input.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
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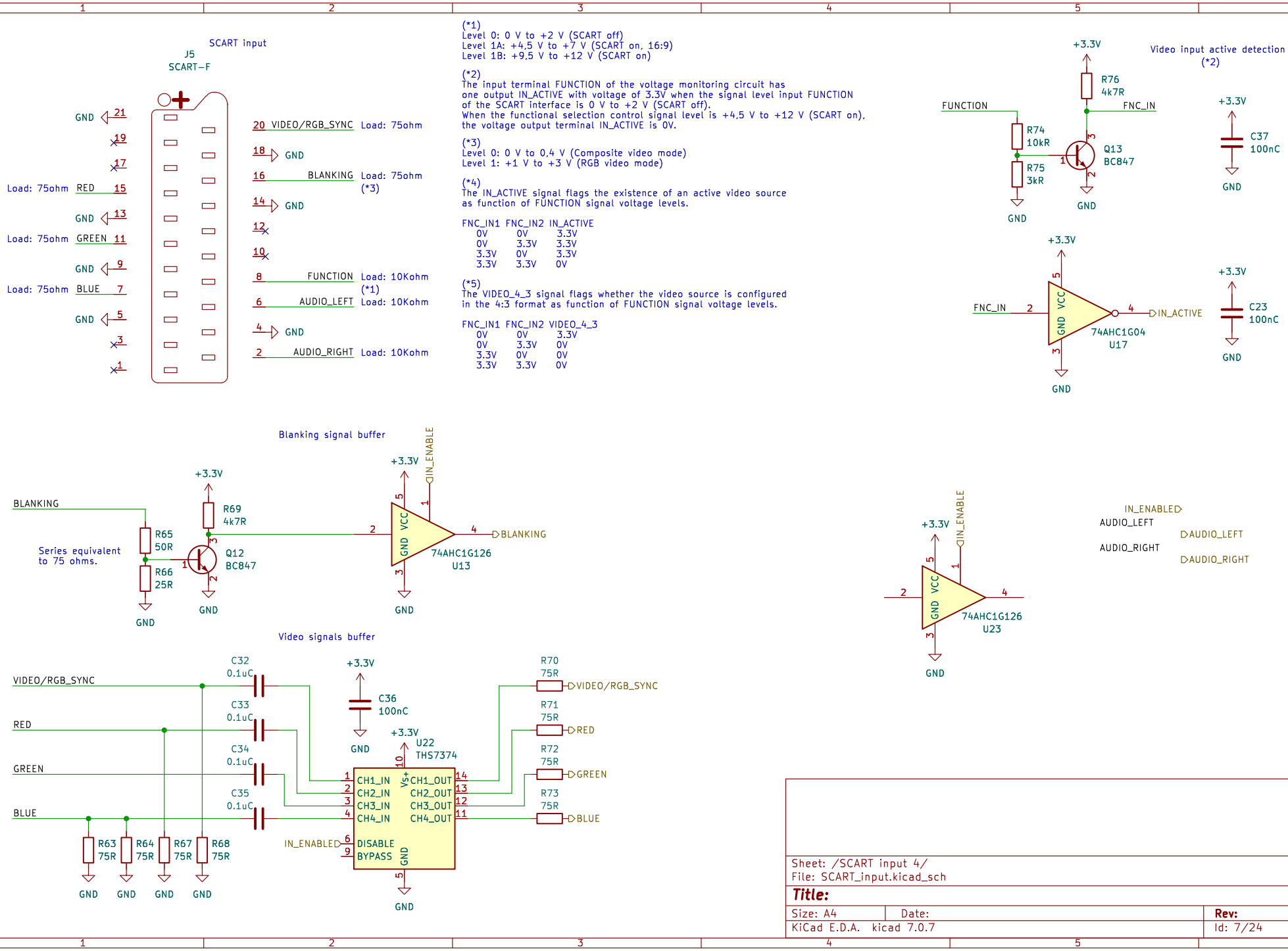
SCART input
J5
SCART-F
GND 21
19
17
Load: 75ohm RED 15
GND 13
Load: 75ohm GREEN 11
GND 9
Load: 75ohm BLUE 7
GND 5
3
1
20 VIDEO/RGB_SYNC Load: 75ohm
18 GND
16 BLANKING Load: 75ohm (*3)
14 GND
12
10
8 FUNCTION Load: 10Kohm (*1)
6 AUDIO_LEFT Load: 10Kohm
4 GND
2 AUDIO_RIGHT Load: 10Kohm
(*1)
Level 0: 0 V to +2 V (SCART off)
Level 1A: +4,5 V to +7 V (SCART on, 16:9)
Level 1B: +9,5 V to +12 V (SCART on)
(*2)
The input terminal FUNCTION of the voltage monitoring circuit has one output IN_ACTIVE with voltage of 3.3V when the signal level input FUNCTION of the SCART interface is 0 V to +2 V (SCART off).
When the functional selection control signal level is +4,5 V to +12 V (SCART on), the voltage output terminal IN_ACTIVE is 0V.
(*3)
Level 0: 0 V to 0,4 V (Composite video mode)
Level 1: +1 V to +3 V (RGB video mode)
(*4)
The IN_ACTIVE signal flags the existence of an active video source as function of FUNCTION signal voltage levels.
FNC_IN1 FNC_IN2 IN_ACTIVE
0V 0V 3.3V
0V 3.3V 3.3V
3.3V 0V 3.3V
3.3V 3.3V 0V
(*5)
The VIDEO_4_3 signal flags whether the video source is configured in the 4:3 format as function of FUNCTION signal voltage levels.
FNC_IN1 FNC_IN2 VIDEO_4_3
0V 0V 3.3V
0V 3.3V 0V
3.3V 0V 0V
3.3V 3.3V 0V
Video input active detection (*2)
+3.3V
R76 4k7R
FUNCTION
FNC_IN
R74 10kR
R75 3kR
Q13 BC847
GND
C37 100nC
FNC_IN
IN_ACTIVE
74AHC1G04 U17
C23 100nC
Blanking signal buffer
BLANKING
Series equivalent to 75 ohms.
R65 50R
R66 25R
R69 4k7R
Q12 BC847
IN_ENABLE
74AHC1G126 U13
Video signals buffer
VIDEO/RGB_SYNC
RED
GREEN
BLUE
C32 0.1uC
C33 0.1uC
C34 0.1uC
C35 0.1uC
C36 100nC
U22 THS7374
CH1_IN
CH2_IN
CH3_IN
CH4_IN
CH1_OUT
CH2_OUT
CH3_OUT
CH4_OUT
DISABLE
BYPASS
R70 75R
R71 75R
R72 75R
R73 75R
R63 75R
R64 75R
R67 75R
R68 75R
IN_ENABLED
AUDIO_LEFT
AUDIO_RIGHT
74AHC1G126 U23
Sheet: /SCART input 4/
File: SCART_input.kicad_sch
Title:
Size: A4
Date:
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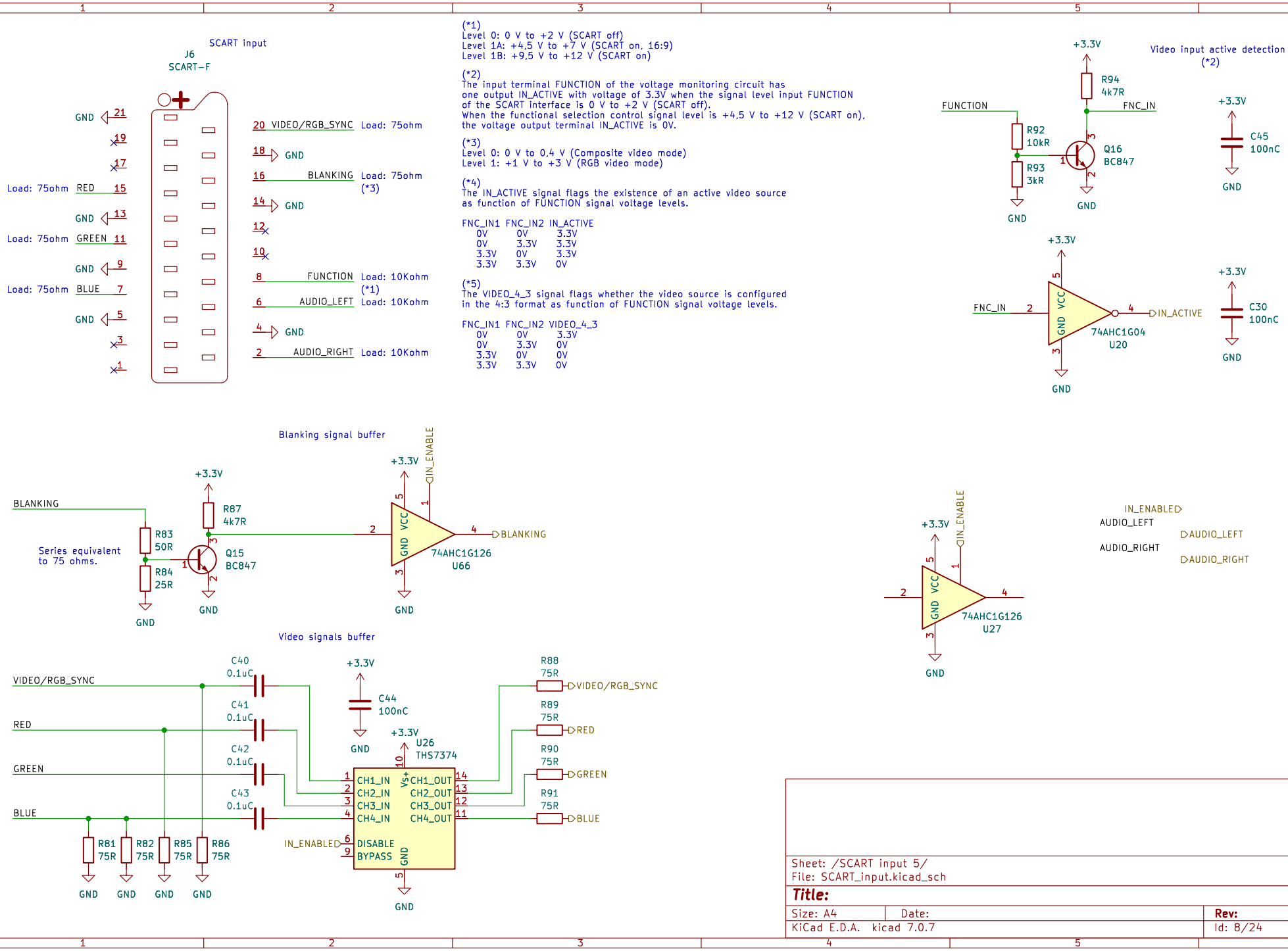
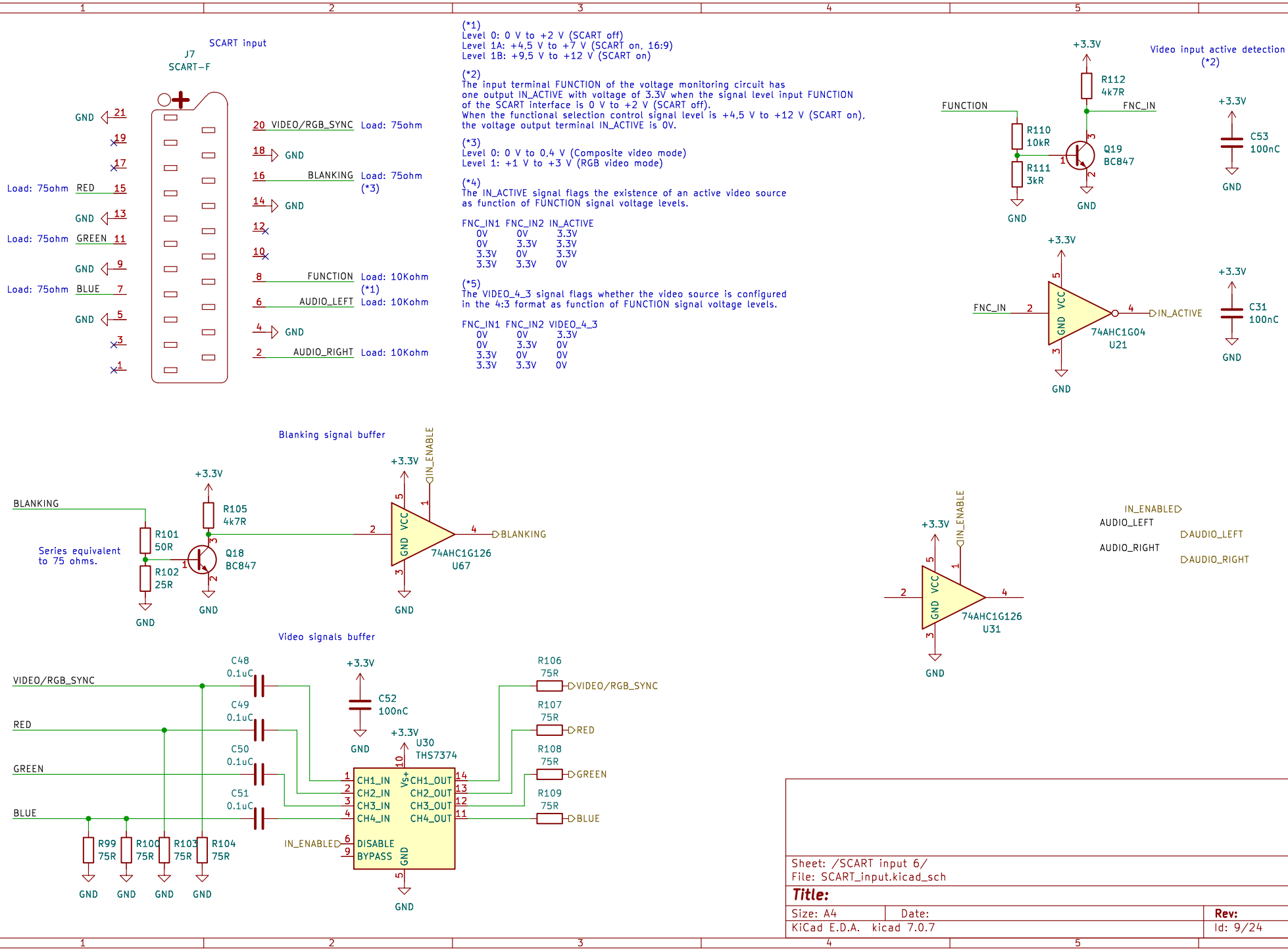


Sheet: /SCART input 5/		
File: SCART_input.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 8/24



Sheet: /SCART input 6/		
File: SCART_input.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 9/24

SCART input

J8
SCART-F

GND	21	20	VIDEO/RGB_SYNC	Load: 75ohm
	19	18	GND	
	17	16	BLANKING	Load: 75ohm (*3)
Load: 75ohm RED	15	14	GND	
GND	13	12		
Load: 75ohm GREEN	11	10		
GND	9	8	FUNCTION	Load: 10Kohm (*1)
Load: 75ohm BLUE	7	6	AUDIO_LEFT	Load: 10Kohm
GND	5	4	GND	
	3	2	AUDIO_RIGHT	Load: 10Kohm
	1			

(*1)
Level 0: 0 V to +2 V (SCART off)
Level 1A: +4,5 V to +7 V (SCART on, 16:9)
Level 1B: +9,5 V to +12 V (SCART on)

(*2)
The input terminal FUNCTION of the voltage monitoring circuit has one output IN_ACTIVE with voltage of 3.3V when the signal level input FUNCTION of the SCART interface is 0 V to +2 V (SCART off).
When the functional selection control signal level is +4,5 V to +12 V (SCART on), the voltage output terminal IN_ACTIVE is 0V.

(*3)
Level 0: 0 V to 0,4 V (Composite video mode)
Level 1: +1 V to +3 V (RGB video mode)

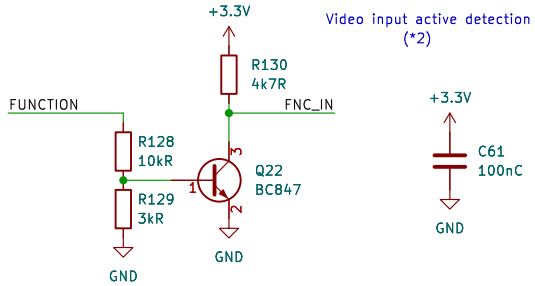
(*4)
The IN_ACTIVE signal flags the existence of an active video source as function of FUNCTION signal voltage levels.

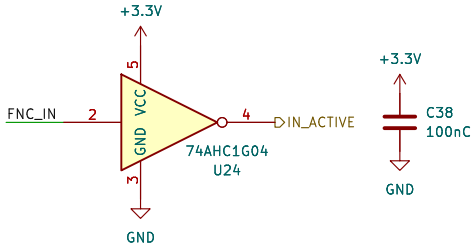
FNC_IN1	FNC_IN2	IN_ACTIVE
0V	0V	3.3V
0V	3.3V	3.3V
3.3V	0V	3.3V
3.3V	3.3V	0V

(*5)
The VIDEO_4_3 signal flags whether the video source is configured in the 4:3 format as function of FUNCTION signal voltage levels.

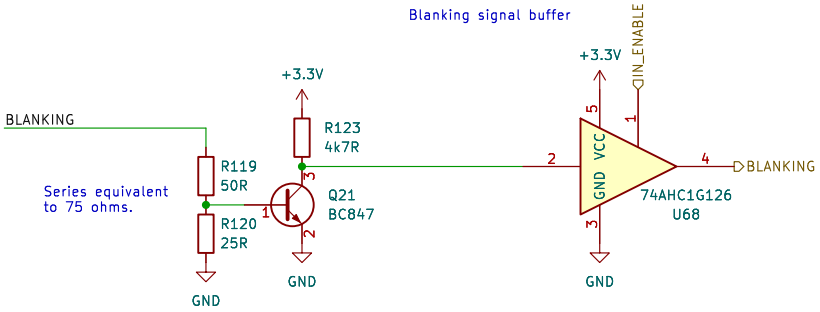
FNC_IN1	FNC_IN2	VIDEO_4_3
0V	0V	3.3V
0V	3.3V	0V
3.3V	0V	0V
3.3V	3.3V	0V

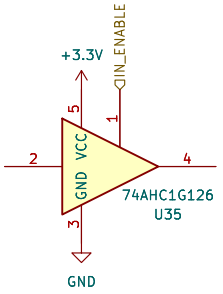
Video input active detection (*2)



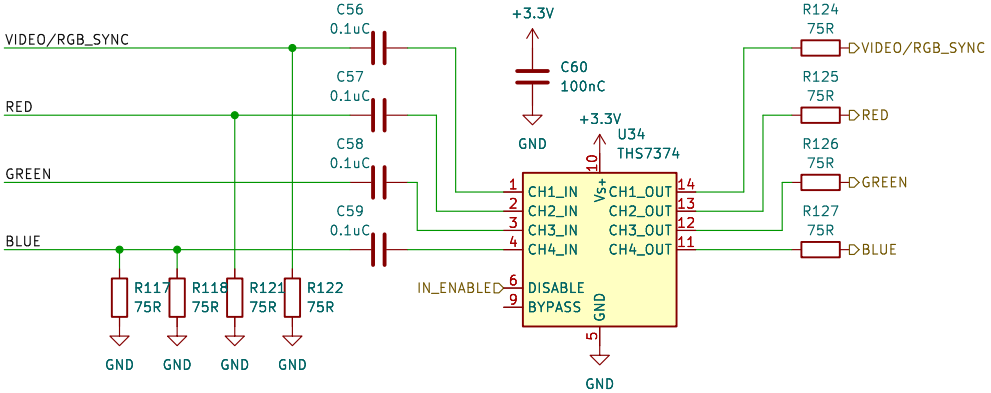


Blanking signal buffer

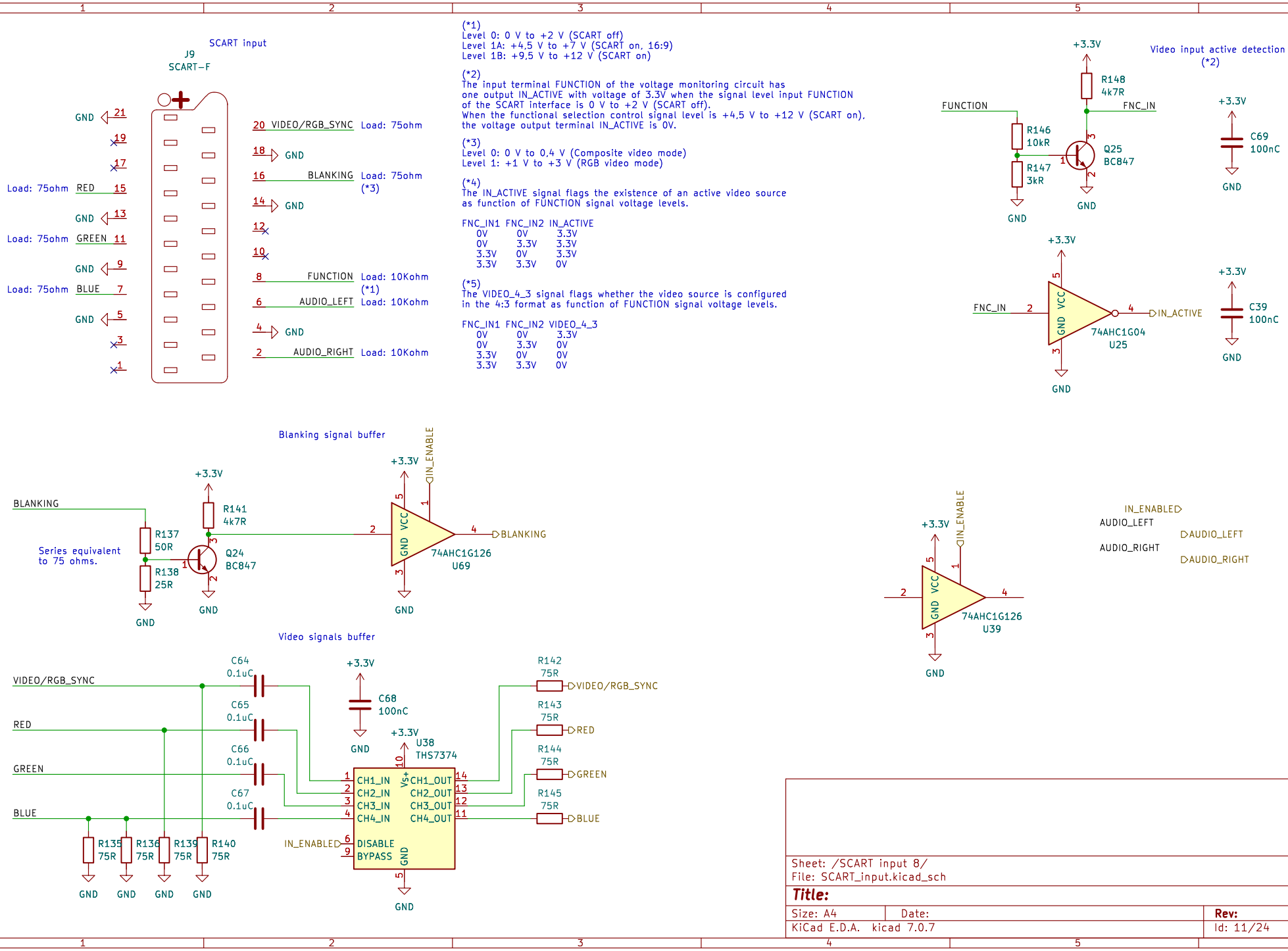




Video signals buffer



Sheet: /SCART input 7/		
File: SCART_input.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 10/24


SCART input
J9
SCART-F
GND 21
19
17
Load: 75ohm RED 15
GND 13
Load: 75ohm GREEN 11
GND 9
Load: 75ohm BLUE 7
GND 5
3
1
20 VIDEO/RGB_SYNC Load: 75ohm
18 GND
16 BLANKING Load: 75ohm (*3)
14 GND
12
10
8 FUNCTION Load: 10Kohm (*1)
6 AUDIO_LEFT Load: 10Kohm
4 GND
2 AUDIO_RIGHT Load: 10Kohm
(*1)
Level 0: 0 V to +2 V (SCART off)
Level 1A: +4,5 V to +7 V (SCART on, 16:9)
Level 1B: +9,5 V to +12 V (SCART on)
(*2)
The input terminal FUNCTION of the voltage monitoring circuit has one output IN_ACTIVE with voltage of 3.3V when the signal level input FUNCTION of the SCART interface is 0 V to +2 V (SCART off).
When the functional selection control signal level is +4,5 V to +12 V (SCART on), the voltage output terminal IN_ACTIVE is 0V.
(*3)
Level 0: 0 V to 0,4 V (Composite video mode)
Level 1: +1 V to +3 V (RGB video mode)
(*4)
The IN_ACTIVE signal flags the existence of an active video source as function of FUNCTION signal voltage levels.
FNC_IN1 FNC_IN2 IN_ACTIVE
0V 0V 3.3V
0V 3.3V 3.3V
3.3V 0V 3.3V
3.3V 3.3V 0V
(*5)
The VIDEO_4_3 signal flags whether the video source is configured in the 4:3 format as function of FUNCTION signal voltage levels.
FNC_IN1 FNC_IN2 VIDEO_4_3
0V 0V 3.3V
0V 3.3V 0V
3.3V 0V 0V
3.3V 3.3V 0V
Video input active detection (*2)
+3.3V
R148 4k7R
FUNCTION
FNC_IN
R146 10kR
R147 3kR
Q25 BC847
GND
C69 100nC
Blanking signal buffer
BLANKING
Series equivalent to 75 ohms.
R137 50R
R138 25R
R141 4k7R
Q24 BC847
IN_ENABLE
74AHC1G126 U69
Video signals buffer
VIDEO/RGB_SYNC
RED
GREEN
BLUE
C64 0.1uC
C65 0.1uC
C66 0.1uC
C67 0.1uC
C68 100nC
U38 THS7374
CH1_IN
CH2_IN
CH3_IN
CH4_IN
CH1_OUT
CH2_OUT
CH3_OUT
CH4_OUT
DISABLE
BYPASS
R135 75R
R136 75R
R139 75R
R140 75R
R142 75R
R143 75R
R144 75R
R145 75R
74AHC1G04 U25
C39 100nC
74AHC1G126 U39
AUDIO_LEFT
AUDIO_RIGHT
Sheet: /SCART input 8/
File: SCART_input.kicad_sch
Title:
Size: A4
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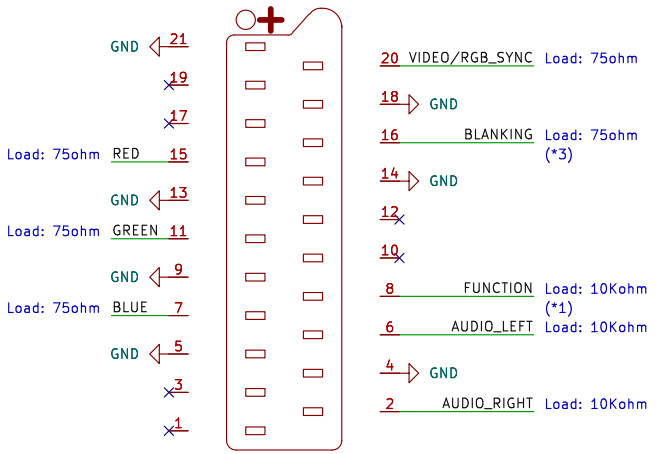
Id: 11/24

SCART input

J10
SCART-F



(*1)
Level 0: 0 V to +2 V (SCART off)
Level 1A: +4,5 V to +7 V (SCART on, 16:9)
Level 1B: +9,5 V to +12 V (SCART on)

(*2)
The input terminal FUNCTION of the voltage monitoring circuit has one output IN_ACTIVE with voltage of 3.3V when the signal level input FUNCTION of the SCART interface is 0 V to +2 V (SCART off).
When the functional selection control signal level is +4,5 V to +12 V (SCART on), the voltage output terminal IN_ACTIVE is 0V.

(*3)
Level 0: 0 V to 0,4 V (Composite video mode)
Level 1: +1 V to +3 V (RGB video mode)

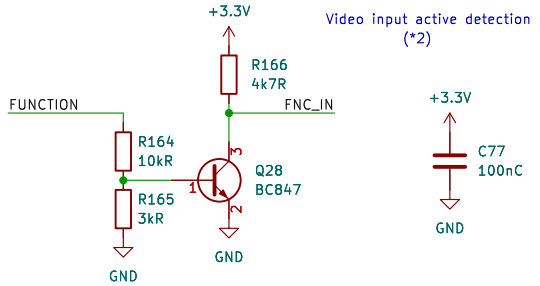
(*4)
The IN_ACTIVE signal flags the existence of an active video source as function of FUNCTION signal voltage levels.

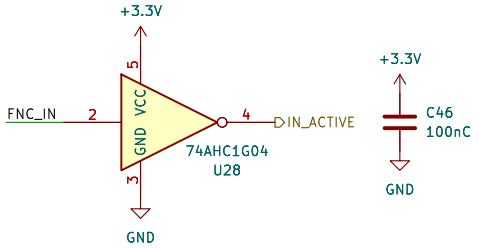
FNC_IN1	FNC_IN2	IN_ACTIVE
0V	0V	3.3V
0V	3.3V	3.3V
3.3V	0V	3.3V
3.3V	3.3V	0V

(*5)
The VIDEO_4_3 signal flags whether the video source is configured in the 4:3 format as function of FUNCTION signal voltage levels.

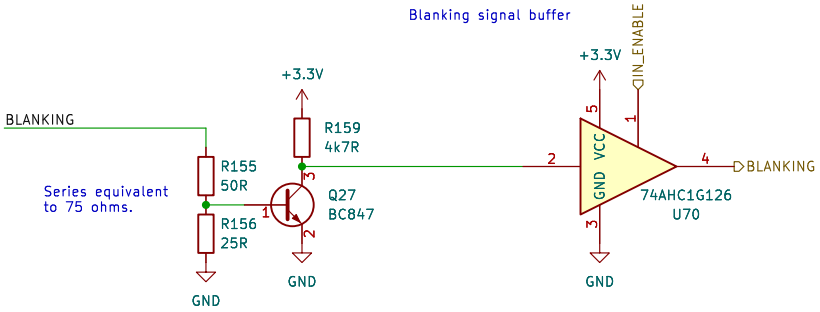
FNC_IN1	FNC_IN2	VIDEO_4_3
0V	0V	3.3V
0V	3.3V	0V
3.3V	0V	0V
3.3V	3.3V	0V

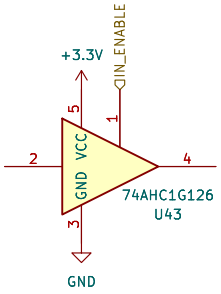
Video input active detection (*2)



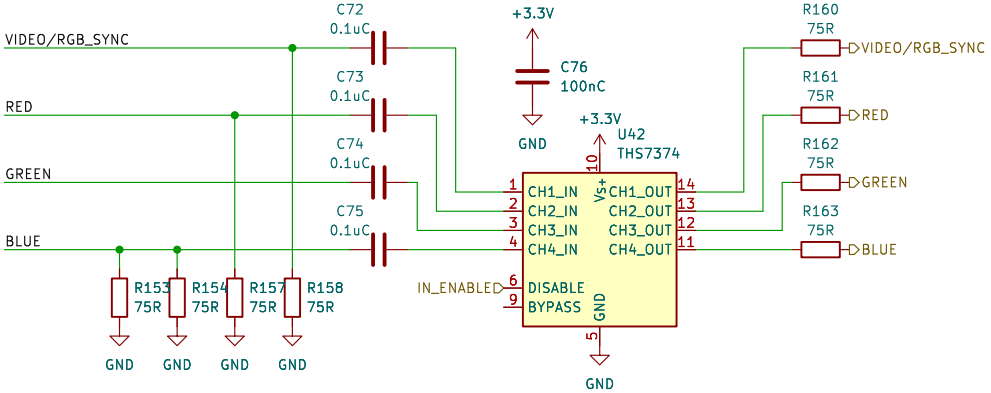


Blanking signal buffer





Video signals buffer



Sheet: /SCART input 9/		
File: SCART_input.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
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SCART input

J11
SCART-F

GND 21
19
17
Load: 75ohm RED 15
GND 13
Load: 75ohm GREEN 11
GND 9
Load: 75ohm BLUE 7
GND 5
3
1

20 VIDEO/RGB_SYNC Load: 75ohm
18 GND
16 BLANKING Load: 75ohm (*3)
14 GND
12
10
8 FUNCTION Load: 10Kohm (*1)
6 AUDIO_LEFT Load: 10Kohm
4 GND
2 AUDIO_RIGHT Load: 10Kohm

(*1)
Level 0: 0 V to +2 V (SCART off)
Level 1A: +4,5 V to +7 V (SCART on, 16:9)
Level 1B: +9,5 V to +12 V (SCART on)

(*2)
The input terminal FUNCTION of the voltage monitoring circuit has one output IN_ACTIVE with voltage of 3.3V when the signal level input FUNCTION of the SCART interface is 0 V to +2 V (SCART off).
When the functional selection control signal level is +4,5 V to +12 V (SCART on), the voltage output terminal IN_ACTIVE is 0V.

(*3)
Level 0: 0 V to 0,4 V (Composite video mode)
Level 1: +1 V to +3 V (RGB video mode)

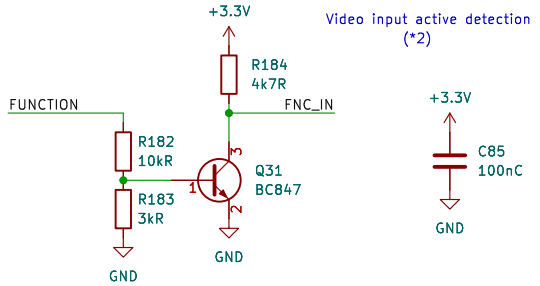
(*4)
The IN_ACTIVE signal flags the existence of an active video source as function of FUNCTION signal voltage levels.

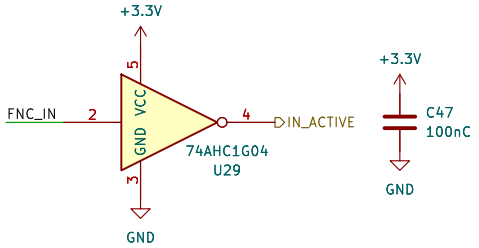
FNC_IN1	FNC_IN2	IN_ACTIVE
0V	0V	3.3V
0V	3.3V	3.3V
3.3V	0V	3.3V
3.3V	3.3V	0V

(*5)
The VIDEO_4_3 signal flags whether the video source is configured in the 4:3 format as function of FUNCTION signal voltage levels.

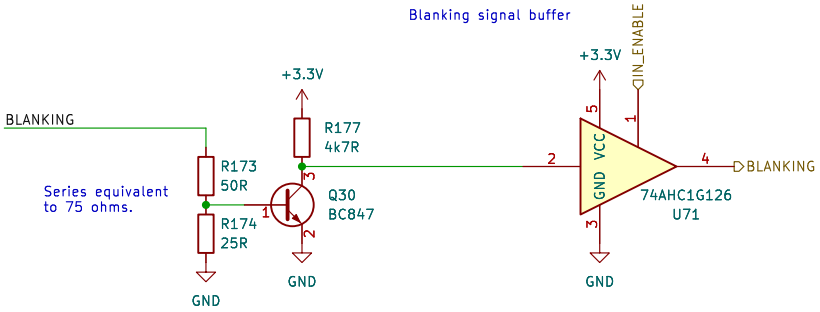
FNC_IN1	FNC_IN2	VIDEO_4_3
0V	0V	3.3V
0V	3.3V	0V
3.3V	0V	0V
3.3V	3.3V	0V

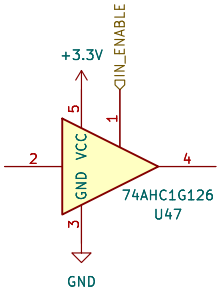
Video input active detection (*2)



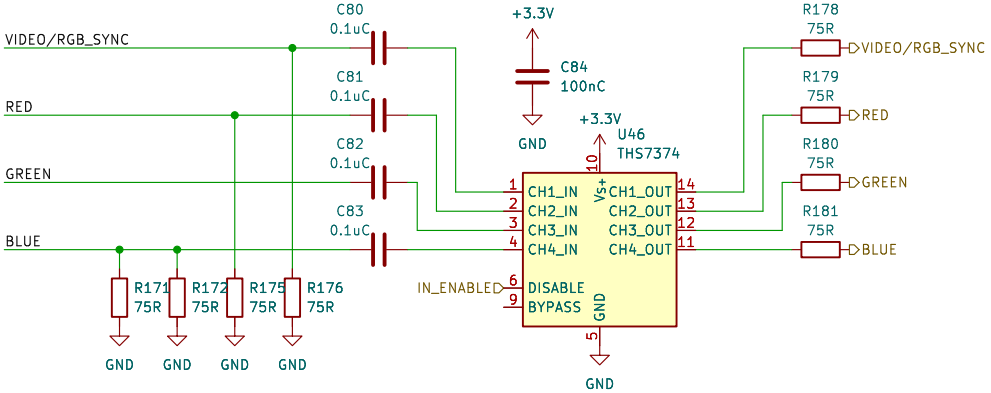


Blanking signal buffer





Video signals buffer



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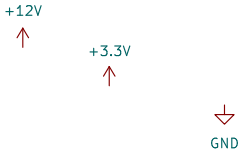
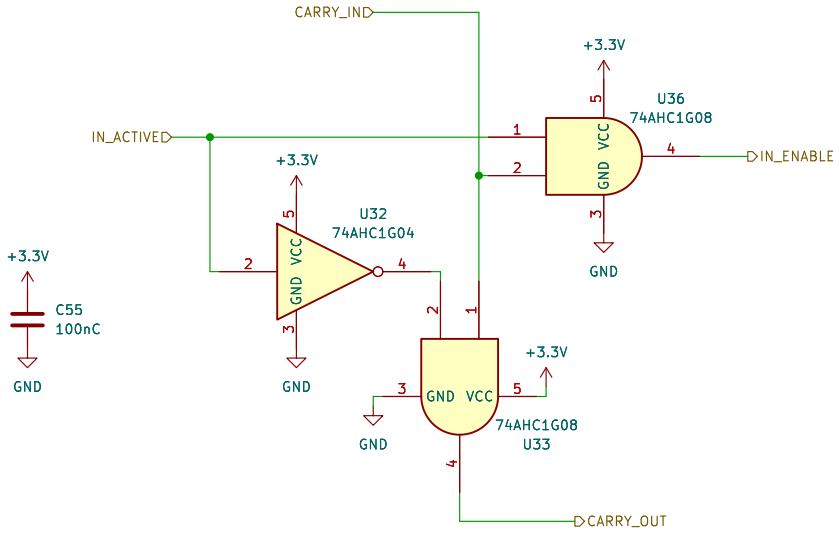
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 13/24



Sheet: /Power/
File: power.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 14/24



Sheet: /Priority Encoder/Priority Level 1/		
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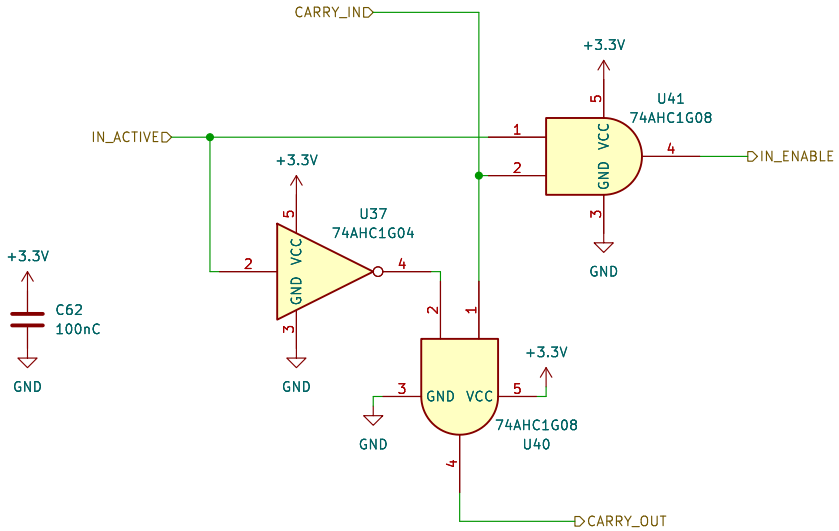
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 15/24



Sheet: /Priority Encoder/Priority Level 2/		
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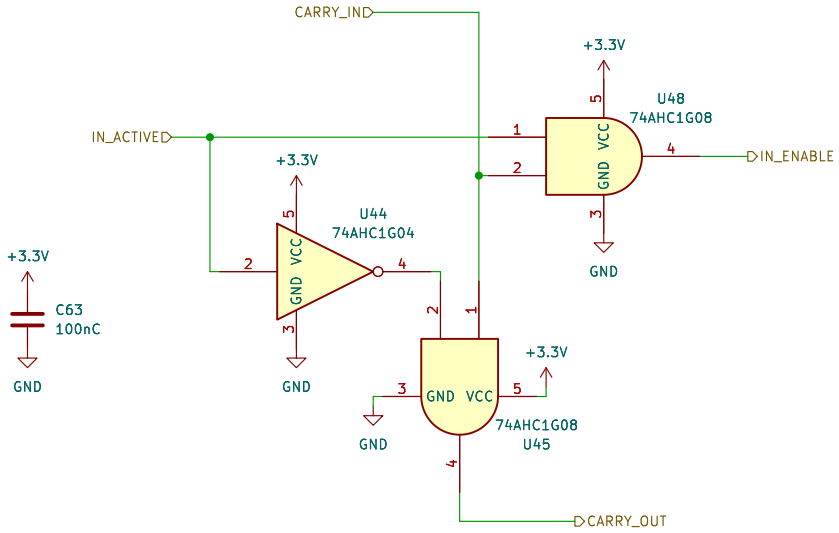
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 16/24



Sheet: /Priority Encoder/Priority Level 3/		
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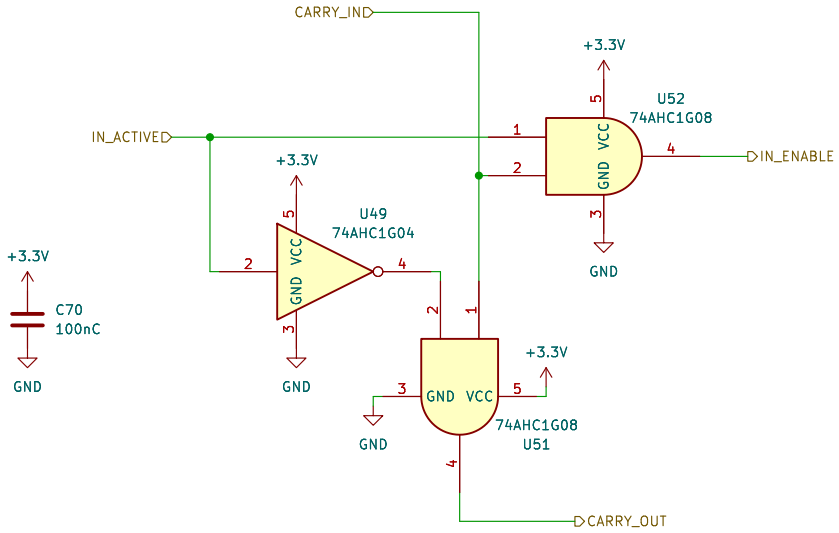
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 17/24



Sheet: /Priority Encoder/Priority Level 4/		
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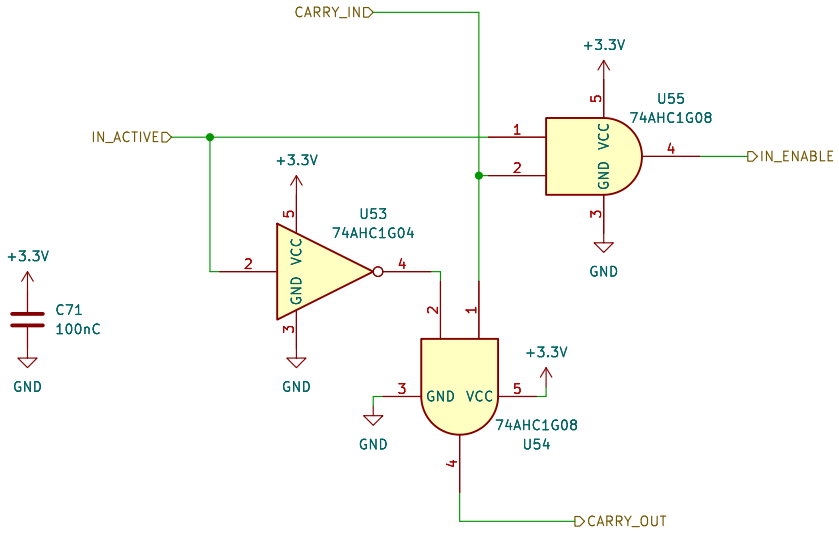
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 18/24



Sheet: /Priority Encoder/Priority Level 5/		
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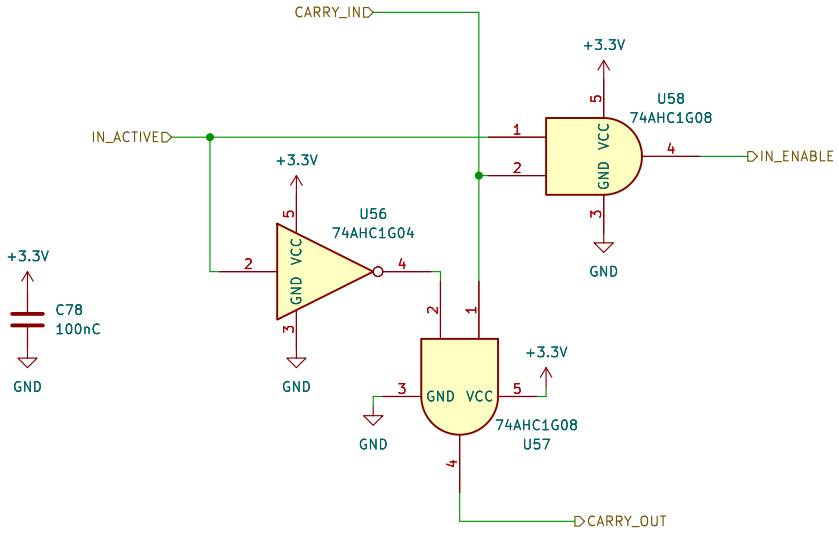
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 19/24



Sheet: /Priority Encoder/Priority Level 6/		
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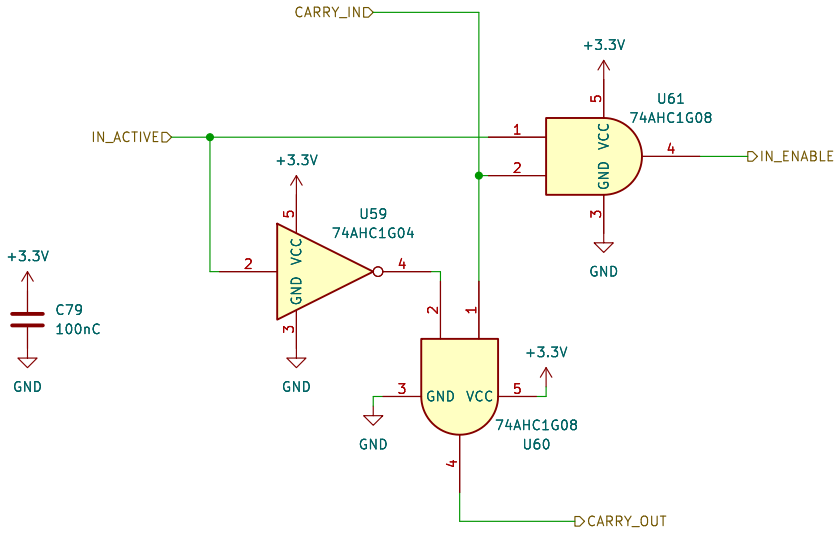
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 20/24



Sheet: /Priority Encoder/Priority Level 7/		
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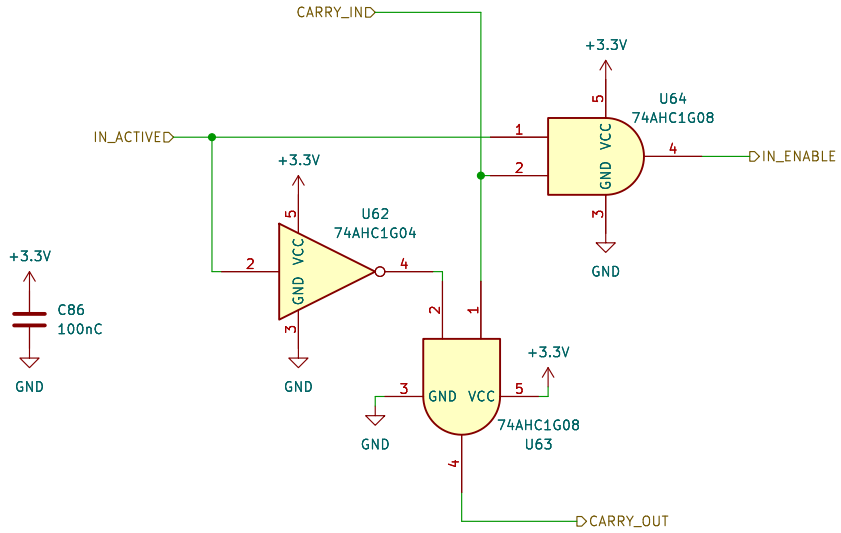
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 21/24



Sheet: /Priority Encoder/Priority Level 8/		
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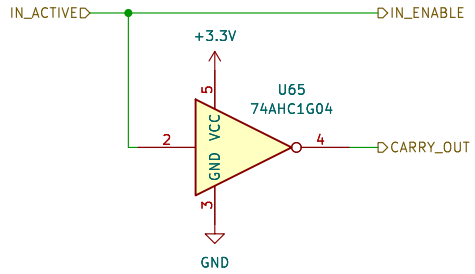
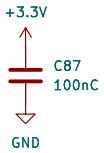
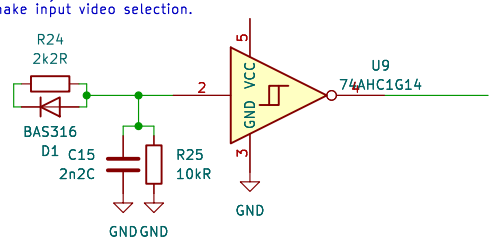
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 22/24





Dead time delay to allow for break
before make input video selection.

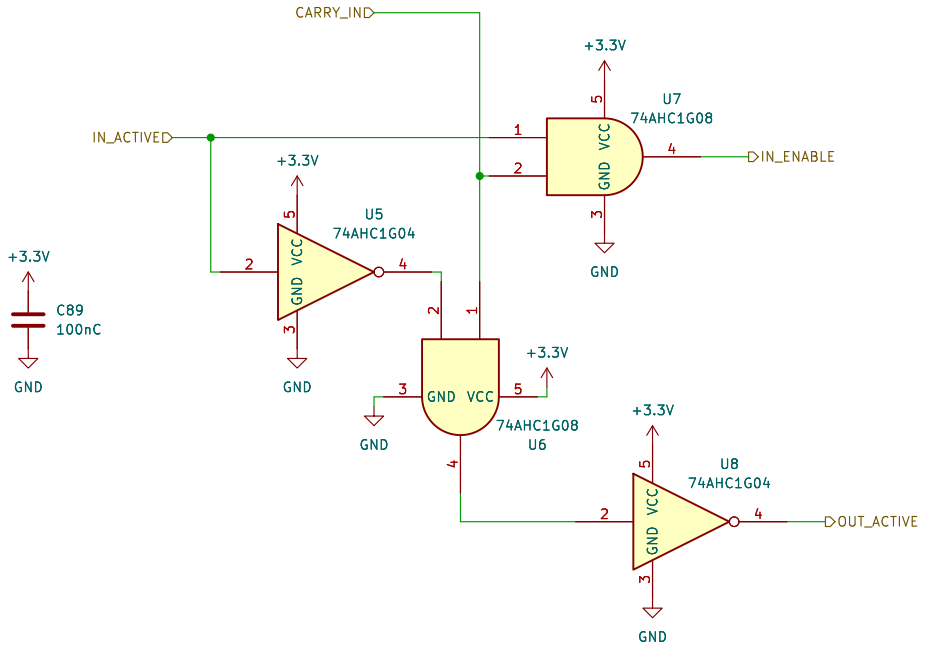


tbd: add delay to the enable case such that "break before make"
type of behaviour is built.

Sheet: /Priority Encoder/Priority Level 0/
File: priority_level_start.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 23/24



Sheet: /Priority Encoder/Priority Level 9/
File: priority_level_end.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.7		Id: 24/24