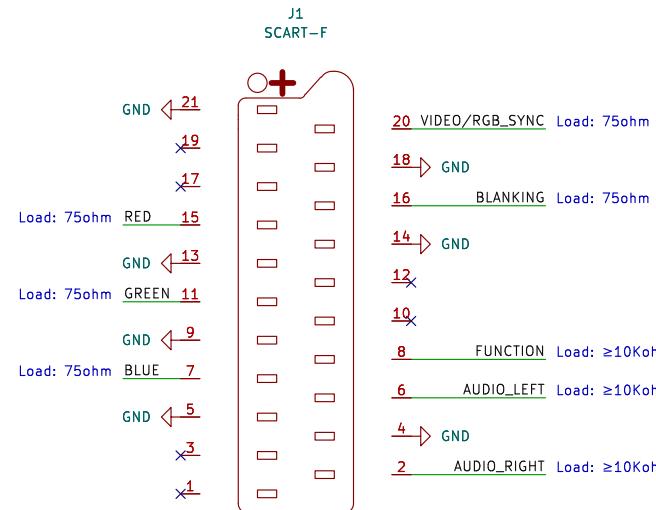
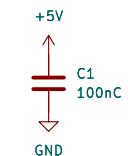
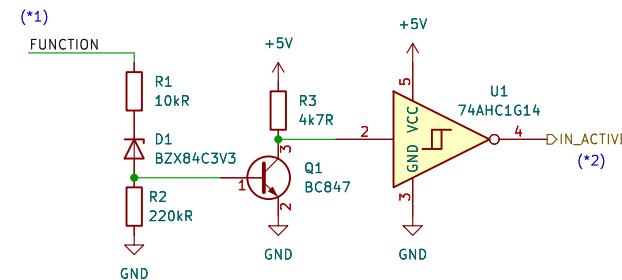


A

SCART input

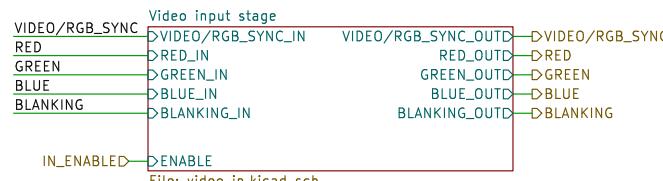


Video input signaling

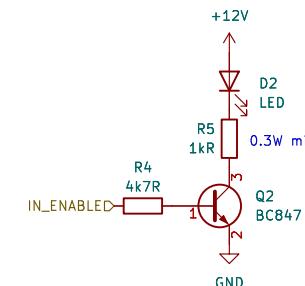


B

Audio and Video input stages with enable circuitry



Input active indicator



(*1) FUNCTION pin has the following signaling:

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)

The circuit doesn't distinguish between levels 1A and 1B as these are frequently not respected in consumer products. This way it is simpler to default to 4:3 format and if needed manually adjust the TV to 16:9.

(*2) The IN_ACTIVE signal flags the existence of an active video source (FUNCTION voltage levels 1A and 1B).

Sheet: /SCART input 1/

File: SCART_input.kicad_sch

Title:

Size: A4 Date:

KiCad E.D.A. kicad 7.0.9

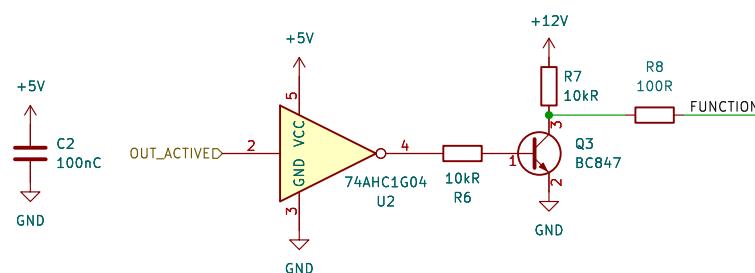
Rev:

Id: 2/46

A

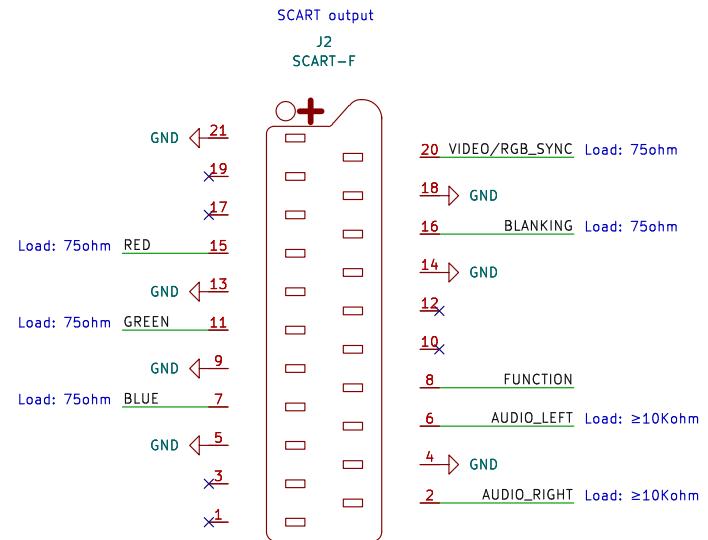
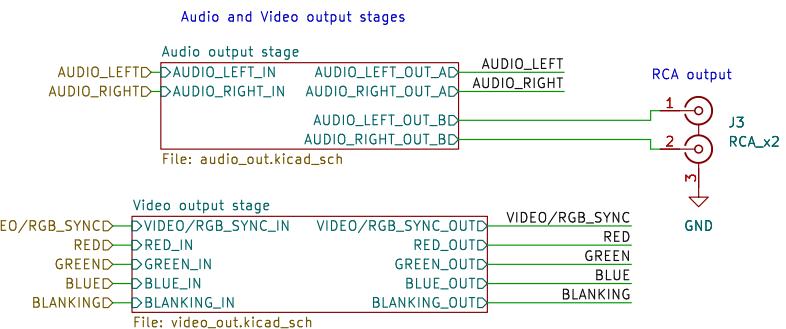
The signals FNC_IN1 and FNC_IN2 are input to the level conversion circuit of the SCART function selection control to generate the appropriate signal levels. When the voltage levels of both the first input terminal FNC_IN1 and the second input terminal FNC_IN2 are 3.3V, the output voltage of the output 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).

B



C

D

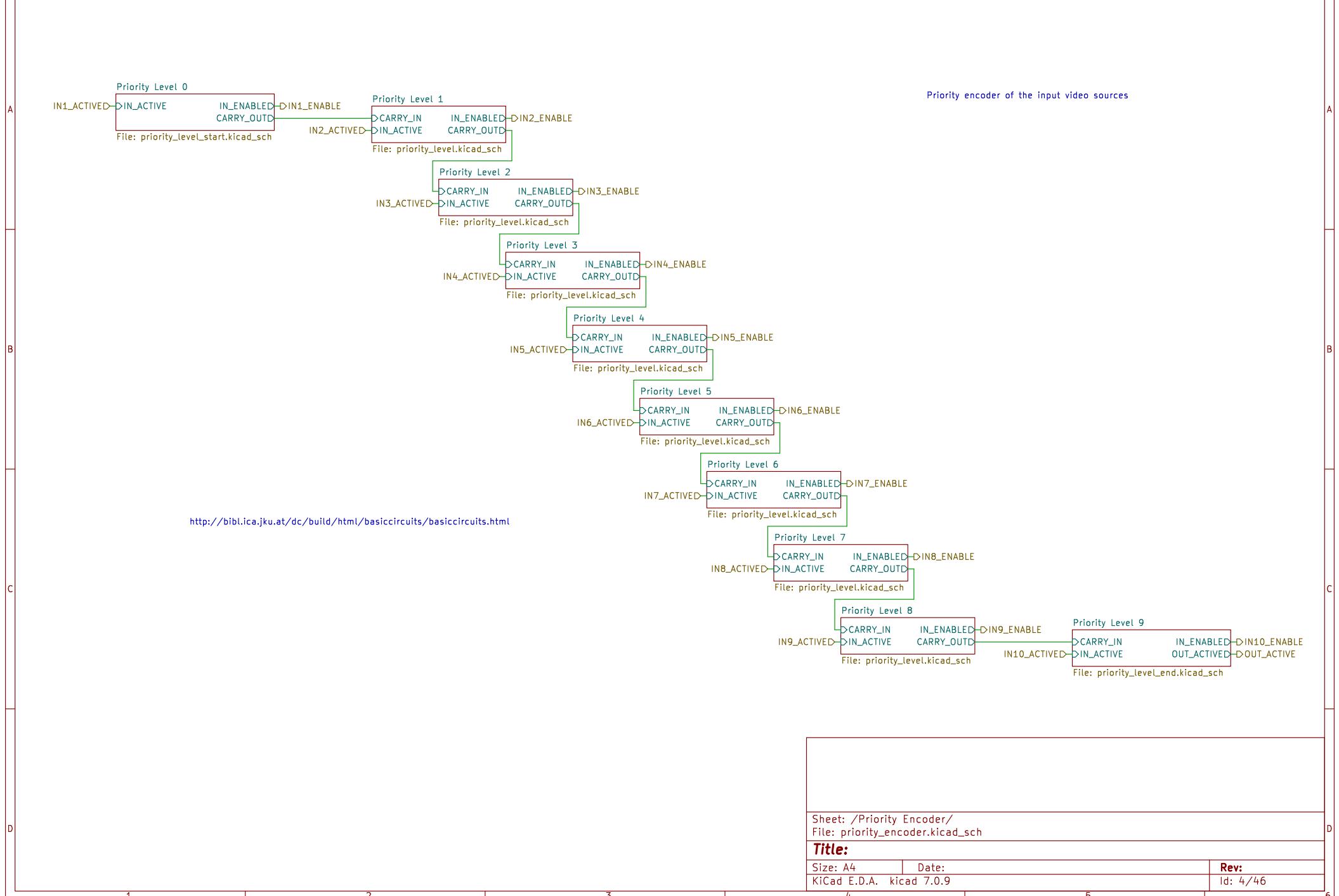


Sheet: /SCART_output/
File: SCART_output.kicad_sch

Title:

Size: A4	Date:
KiCad E.D.A.	kicad 7.0.9

Rev:	Id: 3/46
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A

B

C

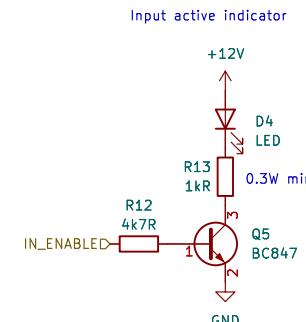
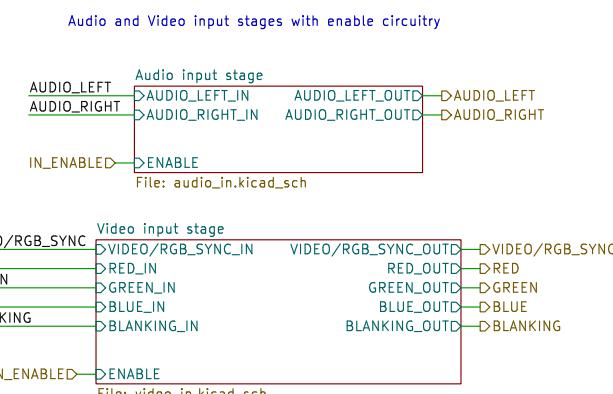
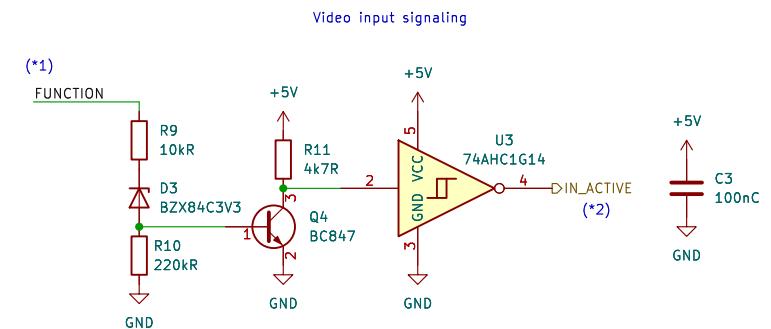
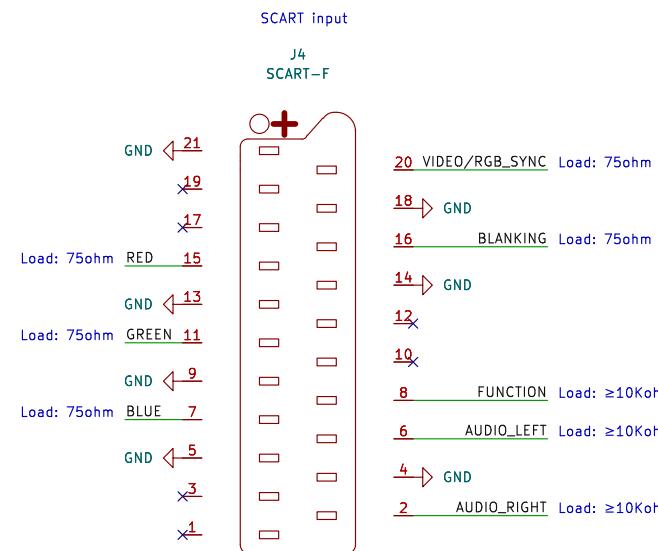
D

A

B

C

D



(*)1) FUNCTION pin has the following signaling:
 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)

The circuit doesn't distinguish between levels 1A and 1B as these are frequently not respected in consumer products. This way it is simpler to default to 4:3 format and if needed manually adjust the TV to 16:9.

(*)2) The IN_ACTIVE signal flags the existence of an active video source (FUNCTION voltage levels 1A and 1B).

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

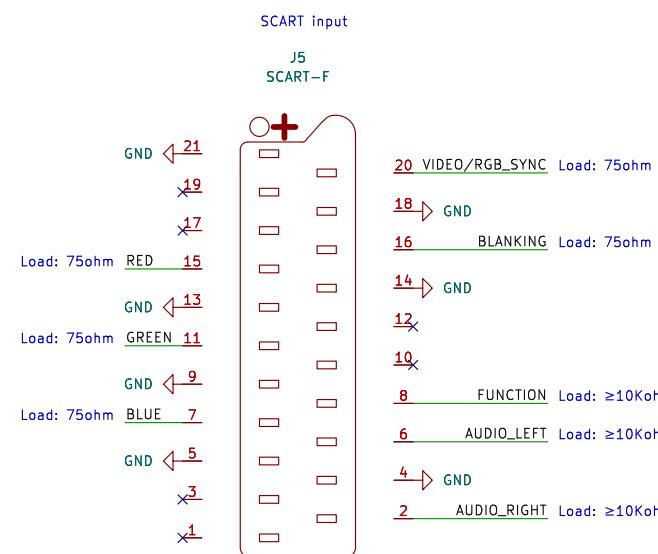
Title:

Size: A4 Date:
 KiCad E.D.A. kicad 7.0.9

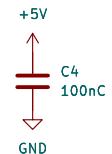
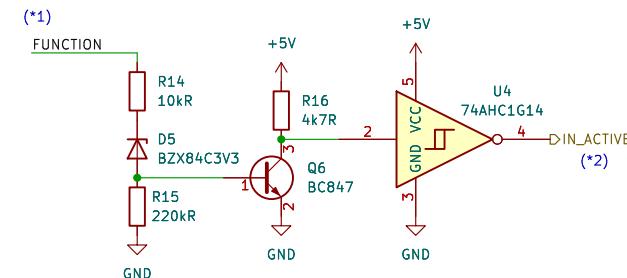
Rev:
 Id: 5/46

1 2 3 4 5 6

A



Video input signaling

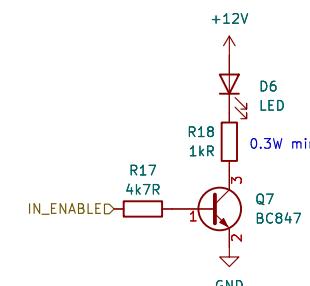


B

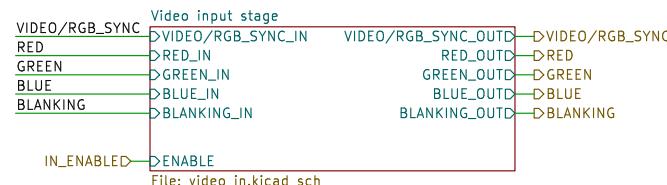
Audio and Video input stages with enable circuitry



Input active indicator



C



(*1) FUNCTION pin has the following signaling:
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)

The circuit doesn't distinguish between levels 1A and 1B as these are frequently not respected in consumer products. This way it is simpler to default to 4:3 format and if needed manually adjust the TV to 16:9.

(*2) The IN_ACTIVE signal flags the existence of an active video source (FUNCTION voltage levels 1A and 1B).

Title:
Sheet: /SCART input 3/
File: SCART_input.kicad_sch

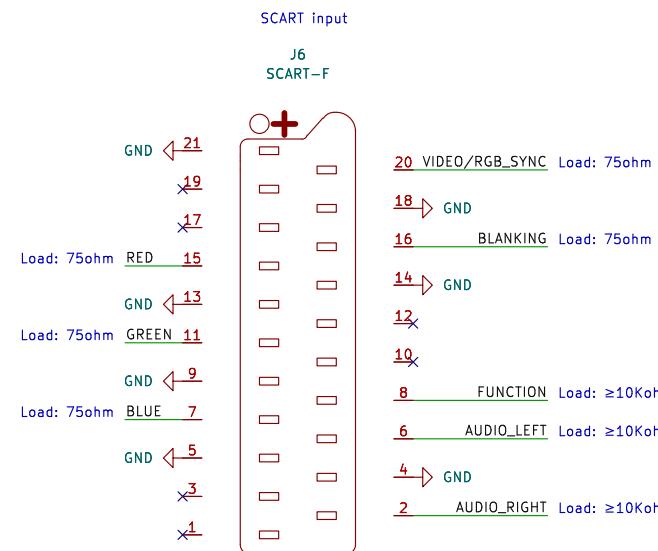
Rev:
Id: 6/46

D

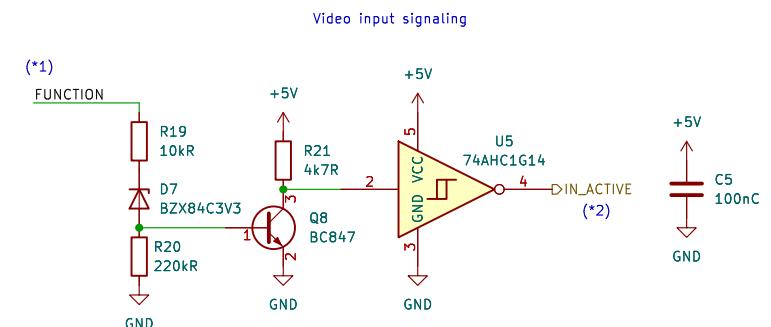
1 2 3 4 5 6

1 2 3 4 5 6

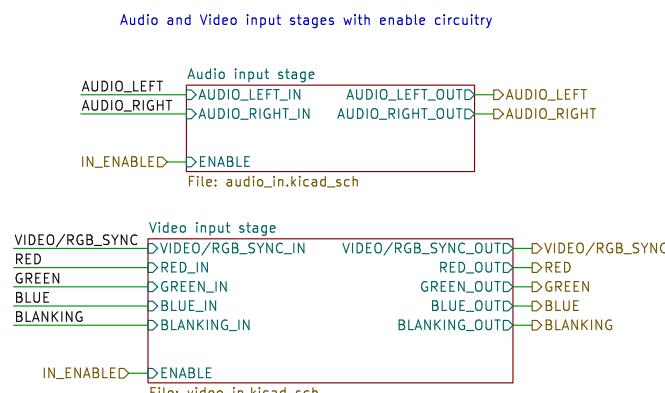
A



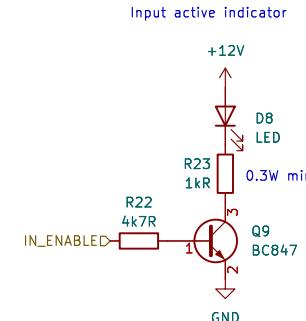
B



C



D



(*)1) FUNCTION pin has the following signaling:
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)

The circuit doesn't distinguish between levels 1A and 1B as these are frequently not respected in consumer products. This way it is simpler to default to 4:3 format and if needed manually adjust the TV to 16:9.

(*)2) The IN_ACTIVE signal flags the existence of an active video source (FUNCTION voltage levels 1A and 1B).

Title:
Sheet: /SCART input 4/
File: SCART_input.kicad_sch

Size: A4	Date:	Rev:
KiCad E.D.A.	kicad 7.0.9	Id: 7/46

1 2 3 4 5 6

A

B

C

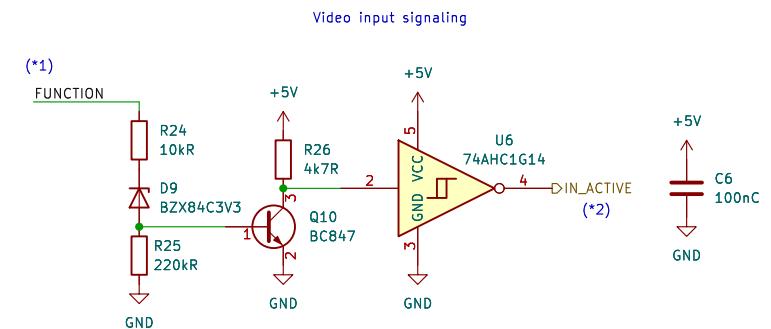
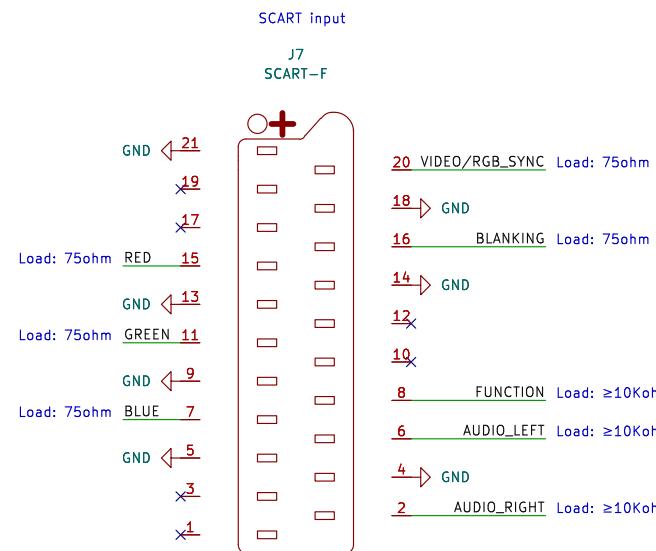
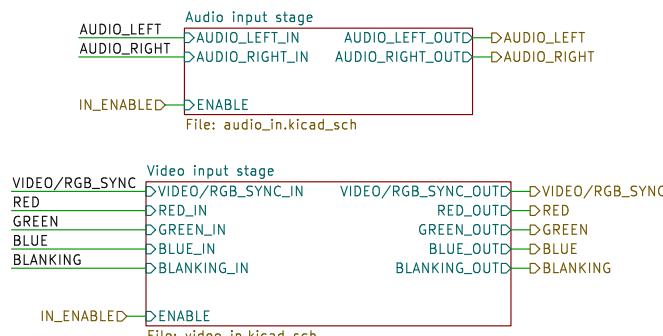
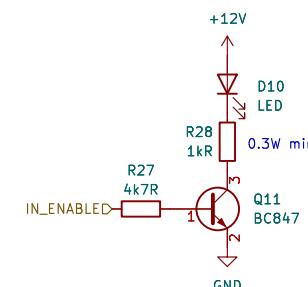
D

A

B

C

D

**Audio and Video input stages with enable circuitry****Input active indicator**

(1) FUNCTION pin has the following signaling:

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)

The circuit doesn't distinguish between levels 1A and 1B as these are frequently not respected in consumer products. This way it is simpler to default to 4:3 format and if needed manually adjust the TV to 16:9.

(2) The IN_ACTIVE signal flags the existence of an active video source (FUNCTION voltage levels 1A and 1B).

Sheet: /SCART input 5/

File: SCART_input.kicad_sch

Title:

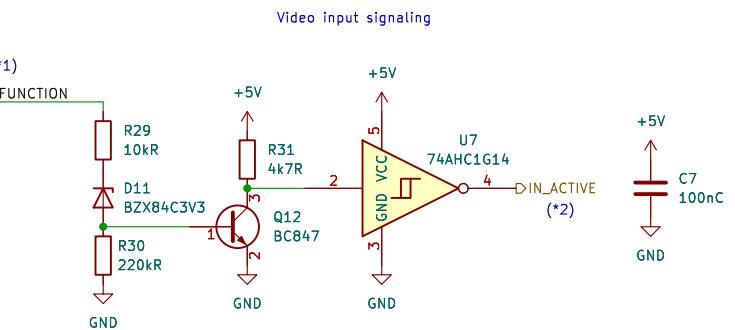
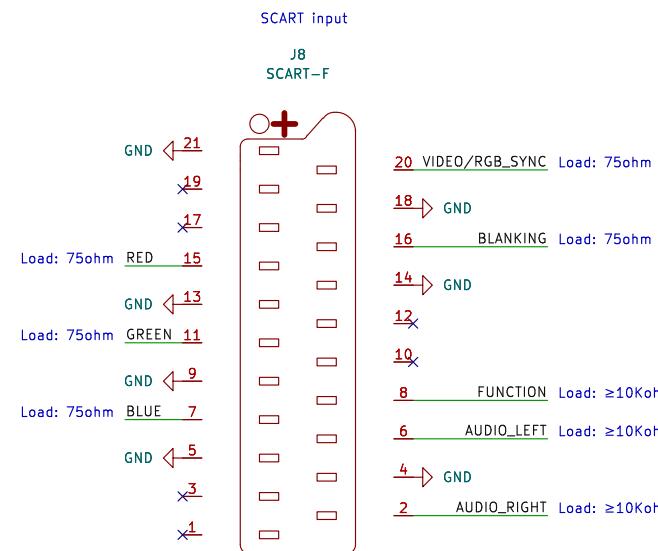
Size: A4 Date:

KiCad E.D.A. kicad 7.0.9

Rev:

Id: 8/46

A

(*1) FUNCTION pin has the following signaling:
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)

The circuit doesn't distinguish between levels 1A and 1B as these are frequently not respected in consumer products. This way it is simpler to default to 4:3 format and if needed manually adjust the TV to 16:9.

(*2) The IN_ACTIVE signal flags the existence of an active video source (FUNCTION voltage levels 1A and 1B).

Sheet: /SCART input 6/

File: SCART_input.kicad_sch

Title:

Size: A4 Date:

KiCad E.D.A. kicad 7.0.9

Rev:

Id: 9/46

B

B

B

B

C

C

C

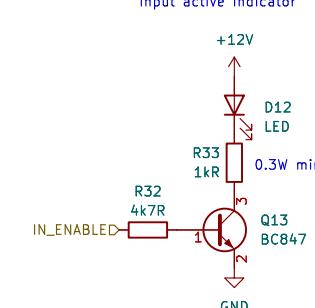
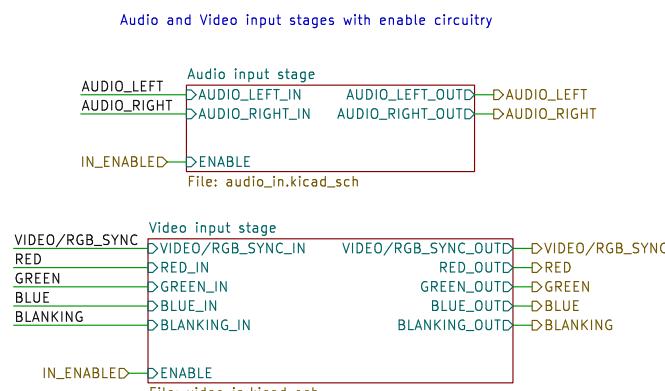
C

D

D

D

D



1

2

3

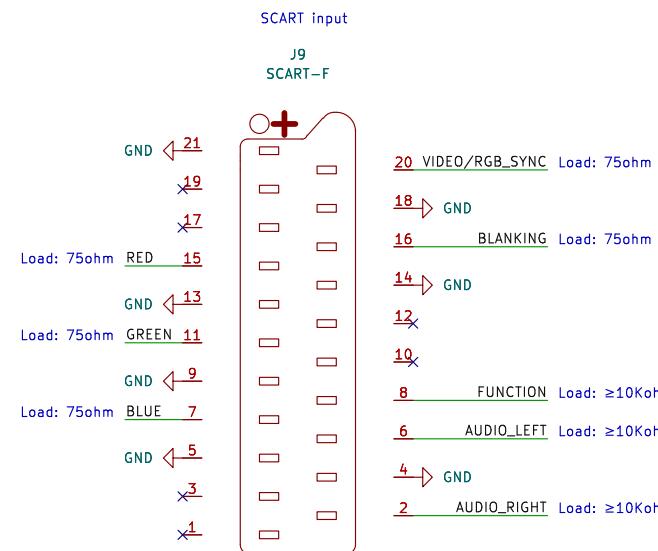
4

5

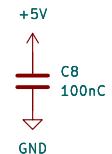
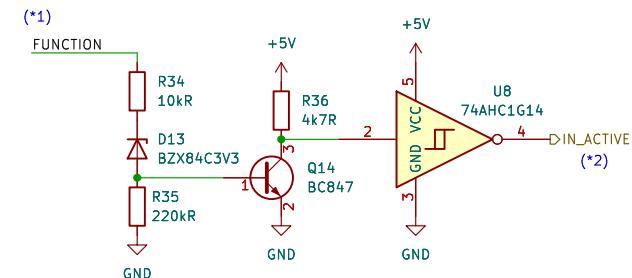
6

1 2 3 4 5 6

A

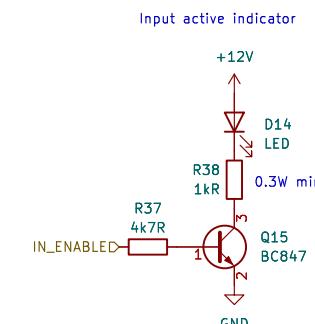
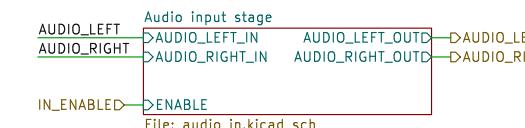


Video input signaling

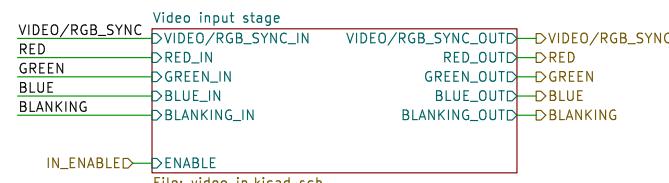


B

Audio and Video input stages with enable circuitry



C



(*1) FUNCTION pin has the following signaling:
 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)

The circuit doesn't distinguish between levels 1A and 1B as these are frequently not respected in consumer products. This way it is simpler to default to 4:3 format and if needed manually adjust the TV to 16:9.

(*2) The IN_ACTIVE signal flags the existence of an active video source (FUNCTION voltage levels 1A and 1B).

Title:
 Sheet: /SCART input 7/
 File: SCART_input.kicad_sch

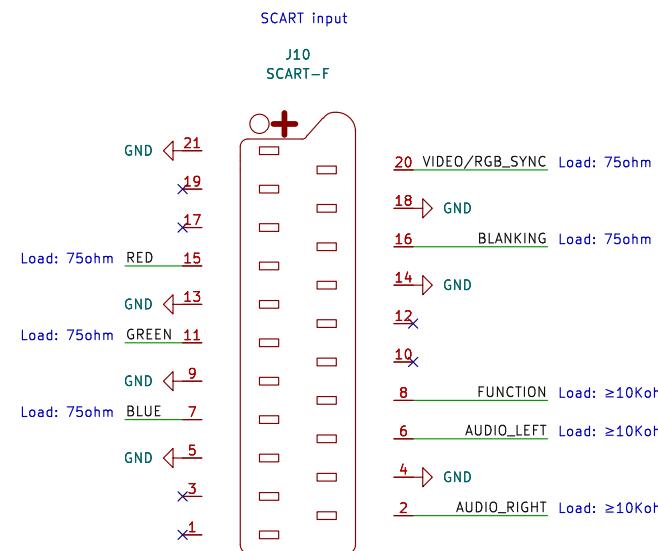
Rev:
 Id: 10/46

D

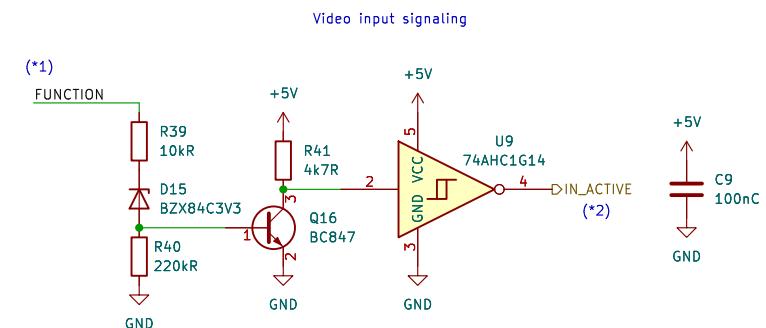
1 2 3 4 5 6

1 2 3 4 5 6

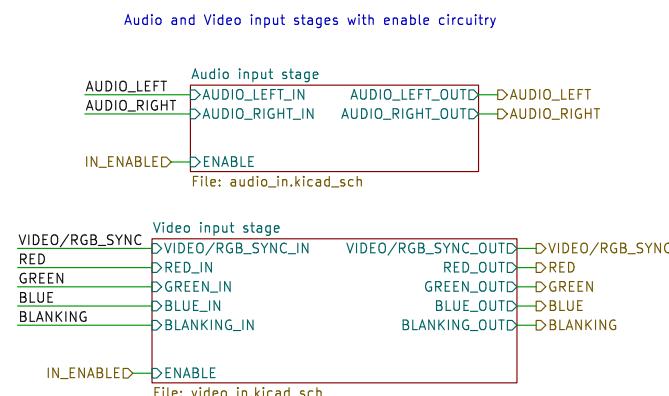
A



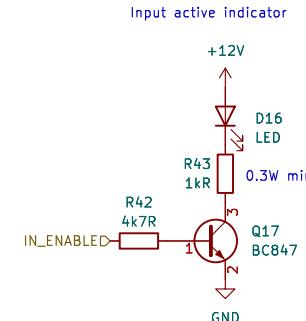
B



C



D



(*)1) FUNCTION pin has the following signaling:
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)
The circuit doesn't distinguish between levels 1A and 1B as these are frequently not respected in consumer products. This way it is simpler to default to 4:3 format and if needed manually adjust the TV to 16:9.
(*)2) The IN_ACTIVE signal flags the existence of an active video source (FUNCTION voltage levels 1A and 1B).

Sheet: /SCART input 8/
File: SCART_input.kicad_sch

Title:

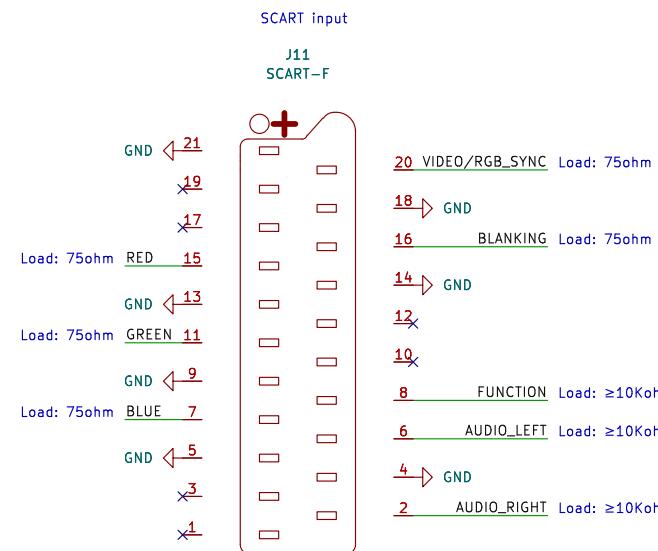
Size: A4 Date:
KiCad E.D.A. kicad 7.0.9

Rev:
Id: 11/46

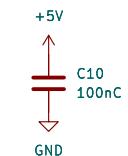
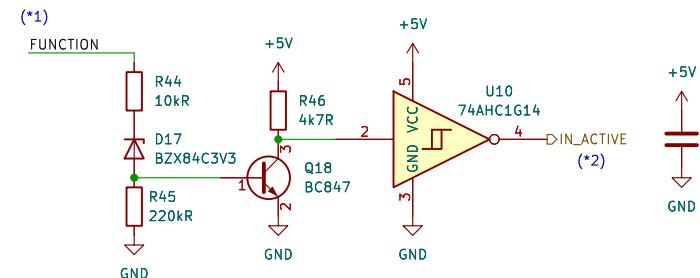
1 2 3 4 5 6

1 2 3 4 5 6

A

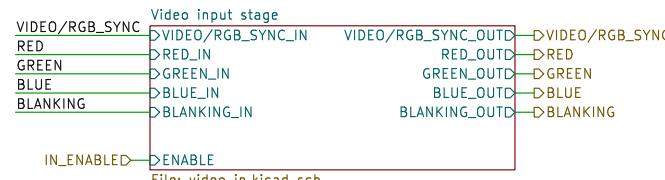
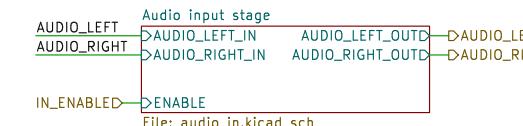


Video input signaling

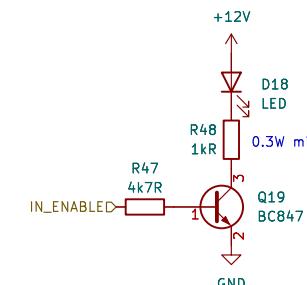


B

Audio and Video input stages with enable circuitry



Input active indicator



C

C

(*1) FUNCTION pin has the following signaling:
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)

The circuit doesn't distinguish between levels 1A and 1B as these are frequently not respected in consumer products. This way it is simpler to default to 4:3 format and if needed manually adjust the TV to 16:9.

(*2) The IN_ACTIVE signal flags the existence of an active video source (FUNCTION voltage levels 1A and 1B).

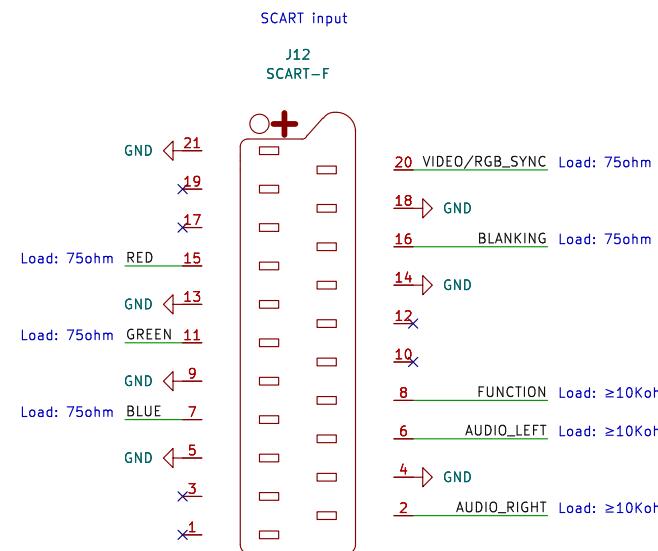
Title:
Sheet: /SCART input 9/
File: SCART_input.kicad_sch

Size: A4 Date:
Rev:
KiCad E.D.A. kicad 7.0.9
Id: 12/46

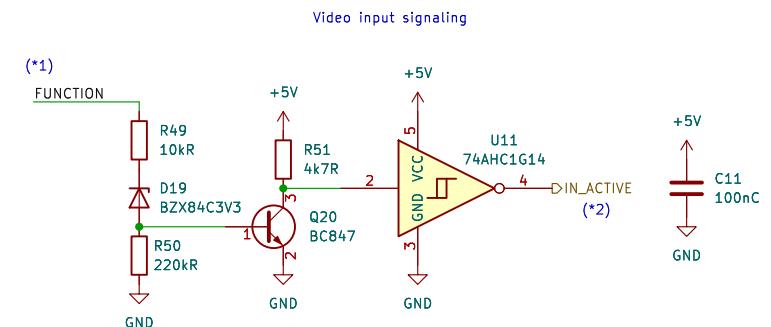
1 2 3 4 5 6

1 2 3 4 5 6

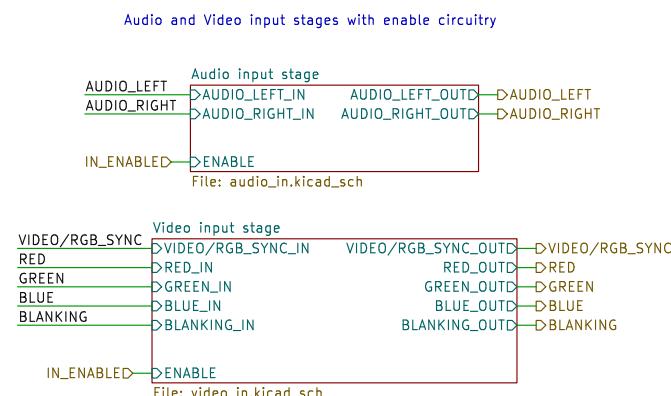
A



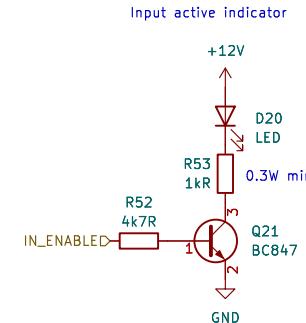
B



C



D



(*)1 FUNCTION pin has the following signaling:
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)

The circuit doesn't distinguish between levels 1A and 1B as these are frequently not respected in consumer products. This way it is simpler to default to 4:3 format and if needed manually adjust the TV to 16:9.

(*)2 The IN_ACTIVE signal flags the existence of an active video source (FUNCTION voltage levels 1A and 1B).

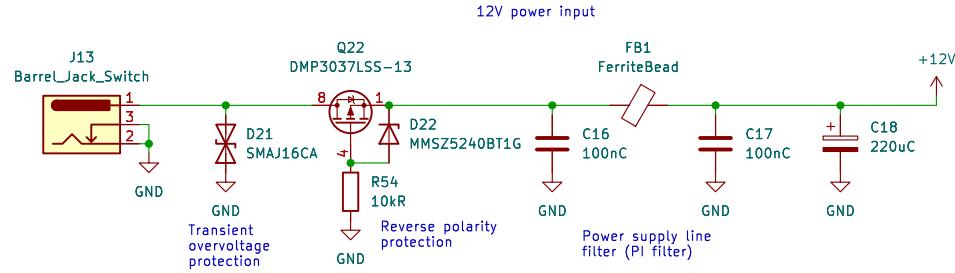
Title:
Sheet: /SCART input 10/
File: SCART_input.kicad_sch

Size: A4	Date:	Rev:
KiCad E.D.A.	kicad 7.0.9	Id: 13/46

1 2 3 4 5 6

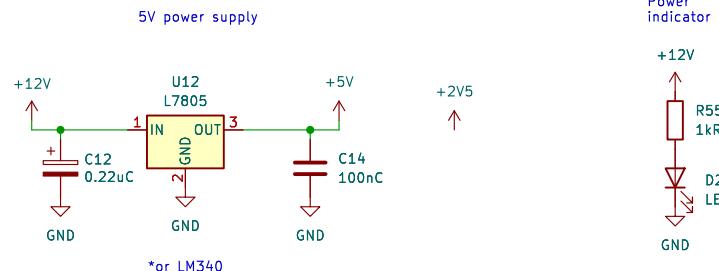
A

A



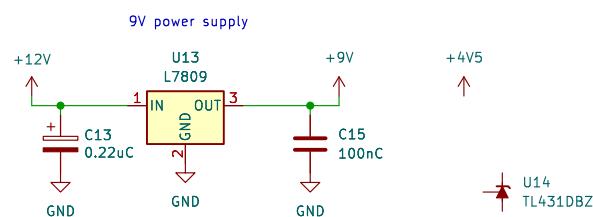
B

B



C

C



D

D

Sheet: /Power/
File: power.kicad_sch

Title:

Size: A4 Date:

KiCad E.D.A. kicad 7.0.9

Rev:

Id: 14/46

1 2 3 4 5 6

A

A

B

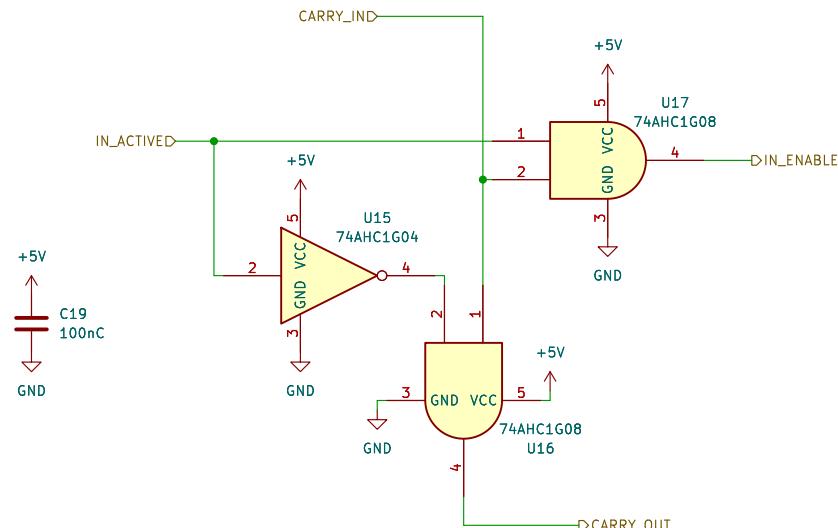
B

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C

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D



Sheet: /Priority Encoder/Priority Level 1/
File: priority_level.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. kicad 7.0.9

Rev:
Id: 15/46

1 2 3 4 5 6

1 2 3 4 5 6

A

A

B

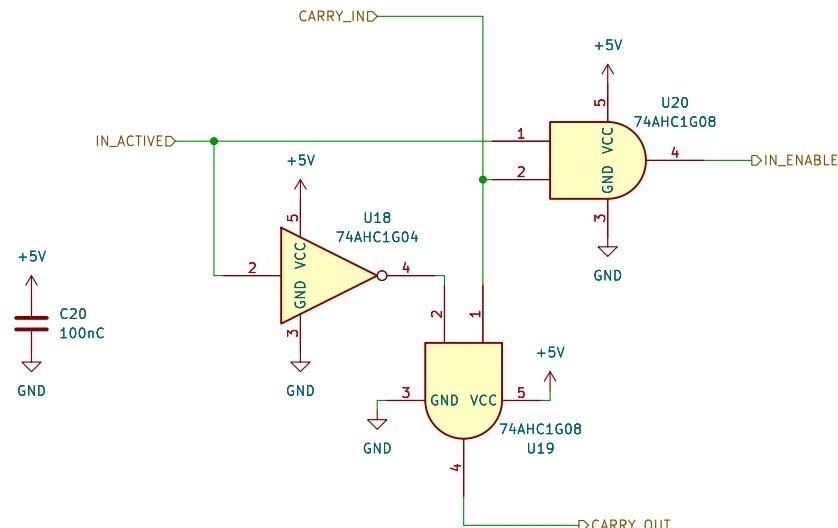
B

C

C

D

D



Sheet: /Priority Encoder/Priority Level 2/
File: priority_level.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. kicad 7.0.9

Rev:
Id: 16/46

1 2 3 4 5 6

1 2 3 4 5 6

A

A

B

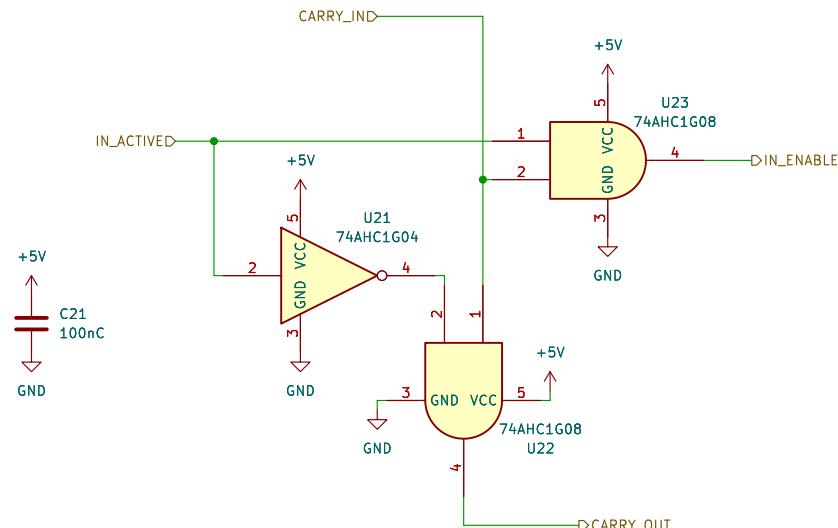
B

C

C

D

D



Sheet: /Priority Encoder/Priority Level 3/
File: priority_level.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. kicad 7.0.9

Rev:
Id: 17/46

1 2 3 4 5 6

1 2 3 4 5 6

A

A

B

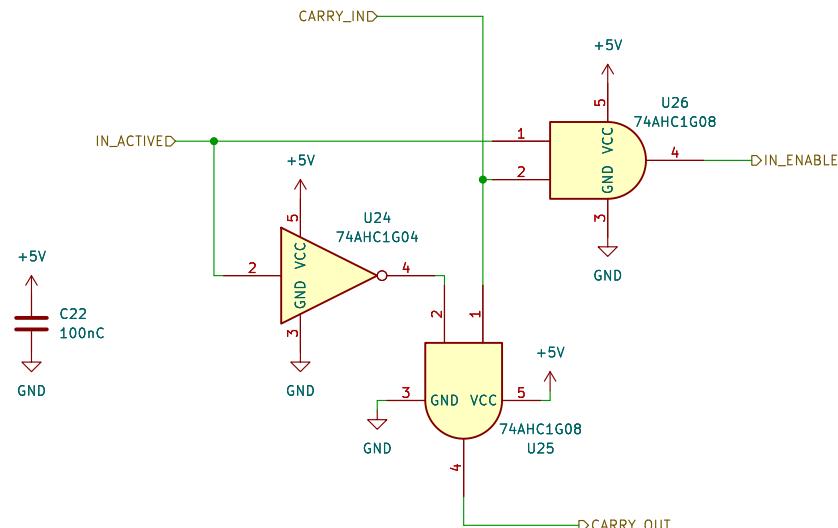
B

C

C

D

D



Sheet: /Priority Encoder/Priority Level 4/
File: priority_level.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. kicad 7.0.9

Rev:
Id: 18/46

1 2 3 4 5 6

1 2 3 4 5 6

A

A

B

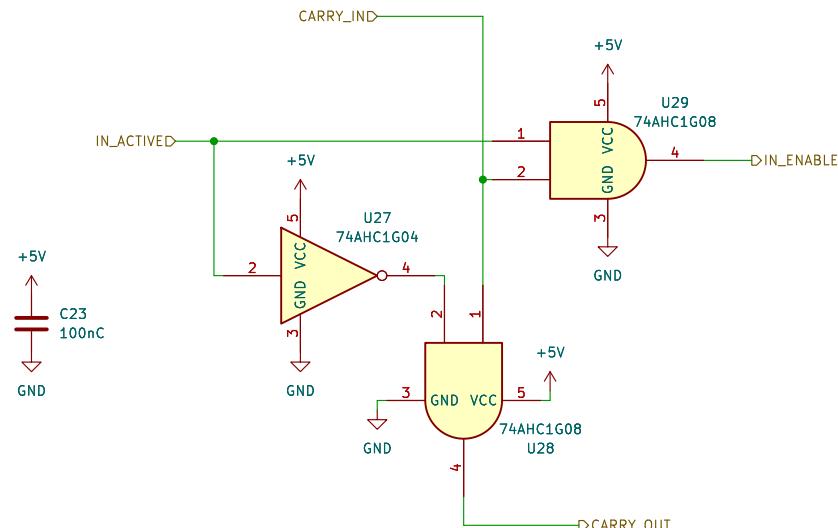
B

C

C

D

D



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Size: A4 | Date:
KiCad E.D.A. kicad 7.0.9

Rev:
Id: 19/46

1 2 3 4 5 6

1 2 3 4 5 6

A

A

B

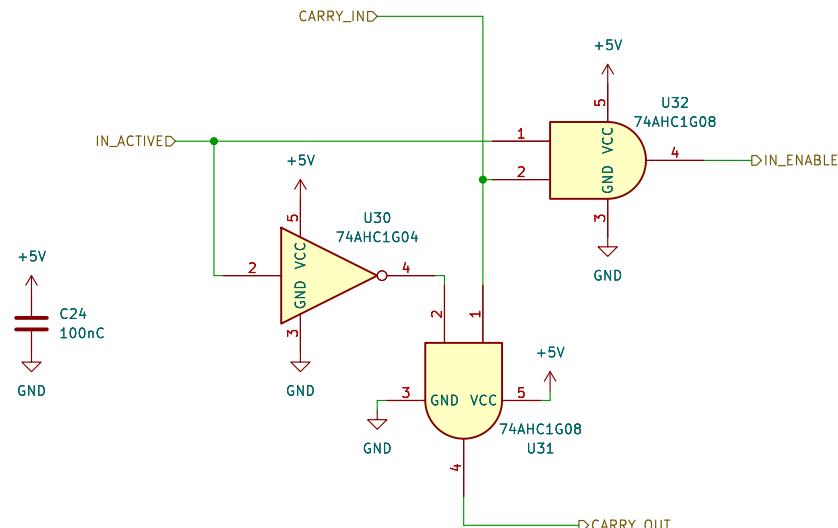
B

C

C

D

D



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Rev:
Id: 20/46

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1 2 3 4 5 6

A

A

B

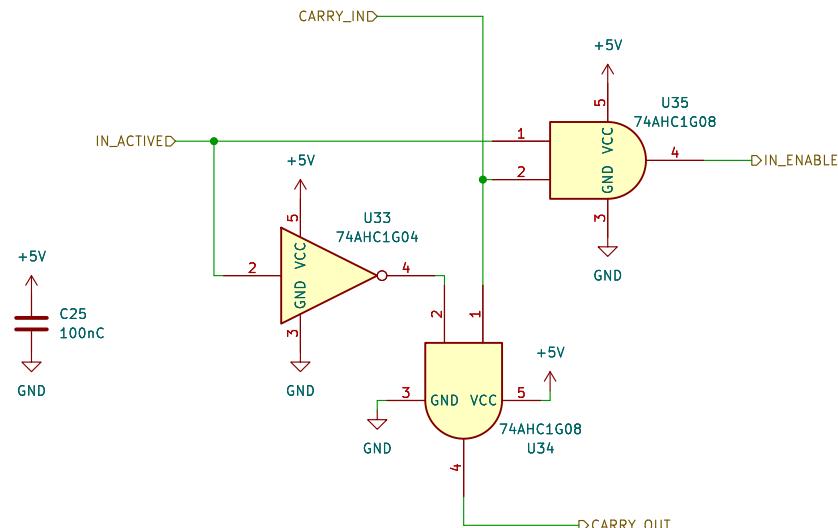
B

C

C

D

D



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Rev:
Id: 21/46

1 2 3 4 5 6

1 2 3 4 5 6

A

A

B

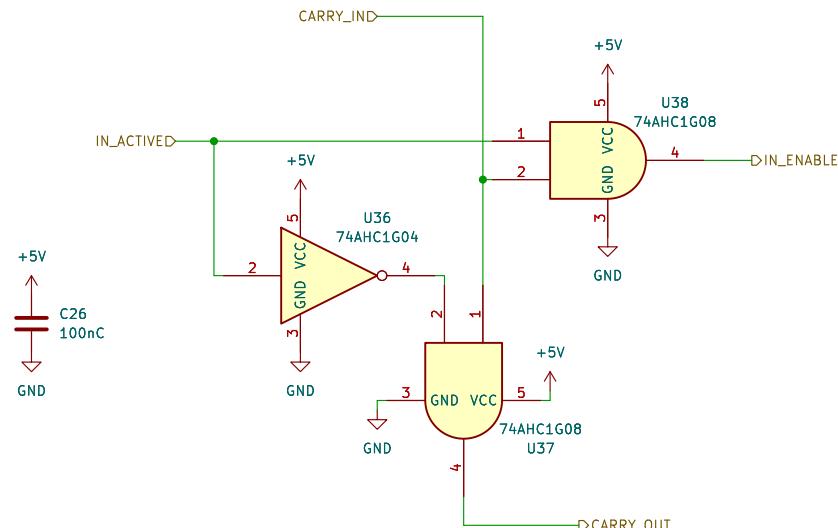
B

C

C

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D



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Rev:
Id: 22/46

1 2 3 4 5 6

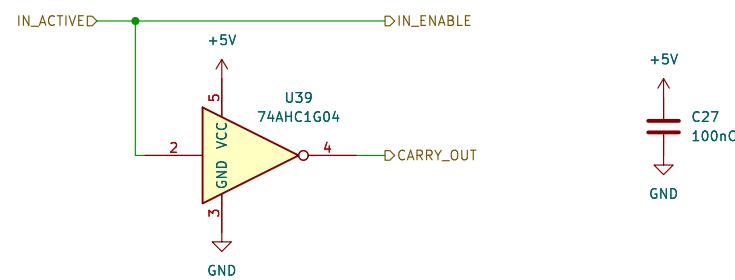
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A

B

C

D



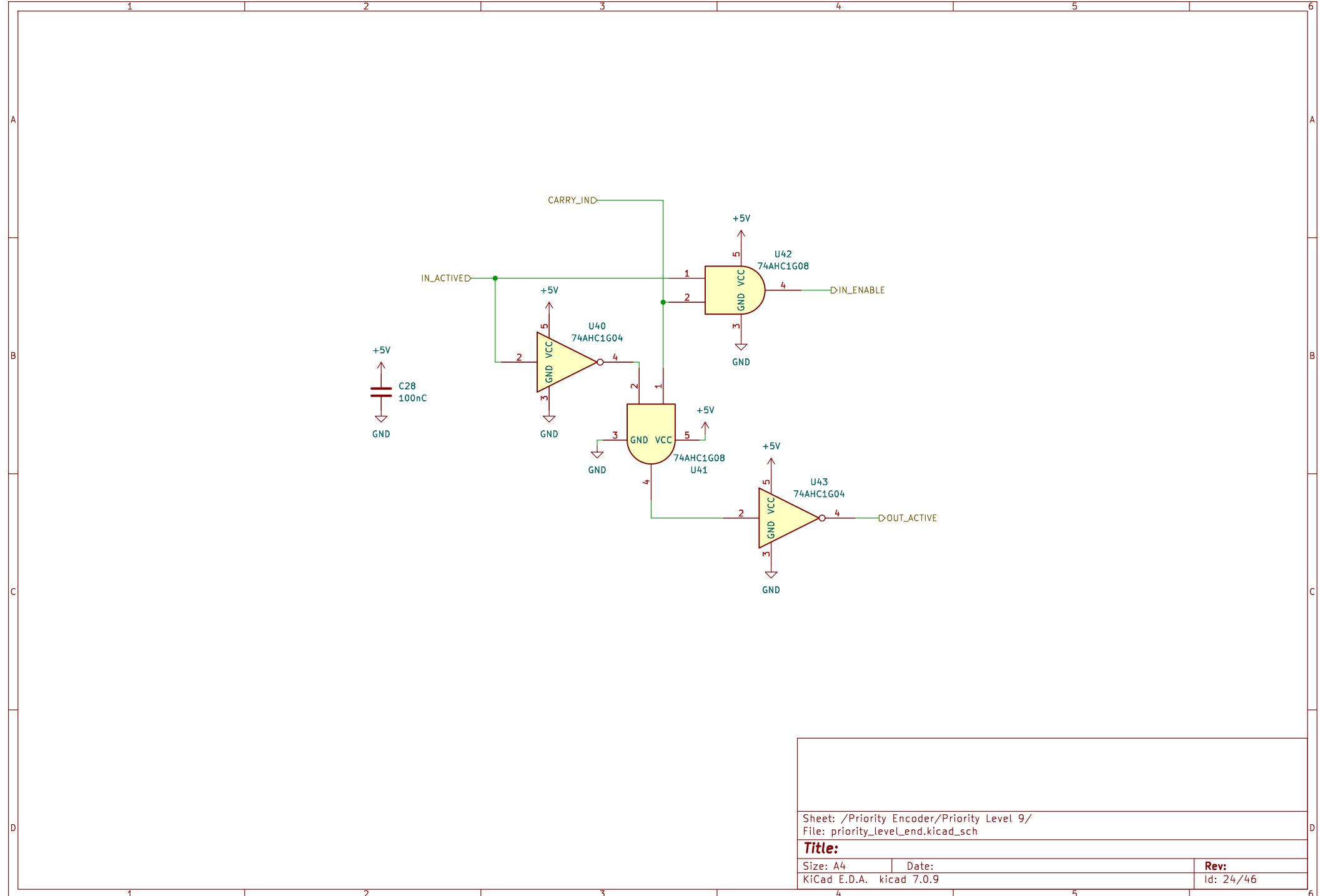
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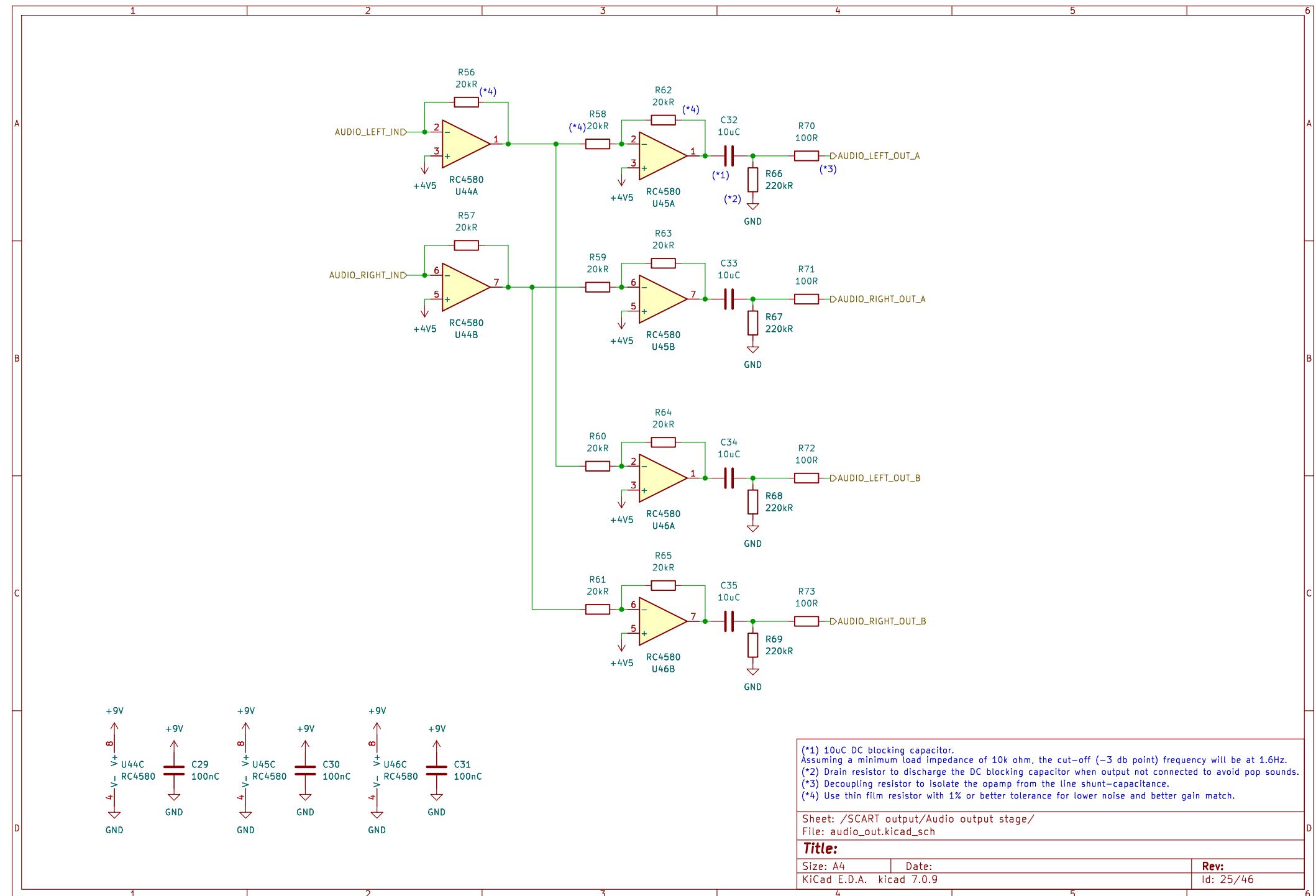
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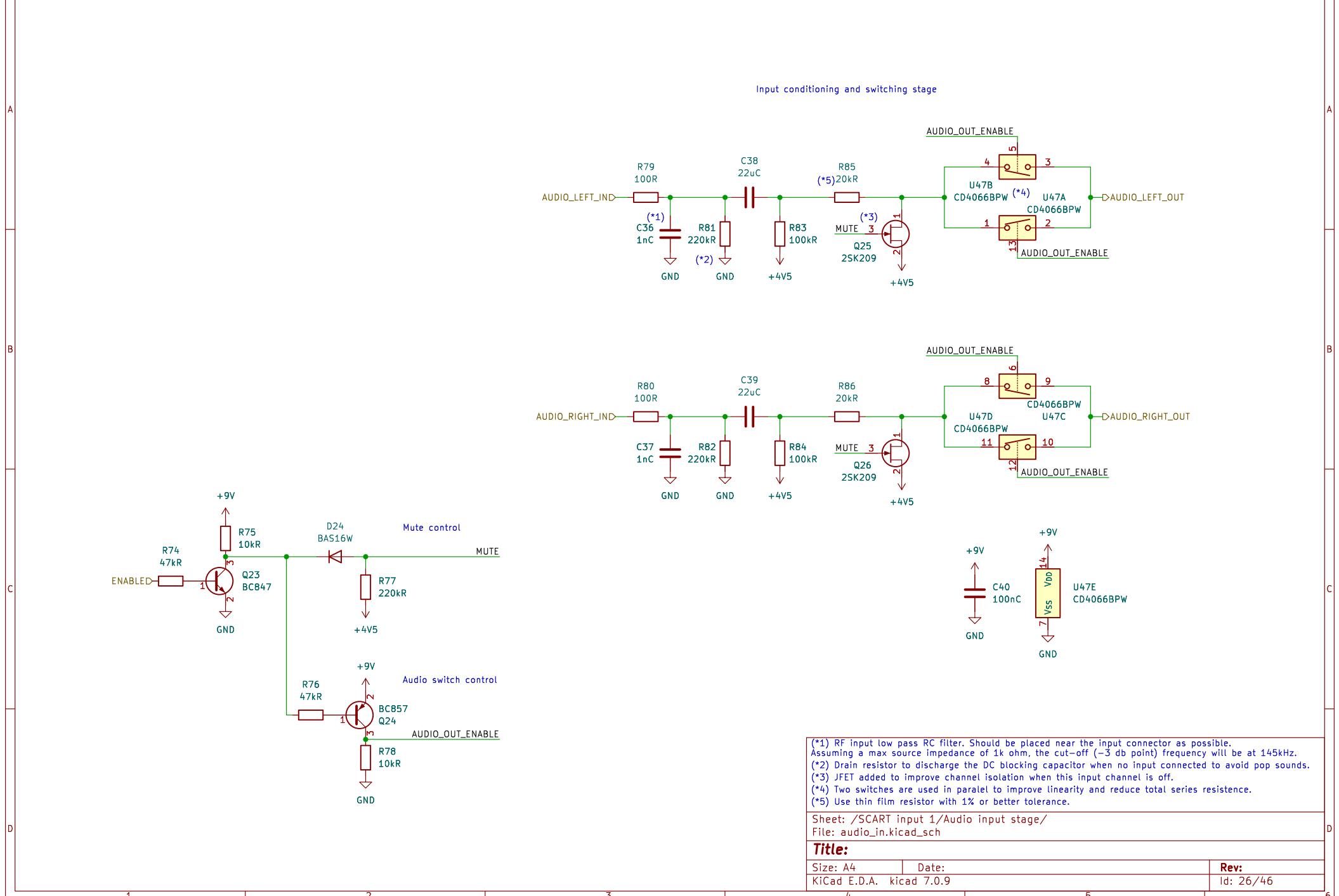
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Id: 23/46

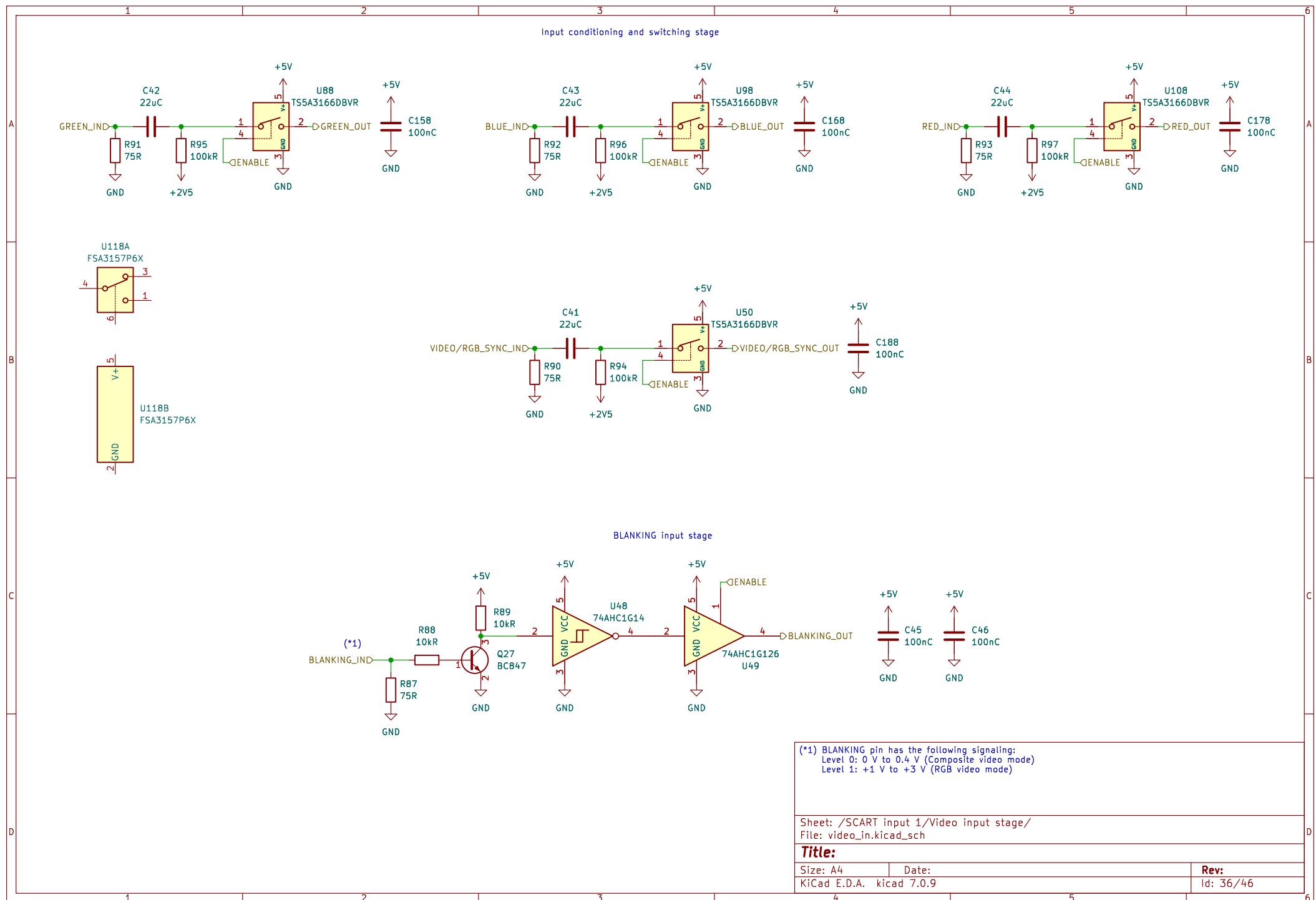
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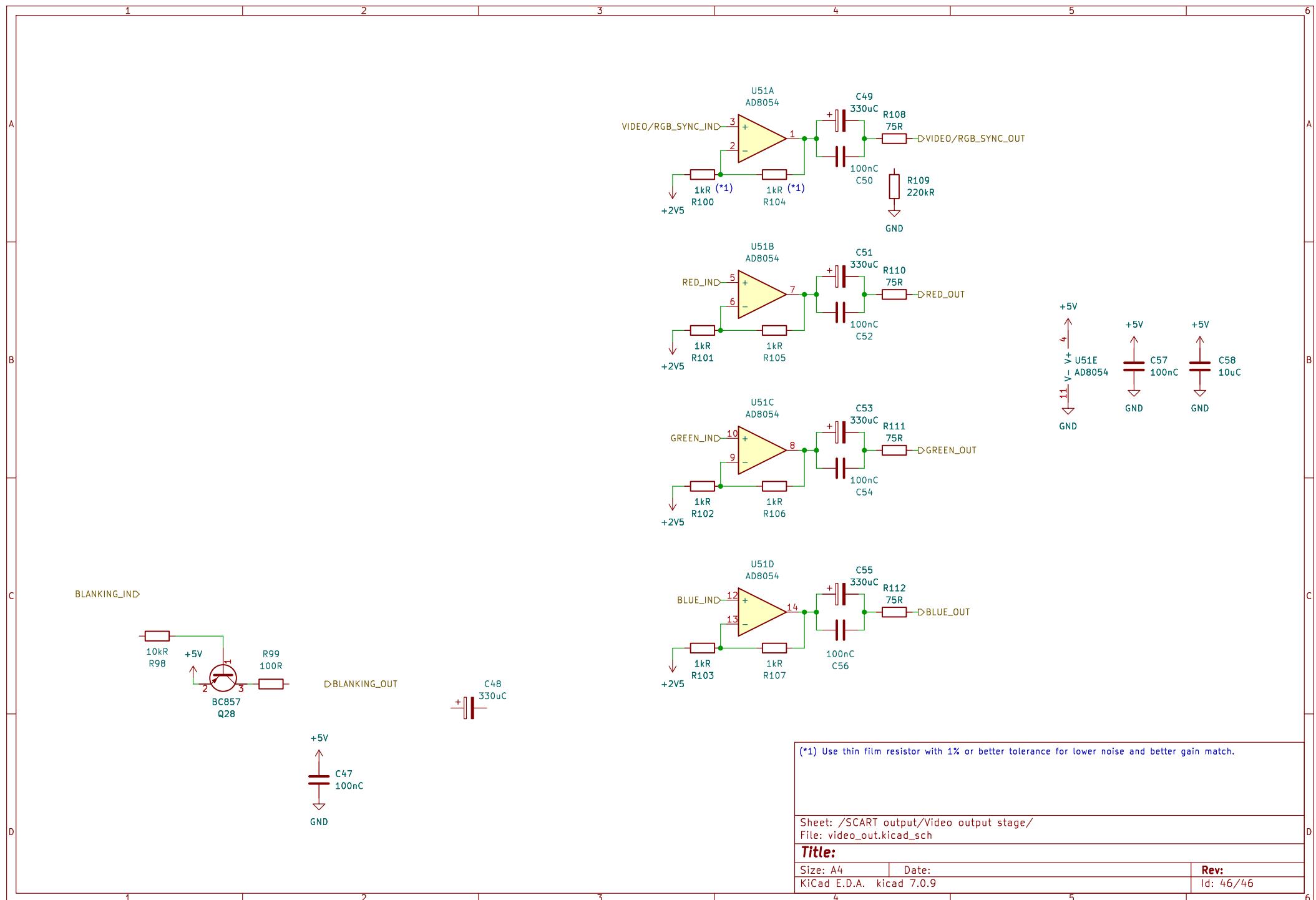


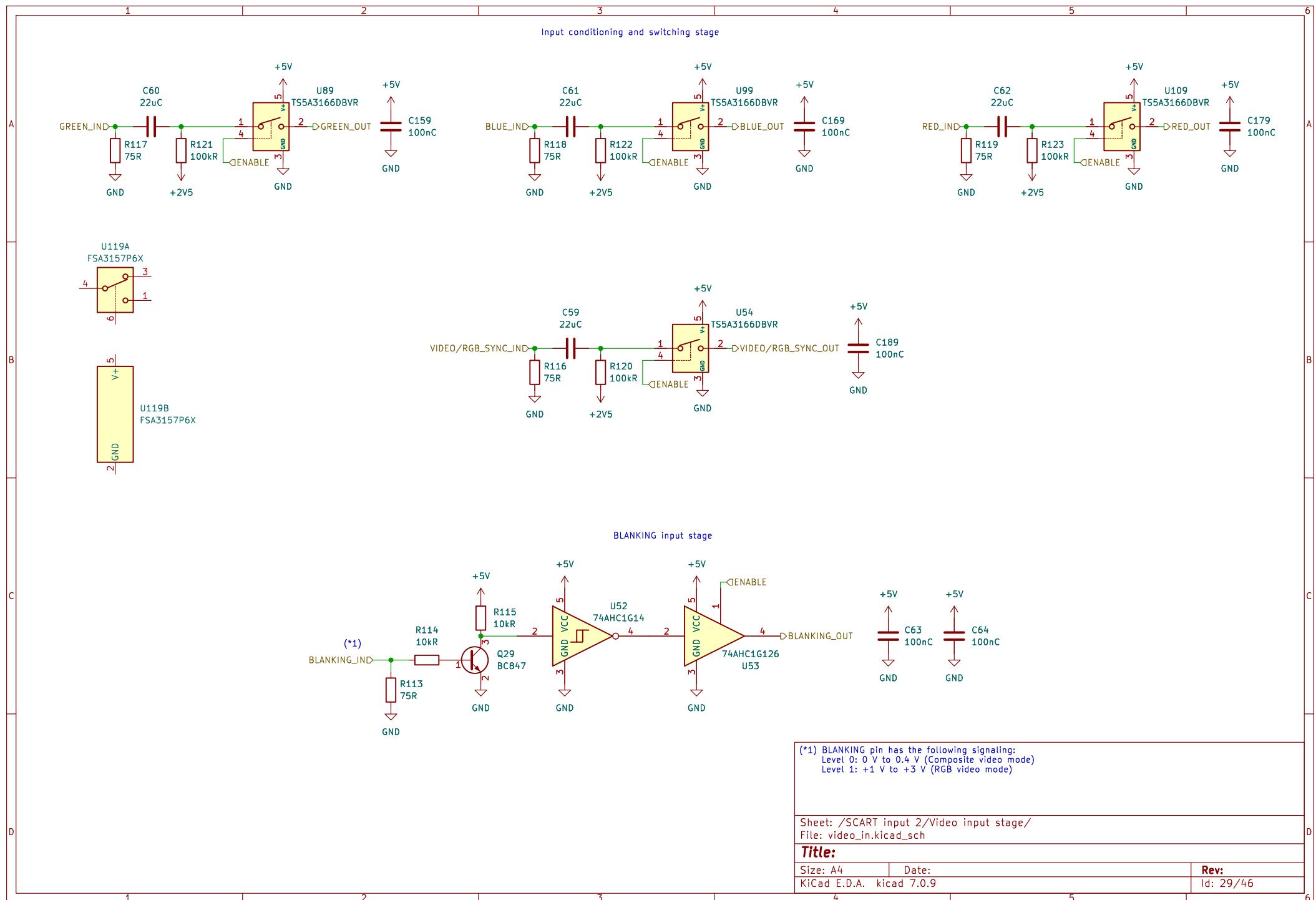


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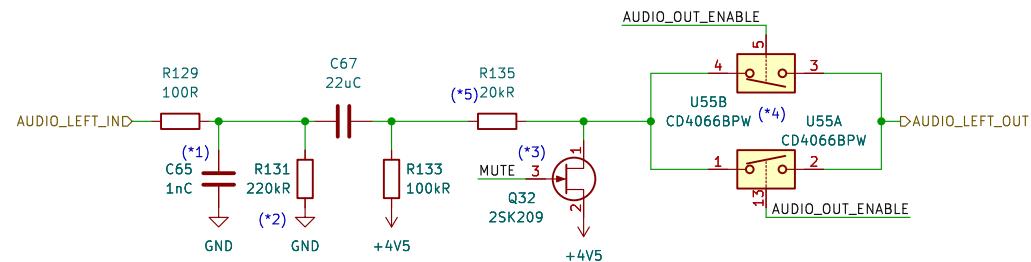


1 2 3 4 5 6

A

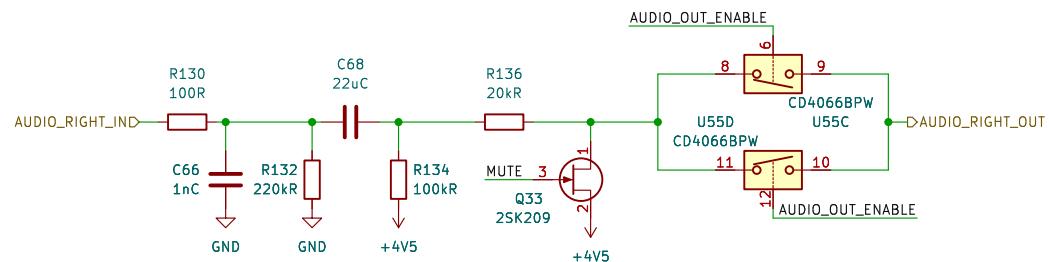
A

Input conditioning and switching stage



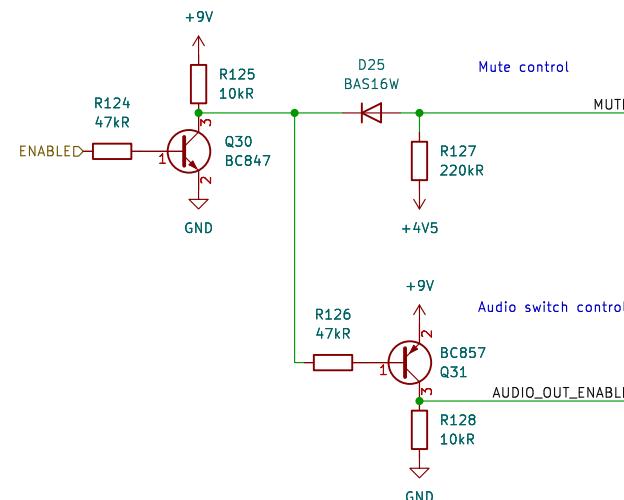
B

B



C

C



D

D

- (*)1 RF input low pass RC filter. Should be placed near the input connector as possible.
- (*)2 Assuming a max source impedance of 1k ohm, the cut-off (-3 db point) frequency will be at 145kHz.
- (*)3 Drain resistor to discharge the DC blocking capacitor when no input connected to avoid pop sounds.
- (*)4 Two switches are used in parallel to improve linearity and reduce total series resistance.
- (*)5 Use thin film resistor with 1% or better tolerance.

Sheet: /SCART input 2/ Audio input stage/

File: audio_in.kicad_sch

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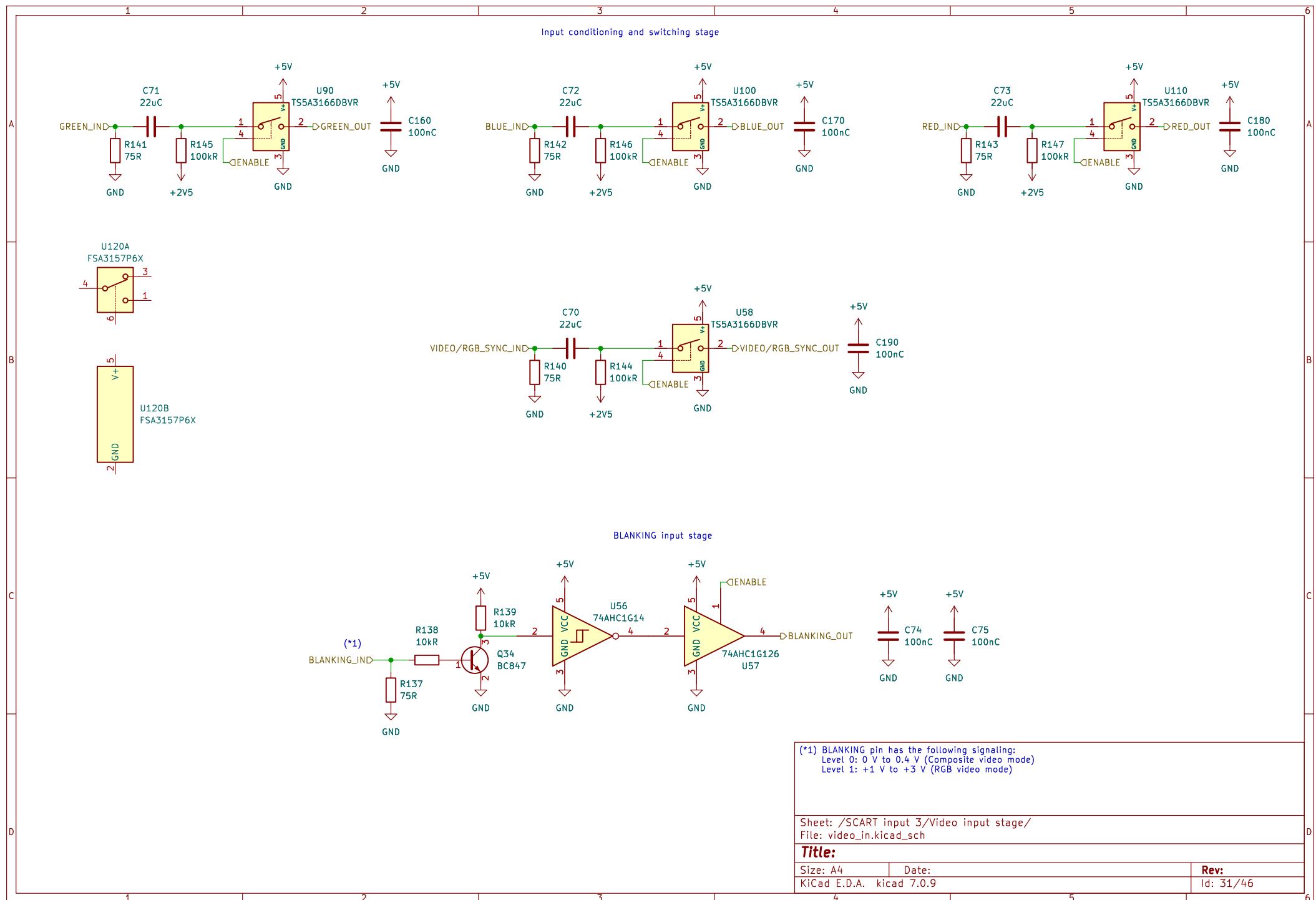
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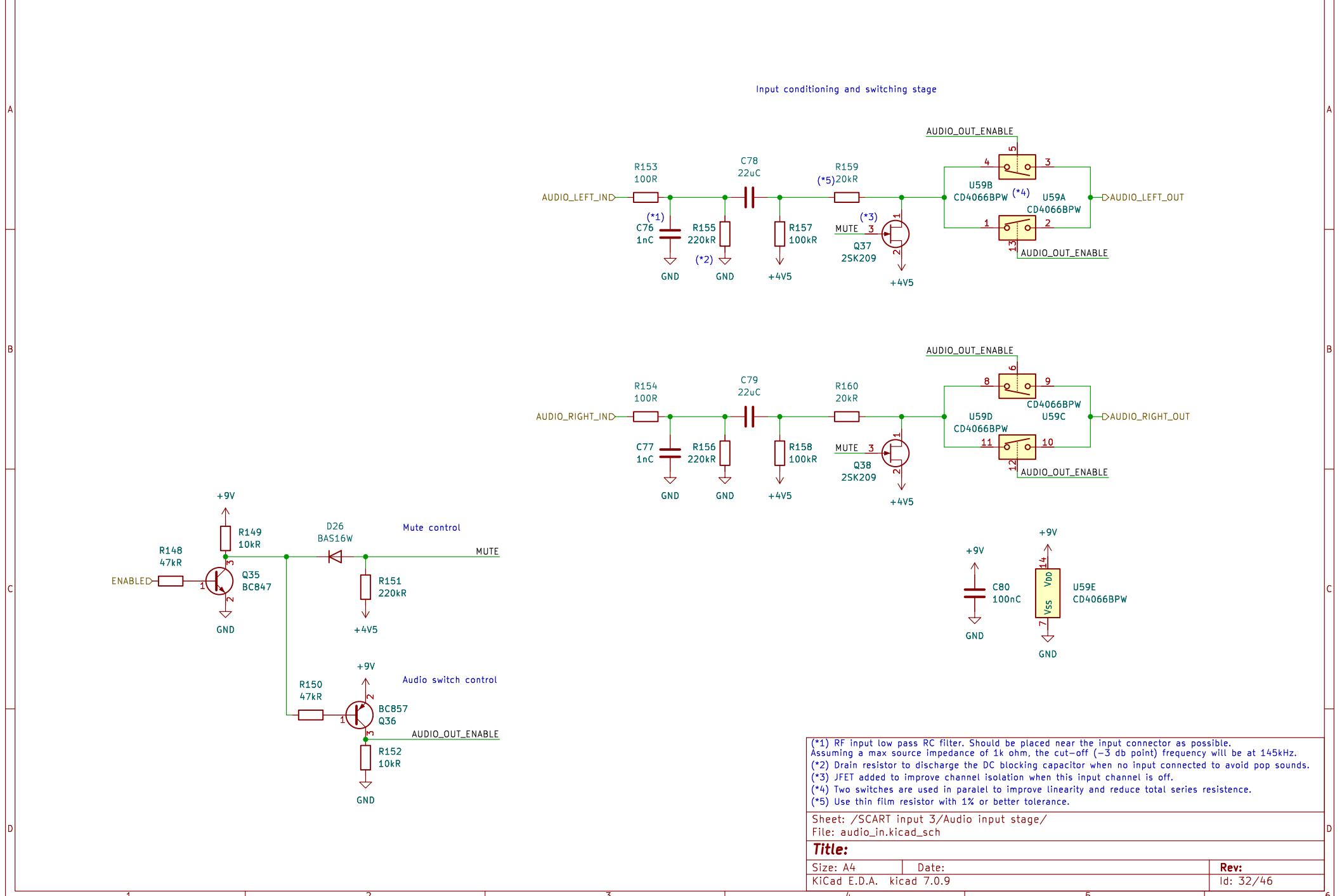
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Id: 30/46

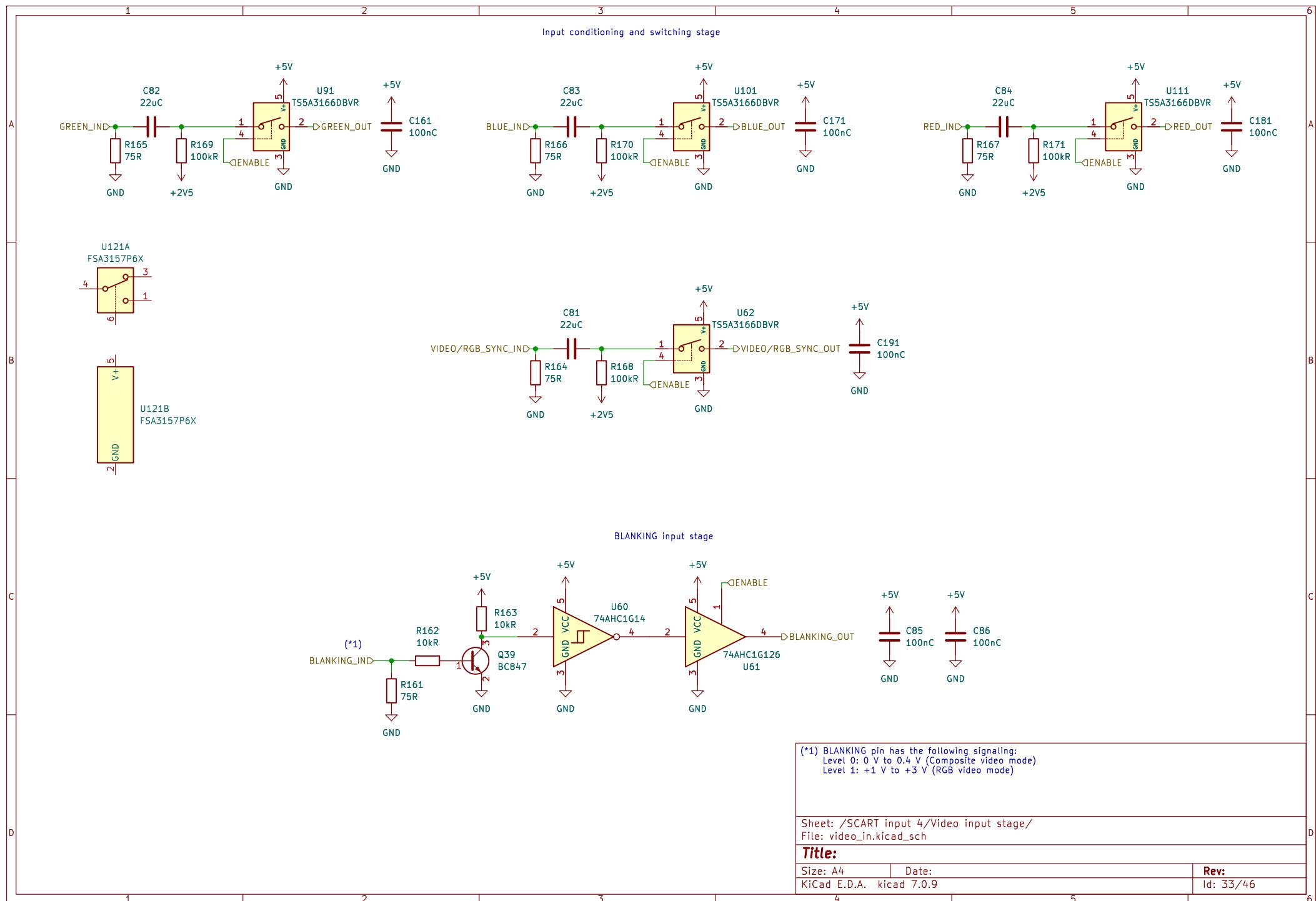
1 2 3 4 5 6



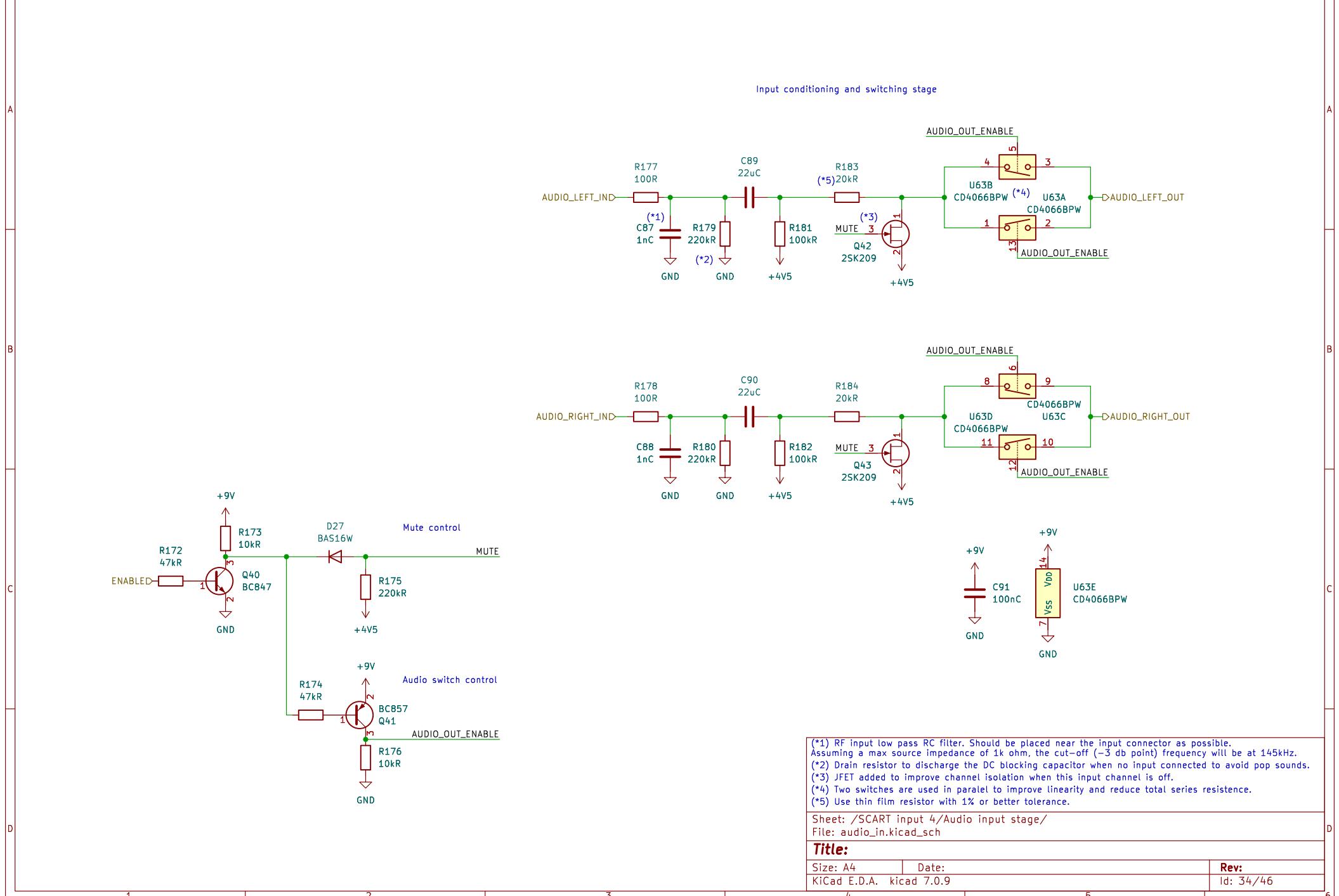
1 2 3 4 5 6



1 2 3 4 5 6



1 2 3 4 5 6



(*1) RF input low pass RC filter. Should be placed near the input connector as possible.
 Assuming a max source impedance of 1k ohm, the cut-off (-3 db point) frequency will be at 145kHz.
 (*2) Drain resistor to discharge the DC blocking capacitor when no input connected to avoid pop sounds.
 (*3) JFET added to improve channel isolation when this input channel is off.
 (*4) Two switches are used in parallel to improve linearity and reduce total series resistance.
 (*5) Use thin film resistor with 1% or better tolerance.

Sheet: /SCART input 4/Audio input stage/

File: audio_in.kicad_sch

Title:

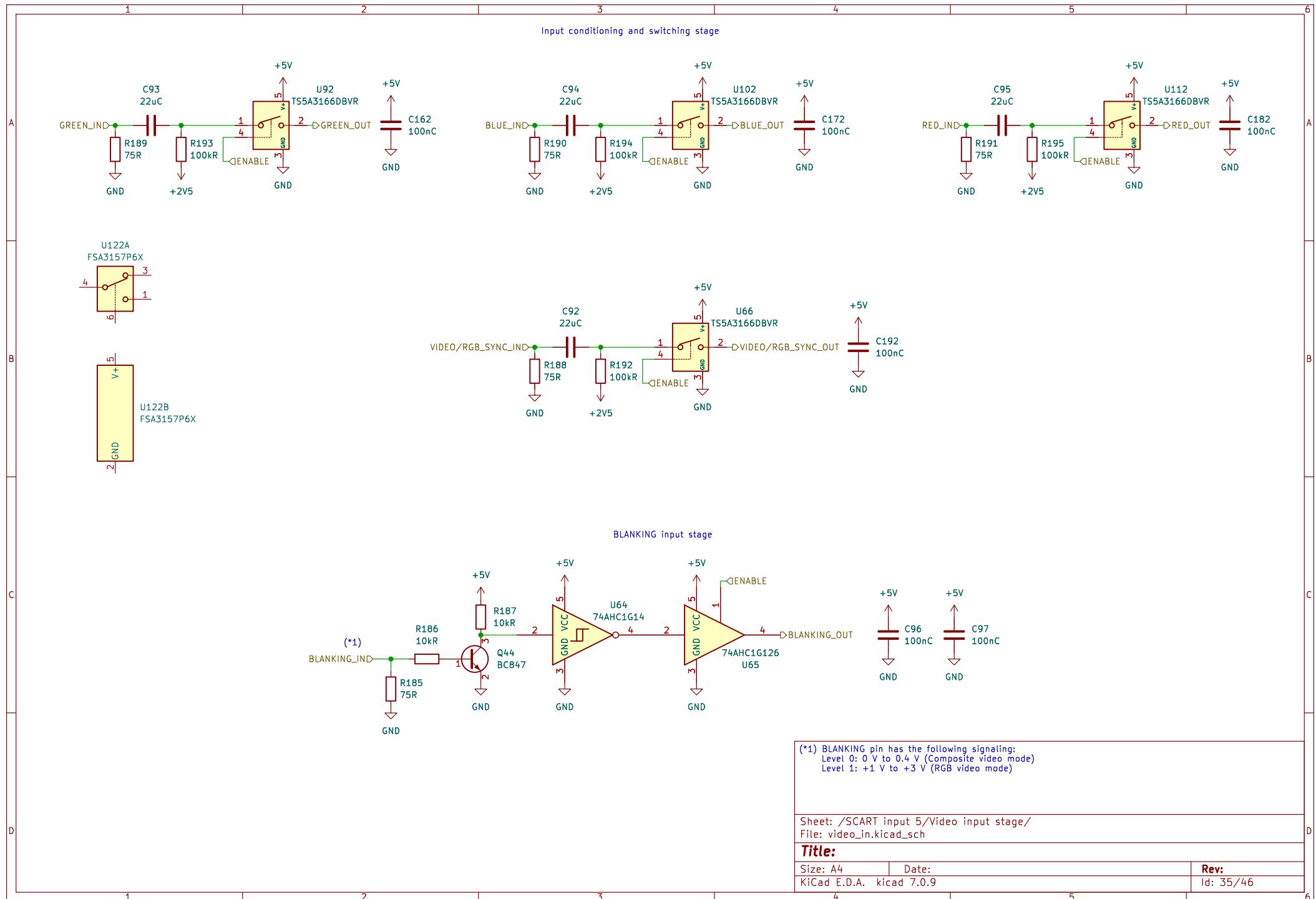
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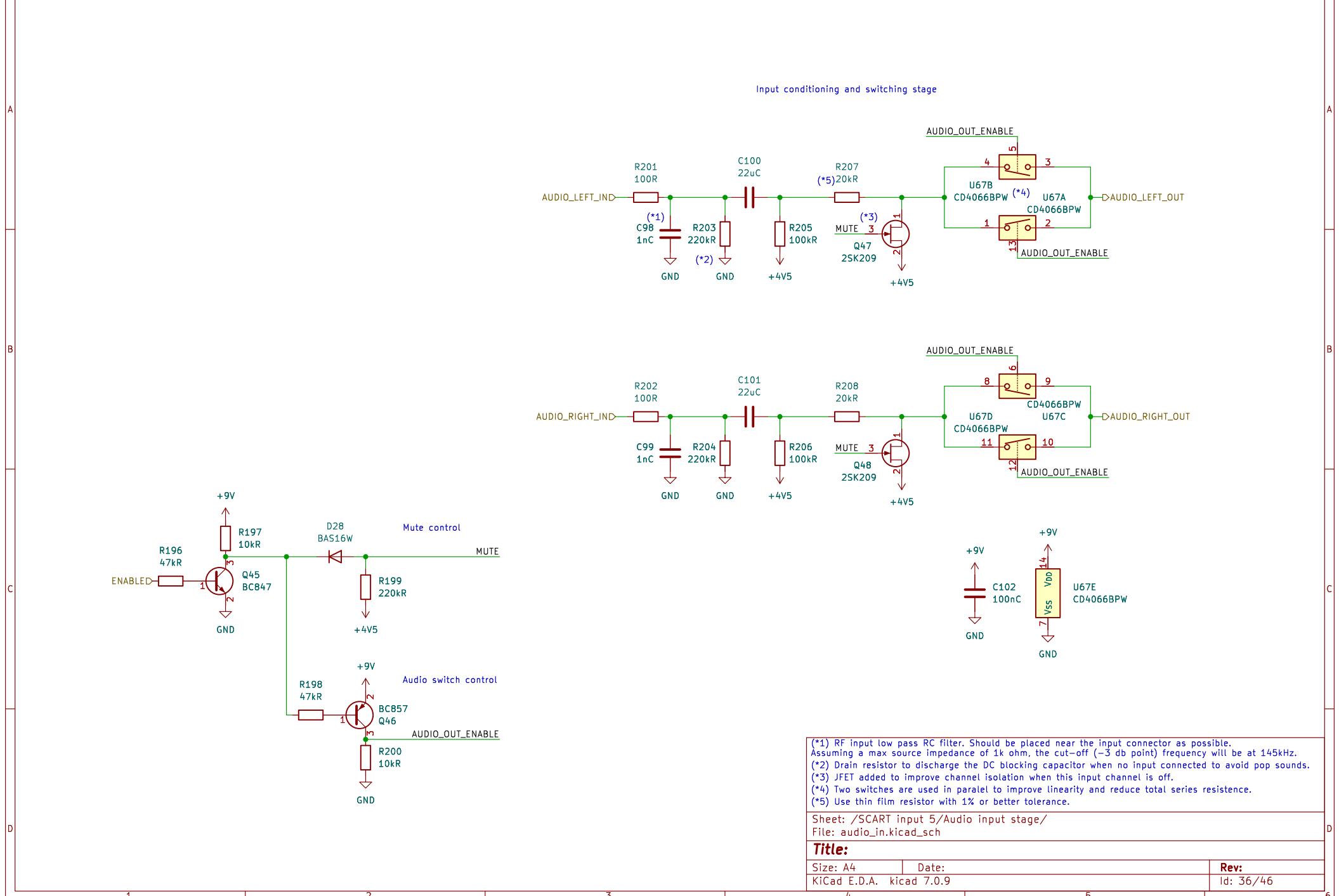
Rev:

Id: 34/46

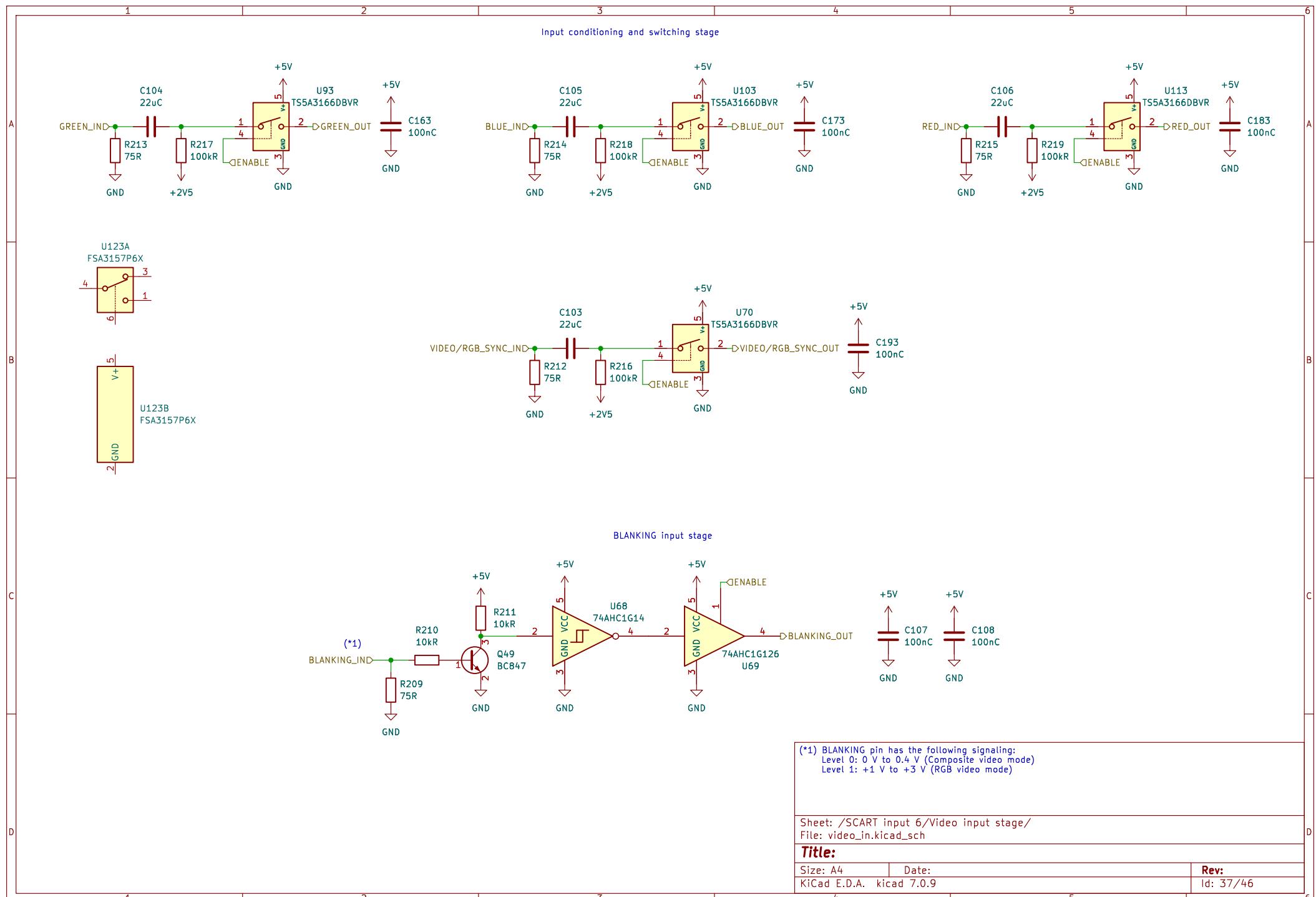
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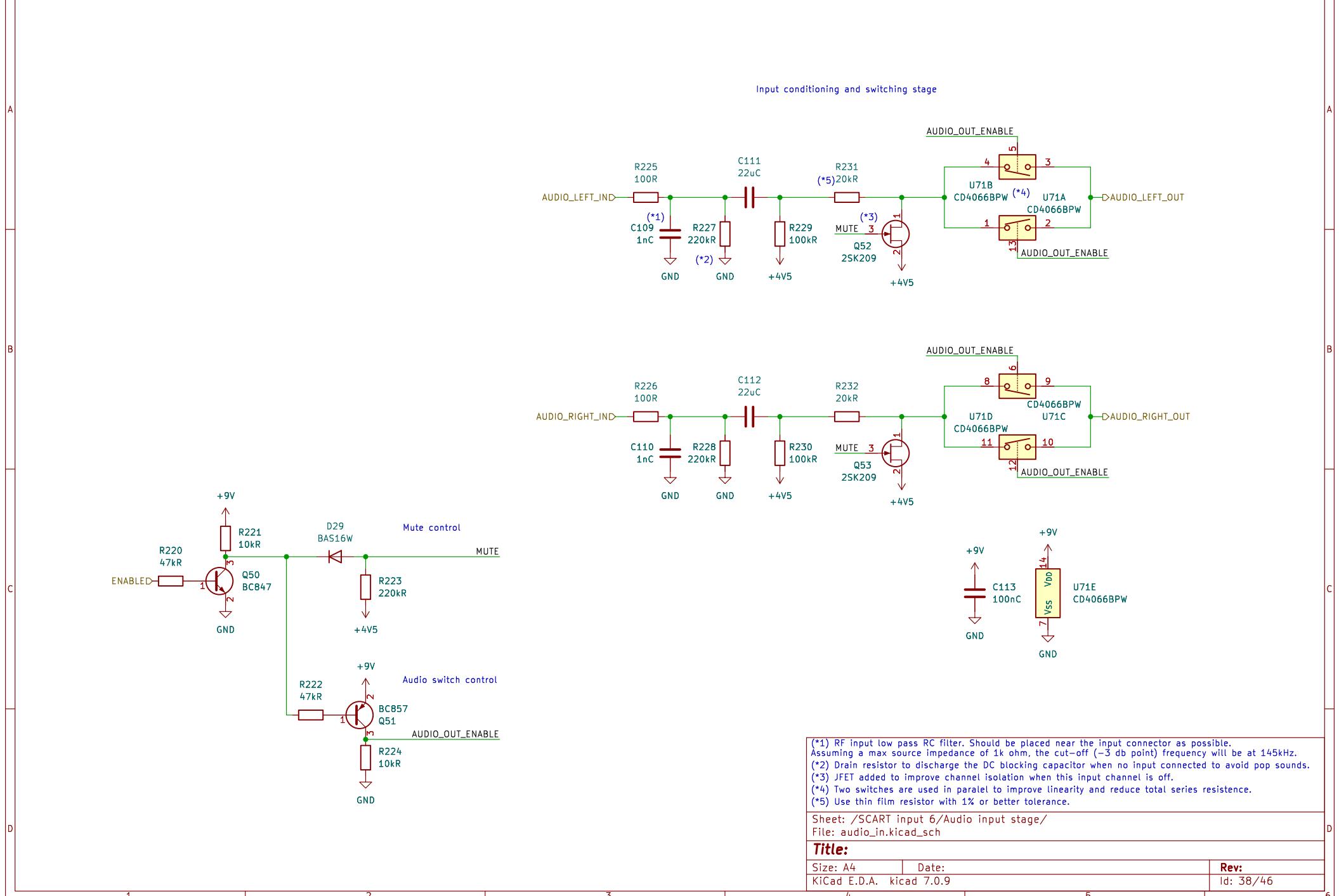
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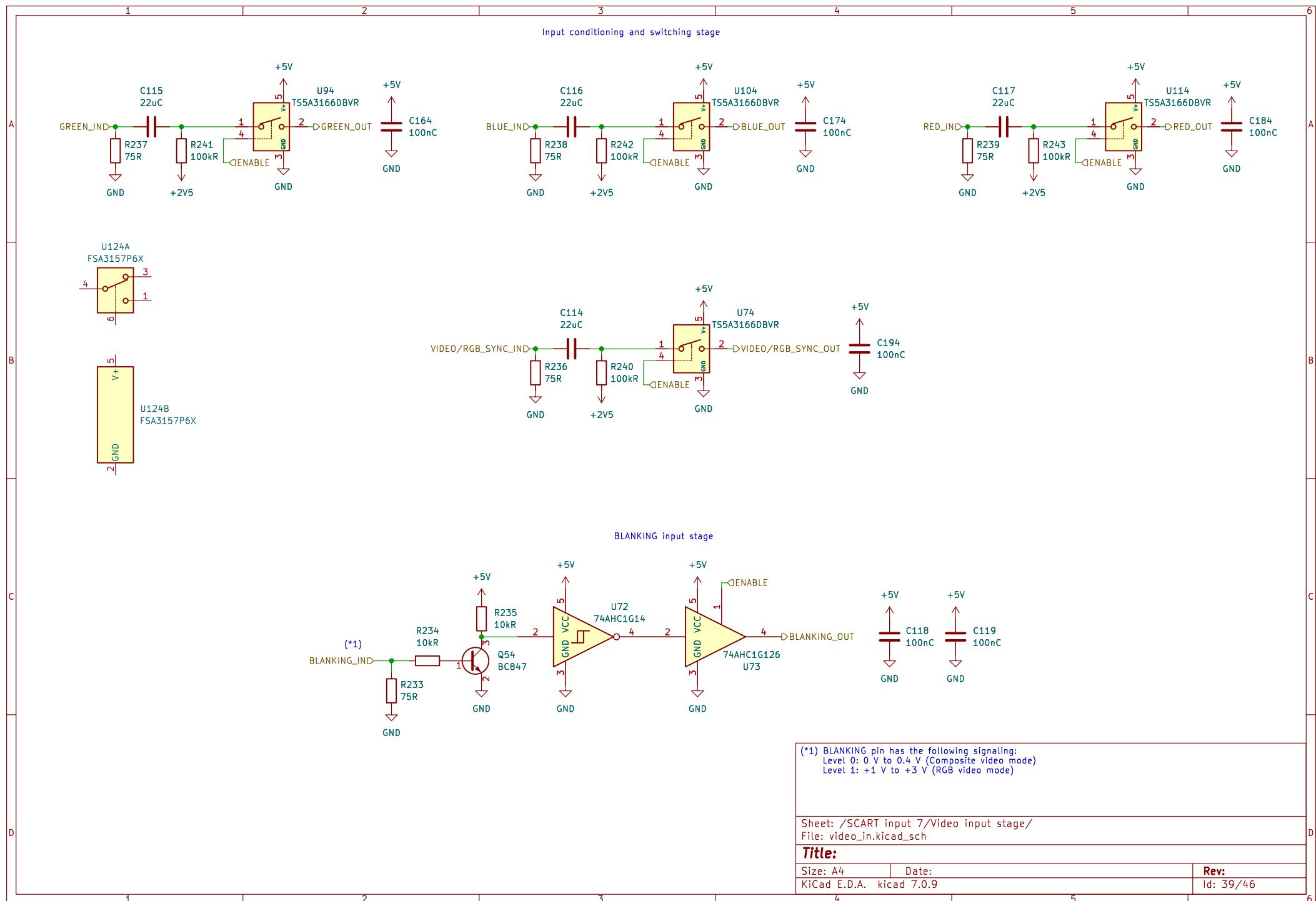
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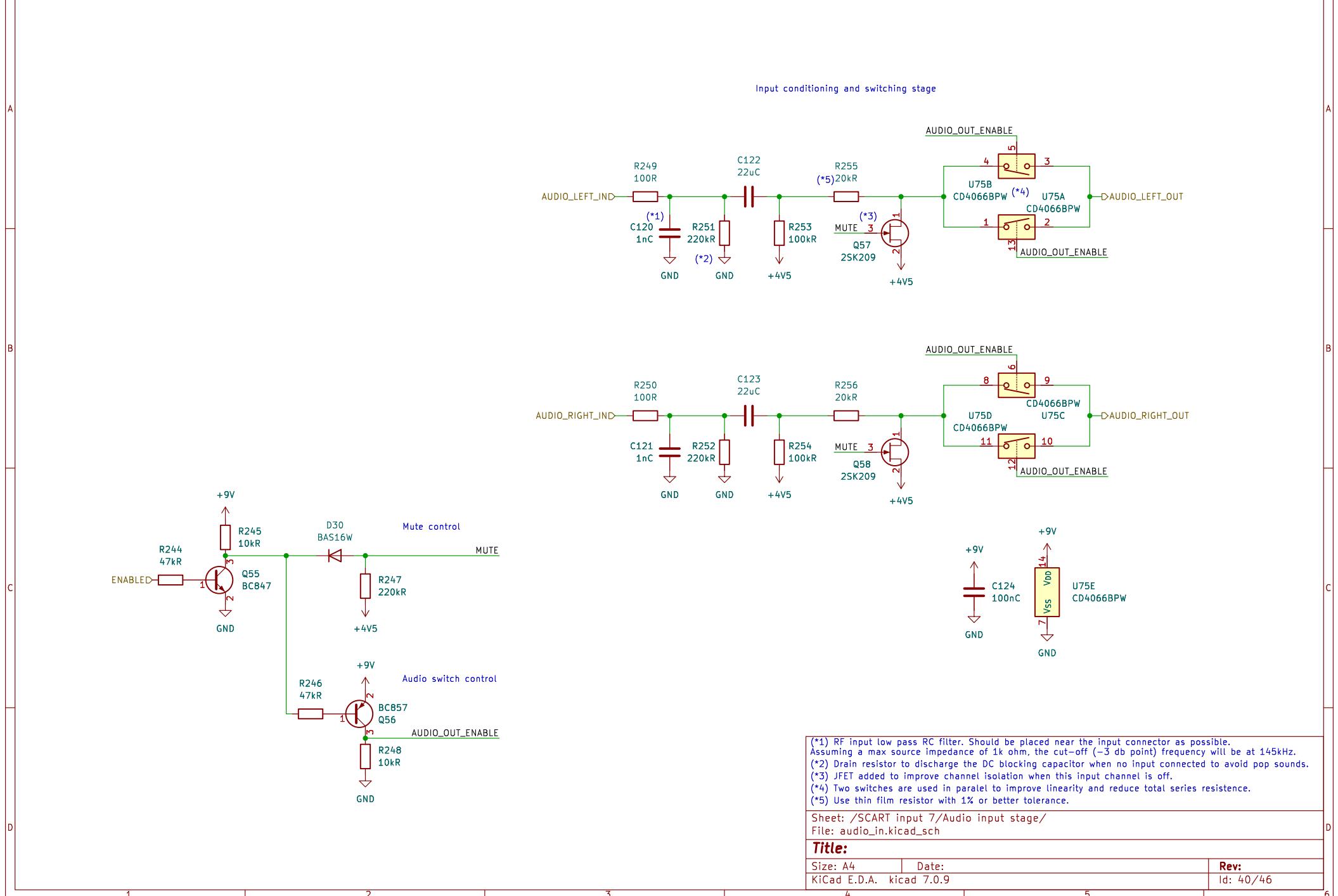
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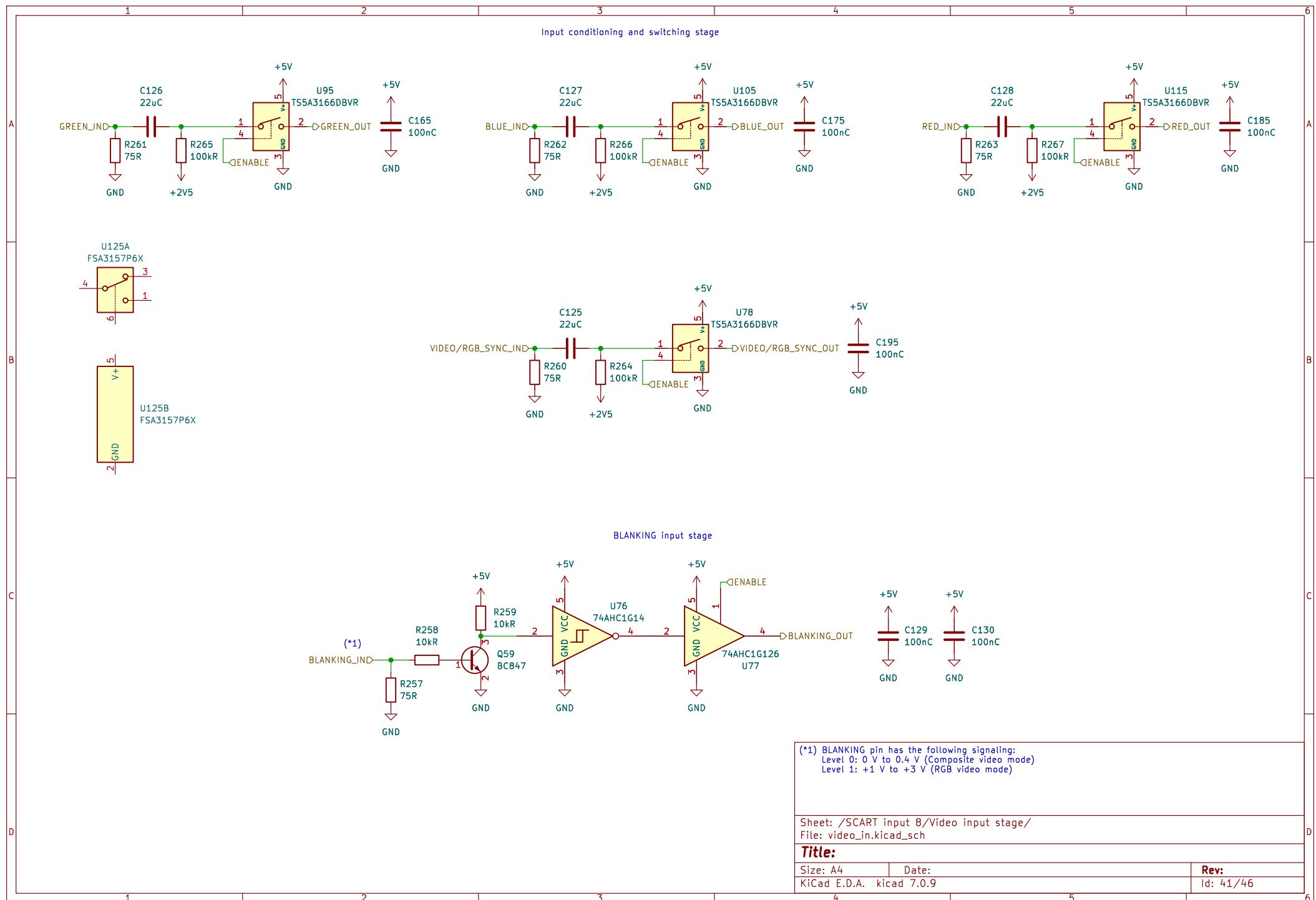
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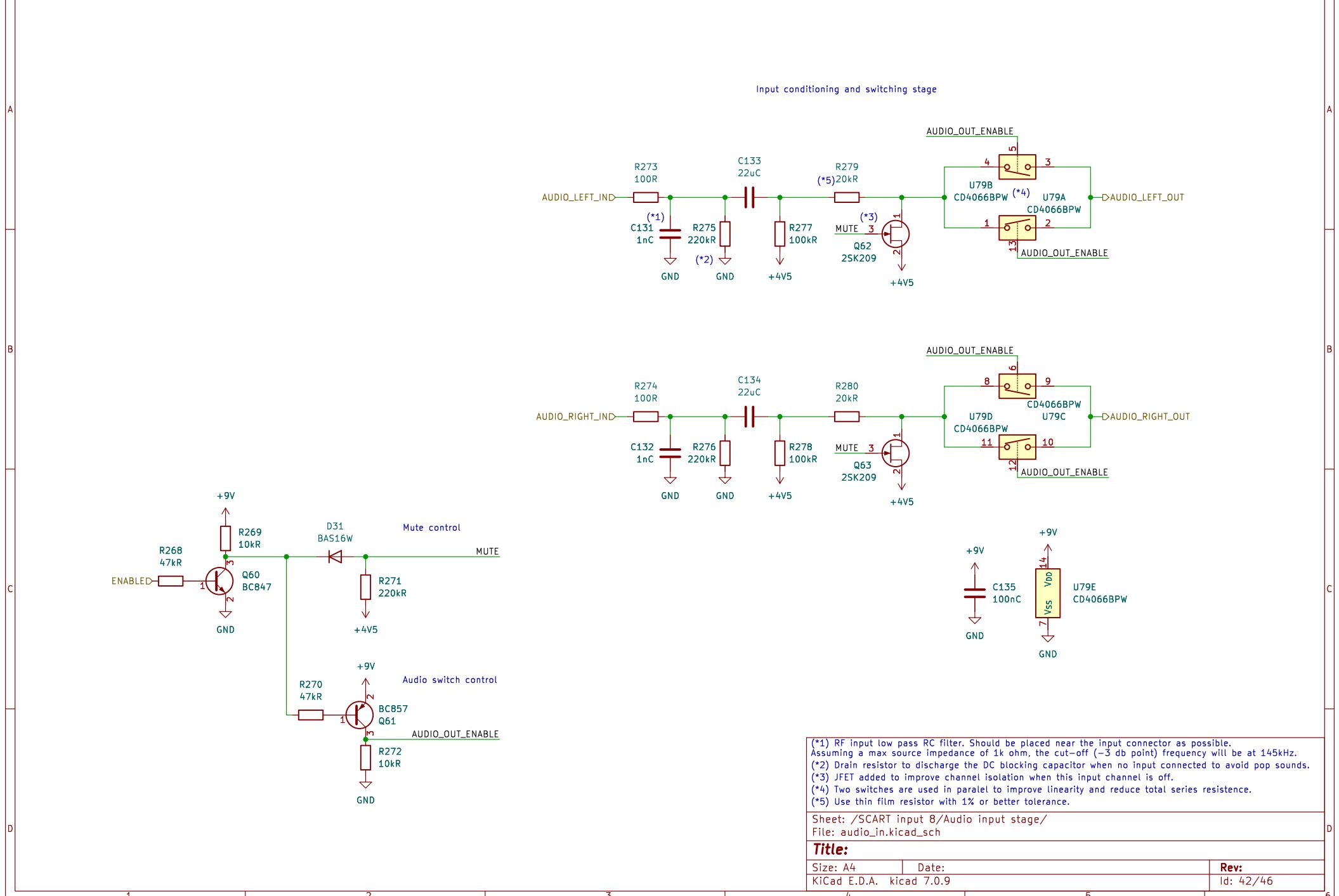
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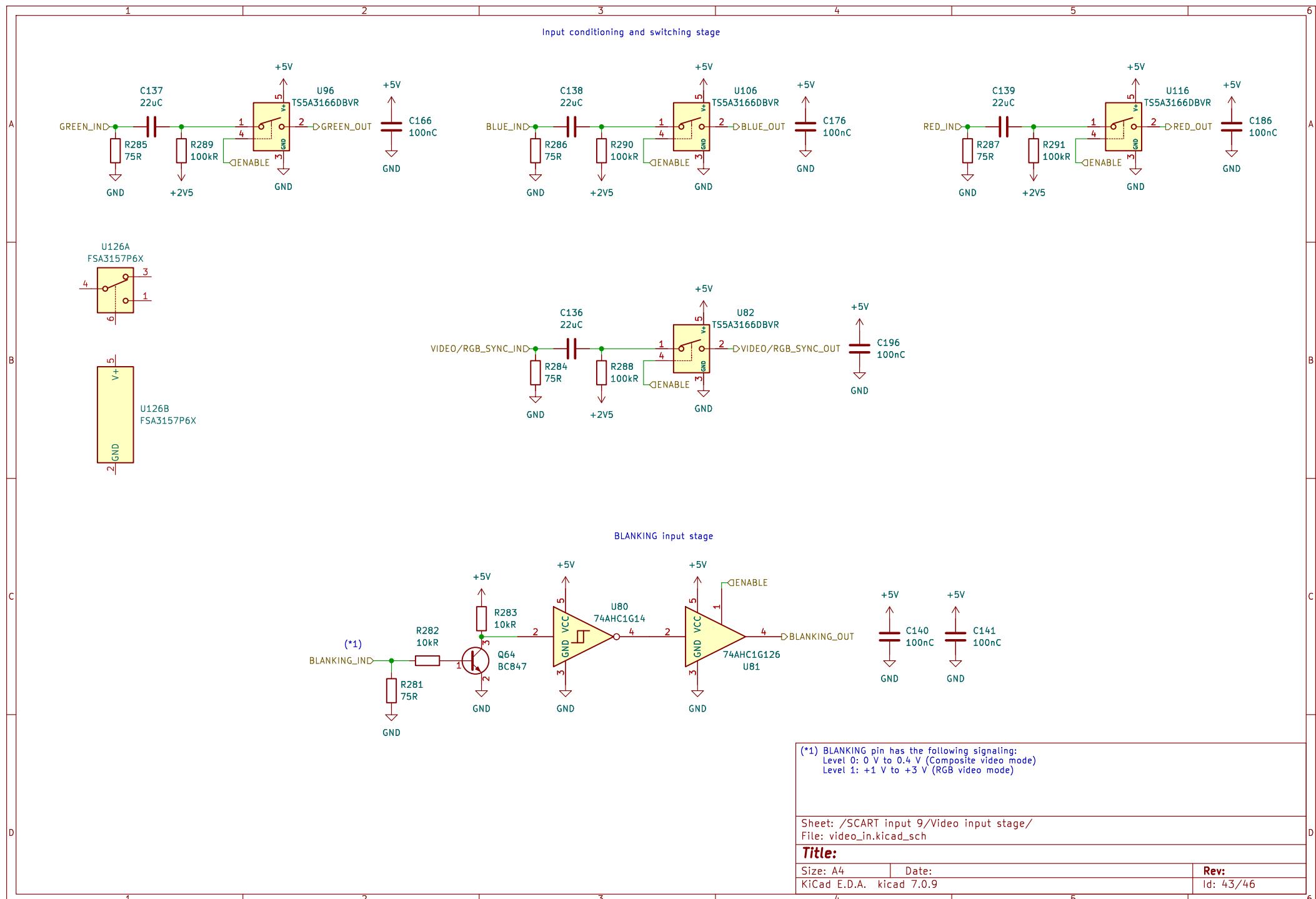
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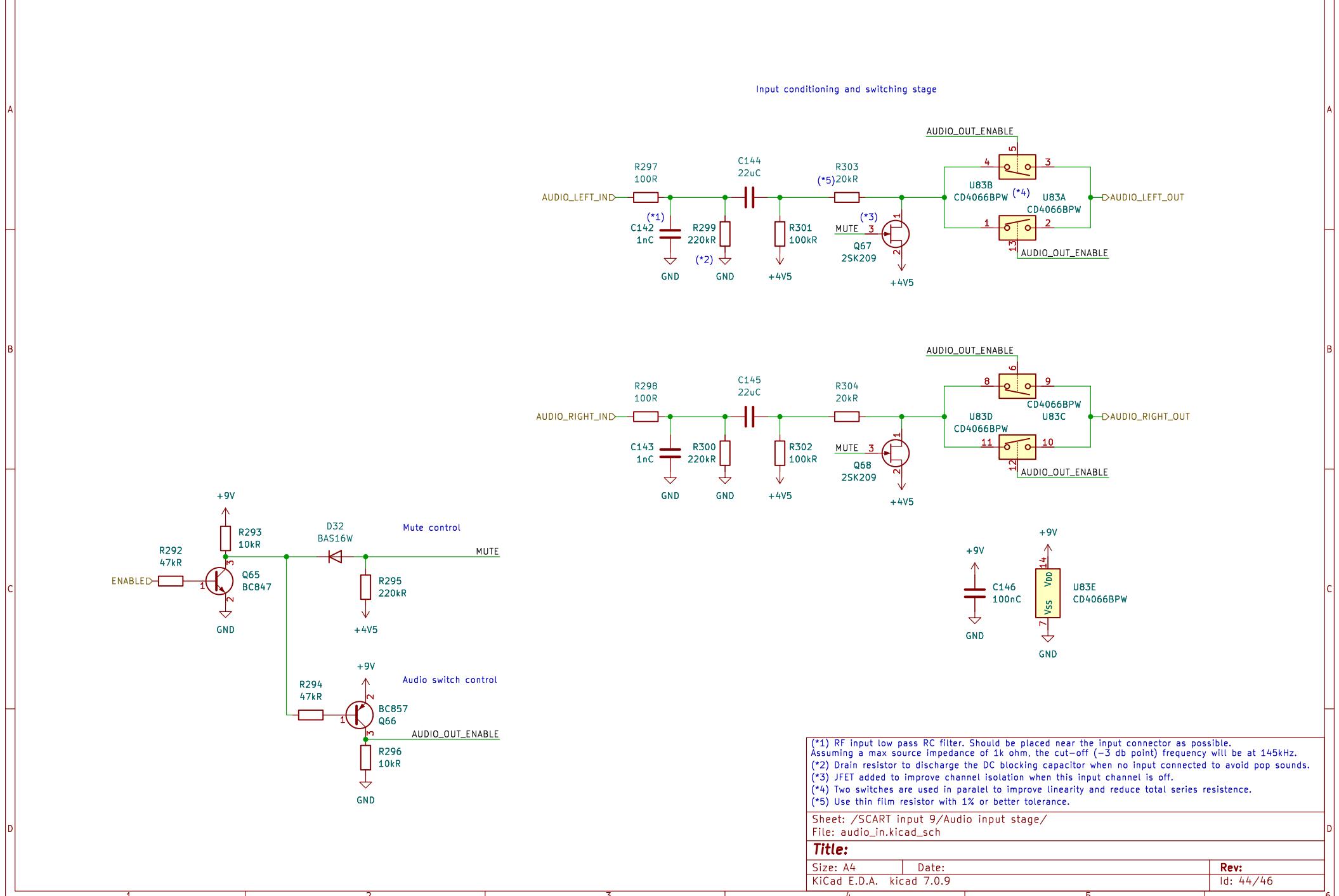
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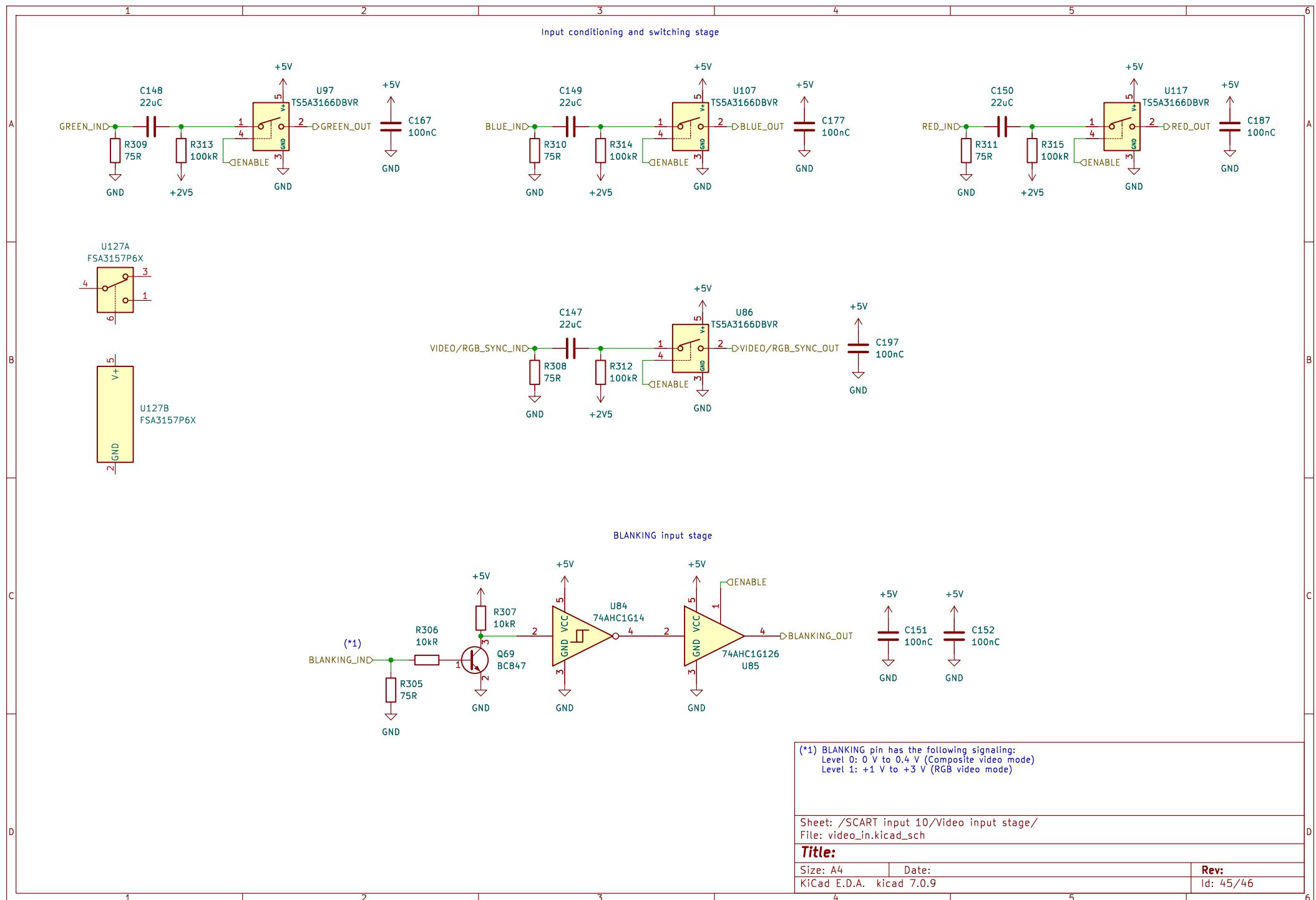
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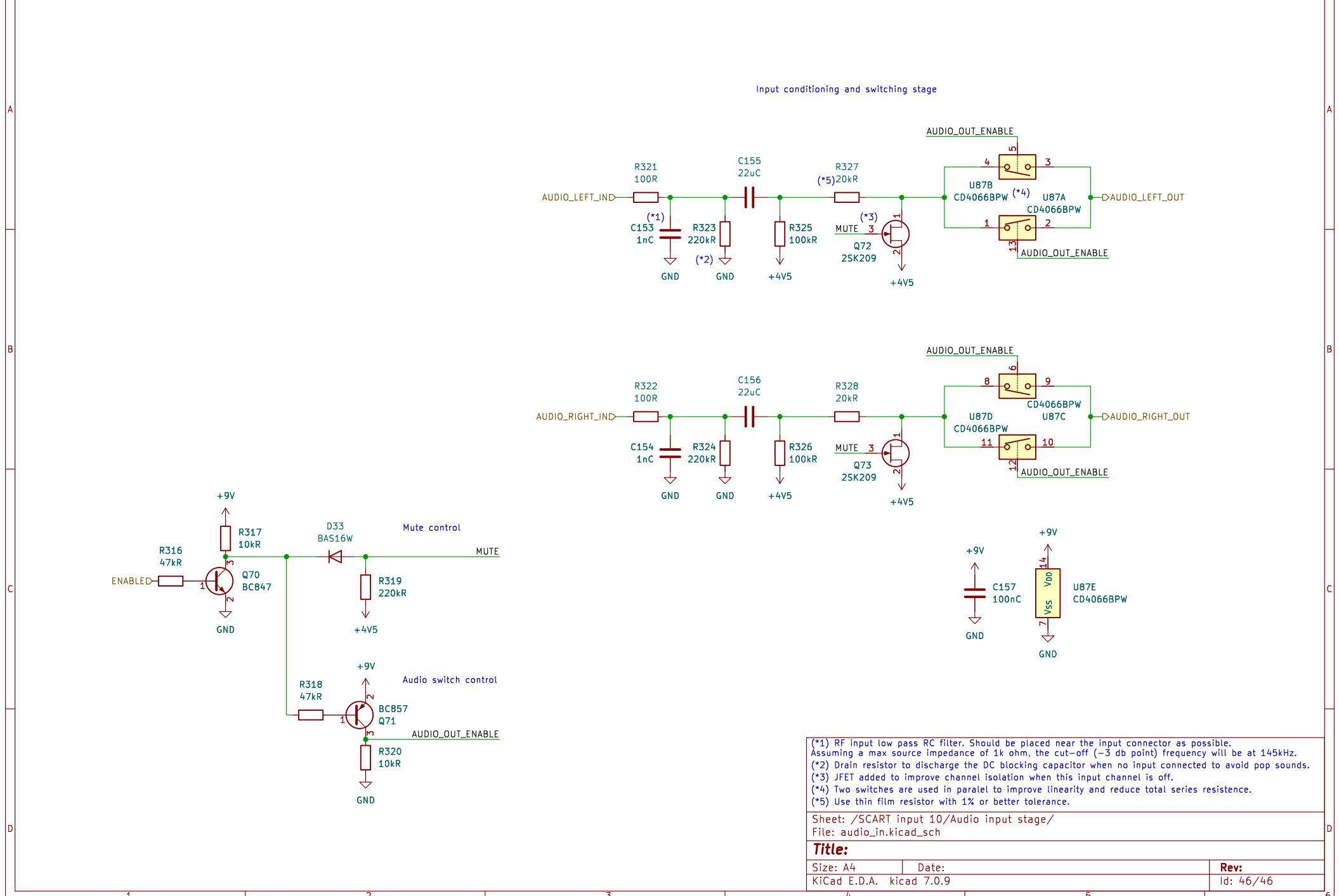
1 2 3 4 5 6



1 2 3 4 5 6



1 2 3 4 5 6



1 2 3 4 5 6