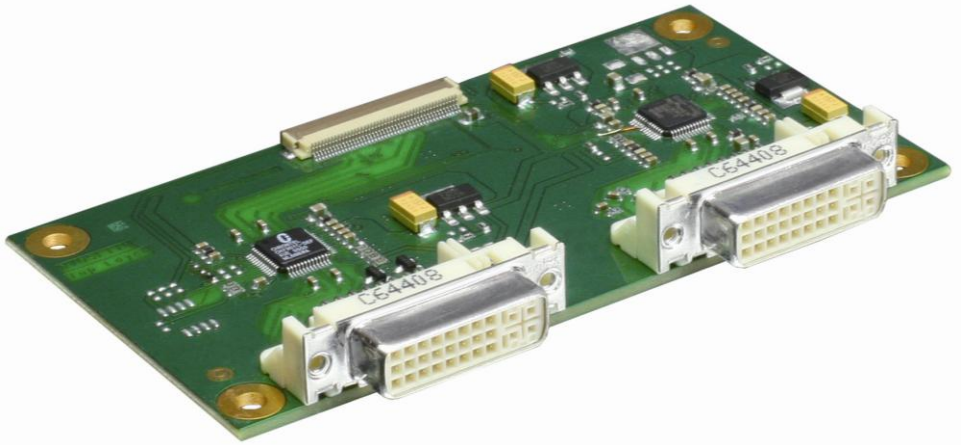
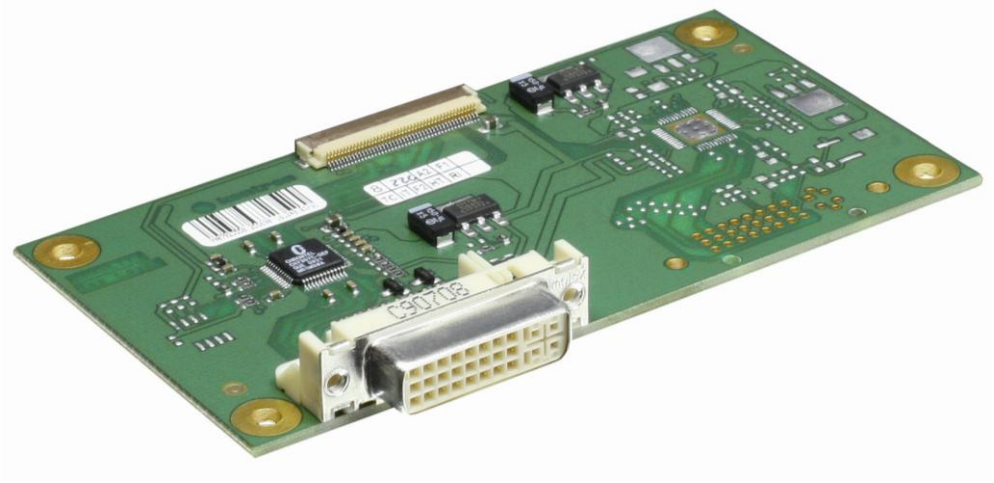
» Kontron User's Guide «





ADA-ETX-CD-FC4 / ADA-SDVOB-FC5

Document Revision 111

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1 User Information

1.1 About This Document

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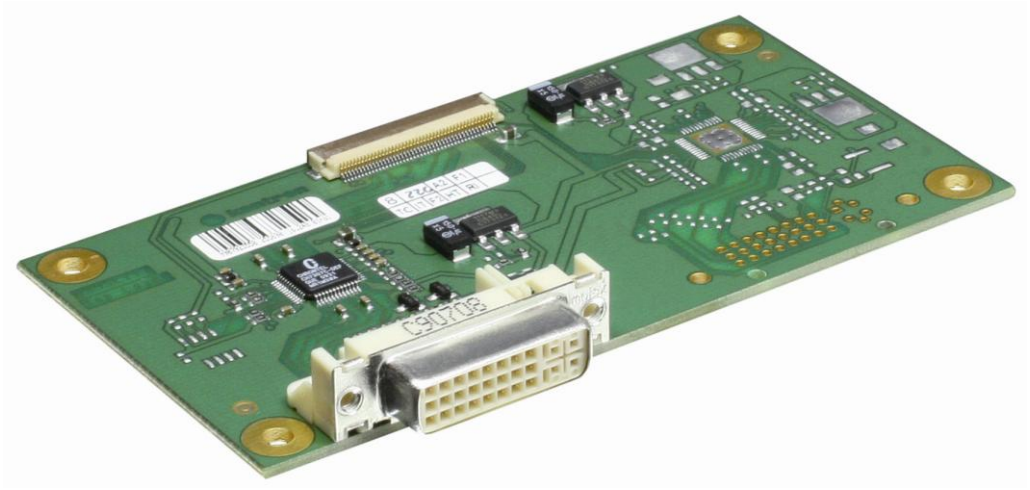
Please consult our Web site at http://www.kontron.com/support for the latest product documentation, utilities, drivers and support contacts. Consult our customer section http://emdcustomersection.kontron.com for the latest BIOS downloads, Product Change Notifications and additional tools and software. In any case you can always contact your board supplier for technical support.

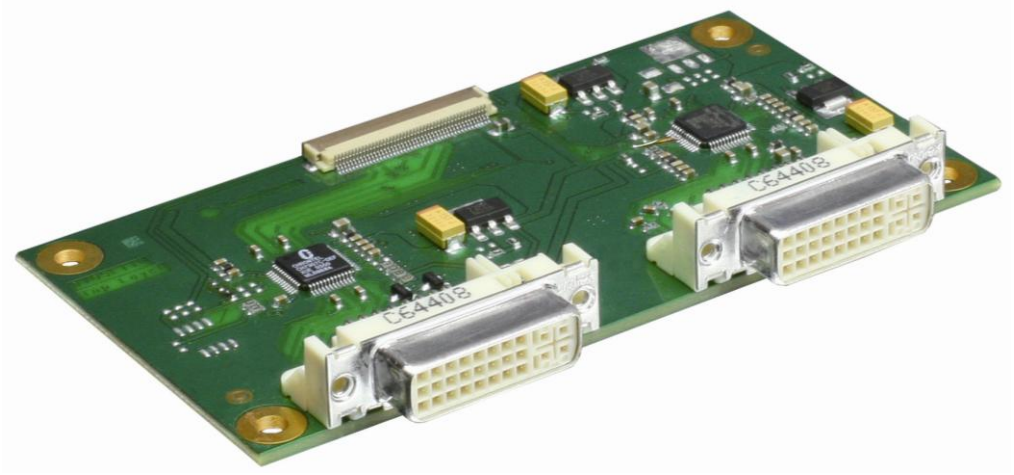
2 Introduction

2.1 ADA-SDVOB-FC5

The **ADA-SDVOB-FC5 (96006-0000-00-5)** is a small board to convert the signals from single channel SDVO to DVI. The SDVO signals are available on Kontron's ETX® boards which have implemented the "SDVO feature connector" like ETX®-CD and ETX®-DC.



The device is available also as **ADA-ETX-CD-FC4 (96006-0000-00-4)** which offers two SDVO to DVI channels and is only supported by ETX®-CD.



3 Specification

3.1 Functional Specification

3.1.1 ADA-ETX-CD-FC4 (96006-0000-00-4)

SDVOB - DVI Transmitter: Chrontel CH7307C

SDVOC - DVI Transmitter: Silicon Image SIL1362

» Digital Visual Interfach (DVI) Transmitter up to 165M pixels/second

» Supports resolutions up to UXGA (1600x1200)

» DVI low jitter PLL

» DVI hot plug detection

3.1.2 ADA-SDVOB-FC5 (96006-0000-00-5)

SDVOB - DVI Transmitter: Chrontel CH7307C

» Digital Visual Interfach (DVI) Transmitter up to 165M pixels/second

» Supports resolutions up to UXGA (1600x1200)

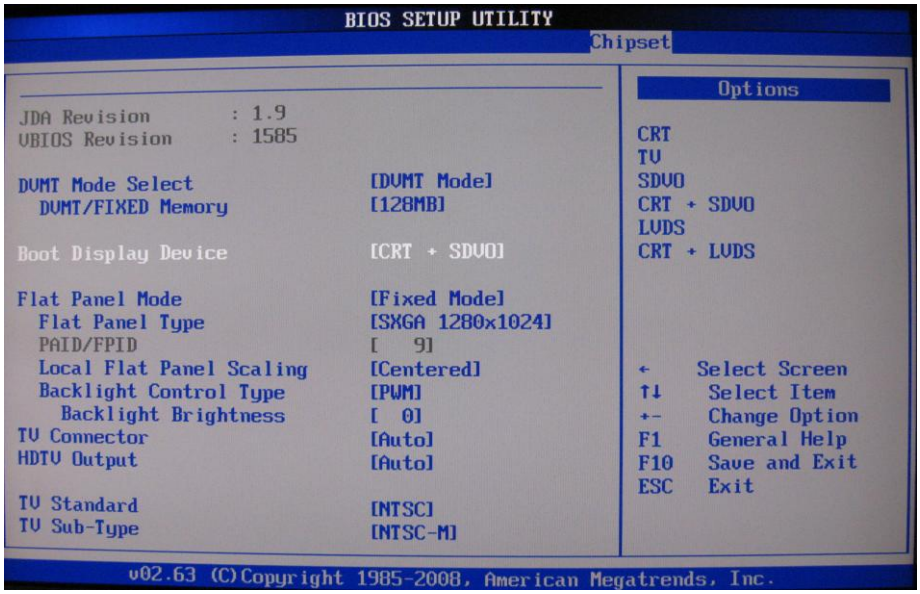
» DVI low jitter PLL

» DVI hot plug detection

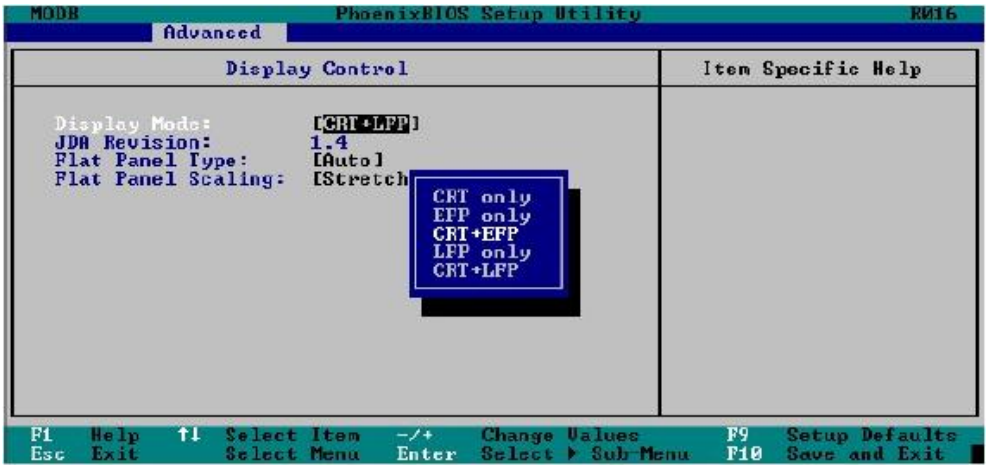
SDVO Output during bootup

The Bios must be set to enable the SDVO output during boot-up.

» ETX®-DC in AMI Bios Setup: → Chipset → Display Control: SDVO or CRT + SDVO



» ETX®-CD in the Phoenix Bios Setup: → Devices → Integrated Video → Display Control: EFP only or CRT + EFP



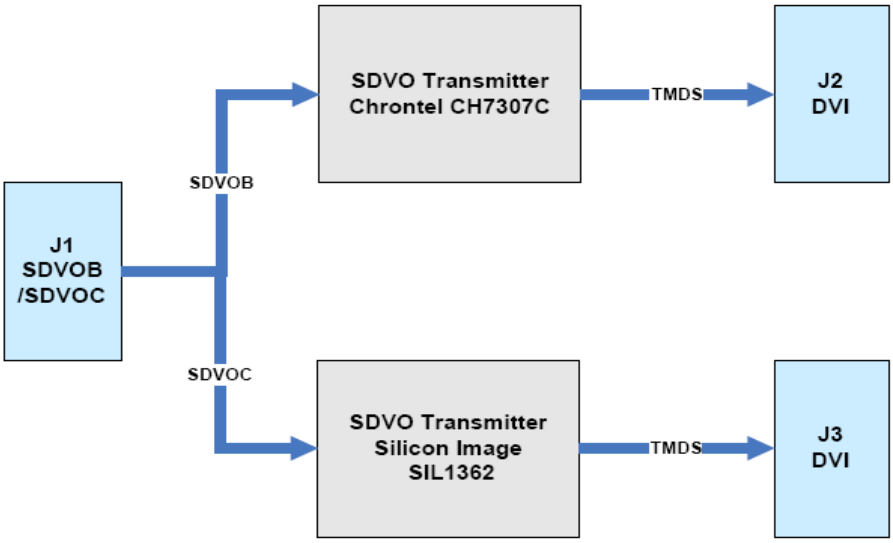
SDVO Output during bootup

The regarding driver must enable the interface. This does not need an enabled boot up display set to SDVO. It can happen that you have an enabled SDVO boot device, but when in windows the driver is loaded, the SDVO interface is disabled after the graphic driver installation.

You can enable it in blind mode by pressing the default driver hotkey combination <CRTL><ALT><F4>.

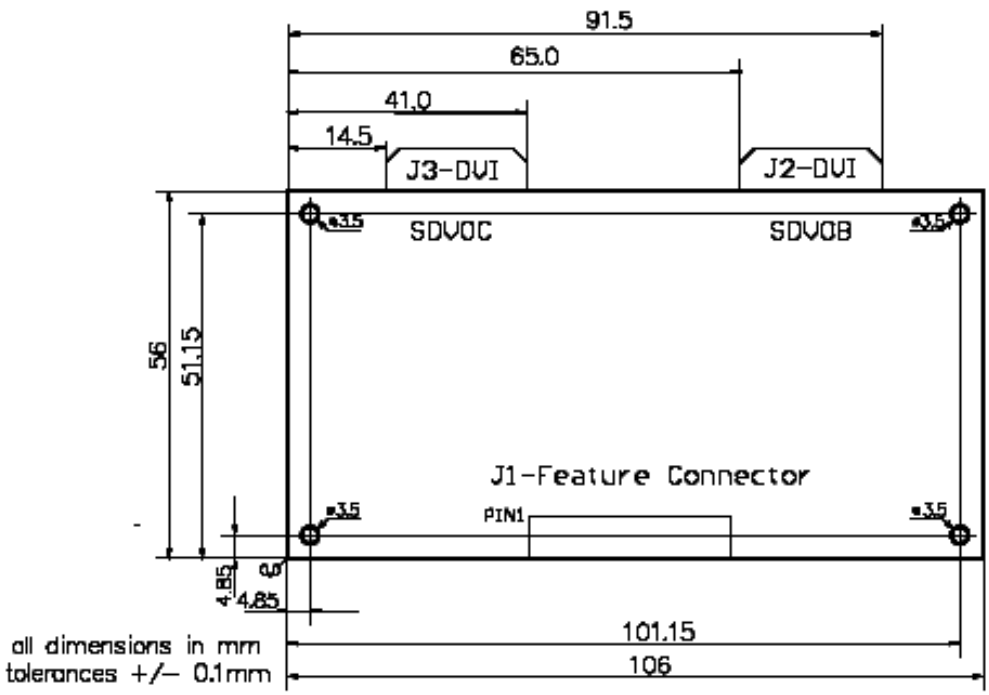
3.2 Block Diagram

3.2.1 ADA-ETX-CD-FC4 (96006-0000-00-4)



3.2.2 ADA-SDVOB-FC5 (96006-0000-00-5)

3.3 Mechanical Specification



3.4 Electical Specification

Supply Voltage

» 5V DC+/- 5%

Supply Voltage Ripple

» Maximum 100 mV peak to peak 0 – 20 MHz

3.5 Environmental Specification

Temperature

» Maximum operating temperature: 0 to +60 °C (**)

» Non operating: -30 to +85 °C

Note: **The maximum operating temperature is the maximum measurable temperature on any spot on a module's surface. You must maintain the temperature according to the above specification.

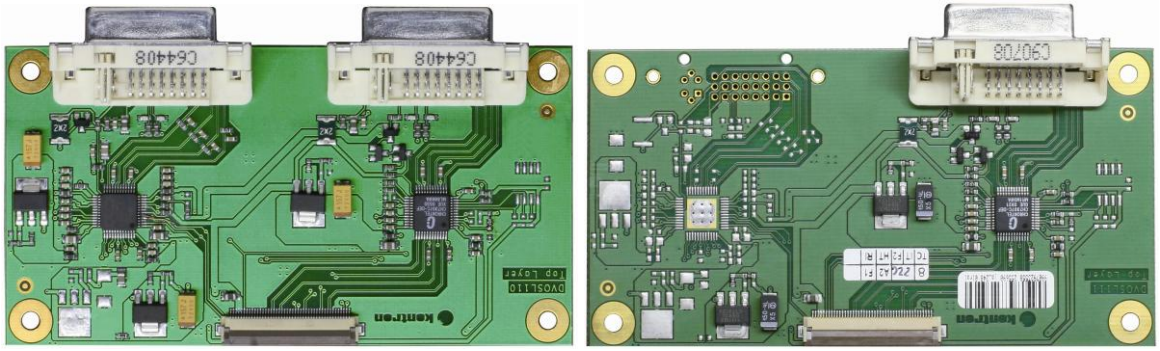
Humidity

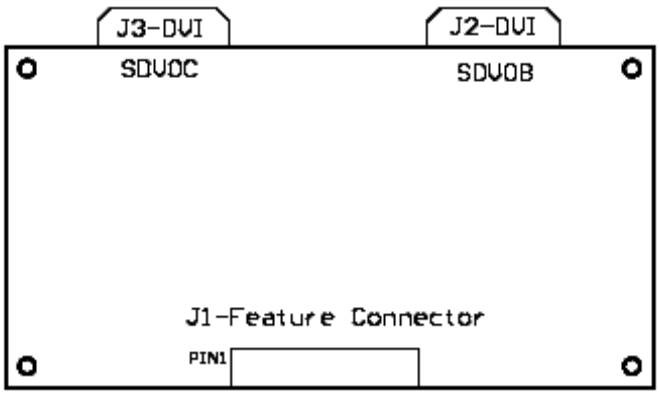
» Operating: 10% to 90% (non condensing)

» Non operating: 5% to 95% (non condensing)

4 ADA-SDVOB-FC5 Connectors

4.1 Connector Locations



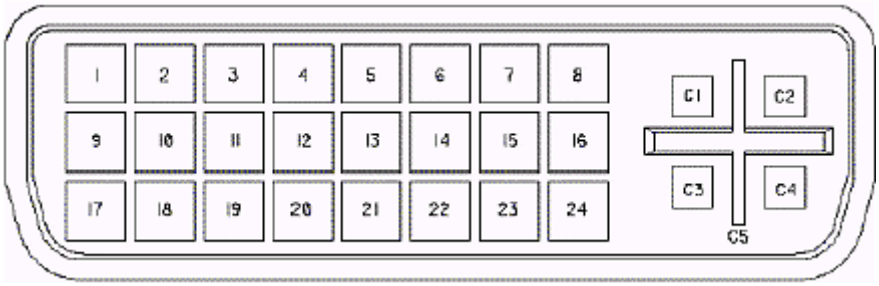


4.2 Pinout List

Feature Connector J1 Pinout

Pin	Pin on ETX®-CD	Description
1	Reserved	nc
2	Reserved	nc
3	VCC	5V power
4	VCC	5V power
5	VCC	5V power
6	RESET#	Reset signal
7	SDVO_CTRLDATA	I2C based control signal for SDVO devices; data
8	SDVO_CTRCLK	I2C based control signal for SDVO devices; clock
9	GND1	Ground
10	SDVO_TVCLKINP	TV Clock Input positive
11	SDVO_TVCLKINN	TV Clock Input negative
12	GND2	Ground
13	SDVO_FLDSTALLP	Field Stall positive
14	SDVO_FLDSTALLN	Field Stall negative
15	GND3	Ground
16	SDVOB_REDP	Channel B; Red positive
17	SDVOB_REDN	Channel B; Red negative
18	GND4	Ground
19	SDVOB_BLUEP	Channel B; Blue positive
20	SDVOB_BLUEN	Channel B; Blue negative
21	GND5	Ground
22	SDVOC_REDP	Channel C; Red positive
23	SDVOC_REDN	Channel C; Red negative
24	GND6	Ground
25	SDVOC_BLUEP	Channel C; Blue positive
26	SDVOC_BLUEN	Channel C; Blue negative
27	GND7	Ground
28	SDVOB_INTP	Channel B; Interrupt positive
29	SDVOB_INTN	Channel B; Interrupt negative
30	GND8	Ground
31	SDVOC_INTP	Channel C; Interrupt positive
32	SDVOC_INTN	Channel C; Interrupt negative
33	GND9	Ground
34	SDVOB_GREENP	Channel B; Green positive
35	SDVOB_GREENN	Channel B; Green negative
36	GND10	Ground
37	SDVOB_CLKP	Channel B; Clock positive
38	SDVOB_CLKN	Channel B; Clock negative
39	GND11	Ground
40	SDVOC_GREENP	Channel C; Green positive
41	SDVOC_GREENN	Channel C; Green negative
42	GND12	Ground
43	SDVOC_CLKP	Channel C; Clock positive
44	SDVOC_CLKN	Channel C; Clock negative
45	GND13	Ground

DVI Connector J2/J3 Pinout



Pin	Name	Pin	Name
1	TMDS Data2-	13	Not connected
2	TMDS Data2+	14	+5 V Power
3	GND	15	GND
4	Not connected	16	Hot Plug Detect
5	Not connected	17	TMDS Data0-
6	DDC Clock [SCL]	18	TMDSData0+
7	DDC Data [SDA]	19	GND
8	Not connected	20	Not connected
9	TMDS Data1-	21	Not connected
10	TMDS Data1+	22	GND
11	GND	23	TMDS Clock +
12	Not connected	24	TMDS Clock -
C1	Not connected		
C2	Not connected		
C3	Not connected		
C4	Not connected		
C5	GND		

Legend:

DDC = Display Data Channel

T.M.D.S. = Transition Minimized Differential Signal

Please refer to following link for detailed information about DVI specification: http://www.ddwg.org

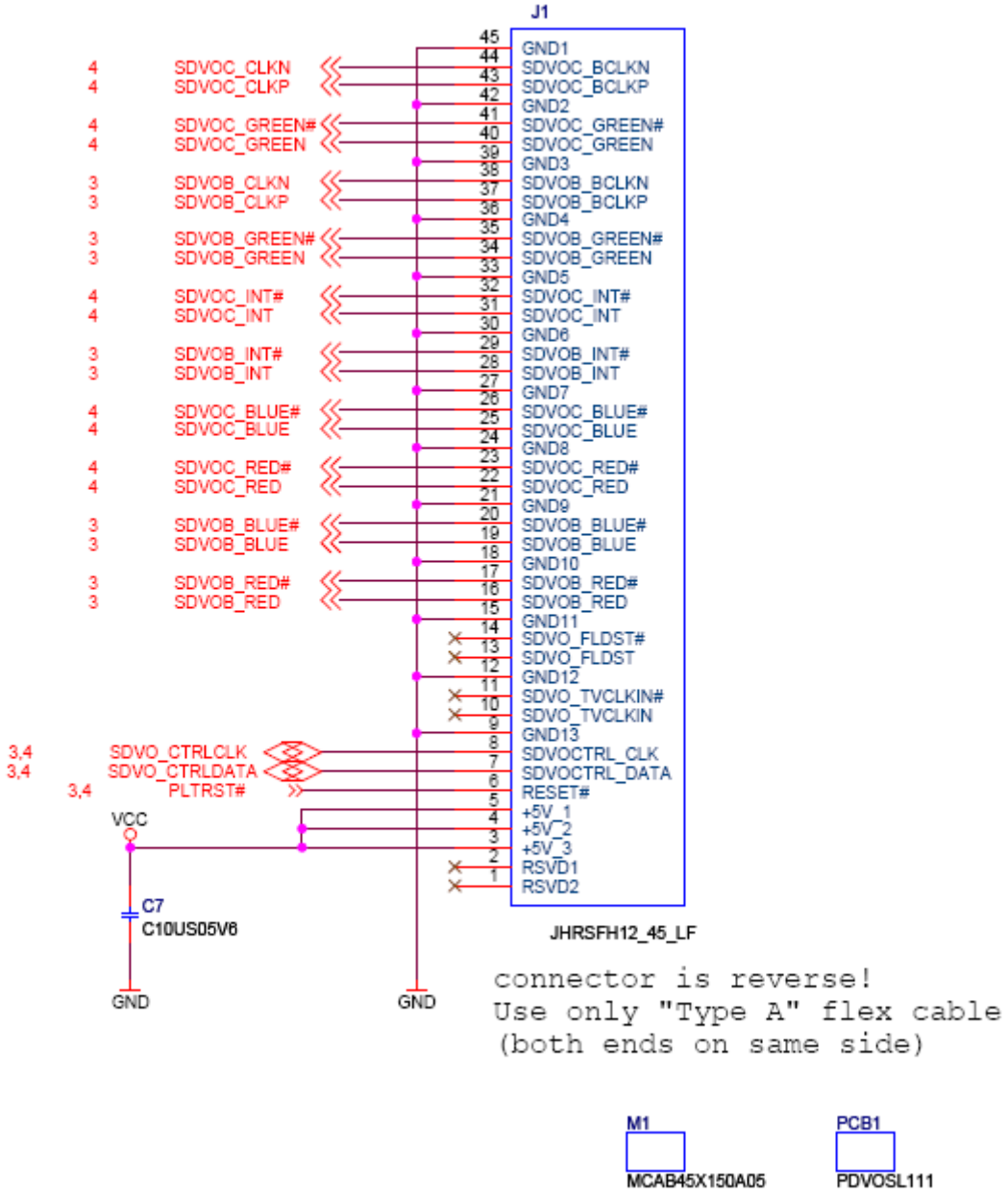
Note1: On VCC pins: To protect the external powerlines of peripheral devices the customer has to take care about: that the wires have the right diameter to withstand the maximum available current that the enclosure of the peripheral device fulfits the fire protecting requirements of IEC/EN 60950

Note2: Analog signals on both DVI-I connectors are not supported

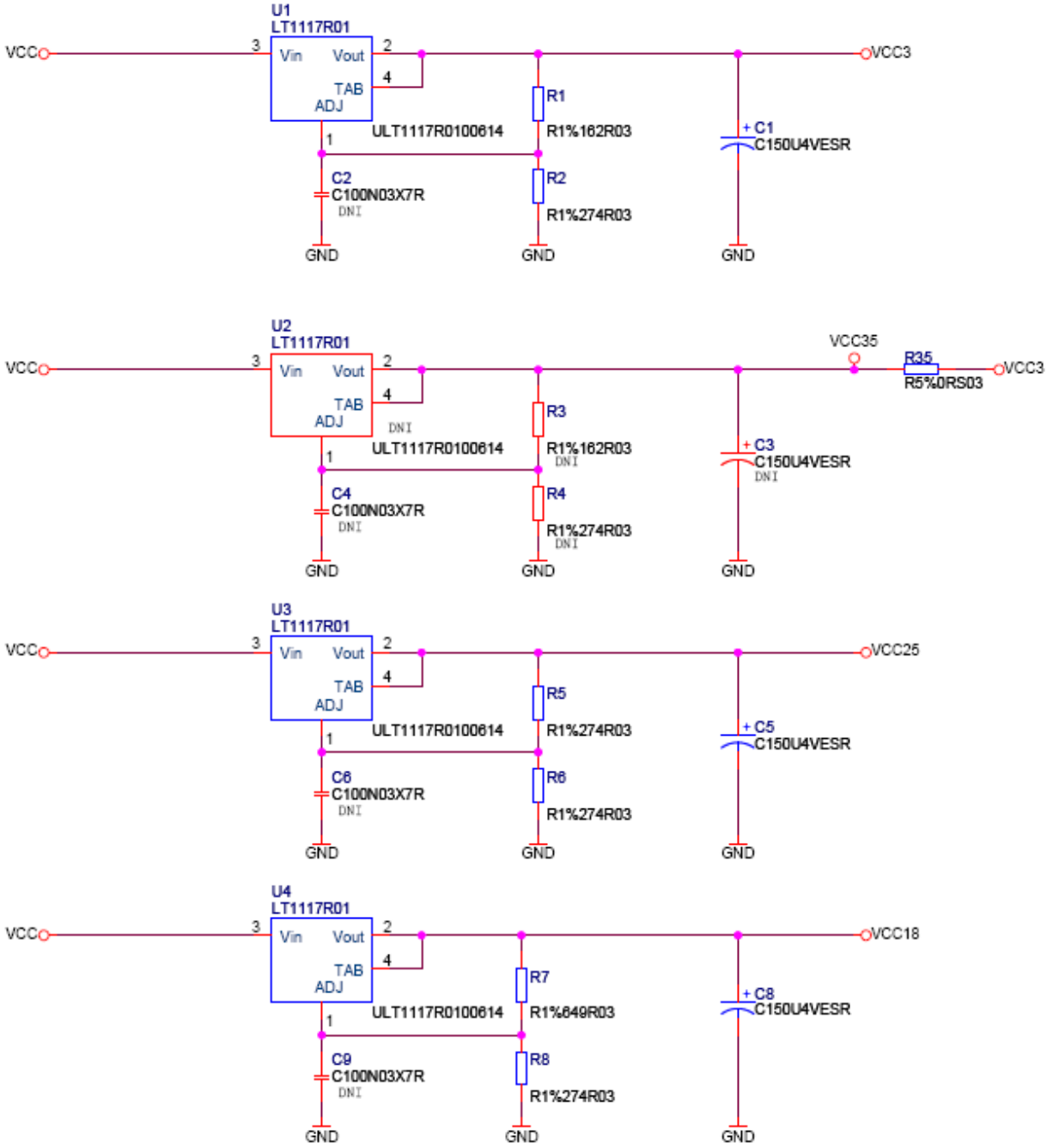
Warning: Please use only the provided flat foil cable or ensure that the used cable is the same type as the provided one.

5 Schematics

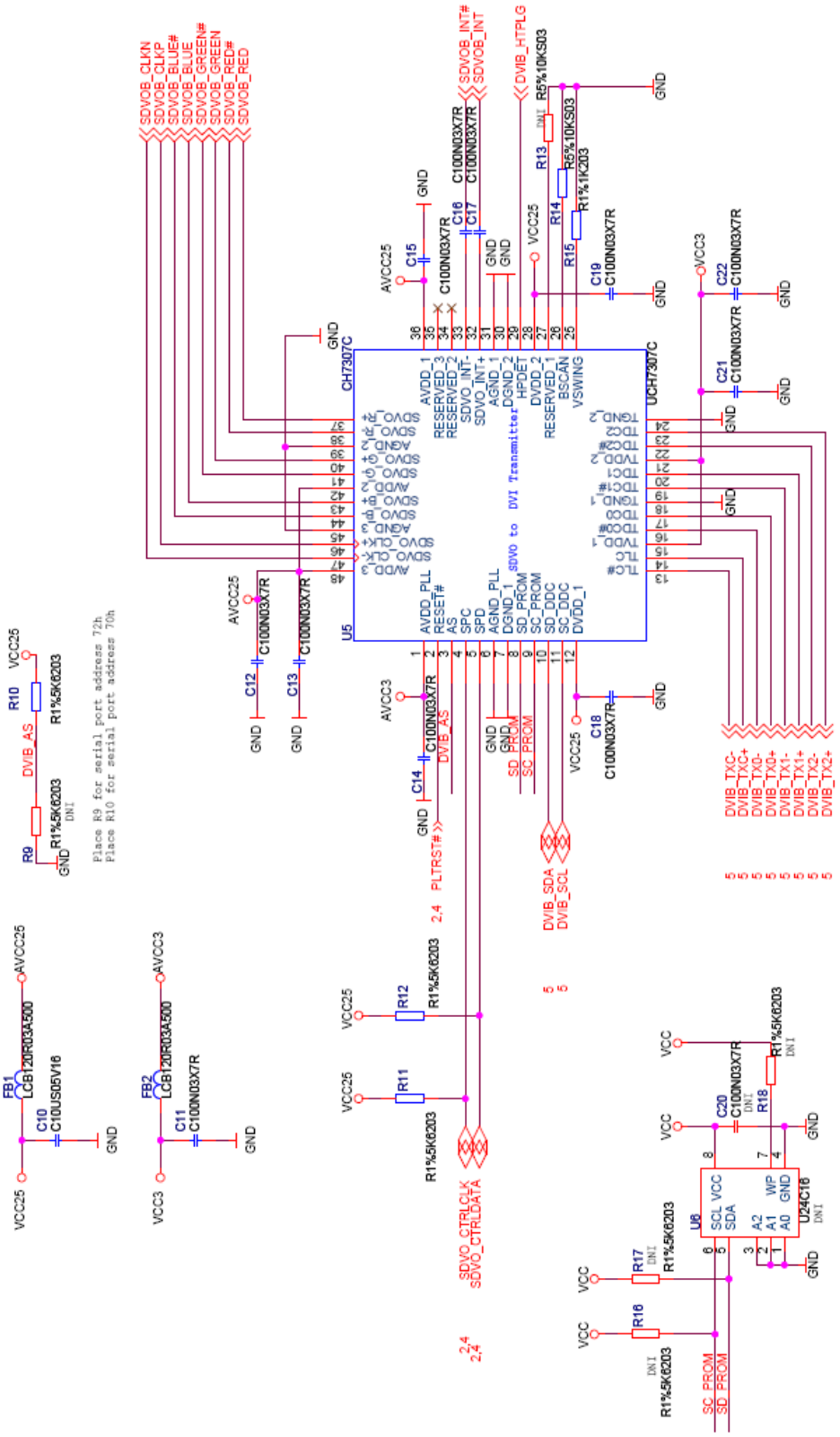
5.1 Feature connector



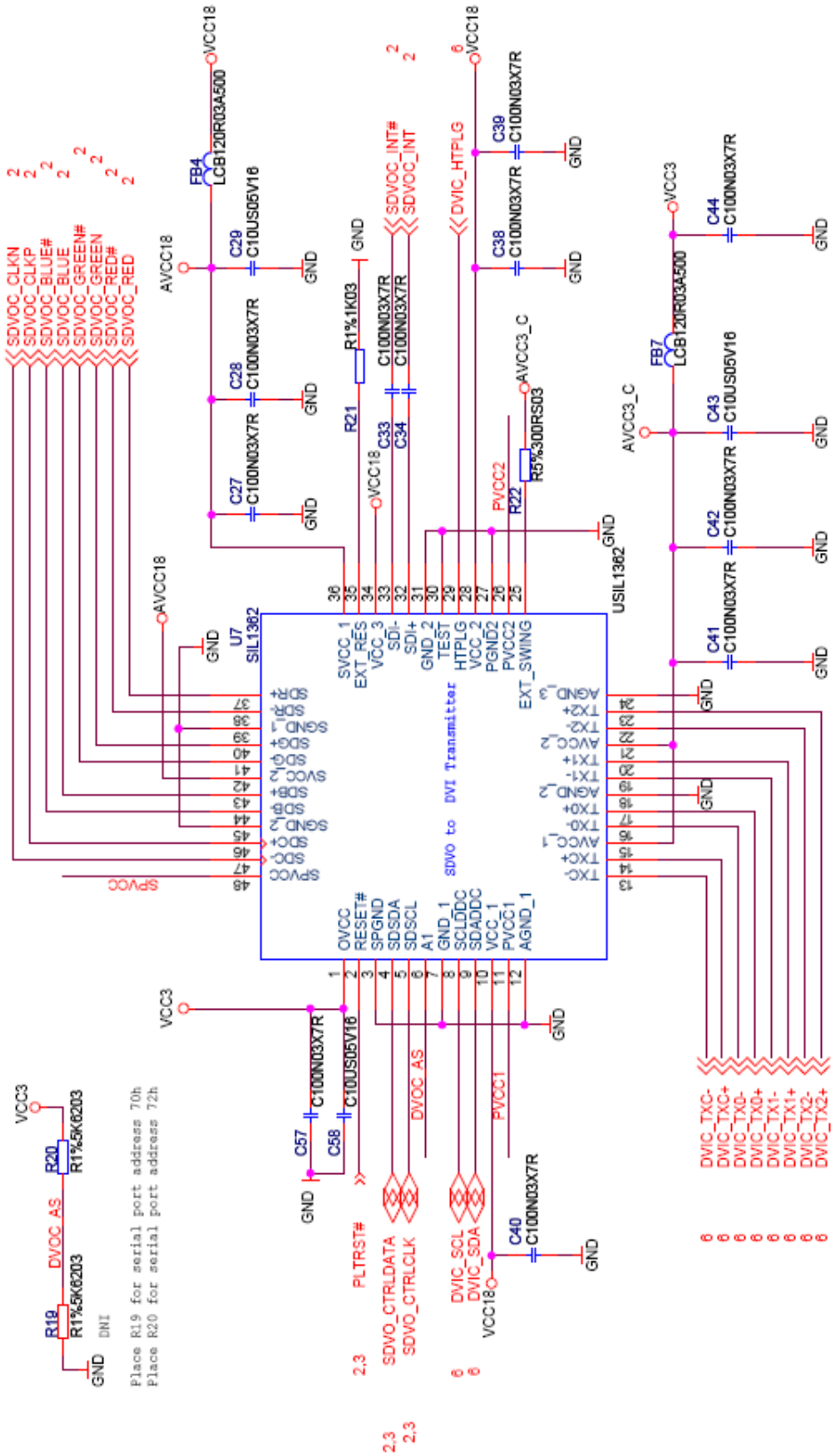
5.2 Regulator

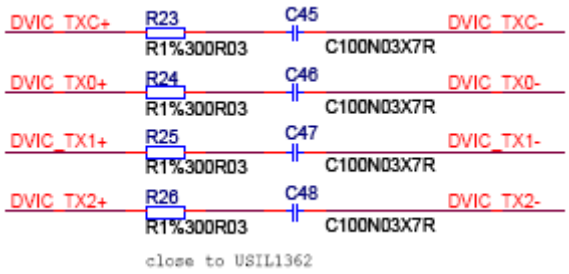


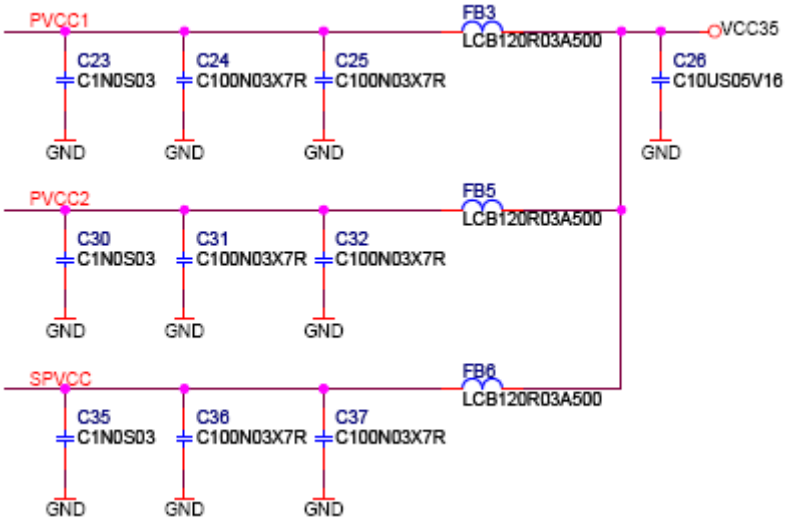
5.3 SDVOB to DVI



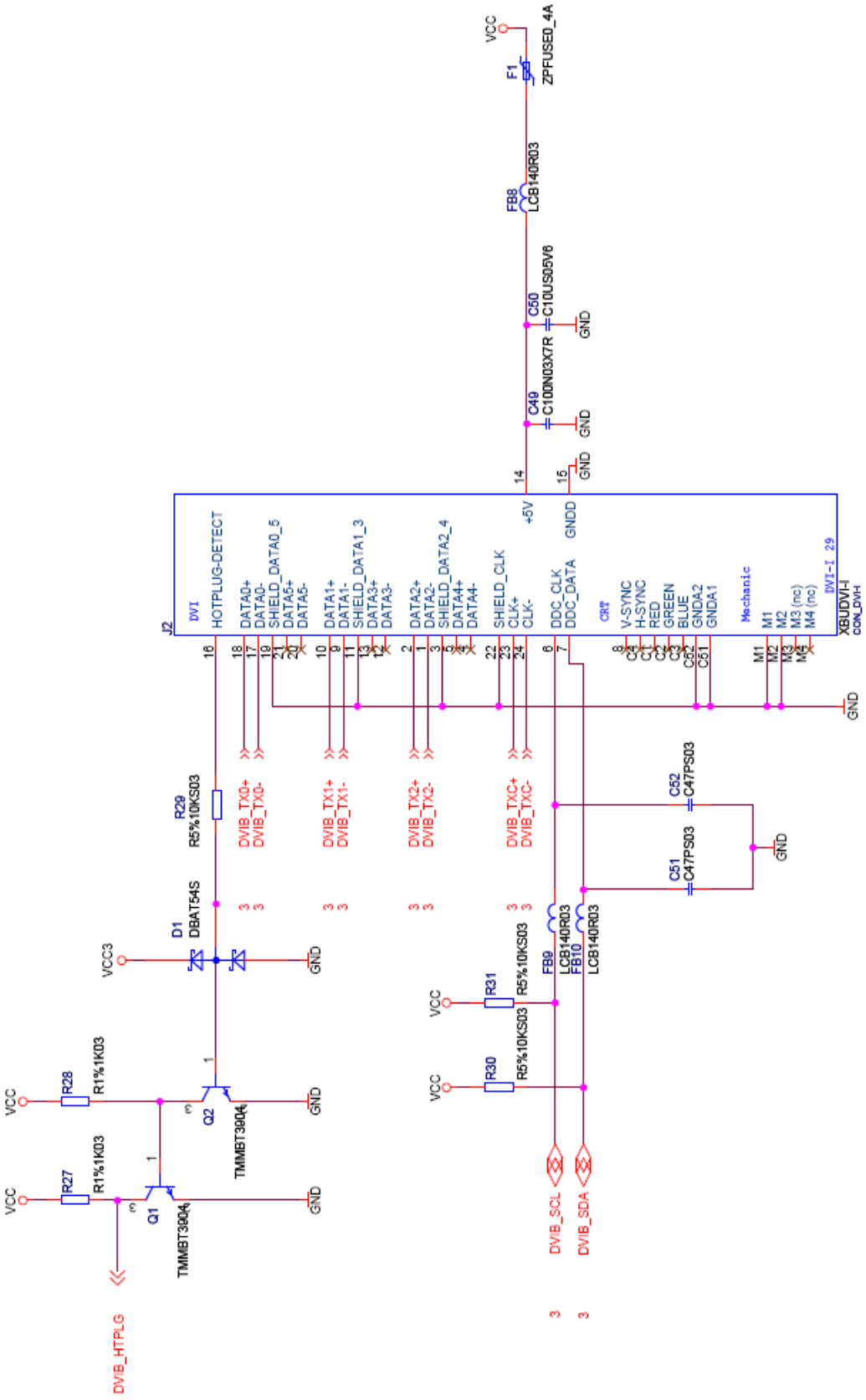
5.4 SDOVC to DVI



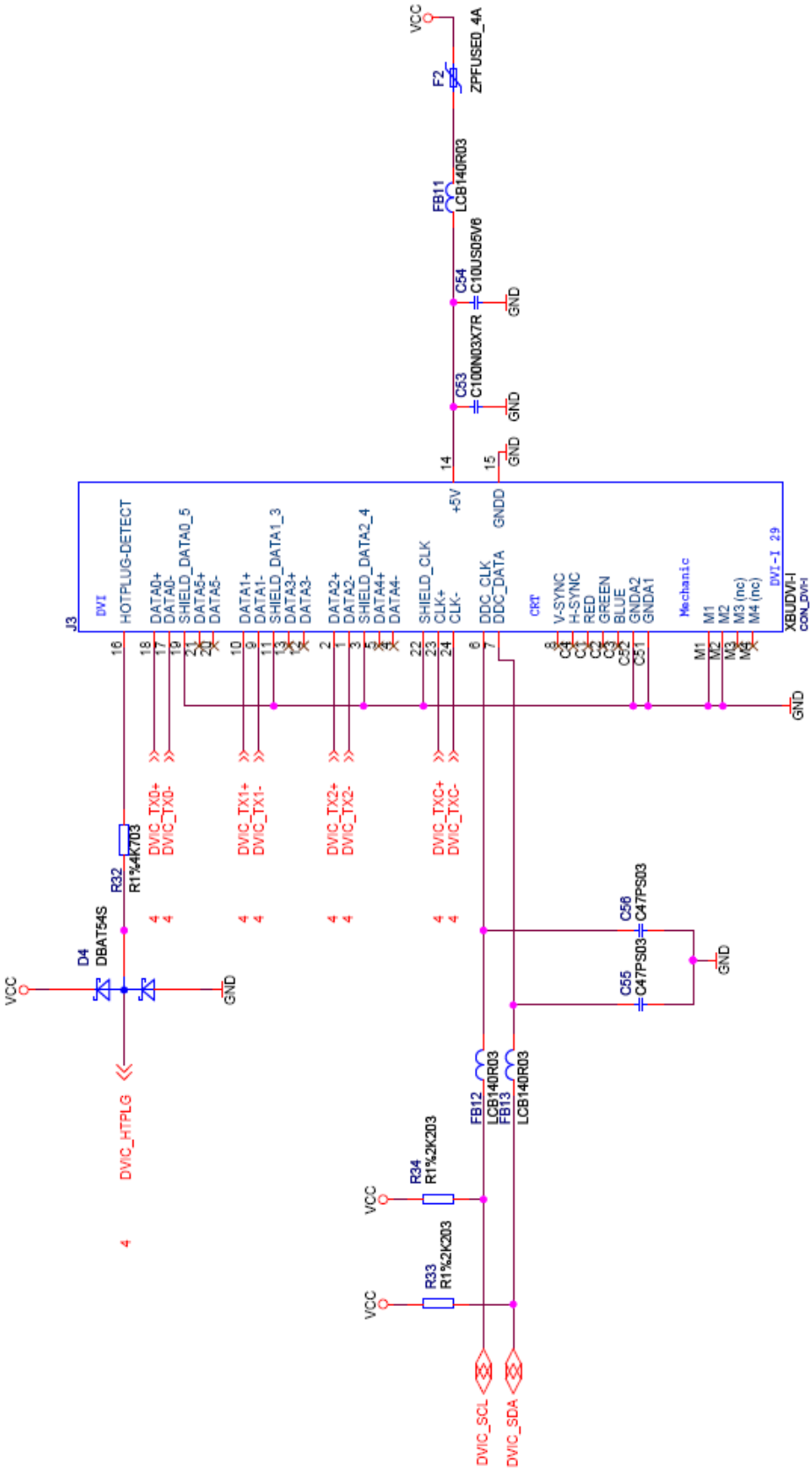

DVIC_TXC+
R23
R1%300R03
C45
C100N03X7R
DVIC_TXC-
DVIC_TX0+
R24
R1%300R03
C46
C100N03X7R
DVIC_TX0-
DVIC_TX1+
R25
R1%300R03
C47
C100N03X7R
DVIC_TX1-
DVIC_TX2+
R26
R1%300R03
C48
C100N03X7R
DVIC_TX2-
close to USIL1362


PVCC1
FB3
LCB120R03A500
VCC35
C23
C1N0S03
C24
C100N03X7R
C25
C100N03X7R
C26
C10US05V16
GND
GND
GND
GND
PVCC2
FB5
LCB120R03A500
C30
C1N0S03
C31
C100N03X7R
C32
C100N03X7R
GND
GND
GND
SPVCC
FB6
LCB120R03A500
C35
C1N0S03
C36
C100N03X7R
C37
C100N03X7R
GND
GND
GND

5.5 DVIB connector



5.6 DVIC connector



6 Appendix C: Document Revision History

Revision	Date	Edited by	Changes
0.1	17.06.2009	TJO	Created preliminary manual
110	15.12.2009	UMA	Added information about both product variants
111	13.09.2010	PRO	Added schematics and updated product image

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