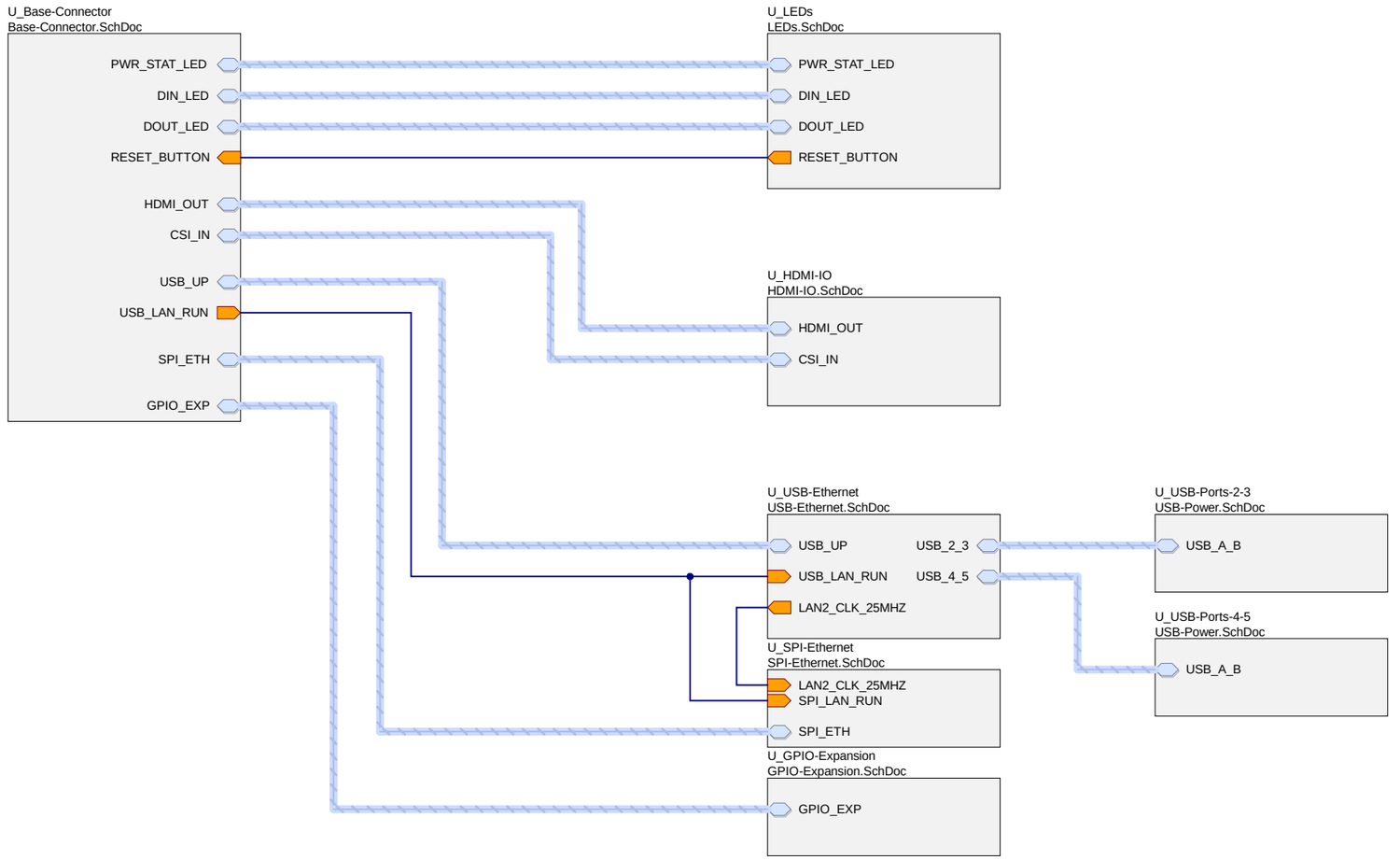

FID6
FID5
FID4
FID3
FID1
FID2

LP0146R02

PCBLabel WOM UL 10x8

DMC 5X5

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FR1

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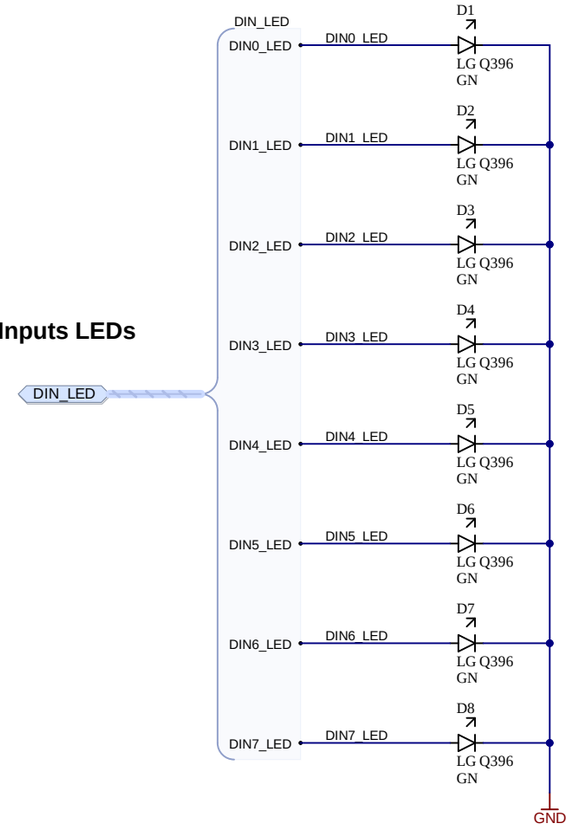
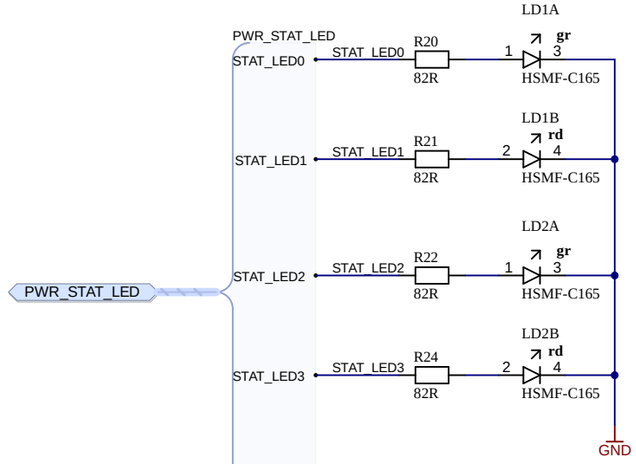
Project: **PiCompact-CoreTop**	Title: *		
Author: VM/VS	approved by: *		Revision: **0**
Size: A3	Number: BG0169R02 LP0146R02		
Date: 25.02.2021	Time: 09:14:14		Sheet **1** of **8**
File: OverviewTop.SchDoc			

Digital Inputs LEDs



Status LEDs



Green Power LED function:

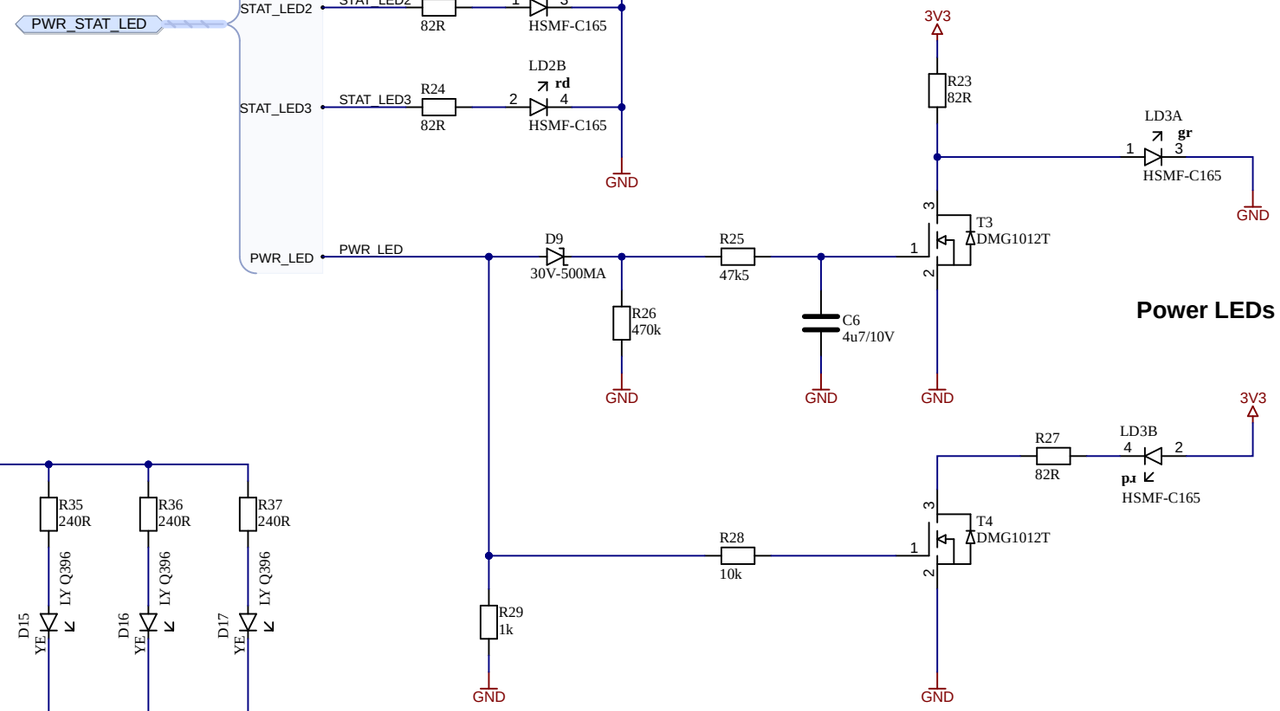
When system is switched on capacity draws gate of green LED to GND.
Thus FET is off and LED_PWgrn is high and green LED is on.

During startup LED_PWRred is high impedance pulled up by Broadcom and pulled down by 1k.
Thus FET is off and LED_PWgrn is high and green LED is on.

After booting Broadcom changes LED_PWred to output low.
Thus FET is off and LED_PWgrn is high and green LED is on.

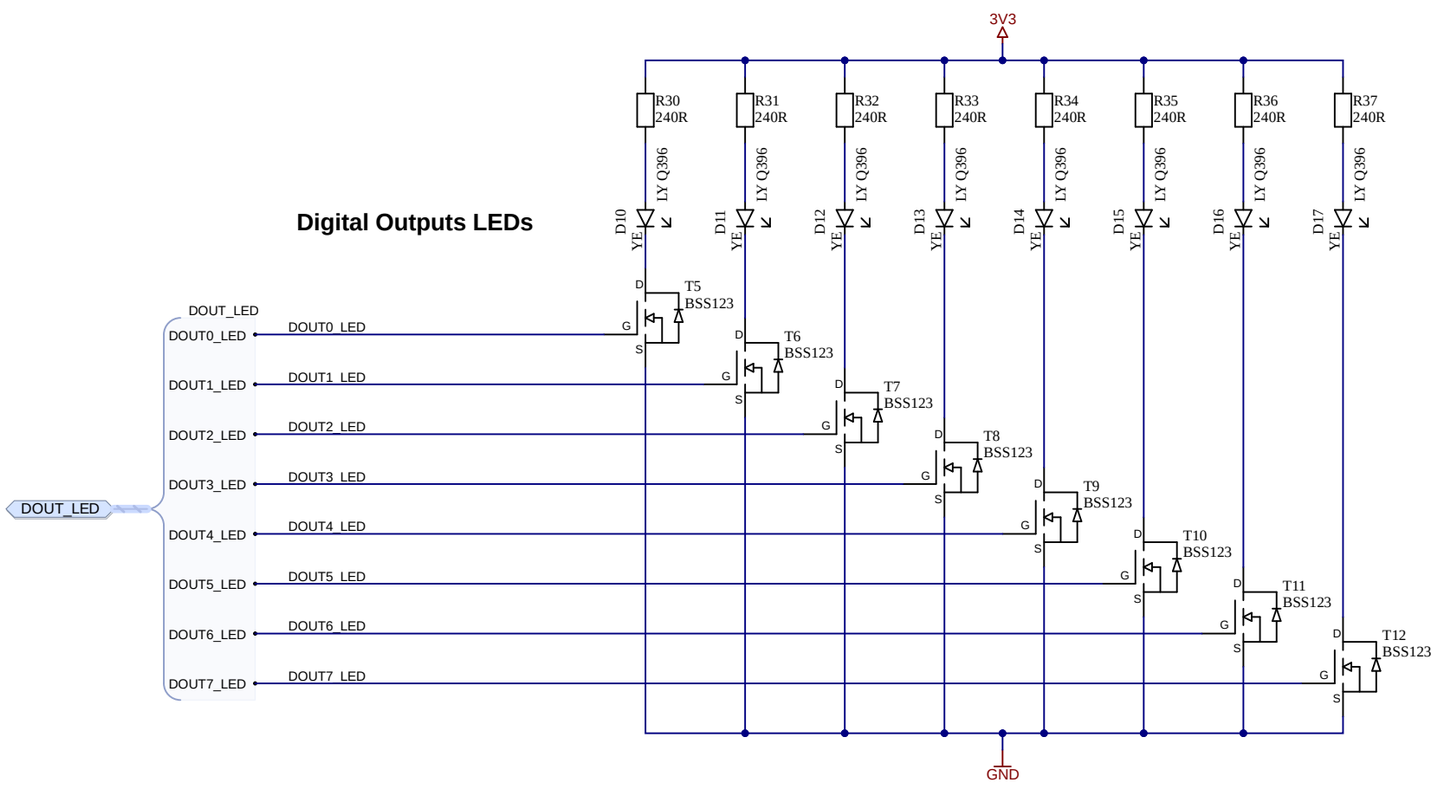
On severe error Broadcom sets LED_PWred to output high.
After charging Capacitor to 1.5 V FEt will turn on (max. 1 s delay).
Thus LED_PWgrn is low and green LED is off.
This mode pulls 2 x 3.3V/1k = 6.6 mA current.

On fault condition Braodcom sets LED_PWred to 1Hz high / low oscillation.
After charging Capacitor to 1.5 V (during high phase) FET will turn on.
Discharge during low phase of LED_PWred is much slower and capacitor is not discharged.
Thus LED_PWgrn keeps low and green LED stays off.
LED turns on again when LED_PWred is low for more than 3 seconds.

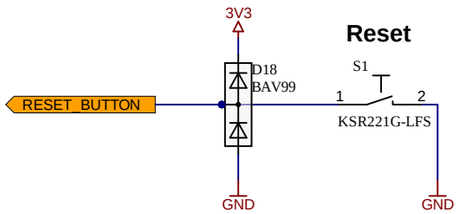


Power LEDs

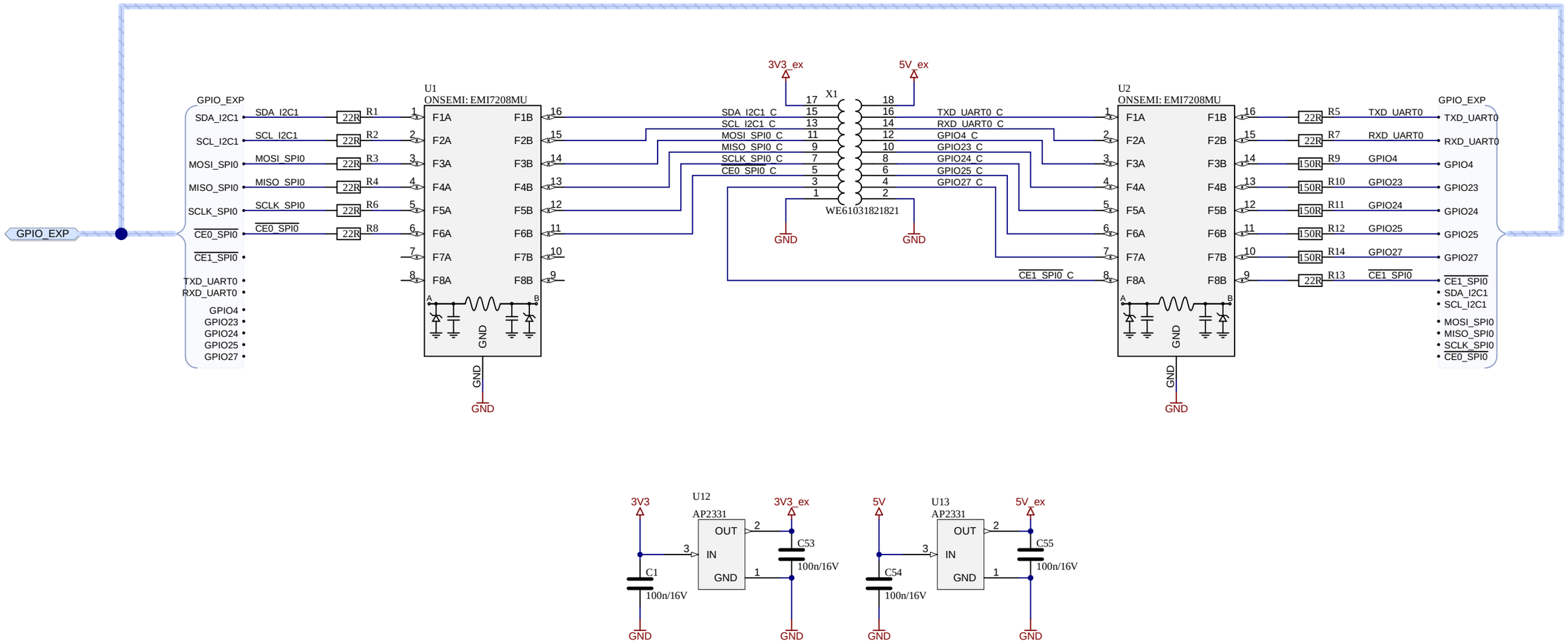
Digital Outputs LEDs



Reset



KUNBUS industrial communication KUNBUS GmbH Heerweg 15c 73770 Denkendorf	Project: **PiCompact-CoreTop** Title: *		
	Author: VM/VS approved by: *		
	Size: A3	Number: BG0169R02 LP0146R02	Revision: **0**
	Date: 25.02.2021 Time: 09:14:14 File: LEDs.SchDoc		Sheet **2** of **8**



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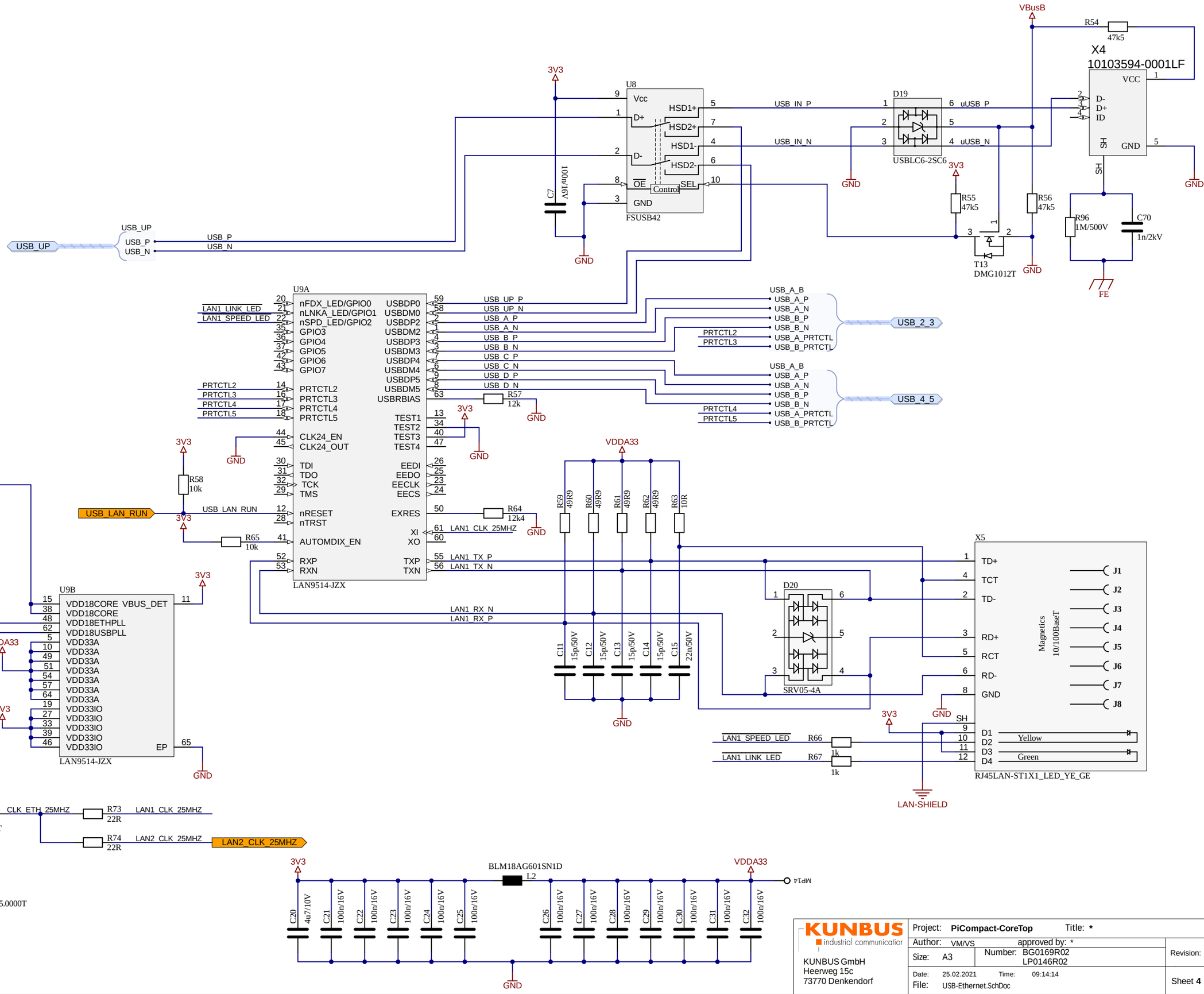
Project: **PiCompact-CoreTop**	Title: *		
Author: VM/VS	approved by: *		
Size: A3	Number: BG0169R02 LP0146R02		Revision: **0**
Date: 25.02.2021	Time: 09:14:14		Sheet **3** of **8**
File: GPIO-Expansion.SchDoc			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R54
47k5
X4
10103594-0001LF
VCC
D-
D+
ID
GND
SH
U8
Vcc
D+
D-
OE
GND
HSD1+
HSD2+
HSD1-
HSD2-
Control
SEL
FSUSB42
C7
10V/100n
3V3
GND
USB_UP
USB_P
USB_N
USB_IN_P
USB_IN_N
D19
USBLC6-2SC6
uUSB_P
uUSB_N
R55
47k5
R56
47k5
T13
DMG1012T
R96
1M/500V
C70
1n/2kV
FE
U9A
nFDX_LED/GPIO0
nLNKA_LED/GPIO1
nSPD_LED/GPIO2
GPIO3
GPIO4
GPIO5
GPIO6
GPIO7
PRTCTL2
PRTCTL3
PRTCTL4
PRTCTL5
CLK24_EN
CLK24_OUT
TDI
TDO
TCK
TMS
nRESET
nTRST
AUTOMDIX_EN
RXP
RXN
USBDP0
USBDM0
USBDP2
USBDM2
USBDP3
USBDM3
USBDP4
USBDM4
USBDP5
USBDM5
USBRBIAS
TEST1
TEST2
TEST3
TEST4
EEDI
EEDO
EECLK
EECS
EXRES
XI
XO
TXP
TXN
LAN9514-JZX
LAN1_LINK_LED
LAN1_SPEED_LED
USB_UP_P
USB_UP_N
USB_A_P
USB_A_N
USB_B_P
USB_B_N
USB_C_P
USB_C_N
USB_D_P
USB_D_N
R57
12k
USB_A_B
USB_A_PRTCTL
USB_B_PRTCTL
USB_2_3
USB_4_5
USB_LAN_RUN
R58
10k
R65
10k
R64
12k4
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LAN1_TX_P
LAN1_TX_N
LAN1_RX_N
LAN1_RX_P
VDDA33
R59
49R9
R60
49R9
R61
49R9
R62
49R9
R63
10R
C11
15p/50V
C12
15p/50V
C13
15p/50V
C14
15p/50V
C15
22n/50V
D20
SRV05-4A
X5
TD+
TCT
TD-
RD+
RCT
RD-
GND
SH
D1
D2
D3
D4
Yellow
Green
Magnetics
10/100BaseT
J1
J2
J3
J4
J5
J6
J7
J8
RJ45LAN-ST1X1_LED_YE_GE
LAN-SHIELD
1V8_core_LAN
C8
4u7/10V
C9
100n/16V
C10
100n/16V
BLM18AG601SN1D
L1
C16
1u/16V
C17
100n/16V
C18
100n/16V
U9B
VDD18CORE_VBUS_DET
VDD18CORE
VDD18ETHPLL
VDD18USBPLL
VDD33A
VDD33IO
EP
LAN9514-JZX
R68
1k
Q1A
EN
CLKOUT
DSC1001DL2-25.0000T
CLK_ETH_25MHZ
R73
22R
R74
22R
LAN2_CLK_25MHZ
C19
100n/16V
Q1B
DSC1001DL2-25.0000T
BLM18AG601SN1D
L2
C20
4u7/10V
C21
100n/16V
C22
100n/16V
C23
100n/16V
C24
100n/16V
C25
100n/16V
C26
100n/16V
C27
100n/16V
C28
100n/16V
C29
100n/16V
C30
100n/16V
C31
100n/16V
C32
100n/16V
MPt4
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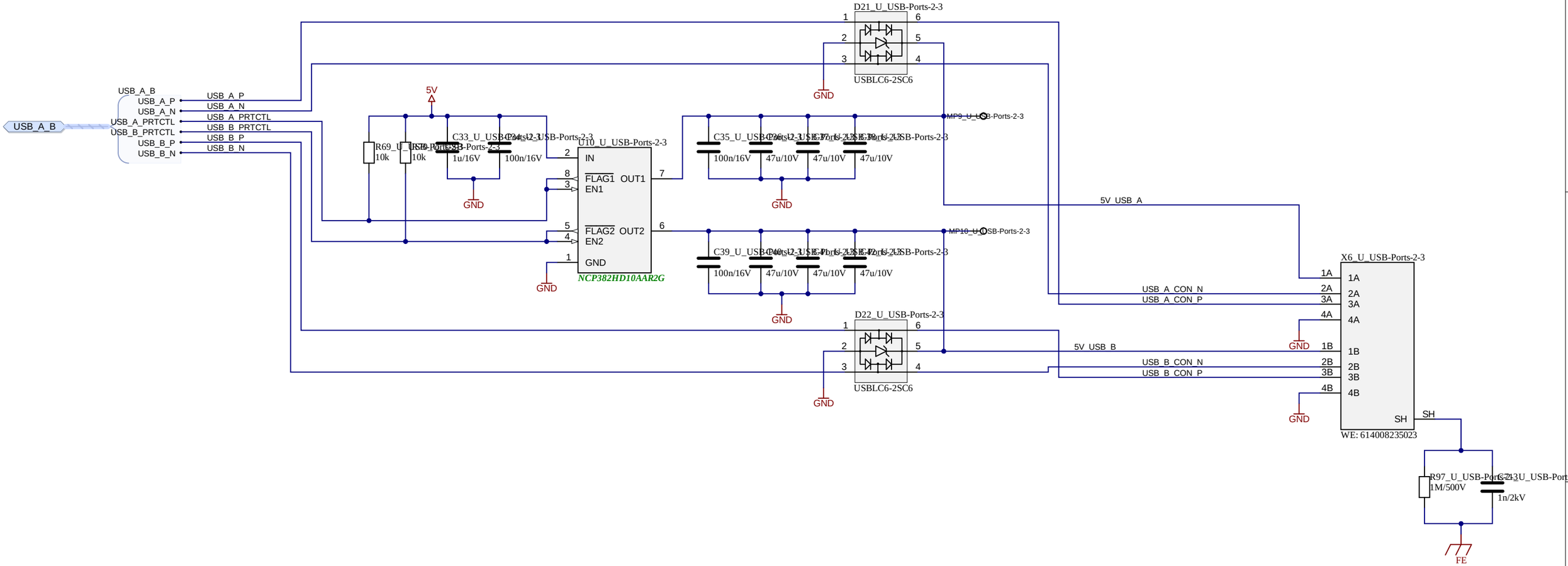
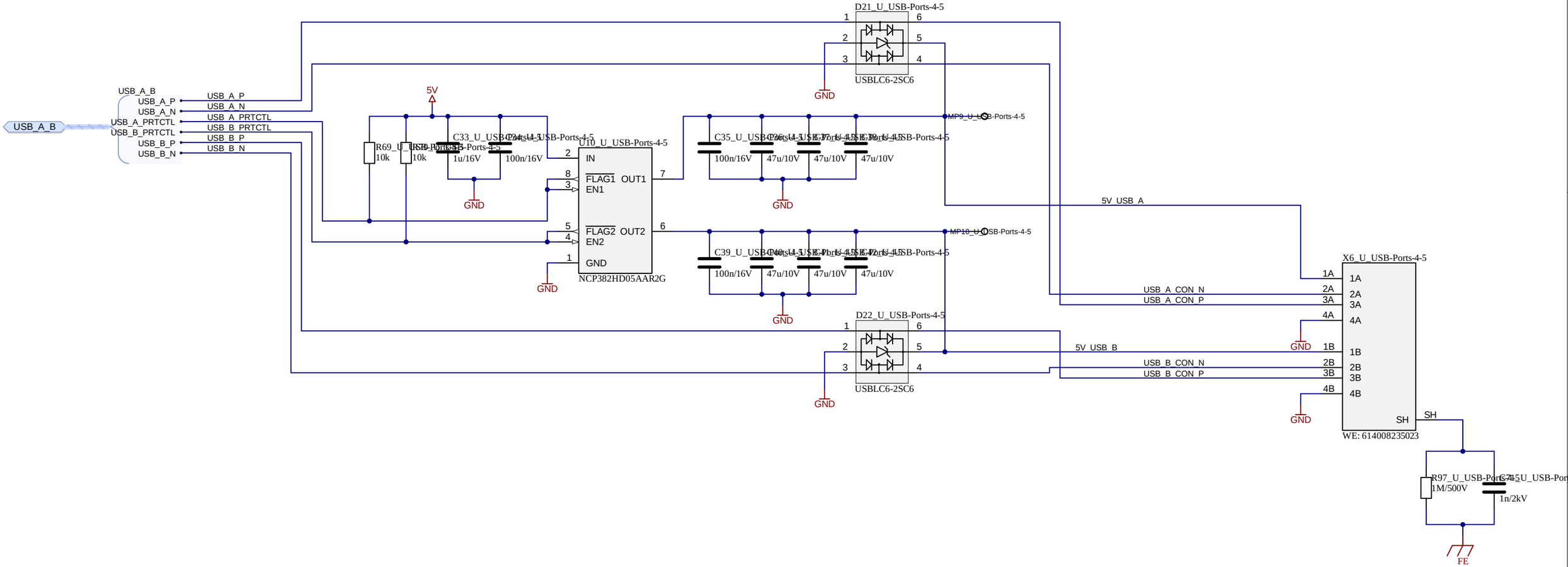
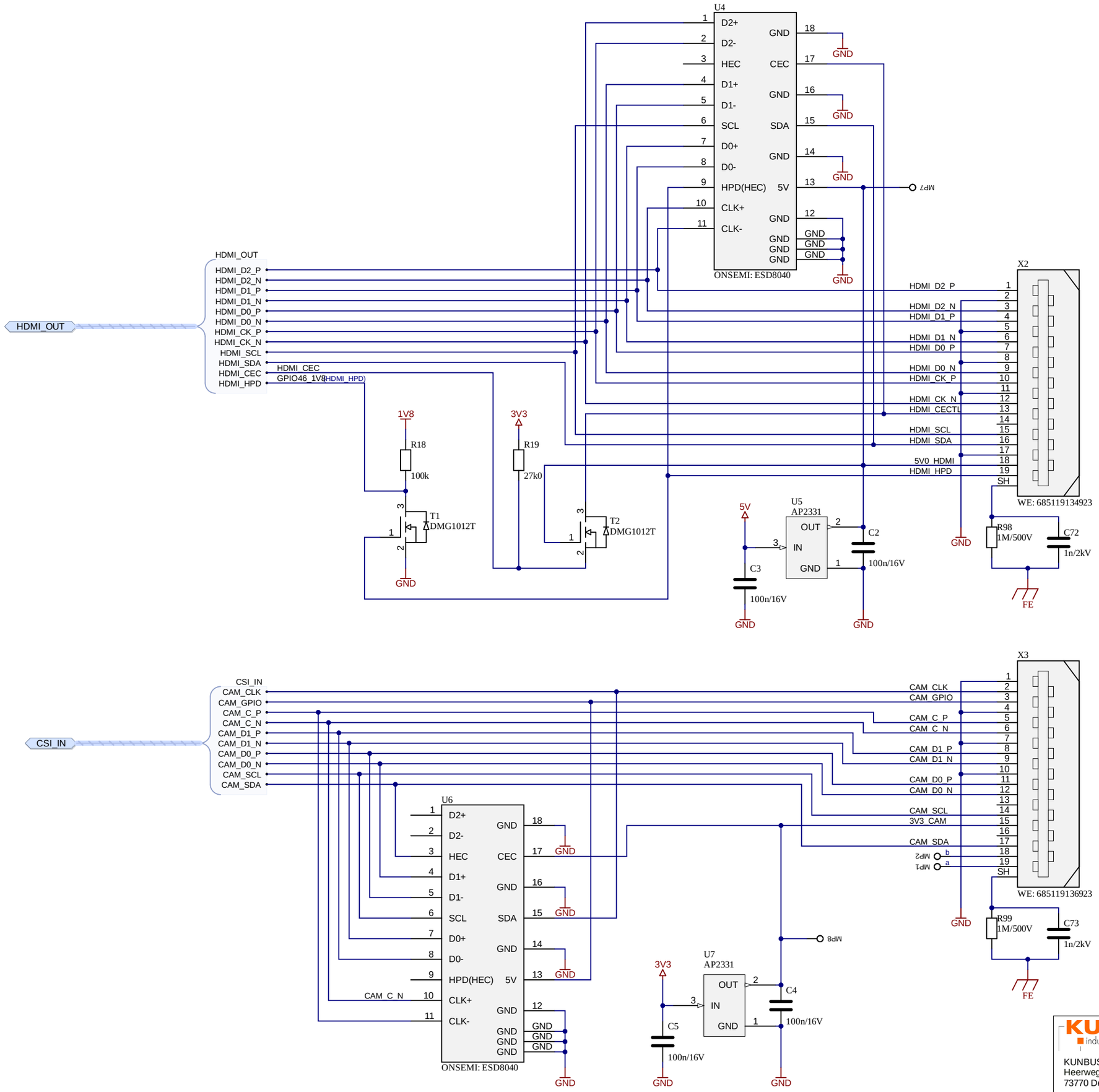
Project: PiCompact-CoreTop
Title: *
Author: VM/VS
approved by: *
Size: A3
Number: BG0169R02
LP0146R02
Revision: 0
Date: 25.02.2021
Time: 09:14:14
File: USB-Ethernet.SchDoc
Sheet 4 of 8



KUNBUS GmbH Heerweg 15c 73770 Denkendorf	Project: **PiCompact-CoreTop** Title: *
	Author: VM/VS approved by: *
	Size: A3 Number: BG0169R02 LP0146R02 Revision: **0**
	Date: 25.02.2021 Time: 09:14:14 File: USB-Power.SchDoc Sheet **5** of **8**



KUNBUS GmbH Heerweg 15c 73770 Denkendorf	Project: **PiCompact-CoreTop** Title: *
	Author: VM/VS approved by: *
	Size: A3 Number: BG0169R02 LP0146R02 Revision: **0**
	Date: 25.02.2021 Time: 09:14:14 File: USB-Power.SchDoc Sheet **5** of **8**



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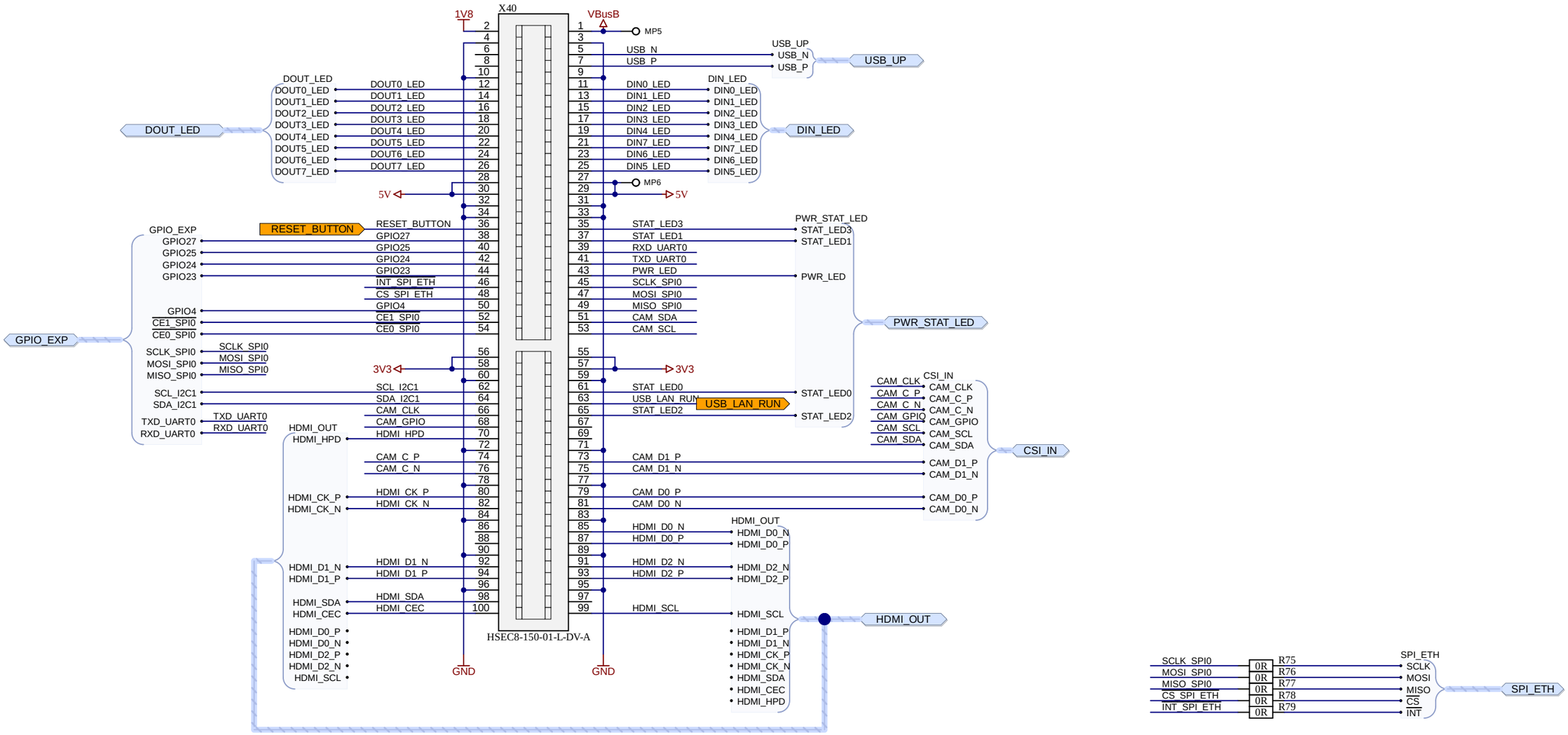
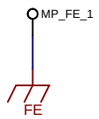
Project: **PiCompact-CoreTop**	Title: *		
Author: VM/VS	approved by: *		
Size: A3	Number: BG0169R02 LP0146R02	Revision: **0**	
Date: 25.02.2021	Time: 09:14:14		
File: HDMI-IO.SchDoc		Sheet **6** of **8**	





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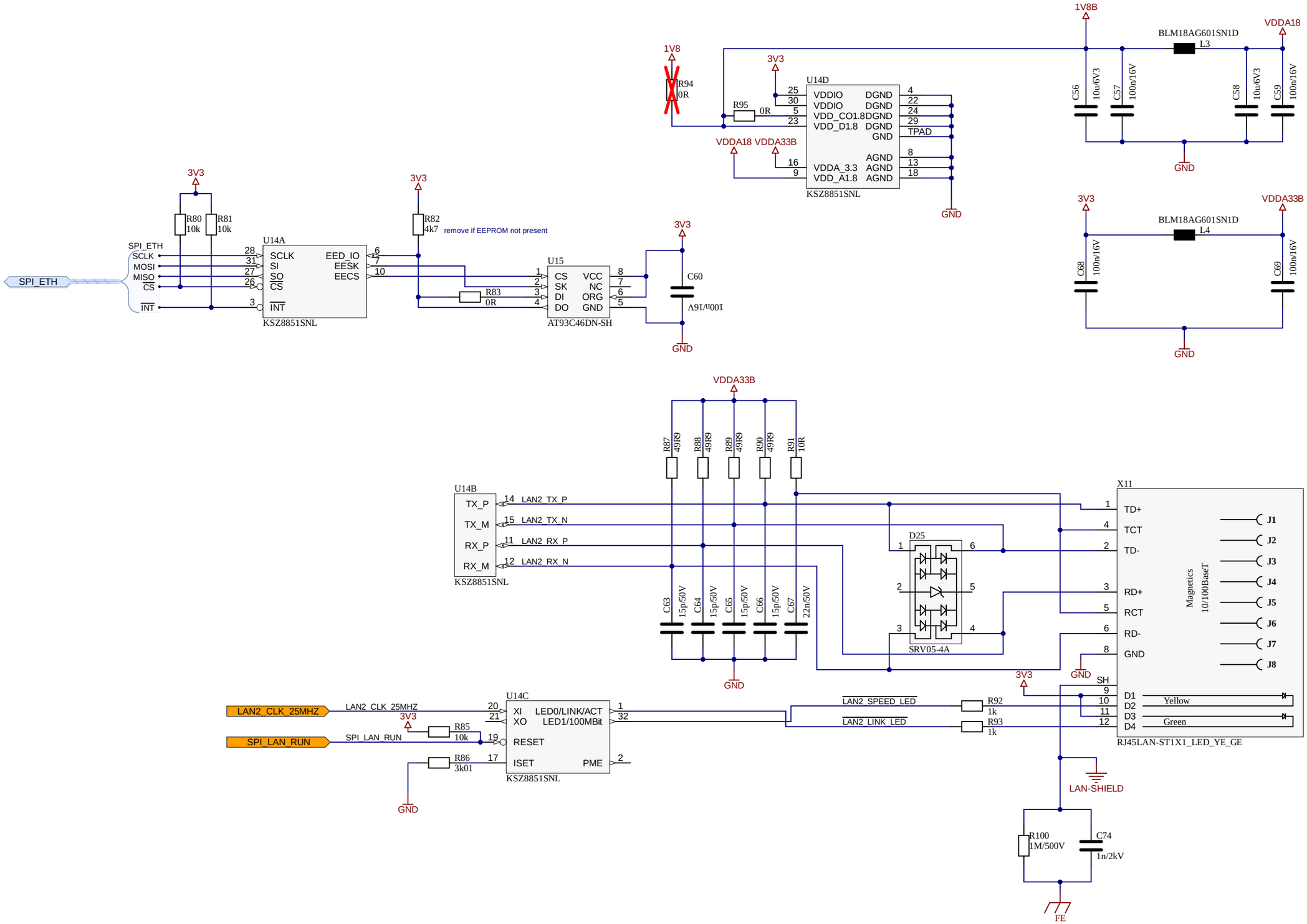
Project: **PiCompact-CoreTop**	Title: *		
Author: VM/VS	approved by: *		
Size: A3	Number: BG0169R02 LP0146R02	Revision: **0**	
Date: 25.02.2021	Time: 09:14:14	Sheet **7** of **8**	
File: Base-Connector.SchDoc			



KUNBUS GmbH Heerweg 15c 73770 Denkendorf	Project: **PiCompact-CoreTop** Title: *
	Author: VM/VS approved by: *
	Size: A3 Number: BG0169R02 LP0146R02 Revision: **0**
	Date: 25.02.2021 Time: 09:14:15
	File: SPI-Ethernet.SchDoc Sheet **8** of **8**