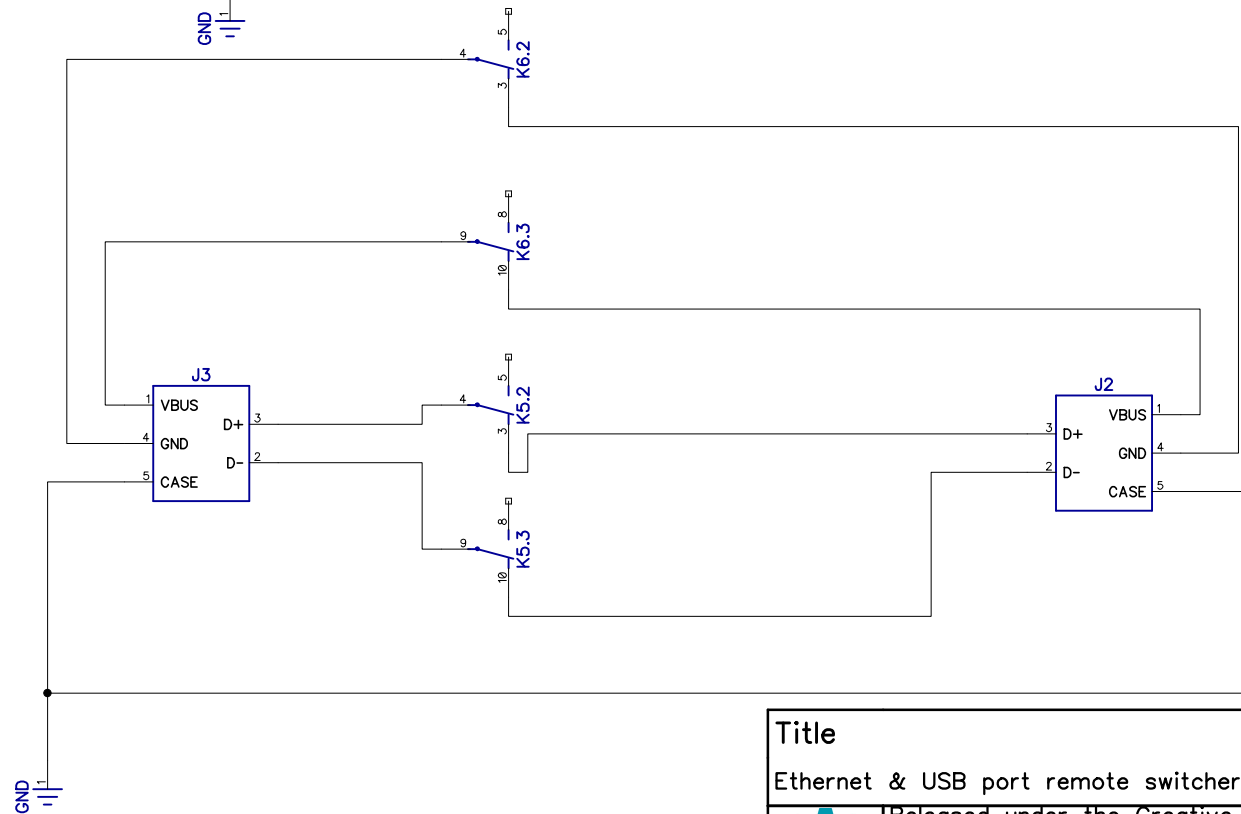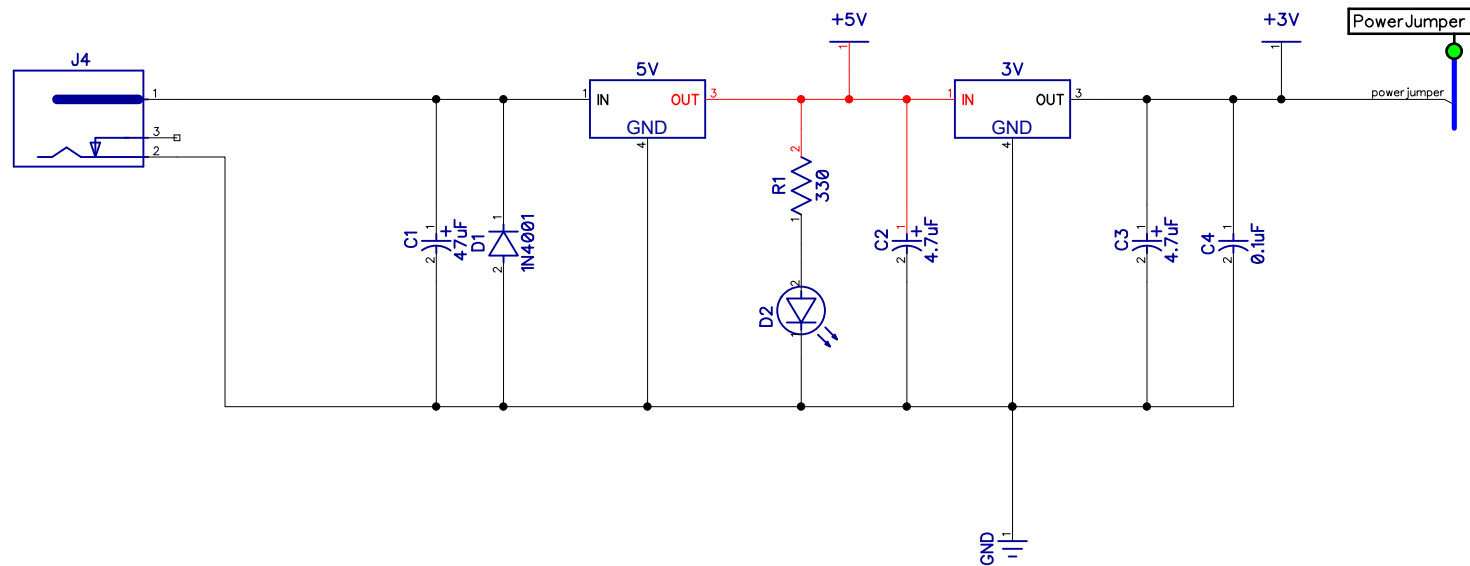The relay circuit for the Ethernet and USB ports
has been designed to be normally closed so if there
is a power failure the connected devices will have
communication.

J7

1	in1
2	in2
3	in3
4	in4
5	in5
6	in6
7	in7
8	in8

9 CASE

J1

out1	1
out2	2
out3	3
out4	4
out5	5
out6	6
out7	7
out8	8

CASE 9

GND

K1.2   5 3   out1
in1   4

K1.3   8 10   out2
in2   9

K2.2   5 3   out3
in3   4

K2.3   8 10   out4
in4   9

K3.2   5 3   out5
in5   4

K3.3   8 10   out6
in6   9

K4.2   5 3   out7
in7   4

K4.3   8 10   out8
in8   9

+3V

D3   1N4001

K1.1   K2.1   K3.1   K4.1

Relays

S5_0   R9   10k   Q1   Q3

GND

Title

Ethernet & USB port remote switcher Lure

Rev
1.1

Date: 07/10/2015

Drawn by: Jose Navarro

eth&usbswitcher_Lure.dch

Ethernet

+3V

Relays

S5_1

R10
10k

2N2222
Q2

2N2222
Q4

D4
1N4001

K5.1

K6.1

GND

The relay circuit for the Ethernet and USB ports
has been designed to be normally closed so if there
is a power failure the connected devices will have
communication.

K6.2

K6.3

J3

1 VBUS
4 GND   D+ 3
5 CASE   D- 2

K5.2

K5.3

J2

VBUS 1
D+ 3   GND 4
D- 2   CASE 5

GND

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eth&usbswitcher_Lure.dch	USB	

This power supply can be used to prevent relay power consumption spikes to affect the MinnowBoard MAX

+5V

+3V

PowerJumper

J4

5V
IN   OUT
GND

3V
IN   OUT
GND

power jumper

C1
4.7uF

D1
1N4001

R1
330

C2
4.7uF

C3
4.7uF

C4
0.1uF

D2

GND

Title		
Ethernet & USB port remote switcher Lure		Rev
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Date: 07/10/2015	Drawn by: Jose Navarro	
eth&usbswitcher_Lure.dch	Power supply	

Use a jumper wire to draw power
from the MinnowBoard MAX

J6

PowerJumper

power jumper

This exposes UART2(GPIO) power
rails (5V and 3.3V) and 2 GPIO pins
GPIO_PWM0 and GPIO_PWM1

VCC

J5

1
2
3
4
5
6
7
8

GND

This lines will expose
the UART2

VCC

GND

U2

1	Gnd	Gnd	14	
2	VCC	3v3	15	
3	GPIO_SPI_CS#	GPIO_UART1_TXD	16	
4	GPIO_SPI_MISO	GPIO_UART1_RXD	17	
5	GPIO_SPI_MOSI	GPIO_UART1_CTS	18	
6	GPIO_SPI_CLK	GPIO_UART1_RTS	19	
7	GPIO_I2C_SCL	GPIO_I2S_CLK	20	
8	GPIO_I2C_SDA	GPIO_I2S_FRM	21	
9	GPIO_UART2_TXD	GPIO_I2S_DO	22	
10	GPIO_UART2_RXD	GPIO_I2S_DI	23	
11	GPIO_S5_0	GPIO_PWM0	24	
12	GPIO_S5_1	GPIO_PWM1	25	
13	GPIO_S5_4	GPIO_IBL_8254	26	

MBoardMaxHDR26

Relays

S5_0
S5_1
S5_4

Title

Ethernet & USB port remote switcher Lure

Rev

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eth&usbswitcher_Lure.dch

Minnowboard integration