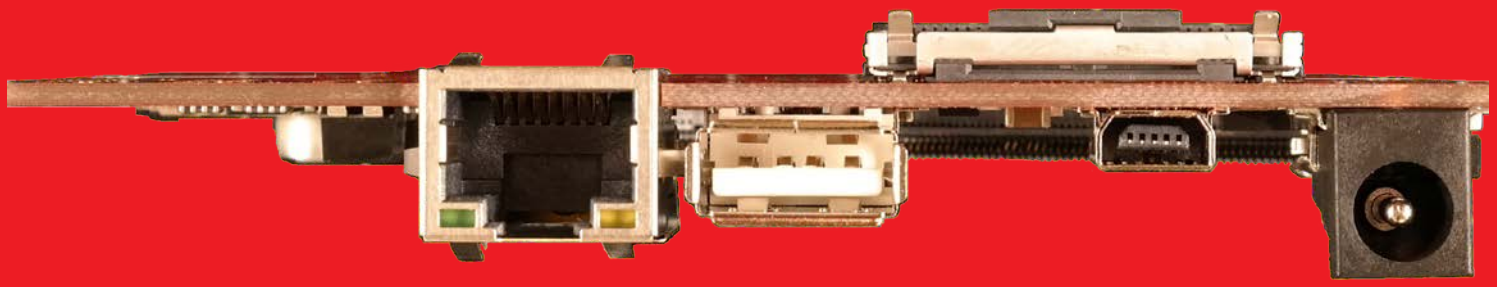
FIRST CLASS PREMIUM SUPPORT

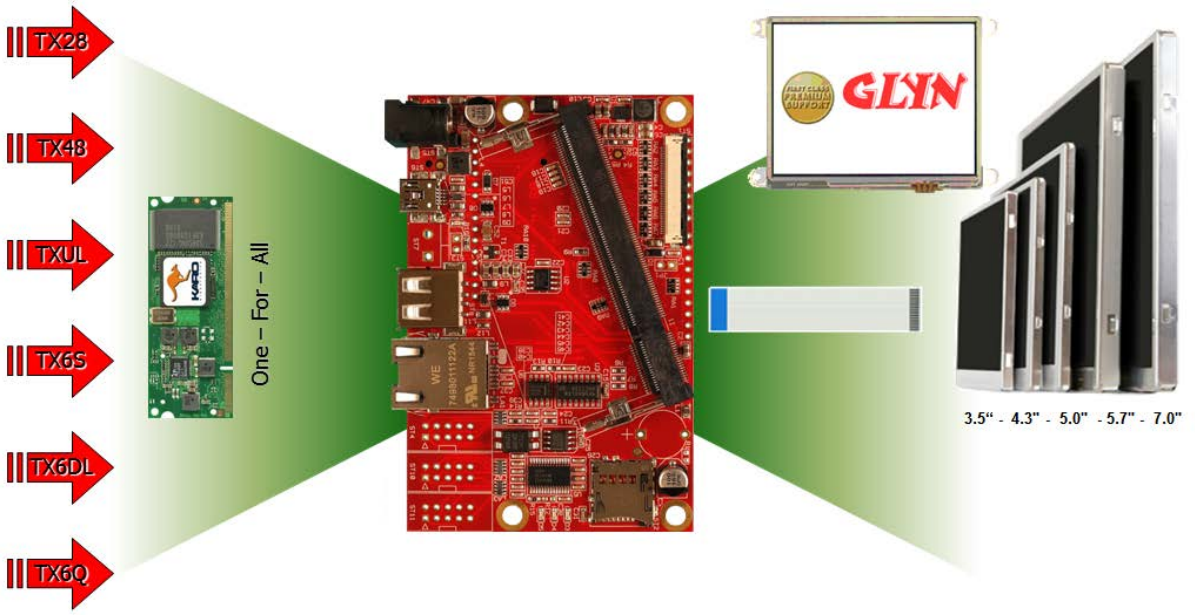
GLYN

High-Tech Distribution

ACLAVIS®

CoM Baseboard
TX-Original 1v2





PRELIMINARY
Version 1.2

Table of Contents

1 Introduction

The ACLAVIS® CoM Baseboard TX-Original is a ready-to-use Baseboard for Building applications based on theTX embedded processor boards.

The new ACLAVIS® CoM Baseboard comes with CAN, RS485 and PCIe.

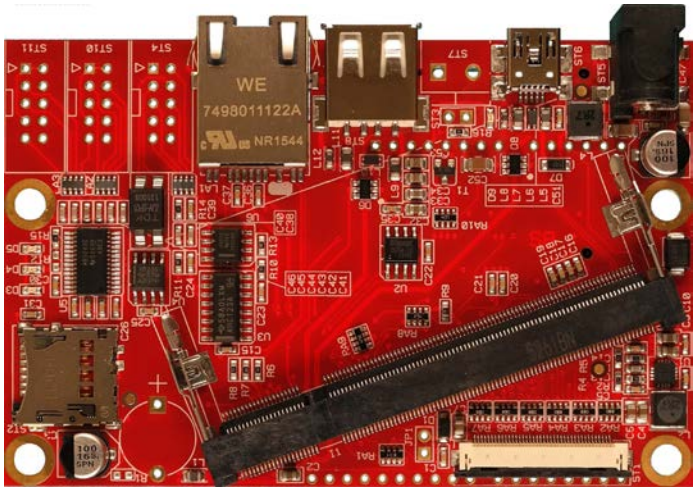
The ACLAVIS® CoM Baseboard serves as a perfect match for Glyn's TFT Family Concept display series from 3.5" up to 7".

Connectivity

- Ethernet
- USB
- CAN
- RS485
- RS232
- PCIe optional
- SD-Card
- RGB Display

Size and supply

- 5V DC Power supply
- -40°C bis 85°C
- 100mm x 65mm



Partnumber CoM_BB_TX-Original_1v1

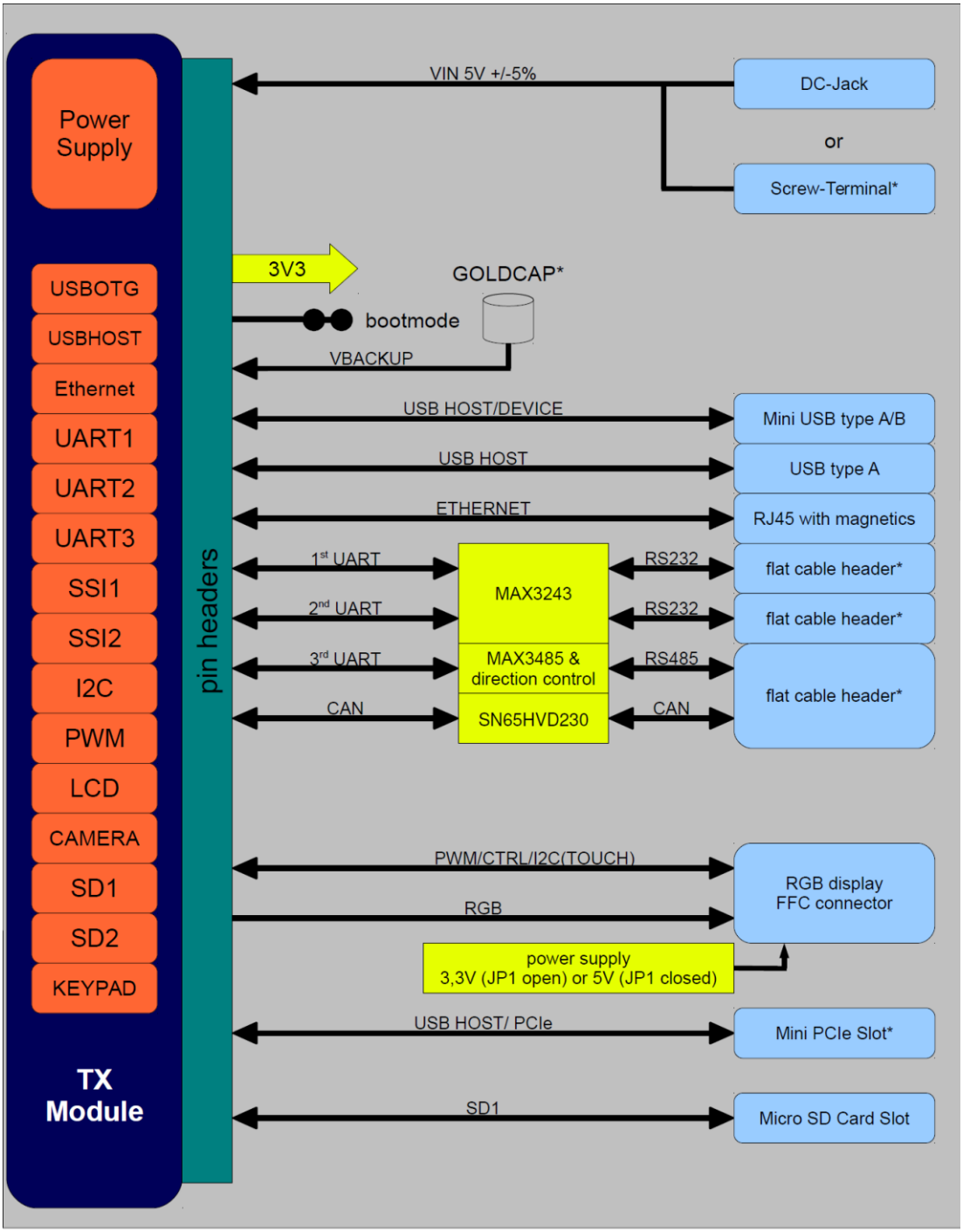
1.1 General Precautions

Take note of the following general precautions before you begin working with the Starterkit Hardware:

- Unplug the power cord from the wall socket before touching any component!
- Use a grounded wrist strap or touch a safely grounded object, such as the metal power supply case or the heating, before handling components to avoid damaging them due to static electricity!
- Hold components by the edges and do not touch the ICs on them!
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component!

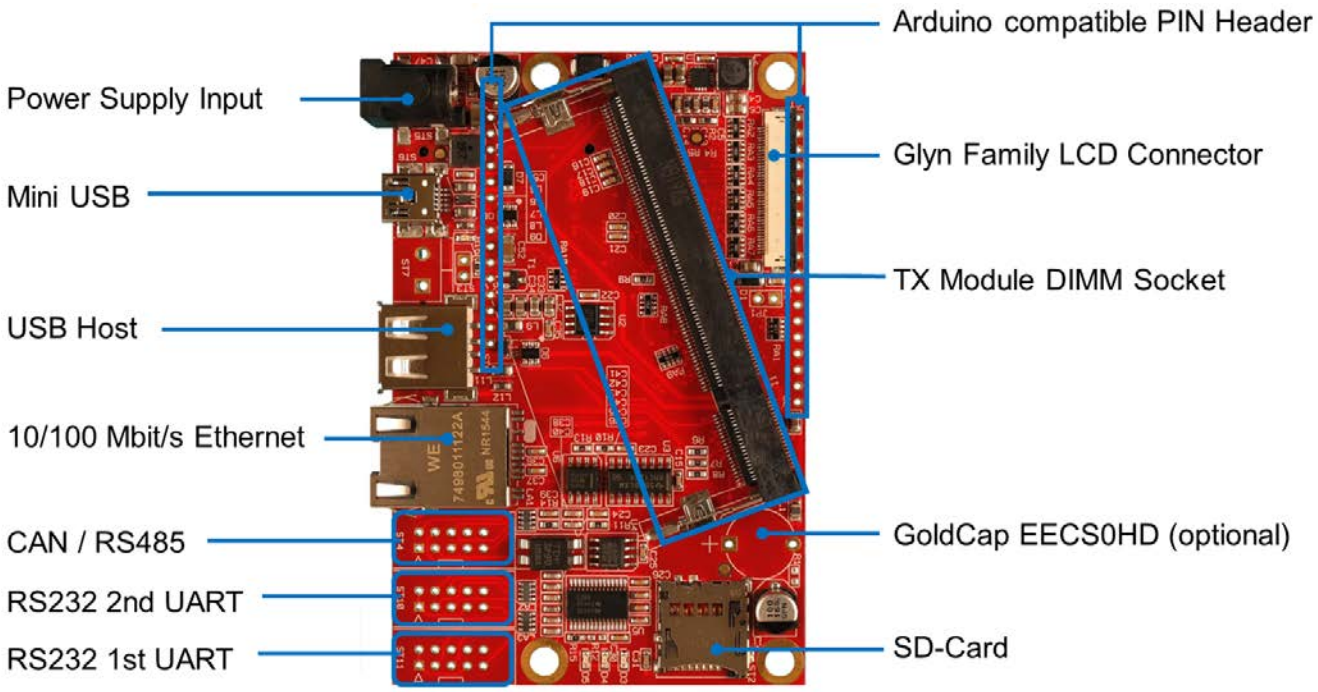
2 Baseboard Hardware

2.1 Blockdiagram

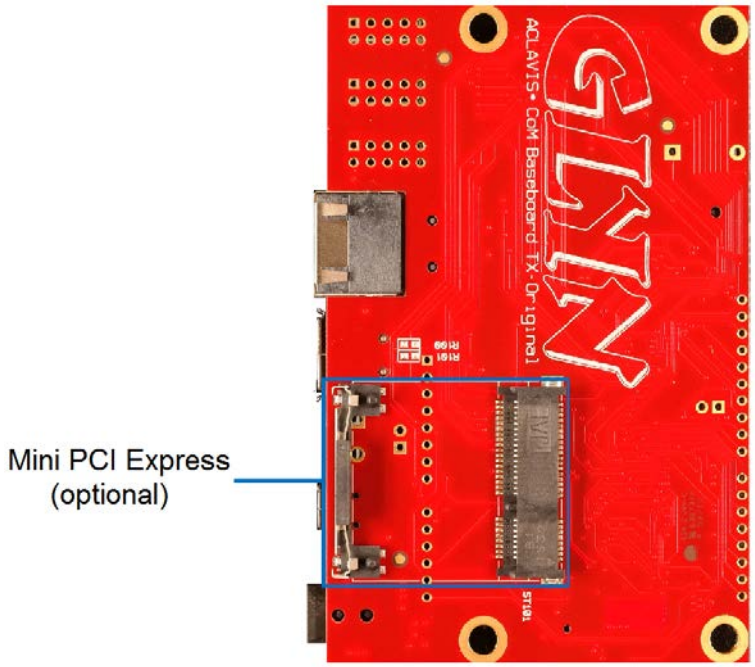


*optional

2.2 Baseboard Overview

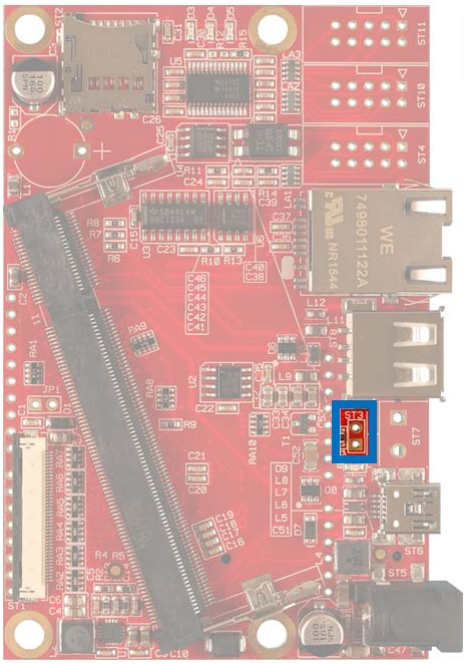


Backplane



2.3 Jumper

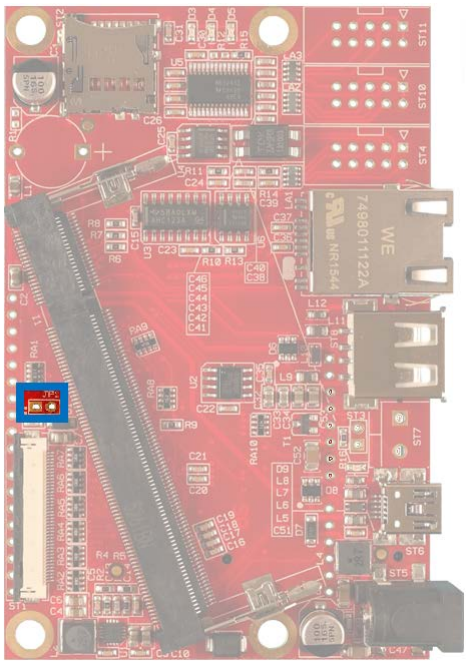
2.3.1 Boot-Jumper ST3



closed	Boot from USB/UART
open	Boot from NAND (default)

2.3.2 LCD Power-Supply-Jumper JP1 for TFT Connector ST8

LCD-Power-Connector for ST8 (Chapter 2.4.4) TFT-Family-Concept-Connector PIN 33 / 34.

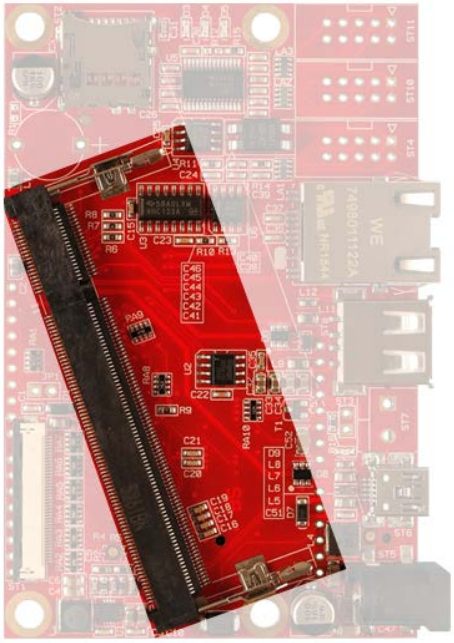


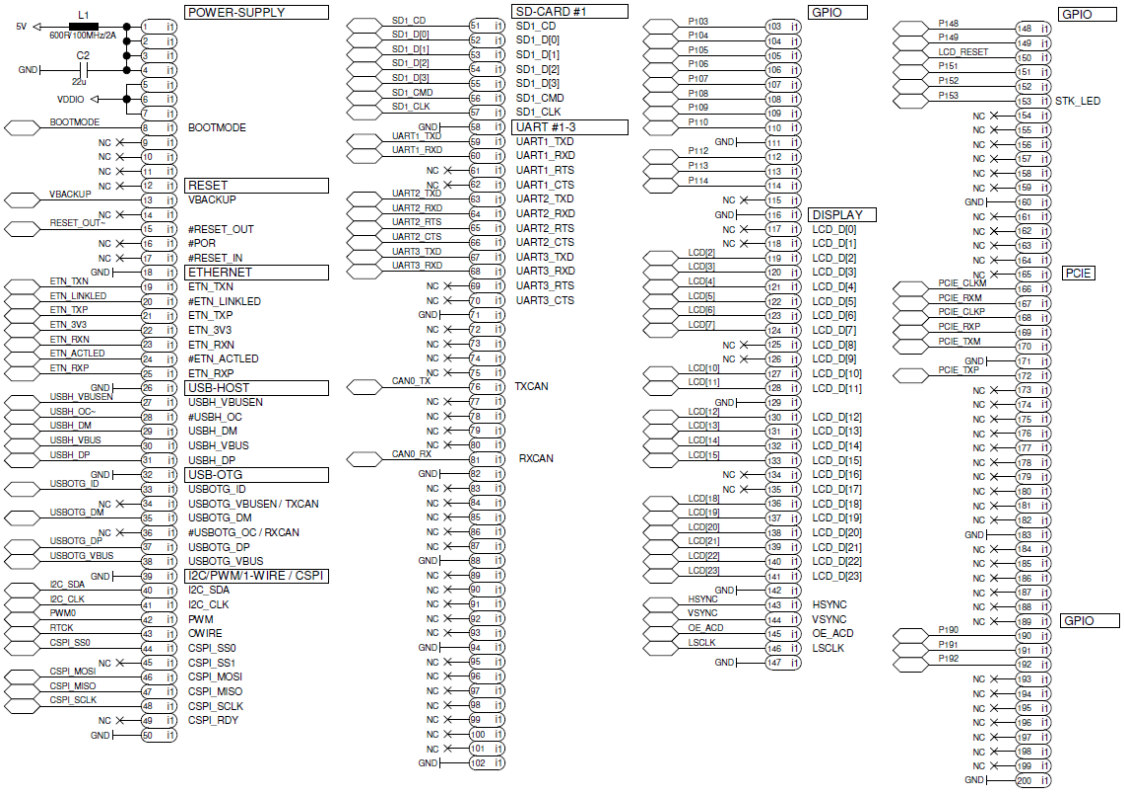
closed	5V
open	3,3V (default)

2.4 Pin Description

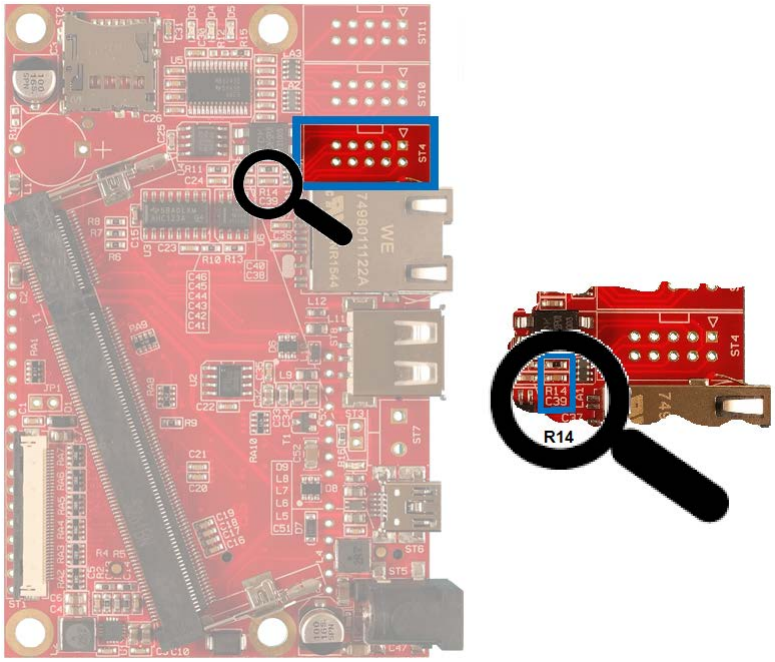
2.4.1 TX-DIMM-Pinout

For information about the 200-PIN DIMM pinout, please refer to the TX module datasheet.





2.4.2 ST4 CAN/RS485



ST4 Connections

Name	PIN #		Name
not connected	1	2	5V
CAN_L	3	4	CAN_H
RS485_B	5	6	RS485_A
not connected	7	8	not connected
GND	9	10	not connected

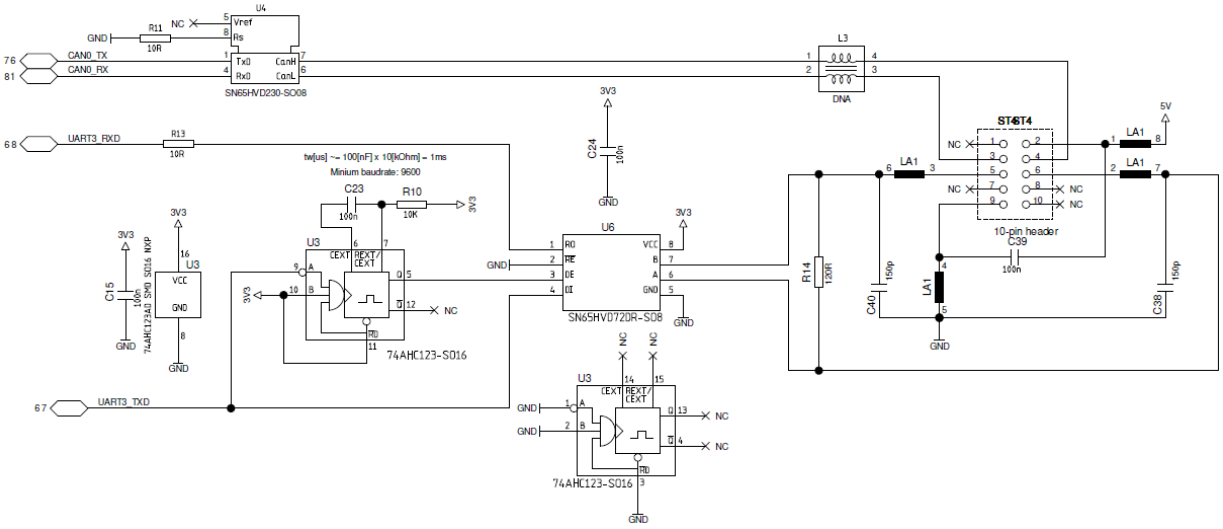
TX6UL pin assignment

TXCOM pin	Selected Function	i.MX6 UltraLite Pad Name	GPIO
67	UART5_TXD	GPIO1_IO04	GPIO1[4]
68	UART5_RXD	GPIO1_IO05	GPIO1[5]
76	FLEXCAN2_TX	UART2_CTS_B	GPIO1[22]
81	FLEXCAN2_RX	UART2_RTS_B	GPIO1[23]

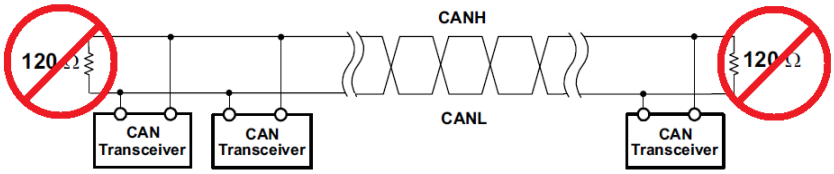
TX6 pin assignment

TXCOM pin	Selected Function	i.MX6 Pad Name	GPIO
67	UART3_TXD	EIM_D24	GPIO3[24]
68	UART3_RXD	EIM_D25	GPIO3[25]
76	FLEXCAN2_TX	KEY_COL4	GPIO4[14]
81	FLEXCAN2_RX	KEY_ROW3	GPIO4[11]

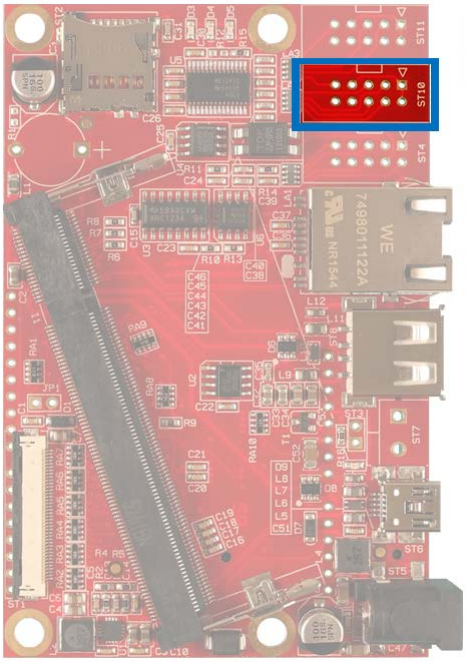
Schematics



Hint: There is no Termination Resistor for the CAN-Bus on the board! RS485 has a Termination Resistor (R14). See Board Schematics.



2.4.3 ST10 RS232 (UART-C)



ST10 Connections 4-wire UART2

ST10 RS232 UART2			
Name	PIN #		Name
1-2-7 connected onboard	1	2	1-2-7 connected onboard
TXD	3	4	CTS
RXD	5	6	RTS
1-2-7 connected onboard	7	8	not connected
GND	9	10	not connected

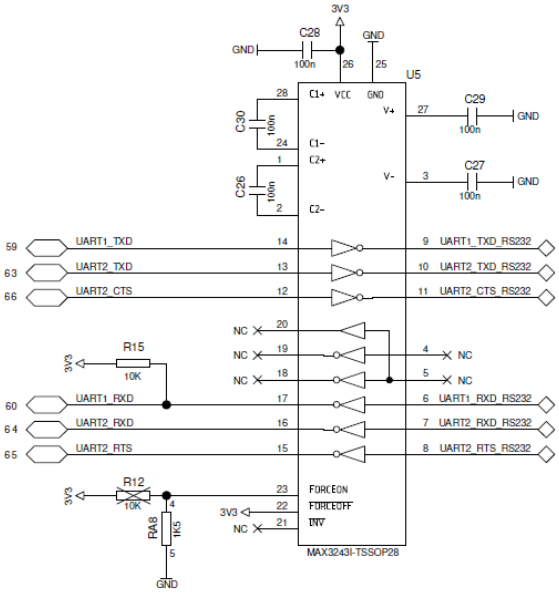
TX6UL pin assignment 4-wire

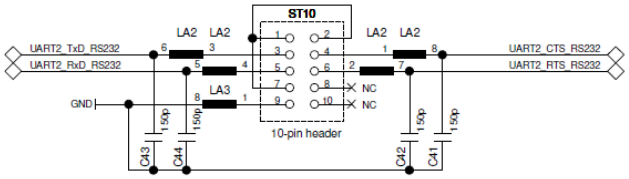
TXCOM pin	Selected Function	i.MX6 UltraLite Pad Name	GPIO
63	UART2_TXD_DATA	UART2_TX_DATA	GPIO1[20]
64	UART2_RXD_DATA	UART2_RX_DATA	GPIO1[21]
65	UART2_RTS_B	UART3_RX_DATA	GPIO1[25]
66	UART2_CTS_B	UART3_TX_DATA	GPIO1[24]

TX6 pin assignment 4-wire

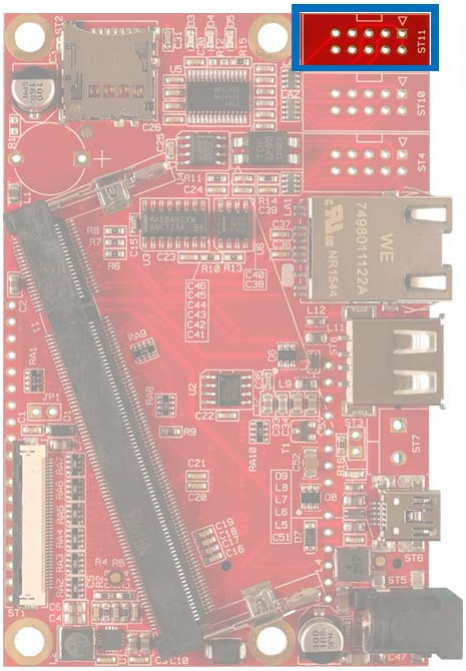
TXCOM pin	Selected Function	i.MX6 Pad Name	GPIO
63	UART2_TXD_DATA	SD4_DAT7	GPIO2[15]
64	UART2_RXD_DATA	SD4_DAT4	GPIO2[12]
65	UART2_RTS_B	SD4_DAT5	GPIO2[13]
66	UART2_CTS_B	SD4_DAT6	GPIO2[14]

Schematics


3V3
C28
100n
GND
26
25
U5
C1+
VCC
GND
V+
C29
100n
C30
100n
C1-
C2+
V-
C27
100n
C26
100n
C2-
UART1_TXD
UART2_TXD
UART2_CTS
UART1_TXD_RS232
UART2_TXD_RS232
UART2_CTS_RS232
NC
R15
10K
UART1_RXD
UART2_RXD
UART2_RTS
UART1_RXD_RS232
UART2_RXD_RS232
UART2_RTS_RS232
R12
10K
RA8
1K5
FORCEON
FORCEOFF
INV
MAX3243I-TSSOP28


ST10
LA2
LA3
UART2_TxD_RS232
UART2_RxD_RS232
GND
UART2_CTS_RS232
UART2_RTS_RS232
NC
10-pin header
150p
C43
C44
C42
C41

2.4.4 ST11 RS232 (UART-B)



ST11 Connections 2-wire UART1

ST11 RS232 UART1 (Debug)			
Name	PIN #		Name
1-2-7 connected onboard	1	2	1-2-7 connected onboard
TXD	3	4	not connected
RXD	5	6	not connected
1-2-7 connected onboard	7	8	not connected
GND	9	10	not connected

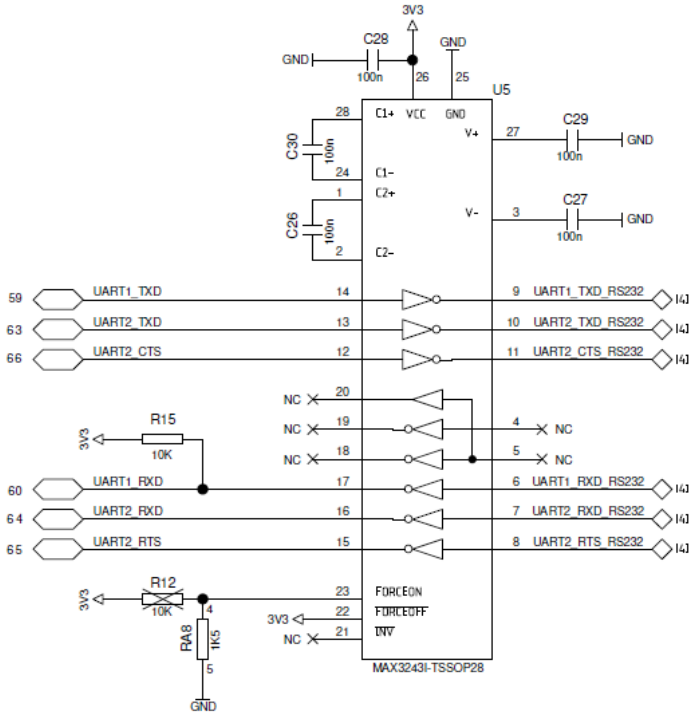
TX6UL pin assignment 2-wire

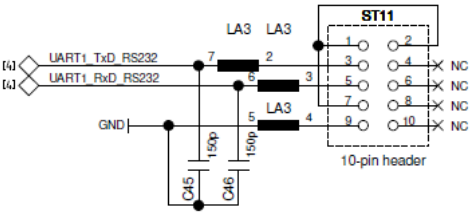
TXCOM pin	Selected Function	i.MX6 UltraLite Pad Name	GPIO
59	UART1_TXD_DATA	UART1_TX_DATA	GPIO1[16]
60	UART1_RXD_DATA	UART1_RX_DATA	GPIO1[17]

TX6 pin assignment 2-wire

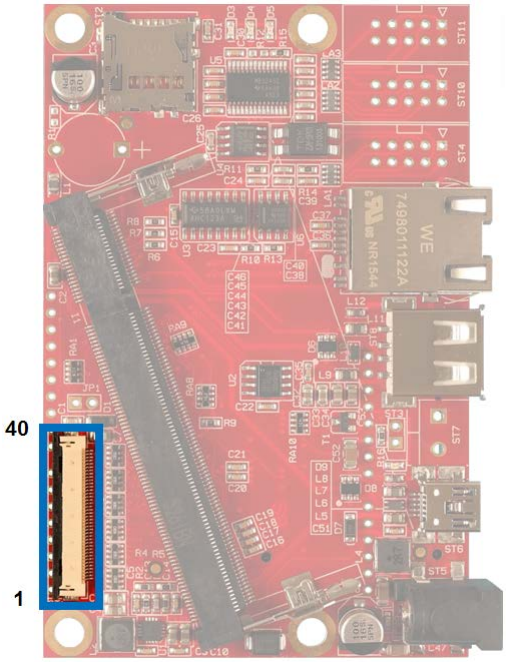
TXCOM pin	Selected Function	i.MX6 Pad Name	GPIO
59	UART1_TXD_DATA	SD3_DAT7	GPIO2[15]
60	UART1_RXD_DATA	SD3_DAT6	GPIO2[12]

Schematics


3V3
C28
GND
100n
26
25
U5
28
C1+
VCC
GND
V+
27
C29
100n
GND
C30
100n
24
C1-
1
C2+
V-
3
C27
100n
GND
C26
100n
2
C2-
59
UART1_TXD
14
9
UART1_TXD_RS232
63
UART2_TXD
13
10
UART2_TXD_RS232
66
UART2_CTS
12
11
UART2_CTS_RS232
NC
20
NC
19
4
NC
NC
18
5
NC
R15
3V3
10K
60
UART1_RXD
17
6
UART1_RXD_RS232
64
UART2_RXD
16
7
UART2_RXD_RS232
65
UART2_RTS
15
8
UART2_RTS_RS232
R12
3V3
10K
4
23
FORCEON
3V3
22
FORCEOFF
NC
21
INV
RA8
1K5
5
GND
MAX3243I-TSSOP28


ST11
LA3
LA3
UART1_TxD_RS232
UART1_RxD_RS232
GND
LA3
150p
150p
C45
C46
NC
10-pin header

2.4.5 ST1 Family Concept Connector

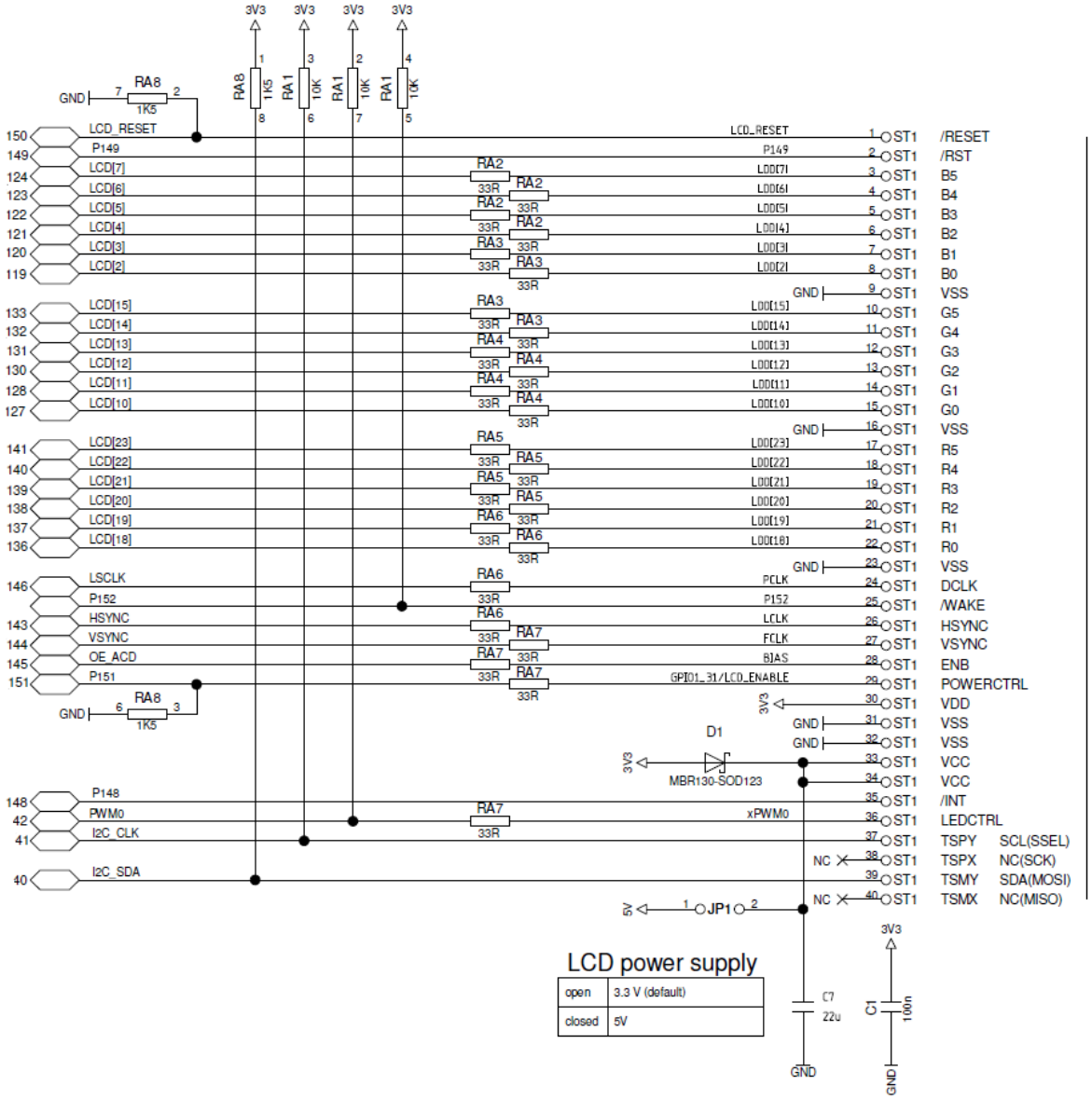


PIN #	Name	PIN #	Name
1	#LCD_RESET/P150	21	LDD[19]
2	#RST/P149	22	LDD[18]
3	LDD[7]	23	GND
4	LDD[6]	24	LSCLK/P146
5	LDD[5]	25	GND | WAKE/P152
6	LDD[4]	26	HSYNC/P143
7	LDD[3]	27	VSYNC/P144
8	LDD[2]	28	OE_ACD/P145
9	GND	29	LCD_ENABLE/P151
10	LDD[15]	30	3V3
11	LDD[14]	31	GND
12	LDD[13]	32	GND
13	LDD[12]	33	3V3
14	LDD[11]	34	3V3
15	LDD[10]	35	#INT/P148
16	GND	36	PWM0/P42
17	LDD[23]	37	SCL
18	LDD[22]	38	not connected
19	LDD[21]	39	SDA
20	LDD[20]	40	not connected

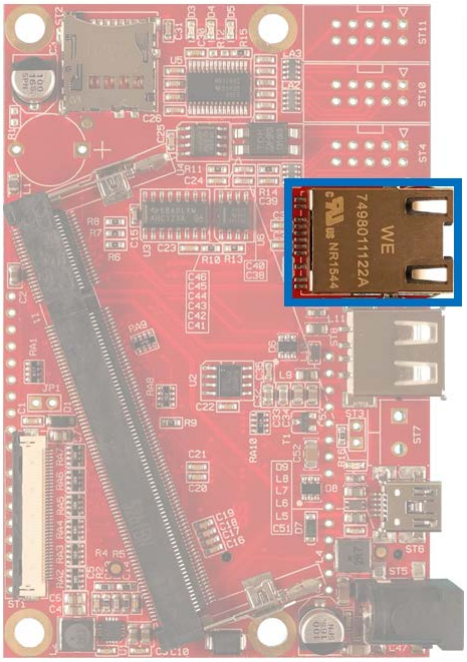
2.4.6 ST1 Glyn TFT Family Concept – Pin Assignment

ST1	Function	TXCOM PIN	i.MX6 UltraLite Pad Name	i.MX6 UltraLite GPIO	i.MX6 Pad Name	i.MX6 GPIO
1	/RESET	150	LCD_RESET	GPIO3[4]	EIM_D29	GPIO3[29]
2	/RST	149	SNVS_TAMPER3	GPIO5[3]	EIM_A16	GPIO2[22]
3	B5	124	LCD_DATA07	GPIO3[12]	DISP0_DAT7	GPIO4[28]
4	B4	123	LCD_DATA06	GPIO3[11]	DISP0_DAT6	GPIO4[27]
5	B3	122	LCD_DATA05	GPIO3[10]	DISP0_DAT5	GPIO4[26]
6	B2	121	LCD_DATA04	GPIO3[9]	DISP0_DAT4	GPIO4[25]
7	B1	120	LCD_DATA03	GPIO3[8]	DISP0_DAT3	GPIO4[24]
8	B0	119	LCD_DATA02	GPIO3[7]	DISP0_DAT2	GPIO4[23]
9	VSS	-	-	-	-	-
10	G5	133	LCD_DATA15	GPIO3[20]	DISP0_DAT15	GPIO5[9]
11	G4	132	LCD_DATA14	GPIO3[19]	DISP0_DAT14	GPIO5[8]
12	G3	131	LCD_DATA13	GPIO3[18]	DISP0_DAT13	GPIO5[7]
13	G2	130	LCD_DATA12	GPIO3[17]	DISP0_DAT12	GPIO5[6]
14	G1	128	LCD_DATA11	GPIO3[16]	DISP0_DAT11	GPIO5[5]
15	G0	127	LCD_DATA10	GPIO3[15]	DISP0_DAT10	GPIO4[31]
16	VSS	-	-	-	-	-
17	R5	141	LCD_DATA23	GPIO3[28]	DISP0_DAT23	GPIO5[17]
18	R4	140	LCD_DATA22	GPIO3[27]	DISP0_DAT22	GPIO5[16]
19	R3	139	LCD_DATA21	GPIO3[26]	DISP0_DAT21	GPIO5[15]
20	R2	138	LCD_DATA20	GPIO3[25]	DISP0_DAT20	GPIO5[14]
21	R1	137	LCD_DATA19	GPIO3[24]	DISP0_DAT19	GPIO5[13]
22	R0	136	LCD_DATA18	GPIO3[23]	DISP0_DAT18	GPIO5[12]
23	VSS	-	-	-	-	-
24	DCLK	146	LCD_CLK	GPIO3[0]	DI0_DISP_CLK	GPIO4[16]
25	/WAKE	152	SNVS_TAMPER8	GPIO5[8]	EIM_A17	GPIO2[21]
26	HSYNC	143	LCD_HSYNC	GPIO3[2]	DI0_PIN2	GPIO4[18]
27	VSYNC	144	LCD_VSYNC	GPIO3[3]	DI0_PIN3	GPIO4[19]
28	ENB	145	LCD_ENABLE	GPIO3[1]	DI0_PIN15	GPIO4[17]
29	PWCTRL	151	SNVS_TAMPER4	GPIO5[4]	EIM_EB3	GPIO3[29]
30	VDD	-	-	-	-	-
31	VSS	-	-	-	-	-
32	VSS	-	-	-	-	-
33	VCC	-	-	-	-	-
34	VCC	-	-	-	-	-
35	/INT	148	SNVS_TAMPER2	GPIO5[2]	NANDF_CS2	GPIO6[15]
36	LEDCTRL	42	NAND_DQS	GPIO4[16]	GPIO_1	GPIO1[1]
37	SCL(SSEL)	41	GPIO1_IO00	GPIO1[0]	GPIO_3	GPIO1[3]
38	NC(SCK)	-	-	-	-	-
39	SDA(MOSI)	40	GPIO1_IO01	GPIO1[1]	GPIO_6	GPIO1[6]
40	NC(MISO)	-	-	-	-	-

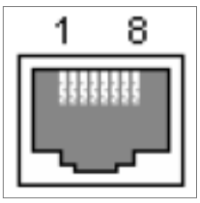
Schematics


3V3
RA8
1K5
RA1
10K
GND
LCD_RESET
P149
LCD[7]
LCD[6]
LCD[5]
LCD[4]
LCD[3]
LCD[2]
LCD[15]
LCD[14]
LCD[13]
LCD[12]
LCD[11]
LCD[10]
LCD[23]
LCD[22]
LCD[21]
LCD[20]
LCD[19]
LCD[18]
LSCLK
P152
HSYNC
VSYNC
OE_ACD
P151
P148
PWM0
I2C_CLK
I2C_SDA
RA2
RA3
RA4
RA5
RA6
RA7
33R
D1
MBR130-SOD123
JP1
5V
xPWM0
GPIO1_31/LCD_ENABLE
PCLK
LCLK
FCLK
BIAS
NC
C7
22u
C1
100n
/RESET
/RST
B5
B4
B3
B2
B1
B0
G5
G4
G3
G2
G1
G0
R5
R4
R3
R2
R1
R0
DCLK
/WAKE
HSYNC
VSYNC
ENB
POWERCTRL
VDD
VCC
/INT
LEDCTRL
TSPY
TSPX
TSMY
TSMX
SCL(SSEL)
NC(SCK)
SDA(MOSI)
NC(MISO)
40pin ZIF connector Molex 54132-4097
LCD power supply
open
3.3 V (default)
closed
5V

2.4.7 ST9 Ethernet



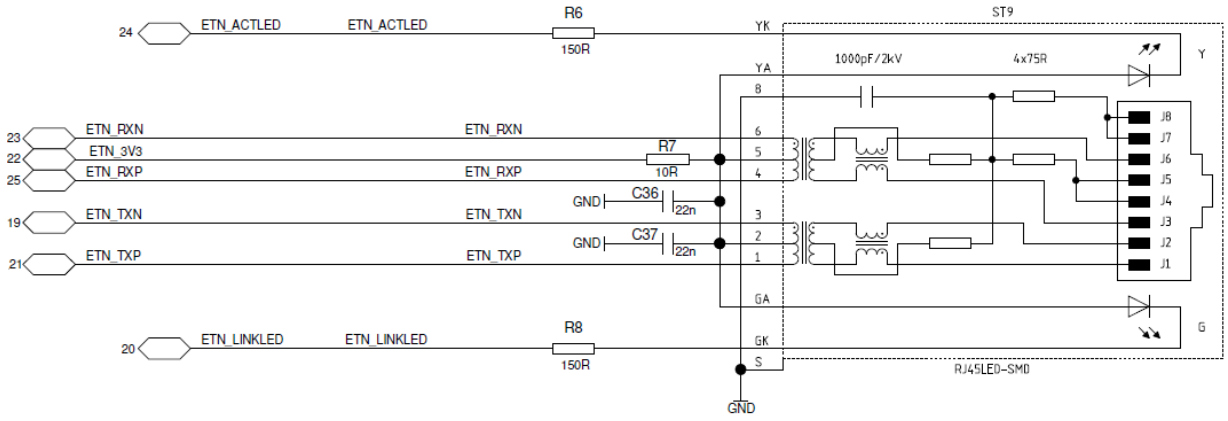
PIN #	Name
1	TX+
2	TX-
3	RX+
4	not used
5	not used
6	RX-
7	not used
8	not used



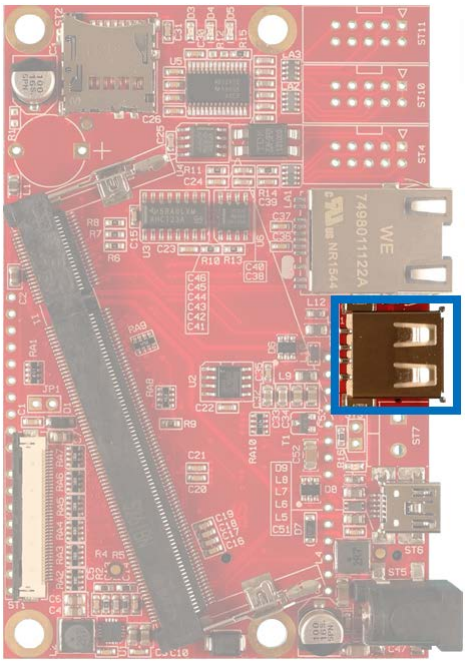
TX6 & TX6UL Ultra Lite pin assignment

TXCOM pin	Selected Function	i.MX6 UL Pad Name	GPIO
19	ETN_TXN		
20	#ETN_LED2		
21	ETN_TXP		
22	ETN_3V3		
23	ETN_RXN		
24	#ETN_LED1		
25	ETN_RXP		

Schematics


24
ETN_ACTLED
ETN_ACTLED
R6
150R
YK
ST9
1000pF/2kV
4x75R
Y
YA
8
23
ETN_RXN
ETN_RXN
22
ETN_3V3
25
ETN_RXP
ETN_RXP
R7
10R
6
5
4
GND
C36
22n
19
ETN_TXN
ETN_TXN
3
GND
C37
22n
21
ETN_TXP
ETN_TXP
2
1
J8
J7
J6
J5
J4
J3
J2
J1
GA
G
20
ETN_LINKLED
ETN_LINKLED
R8
150R
GK
S
GND
RJ45LED-SMD

2.4.8 ST8 USB Host Interface



PIN #	Name
1	5V
2	DATA-
3	DATA+
4	GND

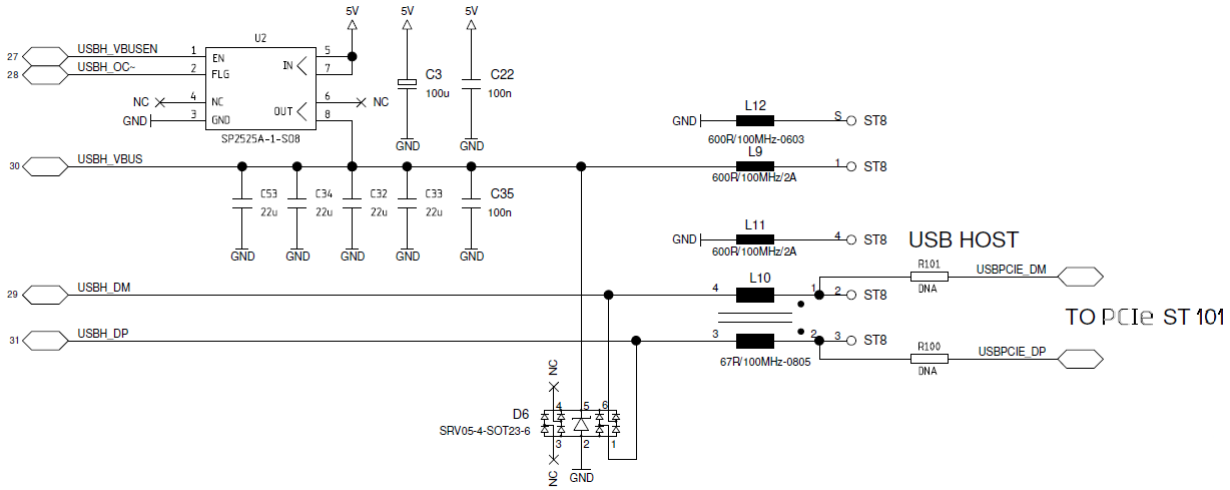
TX6UL Ultra Lite pin assignment

TXCOM pin	Selected Function	i.MX6 UL Pad Name	GPIO
27	USBH_VBUSEN	GPIO1_IO02	GPIO1_IO2
28	#USBH_OC	GPIO1_IO03	GPIO1_IO3 10K-PU
29	USBH_DM	USB_OTG2_DN	
30	USBH_VBUS	USB_OTG_VBUS	
31	USBH_DP	USB_OTG2_DP	

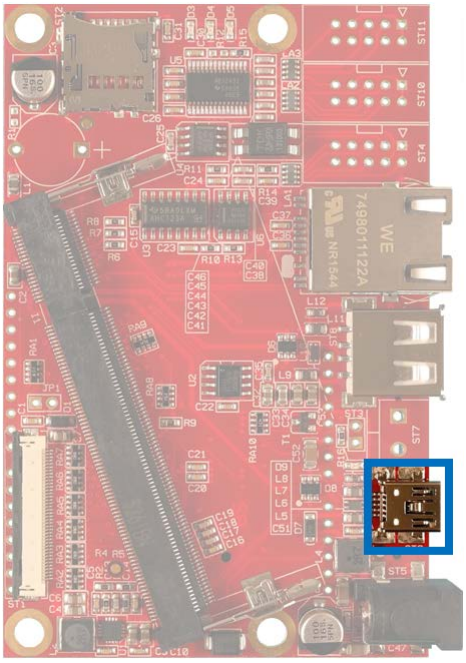
TX6 pin assignment

TXCOM pin	Selected Function	i.MX6 Pad Name	GPIO
27	USBH_VBUSEN	EIM_D31	GPIO3[31]
28	#USBH_OC	EIM_D30	GPIO3[30] 10K-PU
29	USBH_DM	USB_H1_DN	
30	USBH_VBUS	USB_H1_VBUS	
31	USBH_DP	USB_H1_DP	

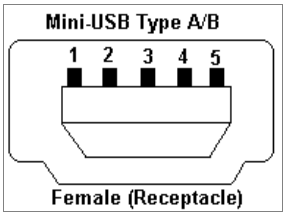
Schematics



2.4.9 ST6 USB OTG



PIN #	Name
1	5V
2	DATA-
3	DATA+
4	ID
5	GND



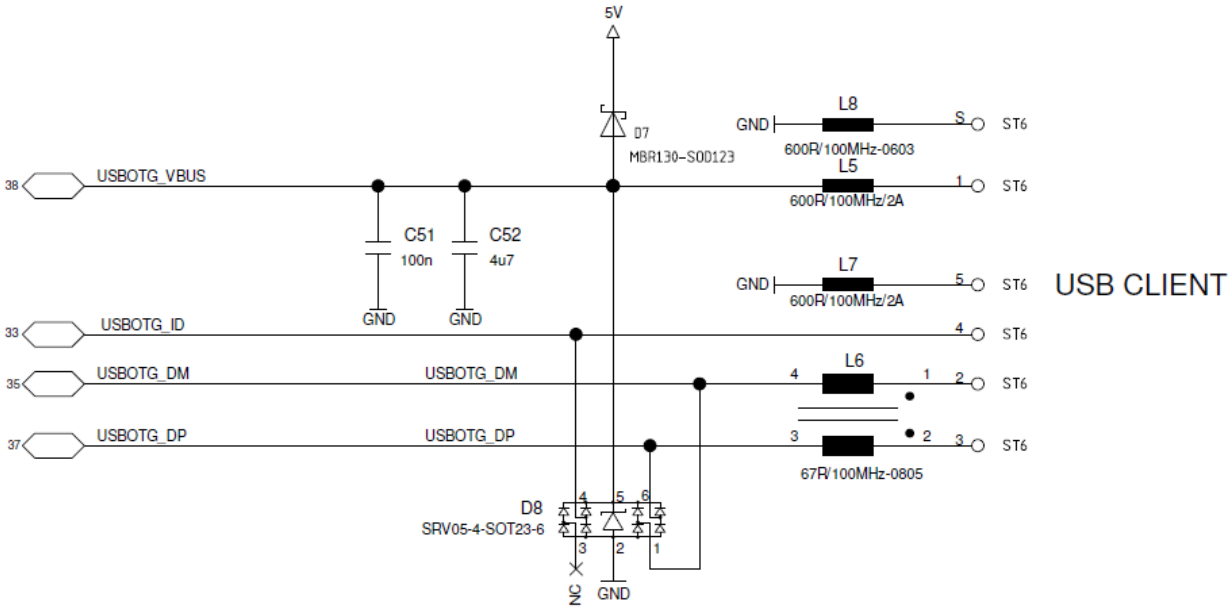
TX6UL Ultra Lite pin assignment

TXCOM pin	Selected Function	i.MX6 UL Pad Name	GPIO
33	Not connected		
35	USBOTG_DM	USB_OTG1_DN	
37	USBOTG_DP	USB_OTG1_DP	
38	USBOTG_VBUS	USB_OTG1_VBUS	

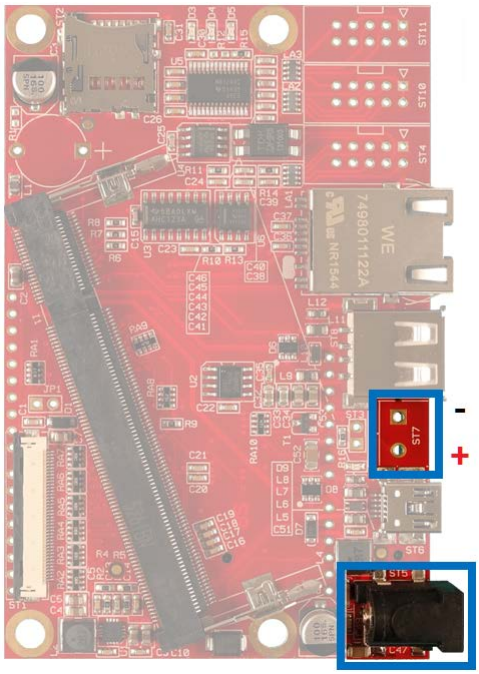
TX6 pin assignment

TXCOM pin	Selected Function	i.MX6 UL Pad Name	GPIO
33	USBOTG_ID	EIM_D23	GPIO3[23]
35	USBOTG_DM	USB_OTG_DN	
37	USBOTG_DP	USB_OTG_DP	
38	USBOTG_VBUS	USB_OTG_VBUS	

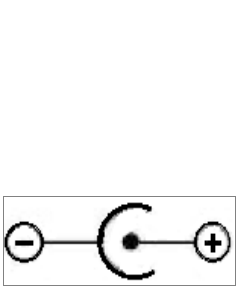
Schematics

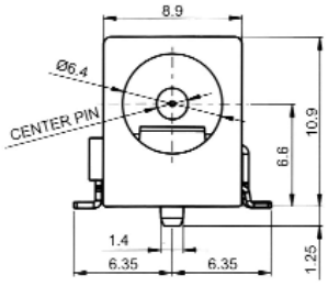

5V
D7
MBR130-SOD123
L8
GND
600R/100MHz-0603
ST6
L5
600R/100MHz/2A
38
USBOTG_VBUS
C51
100n
C52
4u7
GND
GND
L7
600R/100MHz/2A
USB CLIENT
33
USBOTG_ID
35
USBOTG_DM
USBOTG_DM
L6
37
USBOTG_DP
USBOTG_DP
67R/100MHz-0805
D8
SRV05-4-SOT23-6
NC
GND

2.4.10 ST1 Power Supply

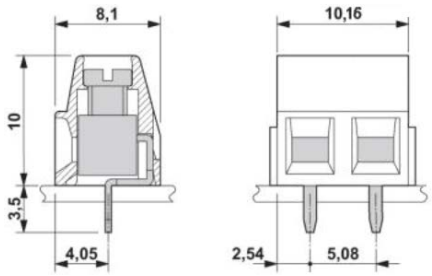


PIN #	Name
INNER	5VDC
OUTER	GND

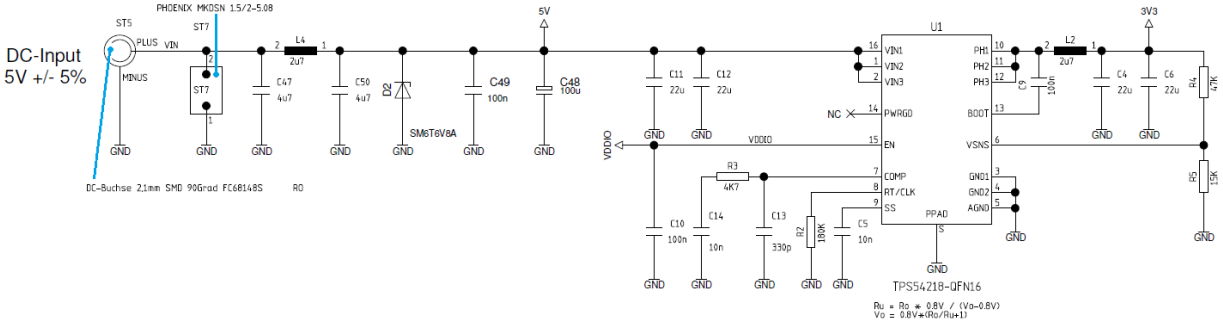




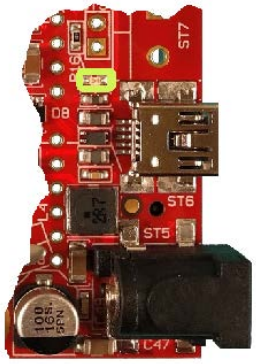
Optional assembled Phoenix 1.5/2-5.08:



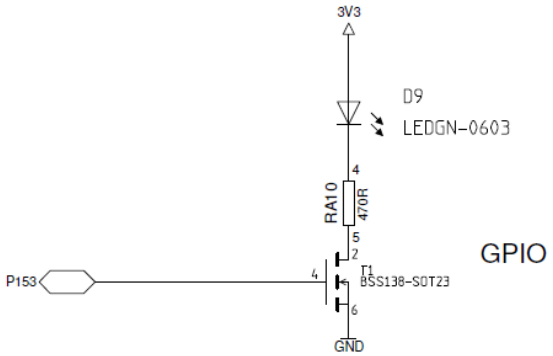
Schematics



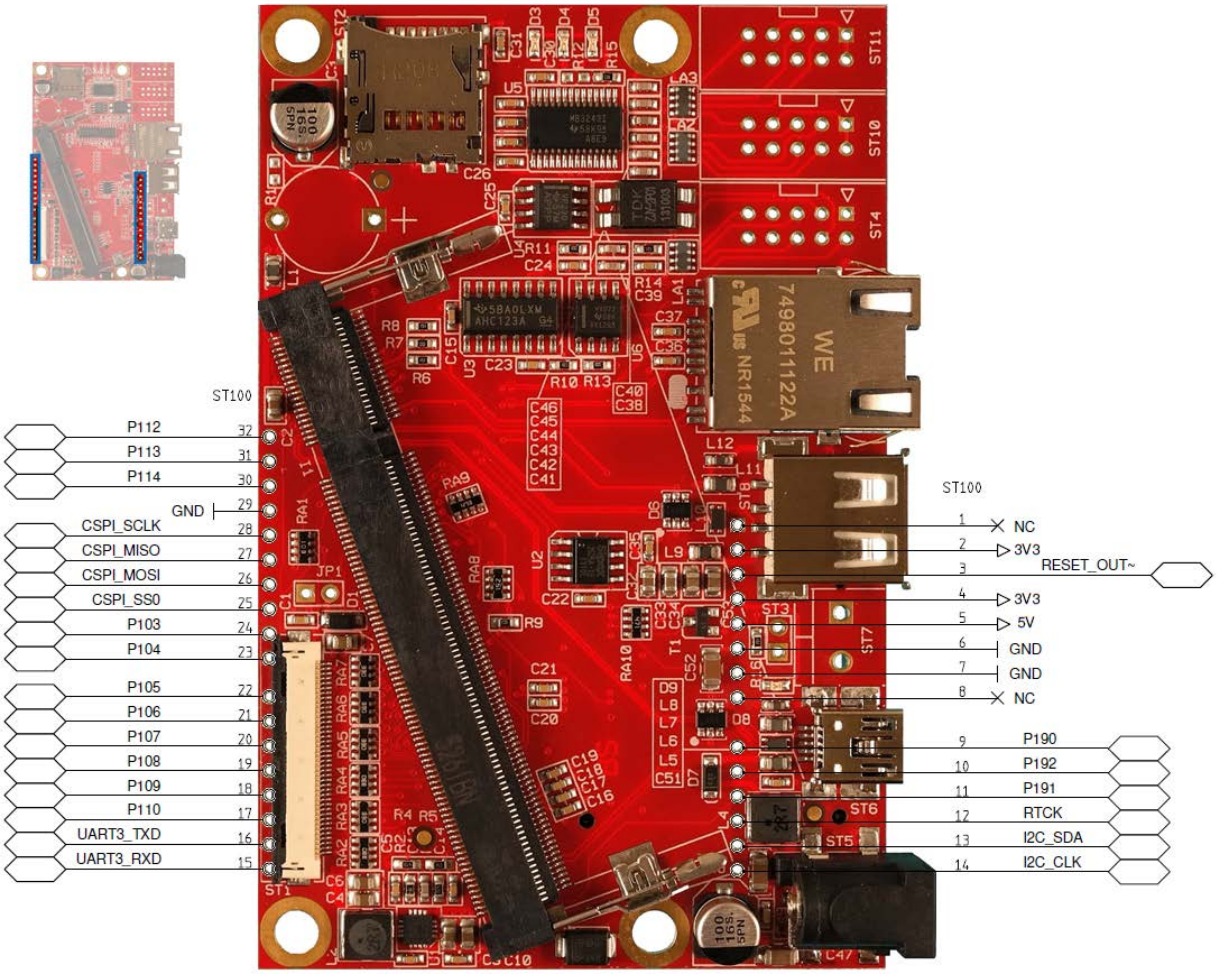
2.4.11 LED D9



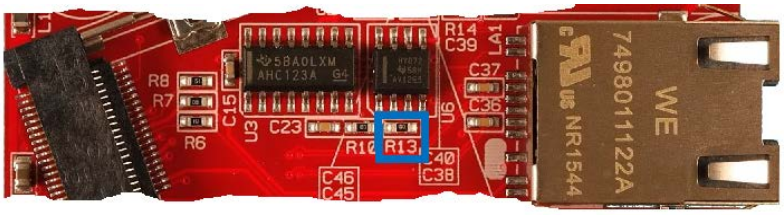
Schematics



2.4.12 ST100 Arduino compatible Pin Header



Hint: If you want to use UART3 (PIN 16, 17) on PIN Header you have to remove resistor R13 (RS485)! See Board Schematics.



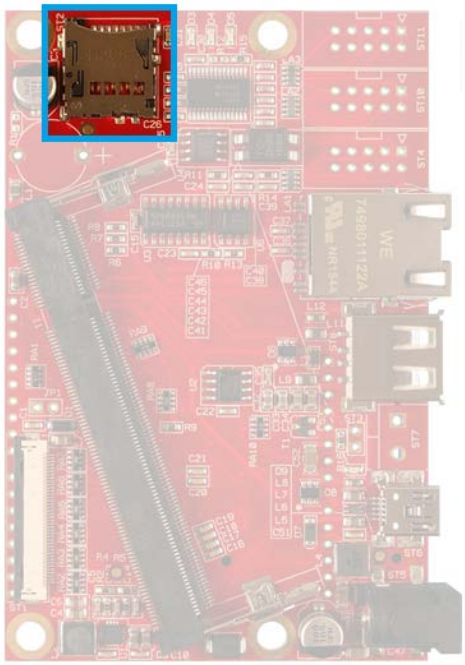
ST100 pin assignment TX6-Family

ST100 PIN	TXCOM pin	Selected Function	i.MX6 Pad Name	GPIO
1	-	Not Connected		
2	-	3.3V		
3	15	RESET_OUT		
4	-	3.3V		
5	-	5V		
6	-	GND		
7	-	GND		
8	-	Not Connected		
9	190	GPIO3_IO06	EIM_DA6	GPIO3[6]
10	192	GPIO3_IO08	EIM_DA8	GPIO3[8]
11	191	GPIO3_IO07	EIM_DA7	GPIO3[7]
12	43	RTCK	GPIO_18	GPIO7[13]
13	40	I2C_SDA	GPIO_6	GPIO1[6]
14	41	I2C_CLK	GPIO_3	GPIO1[3]
15	68	UART3_RXD_DATA	EIM_D25	
16	67	UART3_TXD_DATA	EIM_D24	
17	110	GPIO6_IO05	CSI0_DAT19	GPIO6[5]
18	109	GPIO6_IO04	CSI0_DAT18	GPIO6[4]
19	108	GPIO6_IO03	CSI0_DAT17	GPIO6[3]
20	107	GPIO6_IO02	CSI0_DAT16	GPIO6[2]
21	106	GPIO6_IO01	CSI0_DAT15	GPIO6[1]
22	105	GPIO6_IO00	CSI0_DAT14	GPIO6[0]
23	104	GPIO5_IO31	CSI0_DAT13	GPIO5[31]
24	103	GPIO5_IO30	CSI0_DAT12	GPIO5[30]
25	44	CSPI_SS0	EIM_EB2	GPIO2[30]
26	46	CSPI_MOSI	EIM_D18	GPIO3[18]
27	47	CSPI_MISO	EIM_D17	GPIO3[17]
28	48	CSPI_SCLK	EIM_D11	GPIO3[16]
29	-	GND		
30	114	GPIO5_IO18	CSI0_PIXCLK	GPIO5[18]
31	113	GPIO5_IO21	CSI0_VSYNC	GPIO5[21]
32	112	GPIO5_IO19	CSI0_MCLK	GPIO5[19]

ST100 pin assignment TXUL-Family (Ultra Lite)

ST100 PIN	TXCOM pin	Selected Function	i.MX6 Ultra Lite Pad Name	GPIO
1	-	Not Connected		
2	-	3.3V		
3	15	RESET_OUT		
4	-	5V		
5	-	3.3V		
6	-	GND		
7	-	GND		
8	-	Not Connected		
9	190	Not Connected		
10	192	Not Connected		
11	191	Not Connected		
12	43	Not Connected		
13	40	I2C_SDA	GPIO1_IO01	GPIO1[1]
14	41	I2C_CLK	GPIO1_IO00	GPIO1[0]
15	68	UART3_RXD_DATA	GPIO1_IO05	GPIO1[5]
16	67	UART3_TXD_DATA	GPIO1_IO04	GPIO1[4]
17	110	GPIO4_IO28	CSI_DATA07	GPIO4[28]
18	109	GPIO4_IO27	CSI_DATA06	GPIO4[27]
19	108	GPIO4_IO26	CSI_DATA05	GPIO4[26]
20	107	GPIO4_IO25	CSI_DATA04	GPIO4[25]
21	106	GPIO4_IO24	CSI_DATA03	GPIO4[24]
22	105	GPIO4_IO23	CSI_DATA02	GPIO4[23]
23	104	GPIO4_IO22	CSI_DATA01	GPIO4[22]
24	103	GPIO4_IO21	CSI_DATA00	GPIO4[21]
25	44	CSPI_SS0	UART4_RX_DATA	GPIO1[29]
26	46	CSPI_MOSI	UART5_TX_DATA	GPIO1[30]
27	47	CSPI_MISO	UART5_RX_DATA	GPIO1[31]
28	48	CSPI_SCLK	UART4_TX_DATA	GPIO1[28]
29	-	GND		
30	114	GPIO4_IO18	CSI_PIXCLK	GPIO4[18]
31	113	GPIO4_IO19	CSI_VSYNC	GPIO4[19]
32	112	GPIO4_IO20	CSI_HSYNC	GPIO4[20]

2.4.13 ST2 Micro SD Card



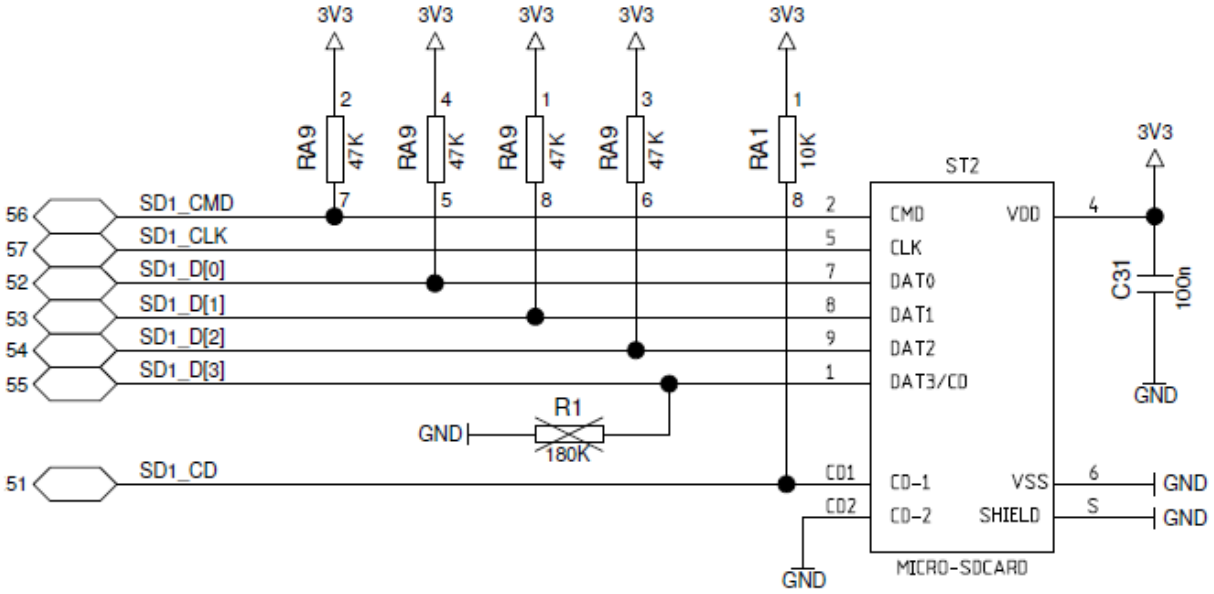
TX6UL pin assignment

TXCOM pin	Selected Function	i.MX6 UltraLite Pad Name	GPIO
51	SD1_CD	NAND_CE1_B	GPIO4[14]
52	SD1_D[0]	SD1_DATA0	GPIO2[18]
53	SD1_D[1]	SD1_DATA1	GPIO2[19]
54	SD1_D[2]	SD1_DATA2	GPIO2[20]
55	SD1_D[3]	SD1_DATA3	GPIO2[21]
56	SD1_CMD	SD1_CMD	GPIO2[16]
57	SD1_CLK	SD1_CLK	GPIO2[17]

TX6 pin assignment

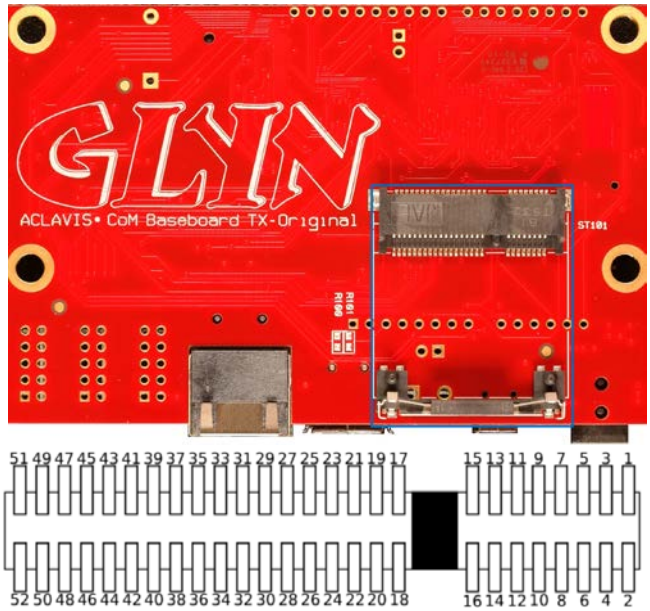
TXCOM pin	Selected Function	i.MX6 Pad Name	GPIO
51	SD1_CD	SD3_CMD	GPIO7[2]
52	SD1_D[0]	SD1_DAT0	GPIO1[16]
53	SD1_D[1]	SD1_DAT1	GPIO1[17]
54	SD1_D[2]	SD1_DAT2	GPIO1[19]
55	SD1_D[3]	SD1_DAT3	GPIO1[21]
56	SD1_CMD	SD1_CMD	GPIO1[18]
57	SD1_CLK	SD1_CLK	GPIO1[20]

Schematics


3V3
3V3
3V3
3V3
3V3
RA9
47K
RA9
47K
RA9
47K
RA9
47K
RA1
10K
2
4
1
3
1
7
5
8
6
8
56
57
52
53
54
55
SD1_CMD
SD1_CLK
SD1_D[0]
SD1_D[1]
SD1_D[2]
SD1_D[3]
R1
GND
180K
51
SD1_CD
ST2
CMD
CLK
DAT0
DAT1
DAT2
DAT3/CD
CD1
CD2
CD-1
CD-2
VDD
VSS
SHIELD
2
5
7
8
9
1
4
6
S
3V3
C31
100n
GND
GND
GND
GND
MICRO-SDCARD

2.4.14 ST101 Mini PCIexpress (optional on PCB Backplane)

This is in our Standard-Board not assembled.



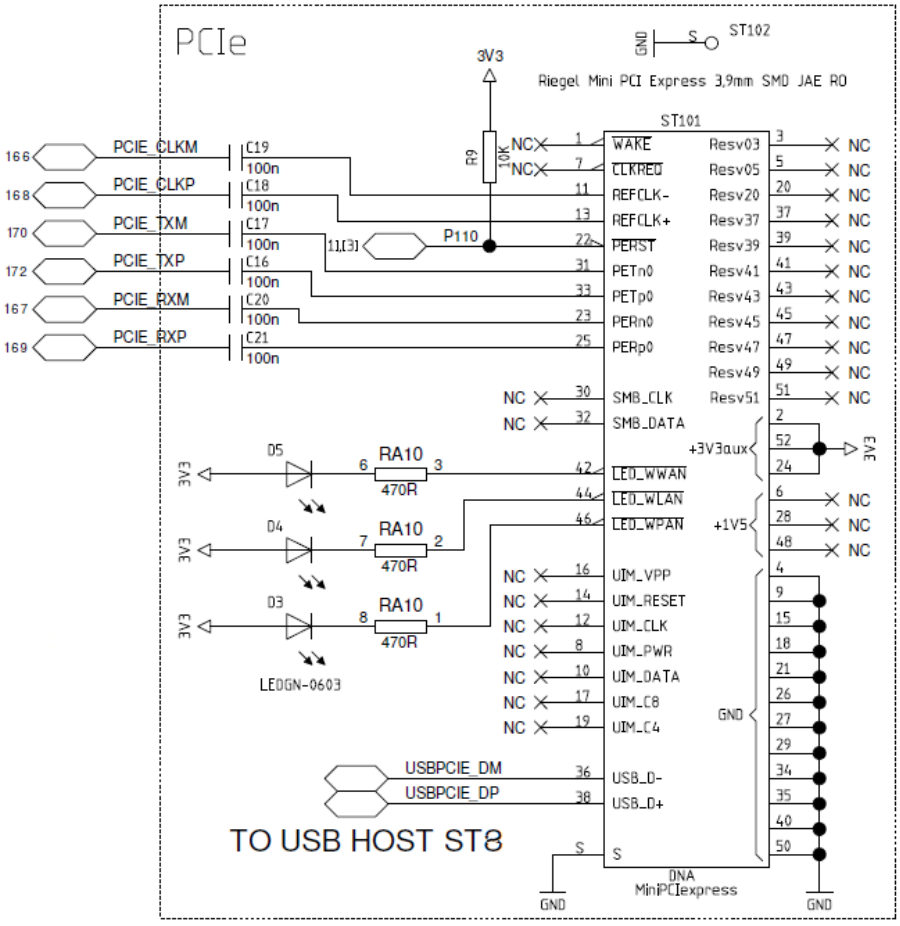
PIN #	Name	PIN #	Name
1	Not connected	2	3V3
3	Not connected	4	GND
5	Not connected	6	Not connected
7	Not connected	8	Not connected
9	GND	10	Not connected
11	PCIE CLKM	12	Not connected
13	PCIE CLKP	14	Not connected
15	GND	16	Not connected
17	Not connected	18	GND
19	Not connected	20	Not connected
21	GND	22	PERST#
23	PCIE RXM	24	3V3
25	PCIE RXP	26	GND
27	GND	28	Not connected
29	GND	30	Not connected
31	PCIE TXM	32	Not connected
33	PCIE TXP	34	GND
35	GND	36	USB PCIe DM / USB D-
37	Not connected	38	USB PCIe DP / USB D+
39	Not connected	40	GND
41	Not connected	42	LED WWAN
43	Not connected	44	LED WLAN
45	Not connected	46	LED WPAN
47	Not connected	48	Not connected
49	Not connected	50	GND
51	Not connected	52	3V3

TX6UL has no PCIe

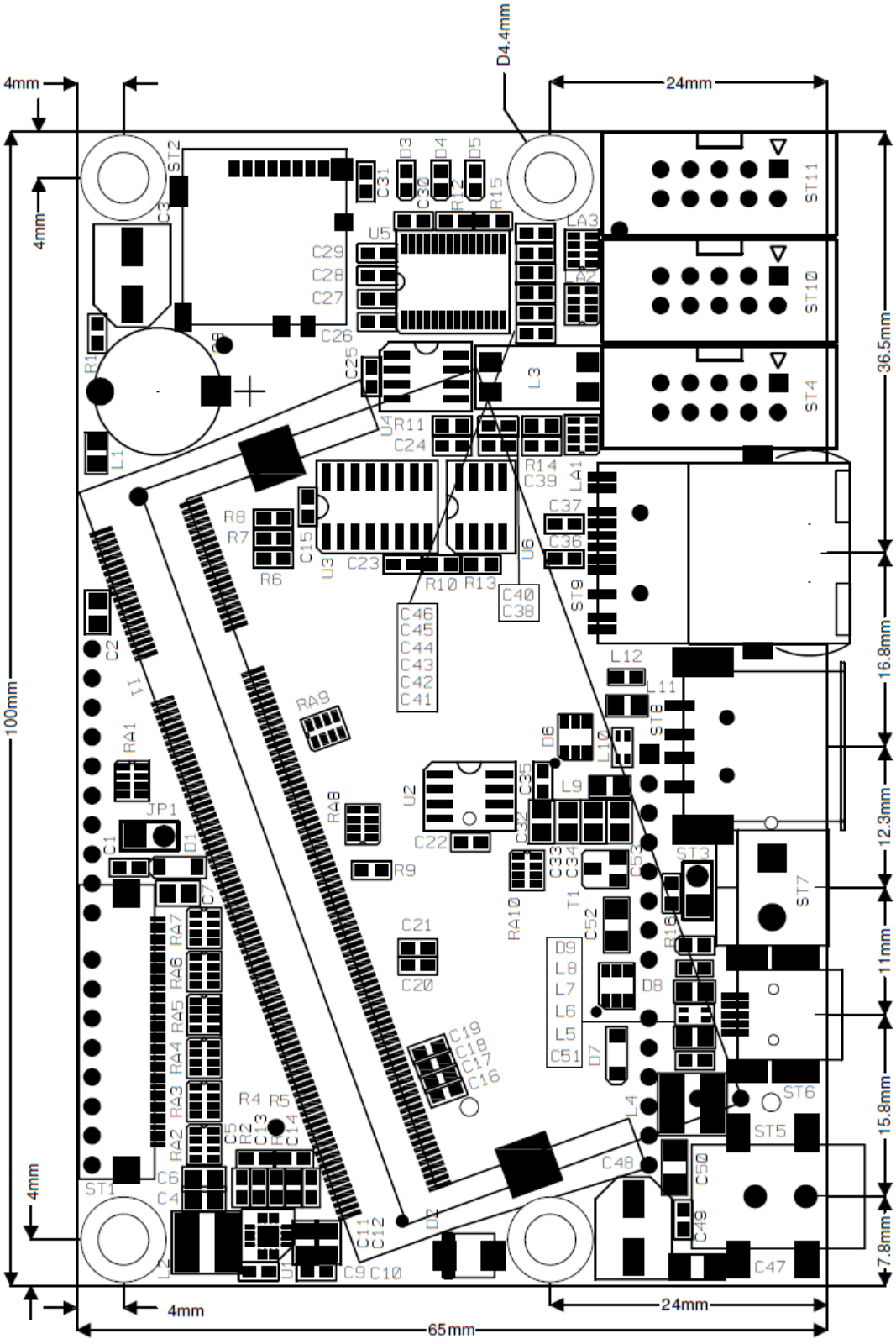
TX6 pin assignment

TXCOM pin	Selected Function	i.MX6 Pad Name	GPIO
166		CLK_N	
167		PCIE_RXM	
168		CLK1_P	
169		PCIE_RXP	
170		PCIE_TXM	
172		PCIE_TXP	

Schematics



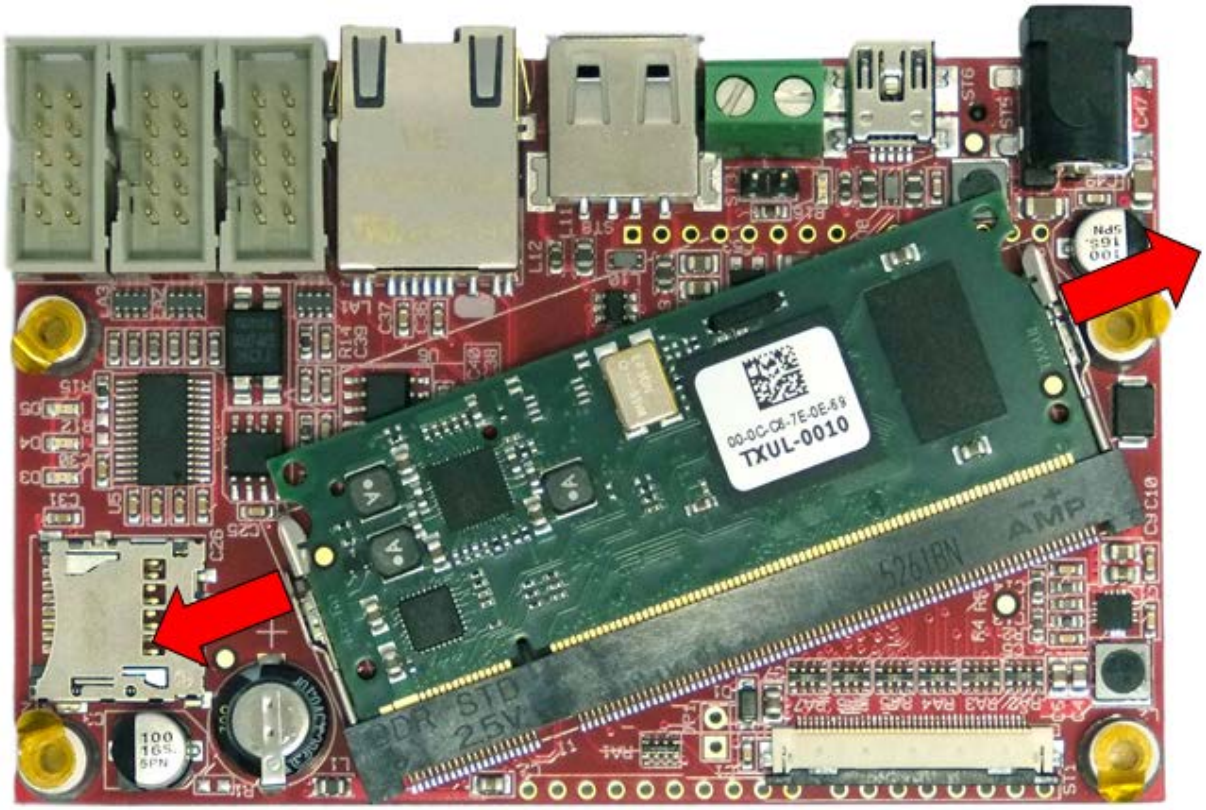
2.5 Component Location / Mechanical Drawing



3 Hardware-Installation

3.1 Module Replacement

The TX-Processor-Module must be plugged into the socket of the board. If it is necessary to remove the processor module from the socket unlock the module by pulling the two locking clips **gently** sideways away from the socket.

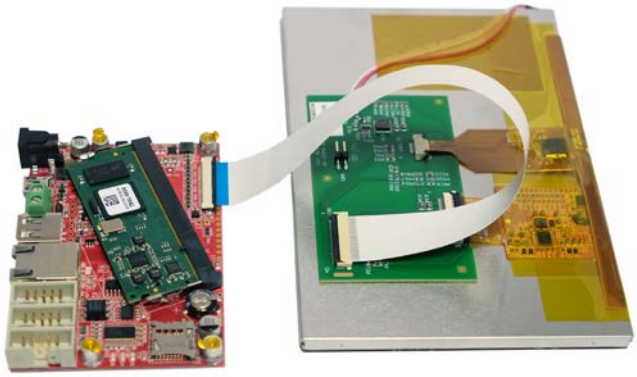


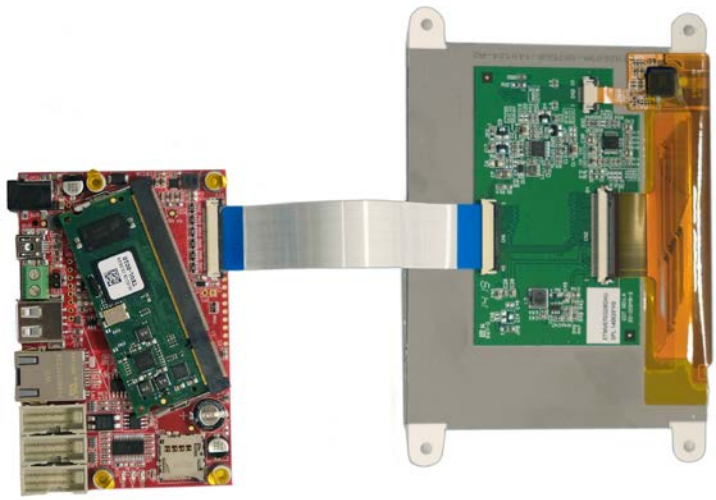
If the clips are opened, the module flips into a diagonal position and can be removed.

If you insert the TX module into the socket again, the module should drop easily into place. Do not force the module into the socket to avoid damage to the socket. If the module does not fit check its alignment. You also may pull the two locking clips gently sideways away from the socket during insertion before the module is locked into the socket.

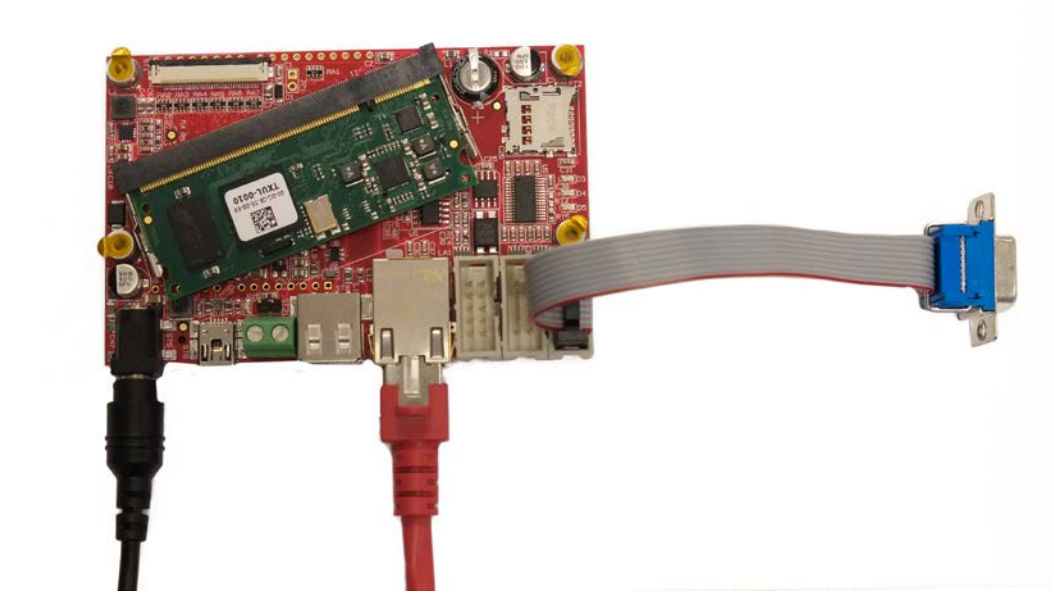
Ensure a good connection to the spring contacts on the bottom side of the module and that the clips are tightly locked in place!

3.2 Installing the Family Concept Display with the Board

3,5“, 4,3“, 5.0”, 7.0” TFT


5.7” TFT


3.3 Working with the Board during developement (Starterkit)



- ► Check the BOOTMODE jumper (ST3) is open (unset)
- ► Connect the RS232 cable from a PC to the debug port (ST9) on the StarterKit
- ► A terminal program like Windows 'TeraTerm' or Unix based 'minicom', has to be running on the host PC1. The communication settings are:

```
Baud rate:115200
Data bits:8
Parity:None
Stop bits:1
Flow control:None (or Xon/Xoff)
(disable hardware handshake (RTS/CTS))
```

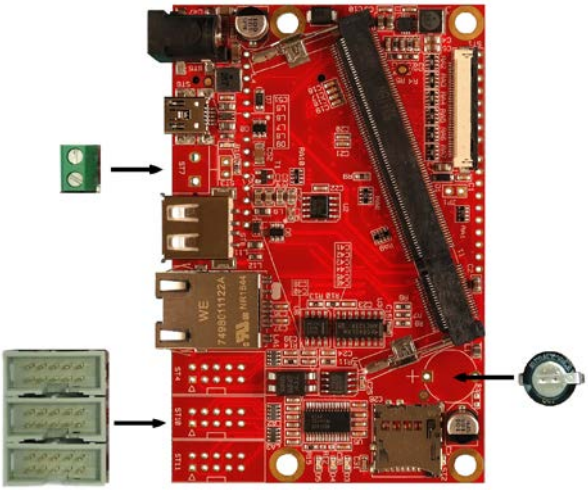
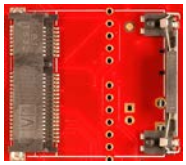
- ► Optional Connect TFT to the kit (Chapter 3.2).
- ► The Starterkit can be integrated into your local network. We need it for Software download via TFTP protocol.
- ► Connect the Starterkit with a 5V power supply to the power jack or use the USB Device Port (ST2) to power the board. The system will boot automatically.
- ► Linux is usually preinstalled on the module (Module baught as part of a starterkit!). Just wait until Linux has booted and log in, depending on the rootfs with the optionally needed password:

```
User:root
Password:root(optional)
```

4 Revision List

V1.0	11.01.2016	CTE	Initial Release
V1.1	03.03.2016	CTE	Adding TX/TXUL Pinning Chp.2.4
V1.2	12.04.2018	CTE	Corrections

Appendix A: Ordering Information ACLAVIS® Baseboard

Part Number	Description
CoM_BB_TX-Original_1v1	ACLAVIS® CoM Baseboard for Ka-Ro TX-Boards 
CoM_BB_TX-Original_xxx **customspecific assembled** **Optional Components:** Phoenix Power Connector 1-3 x Box Header Goldcap e.g. EECS0HD Mini PCI Express Socket	 

Appendix B: Ordering Information Ka-Ro TX-Boards

Art.No.	Display Interface	Clock [MHz]	CPU	RAM [MB]	RAM Type	ROM	Temp
TX6UL-NXP i.MX6 Ultra Lite / ULL							
TXUL-5010	TTL	528	i.MX6G2	256	DDR3	128MB	-40..85°C
TXUL-5011	TTL	528	i.MX6G2	256	DDR3	4GB*	-25..85°C
TXUL-8013	TTL	800	i.MX6Y2	512	DDR3	4GB*	-25..85°C
TX6S – NXP iMX6 Solo							
TX6S-8034	TTL	800	i.MX6S7	256	DDR3	128MB	-40..85°C
TX6S-8134**	LVDS	800	i.MX6S7	256	DDR3	128MB	-40..85°C
TX6S-8035	TTL	800	i.MX6S7	512	DDR3	4GB*	-25..85°C
TX6S-8135**	LVDS	800	i.MX6S7	512	DDR3	4GB*	-25..85°C
TX6DL – NXP i.MX6 Dual Lite							
TX6U-8030	TTL	2x800	i.MX6U7	1024	DDR3	128MB	-40..85°C
TX6U-8130**	LVDS	2x800	i.MX6U7	1024	DDR3	128MB	-40..85°C
TX6U-8033	TTL	2x800	i.MX6U7	1024	DDR3	4GB*	-25..85°C
TX6U-8133**	LVDS	2x800	i.MX6U7	1024	DDR3	4GB*	-25..85°C
TX6Q – NXP i.MX6 Quad							
TX6Q-1030	TTL	4x1000	i.MX6Q5	1024	DDR3	128MB	-20..70°C
TX6Q-1130**	LVDS	4x1000	i.MX6Q5	1024	DDR3	128MB	-20..70°C
TX6Q-1036	TTL	4x1000	i.MX6Q5	1024	DDR3	8GB*	-20..70°C
TX6Q – NXP i.MX6 Quad PLUS							
TX6Q-8037	TTL	4x800	i.MX6QP7	2048	DDR3	4GB*	-40..85°C
TX6Q-8137**	LVDS	4x800	i.MX6QP7	2048	DDR3	4GB*	-40..85°C

*eMMC **LVDS does not work with ACLAVIS® CoM Baseboard TX-Original 1V1

Appendix C: Ordering Information EDT Family Concept TFT

Overview of the **TTL PolyTouch™** Family Concept Displays

Part Number	Size	Resolution	Dimension
G-ETM0350G8EDH6	3.5”	320 x 240 QVGA	76.8 x 63.8 mm
G-ETM0430G0DH6	4.3”	480 x 272 WQVGA	105.5 x 67.2 mm
G-ETM0430G0BDH6	4.3”	480 x 272 WQVGA	105.5 x 67.2 mm
G-ETM0500G0EDH6	5.0”	800 x 480 WVGA	118,5 x 77,6 mm
G-ETMQ570G0DH6	5.7”	800 x 480 WVGA	117,2 x 88.4 mm *
G-ETMQ570G2DH6	5.7”	800 x 480 WVGA	117,2 x 88.4 mm *
G-ETMV570G0DHU	5.7”	320 x 240 QVGA	124,7 x 100,0 mm
G-ETMV570G0BDHU	5.7”	320 x 240 QVGA	124,7 x 100,0 mm
G-ETMV570G2DHV	5.7”	640 x 480 VGA	147.6 x 100,0 mm *
G-ETMV570G2BDHU	5.7”	640 x 480 VGA	147.6 x 100,0 mm *
G-ETM0700G0EDH6	7.0”	800 x 480 WVGA	166,0 x 105,4 mm
G-ETM0700G8DH6	7.0”	800 x 480 WVGA	166,0 x 105,4 mm

*** With mounting lugs**

Overview of the **TTL** Family Concept Displays (No Touch)

Part Number	Size	Resolution	Dimension
G-ET0350G0DM6	3.5”	320 x 240 QVGA	76.8 x 63.8 mm
G-ET0430G0DM6	4.3”	480 x 272 WQVGA	105.5 x 67.2 mm
G-ET0500G0DM6	5.0”	800 x 480 WVGA	118.5 x 77.6 mm
G-ETQ570G0DM6	5.7”	320 x 240 QVGA	124.7 x 100.0 mm
G-ETQ570G2DM6	5.7”	320 x 240 QVGA	142.1 x 100.0 mm *
G-ETV570G0DMU	5.7”	640 x 480 VGA	124.7 x 100.0 mm
G-ETV570G2DMU	5.7”	640 x 480 VGA	142.1 x 100.0 mm *
G-ET0700G8DM6	7.0”	800 x 480 WVGA	166.0 x 105.4 mm

Overview of the **TTL PolyTouch**™ Family Concept Premium Displays **w.Coverlens**

Part Number	Size	Resolution	Dimension
GETM0500G0EDH6GLYN01	5.0”	800 x 480 WVGA	135.0 x 91.8 mm***
GETM0500G0EDH6GLYN02	5.0”	800 x 480 WVGA	135.0 x 91.8 mm**
GETM0700G0EDH6GLYN01	7.0”	800 x 480 WVGA	193.5 x 132.5 mm***
GETM0700G0EDH6GLYN04	7.0”	800 x 480 WVGA	193.5 x 132.5 mm**

*** With mounting lugs**
**** White frame**
***** Black frame**

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