



**ELEKTROSIL**

---

**Distribution mit Mehrwert**

Mini carrier board M1552

User's Manual

# 1 Introduction

## 1.1 Document revision

Revision	Description	Revisor	Date
001	First edition	PF	2009 - 07 - 01

## 1.2 Exclusion of liability

The contents of this manual serve for information purposes only. Elektrosil GmbH reserves the right to change the contents of this manual without prior notice. While reasonable efforts have been made in the preparation of this manual to assure its accuracy, errors may occur. Therefore, Elektrosil GmbH assumes no liability resulting from errors or omissions in this manual or from the use of the information contained herein. Elektrosil GmbH appreciates suggestions with regard to improvements or corrections.

This manual is subject to copyright.

© Copyright 2009

Elektrosil GmbH, Ruhrstraße 53, 22761 Hamburg, Germany

<http://www.elektrosil.com>

ALL RIGHTS RESERVED

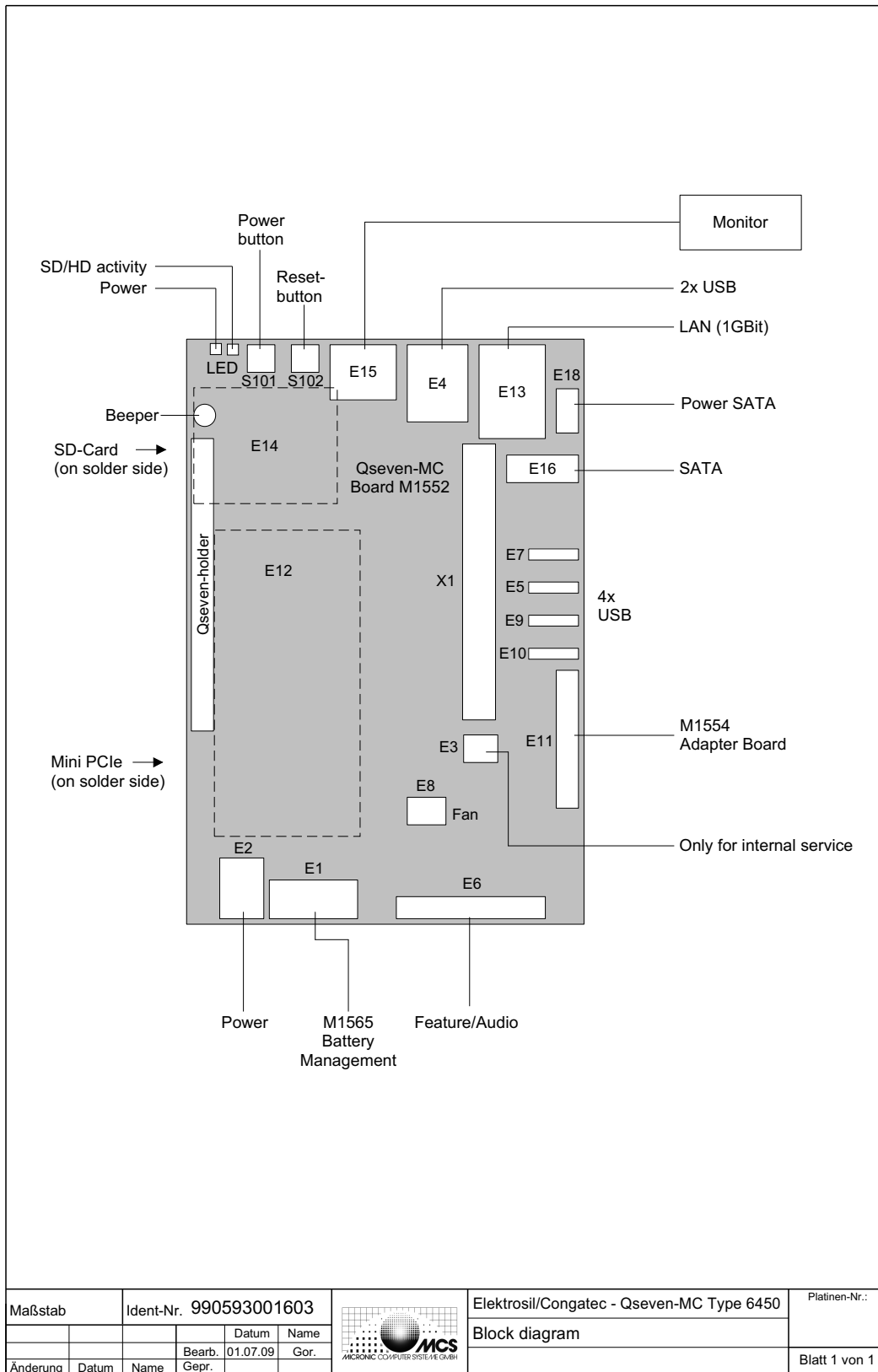
# Contents

<b>1</b>	<b>Introduction</b>	<b>2</b>
1.1	Document revision . . . . .	2
1.2	Exclusion of liability . . . . .	2
<b>2</b>	<b>General specifications</b>	<b>4</b>
<b>3</b>	<b>Block diagram</b>	<b>5</b>
<b>4</b>	<b>Dimensions</b>	<b>6</b>
<b>5</b>	<b>Assembly diagram (front)</b>	<b>7</b>
<b>6</b>	<b>Assembly diagram (back)</b>	<b>8</b>
<b>7</b>	<b>Buttons</b>	<b>9</b>
7.1	Power button (S101) . . . . .	9
7.2	Reset button (S102) . . . . .	9
<b>8</b>	<b>Pin configurations</b>	<b>10</b>
8.1	Power (E1) . . . . .	10
8.2	Power (E2) . . . . .	12
8.3	PS ON (E3) . . . . .	13
8.4	USB (E4) . . . . .	14
8.5	USB (E5) . . . . .	15
8.6	Audio/Feature (E6) . . . . .	16
8.7	USB (E7) . . . . .	17
8.8	Fan (E8) . . . . .	18
8.9	USB (E9) . . . . .	19
8.10	USB (E10) . . . . .	20
8.11	Display/Touch (E11) . . . . .	21
8.12	MiniPCI Express (E12) . . . . .	22
8.13	GBit LAN (E13) . . . . .	23
8.14	SD Card (E14) . . . . .	24
8.15	HDMI (E15) . . . . .	25
8.16	SATA (E16) . . . . .	26
8.17	Power SATA (E18) . . . . .	27
8.18	MXM Connector Part 1 (X1) . . . . .	28
8.19	MXM Connector Part 2 (X1) . . . . .	29
<b>9</b>	<b>Industry specifications</b>	<b>30</b>

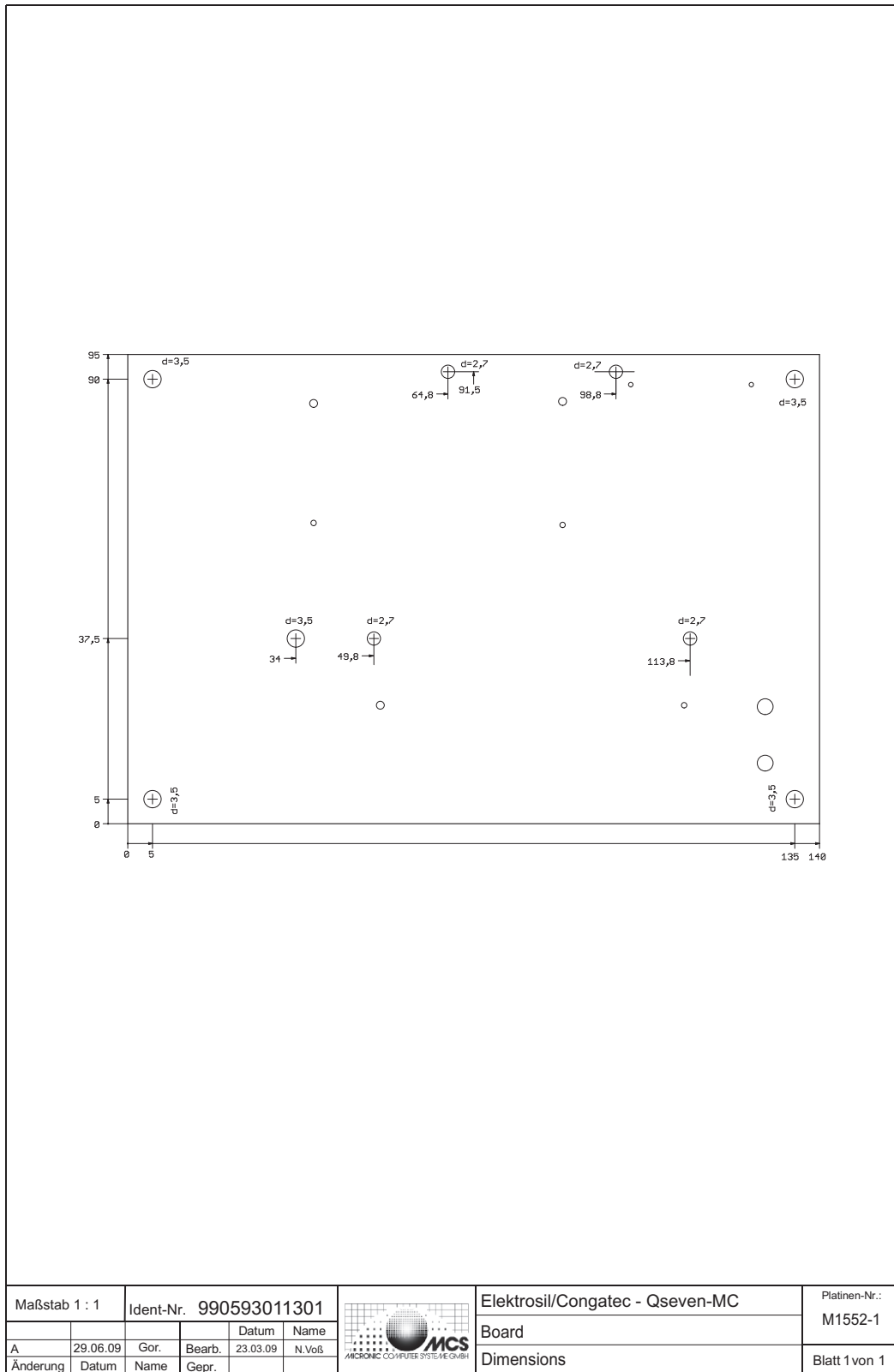
## 2 General specifications

Dimensions	95 x 140 mm <sup>2</sup>
Input voltage range	12 – 32VDC
Temperature range	tbd.
Interfaces	MIC, Audio in, Audio out, I2C bus, Display connector LVDS, touch controller (USB), 2x USB 2.0 (connector type A), 4 x USB 2.0 (PIN connector), GBit LAN, HDMI (DVI), SATA, Power SATA
Slots	Mini-PCI-Express, SD card interfaces
Special features	Watchdog, System management bus, Thermal management, Fan control

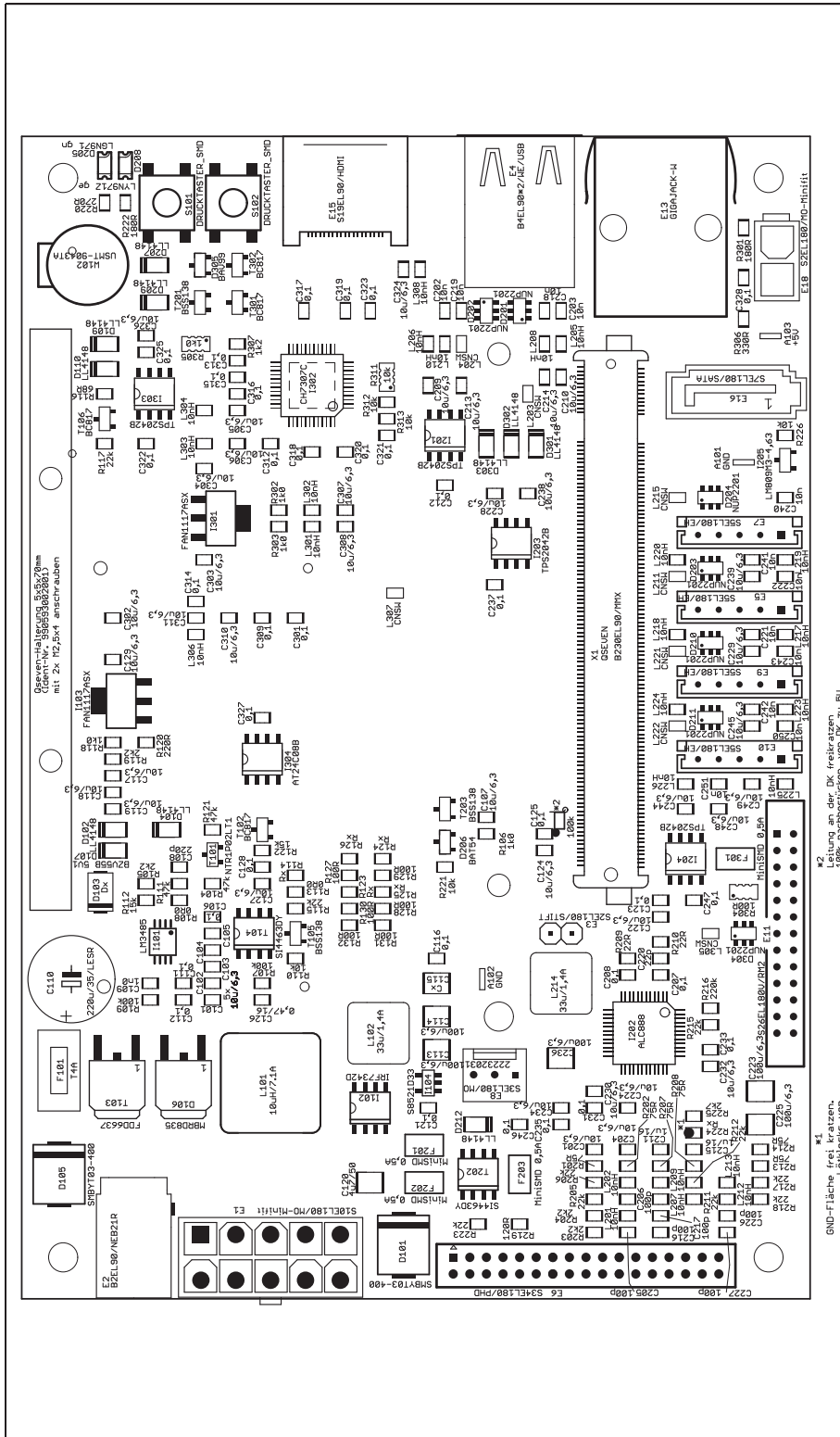
### 3 Block diagram



# 4 Dimensions



# 5 Assembly diagram (front)



GND-Fläche frei kratzen, Lötlacks von R224/GNDX zu GND  
 \*  
 \* Lösung an der DK freiskratzen, 180k nachbestellen, von DK zu EV  
 41


Änderung	Datum	Name	Gepr.
B	29.06.09	Gor.	Datum
A	20.05.09	N.VoS	N.VoS

Ident-Nr. 990593011201  
 Manstab 1.6 - 1

Elektrosil/Congatec - Qsevent-MC  
 Board  
 Assembly diagram component side

Platinen-Nr.: M1552-1  
 Blatt 1 von 3

## 6 Assembly diagram (back)

Maßstab 1 : 1		Ident-Nr. 990593011201				Elektrosil/Congatec - Qseven-MC		Platinen-Nr.:
B	29.06.09	Gor.	Datum	Name		Board		M1552-1
A	20.05.09	N. Voß	Bearb.	23.03.09	N. Voß	Assembly diagram solder side		Blatt 2 von 3
Änderung	Datum	Name	Gepr.					

## 7 Buttons

### 7.1 Power button (S101)

The QA module will perform a power up sequence when this button is pressed. The power button is connected to the QA module's PWRBTN# signal.

### 7.2 Reset button (S102)


The QA module and all connected components will perform a hard reset when this button is pressed. The reset button is connected to the QA module's RSTBTN# signal.

# 8 Pin configurations

## 8.1 Power (E1)

10-pin Molex Mini-Fit 39-28-1103 Male  
S10EL180/MO


Pin	Function:	Remark:
1	+5V	
2	GND	
3	I2C CK	
4	I2C DAT	
5	BATTLOW	
6	PWRBTN	
7	PS ON	
8	SUS S5	
9	5V SB	
10	+19V	



Male

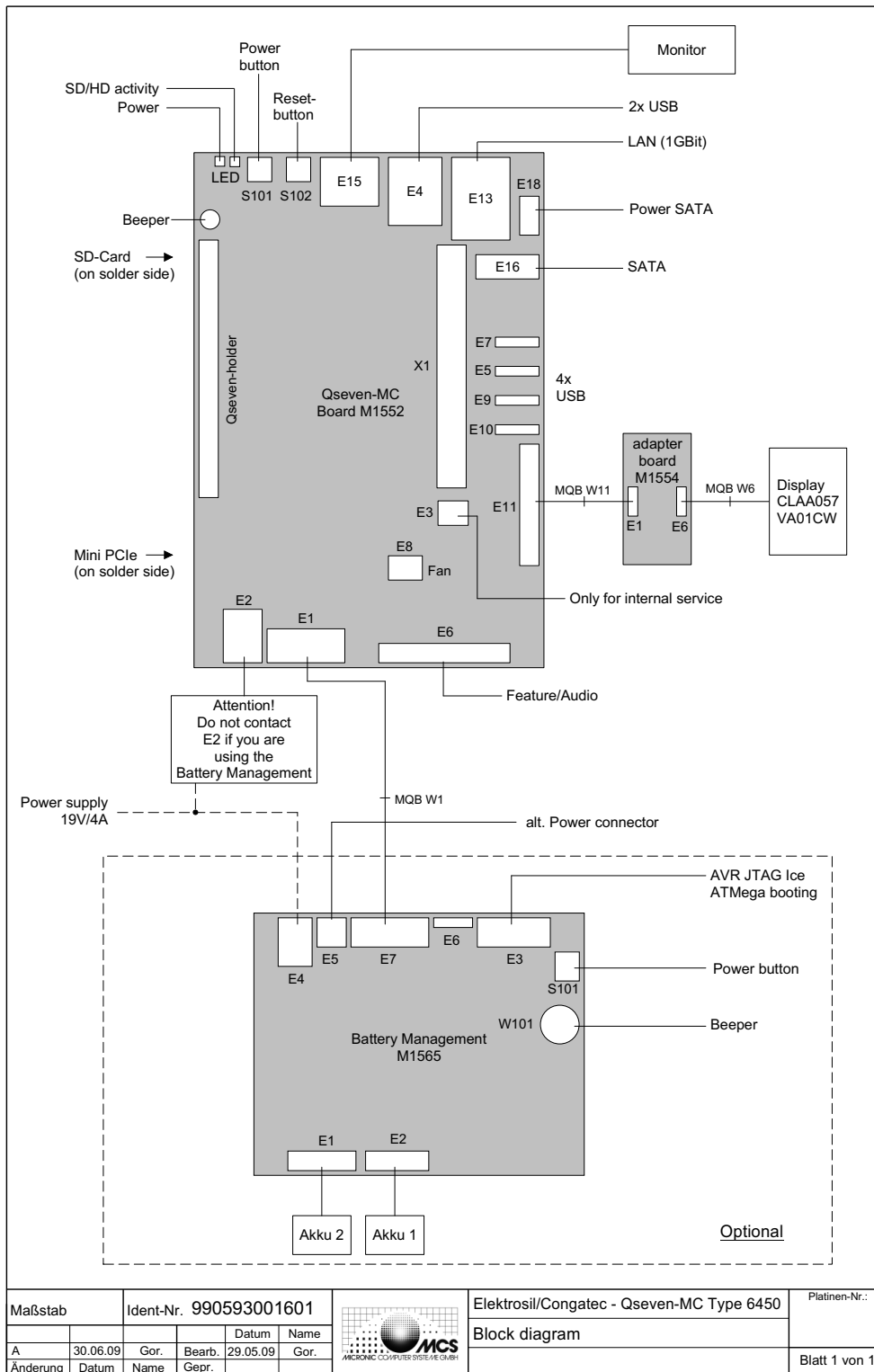
connector view

S1283

Maßstab		Ident-Nr. 990593017001				 <p>MCS MICRONIC COMPUTER SYSTEME GMBH</p>	Elektrosil/Congatec - Qseven-MC Typ 6450		Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	Datum	Name		pinout E1 M1552 Board		M1552
Änderung	Datum	Name	Gepr.	26.02.09	Gor.	Power		Blatt 1 von 1	

Connector E1 is used to connect the M1552 to the battery management board M1565 (available

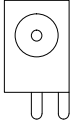
on request). Please have a look at the following block diagram for details.



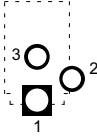
## 8.2 Power (E2)

**Lumberg NEB21R**  
 2-pin Power supply chassis socket,  
 angular version, with break  
 contact, for printed circuit boards  
**B2EL90**

Pin	Function:	Remark:
1	+19V	
2	N.C.	
3	GND	




connector view



solder side view

*St318*

Maßstab	Ident-Nr. 990593017002				 <small>MICRONIC COMPUTER SYSTEME GMBH</small>	Elektrosil/Congatec - Qseven-MC Typ 6450	Platinen-Nr.:
A	01.07.09	Gor.	Bearb.	11.06.09		Gor.	pinout E2 M1552 Board
Änderung	Datum	Name	Gepr.				Blatt 1 von 1

Input voltage: 12 – 32VDC

### 8.3 PS ON (E3)

2-pin Pin Header  
 1-Row  
 180° (Vertical)   
 90° (Right Angle)

Pin	Function:	Remark:
1	PS ON	
2	GND	



connector view

St104

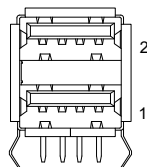
Maßstab		Ident-Nr. 990593017003					Elektrosil/Congatec - Qseven-MC Typ 6450		Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	26.02.09	Gor.		pinout E3 M1552 Board		M1552
Änderung	Datum	Name	Gepr.					Blatt 1 von 1	

Internal use only.

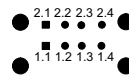
### 8.4 USB (E4)

B4EL90\*2/WE/USB

Pin	Function:	Remark:
1.1	+5V <sub>USB</sub>	
1.2	USB-0	
1.3	USB+0	
1.4	GND	
2.1	+5V <sub>USB</sub>	
2.2	USB-3	
2.3	USB+3	
2.4	GND	



connector view



solder side view

St315



Maßstab		Ident-Nr. 990593017004					Elektrosil/Congatec - Qseven-MC Typ 6450		Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	11.06.09	Gor.		pinout E4 M1552 Board		M1552
Änderung	Datum	Name	Gepr.			USB		Blatt 1 von 1	

USB 1.1 and 2.0 compatible.

## 8.5 USB (E5)


5-pin JST  
 Female EHR-5   
 Male 180° (Vertical) B5B-EH-A   
 Male 90° (Right Angle) S5B-EH

Pin	Function:	Remark:
1	+5V	
2	USB-4	
3	USB+4	
4	GND	
5	Shield	

connector view

St014

Maßstab		Ident-Nr. 990593017005					Elektrosil/Congatec - Qseven-MC Typ 6450		Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	27.03.09	Gor.		pinout E5 M1552 Board		M1552
Änderung	Datum	Name	Gepr.			USB		Blatt 1 von 1	

Only compatible with USB 2.0 devices.

## 8.6 Audio/Feature (E6)

34-pin JST  
 Female PHDR-34VS   
 Male 180° (Vertical) B34B-PHDSS   
 Male 90° (Right Angle) S34B-PHDSS

Pin	Function:	Remark:
1	+5V	Feature
2	5V SB	Feature
3	+3,3V	Feature
4	GND	Feature
5	I2C DAT	Feature
6	SMBCLK	Feature
7	I2C CK	Feature
8	SMBDAT	Feature
9	PWRBTN	Feature
10	SUS S3	Feature
11	GND	Feature
12	GND	Feature
13	THRMTRIP	Feature
14	SMBALERT	Feature
15	SUS STAT	Feature
16	LID_BTN	Feature
17	WDTRIG	Feature
18	THRM	Feature
19	SLP_BTN	Feature
20	WAKE	Feature
21	RSTBTN	Feature
22	GND	Feature
23	GND	Feature
24	PWRBTN	Feature
25	PWGIN	Feature
26	MIC1-L	Audio MIC
27	MIC1-R	Audio MIC
28	GND	Audio GND
29	LINE1-L	Audio IN
30	LINE1-R	Audio IN
31	SensA	Sense-Rs for Jack-detect
32	FRONT-OUT-L	Audio OUT
33	FRONT-OUT-R	Audio OUT
34	GND	Audio GND

Female

Male

St309



Maßstab	Ident-Nr. 990593017006					Elektrosil/Congatec - Qseven-MC Typ 6450	Platinen-Nr.: M1552
A	30.06.09	Gor.	Bearb.	Datum		08.04.09	pinout E6 M1552 Board
Änderung	Datum	Name	Gepr.	Gor.		Audio/Feature	Blatt 1 von 1

The M1552 uses the Realtek ALC888 codec for sound I/O, but does only support stereo sound output. Please have a look at the conga-QA manual for more details.

## 8.7 USB (E7)


5-pin JST  
 Female EHR-5   
 Male 180° (Vertical) B5B-EH-A   
 Male 90° (Right Angle) S5B-EH

Pin	Function:	Remark:
1	+5V	
2	USB-6	
3	USB+6	
4	GND	
5	Shield	

connector view

St014

Maßstab		Ident-Nr. 990593017007					Elektrosil/Congatec - Qseven-MC Typ 6450		Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	27.03.09	Gor.		pinout E7 M1552 Board		M1552
Änderung	Datum	Name	Gepr.			USB		Blatt 1 von 1	

Only compatible with USB 2.0 devices.

## 8.8 Fan (E8)

3-pin Molex 22232031  
S3EL180/MO


Pin	Function:	Remark:
1	GND	
2	+5V	
3	FAN TACHO IN	



3 1

Male  
connector view


St319

Maßstab		Ident-Nr. 990593017008					Elektrosil/Congatec - Qseven-MC Typ 6450		Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	11.06.09	Gor.		pinout E8 M1552 Board		M1552
Änderung	Datum	Name	Gepr.			FAN		Blatt 1 von 1	

## 8.9 USB (E9)


5-pin JST  
 Female EHR-5   
 Male 180° (Vertical) B5B-EH-A   
 Male 90° (Right Angle) S5B-EH

Pin	Function:	Remark:
1	+5V	
2	USB-2	
3	USB+2	
4	GND	
5	Shield	



connector view

St014



Maßstab	Ident-Nr. 990593017009					Elektrosil/Congatec - Qseven-MC Typ 6450	Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	27.03.09		Gor.	pinout E9 M1552 Board
Änderung	Datum	Name	Gepr.			USB	Blatt 1 von 1

Only compatible with USB 2.0 devices.

## 8.10 USB (E10)

5-pin JST  
 Female EHR-5   
 Male 180° (Vertical) B5B-EH-A   
 Male 90° (Right Angle) S5B-EH


Pin	Function:	Remark:
1	+5V	
2	USB-7	by M1552-0 USB-5
3	USB+7	by M1552-0 USB+5
4	GND	
5	Shield	

Female    Male

connector view

St014

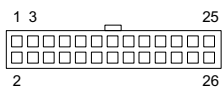
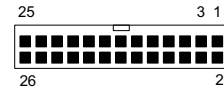
Maßstab	Ident-Nr. 990593017010					Elektrosil/Congatec - Qseven-MC Typ 6450	Platinen-Nr.:	
A	30.06.09	Gor.	Bearb.	08.04.09		Gor.	pinout E10 M1552 Board	M1552
Änderung	Datum	Name	Gepr.				USB	Blatt 1 von 1

Only compatible with USB 2.0 devices.

### 8.11 Display/Touch (E11)


**26-pin W+P PRODUCTS**  
 S26EL180/Low/RM2   
 S26EL180/V/RM2

Pin	Function:	Remark:
1	+5V	
2	+5V	
3	+5V	
4	+5V	
5	LVDS VDD	
6	LVDS BKLT	
7	LVDS BKCTRL	
8	+5V USB	
9	GND	
10	GND	
11	USB+5	by M1552-0 USB+7
12	USB-5	by M1552-0 USB-7
13	GND	
14	LVDS A-0	
15	LVDS A+0	
16	GND	
17	LVDS A-1	
18	LVDS A+1	
19	GND	
20	LVDS A-2	
21	LVDS A+1	
22	GND	
23	LVDS ACK-	
24	LVDS ACK+	
25	GND	
26	GND	

connector view

St308

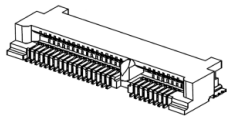
Maßstab		Ident-Nr. 990593017011			 MICRONIC COMPUTER SYSTEME GMBH	Elektrosil/Congatec - Qseven-MC Typ 6450		Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	27.03.09		Gor.	pinout E11 M1552 Board	
Änderung	Datum	Name	Gepr.			Display/Touch		Blatt 1 von 1

Pin 11 and Pin 12 are used for resistive touch panel (available on request).

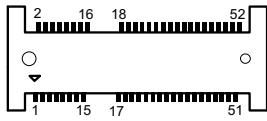
## 8.12 MiniPCI Express (E12)

**MINI-PCI-EXPRESS**

Pin	Function:	Pin	Remark:
1	PCIE WAKE#	27	GND
2	+3,3V	28	+1,5V
3	N.C.	29	GND
4	GND	30	SMBCLK
5	N.C.	31	PCIE0 TX-
6	+1,5V	32	SMBDAT
7	N.C.	33	PCIE0 TX+
8	N.C.	34	GND
9	GND	35	GND
10	N.C.	36	USB-1
11	PCIE CLKREF-	37	N.C.
12	N.C.	38	USB+1
13	PCIE CLKREF+	39	N.C.
14	N.C.	40	GND
15	GND	41	N.C.
16	N.C.	42	LED WWAN
17	N.C.	43	N.C.
18	GND	44	LED WLAN
19	N.C.	45	N.C.
20	N.C.	46	LED WPAN
21	GND	47	GND
22	PCI RST#	48	+1,5V
23	PCIE0 RX-	49	N.C.
24	+3,3V	50	GND
25	PCIE0 RX+	51	N.C.
26	GND	52	+3,3V




connector view



pin out

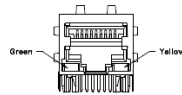
St311

Maßstab		Ident-Nr. 990593017012						Elektrosil/Congatec - Qseven-MC Typ 6450		Platinen-Nr.: M1552	
A	01.07.09	Gor.	Bearb.	11.06.09	Gor.			pinout E12 M1552 Board			
Änderung	Datum	Name	Gepr.			Mini PCI Express				Blatt 1 von 1	

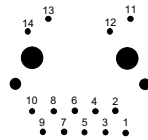
### 8.13 GBit LAN (E13)

B10EL90+2LED/GBit-LAN  
GBit-Ethernet JR45

Pin	Function:	Remark:
1	GE_MDI+0	
2	GE_MDI-0	
3	GE_MDI+1	
4	GE_MDI-1	
5	GE_CTREF	
6	GE_CTREF	
7	GE_MDI+2	
8	GE_MDI-2	
9	GE_MDI+3	
10	GE_MDI-3	
11	LED_LINK	
12	+3,3V	
13	LED_ACT	
14	+3,3V	




connector view



solder side view

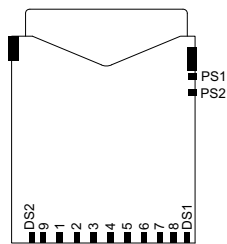
St320

Maßstab		Ident-Nr. 990593017013				Elektrosil/Congatec - Qseven-MC Typ 6450		Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	11.06.09		Gor.	pinout E13 M1552 Board	
Änderung	Datum	Name	Gepr.			GBit-LAN		Blatt 1 von 1


### 8.14 SD Card (E14)

SD-Card Holder  
SG5S009V1A1

Pin	Bezeichnung:	Bemerkung:
1	SD D3	
2	SD CMD	
3	GND	
4	+3,3V <sub>SD-Card</sub>	
5	SD CLK#	
6	GND	
7	SD D0	
8	SD D1	
9	SD D2	
DS1	SD CD#	Detection Switch Contact
DS2	GND	
PS1	SD WP	Protect Switch Contact
PS2	GND	



St321

Maßstab	Ident-Nr. 990593017014					Elektrosil/Congatec - Qseven-MC Typ 6450	Platinen-Nr.:
		Bearb.	Datum	Name		pinout E14 M1552 Board	M1552
Änderung	Datum	Name	Gepr.			SD-Card	Blatt 1 von 1

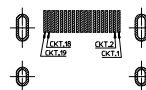
### 8.15 HDMI (E15)

S19EL90/HDMI

Pin	Function:	Remark:
1	TMDS Data2+	
2	GND	Shield Data2
3	TMDS Data2-	
4	TMDS Data1+	
5	GND	Shield Data1
6	TMDS Data1-	
7	TMDS Data0+	
8	GND	Shield Data0
9	TMDS Data0-	
10	TMDS Clock+	
11	GND	Shield Clock
12	TMDS Clock-	
13	N.B.	
14	N.B.	
15	SC_DDC	
16	SD_DDC	
17	GND	
18	+5V	
19	Hot Plug Detect	



connector view



pin out

St316

Maßstab	Ident-Nr. 990593017015						Elektrosil/Congatec - Qseven-MC Typ 6450	Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	Datum	Name		pinout E15 M1552 Board	M1552
Änderung	Datum	Name	Gepr.			HDMI	Blatt 1 von 1	

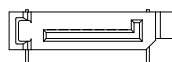
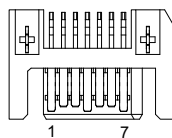
The HDMI connector does not fulfill the HDMI specification. This connector can only be used to connect a DVI monitor via HDMI-DVI adapter cable to the M1552.

## 8.16 SATA (E16)

7-pin SATA  
 S7EL180/SATA   
 S7EL90/SATA

Pin	Function:	Remark:
1	GND	
2	SATA0 TX+	
3	SATA0 TX-	
4	GND	
5	SATA0 RX-	
6	SATA0 RX+	
7	GND	

top view



connector view

SI276

Maßstab		Ident-Nr. 990593017016					Elektrosil/Congatec - Qseven-MC Typ 6450	Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	27.03.09	Gor.		pinout E16 M1552 Board	M1552
Änderung	Datum	Name	Gepr.			SATA	Blatt 1 von 1	

### 8.17 Power SATA (E18)

2-pin Molex  
S2EL90/Mo/39-30-1020

Pin	Function:	Remark:
1	+5V	
2	GND	



Male

connector view

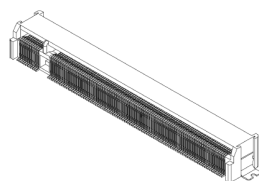
SI221

Maßstab		Ident-Nr. 990593017018					Elektrosil/Congatec - Qseven-MC Typ 6450		Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	Datum	Name		pinout E18 M1552 Board		M1552
Änderung	Datum	Name	Gepr.	05.06.09	Gor.	Power SATA		Blatt 1 von 1	

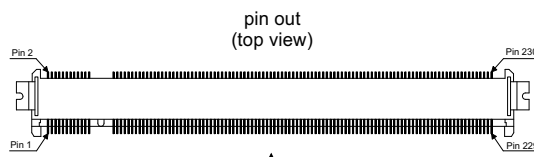
### 8.18 MXM Connector Part 1 (X1)

Qseven B230EL90/MMX (part 1)

Pin	Function:	Pin	Function:	Pin	Function:
1	GND	40	GND	79	USB_6_7_OC#
2	GND	41	BIOS_DISABLE#	80	USB_4_5_OC#
3	GBE_MDI3-	42	SDIO_CLK#	81	USB_P5-
4	GBE_MDI2-	43	SDIO_CD#	82	USB_P4-
5	GBE_MDI3+	44	SDIO_LED	83	USB_P5+
6	GBE_MDI2+	45	SDIO_CMD	84	USB_P4+
7	GBE_LINK100#	46	SDIO_WP	85	USB_2_3_OC#
8	GBE_LINK1000#	47	SDIO_PWR#	86	USB_0_1_OC#
9	GBE_MDI1-	48	SDIO_DAT1	87	USB_P3-
10	GBE_MDI0-	49	SDIO_DAT0	88	USB_P2-
11	GBE_MDI1+	50	SDIO_DAT3	89	USB_P3+
12	GBE_MDI0+	51	SDIO_DAT2	90	USB_P2+
13	GBE_LINK#	52	SDIO_DAT5	91	USB_HOST_PRES#
14	GBE_ACT#	53	SDIO_DAT4	92	USB_HC_SEL
15	GBE_CTREF	54	SDIO_DAT7	93	USB_P1-
16	SUS_S5#	55	SDIO_DAT6	94	USB_P0-
17	WAKE#	56	RSVD	95	USB_P1+
18	SUS_S3#	57	GND	96	USB_P0+
19	SUS_STAT#	58	GND	97	GND
20	PWRBTN#	59	HDA_SYNC	98	GND
21	SLP_BTN#	60	SMB_CLK	99	LVDS_A0+
22	LID_BTN#	61	HDA_RST#	100	LVDS_B0+
23	GND	62	SMB_DAT	101	LVDS_A0-
24	GND	63	HDA_BITCLK	102	LVDS_B0-
25	GND	64	SMB-ALERT#	103	LVDS_A1+
26	PWGIN	65	HDA_SDI	104	LVDS_B1+
27	BATLOW#	66	I2C_CLK	105	LVDS_A1-
28	RSTBTN#	67	HDA_SDO	106	LVDS_B1-
29	SATA0_TX+	68	I2C_DAT	107	LVDS_A2+
30	SATA1_TX+	69	THRM#	108	LVDS_B2+
31	SATA_TX-	70	WDTRIG#	109	LVDS_A2-
32	SATA1_TX-	71	THRMTRIP#	110	LVDS_B2-
33	SATA_ACT#	72	WDOUT	111	LVDS_PPEN
34	GND	73	GND	112	LVDS_BLEN
35	SATA0_RX+	74	GND	113	LVDS_A3+
36	SATA1_RX+	75	USB_P7-	114	LVDS_B3+
37	SATA0_RX-	76	USB_P6-	115	LVDS_A3-
38	SATA1_RX-	77	USB_P7+		
39	GND	78	USB_P6+		



back side view



connect side

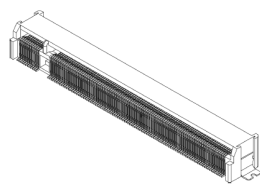
St317

Maßstab	Ident-Nr. 990593017050					Elektrosil/Congatec - Qseven-MC Typ 6450	Platinen-Nr.:
A	30.06.09	Gor.	Bearb.	11.06.09		Gor.	pinout X1 M1552 Board
Änderung	Datum	Name	Gepr.			Qseven	Blatt 1 von 2

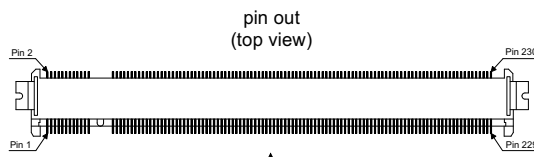
### 8.19 MXM Connector Part 2 (X1)

Qseven B230EL90/MMX (part 2)

Pin	Function:	Pin	Function:	Pin	Function:
116	LVDS_B3-	155	PCIE_CLK_REF+	194	SPKR
117	GND	156	PCIE_WAKE#	195	FAN_TACHOIN
118	GND	157	PCIE_CLK_REF-	196	FAN_PWMOUT
119	LVDS_A_CLK+	158	PCIE_RST#	197	GND
120	LVDS_B_CLK+	159	GND	198	GND
121	LVDS_A_CLK-	160	GND	199	RSVD
122	LVDS_B_CLK-	161	PCIE3_TX+	200	RSVD
123	LVDS_BLT_CTRL	162	PCIE3_RX+	201	RSVD
124	RSVD	163	PCIE3_TX-	202	RSVD
125	LVDS_DID_DAT	164	PCIE3_RX-	203	RSVD
126	LVDS_BLC_DAT	165	GND	204	MFG_NC4
127	LVDS_DID_CLK	166	GND	205	VCC_5V_SB
128	LVDS_BLC_CLK	167	PCIE2_TX+	206	VCC_5V_SB
129	RSVD	168	PCIE2_RX+	207	MFG_NC0
130	RSVD	169	PCIE2_TX-	208	MFG_NC2
131	SDVO_BCLK+	170	PCIE2_RX-	209	MFG_NC1
132	SDVO_INT+	171	EXCD0_PERST#	210	MFG_NC3
133	SDVO_BCLK-	172	EXCD1_PERST#	211	VCC
134	SDVO_INT-	173	PCIE1_TX+	212	VCC
135	GND	174	PCIE1_RX+	213	VCC
136	GND	175	PCIE1_TX-	214	VCC
137	SDVO_GREEN+	176	PCIE1_RX-	215	VCC
138	SDVO_FLDSTALL+	177	EXCD0_CPPE#	216	VCC
139	SDVO_GREEN-	178	EXCD1_CPPE#	217	VCC
140	SDVO_FLDSTALL-	179	PCIE0_TX+	218	VCC
141	GND	180	PCIE0_RX+	219	VCC
142	GND	181	PCIE0_TX-	220	VCC
143	SDVO_BLUE+	182	PCIE0_RX-	221	VCC
144	SDVO_TVCLKIN+	183	GND	222	VCC
145	SDVO_BLUE-	184	GND	223	VCC
146	SDVO_TVCLKIN-	185	LPC_AD0	224	VCC
147	GND	186	LPC_AD1	225	VCC
148	GND	187	LPC_AD2	226	VCC
149	SDVO_RED+	188	LPC_AD3	227	VCC
150	SDVO_CTRL_DAT	189	LPC_CLK	228	VCC
151	SDVO_RED-	190	LPC_FRAME#	229	VCC
152	SDVO_CTRL_CLK	191	SERIRQ	230	VCC
153	HDMI_HPD#	192	LPC_LDRQ#		
154	DP_HPD#	193	VCC_RTC		




back side view



pin out  
(top view)

connect side

St317

Maßstab		Ident-Nr. 990593017050					Elektrosil/Congatec - Qseven-MC Typ 6450		Platinen-Nr.: M1552	
A	30.06.09	Gor.	Bearb.	08.06.09	Gor.		pinout X1 M1552 Board			
Änderung	Datum	Name	Gepr.			Qseven		Blatt 2 von 2		

## 9 Industry specifications

The list below provides links to industry specifications that should be used as reference.

Qseven Specification

<http://www.qseven-standard.org/>

PCI Express Base Specification, Revision 2.0

<http://www.pcisig.com/specifications>

Universal Serial Bus (USB) Specification, Revision 2.0

<http://www.usb.org/home>

ExpressCard Standard Release 1.0

<http://www.expresscard.org/>

Serial ATA Specification, Revision 1.0a

<http://www.serialata.org>

MMC Multimedia Card Association

<http://www.mmca.org>

SD Card Association

<http://www.sdcard.org>

Low Pin Count Interface Specification, Revision 1.0 (LPC)

<http://developer.intel.com/design/chipsets/industry/lpc.htm>

High Definition Audio Specification, Rev. 1.0

<http://www.intel.com/standards/hdaudio/>

LVDS Owner's Manual

<http://www.national.com>

Extended Display Identification Data Standard Version 1.3 (EDID)

<http://www.vesa.org>

Enhanced Display Data Channel Specification Version 1.1 (DDC)

<http://www.vesa.org>

IEEE standard 802.3ab 1000BASE T Ethernet

<http://www.ieee.org/portal/site>

Advanced Configuration and Power Interface Specification Rev. 3.0a

<http://www.acpi.info/>