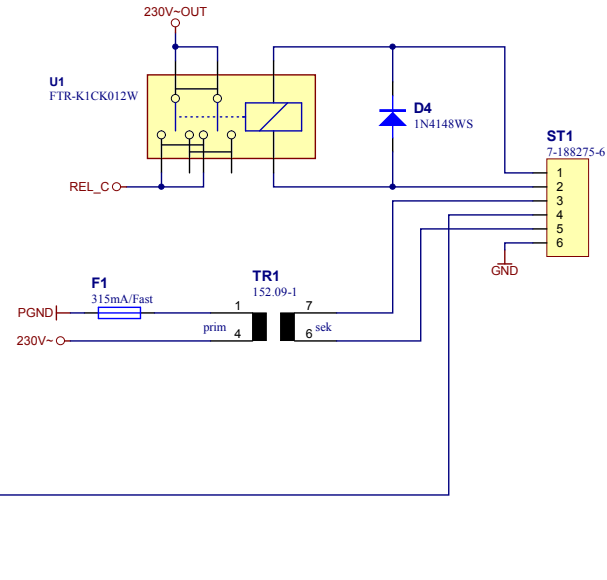
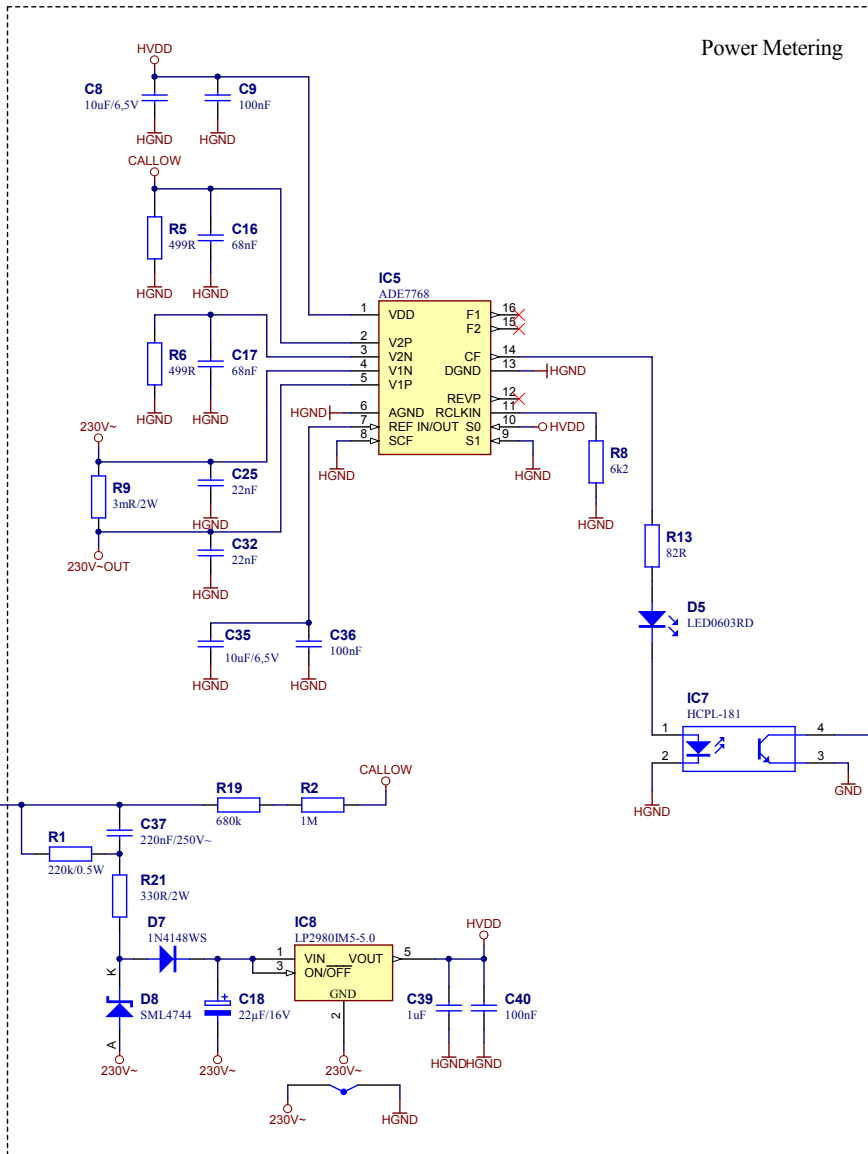


HIGH VOLTAGE !!!

HIGH VOLTAGE !!!



- 1 - Relais +12V
- 2 - Relais GND
- 3 - Supply 12V (1)
- 4 - Metering Pulse
- 5 - Supply 12V (2)
- 6 - GND

solder 2.5mm2 flexibel wire



HIGH VOLTAGE !!!

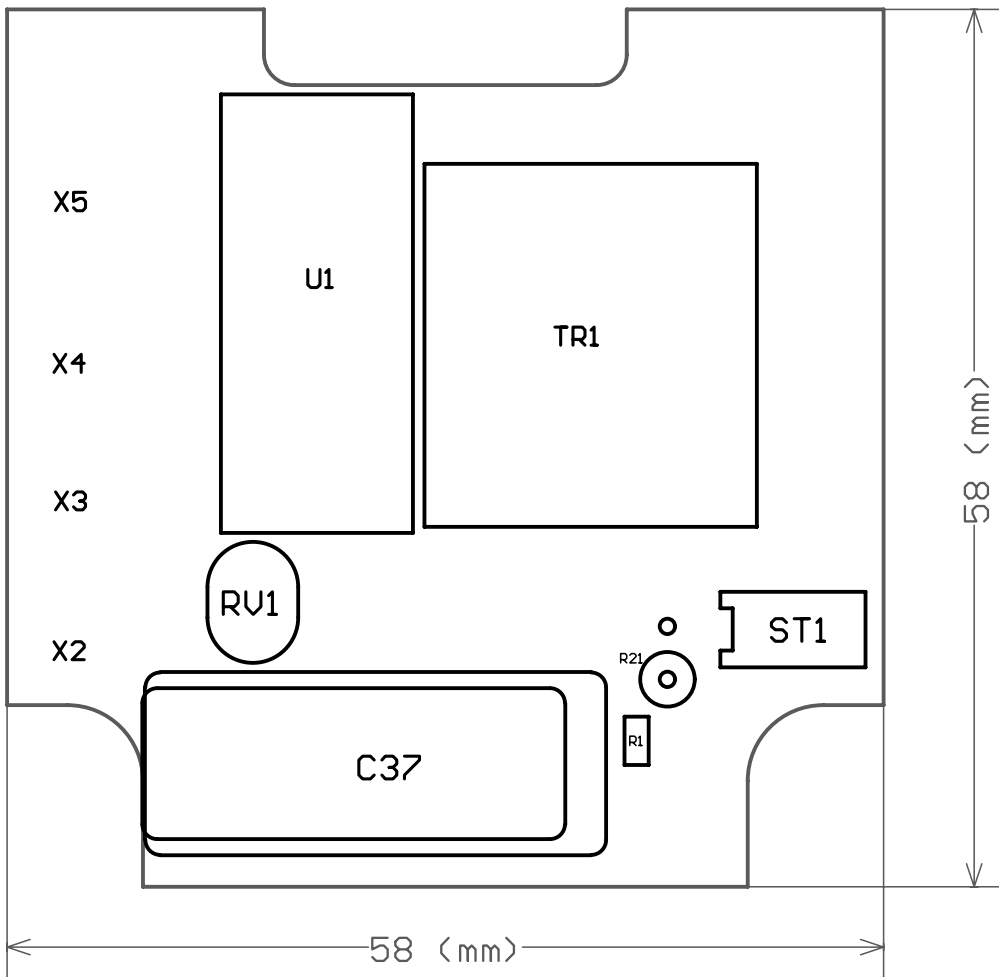
Attention CAD-Drawing
Do not change manually !

HIGH VOLTAGE !!!

List of Change		Date	Dwn	Chk
2nd Revision		12.07.2011	M. Hammer	
1st Revision		15.04.2011	M. Hammer	
1st Release		01.03.2011	M. Hammer	
Project		Date		Chk
+ +		Rev.		E3.0
Name		Hexabus Power Plug High Voltage plus		
Sheet			1/1	



Top



Bill of Material

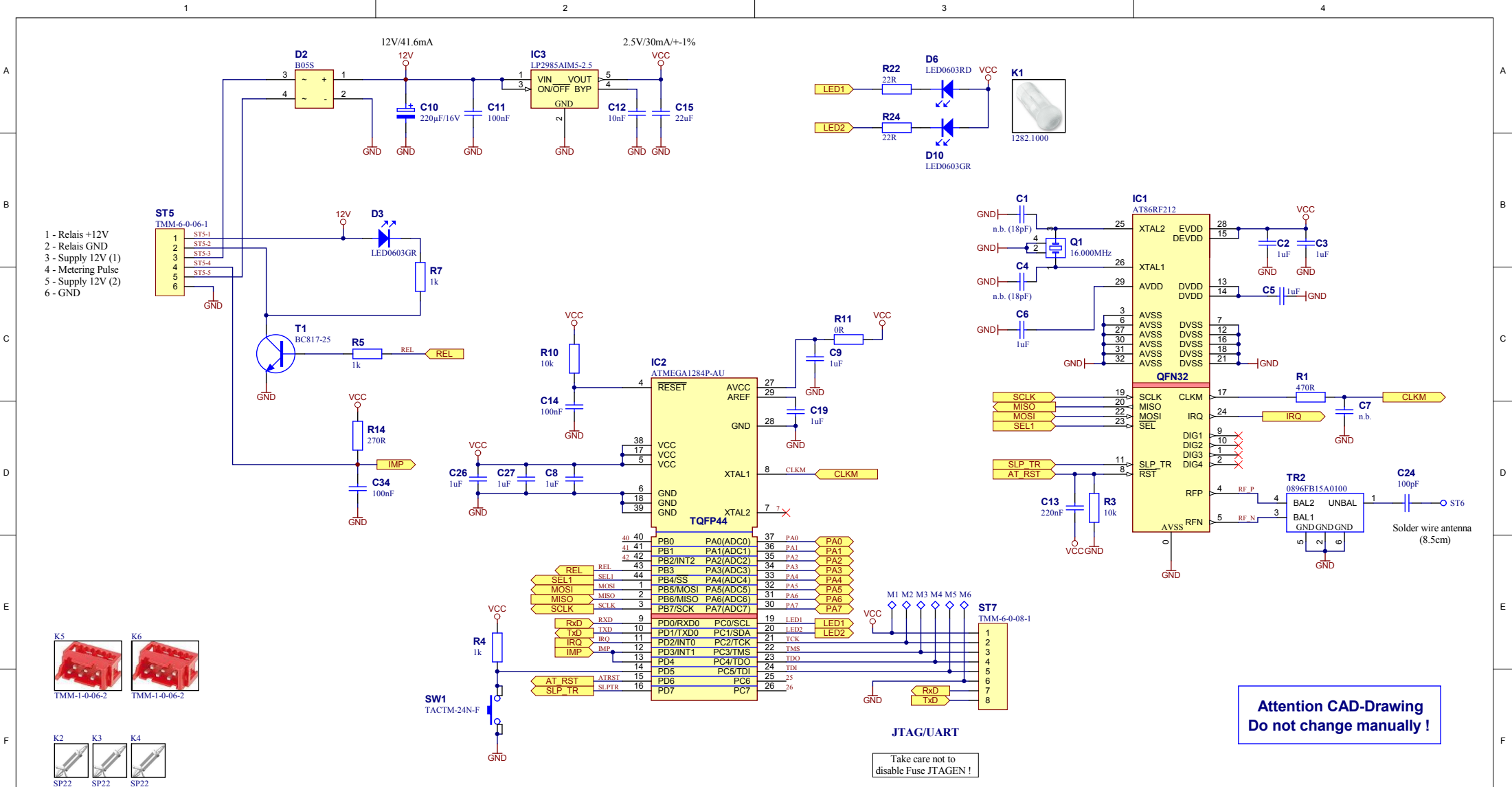
Project : HexaBus
 Name : Steckdose High Voltage plus
 Release : E3.0
 Author : Markus Hammer
 Date : 30.08.11



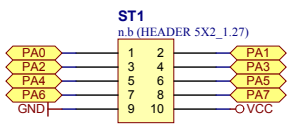
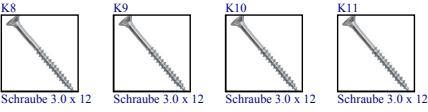
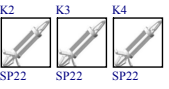
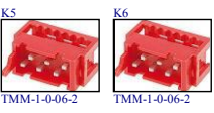
Commentary :

Pos.	Num.	Components	Size	Description	Case	Manufacturer	Temperature Range	Characteristics	Distributor	Ordering Number	€	Commentary
1	2	C8, C35	10uF/6,5V	Keramikkondensator	1210	Open Source	-55°C - +85°C	25V/+10%-20%	Open Source	---	0,24	
2	3	C9, C36, C40	100nF	Keramikvielschichtkondensator X7R	0603	AVX	-55°C - +125°C	16V/+10%	Farnell	132-7679	0,04	
3	2	C16, C17	68nF	Keramikvielschichtkondensator Y5V	0603	Multicomp	-30°C - +85°C	50V	Farnell	175-9120	0,01	
4	1	C18	22µF/16V	Tantal Kondensator TAJ Series	Size D	AVX	-55°C - +85°C	22µF/16V/+20%	Reichelt	SMD TAN.22/20 (TAJD226)	0,17	
5	2	C25, C32	22nF	Keramikvielschichtkondensator Y5V	0603	Multicomp	-30°C - +85°C	50V	Farnell	175-9110	0,01	
6	1	C37	220nF/250V~	Metallized Paper Capacity Class X2	22.5mm	Wima	< 110°C	220nF/275V~	Arrow Central Europe	MPX20W3220F100		
7	1	C39	1uF	Keramikkondensator X7R	0805	Yageo	-55°C - +125°C	25V/+10%	Farnell	145-8903	0,10	
8	2	D4, D7	1N4148WS	200mW Small Fast Switching Diode	SOD-323F	Taiwan Semiconductor	-65°C - +150°C	150mA/75V	Reichelt	1N 4148 WS	0,03	
9	1	D5	LED0603RD	SMT LED red	0603	Dialight Corporation	-30°C - +85°C	2,0V/20mA	Farnell	146-5988	0,11	
10	1	D8	SML4744	Zener Diode	DO-214AC	Vishay Semiconductor	-65°C - +150°C	15V/1W	Farnell	165-1604	0,18	
11	1	F1	315mA/Fast	Chip Fuse	3.2x1.6	Cooper Bussmann	-55°C - +125°C	375mA/63VDC	Farnell	112-3251	0,75	
12	1	IC5	ADE7768	Energy Metering IC	SOIC16	Analog Devices	-40°C - +85°C	5.0V+-5%/4mA	Digikey	ADE7768ARZ-ND	2,02	

Pos.	Num.	Components	Size	Description	Case	Manufacturer	Temperature Range	Characteristics	Distributor	Ordering Number	€	Commentary
13	1	IC7	HCPL-181	Phototransistor Optocoupler	Miniflat SMD	Avago Technologies	-55°C - +100°C	3,75kV	Farnell	124-4527	0,22	
14	1	IC8	LP2980IM5-5.0	Micropower Ultra-Low Dropout Voltage Regulator	SOT23-5	National Semiconductor	-40°C - +125°C	5.0V/50mA	Farnell	9779-329	0,66	
15	1	R1	220k/0.5W	SMD-Widerstand	1206	Multicomp	-55°C - +155°C	0,5W/1%	Farnell	157-6662	0,04	
16	1	R2	1M	SMD-Widerstand	1206	Multicomp	-55°C - +155°C	0,5W/1%	Farnell	157-6679	0,04	
17	2	R5, R6	499R	SMD-Widerstand	0603	Vishay Draloric	-55°C - +155°C	0,063W/1%	Farnell	146-9818	0,02	
18	1	R8	6k2	SMD-Widerstand	0603	Multicomp	-55°C - +125°C	1%/0,063W	Farnell	933-1409	0,03	
19	1	R9	3mR/2W	Current Sensing Chip	2512	KOA	-65°C - +155°C	2W/1%	Farnell	1400-838	0,60	
20	1	R13	82R	SMD-Widerstand	0603	Multicomp	-55°C - +125°C	0,063W	Farnell	933-2308	0,03	
21	1	R19	680k	SMD-Widerstand	1206	Multicomp	-55°C - +155°C	0,5W/1%	Farnell	157-6676	0,04	
22	1	R21	330R/2W	Flameproof Power Wirewound Resistor	9.0 x 3.6	Welwyn	-55°C - +155°C	2W/5%	Farnell	121-9231	0,33	
23	1	RV1	JVR7N431K	Zinc Oxide Varistor	9mm x 6mm	Diverse	-40°C - +125°C	275VAC/0.25W	Reichelt	VDR-0,25 270	0,08	
24	1	ST1	7-188275-6	Micromatch gerade 6-polig	1,27 SMD	Tyco Electronics / AMP	-40°C - +105°C	1,5A/100VDC	Farnell/Reichelt	105-6234/MM FL 6S	0,73/0,63	
25	1	TR1	152.09-1	Printtransformator 0.5VA	24x22x19	Gerth Transformatoren	0°C - +70°C	9V/55.5mA	Reichelt	152.09-1	2,15	
26	1	U1	FTR-K1CK012W	Miniatur-Leistungsrelais	29x12.7	Fujitsu-Takamisawa	-40°C - +85°C	14V/1k44/250VAC /16A	Reichelt	FTR K1CK012W	1,15	



- 1 - Relais +12V
- 2 - Relais GND
- 3 - Supply 12V (1)
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**Attention CAD-Drawing
Do not change manually !**

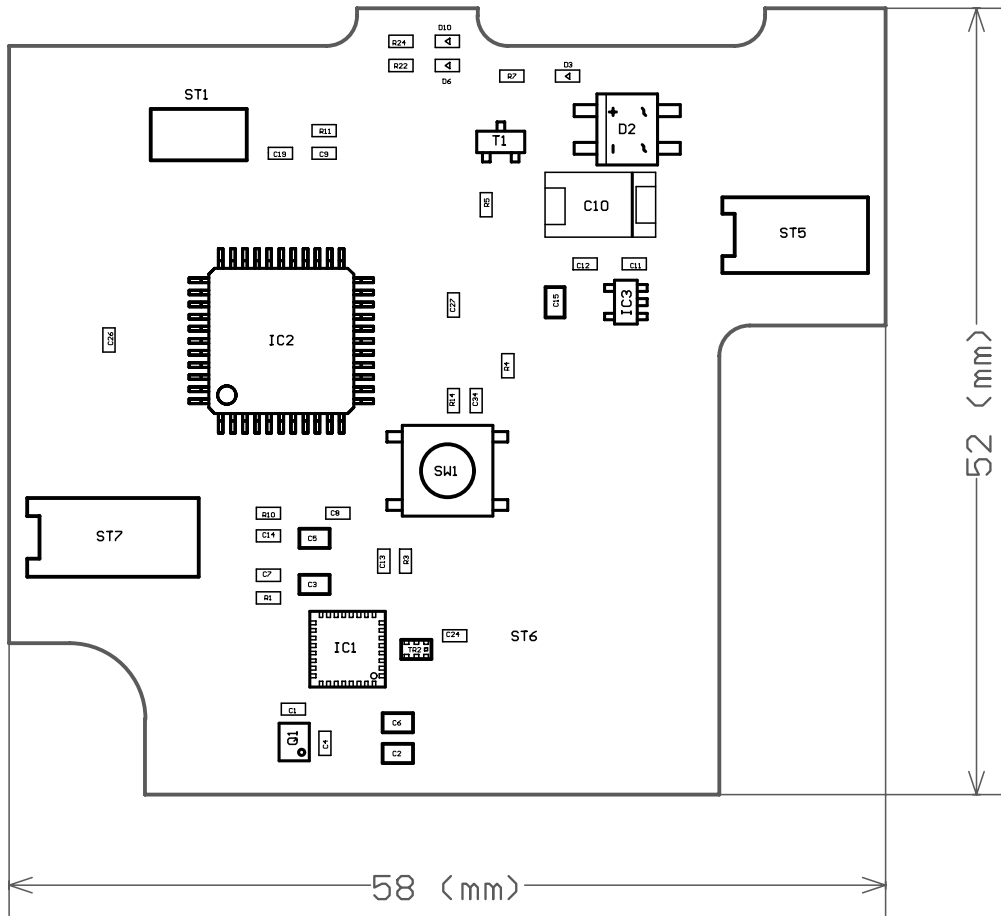
JTAG/UART
Take care not to disable Fuse JTAGEN !

Rev.	Date	Dwn	Chk
3rd Revision	30.08.2011	M. Hammer	
2nd Revision	12.07.2011	M. Hammer	
1st Revision	15.04.2011	M. Hammer	
1st Release	01.03.2011	M. Hammer	

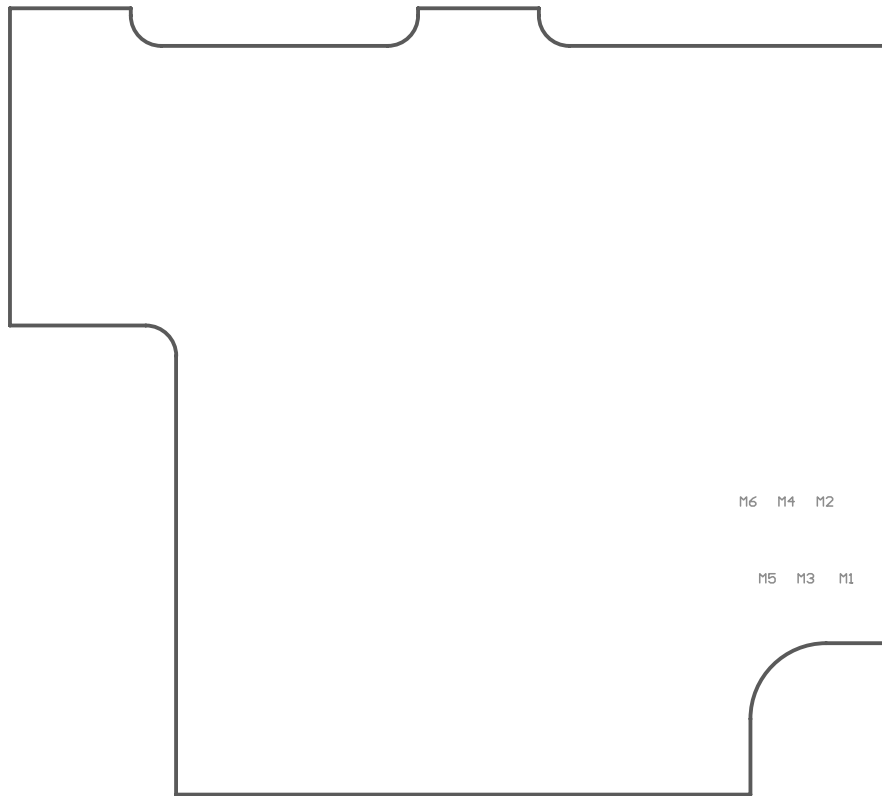
Project		Hexabus		Rev.	E4.0
Name		Power Socket Low Voltage			
					Sheet
					1/1



Top



Bottom



M6 M4 M2

M5 M3 M1

Bill of Material

Project : HexaBus
 Name : Steckdose Low Voltage
 Release : E4.0
 Author : Markus Hammer
 Date : 30.08.11



Commentary :

Pos.	Num.	Components	Size	Description	Case	Manufacturer	Temperature Range	Characteristics	Distributo	Ordering Number	€	Commentary
1	2	C1, C4	n.b. (18pF)	Keramikvielschichtkondensator C0G	0603	AVX	-55°C - +125°C	25V/+5%	Farnell	139-6426	0,01	
2	4	C2, C3, C5, C6	1uF	Keramikkondensator X7R	0805	Yageo	-55°C - +125°C	25V/+10%	Farnell	145-8903	0,10	
3	1	C7	n.b.	Keramikvielschichtkondensator C0G	0603		-55°C - +125°C	50V/+5%	Farnell			
4	5	C8, C9, C19, C26, C27	1uF	Keramikvielschichtkondensator X5R	0603	AVX	-55°C - +85°C	6,3V/+10%	Farnell	132-7676	0,09	
5	1	C10	220µF/16V	Solid Tantalum Surface Mount Capacitor	7.3 x 4.3	Vishay	-55°C - +125°C	+10%	Farnell	175-4097 (TR3E227K016C0100)	1,15	
6	3	C11, C14, C34	100nF	Keramikvielschichtkondensator X7R	0603	AVX	-55°C - +125°C	16V/+10%	Farnell	132-7679	0,04	
7	1	C12	10nF	Keramikvielschichtkondensator X7R	0603	AVX	-55°C - +125°C	50V/+10%	Farnell	132-7675	0,04	
8	1	C13	220nF	Keramikvielschichtkondensator X7R	0603	AVX	-55°C - +125°C	16V/+10%	Farnell	132-7683	0,09	
9	1	C15	22uF	Keramikkondensator X5R	0805	Multicomp	-55°C - +85°C	6.5V/+10%	Farnell	175-9415	0,13	
10	1	C24	100pF	Keramikvielschichtkondensator C0G	0603	AVX	-55°C - +125°C	50V/+5%	Farnell	499-122	0,04	
11	1	D2	B05S	SMD Bridge Rectifier	DB1-MS	DC Components	-55°C - +150°C	50V/0,5A	TME	B05S	0,11	
12	2	D3, D10	LED0603GR	SMT LED green	0603	Dialight Corporation	-30°C - +85°C	2,0V/20mA	Farnell	146-5991	0,11	

Pos.	Num.	Components	Size	Description	Case	Manufacturer	Temperature Range	Characteristics	Distributo	Ordering Number	€	Commentary
13	1	D6	LED0603RD	SMT LED red	0603	Dialight Corporation	-30°C - +85°C	2,0V/20mA	Farnell	146-5988	0,11	
14	1	IC1	AT86RF212	IEEE 802.15.4 Transceiver	QFN32	Atmel	-40°C - +85°C	1.8V-3.6V/25mA	Farnell	174-8492	5,55	
15	1	IC2	ATMEGA1284P-AU	8-bit Microcontroller 128KB Flash	TQFP44	Atmel	-40°C - +85°C	1.8 - 5.5V	CSD Electronics	301909	7,95	
16	1	IC3	LP2985AIM5-2.5	Micropower Ultra-Low Dropout Voltage Regulator	SOT23-5	National Semiconductor	-40°C - +125°C	2.5V/150mA	Farnell	1691-630	0,74	
17	1	K1	1282.1000	Lightguide for front panels	8.5mm x 3.2mm	Mentor	-40°C - +85°C	2.8mm Hole	Farnell	432-7767	0,79	
18	3	K2, K3, K4	SP22	Spacer 22.2mm	22.2mm	Skiffy	---	4mm/4.3mm	Skiffy	100 0372 000 02	0,17	
19	2	K5, K6	TMM-1-0-06-2	Micromatch Plug 6pin	1.27mm	Amphenol	-40°C - +105°C	1.5A/230VAC	TME	TMM-1-0-06-2	0,25	
20	4	K8, K9, K10, K11	Schraube 3.0 x 12	Senkkopf Kreuzschlitz	3.0 x 12	Open Source	---	---	Open Source	---	0,05	
21	1	Q1	16.000MHz	Quarz 16.000MHz	2.5x2.0	Euroquartz	-40°C - +85°C	+/-15ppm	Reichelt	16,000000-X22	1,05	
22	1	R1	470R	SMD-Widerstand	0603	Multicomp	-55°C - +125°C	0,063W	Farnell	933-2146	0,03	
23	2	R3, R10	10k	SMD-Widerstand	0603	Multicomp	-55°C - +125°C	0,063W	Farnell	933-1700	0,03	
24	3	R4, R5, R7	1k	SMD-Widerstand	0603	Multicomp	-55°C - +125°C	0,063W	Farnell	933-1697	0,03	
25	1	R11	0R	SMD-Widerstand	0603	Multicomp	-55°C - +125°C	0,063W	Farnell	933-1662	0,03	
26	1	R14	270R	SMD-Widerstand	0603	Multicomp	-55°C - +125°C	0,063W	Farnell	933-1964	0,03	
27	2	R22, R24	22R	SMD-Widerstand	0603	Multicomp	-55°C - +125°C	1%/0,063W	Farnell	933-0844	0,03	
28	1	ST1	n.b (HEADER 5X2_1.27)	Steckverbinder 10-polig	1.27mm	MPE Garry	-40°C - +105°C	1,0A	Reichelt	SL 2X10G 1,27	0,54	
29	1	ST5	TMM-6-0-06-1	Micromatch gerade 6-polig	1,27 SMD	Amphenol	-40°C - +105°C	1,5A/100VDC	TME	TMM-6-0-06-1	0,44	
30	1	ST7	TMM-6-0-08-1	Micromatch gerade 8-polig	1,27 SMD	Amphenol	-40°C - +105°C	1,5A/100VDC	TME	TMM-6-0-08-1	0,25	
31	1	SW1	TACTM-24N-F	Mikroschalter monostabil	6x6	Ninigi/Schurter	n.d.	0.5A/12V/1.6N	TME/Reichelt	TACTM-613N-F/TASTER 9320	0,05/0,28	
32	1	T1	BC817-25	NPN General Purpose Transistor	SOT23	Fairchild Semiconductor	-55°C - +150°C	1,5A/45V	Farnell	122-8216	0,07	
33	1	TR2	0896FB15A0100	896 MHz Balun/Filter Combination	2mm x 1.25mm	Johanson Technology	-40°C - +85°C	863-928 MHz/1W	Digikey/BFI Optilas	712-1473-1-ND/0896FB15A0100	0,53/0,31	