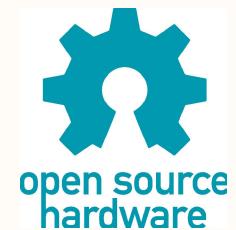
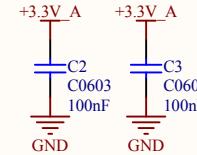
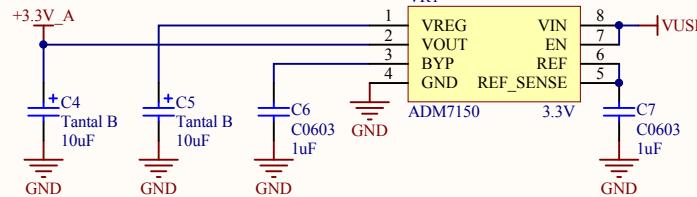


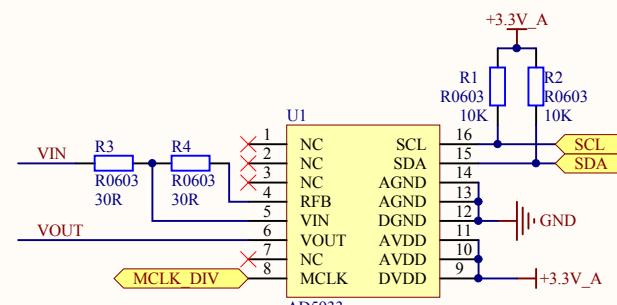
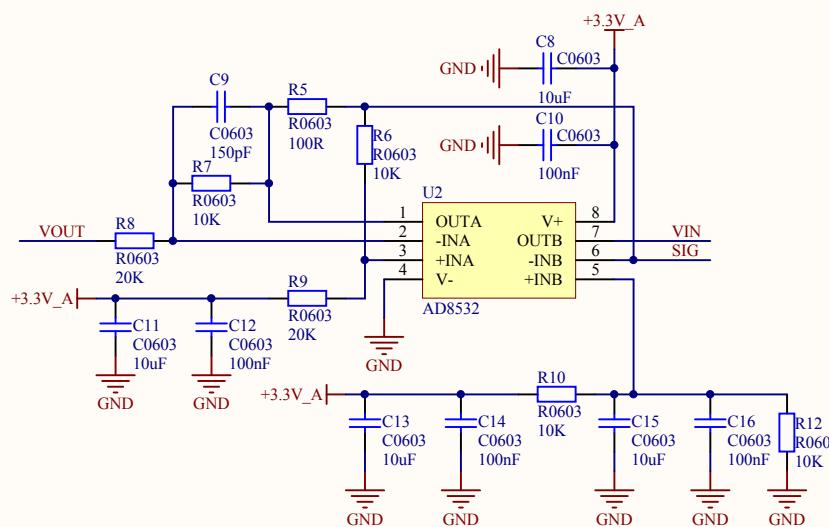
Title  
Small Impedance Meter (Microcontroller)

Size	Number	Revision
A4	1	1.0
Date:	11.6.2016	Sheet 1 of 3
File:	C:\Users...\microcontroller.SchDoc	Drawn By: Matej Gomboc

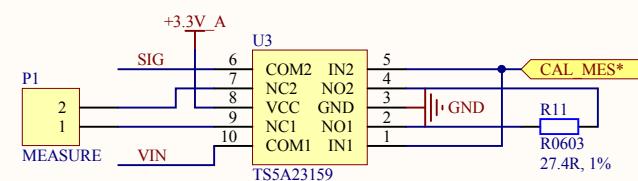
A



B



C

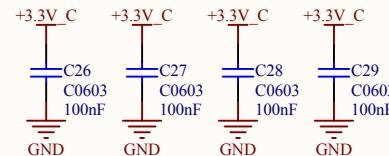


D

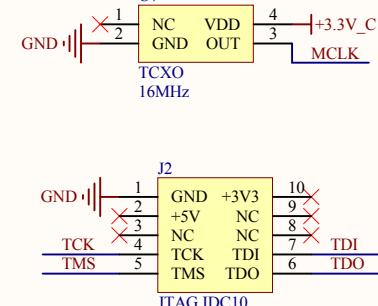
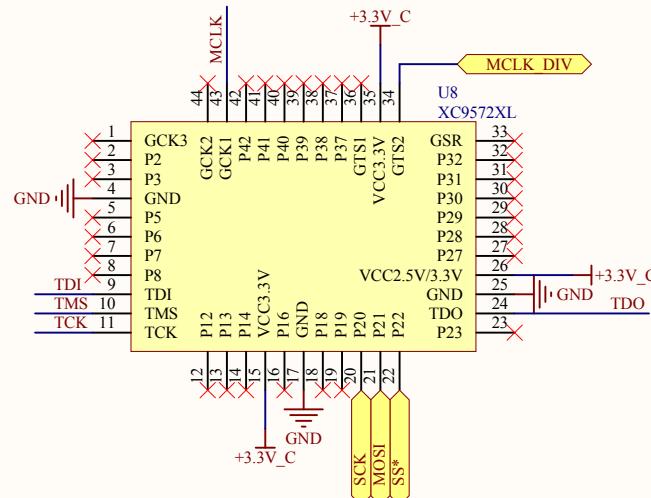
Title: Small Impedance Meter (Analogue Part)

Size	Number	Revision
A4	2	1.0
Date:	11.6.2016	Sheet 2 of 3
File:	C:\Users...\analog.SchDoc	Drawn By: Matej Gomboc

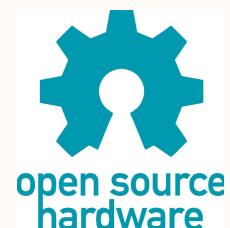
A



B



C



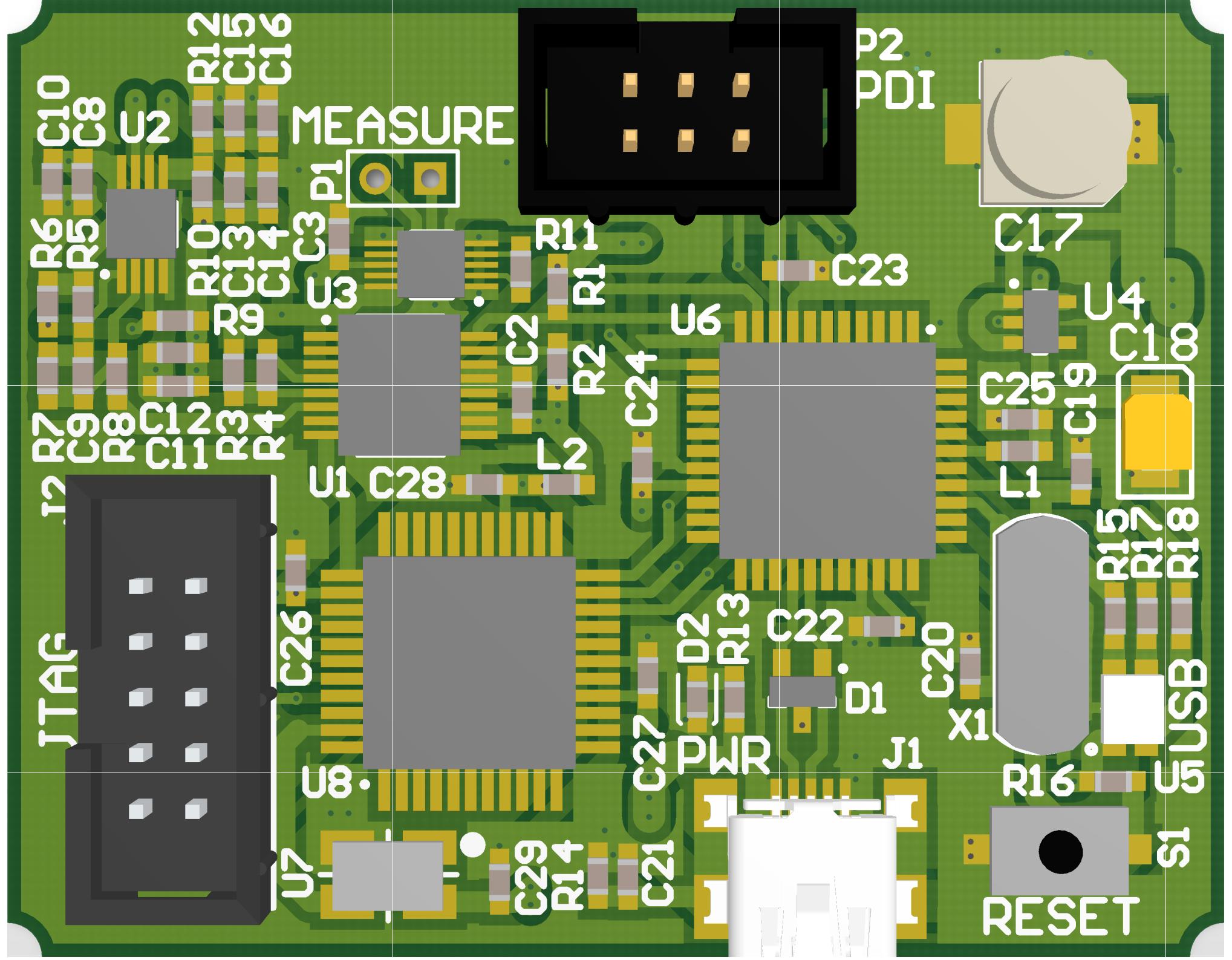
Title Small Impedance Meter (Clock Generator)		
Size A4	Number 3	Revision 1.0
Date: 11.6.2016	Sheet 3 of 3	
File: C:\Users...\clk_gen.SchDoc	Drawn By: Matej Gomboc	

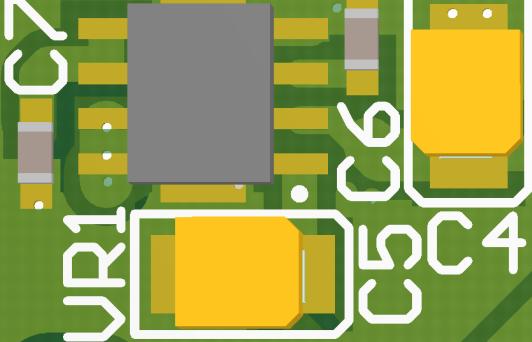
A

B

C

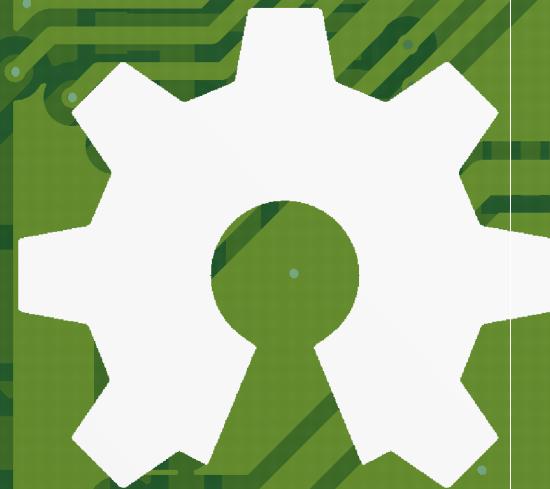
D





DAT NC CLK  
JCC NC GND

## Small Impedance Meter



open source  
hardware

+3V3 GND  
NC +5V  
NC NC  
TDI TCK  
TDO TMS

Description	Comment	Designator	Footprint	Quantity	Value
2-Channel SPDT Switch	TS5A23159	U3	TS5A23159_VSSOP10	1	
8/ 16-bit Atmel XMEGA Microcontroller	ATXMEGA128A4U-AU	U6	ATXMEGAA4U_TQFP44	1	
100 mA Voltage Regulator	ADP150	U4	ADP150	1	3.3V
800 mA Ultralow Noise, High PSRR, RF Linear Regulator	ADM7150	VR1	ADM7150_SOIC8	1	3.3V
Aluminium Electrolytic Capacitor	Alu D8	C17	PANASONIC SIZE D8	1	100uF
Ceramic Capacitor	C0603	C19, C20	0603_HandSoldering	2	22pF
		C2, C3, C10, C12, C14, C16, C22, C23, C24, C25, C26, C27, C28, C29			
Ceramic Capacitor	C0603	0603_HandSoldering		14	100nF
Ceramic Capacitor	C0603	C21	0603_HandSoldering	1	4.7nF
Ceramic Capacitor	C0603	C6, C7	0603_HandSoldering	2	1uF
Ceramic Capacitor	C0603	C8, C11, C13, C15	0603_HandSoldering	4	10uF
Ceramic Capacitor	C0603	C9	0603_HandSoldering	1	150pF
ESD protection	TPD2E009	D1	TPD2E009_SOT23_3	1	
FOX924B-16.000 TCXO, 3.3V CMOS, SMD	TCXO	U7	TCXO_5x3	1	16MHz
Header, 2-Pin	MEASURE	P1	HDR1X2	1	
High Current Output OpAmp	AD8532	U2	AD8532_MSOP8	1	
Inductor	i0603	L1, L2	0603_HandSoldering	2	Ferrite Bead
JTAG IDC10 Bus Pirate Programming Interface	JTAG IDC10	J2	IDC10	1	
KSR221G LFS Tactile Switch	Tactile Switch	S1	KSR221G_LFS_Tactile_Switch	1	KSR221G LFS
Network Analyzer	AD5933	U1	AD5933	1	
PDI Programming Interface	PDI IDC6	P2	PDI_HDR2X3	1	
		R1, R2, R6, R7, R10, R12, R16	0603_HandSoldering	7	10K
Resistor	R0603	R11	0603_HandSoldering	1	27.4R, 1%
Resistor	R0603	R13, R15, R17, R18	0603_HandSoldering	4	1K
Resistor	R0603	R14	0603_HandSoldering	1	1M
Resistor	R0603	R3, R4	0603_HandSoldering	2	30R
Resistor	R0603	R5	0603_HandSoldering	1	100R
Resistor	R0603	R8, R9	0603_HandSoldering	2	20K
RGB LED ASMB-MTB0-0A3A2	RGB_LED	U5	PLCC-4_LED	1	
SMD LED 0603	LED 0603	D2	0603_LED	1	RED
Tantalum Capacitor	Tantal B	C4, C5, C18	AVX-CAPC3528_V	3	10uF
USB 2.0 mini B receptacle	USB mini B	J1	USB mini B receptacle	1	
Xilinx CPLD 72 Macrocells	XC9572XL	U8	XC9572XL_QFP44	1	
XTAL TH Low Profile	16MHz	X1	XTAL_TH_LOW	1	16MHz