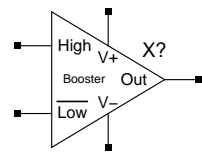


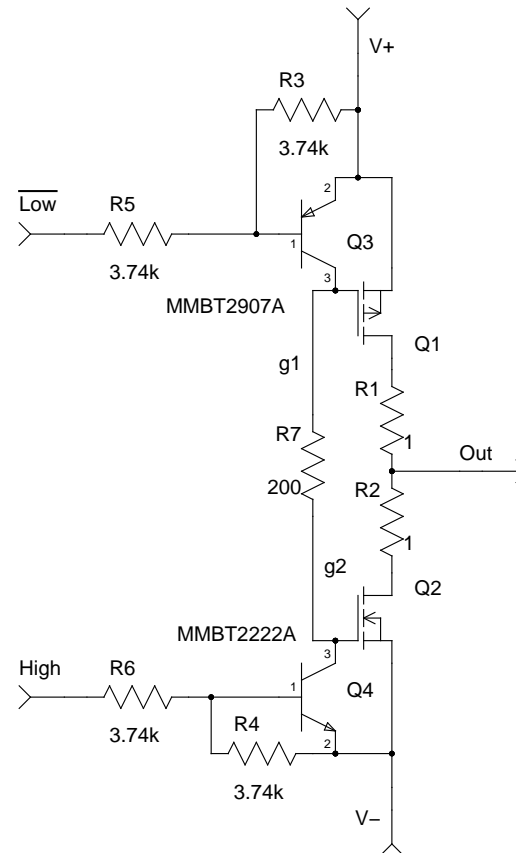
# Noqsi Aerospace, Ltd.

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+1-303-816-2756 jpd@noqsi.com



.subckt Booster %up



TITLE

Parallel clock current booster

FILE: Booster.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

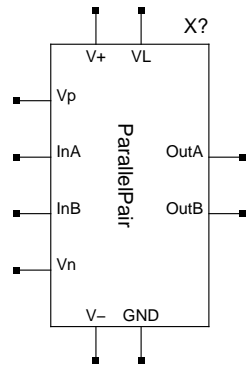
PAGE 1 OF 1

DRAWN BY: jpd

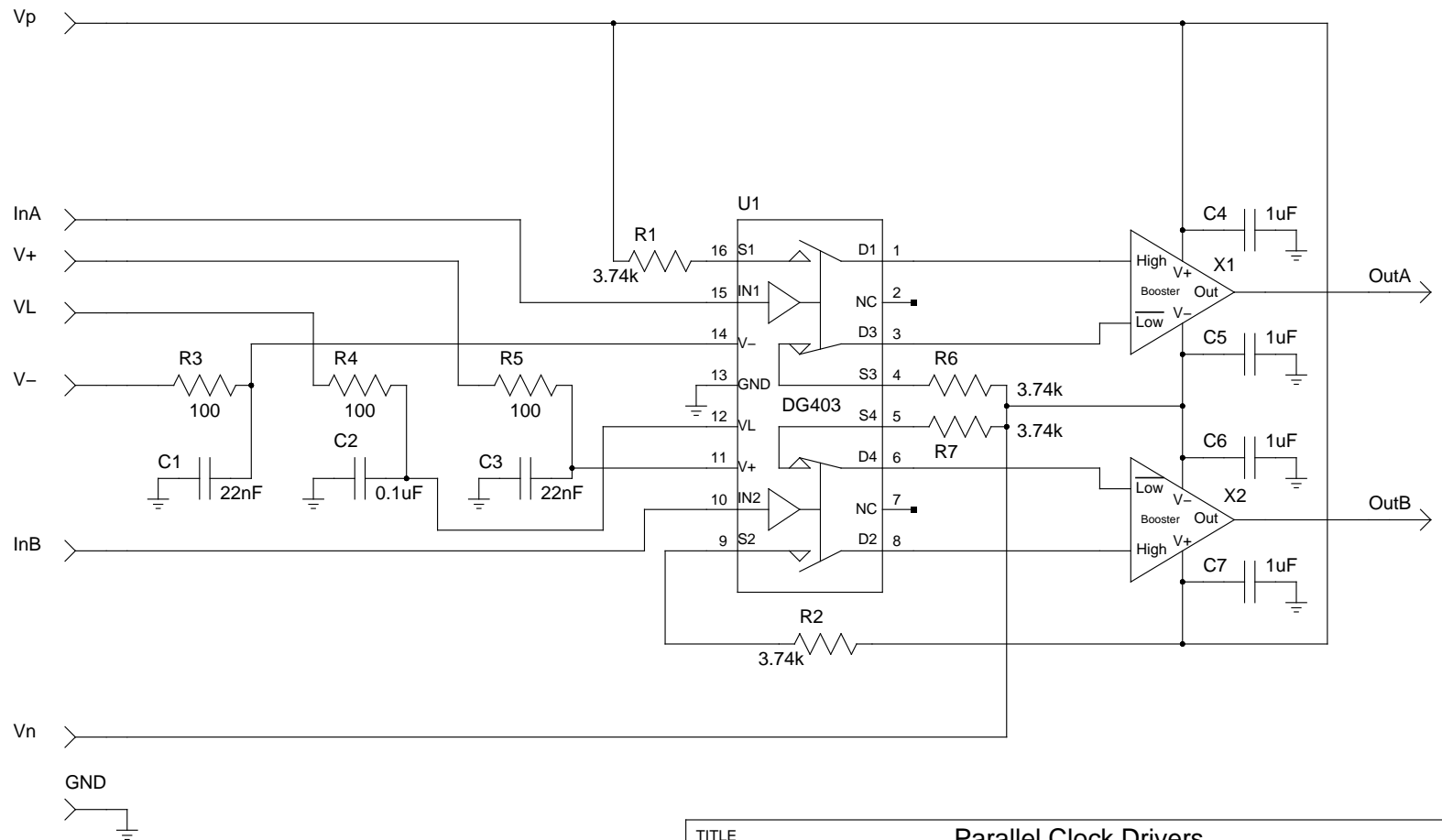
# Noqsi Aerospace, Ltd.

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.subckt ParallelPair %up



TITLE

Parallel Clock Drivers

FILE: ParallelPair.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

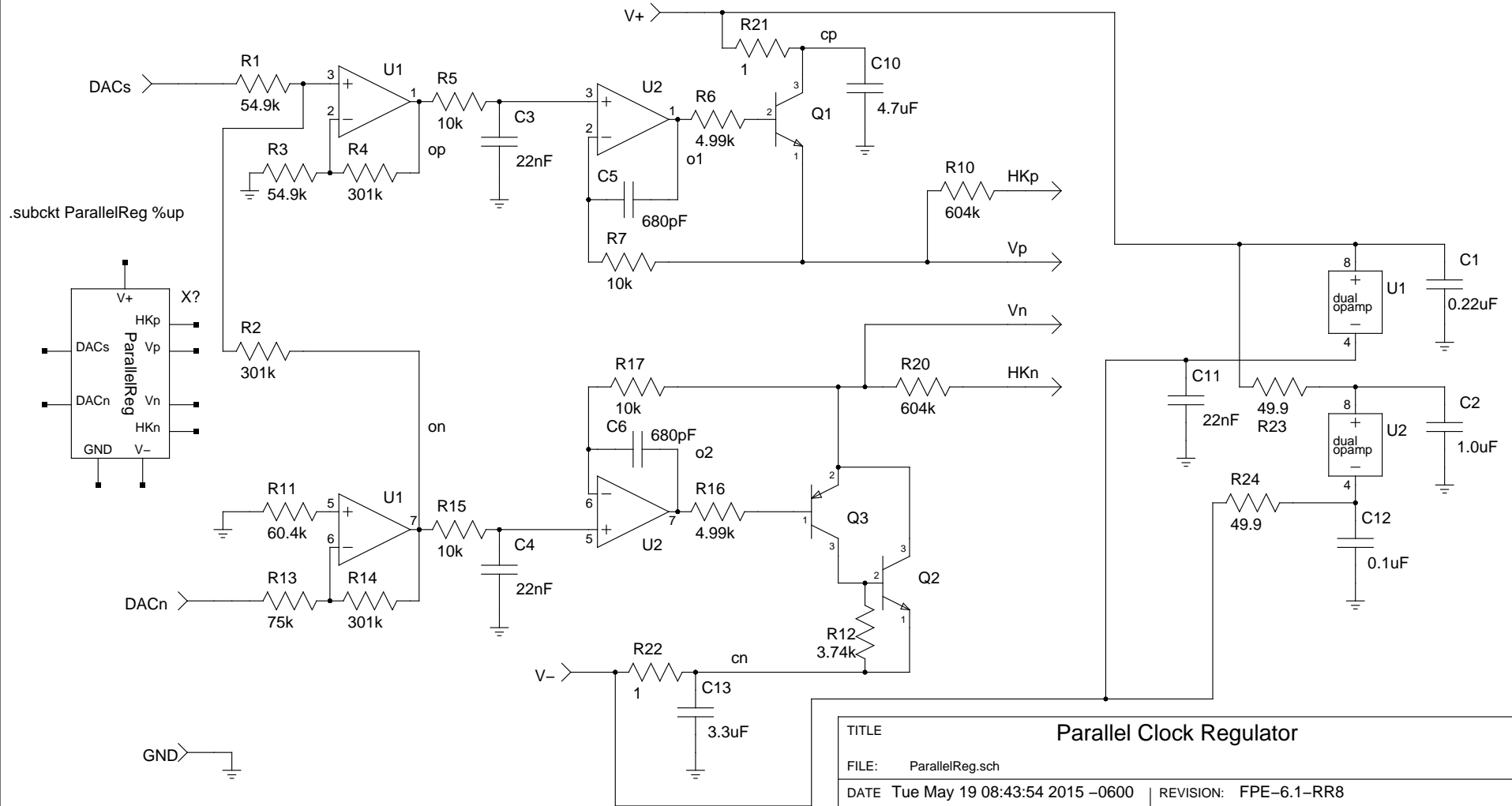
PAGE 1 OF 1

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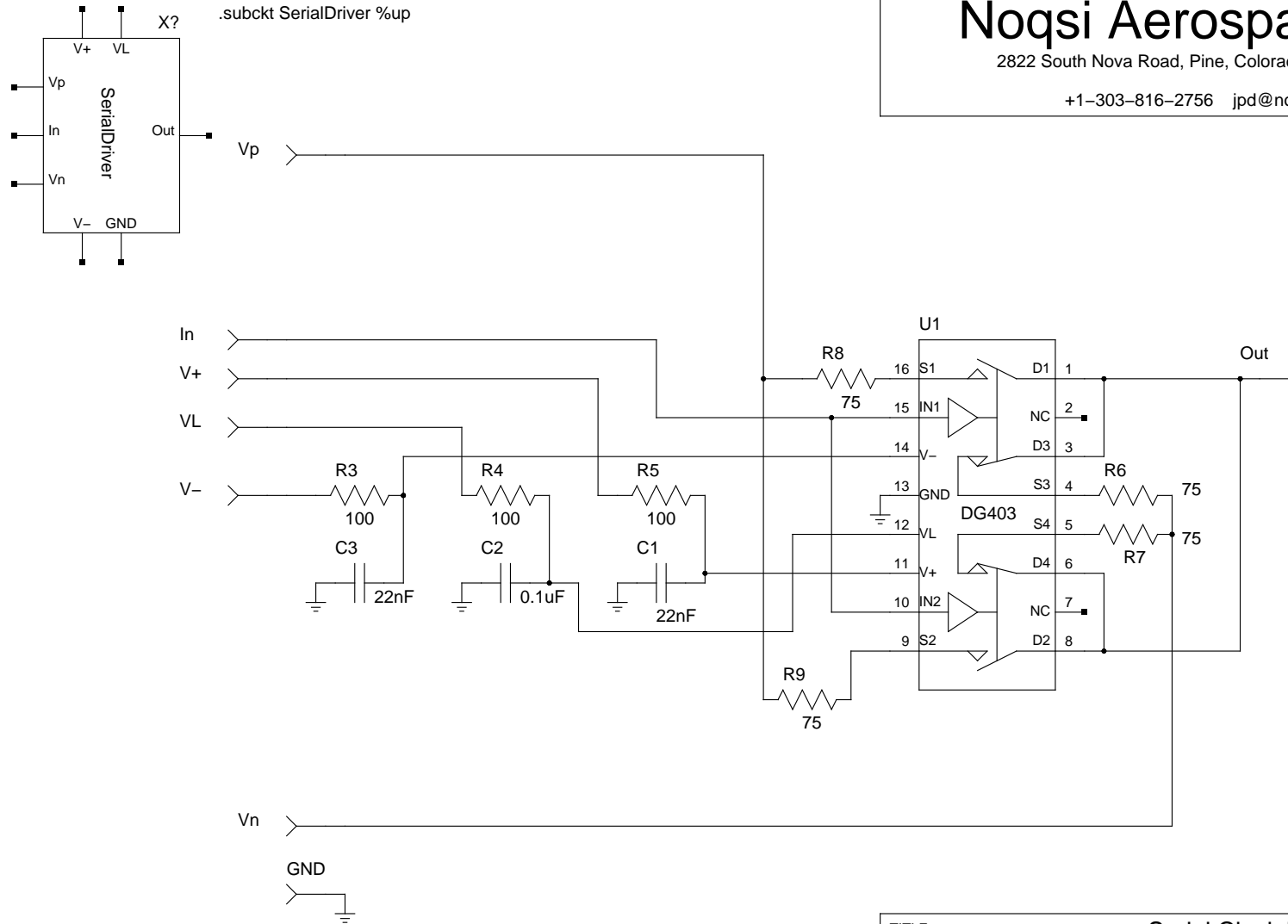
+1-303-816-2756 jpd@noqsi.com



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+1-303-816-2756 jpd@noqsi.com

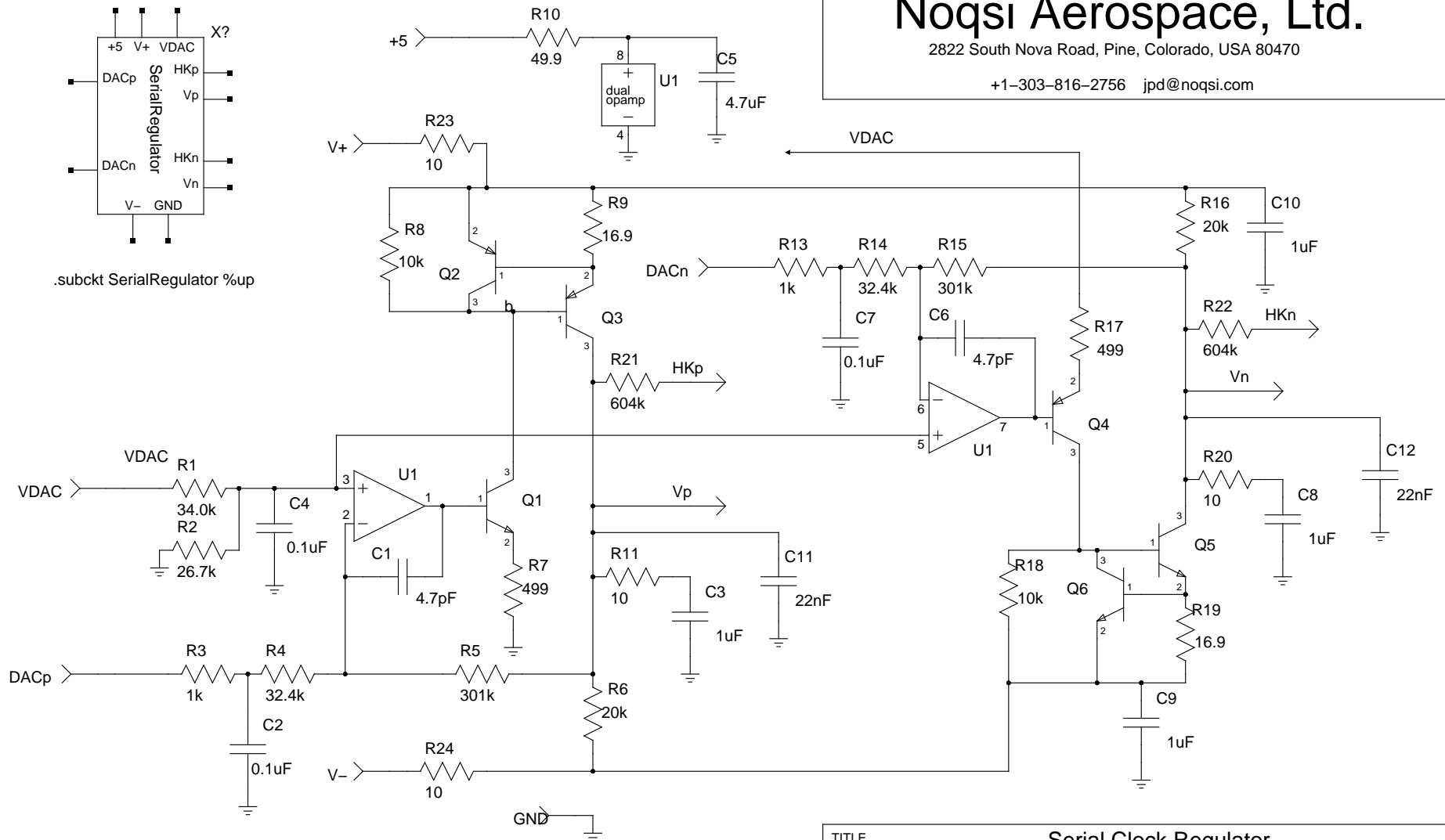


Serial Clock Driver			
FILE:	SerialDriver.sch		
DATE	Tue May 19 08:43:54 2015 -0600	REVISION:	FPE-6.1-RR8
PAGE	1 OF 1	DRAWN BY:	jpd

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TITLE

Serial Clock Regulator

FILE: SerialRegulator.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

PAGE 1 OF 1

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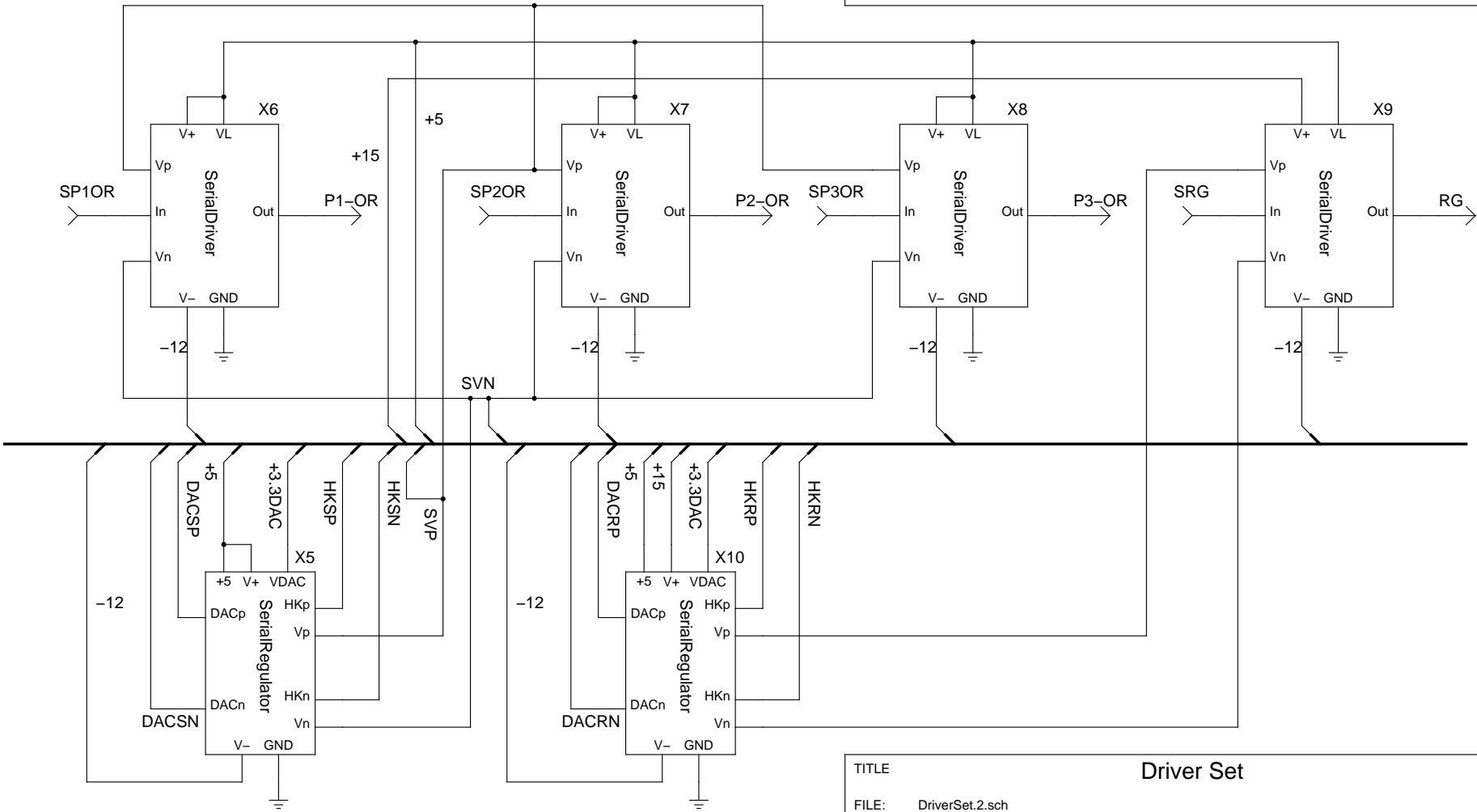
DRAWN BY: jpd

Serial Clock Drivers

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TITLE

Driver Set

FILE: DriverSet.2.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

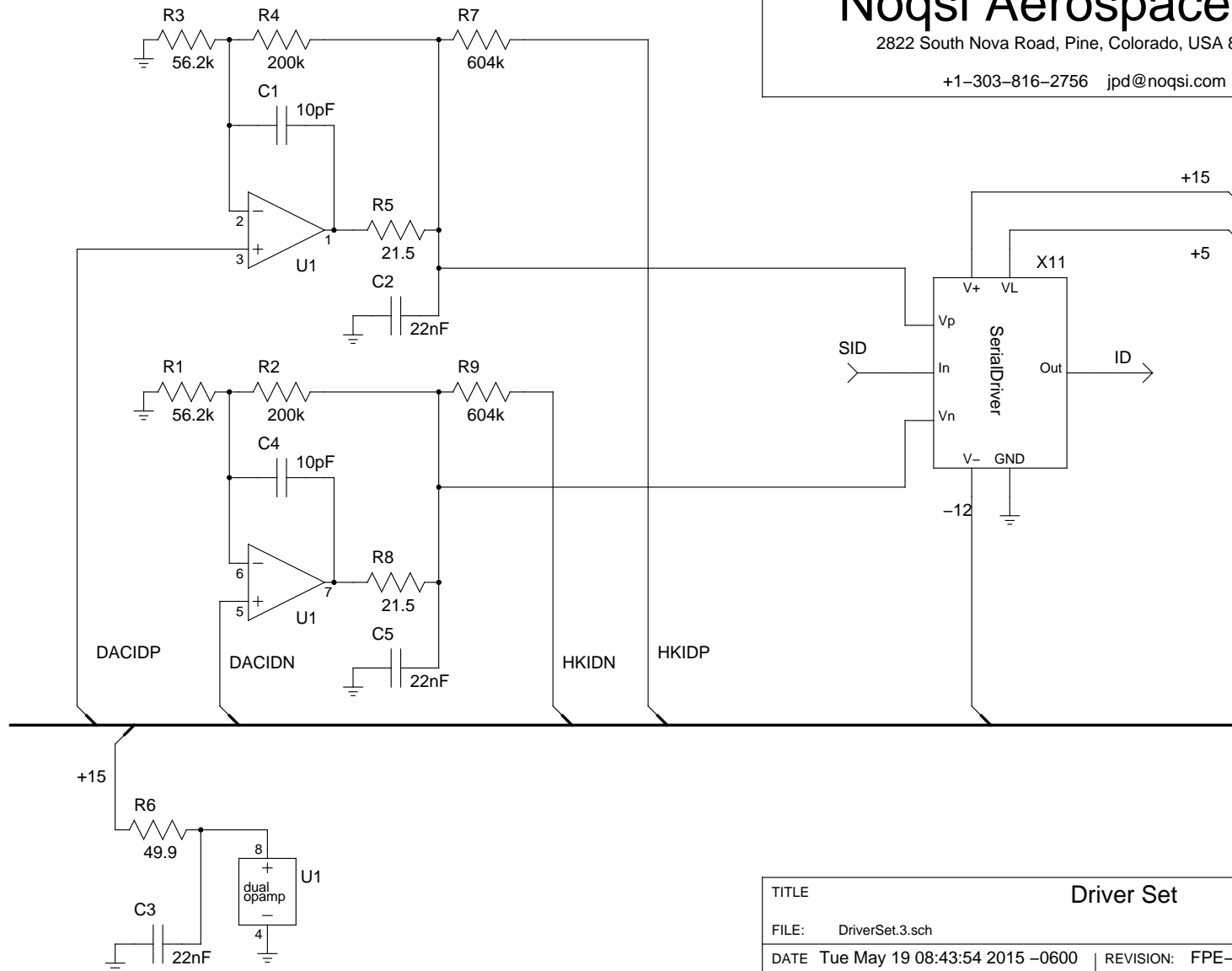
PAGE 2 OF 5

DRAWN BY: jpd

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TITLE

Driver Set

FILE: DriverSet.3.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

PAGE 3 OF 5

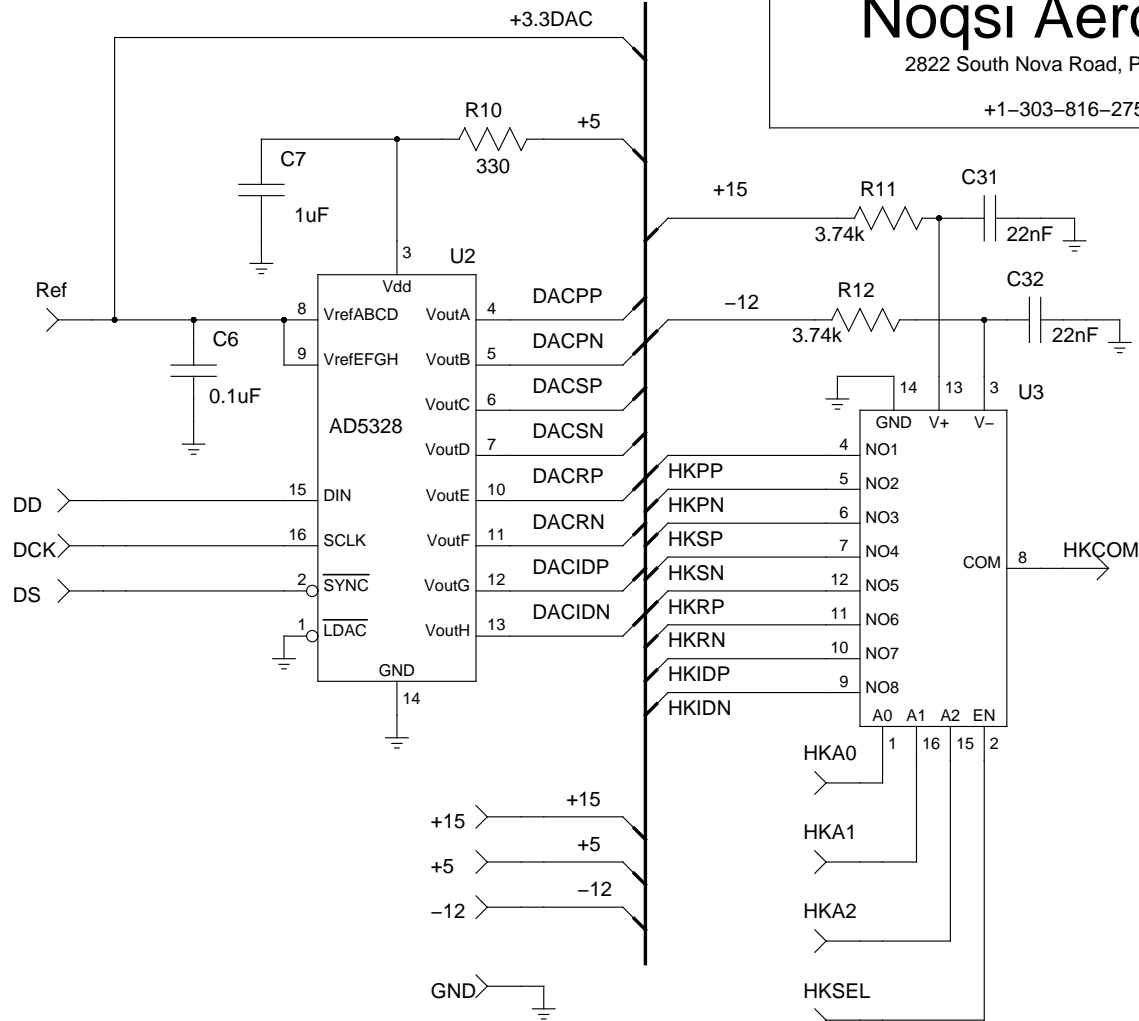
DRAWN BY: jpd



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TITLE

Driver Set

FILE: DriverSet.4.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

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OF

5

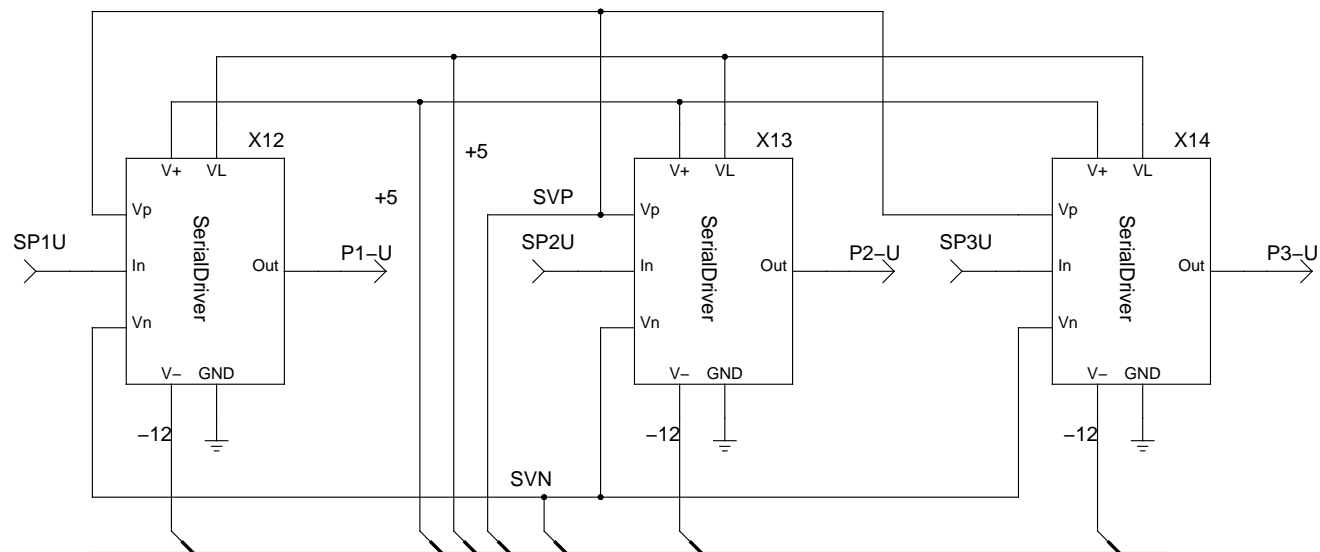
DRAWN BY:

jpd

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TITLE

Driver Set

FILE: DriverSet.5.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

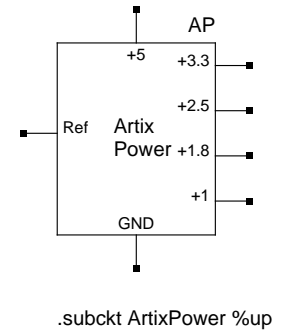
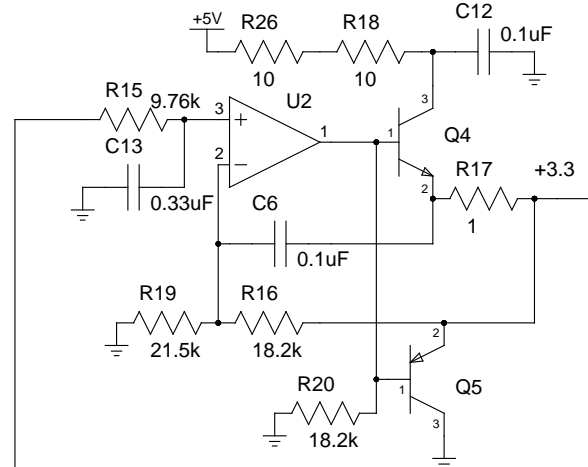
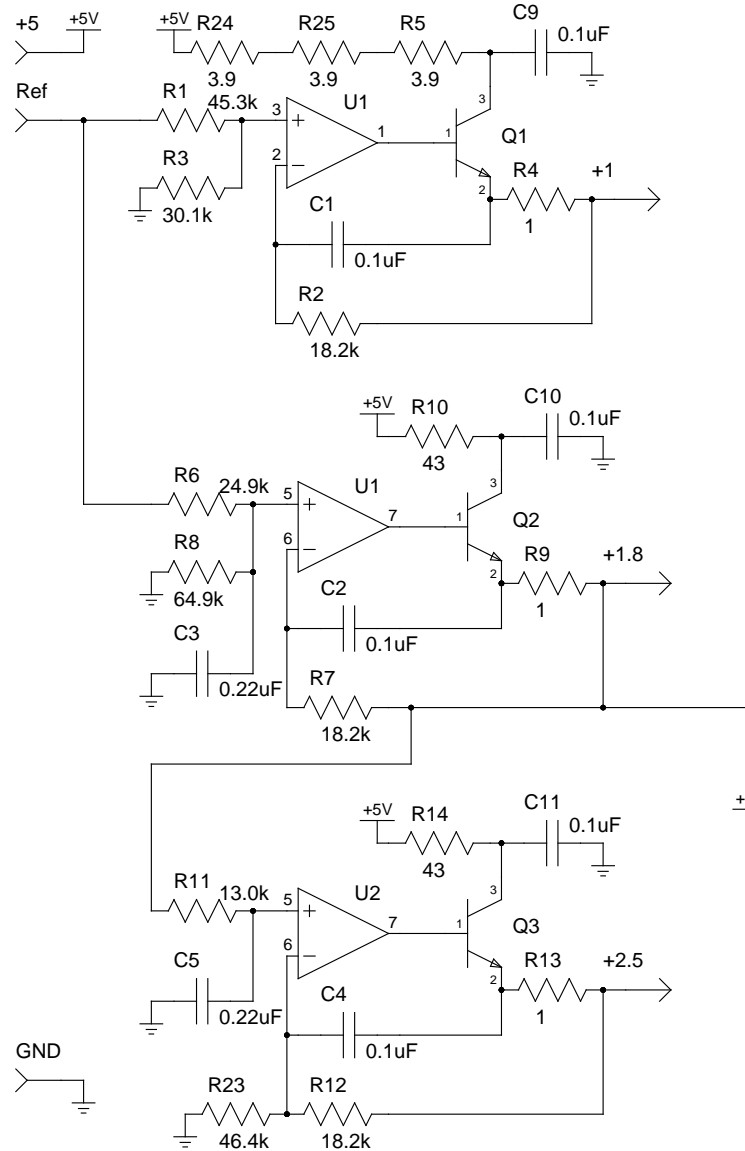
PAGE 5 OF 5

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TITLE

Artix Power

FILE: ArtixPower.sch

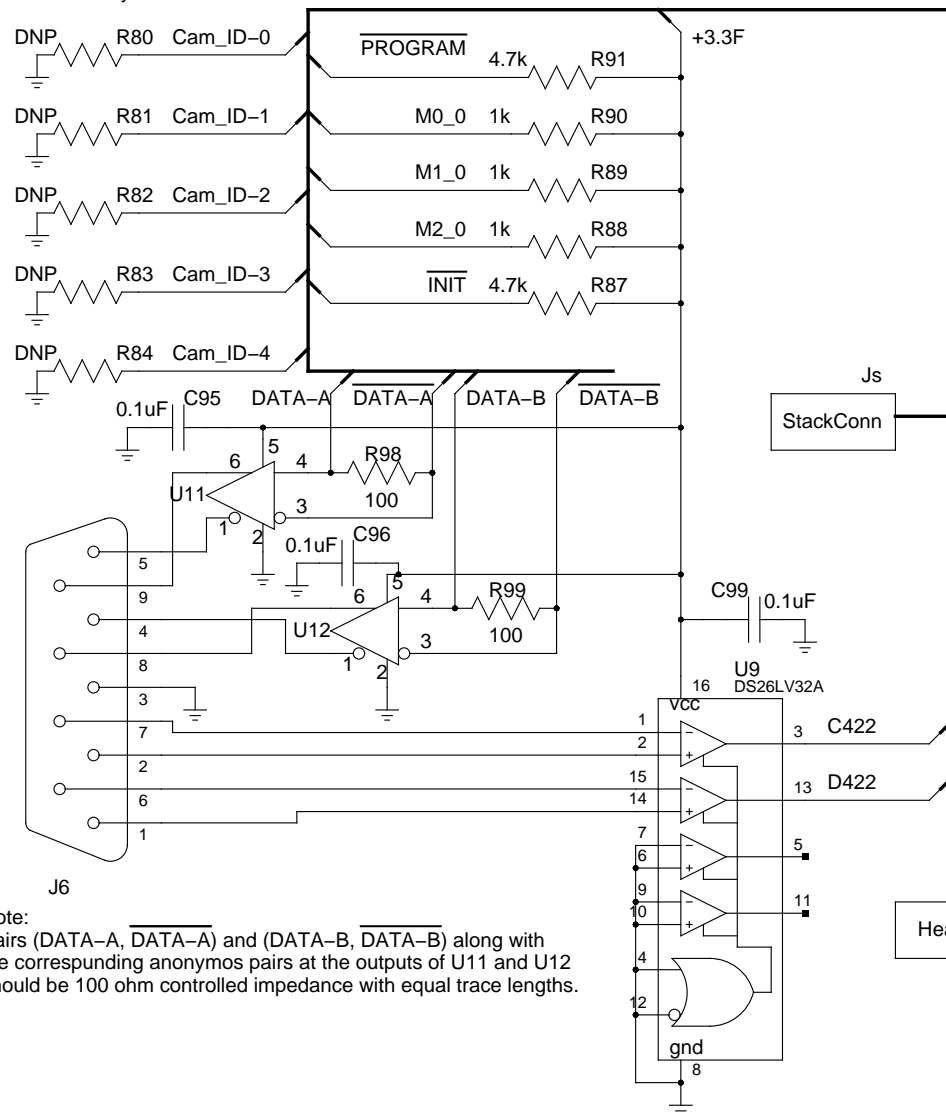
DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

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DRAWN BY: jpd

Encode board serial number  
by populating selected R80–R84  
with zero-ohm resistors for  
each binary zero.



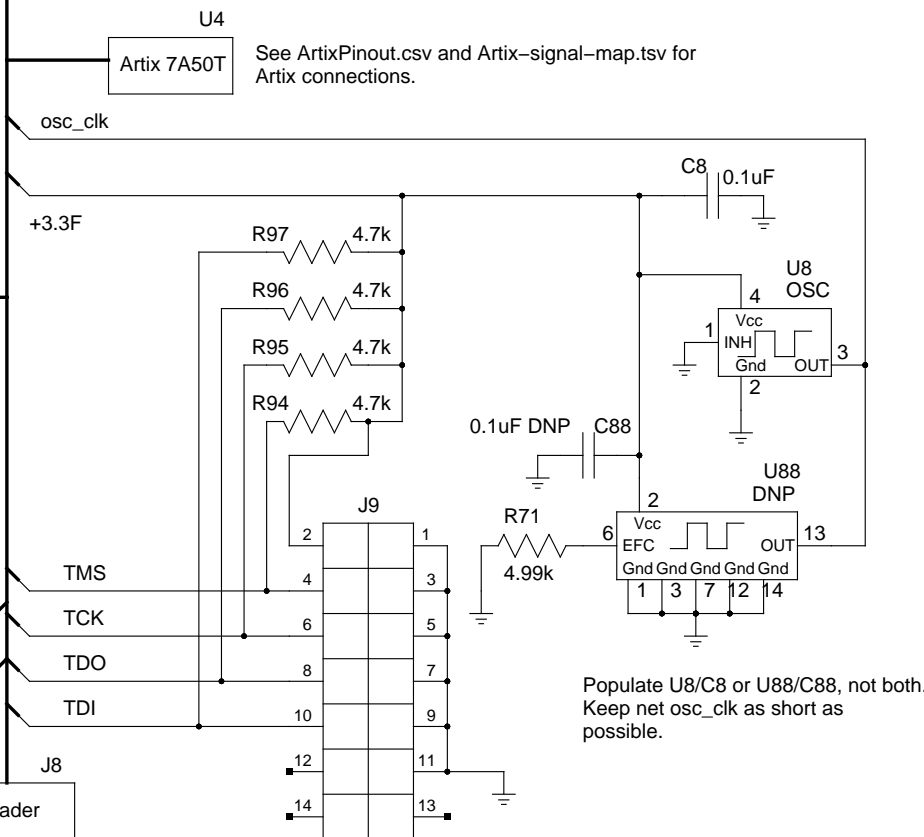
Note:  
Pairs (DATA-A, DATA-A) and (DATA-B, DATA-B) along with  
the corresponding anonymos pairs at the outputs of U11 and U12  
should be 100 ohm controlled impedance with equal trace lengths.

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## FPGA I/O



Populate U8/C8 or U88/C88, not both.  
Keep net osc\_clk as short as possible.

TITLE

Interface Board

FILE: Interface.1.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

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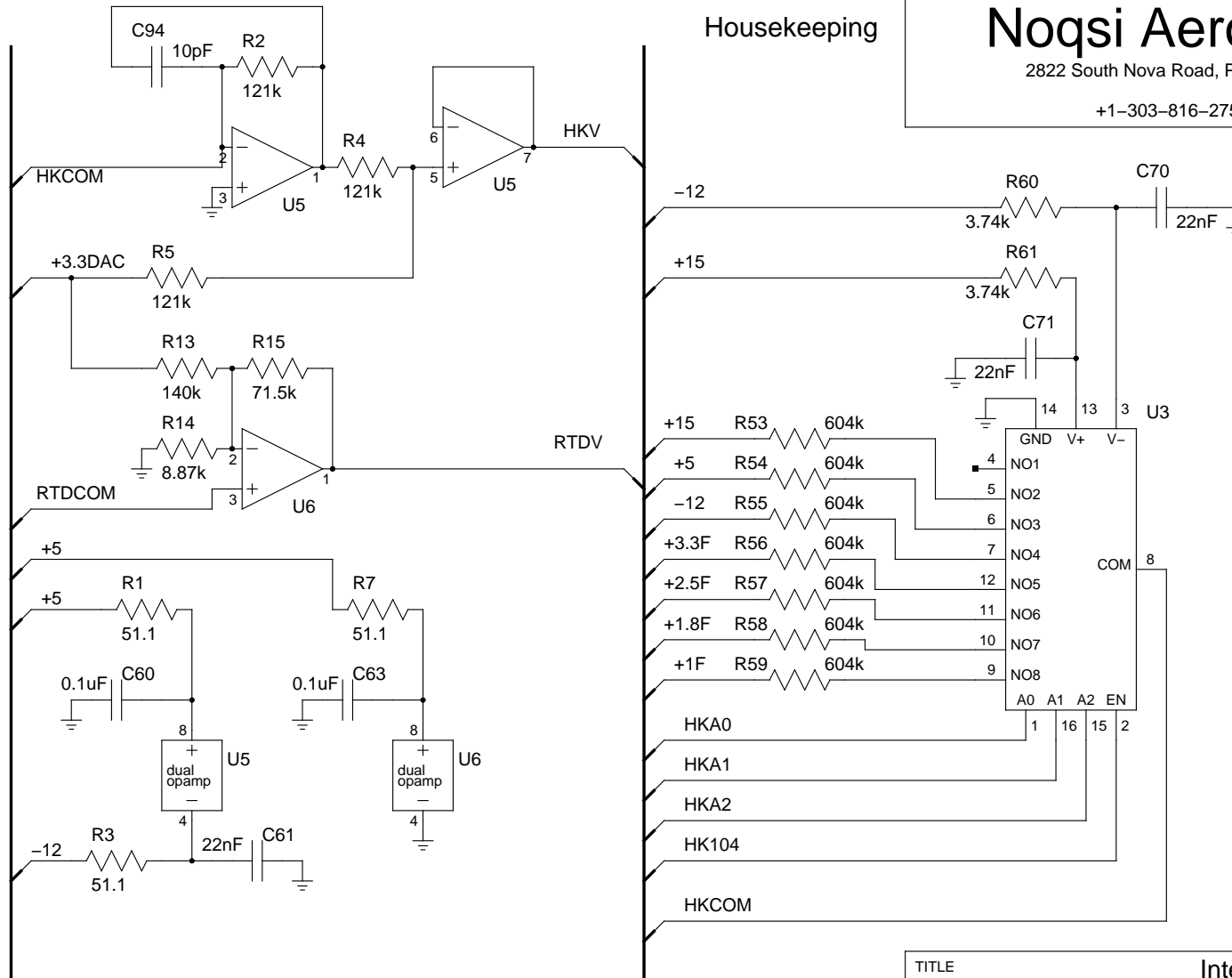
DRAWN BY: jpd

Housekeeping

# Noqsi Aerospace, Ltd.

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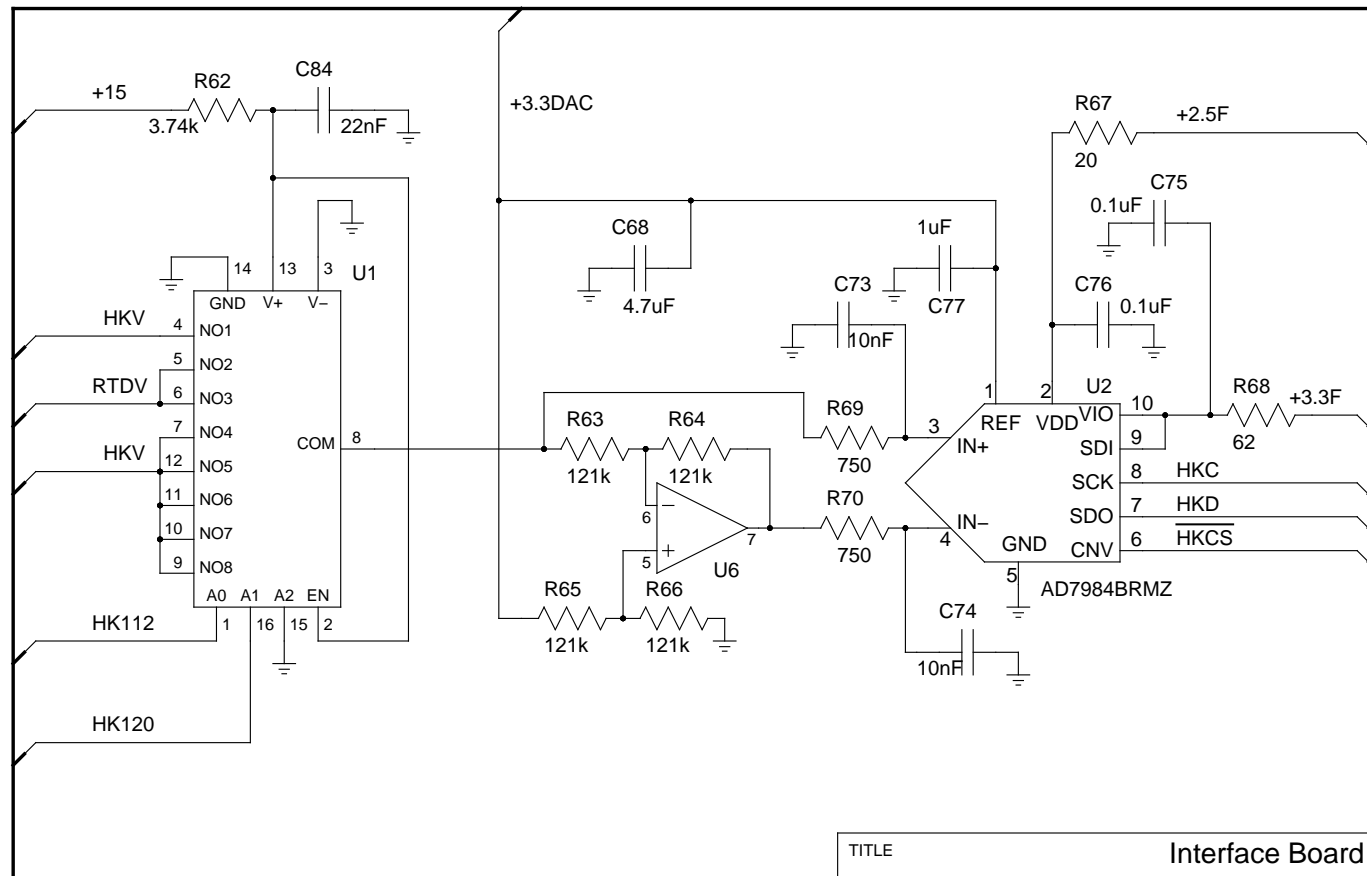
TITLE		Interface Board	
FILE:		Interface.2.sch	
DATE	Tue May 19 08:43:54 2015 -0600	REVISION:	FPE-6.1-RR8
PAGE	2 OF 7	DRAWN BY:	jpd

# Housekeeping ADC

# Noqsi Aerospace, Ltd.

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TITLE

Interface Board

FILE: Interface.3.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

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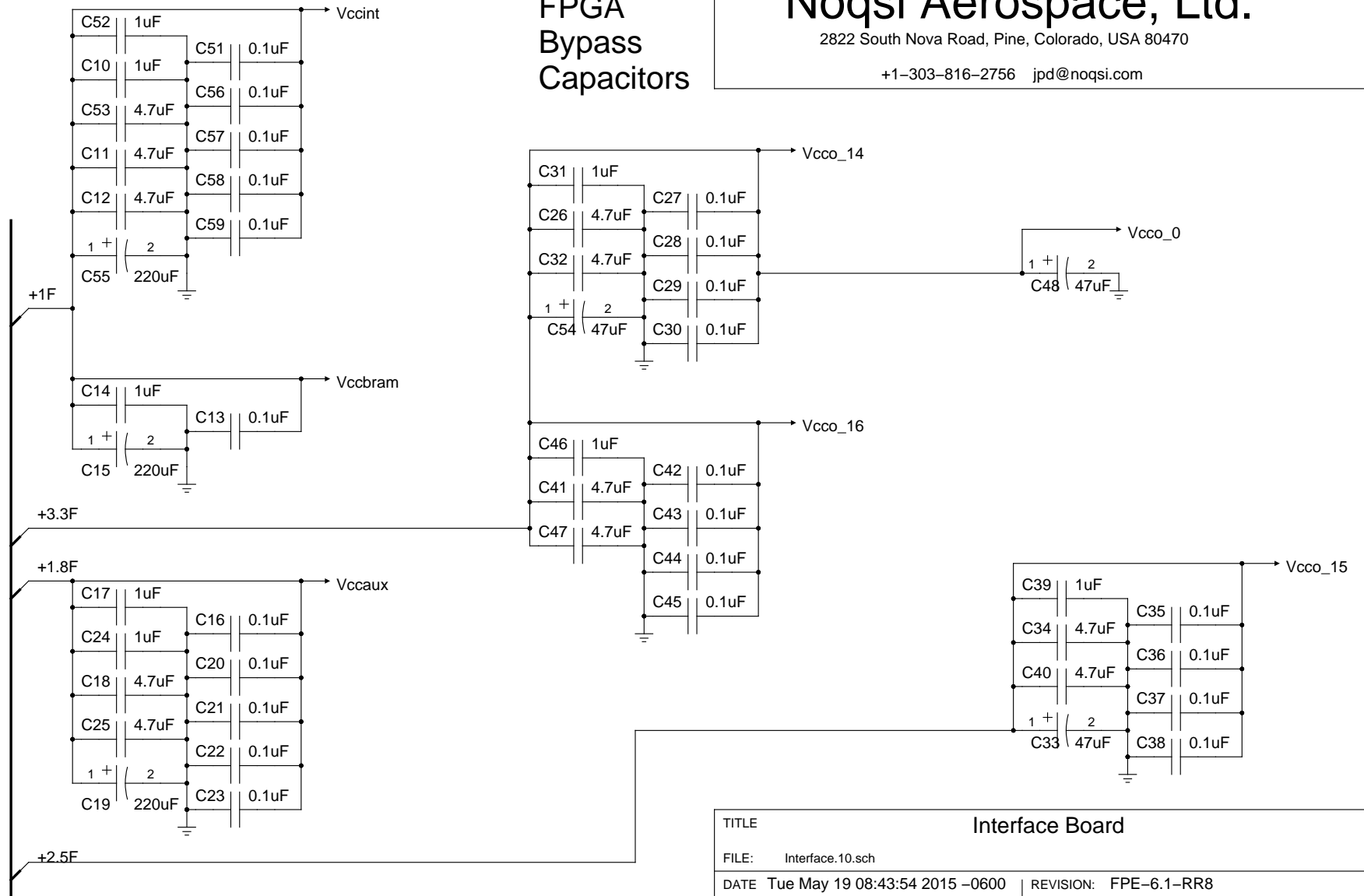
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# FPGA Bypass Capacitors

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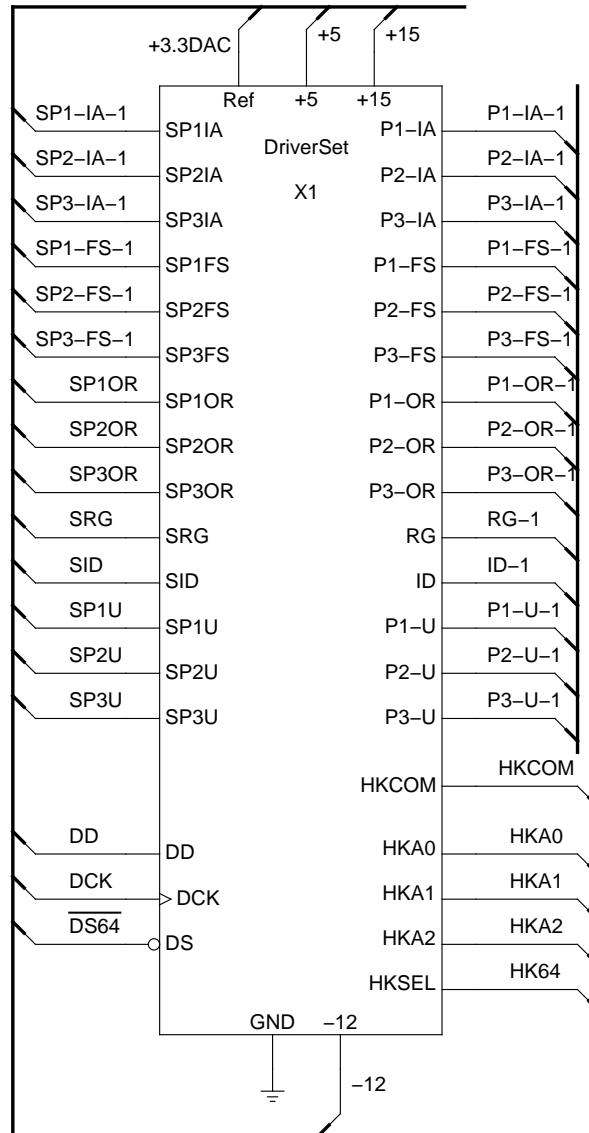


TITLE		Interface Board	
FILE:	Interface.10.sch	DATE	Tue May 19 08:43:54 2015 -0600
PAGE	4	OF	7
REVISION:	FPE-6.1-RR8	DRAWN BY:	jpd

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TITLE

Interface Board

FILE: Interface.5.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

PAGE 5 OF 7

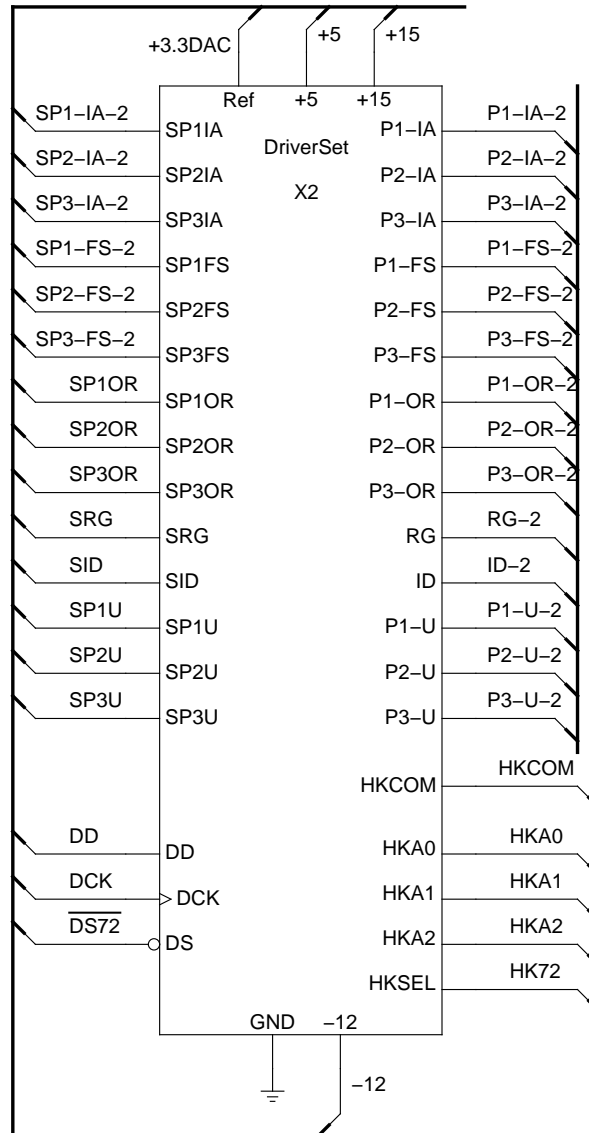
DRAWN BY: jpd



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TITLE

Interface Board

FILE: Interface.6.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

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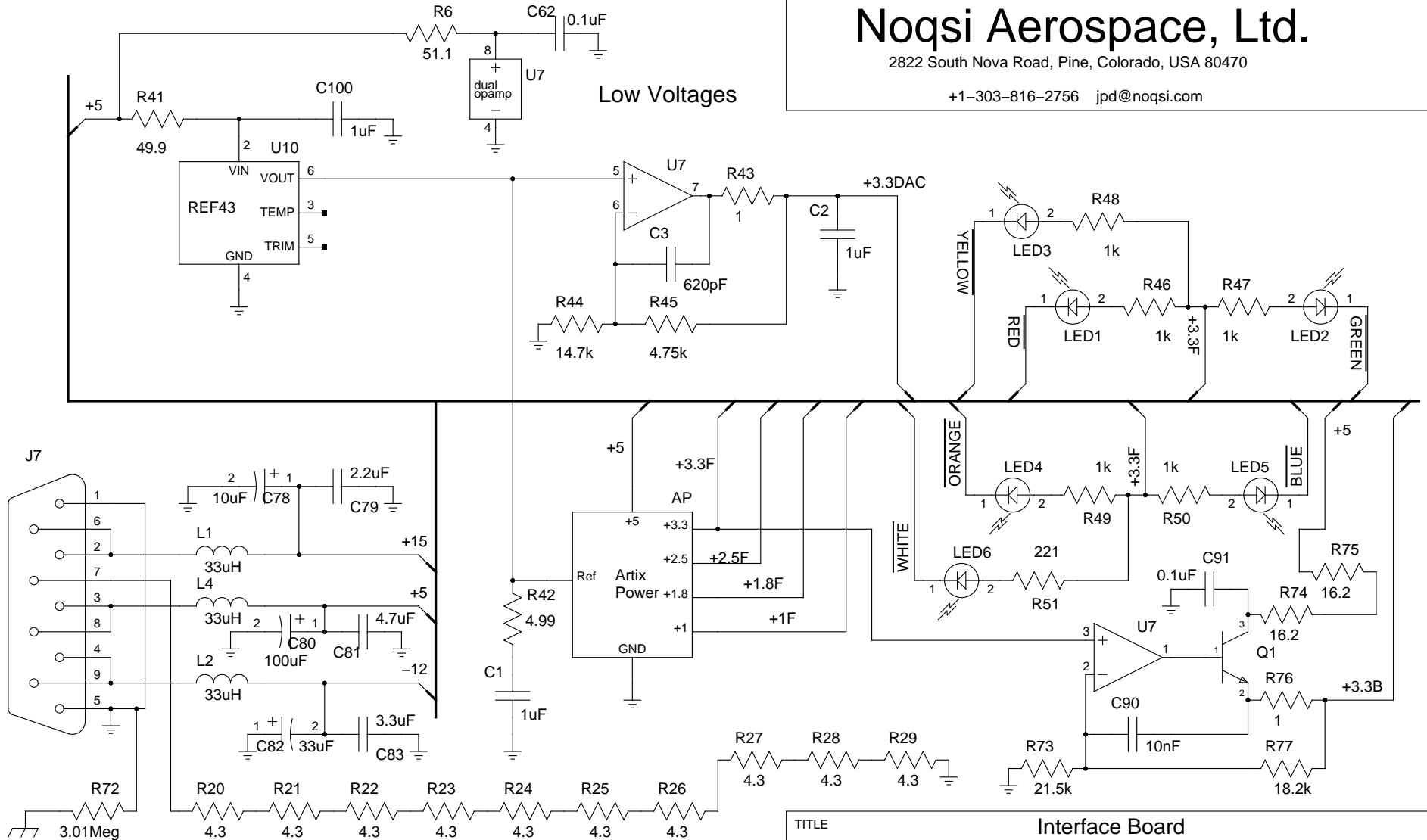
DRAWN BY: jpd

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## Low Voltages



R20-R29 are the survival heater. Arrange these in a circle around the outside of the board to spread the heat.

### TITLE

### Interface Board

FILE: Interface.9.sch

DATE Tue May 19 08:43:54 2015 -0600

REVISION: FPE-6.1-RR8

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DRAWN BY: jpd

May 12, 15 15:08

**Interface.J8.txt**

Page 1/1

J8	1	GND
J8	2	ArtixDebug7
J8	3	GND
J8	4	ArtixDebug6
J8	5	GND
J8	6	DONE_0
J8	7	GND
J8	8	M0_0
J8	9	GND
J8	10	M1_0
J8	11	GND
J8	12	M2_0
J8	13	GND
J8	14	\_INIT\_
J8	15	GND
J8	16	\_PROGRAM\_

May 12, 15 16:37

**Interface.U4.txt**

Page 1/5

U4	F18	SP1-IA-4	CCD_IA1_pin[3]
U4	B20	SP1-IA-3	CCD_IA1_pin[2]
U4	E18	SP1-IA-2	CCD_IA1_pin[1]
U4	A20	SP1-IA-1	CCD_IA1_pin[0]
U4	B21	SP2-IA-4	CCD_IA2_pin[3]
U4	A21	SP2-IA-3	CCD_IA2_pin[2]
U4	C22	SP2-IA-2	CCD_IA2_pin[1]
U4	B22	SP2-IA-1	CCD_IA2_pin[0]
U4	C13	SP3-IA-4	CCD_IA3_pin[3]
U4	B15	SP3-IA-3	CCD_IA3_pin[2]
U4	B16	SP3-IA-2	CCD_IA3_pin[1]
U4	B13	SP3-IA-1	CCD_IA3_pin[0]
U4	D16	SP1-FS-4	CCD_FS1_pin[3]
U4	E14	SP1-FS-3	CCD_FS1_pin[2]
U4	C14	SP1-FS-2	CCD_FS1_pin[1]
U4	E13	SP1-FS-1	CCD_FS1_pin[0]
U4	E22	SP2-FS-4	CCD_FS2_pin[3]
U4	E21	SP2-FS-3	CCD_FS2_pin[2]
U4	D22	SP2-FS-2	CCD_FS2_pin[1]
U4	D21	SP2-FS-1	CCD_FS2_pin[0]
U4	D14	SP3-FS-4	CCD_FS3_pin[3]
U4	D15	SP3-FS-3	CCD_FS3_pin[2]
U4	C15	SP3-FS-2	CCD_FS3_pin[1]
U4	E16	SP3-FS-1	CCD_FS3_pin[0]
U4	L21	SDO-D-4	CCD_ADC_Sdi_pin[15]
U4	K19	SDO-C-4	CCD_ADC_Sdi_pin[14]
U4	H15	SDO-B-4	CCD_ADC_Sdi_pin[13]
U4	G17	SDO-A-4	CCD_ADC_Sdi_pin[12]
U4	K18	SDO-D-3	CCD_ADC_Sdi_pin[11]
U4	G18	SDO-C-3	CCD_ADC_Sdi_pin[10]
U4	J20	SDO-B-3	CCD_ADC_Sdi_pin[9]
U4	J14	SDO-A-3	CCD_ADC_Sdi_pin[8]
U4	J21	SDO-D-2	CCD_ADC_Sdi_pin[7]
U4	M21	SDO-C-2	CCD_ADC_Sdi_pin[6]
U4	L20	SDO-B-2	CCD_ADC_Sdi_pin[5]
U4	J15	SDO-A-2	CCD_ADC_Sdi_pin[4]
U4	J19	SDO-D-1	CCD_ADC_Sdi_pin[3]
U4	H14	SDO-C-1	CCD_ADC_Sdi_pin[2]
U4	H19	SDO-B-1	CCD_ADC_Sdi_pin[1]
U4	N22	SDO-A-1	CCD_ADC_Sdi_pin[0]
U4	V18	HKA2	HSK_ADC_Sel_pin[2]
U4	V19	HKA1	HSK_ADC_Sel_pin[1]
U4	AB20	HKA0	HSK_ADC_Sel_pin[0]
U4	L18	ArtixDebug7	DebugStatus_pins[7]
U4	K21	ArtixDebug6	DebugStatus_pins[6]
U4	H18	\_RED\_	DebugStatus_pins[5]
U4	K22	\_ORANGE\_	DebugStatus_pins[4]
U4	G20	\_YELLOW\_	DebugStatus_pins[3]
U4	H20	\_GREEN\_	DebugStatus_pins[2]
U4	J22	\_BLUE\_	DebugStatus_pins[1]
U4	H22	\_WHITE\_	DebugStatus_pins[0]
U4	F13	Cam_ID-4	Cam_ID_pin[4]
U4	E17	Cam_ID-3	Cam_ID_pin[3]
U4	F15	Cam_ID-2	Cam_ID_pin[2]
U4	F14	Cam_ID-1	Cam_ID_pin[1]
U4	F16	Cam_ID-0	Cam_ID_pin[0]
U4	E19	osc_clk	osc_clk_60_pin
U4	Y18	cwclk	ChargePumpClk_pin
U4	R18	SP1U	CCD_SU1_pin

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## Interface.U4.txt

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U4	N13	SP2U	CCD_SU2_pin
U4	N14	SP3U	CCD_SU3_pin
U4	R17	SP1OR	CCD_S1_pin
U4	N17	SP2OR	CCD_S2_pin
U4	P17	SP3OR	CCD_S3_pin
U4	R16	SRG	CCD_RstGate_pin
U4	P15	SID	CCD_InDiode_pin
U4	L16	Clamp	CCD_ADC_Clamp_pin
U4	L14	DeInt	CCD_ADC_DeInt_pin
U4	L15	Int	CCD_ADC_Int_pin
U4	K16	CNV	CCD_ADC_Cnv_pin
U4	K17	SCK	CCD_ADC_Sck_pin
U4	R22	D422	Cmd_DIN_pin
U4	U20	C422	Cmd_SCK_pin
U4	G15	DATA-A	dataA_out_pin_p
U4	H13	DATA-B	dataB_out_pin_p
U4	G16	\_DATA-A\_	dataA_out_pin_n
U4	G13	\_DATA-B\_	dataB_out_pin_n
U4	AA21	HKC	HSK_ADC_Sck_pin
U4	Y22	HKD	HSK_ADC_Sdi_pin
U4	AA20	\_HKCS\_	HSK_ADC_Cnv_pin
U4	W21	HK0	HSK_ADC_0_pin
U4	W22	HK8	HSK_ADC_8_pin
U4	U22	HK16	HSK_ADC_16_pin
U4	V22	HK24	HSK_ADC_24_pin
U4	Y21	HK32	HSK_ADC_32_pin
U4	T19	HK40	HSK_ADC_40_pin
U4	T20	HK48	HSK_ADC_48_pin
U4	P21	HK56	HSK_ADC_56_pin
U4	P19	HK64	HSK_ADC_64_pin
U4	T21	HK72	HSK_ADC_72_pin
U4	U21	HK80	HSK_ADC_80_pin
U4	R19	HK88	HSK_ADC_88_pin
U4	R21	HK96	HSK_ADC_96_pin
U4	U17	HK104	HSK_ADC_104_pin
U4	W17	HK112	HSK_ADC_112_pin
U4	P20	HK120	HSK_ADC_120_pin
U4	J17	\_DS0\_	CLS_DCS_0_pin
U4	M13	\_DS8\_	CLS_DCS_8_pin
U4	L13	\_DS16\_	CLS_DCS_16_pin
U4	K13	\_DS24\_	CLS_DCS_24_pin
U4	K14	\_DS32\_	CLS_DCS_32_pin
U4	N20	\_DS40\_	CLS_DCS_40_pin
U4	M20	\_DS48\_	CLS_DCS_48_pin
U4	N18	\_DS56\_	CLS_DCS_56_pin
U4	M15	\_DS64\_	CLS_DCS_64_pin
U4	M16	\_DS72\_	CLS_DCS_72_pin
U4	J16	\_DS80\_	CLS_DCS_80_pin
U4	H17	\_DS88\_	CLS_DCS_88_pin
U4	N19	\_DS96\_	CLS_DCS_96_pin
U4	M18	DD	CLC_DAC_Din_pin
U4	L19	DCK	CLC_DAC_Sck_pin
U4	M9	GND	VN_0
U4	L10	GND	VP_0
U4	G11	DONE_0	DONE_0
U4	N10	GND	DXP_0
U4	K9	GND	GNDADC_0
U4	K10	+1.8F	VCCADC_0
U4	M10	GND	VREFP_0

May 12, 15 16:37		Interface.U4.txt		Page 3/5
U4	E12	GND	VCCBATT_0	
U4	V12	TCK	TCK_0	
U4	N9	GND	DXN_0	
U4	L9	GND	VREFN_0	
U4	L12	C422	CCLK_0	
U4	U11	M0_0	M0_0	
U4	U10	M1_0	M1_0	
U4	U12	\_INIT\_	INIT_B_0	
U4	R13	TDI	TDI_0	
U4	U13	TDO	TDO_0	
U4	U9	M2_0	M2_0	
U4	U8	+3.3F	3.30	
U4	N12	\_PROGRAM\_	PROGRAM_B_0	
U4	T13	TMS	TMS_0	
U4	F12	+3.3F	VCCO_0	
U4	T12	+3.3F	VCCO_0	
U4	AA17	GND	VCCO_13	
U4	AB14	GND	VCCO_13	
U4	V16	GND	VCCO_13	
U4	W13	GND	VCCO_13	
U4	Y10	GND	VCCO_13	
U4	M14	+3.3F	3.30	
U4	P18	+3.3F	3.30	
U4	R15	+3.3F	3.30	
U4	T22	+3.3F	3.30	
U4	U19	+3.3F	3.30	
U4	Y20	+3.3F	3.30	
U4	G19	+2.5F	2.50	
U4	H16	+2.5F	2.50	
U4	J13	+2.5F	2.50	
U4	K20	+2.5F	2.50	
U4	L17	+2.5F	2.50	
U4	N21	+2.5F	2.50	
U4	A17	+3.3F	3.30	
U4	B14	+3.3F	3.30	
U4	C21	+3.3F	3.30	
U4	D18	+3.3F	3.30	
U4	E15	+3.3F	3.30	
U4	F22	+3.3F	3.30	
U4	AA7	GND	VCCO_34	
U4	AB4	GND	VCCO_34	
U4	R5	GND	VCCO_34	
U4	T2	GND	VCCO_34	
U4	V6	GND	VCCO_34	
U4	W3	GND	VCCO_34	
U4	C1	GND	VCCO_35	
U4	F2	GND	VCCO_35	
U4	H6	GND	VCCO_35	
U4	J3	GND	VCCO_35	
U4	M4	GND	VCCO_35	
U4	N1	GND	VCCO_35	
U4	D11	GND	MGTPRXP1_216	
U4	B10	GND	MGTPRXP2_216	
U4	D9	GND	MGTPRXP3_216	
U4	B8	GND	MGTPRXP0_216	
U4	C11	GND	MGTPRXN1_216	
U4	A10	GND	MGTPRXN2_216	
U4	C9	GND	MGTPRXN3_216	
U4	A8	GND	MGTPRXN0_216	

May 12, 15 16:37		Interface.U4.txt		Page 4/5
U4	F8	GND	MGTRREF_216	
U4	D8	GND	GND	
U4	A2	GND	GND	
U4	A3	GND	GND	
U4	A5	GND	GND	
U4	A7	GND	GND	
U4	A9	GND	GND	
U4	A11	GND	GND	
U4	A12	GND	GND	
U4	A22	GND	GND	
U4	AA2	GND	GND	
U4	AA12	GND	GND	
U4	AA22	GND	GND	
U4	AB9	GND	GND	
U4	AB19	GND	GND	
U4	B3	GND	GND	
U4	B12	GND	GND	
U4	B19	GND	GND	
U4	C3	GND	GND	
U4	C6	GND	GND	
U4	C10	GND	GND	
U4	C12	GND	GND	
U4	C16	GND	GND	
U4	D3	GND	GND	
U4	D4	GND	GND	
U4	D12	GND	GND	
U4	D13	GND	GND	
U4	E4	GND	GND	
U4	E5	GND	GND	
U4	E7	GND	GND	
U4	E9	GND	GND	
U4	E11	GND	GND	
U4	E20	GND	GND	
U4	F5	GND	GND	
U4	F11	GND	GND	
U4	F17	GND	GND	
U4	G5	GND	GND	
U4	G6	GND	GND	
U4	G7	GND	GND	
U4	G8	GND	GND	
U4	G9	GND	GND	
U4	G10	GND	GND	
U4	G12	GND	GND	
U4	G14	GND	GND	
U4	H1	GND	GND	
U4	H7	GND	GND	
U4	H9	GND	GND	
U4	H11	GND	GND	
U4	H21	GND	GND	
U4	J8	GND	GND	
U4	J10	GND	GND	
U4	J12	GND	GND	
U4	J18	GND	GND	
U4	K5	GND	GND	
U4	K7	GND	GND	
U4	K11	GND	GND	
U4	K15	GND	GND	
U4	L2	GND	GND	
U4	L8	GND	GND	

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U4	L22	GND	GND
U4	M7	GND	GND
U4	M11	GND	GND
U4	M19	GND	GND
U4	N6	GND	GND
U4	N8	GND	GND
U4	N16	GND	GND
U4	P3	GND	GND
U4	P7	GND	GND
U4	P9	GND	GND
U4	P11	GND	GND
U4	P13	GND	GND
U4	R8	GND	GND
U4	R10	GND	GND
U4	R12	GND	GND
U4	R20	GND	GND
U4	T7	GND	GND
U4	T9	GND	GND
U4	T11	GND	GND
U4	T17	GND	GND
U4	U4	GND	GND
U4	U14	GND	GND
U4	V1	GND	GND
U4	V11	GND	GND
U4	V21	GND	GND
U4	W8	GND	GND
U4	W18	GND	GND
U4	Y5	GND	GND
U4	Y15	GND	GND
U4	H8	+1F	VCCINT
U4	H10	+1F	VCCINT
U4	J7	+1F	VCCINT
U4	J9	+1F	VCCINT
U4	K8	+1F	VCCINT
U4	L7	+1F	VCCINT
U4	M8	+1F	VCCINT
U4	N7	+1F	VCCINT
U4	P8	+1F	VCCINT
U4	P10	+1F	VCCINT
U4	R7	+1F	VCCINT
U4	R9	+1F	VCCINT
U4	T8	+1F	VCCINT
U4	T10	+1F	VCCINT
U4	H12	+1.8F	1.80
U4	K12	+1.8F	1.80
U4	M12	+1.8F	1.80
U4	P12	+1.8F	1.80
U4	R11	+1.8F	1.80
U4	J11	+1F	VCCBRAM
U4	L11	+1F	VCCBRAM
U4	N11	+1F	VCCBRAM



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refdes	device	value	spec	footprint		description	
L2	MIL4922	33uH	Delevan	M27/367-27		MIL4922	incuctor
L4	MIL4922	33uH	Delevan	M27/367-27		MIL4922	incuctor
R75	RESISTOR		16.2	5% 1W	2512		Resistor
R74	RESISTOR		16.2	5% 1W	2512		Resistor
C91	CAPACITOR	0.1uF		16WVDC	X7R	0603	Ceramic capacitor
R73	RESISTOR	21.5k		1% 1/10W		0603	Resistor
R76	RESISTOR	1		1% 1/10W		0603	Resistor
Q1	NPN_TRANSISTOR		MMBT2222A		unknown	UB	unknown
C90	CAPACITOR	10nF		50WVDC	X7R	0603	Ceramic capacitor
R77	RESISTOR	18.2k		1% 1/10W		0603	Resistor
R72	RESISTOR	3.01Meg		1% 1/10W		0603	Resistor
GP1	CHASSIS	unknown	unknown	CHASSIS	unknown		
R29	RESISTOR		4.3	5% 1W	2512		Resistor
R28	RESISTOR		4.3	5% 1W	2512		Resistor
R26	RESISTOR		4.3	5% 1W	2512		Resistor
R27	RESISTOR		4.3	5% 1W	2512		Resistor
R24	RESISTOR		4.3	5% 1W	2512		Resistor
R25	RESISTOR		4.3	5% 1W	2512		Resistor
R22	RESISTOR		4.3	5% 1W	2512		Resistor
R23	RESISTOR		4.3	5% 1W	2512		Resistor
R21	RESISTOR		4.3	5% 1W	2512		Resistor
R20	RESISTOR		4.3	5% 1W	2512		Resistor
U7	DUAL_OPAMP		LM6142AIM		N/A	SO8	generic dual operational
	amplifier, SO8						
R6	RESISTOR		51.1	1% 1/10W		0603	Resistor
C1	CAPACITOR	1uF		10WVDC	X7R	0805	Ceramic capacitor
R42	RESISTOR		4.99	1% 1/10W		0603	Resistor
C62	CAPACITOR	0.1uF		16WVDC	X7R	0603	Ceramic capacitor
C2	CAPACITOR	1uF		10WVDC	X7R	0805	Ceramic capacitor
R45	RESISTOR		4.75k	1% 1/10W		0603	Resistor
C3	CAPACITOR	620pF		50WVDC	X7R	0603	Ceramic capacitor
R44	RESISTOR		14.7k	1% 1/10W		0603	Resistor
R43	RESISTOR		1	1% 1/10W		0603	Resistor
C79	CAPACITOR	2.2uF		50WVDC	X7R	2225	Ceramic capacitor
C83	CAPACITOR	3.3uF		25WVDC	X7R	2225	Ceramic capacitor
C81	CAPACITOR	4.7uF		10WVDC	X7R	1812	Ceramic capacitor
C82	POLARIZED_CAPACITOR		33uF		25WVDC	2915	Tantalum capacitor
C78	POLARIZED_CAPACITOR		10uF		35WVDC	2915	Tantalum capacitor
C80	POLARIZED_CAPACITOR		100uF		15WVDC, low R	2915	Tantalum capacit
	or						
J7	747467-1		unknown	unknown	747467-1		unknown
L1	MIL4922	33uH	Delevan	M27/367-27		MIL4922	incuctor
R51	RESISTOR		221	1% 1/10W		0603	Resistor
LED6	LED	67-2226-1-ND		unknown	0603	LED	
R50	RESISTOR		1k	1% 1/10W		0603	Resistor
LED5	LED	VAOL-S6SB4CT-ND		unknown	0603	LED	
R49	RESISTOR		1k	1% 1/10W		0603	Resistor
LED4	LED	475-2481-1-ND		unknown	0603	LED	
AP/C13	CAPACITOR	0.33uF		10WVDC	X7R	0805	Ceramic capacitor
AP/R26	RESISTOR		10	5% 1W	2512		Resistor
AP/R18	RESISTOR		10	5% 1W	2512		Resistor
AP/R14	RESISTOR		43	5% 1W	2512		Resistor
AP/R10	RESISTOR		43	5% 1W	2512		Resistor
AP/R24	RESISTOR		3.9	5% 1W	2512		Resistor
AP/R25	RESISTOR		3.9	5% 1W	2512		Resistor
AP/R23	RESISTOR		46.4k	1% 1/10W		0603	Resistor
AP/C11	CAPACITOR	0.1uF		16WVDC	X7R	0603	Ceramic capacitor
AP/C10	CAPACITOR	0.1uF		16WVDC	X7R	0603	Ceramic capacitor

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AP/C12	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
AP/C9	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
AP/C8	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
AP/R22	RESISTOR	51.1	1% 1/10W	0603	Resistor	
AP/C7	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
AP/R21	RESISTOR	51.1	1% 1/10W	0603	Resistor	
AP/R20	RESISTOR	18.2k	1% 1/10W	0603	Resistor	
AP/R19	RESISTOR	21.5k	1% 1/10W	0603	Resistor	
AP/Q5	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
AP/R17	RESISTOR	1	1% 1/10W	0603	Resistor	
AP/Q4	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
AP/C6	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
AP/R16	RESISTOR	18.2k	1% 1/10W	0603	Resistor	
AP/R15	RESISTOR	9.76k	1% 1/10W	0603	Resistor	
AP/C5	CAPACITOR	0.22uF	10WVDC X7R	0805	Ceramic capacitor	
AP/R13	RESISTOR	1	1% 1/10W	0603	Resistor	
AP/Q3	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
AP/C4	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
AP/R12	RESISTOR	18.2k	1% 1/10W	0603	Resistor	
AP/R11	RESISTOR	13.0k	1% 1/10W	0603	Resistor	
AP/U2	DUAL_OPAMP	LM6142AIM	N/A	SO8	generic dual operational amplifier, SO8	
AP/C3	CAPACITOR	0.22uF	10WVDC X7R	0805	Ceramic capacitor	
AP/R9	RESISTOR	1	1% 1/10W	0603	Resistor	
AP/Q2	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
AP/R8	RESISTOR	64.9k	1% 1/10W	0603	Resistor	
AP/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
AP/R7	RESISTOR	18.2k	1% 1/10W	0603	Resistor	
AP/R6	RESISTOR	24.9k	1% 1/10W	0603	Resistor	
AP/R5	RESISTOR	3.9	5% 1W 2512	Resistor		
AP/R4	RESISTOR	1	5% 1/4W 0805	Resistor		
AP/Q1	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
AP/R3	RESISTOR	30.1k	1% 1/10W	0603	Resistor	
AP/C1	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
AP/R2	RESISTOR	18.2k	1% 1/10W	0603	Resistor	
AP/R1	RESISTOR	45.3k	1% 1/10W	0603	Resistor	
AP/U1	DUAL_OPAMP	LM6142AIM	N/A	SO8	generic dual operational amplifier, SO8	
R48	RESISTOR	1k	1% 1/10W	0603	Resistor	
LED3	LED	475-2794-1-ND	unknown	0603	LED	
R47	RESISTOR	1k	1% 1/10W	0603	Resistor	
LED2	LED	475-2709-1-ND	unknown	0603	LED	
R46	RESISTOR	1k	1% 1/10W	0603	Resistor	
LED1	LED	475-2506-1-ND	unknown	0603	LED	
C100	CAPACITOR	1uF	10WVDC X7R	0805	Ceramic capacitor	
R41	RESISTOR	49.9	1% 1/10W	0603	Resistor	
U10	REFERENCE	REF43GS	N/A	SO8	2.5V Reference	
X2/X14/R9	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X14/R8	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X14/R7	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X14/R6	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X14/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X14/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X2/X14/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X14/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X2/X14/R5	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X14/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	

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r							
X2/X14/U1	DG403	unknown	unknown	SO16	Dual SPDT switch		
X2/X13/R9	RESISTOR		75	1% 1/10W	0603	Resistor	
X2/X13/R8	RESISTOR		75	1% 1/10W	0603	Resistor	
X2/X13/R7	RESISTOR		75	1% 1/10W	0603	Resistor	
X2/X13/R6	RESISTOR		75	1% 1/10W	0603	Resistor	
X2/X13/R3	RESISTOR		100	1% 1/10W	0603	Resistor	
X2/X13/C3	CAPACITOR		22nF	50WVDC X7R	0603	Ceramic capacitor	
r							
X2/X13/R4	RESISTOR		100	1% 1/10W	0603	Resistor	
X2/X13/C2	CAPACITOR		0.1uF	16WVDC X7R	0603	Ceramic capacitor	
r							
X2/X13/R5	RESISTOR		100	1% 1/10W	0603	Resistor	
X2/X13/C1	CAPACITOR		22nF	50WVDC X7R	0603	Ceramic capacitor	
r							
X2/X13/U1	DG403	unknown	unknown	SO16	Dual SPDT switch		
X2/X12/R9	RESISTOR		75	1% 1/10W	0603	Resistor	
X2/X12/R8	RESISTOR		75	1% 1/10W	0603	Resistor	
X2/X12/R7	RESISTOR		75	1% 1/10W	0603	Resistor	
X2/X12/R6	RESISTOR		75	1% 1/10W	0603	Resistor	
X2/X12/R3	RESISTOR		100	1% 1/10W	0603	Resistor	
X2/X12/C3	CAPACITOR		22nF	50WVDC X7R	0603	Ceramic capacitor	
r							
X2/X12/R4	RESISTOR		100	1% 1/10W	0603	Resistor	
X2/X12/C2	CAPACITOR		0.1uF	16WVDC X7R	0603	Ceramic capacitor	
r							
X2/X12/R5	RESISTOR		100	1% 1/10W	0603	Resistor	
X2/X12/C1	CAPACITOR		22nF	50WVDC X7R	0603	Ceramic capacitor	
r							
X2/X12/U1	DG403	unknown	unknown	SO16	Dual SPDT switch		
X2/R12	RESISTOR		3.74k	1% 1/10W	0603	Resistor	
X2/R11	RESISTOR		3.74k	1% 1/10W	0603	Resistor	
X2/C7	CAPACITOR		1uF	10WVDC X7R	0805	Ceramic capacitor	
X2/R10	RESISTOR		330	5% 0.15W	0805	Resistor	
X2/C6	CAPACITOR		0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X2/C32	CAPACITOR		22nF	50WVDC X7R	0603	Ceramic capacitor	
X2/U3	MAX308CSE+	unknown	unknown	SO16	8 input analog mux		
X2/C31	CAPACITOR		22nF	50WVDC X7R	0603	Ceramic capacitor	
X2/U2	AD5328	unknown	unknown	TSSOP16	Octal DAC		
X2/X1/U1	DUAL_OPAMP		LT2078AIS8	N/A	SO8	unknown	
X2/X1/R21	RESISTOR		1	1% 1/10W	0603	Resistor	
X2/X1/R22	RESISTOR		1	1% 1/10W	0603	Resistor	
X2/X1/R24	RESISTOR		49.9	1% 1/10W	0603	Resistor	
X2/X1/R23	RESISTOR		49.9	1% 1/10W	0603	Resistor	
X2/X1/C11	CAPACITOR		22nF	50WVDC X7R	0603	Ceramic capacitor	
r							
X2/X1/C12	CAPACITOR		0.1uF	50WVDC X7R	0805	Ceramic capacitor	
r							
X2/X1/C2	CAPACITOR		1.0uF	10WVDC X7R	0805	Ceramic capacitor	
r							
X2/X1/C13	CAPACITOR		3.3uF	25WVDC X7R	2225	Ceramic capacitor	
r							
X2/X1/C10	CAPACITOR		4.7uF	10WVDC X7R	1812	Ceramic capacitor	
r							
X2/X1/R20	RESISTOR		604k	1% 1/10W	0603	Resistor	
X2/X1/R10	RESISTOR		604k	1% 1/10W	0603	Resistor	
X2/X1/C1	CAPACITOR		0.22uF	10WVDC X7R	0603	Ceramic capacitor	
r							
X2/X1/R12	RESISTOR		3.74k	1% 1/10W	0603	Resistor	

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X2/X1/Q2	LM195H unknown	unknown	TO39	unknown			
X2/X1/R16	RESISTOR	4.99k	1% 1/10W	0603	Resistor		
X2/X1/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown		
X2/X1/R2	RESISTOR	301k	1% 1/10W	0603	Resistor		
X2/X1/C6	CAPACITOR	680pF	50WVDC NP0	0603	Ceramic capacitor		
X2/X1/R6	RESISTOR	4.99k	1% 1/10W	0603	Resistor		
X2/X1/Q1	LM195H unknown	unknown	TO39	unknown			
X2/X1/R17	RESISTOR	10k	1% 1/10W	0603	Resistor		
X2/X1/R7	RESISTOR	10k	1% 1/10W	0603	Resistor		
X2/X1/C5	CAPACITOR	680pF	50WVDC NP0	0603	Ceramic capacitor		
X2/X1/U2	DUAL_OPAMP	LM6142AIM	N/A	SO8	generic dual operational amplifier, SO8		
X2/X1/C4	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor		
X2/X1/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor		
X2/X1/R15	RESISTOR	10k	1% 1/10W	0603	Resistor		
X2/X1/R5	RESISTOR	10k	1% 1/10W	0603	Resistor		
X2/X1/R11	RESISTOR	60.4k	1% 1/10W	0603	Resistor		
X2/X1/R13	RESISTOR	75k	1% 1/10W	0603	Resistor		
X2/X1/R14	RESISTOR	301k	1% 1/10W	0603	Resistor		
X2/X1/R1	RESISTOR	54.9k	1% 1/10W	0603	Resistor		
X2/X1/R3	RESISTOR	54.9k	1% 1/10W	0603	Resistor		
X2/X1/R4	RESISTOR	301k	1% 1/10W	0603	Resistor		
X2/X2/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor		
X2/X2/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor		
X2/X2/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor		
X2/X2/C7	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor		
X2/X2/C4	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor		
X2/X2/C6	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor		
X2/X2/C5	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor		
X2/X2/R2	RESISTOR	3.74k	1% 1/10W	0603	Resistor		
X2/X2/R1	RESISTOR	3.74k	1% 1/10W	0603	Resistor		
X2/X2/R7	RESISTOR	3.74k	1% 1/10W	0603	Resistor		
X2/X2/R6	RESISTOR	3.74k	1% 1/10W	0603	Resistor		
X2/X2/X2/Q1	PMOS_TRANSISTOR	IRFR9120N	unknown	TO252AA	generic P channel MOS transistor (enhancement type)		
X2/X2/X2/Q2	NMOS_TRANSISTOR	IRFR220N	unknown	TO252AA	generic N channel MOS transistor (enhancement type)		
X2/X2/X2/R6	RESISTOR	3.74k	1% 1/10W	0603	Resistor		
X2/X2/X2/R5	RESISTOR	3.74k	1% 1/10W	0603	Resistor		
X2/X2/X2/R4	RESISTOR	3.74k	1% 1/10W	0603	Resistor		
X2/X2/X2/R3	RESISTOR	3.74k	1% 1/10W	0603	Resistor		
X2/X2/X2/R7	RESISTOR	200	1% 1/10W	0603	Resistor		
X2/X2/X2/Q4	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown		
X2/X2/X2/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown		
X2/X2/X2/R2	RESISTOR	1	1% 1W	2512	Resistor		
X2/X2/X2/R1	RESISTOR	1	1% 1W	2512	Resistor		
X2/X2/X1/Q1	PMOS_TRANSISTOR	IRFR9120N	unknown	TO252AA	generic P channel MOS transistor (enhancement type)		

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X2/X2/X1/Q2	NMOS_TRANSISTOR	IRFR220N	unknown	TO252AA	generic N channe		
1 MOS transistor (enhancement type)							
X2/X2/X1/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X2/X1/R5	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X2/X1/R4	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X2/X1/R3	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X2/X1/R7	RESISTOR	200	1%	1/10W	0603	Resistor	
X2/X2/X1/Q4	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown		
X2/X2/X1/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown		
X2/X2/X1/R2	RESISTOR	1	1%	1W	2512	Resistor	
X2/X2/X1/R1	RESISTOR	1	1%	1W	2512	Resistor	
X2/X2/R3	RESISTOR	100	1%	1/10W	0603	Resistor	
X2/X2/R4	RESISTOR	100	1%	1/10W	0603	Resistor	
X2/X2/R5	RESISTOR	100	1%	1/10W	0603	Resistor	
X2/X2/U1	DG403	unknown	unknown	SO16	Dual SPDT switch		
X2/X3/C2	CAPACITOR	0.1uF	16WVDC	X7R	0603	Ceramic capacito	
r							
X2/X3/C3	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacito	
r							
X2/X3/C1	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacito	
r							
X2/X3/C7	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacito	
r							
X2/X3/C4	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacito	
r							
X2/X3/C6	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacito	
r							
X2/X3/C5	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacito	
r							
X2/X3/R2	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/R1	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/R7	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/X2/Q1	PMOS_TRANSISTOR	IRFR9120N	unknown	TO252AA	generic P channe		
1 MOS transistor (enhancement type)							
X2/X3/X2/Q2	NMOS_TRANSISTOR	IRFR220N	unknown	TO252AA	generic N channe		
1 MOS transistor (enhancement type)							
X2/X3/X2/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/X2/R5	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/X2/R4	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/X2/R3	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/X2/R7	RESISTOR	200	1%	1/10W	0603	Resistor	
X2/X3/X2/Q4	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown		
X2/X3/X2/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown		
X2/X3/X2/R2	RESISTOR	1	1%	1W	2512	Resistor	
X2/X3/X2/R1	RESISTOR	1	1%	1W	2512	Resistor	
X2/X3/X1/Q1	PMOS_TRANSISTOR	IRFR9120N	unknown	TO252AA	generic P channe		
1 MOS transistor (enhancement type)							
X2/X3/X1/Q2	NMOS_TRANSISTOR	IRFR220N	unknown	TO252AA	generic N channe		
1 MOS transistor (enhancement type)							
X2/X3/X1/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/X1/R5	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/X1/R4	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/X1/R3	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X2/X3/X1/R7	RESISTOR	200	1%	1/10W	0603	Resistor	
X2/X3/X1/Q4	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown		
X2/X3/X1/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown		
X2/X3/X1/R2	RESISTOR	1	1%	1W	2512	Resistor	
X2/X3/X1/R1	RESISTOR	1	1%	1W	2512	Resistor	

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X2/X3/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X3/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X3/R5	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X3/U1	DG403 unknown	unknown	SO16	Dual SPDT switch		
X2/X4/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X2/X4/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X2/X4/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X2/X4/C7	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
X2/X4/C4	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
X2/X4/C6	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
X2/X4/C5	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
X2/X4/R2	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/R1	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/R7	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/R6	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/X2/Q1	PMOS_TRANSISTOR	IRFR9120N	unknown	TO252AA	generic P channel MOS transistor (enhancement type)	
X2/X4/X2/Q2	NMOS_TRANSISTOR	IRFR220N	unknown	TO252AA	generic N channel MOS transistor (enhancement type)	
X2/X4/X2/R6	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/X2/R5	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/X2/R4	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/X2/R3	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/X2/R7	RESISTOR	200	1% 1/10W	0603	Resistor	
X2/X4/X2/Q4	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
X2/X4/X2/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X2/X4/X2/R2	RESISTOR	1	1% 1W	2512	Resistor	
X2/X4/X2/R1	RESISTOR	1	1% 1W	2512	Resistor	
X2/X4/X1/Q1	PMOS_TRANSISTOR	IRFR9120N	unknown	TO252AA	generic P channel MOS transistor (enhancement type)	
X2/X4/X1/Q2	NMOS_TRANSISTOR	IRFR220N	unknown	TO252AA	generic N channel MOS transistor (enhancement type)	
X2/X4/X1/R6	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/X1/R5	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/X1/R4	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/X1/R3	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X2/X4/X1/R7	RESISTOR	200	1% 1/10W	0603	Resistor	
X2/X4/X1/Q4	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
X2/X4/X1/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X2/X4/X1/R2	RESISTOR	1	1% 1W	2512	Resistor	
X2/X4/X1/R1	RESISTOR	1	1% 1W	2512	Resistor	
X2/X4/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X4/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X4/R5	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X4/U1	DG403 unknown	unknown	SO16	Dual SPDT switch		
X2/X10/C12	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X2/X10/C11	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X2/X10/R24	RESISTOR	10	1% 1/10W	0603	Resistor	
X2/X10/R23	RESISTOR	10	1% 1/10W	0603	Resistor	
X2/X10/C5	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	

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r						
X2/X10/R22	RESISTOR	604k	1% 1/10W	0603	Resistor	
X2/X10/R21	RESISTOR	604k	1% 1/10W	0603	Resistor	
X2/X10/C10	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
r						
X2/X10/C9	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
r						
X2/X10/C4	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
r						
X2/X10/R20	RESISTOR	10	1% 1/10W	0603	Resistor	
X2/X10/C8	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
r						
X2/X10/R18	RESISTOR	10k	1% 1/10W	0603	Resistor	
X2/X10/Q6	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
X2/X10/R19	RESISTOR	16.9	1% 1/10W	0603	Resistor	
X2/X10/Q5	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
X2/X10/R16	RESISTOR	20k	1% 1/10W	0603	Resistor	
X2/X10/R17	RESISTOR	499	1% 1/10W	0603	Resistor	
X2/X10/Q4	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X2/X10/C7	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
r						
X2/X10/R13	RESISTOR	1k	1% 1/10W	0603	Resistor	
X2/X10/R14	RESISTOR	32.4k	1% 1/10W	0603	Resistor	
X2/X10/C6	CAPACITOR	4.7pF	100WVDC NP0	0603	Ceramic capacitor	
r						
X2/X10/R15	RESISTOR	301k	1% 1/10W	0603	Resistor	
X2/X10/R11	RESISTOR	10	1% 1/10W	0603	Resistor	
X2/X10/C1	CAPACITOR	4.7pF	100WVDC NP0	0603	Ceramic capacitor	
r						
X2/X10/Q1	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
X2/X10/R7	RESISTOR	499	1% 1/10W	0603	Resistor	
X2/X10/R10	RESISTOR	49.9	1% 1/10W	0603	Resistor	
X2/X10/U1	DUAL_OPAMP	LM6142AIM	N/A	SO8	generic dual op	
rational amplifier, SO8						
X2/X10/R8	RESISTOR	10k	1% 1/10W	0603	Resistor	
X2/X10/R2	RESISTOR	26.7k	1% 1/10W	0603	Resistor	
X2/X10/R1	RESISTOR	34.0k	1% 1/10W	0603	Resistor	
X2/X10/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
r						
X2/X10/R3	RESISTOR	1k	1% 1/10W	0603	Resistor	
X2/X10/R4	RESISTOR	32.4k	1% 1/10W	0603	Resistor	
X2/X10/R5	RESISTOR	301k	1% 1/10W	0603	Resistor	
X2/X10/R6	RESISTOR	20k	1% 1/10W	0603	Resistor	
X2/X10/C3	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
r						
X2/X10/R9	RESISTOR	16.9	1% 1/10W	0603	Resistor	
X2/X10/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X2/X10/Q2	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X2/X9/R9	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X9/R8	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X9/R7	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X9/R6	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X9/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X9/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
r						
X2/X9/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X9/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
r						
X2/X9/R5	RESISTOR	100	1% 1/10W	0603	Resistor	

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X2/X9/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X2/X9/U1	DG403 unknown	unknown	SO16 Dual	SPDT switch	
X2/X8/R9	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X8/R8	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X8/R7	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X8/R6	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X8/R3	RESISTOR	100	1% 1/10W	0603	Resistor
X2/X8/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X2/X8/R4	RESISTOR	100	1% 1/10W	0603	Resistor
X2/X8/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor
X2/X8/R5	RESISTOR	100	1% 1/10W	0603	Resistor
X2/X8/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X2/X8/U1	DG403 unknown	unknown	SO16 Dual	SPDT switch	
X2/X7/R9	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X7/R8	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X7/R7	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X7/R6	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X7/R3	RESISTOR	100	1% 1/10W	0603	Resistor
X2/X7/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X2/X7/R4	RESISTOR	100	1% 1/10W	0603	Resistor
X2/X7/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor
X2/X7/R5	RESISTOR	100	1% 1/10W	0603	Resistor
X2/X7/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X2/X7/U1	DG403 unknown	unknown	SO16 Dual	SPDT switch	
X2/X6/R9	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X6/R8	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X6/R7	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X6/R6	RESISTOR	75	1% 1/10W	0603	Resistor
X2/X6/R3	RESISTOR	100	1% 1/10W	0603	Resistor
X2/X6/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X2/X6/R4	RESISTOR	100	1% 1/10W	0603	Resistor
X2/X6/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor
X2/X6/R5	RESISTOR	100	1% 1/10W	0603	Resistor
X2/X6/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X2/X6/U1	DG403 unknown	unknown	SO16 Dual	SPDT switch	
X2/X5/C12	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X2/X5/C11	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X2/X5/R24	RESISTOR	10	1% 1/10W	0603	Resistor
X2/X5/R23	RESISTOR	10	1% 1/10W	0603	Resistor
X2/X5/C5	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor
X2/X5/R22	RESISTOR	604k	1% 1/10W	0603	Resistor
X2/X5/R21	RESISTOR	604k	1% 1/10W	0603	Resistor
X2/X5/C10	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor
X2/X5/C9	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor



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X2/X5/C4	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X2/X5/R20	RESISTOR	10	1% 1/10W	0603	Resistor	
X2/X5/C8	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
X2/X5/R18	RESISTOR	10k	1% 1/10W	0603	Resistor	
X2/X5/Q6	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
X2/X5/R19	RESISTOR	16.9	1% 1/10W	0603	Resistor	
X2/X5/Q5	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
X2/X5/R16	RESISTOR	20k	1% 1/10W	0603	Resistor	
X2/X5/R17	RESISTOR	499	1% 1/10W	0603	Resistor	
X2/X5/Q4	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X2/X5/C7	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X2/X5/R13	RESISTOR	1k	1% 1/10W	0603	Resistor	
X2/X5/R14	RESISTOR	32.4k	1% 1/10W	0603	Resistor	
X2/X5/C6	CAPACITOR	4.7pF	100WVDC NP0	0603	Ceramic capacitor	
X2/X5/R15	RESISTOR	301k	1% 1/10W	0603	Resistor	
X2/X5/R11	RESISTOR	10	1% 1/10W	0603	Resistor	
X2/X5/C1	CAPACITOR	4.7pF	100WVDC NP0	0603	Ceramic capacitor	
X2/X5/Q1	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown	
X2/X5/R7	RESISTOR	499	1% 1/10W	0603	Resistor	
X2/X5/R10	RESISTOR	49.9	1% 1/10W	0603	Resistor	
X2/X5/U1	DUAL_OPAMP	LM6142AIM	N/A	SO8	generic dual operational amplifier, SO8	
X2/X5/R8	RESISTOR	10k	1% 1/10W	0603	Resistor	
X2/X5/R2	RESISTOR	26.7k	1% 1/10W	0603	Resistor	
X2/X5/R1	RESISTOR	34.0k	1% 1/10W	0603	Resistor	
X2/X5/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X2/X5/R3	RESISTOR	1k	1% 1/10W	0603	Resistor	
X2/X5/R4	RESISTOR	32.4k	1% 1/10W	0603	Resistor	
X2/X5/R5	RESISTOR	301k	1% 1/10W	0603	Resistor	
X2/X5/R6	RESISTOR	20k	1% 1/10W	0603	Resistor	
X2/X5/C3	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
X2/X5/R9	RESISTOR	16.9	1% 1/10W	0603	Resistor	
X2/X5/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X2/X5/Q2	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X2/X11/R9	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X11/R8	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X11/R7	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X11/R6	RESISTOR	75	1% 1/10W	0603	Resistor	
X2/X11/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X11/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X2/X11/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X11/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X2/X11/R5	RESISTOR	100	1% 1/10W	0603	Resistor	
X2/X11/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X2/X11/U1	DG403	unknown	unknown	SO16	Dual SPDT switch	
X2/R9	RESISTOR	604k	1%	0603	Resistor	
X2/R1	RESISTOR	56.2k	1%	0603	Resistor	
X2/R2	RESISTOR	200k	1%	0603	Resistor	
X2/C4	CAPACITOR	10pF	100WVDC NP0	0603	Ceramic capacitor	

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X2/R8	RESISTOR	21.5	1% 1/10W	0603	Resistor	
X2/C5	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X2/R6	RESISTOR	49.9	1% 1/10W	0603	Resistor	
X2/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X2/U1	DUAL_OPAMP	LM6142AIM	N/A	SO8	generic dual operational	
	amplifier, SO8					
X2/R7	RESISTOR	604k	1%	0603	Resistor	
X2/R3	RESISTOR	56.2k	1%	0603	Resistor	
X2/R4	RESISTOR	200k	1%	0603	Resistor	
X2/C1	CAPACITOR	10pF	100WVDC NP0	0603	Ceramic capacitor	
X2/R5	RESISTOR	21.5	1% 1/10W	0603	Resistor	
X2/C2	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X14/R9	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X14/R8	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X14/R7	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X14/R6	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X14/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X14/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X14/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X14/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X1/X14/R5	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X14/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X14/U1	DG403	unknown	unknown	SO16	Dual SPDT switch	
X1/X13/R9	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X13/R8	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X13/R7	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X13/R6	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X13/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X13/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X13/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X13/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X1/X13/R5	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X13/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X13/U1	DG403	unknown	unknown	SO16	Dual SPDT switch	
X1/X12/R9	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X12/R8	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X12/R7	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X12/R6	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X12/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X12/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X12/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X12/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X1/X12/R5	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X12/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X12/U1	DG403	unknown	unknown	SO16	Dual SPDT switch	
X1/R12	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X1/R11	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
X1/C7	CAPACITOR	1uF	10WVDC X7R	0805	Ceramic capacitor	
X1/R10	RESISTOR	330	5% 0.15W	0805	Resistor	
X1/C6	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	

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X1/C32	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacitor	
X1/U3	MAX308CSE+	unknown	unknown	SO16	8 input	analog mux	
X1/C31	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacitor	
X1/U2	AD5328	unknown	unknown	TSSOP16	Octal DAC		
X1/X1/U1	DUAL_OPAMP	LT2078AIS8		N/A	SO8	unknown	
X1/X1/R21	RESISTOR	1	1%	1/10W	0603	Resistor	
X1/X1/R22	RESISTOR	1	1%	1/10W	0603	Resistor	
X1/X1/R24	RESISTOR	49.9	1%	1/10W	0603	Resistor	
X1/X1/R23	RESISTOR	49.9	1%	1/10W	0603	Resistor	
X1/X1/C11	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacitor	
X1/X1/C12	CAPACITOR	0.1uF	50WVDC	X7R	0805	Ceramic capacitor	
X1/X1/C2	CAPACITOR	1.0uF	10WVDC	X7R	0805	Ceramic capacitor	
X1/X1/C13	CAPACITOR	3.3uF	25WVDC	X7R	2225	Ceramic capacitor	
X1/X1/C10	CAPACITOR	4.7uF	10WVDC	X7R	1812	Ceramic capacitor	
X1/X1/R20	RESISTOR	604k	1%	1/10W	0603	Resistor	
X1/X1/R10	RESISTOR	604k	1%	1/10W	0603	Resistor	
X1/X1/C1	CAPACITOR	0.22uF	10WVDC	X7R	0603	Ceramic capacitor	
X1/X1/R12	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X1/Q2	LM195H	unknown	unknown	TO39	unknown		
X1/X1/R16	RESISTOR	4.99k	1%	1/10W	0603	Resistor	
X1/X1/Q3	PNP_TRANSISTOR	MMBT2907A		unknown	UB	unknown	
X1/X1/R2	RESISTOR	301k	1%	1/10W	0603	Resistor	
X1/X1/C6	CAPACITOR	680pF	50WVDC	NP0	0603	Ceramic capacitor	
X1/X1/R6	RESISTOR	4.99k	1%	1/10W	0603	Resistor	
X1/X1/Q1	LM195H	unknown	unknown	TO39	unknown		
X1/X1/R17	RESISTOR	10k	1%	1/10W	0603	Resistor	
X1/X1/R7	RESISTOR	10k	1%	1/10W	0603	Resistor	
X1/X1/C5	CAPACITOR	680pF	50WVDC	NP0	0603	Ceramic capacitor	
X1/X1/U2	DUAL_OPAMP	LM6142AIM		N/A	SO8	generic dual operational amplifier, SO8	
X1/X1/C4	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacitor	
X1/X1/C3	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacitor	
X1/X1/R15	RESISTOR	10k	1%	1/10W	0603	Resistor	
X1/X1/R5	RESISTOR	10k	1%	1/10W	0603	Resistor	
X1/X1/R11	RESISTOR	60.4k	1%	1/10W	0603	Resistor	
X1/X1/R13	RESISTOR	75k	1%	1/10W	0603	Resistor	
X1/X1/R14	RESISTOR	301k	1%	1/10W	0603	Resistor	
X1/X1/R1	RESISTOR	54.9k	1%	1/10W	0603	Resistor	
X1/X1/R3	RESISTOR	54.9k	1%	1/10W	0603	Resistor	
X1/X1/R4	RESISTOR	301k	1%	1/10W	0603	Resistor	
X1/X2/C2	CAPACITOR	0.1uF	16WVDC	X7R	0603	Ceramic capacitor	
X1/X2/C3	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacitor	
X1/X2/C1	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacitor	
X1/X2/C7	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacitor	
X1/X2/C4	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacitor	

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r						
X1/X2/C6	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacitor
r						
X1/X2/C5	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacitor
r						
X1/X2/R2	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/R1	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/R7	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/X2/Q1	PMOS_TRANSISTOR	IRFR9120N		unknown	TO252AA	generic P channel MOS transistor (enhancement type)
X1/X2/X2/Q2	NMOS_TRANSISTOR	IRFR220N		unknown	TO252AA	generic N channel MOS transistor (enhancement type)
X1/X2/X2/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/X2/R5	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/X2/R4	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/X2/R3	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/X2/R7	RESISTOR	200	1%	1/10W	0603	Resistor
X1/X2/X2/Q4	NPN_TRANSISTOR	MMBT2222A		unknown	UB	unknown
X1/X2/X2/Q3	PNP_TRANSISTOR	MMBT2907A		unknown	UB	unknown
X1/X2/X2/R2	RESISTOR	1	1%	1W	2512	Resistor
X1/X2/X2/R1	RESISTOR	1	1%	1W	2512	Resistor
X1/X2/X1/Q1	PMOS_TRANSISTOR	IRFR9120N		unknown	TO252AA	generic P channel MOS transistor (enhancement type)
X1/X2/X1/Q2	NMOS_TRANSISTOR	IRFR220N		unknown	TO252AA	generic N channel MOS transistor (enhancement type)
X1/X2/X1/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/X1/R5	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/X1/R4	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/X1/R3	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X2/X1/R7	RESISTOR	200	1%	1/10W	0603	Resistor
X1/X2/X1/Q4	NPN_TRANSISTOR	MMBT2222A		unknown	UB	unknown
X1/X2/X1/Q3	PNP_TRANSISTOR	MMBT2907A		unknown	UB	unknown
X1/X2/X1/R2	RESISTOR	1	1%	1W	2512	Resistor
X1/X2/X1/R1	RESISTOR	1	1%	1W	2512	Resistor
X1/X2/R3	RESISTOR	100	1%	1/10W	0603	Resistor
X1/X2/R4	RESISTOR	100	1%	1/10W	0603	Resistor
X1/X2/R5	RESISTOR	100	1%	1/10W	0603	Resistor
X1/X2/U1	DG403	unknown	unknown	SO16	Dual SPDT switch	
X1/X3/C2	CAPACITOR	0.1uF	16WVDC	X7R	0603	Ceramic capacitor
r						
X1/X3/C3	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacitor
r						
X1/X3/C1	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacitor
r						
X1/X3/C7	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacitor
r						
X1/X3/C4	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacitor
r						
X1/X3/C6	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacitor
r						
X1/X3/C5	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacitor
r						
X1/X3/R2	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X3/R1	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X3/R7	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X3/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor
X1/X3/X2/Q1	PMOS_TRANSISTOR	IRFR9120N		unknown	TO252AA	generic P channel MOS transistor (enhancement type)

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X1/X3/X2/Q2	NMOS_TRANSISTOR	IRFR220N	unknown	TO252AA	generic N channe		
l MOS transistor (enhancement type)							
X1/X3/X2/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X3/X2/R5	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X3/X2/R4	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X3/X2/R3	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X3/X2/R7	RESISTOR	200	1%	1/10W	0603	Resistor	
X1/X3/X2/Q4	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown		
X1/X3/X2/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown		
X1/X3/X2/R2	RESISTOR	1	1%	1W	2512	Resistor	
X1/X3/X2/R1	RESISTOR	1	1%	1W	2512	Resistor	
X1/X3/X1/Q1	PMOS_TRANSISTOR	IRFR9120N	unknown	TO252AA	generic P channe		
l MOS transistor (enhancement type)							
X1/X3/X1/Q2	NMOS_TRANSISTOR	IRFR220N	unknown	TO252AA	generic N channe		
l MOS transistor (enhancement type)							
X1/X3/X1/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X3/X1/R5	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X3/X1/R4	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X3/X1/R3	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X3/X1/R7	RESISTOR	200	1%	1/10W	0603	Resistor	
X1/X3/X1/Q4	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown		
X1/X3/X1/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown		
X1/X3/X1/R2	RESISTOR	1	1%	1W	2512	Resistor	
X1/X3/X1/R1	RESISTOR	1	1%	1W	2512	Resistor	
X1/X3/R3	RESISTOR	100	1%	1/10W	0603	Resistor	
X1/X3/R4	RESISTOR	100	1%	1/10W	0603	Resistor	
X1/X3/R5	RESISTOR	100	1%	1/10W	0603	Resistor	
X1/X3/U1	DG403	unknown	unknown	SO16	Dual SPDT switch		
X1/X4/C2	CAPACITOR	0.1uF	16WVDC	X7R	0603	Ceramic capacito	
r							
X1/X4/C3	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacito	
r							
X1/X4/C1	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacito	
r							
X1/X4/C7	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacito	
r							
X1/X4/C4	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacito	
r							
X1/X4/C6	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacito	
r							
X1/X4/C5	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacito	
r							
X1/X4/R2	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/R1	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/R7	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/X2/Q1	PMOS_TRANSISTOR	IRFR9120N	unknown	TO252AA	generic P channe		
l MOS transistor (enhancement type)							
X1/X4/X2/Q2	NMOS_TRANSISTOR	IRFR220N	unknown	TO252AA	generic N channe		
l MOS transistor (enhancement type)							
X1/X4/X2/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/X2/R5	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/X2/R4	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/X2/R3	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/X2/R7	RESISTOR	200	1%	1/10W	0603	Resistor	
X1/X4/X2/Q4	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown		
X1/X4/X2/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown		
X1/X4/X2/R2	RESISTOR	1	1%	1W	2512	Resistor	
X1/X4/X2/R1	RESISTOR	1	1%	1W	2512	Resistor	

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X1/X4/X1/Q1	PMOS_TRANSISTOR	IRFR9120N	unknown	TO252AA	generic P channe		
l MOS transistor (enhancement type)							
X1/X4/X1/Q2	NMOS_TRANSISTOR	IRFR220N	unknown	TO252AA	generic N channe		
l MOS transistor (enhancement type)							
X1/X4/X1/R6	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/X1/R5	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/X1/R4	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/X1/R3	RESISTOR	3.74k	1%	1/10W	0603	Resistor	
X1/X4/X1/R7	RESISTOR	200	1%	1/10W	0603	Resistor	
X1/X4/X1/Q4	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown		
X1/X4/X1/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown		
X1/X4/X1/R2	RESISTOR	1	1%	1W	2512	Resistor	
X1/X4/X1/R1	RESISTOR	1	1%	1W	2512	Resistor	
X1/X4/R3	RESISTOR	100	1%	1/10W	0603	Resistor	
X1/X4/R4	RESISTOR	100	1%	1/10W	0603	Resistor	
X1/X4/R5	RESISTOR	100	1%	1/10W	0603	Resistor	
X1/X4/U1	DG403	unknown	unknown	SO16	Dual SPDT switch		
X1/X10/C12	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacito	
r							
X1/X10/C11	CAPACITOR	22nF	50WVDC	X7R	0603	Ceramic capacito	
r							
X1/X10/R24	RESISTOR	10	1%	1/10W	0603	Resistor	
X1/X10/R23	RESISTOR	10	1%	1/10W	0603	Resistor	
X1/X10/C5	CAPACITOR	4.7uF	10WVDC	X7R	1812	Ceramic capacito	
r							
X1/X10/R22	RESISTOR	604k	1%	1/10W	0603	Resistor	
X1/X10/R21	RESISTOR	604k	1%	1/10W	0603	Resistor	
X1/X10/C10	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacito	
r							
X1/X10/C9	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacito	
r							
X1/X10/C4	CAPACITOR	0.1uF	16WVDC	X7R	0603	Ceramic capacito	
r							
X1/X10/R20	RESISTOR	10	1%	1/10W	0603	Resistor	
X1/X10/C8	CAPACITOR	1uF	25WVDC	X7R	1812	Ceramic capacito	
r							
X1/X10/R18	RESISTOR	10k	1%	1/10W	0603	Resistor	
X1/X10/Q6	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown		
X1/X10/R19	RESISTOR	16.9	1%	1/10W	0603	Resistor	
X1/X10/Q5	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown		
X1/X10/R16	RESISTOR	20k	1%	1/10W	0603	Resistor	
X1/X10/R17	RESISTOR	499	1%	1/10W	0603	Resistor	
X1/X10/Q4	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown		
X1/X10/C7	CAPACITOR	0.1uF	16WVDC	X7R	0603	Ceramic capacito	
r							
X1/X10/R13	RESISTOR	1k	1%	1/10W	0603	Resistor	
X1/X10/R14	RESISTOR	32.4k	1%	1/10W	0603	Resistor	
X1/X10/C6	CAPACITOR	4.7pF	100WVDC	NP0	0603	Ceramic capacito	
r							
X1/X10/R15	RESISTOR	301k	1%	1/10W	0603	Resistor	
X1/X10/R11	RESISTOR	10	1%	1/10W	0603	Resistor	
X1/X10/C1	CAPACITOR	4.7pF	100WVDC	NP0	0603	Ceramic capacito	
r							
X1/X10/Q1	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown		
X1/X10/R7	RESISTOR	499	1%	1/10W	0603	Resistor	
X1/X10/R10	RESISTOR	49.9	1%	1/10W	0603	Resistor	
X1/X10/U1	DUAL_OPAMP	LM6142AIM	N/A	SO8	generic dual ope		
rational amplifier, SO8							
X1/X10/R8	RESISTOR	10k	1%	1/10W	0603	Resistor	

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X1/X10/R2	RESISTOR	26.7k	1% 1/10W	0603	Resistor	
X1/X10/R1	RESISTOR	34.0k	1% 1/10W	0603	Resistor	
X1/X10/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X1/X10/R3	RESISTOR	1k	1% 1/10W	0603	Resistor	
X1/X10/R4	RESISTOR	32.4k	1% 1/10W	0603	Resistor	
X1/X10/R5	RESISTOR	301k	1% 1/10W	0603	Resistor	
X1/X10/R6	RESISTOR	20k	1% 1/10W	0603	Resistor	
X1/X10/C3	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
X1/X10/R9	RESISTOR	16.9	1% 1/10W	0603	Resistor	
X1/X10/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X1/X10/Q2	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X1/X9/R9	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X9/R8	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X9/R7	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X9/R6	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X9/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X9/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X9/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X9/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X1/X9/R5	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X9/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X9/U1	DG403	unknown	unknown	SO16	Dual SPDT switch	
X1/X8/R9	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X8/R8	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X8/R7	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X8/R6	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X8/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X8/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X8/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X8/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X1/X8/R5	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X8/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X8/U1	DG403	unknown	unknown	SO16	Dual SPDT switch	
X1/X7/R9	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X7/R8	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X7/R7	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X7/R6	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X7/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X7/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X7/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X7/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X1/X7/R5	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X7/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X7/U1	DG403	unknown	unknown	SO16	Dual SPDT switch	
X1/X6/R9	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X6/R8	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X6/R7	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X6/R6	RESISTOR	75	1% 1/10W	0603	Resistor	

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X1/X6/R3	RESISTOR	100	1% 1/10W	0603	Resistor
X1/X6/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X1/X6/R4	RESISTOR	100	1% 1/10W	0603	Resistor
X1/X6/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor
X1/X6/R5	RESISTOR	100	1% 1/10W	0603	Resistor
X1/X6/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X1/X6/U1	DG403	unknown	unknown	SO16	Dual SPDT switch
X1/X5/C12	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X1/X5/C11	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor
X1/X5/R24	RESISTOR	10	1% 1/10W	0603	Resistor
X1/X5/R23	RESISTOR	10	1% 1/10W	0603	Resistor
X1/X5/C5	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor
X1/X5/R22	RESISTOR	604k	1% 1/10W	0603	Resistor
X1/X5/R21	RESISTOR	604k	1% 1/10W	0603	Resistor
X1/X5/C10	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor
X1/X5/C9	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor
X1/X5/C4	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor
X1/X5/R20	RESISTOR	10	1% 1/10W	0603	Resistor
X1/X5/C8	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor
X1/X5/R18	RESISTOR	10k	1% 1/10W	0603	Resistor
X1/X5/Q6	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown
X1/X5/R19	RESISTOR	16.9	1% 1/10W	0603	Resistor
X1/X5/Q5	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown
X1/X5/R16	RESISTOR	20k	1% 1/10W	0603	Resistor
X1/X5/R17	RESISTOR	499	1% 1/10W	0603	Resistor
X1/X5/Q4	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown
X1/X5/C7	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor
X1/X5/R13	RESISTOR	1k	1% 1/10W	0603	Resistor
X1/X5/R14	RESISTOR	32.4k	1% 1/10W	0603	Resistor
X1/X5/C6	CAPACITOR	4.7pF	100WVDC NP0	0603	Ceramic capacitor
X1/X5/R15	RESISTOR	301k	1% 1/10W	0603	Resistor
X1/X5/R11	RESISTOR	10	1% 1/10W	0603	Resistor
X1/X5/C1	CAPACITOR	4.7pF	100WVDC NP0	0603	Ceramic capacitor
X1/X5/Q1	NPN_TRANSISTOR	MMBT2222A	unknown	UB	unknown
X1/X5/R7	RESISTOR	499	1% 1/10W	0603	Resistor
X1/X5/R10	RESISTOR	49.9	1% 1/10W	0603	Resistor
X1/X5/U1	DUAL_OPAMP	LM6142AIM	N/A	SO8	generic dual operational amplifier, SO8
X1/X5/R8	RESISTOR	10k	1% 1/10W	0603	Resistor
X1/X5/R2	RESISTOR	26.7k	1% 1/10W	0603	Resistor
X1/X5/R1	RESISTOR	34.0k	1% 1/10W	0603	Resistor
X1/X5/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor
X1/X5/R3	RESISTOR	1k	1% 1/10W	0603	Resistor
X1/X5/R4	RESISTOR	32.4k	1% 1/10W	0603	Resistor
X1/X5/R5	RESISTOR	301k	1% 1/10W	0603	Resistor



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X1/X5/R6	RESISTOR	20k	1% 1/10W	0603	Resistor	
X1/X5/C3	CAPACITOR	1uF	25WVDC X7R	1812	Ceramic capacitor	
X1/X5/R9	RESISTOR	16.9	1% 1/10W	0603	Resistor	
X1/X5/Q3	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X1/X5/Q2	PNP_TRANSISTOR	MMBT2907A	unknown	UB	unknown	
X1/X11/R9	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X11/R8	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X11/R7	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X11/R6	RESISTOR	75	1% 1/10W	0603	Resistor	
X1/X11/R3	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X11/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X11/R4	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X11/C2	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
X1/X11/R5	RESISTOR	100	1% 1/10W	0603	Resistor	
X1/X11/C1	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/X11/U1	DG403	unknown	unknown	SO16	Dual SPDT switch	
X1/R9	RESISTOR	604k	1%	0603	Resistor	
X1/R1	RESISTOR	56.2k	1%	0603	Resistor	
X1/R2	RESISTOR	200k	1%	0603	Resistor	
X1/C4	CAPACITOR	10pF	100WVDC NP0	0603	Ceramic capacitor	
X1/R8	RESISTOR	21.5	1% 1/10W	0603	Resistor	
X1/C5	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/R6	RESISTOR	49.9	1% 1/10W	0603	Resistor	
X1/C3	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
X1/U1	DUAL_OPAMP	LM6142AIM	N/A	SO8	generic dual operational amplifier, SO8	
X1/R7	RESISTOR	604k	1%	0603	Resistor	
X1/R3	RESISTOR	56.2k	1%	0603	Resistor	
X1/R4	RESISTOR	200k	1%	0603	Resistor	
X1/C1	CAPACITOR	10pF	100WVDC NP0	0603	Ceramic capacitor	
X1/R5	RESISTOR	21.5	1% 1/10W	0603	Resistor	
X1/C2	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
C48	POLARIZED_CAPACITOR	47uF	15WVDC	2711	Tantalum capacitor	
C47	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	
C46	CAPACITOR	1uF	10WVDC X7R	0805	Ceramic capacitor	
C45	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C44	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C43	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C42	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C41	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	
C40	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	
C39	CAPACITOR	1uF	10WVDC X7R	0805	Ceramic capacitor	
C38	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C37	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C36	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C35	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C34	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	
C33	POLARIZED_CAPACITOR	47uF	15WVDC	2711	Tantalum capacitor	
C32	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	
C31	CAPACITOR	1uF	10WVDC X7R	0805	Ceramic capacitor	
C30	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C29	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C28	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C27	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C26	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	

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C25	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	
C24	CAPACITOR	1uF	10WVDC X7R	0805	Ceramic capacitor	
C23	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C22	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C21	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C20	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C19	POLARIZED_CAPACITOR	220uF	6WVDC	2915	Tantalum capacitor	
C18	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	
C17	CAPACITOR	1uF	10WVDC X7R	0805	Ceramic capacitor	
C16	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C15	POLARIZED_CAPACITOR	220uF	6WVDC	2915	Tantalum capacitor	
C14	CAPACITOR	1uF	10WVDC X7R	0805	Ceramic capacitor	
C13	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C12	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	
C11	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	
C10	CAPACITOR	1uF	10WVDC X7R	0805	Ceramic capacitor	
C59	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C58	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C57	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C56	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C55	POLARIZED_CAPACITOR	220uF	6WVDC	2915	Tantalum capacitor	
C54	POLARIZED_CAPACITOR	47uF	15WVDC	2711	Tantalum capacitor	
C53	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	
C52	CAPACITOR	1uF	10WVDC X7R	0805	Ceramic capacitor	
C51	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
R67	RESISTOR	20	1% 1/10W	0603	Resistor	
R68	RESISTOR	62	5% 0.15W	0805	Resistor	
R62	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
U1	MAX308CSE+	unknown	unknown SO16	8 input	analog mux	
C84	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
R65	RESISTOR	121k	1% 0603	Resistor		
R66	RESISTOR	121k	1% 0603	Resistor		
R63	RESISTOR	121k	1% 0603	Resistor		
R64	RESISTOR	121k	1% 0603	Resistor		
C68	CAPACITOR	4.7uF	10WVDC X7R	1812	Ceramic capacitor	
C73	CAPACITOR	10nF	50WVDC X7R	0603	Ceramic capacitor	
C77	CAPACITOR	1uF	10WVDC X7R	0805	Ceramic capacitor	
C74	CAPACITOR	10nF	50WVDC X7R	0603	Ceramic capacitor	
R70	RESISTOR	750	1% 1/10W	0603	Resistor	
R69	RESISTOR	750	1% 1/10W	0603	Resistor	
C75	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
C76	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor	
U2	AD7984BRMZ	unknown	unknown MSOP10	ADC		
C94	CAPACITOR	10pF	100WVDC NP0	0603	Ceramic capacitor	
R59	RESISTOR	604k	1% 0603	Resistor		
R58	RESISTOR	604k	1% 0603	Resistor		
R57	RESISTOR	604k	1% 0603	Resistor		
R56	RESISTOR	604k	1% 0603	Resistor		
R55	RESISTOR	604k	1% 0603	Resistor		
R54	RESISTOR	604k	1% 0603	Resistor		
R53	RESISTOR	604k	1% 0603	Resistor		
C70	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
R60	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
R61	RESISTOR	3.74k	1% 1/10W	0603	Resistor	
U3	MAX308CSE+	unknown	unknown SO16	8 input	analog mux	
C71	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor	
R5	RESISTOR	121k	1% 0603	Resistor		
U6	DUAL_OPAMP	LT2078AIS8	N/A	SO8	unknown	
U5	DUAL_OPAMP	LT2078AIS8	N/A	SO8	unknown	

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C63	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor		
R7	RESISTOR	51.1	1% 1/10W	0603	Resistor		
C61	CAPACITOR	22nF	50WVDC X7R	0603	Ceramic capacitor		
C60	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor		
R3	RESISTOR	51.1	1% 1/10W	0603	Resistor		
R1	RESISTOR	51.1	1% 1/10W	0603	Resistor		
R14	RESISTOR	8.87k	1% 0603	Resistor			
R15	RESISTOR	71.5k	1% 0603	Resistor			
R13	RESISTOR	140k	1% 0603	Resistor			
R4	RESISTOR	121k	1% 0603	Resistor			
R2	RESISTOR	121k	1% 0603	Resistor			
C88	CAPACITOR	0.1uF DNP	16WVDC X7R	0603	Ceramic capacitor		
U8	OSC	KC3225A60.0000C3GE00	unknown	KYOCERA-KC3225A-C3	Surface Mount Oscillator		
C96	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor		
C95	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor		
R99	RESISTOR	100	5% 1/10W	0603	Resistor		
R98	RESISTOR	100	5% 1/10W	0603	Resistor		
U12	MAX9180	unknown	unknown	SC70-6	unknown		
U11	MAX9180	unknown	unknown	SC70-6	unknown		
Js	StackConn	unknown	unknown	RC422-200-201-3900	Stacking connector		
R71	RESISTOR	4.99k	1% 0603	Resistor			
C8	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor		
U88	2104D60M0000YAX	DNP	unknown	FP14	Surface Mount Oscillator		
R84	RESISTOR	DNP	5% 1/10W	0603	Resistor		
J8	Header	unknown	unknown	HEADER16	unknown		
R83	RESISTOR	DNP	5% 1/10W	0603	Resistor		
R82	RESISTOR	DNP	5% 1/10W	0603	Resistor		
R81	RESISTOR	DNP	5% 1/10W	0603	Resistor		
R80	RESISTOR	DNP	5% 1/10W	0603	Resistor		
R91	RESISTOR	4.7k	5% 1/10W	0603	Resistor		
R87	RESISTOR	4.7k	5% 1/10W	0603	Resistor		
R88	RESISTOR	1k	5% 1/10W	0603	Resistor		
R89	RESISTOR	1k	5% 1/10W	0603	Resistor		
R90	RESISTOR	1k	5% 1/10W	0603	Resistor		
J6	MDM9S	unknown	unknown	MDM9S	unknown		
C99	CAPACITOR	0.1uF	16WVDC X7R	0603	Ceramic capacitor		
U9	DS26LV32A	unknown	unknown	CFP16	unknown		
J9	HEADER14	87832-1420	unknown	HEADER14SMT2MM	unknown		
R94	RESISTOR	4.7k	5% 1/10W	0603	Resistor		
R95	RESISTOR	4.7k	5% 1/10W	0603	Resistor		
R96	RESISTOR	4.7k	5% 1/10W	0603	Resistor		
R97	RESISTOR	4.7k	5% 1/10W	0603	Resistor		
U4	Artix	XC7A50T-1FGG484C	unknown	BGA484	unknown		

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