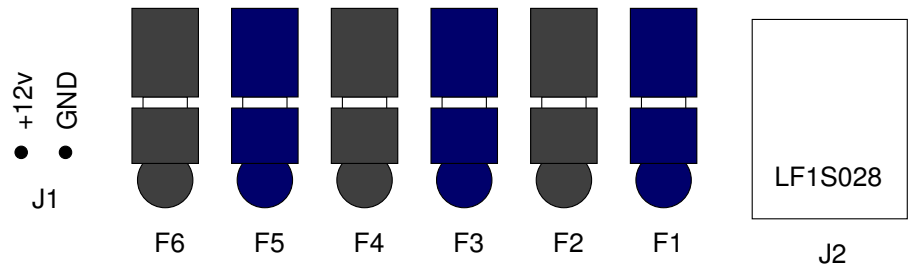
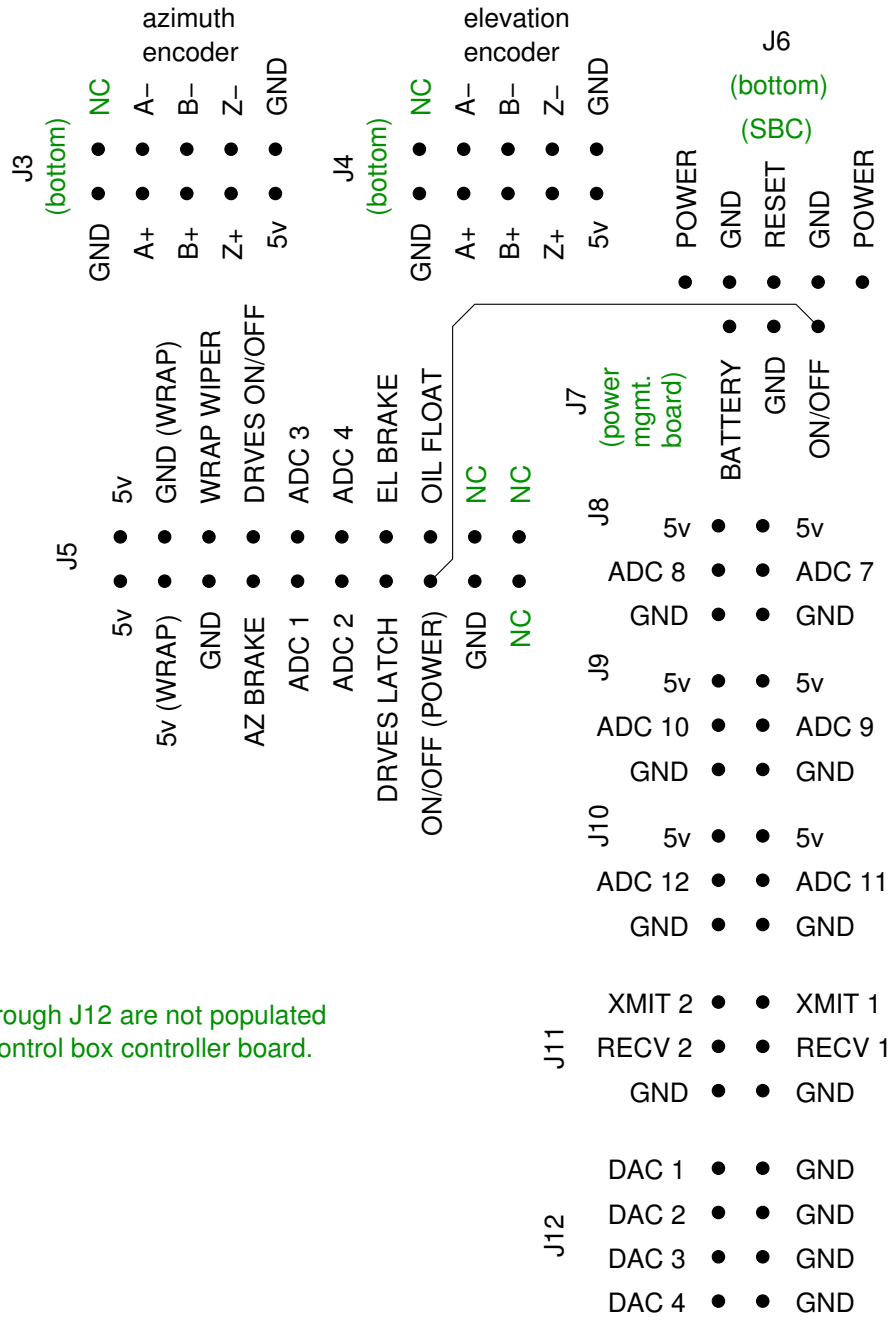
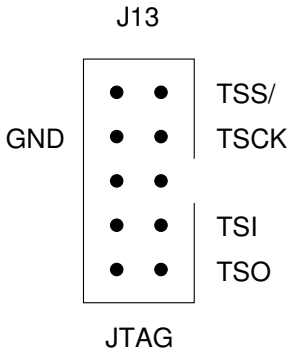
Control and Rim Box Controller – Connectors (1)



Note: F2 is a different detector (IF–D96) than F4 and F6 (IF–D95T)

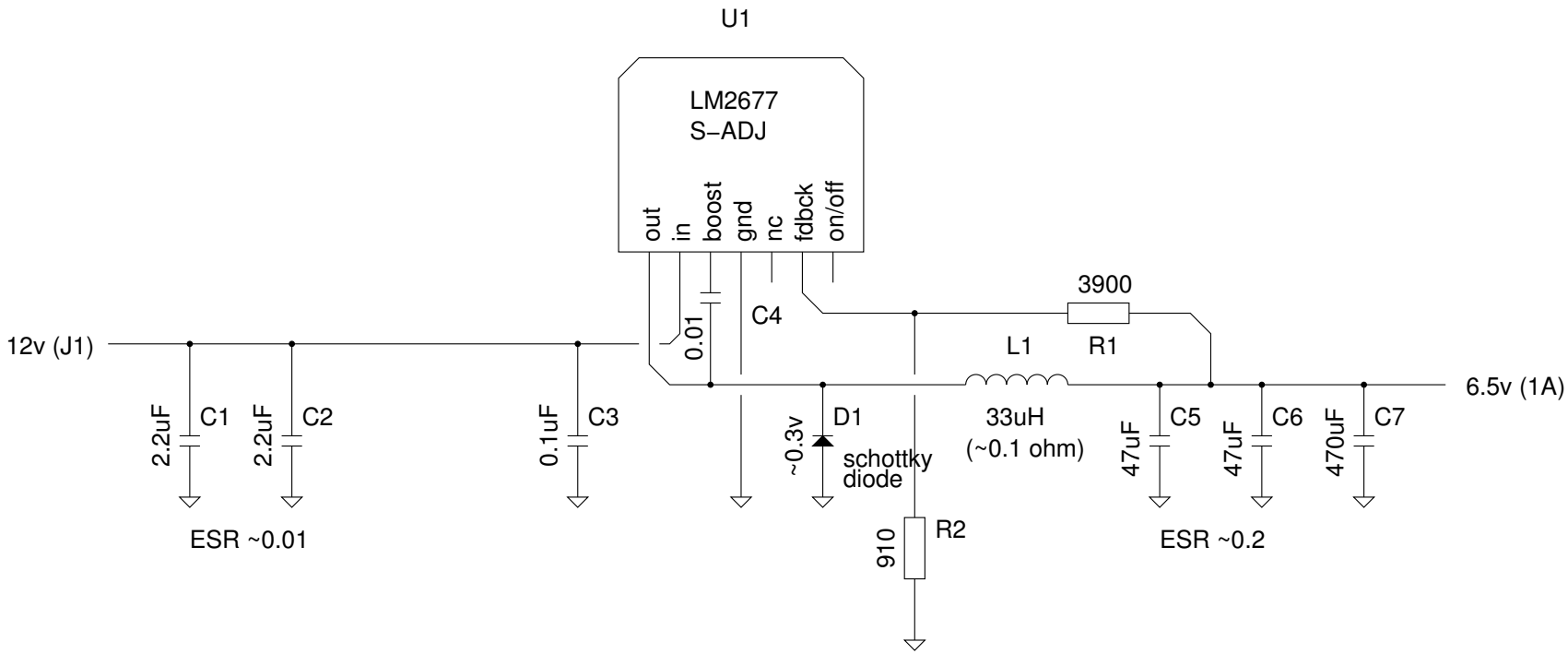




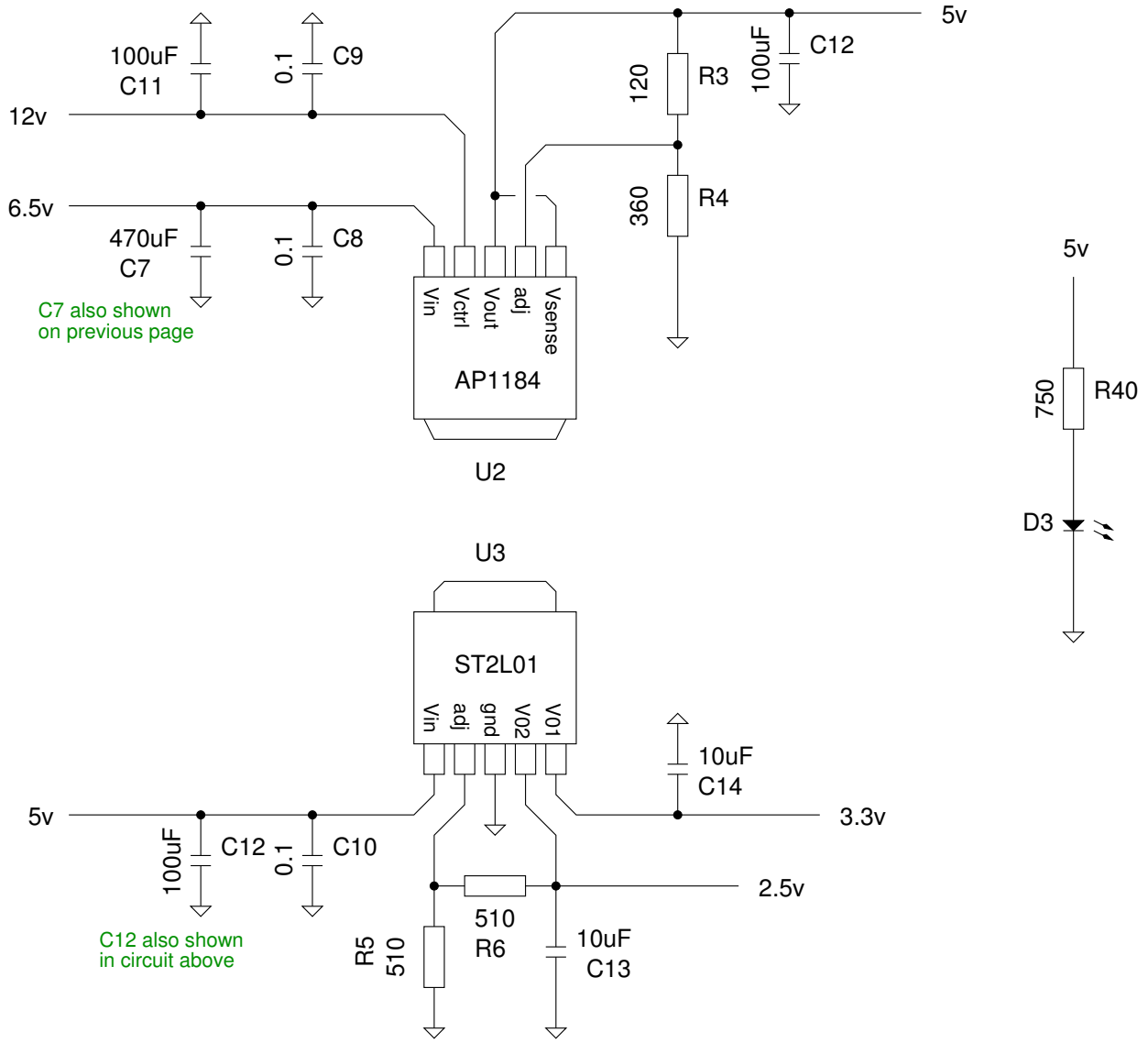
(also shown on page four)

Note: J8 through J12 are not populated on control box controller board.

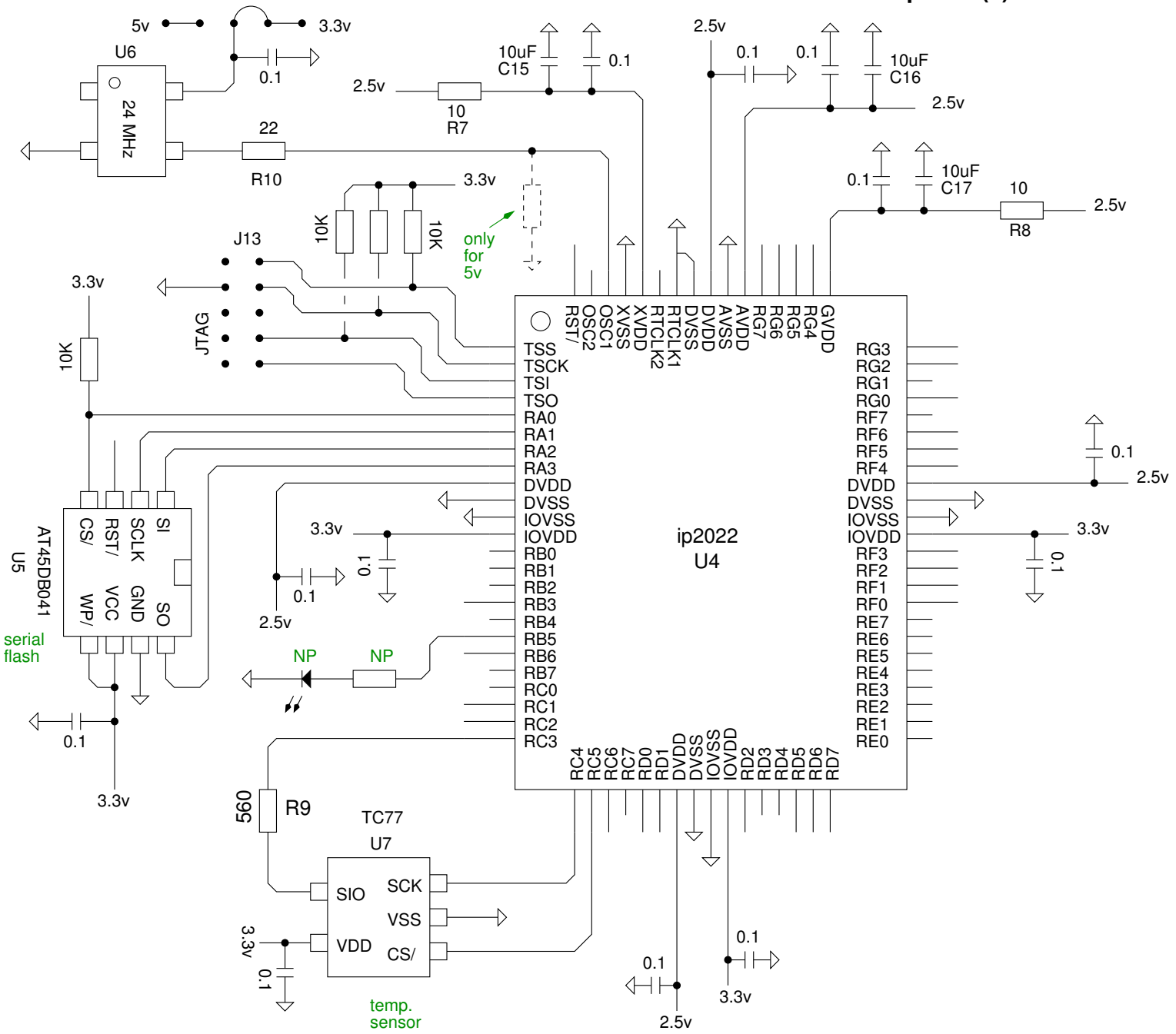
Control and Rim Box Controller – Voltage Regulators (2)



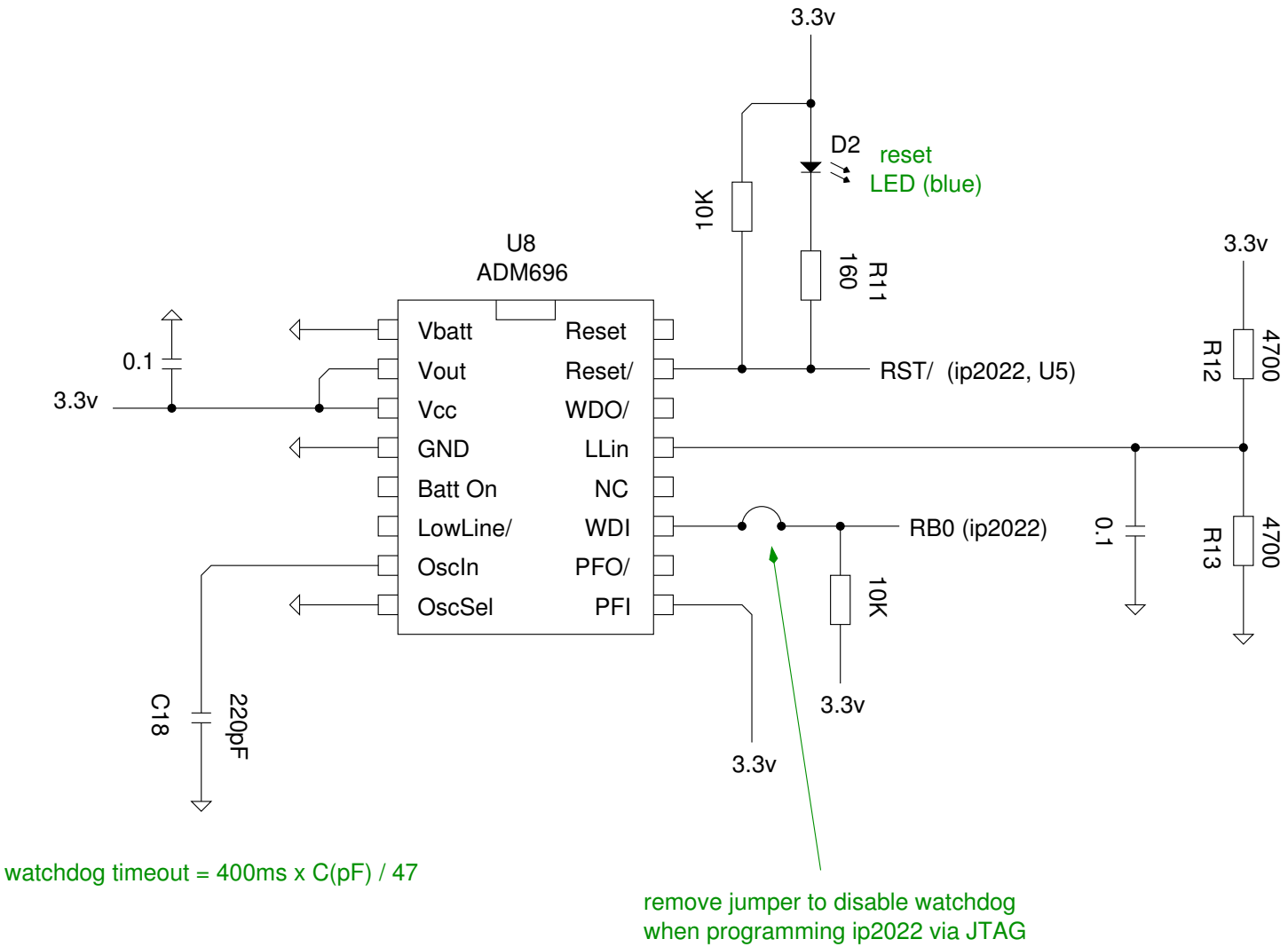
Control and Rim Box Controller – Voltage Regulators (3)



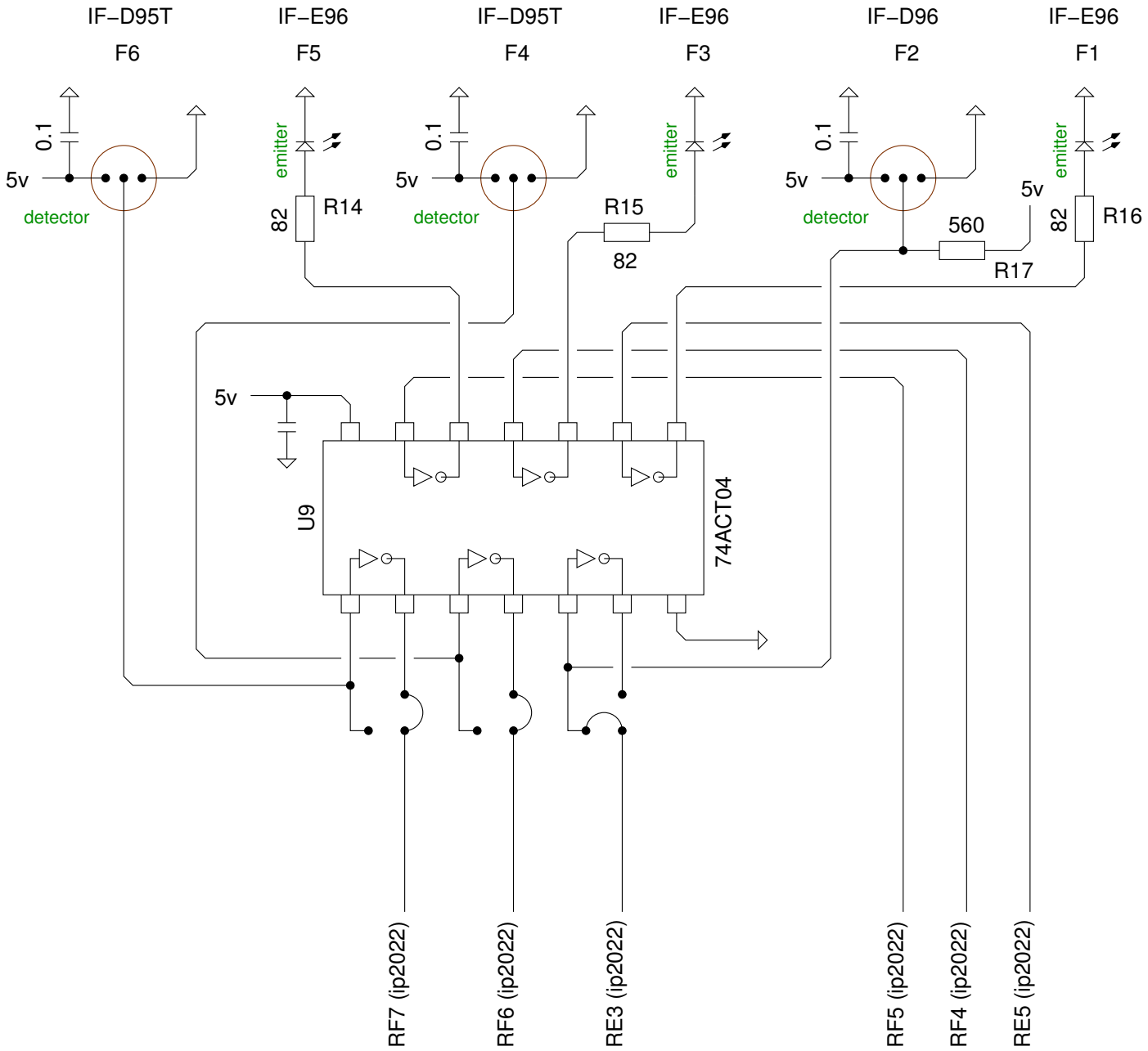
Control and Rim Box Controller – ip2022 (4)



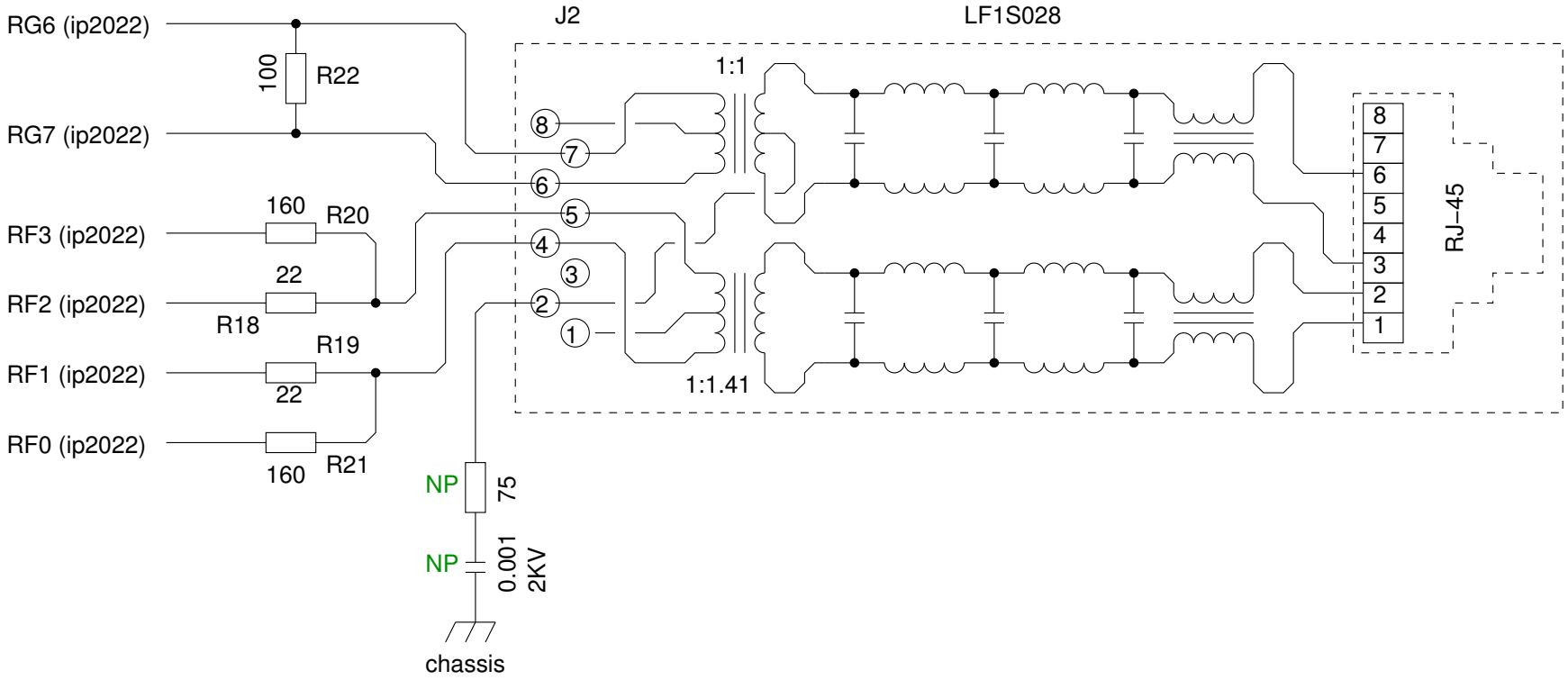
Control And Rim Box Controller – Watchdog (5)



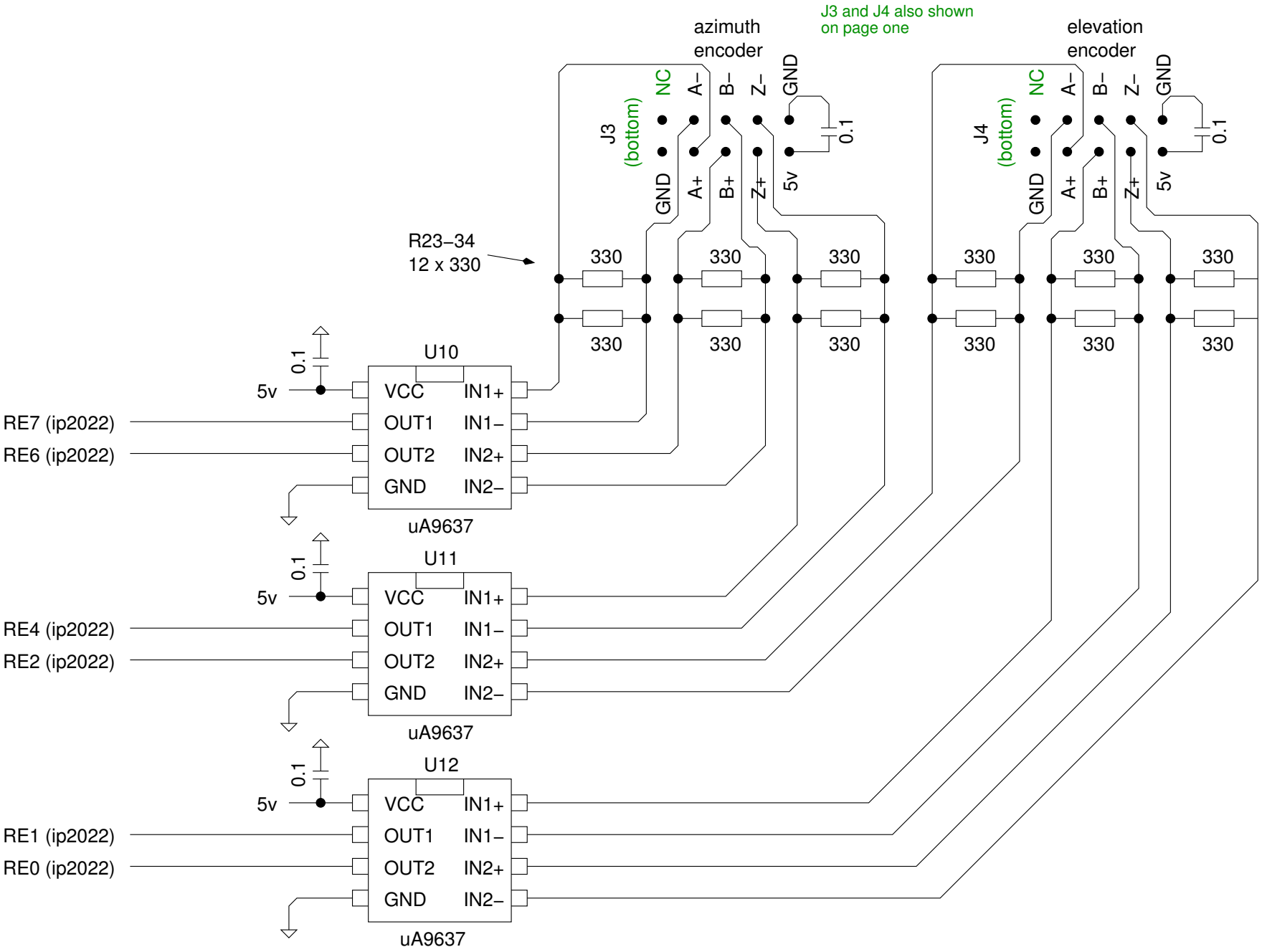
Control and Rim Box Controller – POF Emitters and Detectors (6)



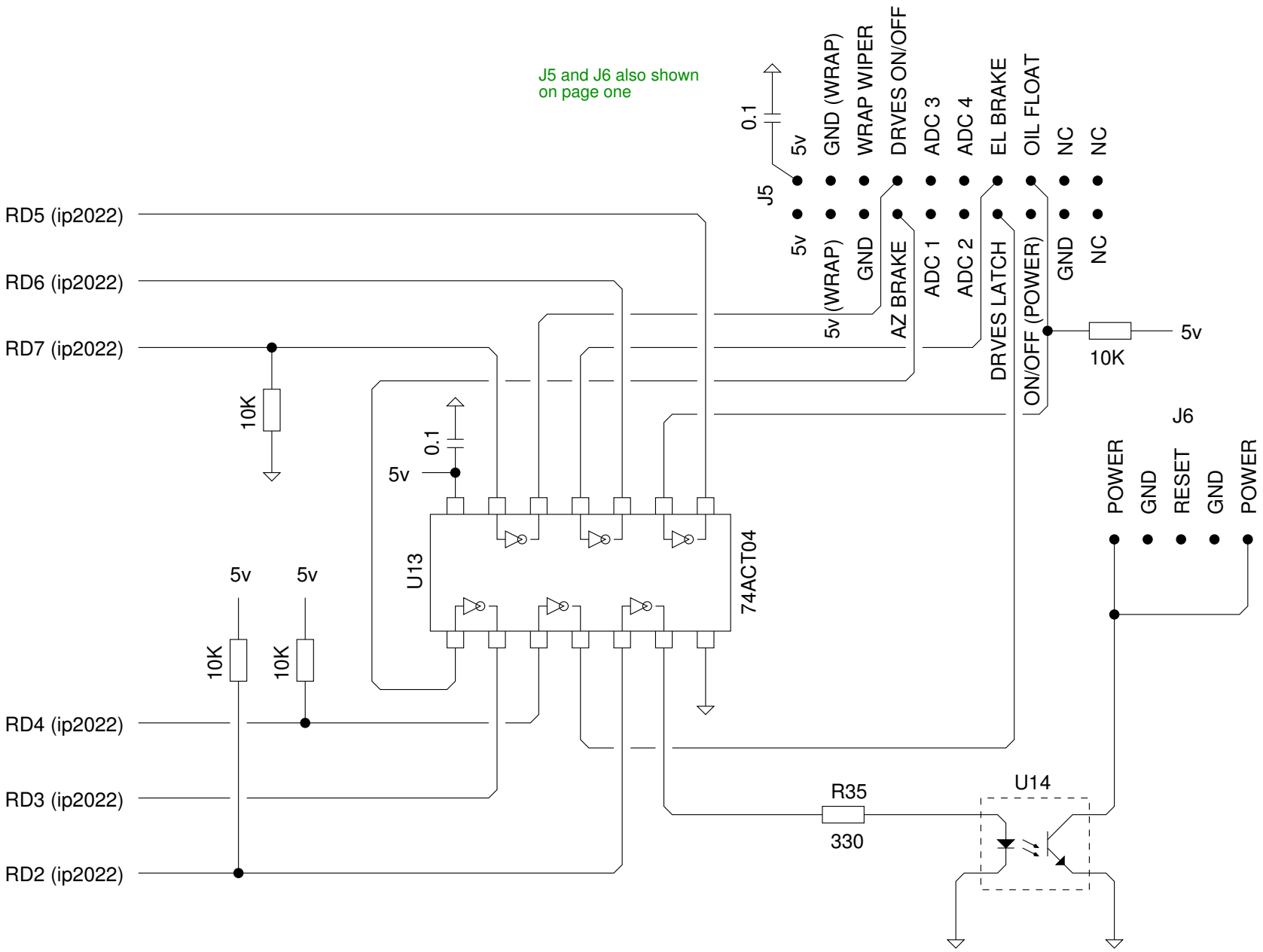
Control and Rim Box Controller – 10Base–T Ethernet (7)



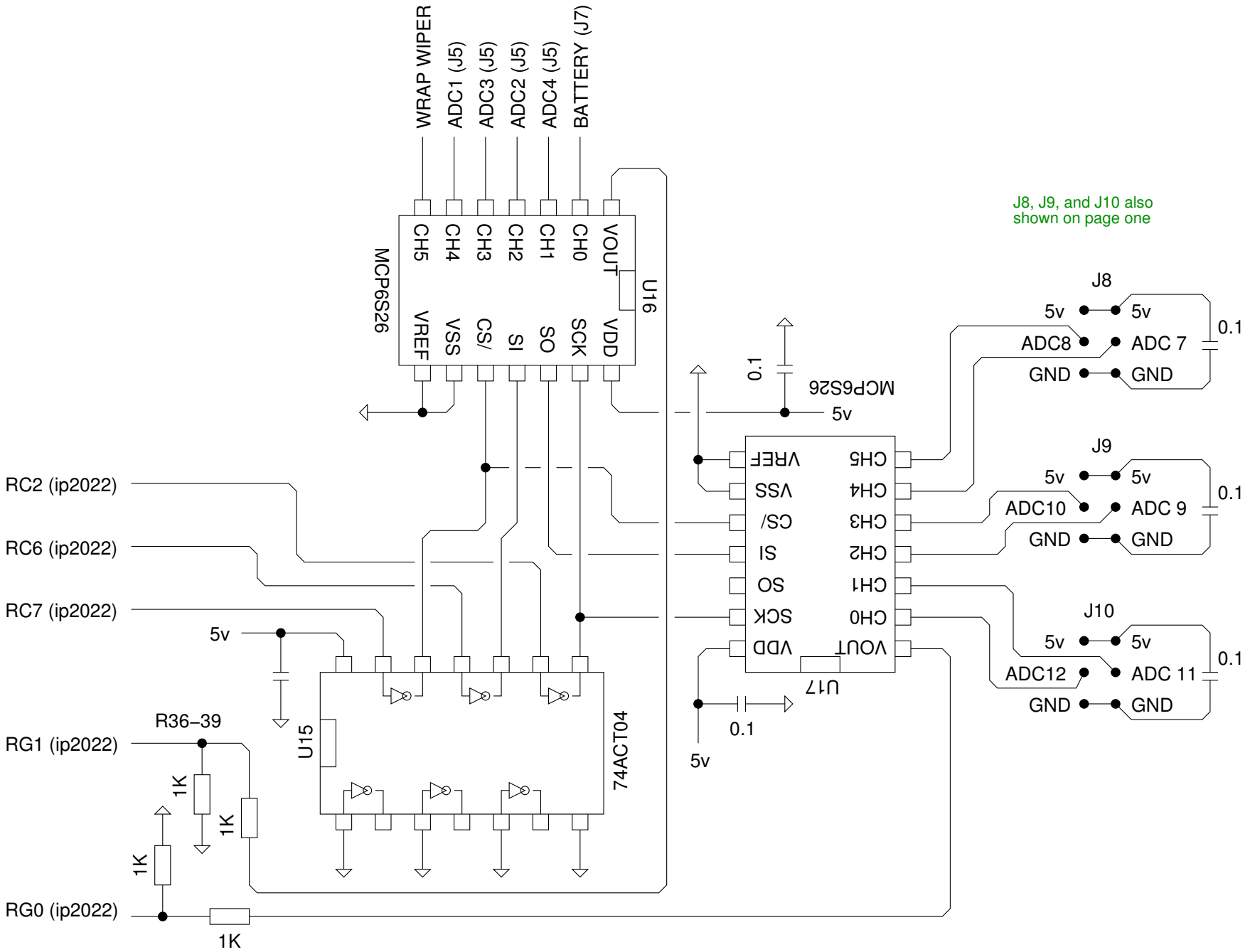
Control and Rim Box Controller – Encoders (8)

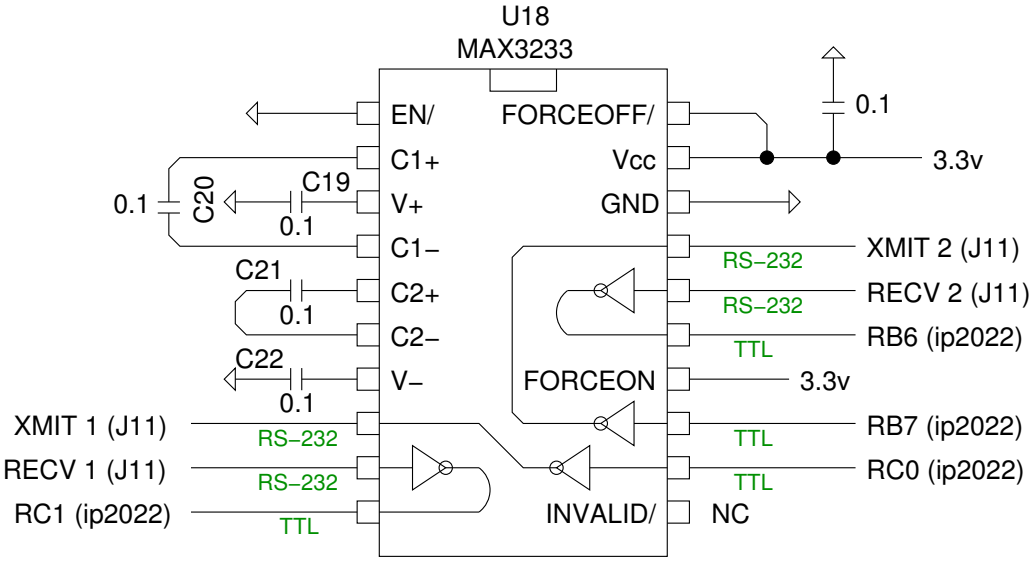


Control and Rim Box Controller – I/O (9)

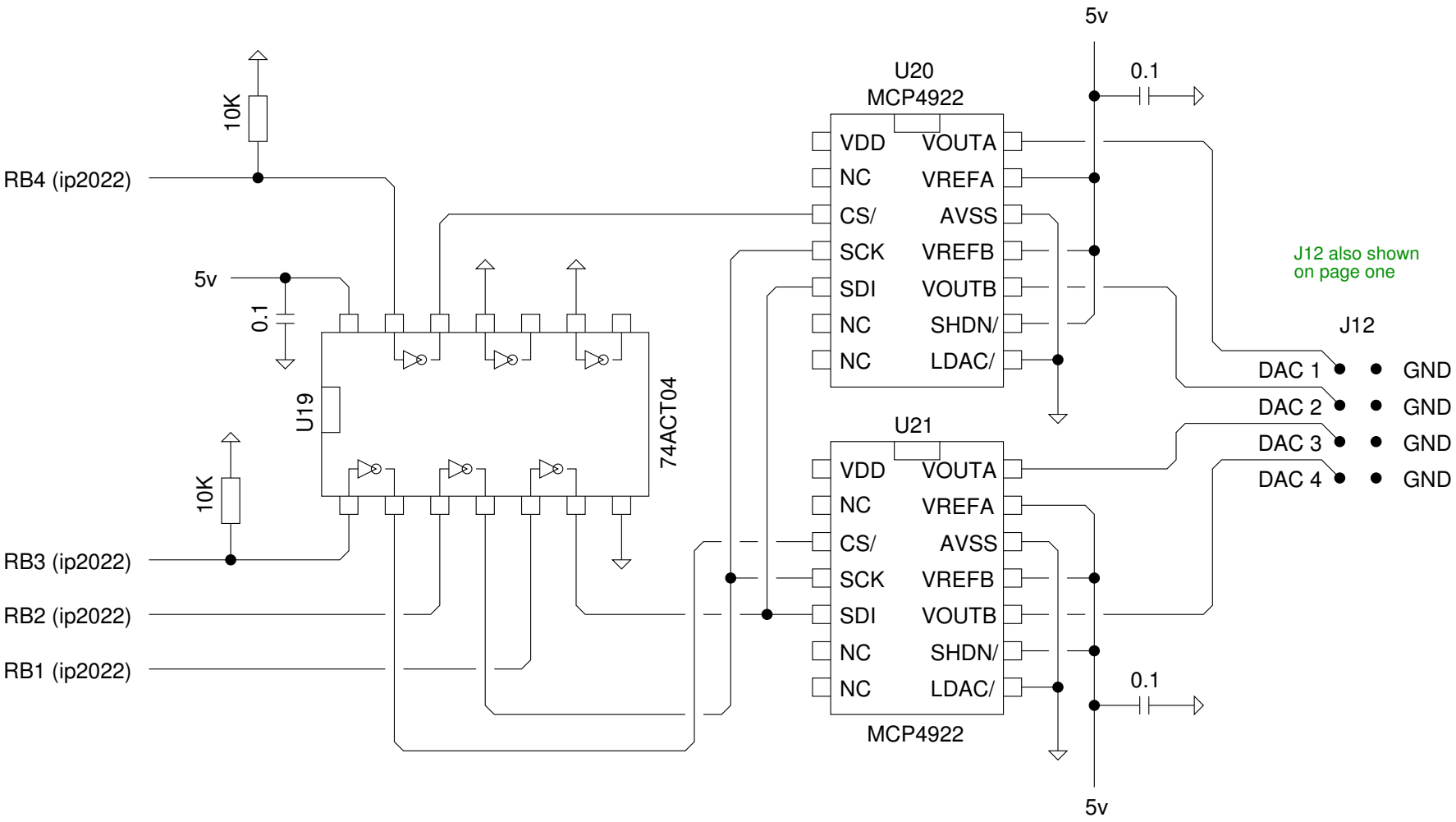


Control and Rim Box Controller – ADCs (10)




U18
MAX3233
EN/
C1+
V+
C1–
C2+
C2–
V–
FORCEOFF/
Vcc
GND
FORCEON
INVALID/
NC
0.1
3.3v
C19
C20
C21
C22
XMIT 1 (J11)
RECV 1 (J11)
RC1 (ip2022)
RS–232
TTL
XMIT 2 (J11)
RECV 2 (J11)
RB6 (ip2022)
RB7 (ip2022)
RC0 (ip2022)

Control and Rim Box Controller – DACs (12)



Control and Rim Box Controller – Component List (13)

C1–2	2.2uF	tantalum, SMD, low–ESR, 20v
C3, C8–10, C19–22	0.1uF	ceramic capacitor, SMD, 50v
C4	0.01uF	ceramic capacitor, SMD, 50v
C5–6	47uF	tantalum, SMD, low–ESR, 16v
C7	470uF	tantalum, SMD, low–ESR, 16v
C11–12	100uF	tantalum, SMD, 16v
C13–17	10uF	tantalum, SMD, 10v
C18	220pF	ceramic capacitor, SMD
D1	30v, 5A	50WQ03FN Schottky
D2	blue	LED, 0805 SMD
D3	red	LED, 0805 SMD
F1, F3, F5	IF–E96	1000um plastic fiber emitter
F2	IF–D96	1000um plastic fiber detector
F4, F6	IF–D95T	1000um plastic fiber detector
J1		2 prong, right–angle, 0.156"
J2	LF1S028	10Base–T magnetics Ethernet jack
J3–4		2x5 right–angle 100mil header
J5		2x10 right–angle 100mil header
J6		1x5 right–angle 100mil header
J7		1x3 right–angle 100mil header
J8–11		2x3 right–angle 100mil header
J12		2x4 right_angle 100mil header
J13		2x5 straight shrouded header
L1	DR127–330	33uH inductor, horizontal torroid
R1	3.9K ohm	1/8W resistor, 0805 SMD
R2	910 ohm	1/8W resistor, 0805 SMD
R3	120 ohm	1/8W resistor, 0805 SMD
R4	360 ohm	1/8W resistor, 0805 SMD
R5–6	510 ohm	1/8W resistor, 0805 SMD
R7–8	10 ohm	1/8W resistor, 0805 SMD
R9, R17	560 ohm	1/8W resistor, 0805 SMD
R10, R18–19	22 ohm	1/8W resistor, 0805 SMD
R11, R20–21	160 ohm	1/8W resistor, 0805 SMD
R12–13	4.7K ohm	1/8W resistor, 0805 SMD
R14–16	82 ohm	1/8W resistor, 0805 SMD
R22	100 ohm	1/8W resistor, 0805 SMD
R23–34, R35	330 ohm	1/8W resistor, 0805 SMD
R36–39	1K ohm	1/8W resistor, 0805 SMD

U1	LM2677S–ADJ	high efficiency switching regulator
U2	AP1184	LDO linear regulator
U3	ST2L01	dual 3.3v and adj. output positive regulator
U4	ip2022–PQ80	Ubicom microcontroller
U5	AT45DB041	Atmel serial flash, 8–SOIC
U6	CMX309FBC24.000MTR	24 MHz oscillator, 3.3v, SMD
U7	TC77	Microchip digital temp. sensor, SOT–23–5
U8	ADM696	Analog Devices watchdog, 16–SOIC
U9,U13,U15,U19	74ACT04	hex TTL to CMOS inverter, 14–SOIC
U10–12	uA9637	dual differential receiver
U14	(NTE3098)	LED to NPN transistor optoisolator
U16–17	MCP6S26	single–ended, rail–to–rail, PGA
U18	MAX3223	RS–232 transceiver
U20–21	MCP4922	12–bit dual DAC

Throughout the schematics are shown unnamed 0.1uF ceramic decoupling capacitors and 10K ohm 1/8W 0805 pull–up resistors.