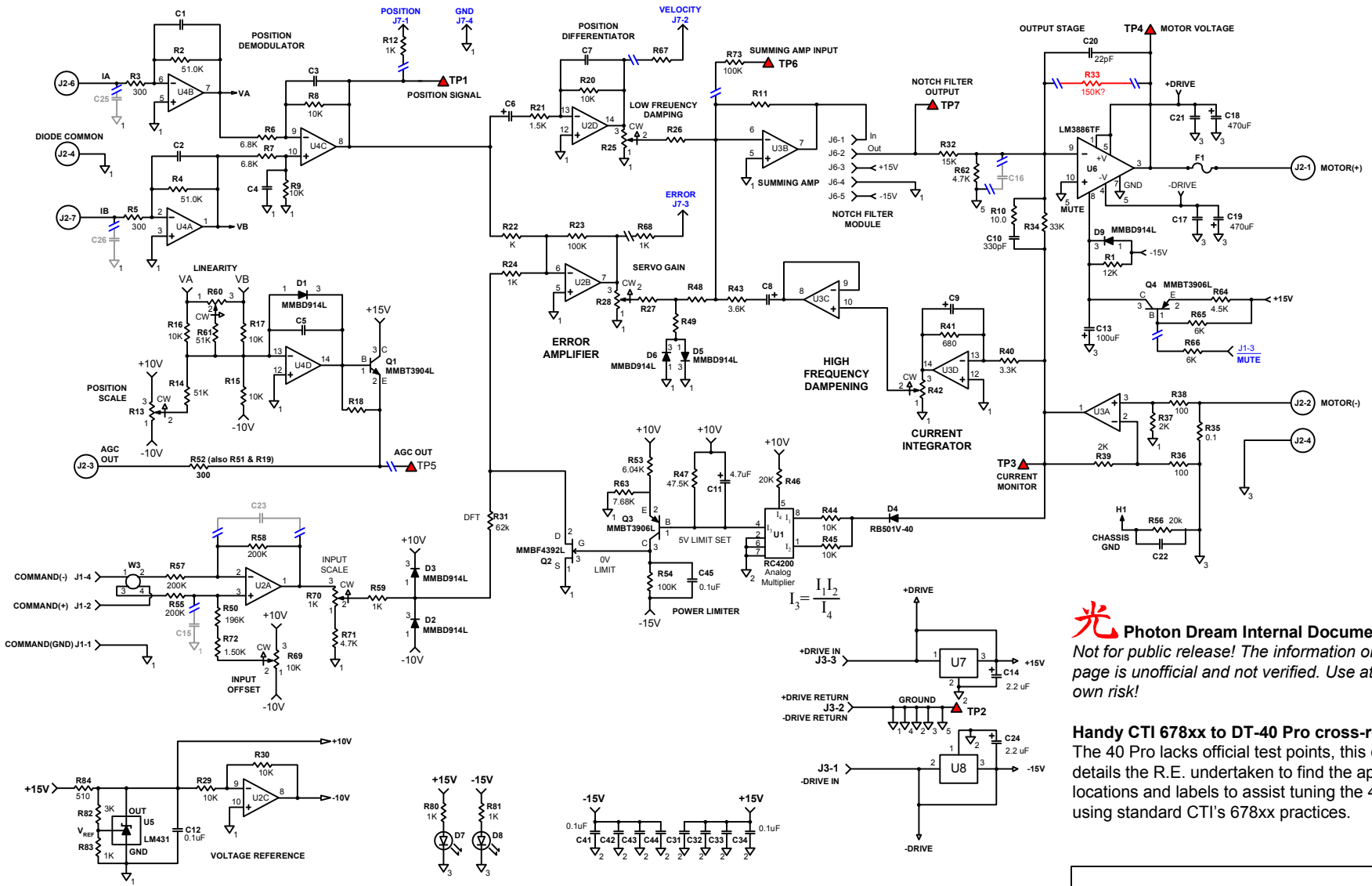

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Handy CTI 678xx to DT-40 Pro cross-reference. The 40 Pro lacks official test points, this document details the R.E. undertaken to find the appropriate locations and labels to assist tuning the 40 Pro using standard CTI's 678xx practices.

DT4XXX / 678XX Cross-Reference Circuit

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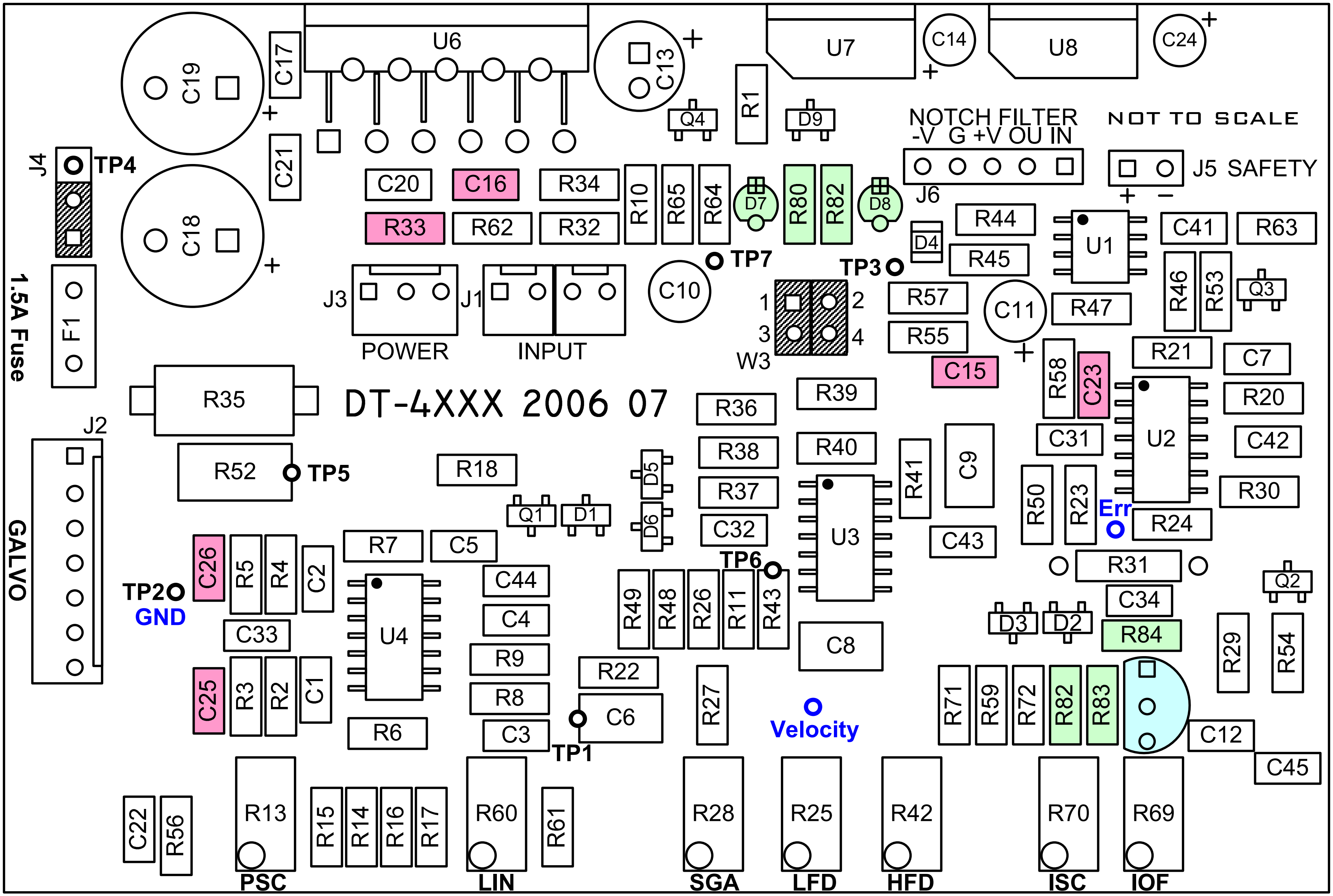

U1	RC4200 Analog Multiplier
U2	TL074C JFET Quad OpAmp
U3	TL074C JFET Quad OpAmp
U4	TL074C JFET Quad OpAmp
U5	TL431 Shunt Regulator
U6	LM3886TF Power Amplifier
U7	7815 +15V Voltage Regulator
U8	7915 -15V Voltage Regulator
Q1	MMBT3904L
Q2	MMBF4392L (SOT23)
Q3	MMBT3906L (SOT23)
Q4	MMBT3906L (SOT23)
C1	?
C2	?
C3	?
C4	?
C5	0.1 uF
C6	??
C7	?
C8	??
C9	???
C10	300 pF (331)
C11	Tantalum 25V 4.7 uF (4u7-25)
C12	0.1 uF
C13	Electrolytic 25V 47 uF [NEED 100 uF]
C14	Pol. 35V 2.2 uF
C15	*Missing!*
C16	*Missing!*
C17	0.1 uF
C18	Electrolytic 35V 470 uF
C19	Electrolytic 35V 470 uF
C20	22 pF (22)
C21	0.1 uF
C22	0.1 uF
C23	*Missing!*
C24	Ceramic 35V 2.2 uF
C25	*Missing!*
C26	*Missing!*
C31	0.1 uF
C32	0.1 uF
C33	0.1 uF
C34	0.1 uF
C41	0.1 uF
C42	0.1 uF
C43	0.1 uF
C44	0.1 uF
C45	0.1 uF
F1	1.5A Fuse

R1	*10k Ohm (103) [NEED 12k]*
R2	51.0k Ohm (5102)
R3	300 Ohm (301)
R4	51.0k Ohm (5102)
R5	300 Ohm (301) [Verify this on CT 3k?]
R6	6.8k Ohm (682)
R7	6.8k Ohm (682)
R8	10k Ohm (103)
R9	10k Ohm (103)
R10	10 Ohm (100)
R11	100k Ohm (104)
R12	*Need to create, 1k*
R13	20k Ohm Pot (203)
R14	51.0k Ohm (5102)
R15	10k Ohm (103)
R16	10k Ohm (103)
R17	10k Ohm (103)
R18	150 Ohm (151)
R19	*See R52*
R20	10k Ohm (103)
R21	1.5k Ohm (152)
R22	110k Ohm (114)
R23	100k Ohm (104)
R24	1k Ohm (102)
R25	10k Ohm Pot (103)
R26	4.7k Ohm (472)
R27	2.2k Ohm (222)
R28	10k Ohm Pot (103)
R29	10k Ohm Pot (103)
R30	10k Ohm Pot (103)
R31	62k Ohm (623K)
R32	15k Ohm (153)
R33	*150k Ohm Missing! (1503)*
R34	33k Ohm (333)
R35	0.1 Ohm (R10)
R36	100 Ohm (101)
R37	2k Ohm (202)
R38	100 Ohm (101)
R39	2k Ohm (202)
R40	3.3k Ohm (332)
R41	120k Ohm (124)
R42	100k Ohm Pot (104) HFD
R43	3.6K Ohm (362)
R44	10k Ohm (103)
R45	10k Ohm (103)
R46	20k Ohm (203)
R47	47.5k Ohm (473)
R48	2.2k Ohm (222)
R49	680 Ohm (681)
R50	*200k Ohm (204) [NEED 196K]*
R51	*(see R52)*
R52	300 Ohm (301)

R53	*6.2k Ohm (622) [NEED 6.04k]*
R54	100k Ohm (104)
R55	200k Ohm (204)
R56	20k Ohm (203)
R57	200k Ohm (204)
R58	200k Ohm (204)
R59	1k Ohm (102)
R60	10k Ohm Pot (103)
R61	51k Ohm (5102)
R62	4.7k Ohm (472)
R63	*7.5k (752) [NEED 7.68k Ohm]*
R64	*4.7k Ohm (472) [NEED 4.5k]*
R65	*6.2k Ohm (622) [NEED 6k]*
R66	*Need to create, 6k for MUTE*
R67	*Need to create, 1k for Velocity*
R68	*Need to create, 1k for Error*
R69	10k Ohm Pot (103)
R70	*10k Ohm Pot (103) [NEED 1k]*
R71	4.7k Ohm (472)
R72	1.50k Ohm (152)
R73	*Need to create, 100k Ohm for TP6*
R80	1k Ohm (102) for LEDs
R81	1k Ohm (102) for LEDs
R82	3k Ohm (302) for Shunt Reg
R83	1k Ohm (102) for Shunt Reg
R84	510 Ohm (511) for Shunt Reg

D1	MMBD914L	H.S. Switching Diode
D2	MMBD914L	H.S. Switching Diode
D3	MMBD914L	H.S. Switching Diode
D4	RB501V-40	Shottky Barrier Diode
D5	MMBD914L	H.S. Switching Diode
D6	MMBD914L	H.S. Switching Diode
D7	LED	
D8	LED	
D9	MMBD914L	H.S. Switching Diode

J1	Command (Differential Signal) Input
J2	Galvanometer Output
J3	Power Input
J4	Motor/Fuse Bypass
J5	Commanded Input Signal (Safety)
J6	Notch Filter
J7	Virtual Test Header (J4 on Camtech 678)

Note: On the DT-4XXX board some of the components have been substituted with approximate values. I have marked them in RED along with components which are absent for the purpose of cost reduction. Some of the components used for tuning are also missing, I marked those in BLUE.

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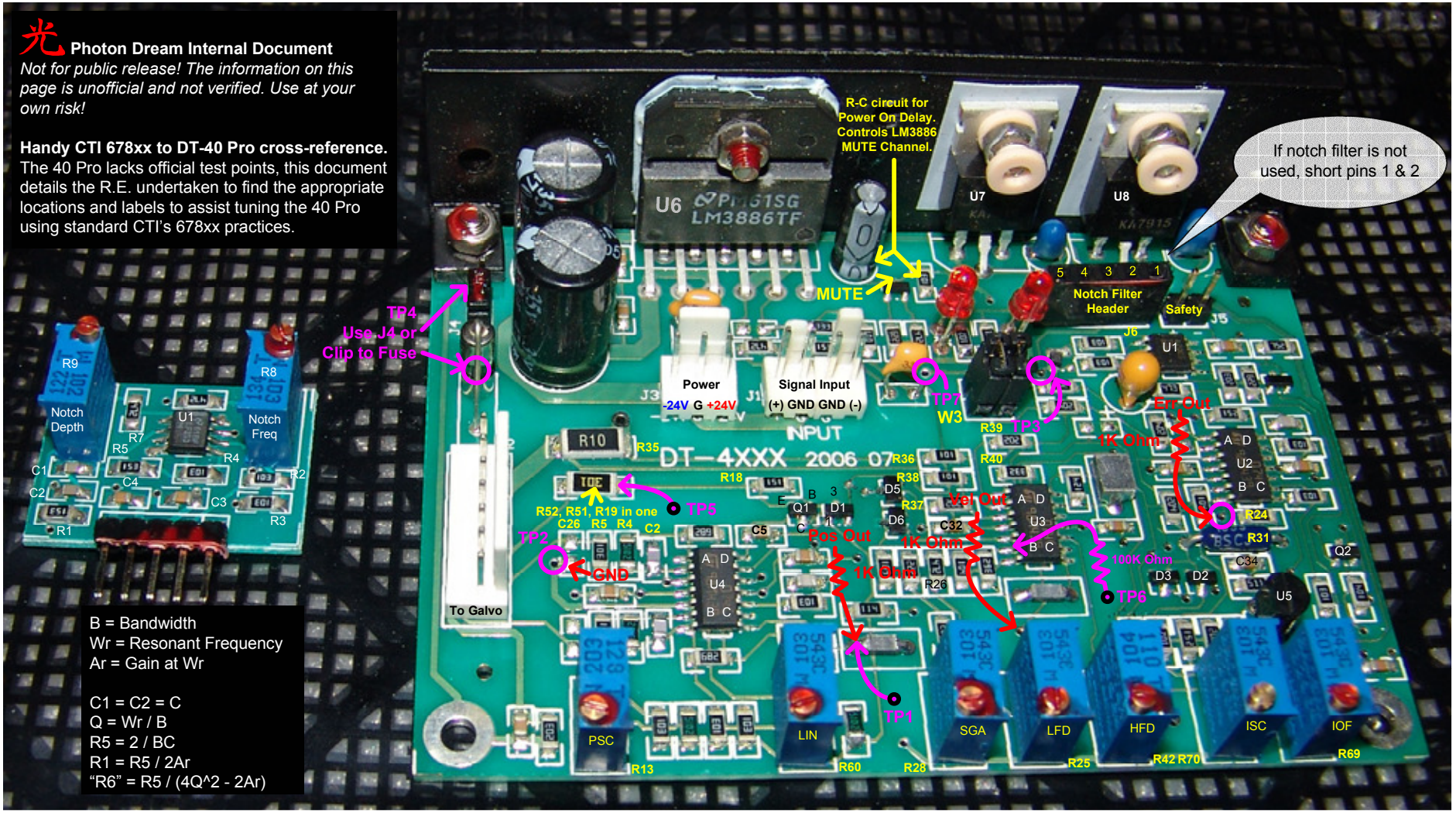

678xx EQUIV TEST POINTS

TP1 - Position Signal, VP
TP2 - Ground
TP3 - Current Monitor
TP4 - Motor Voltage, +M
TP5 - AGC Out
TP6 - Summing Amp Input
TP7 - Notch Filter Output

JUMPERS

J1 - Differential Signal Input (+, GND, GND, -)
J2 - Galvanometer Output
J3 - Power Input (-24V, GND, +24V)
J4 - Fuse Bypass
J5 - Safety (Commanded Input Signal)
J6 - 5 Pin Notch Filter (In, Out, +15, GND, -15)
W3 - Input Invert/NonInvert jumper pair

TUNABLE INPUTS

PSC - Position Detect Scale Factor
LIN - Position Detect Linearity
SGA - Servo Gain
LFD - Low Frequency Dampening
HFD - High Frequency Dampening
ISC - Input Scale Factor
IOF - Input Position Offset

Rev B