

## CX7 Troubleshooting Index

Modification	S/I Newsletter	Guide	Board	Description
<b>A/TO</b>				
A/TO MODE Intermod	V1,12 P4.4		A11	Shut off one 35 MHz osc in receive, done sn 244
A/TO Spur	V1,12 P1			Reduce A/TO spur, use mod above
<b>AGC</b>				
AGC Adjustment	V1,4 P3		A9	Noise is energizing AGC, not signal
AGC balanced modulator			A9	Improve balance with C44 2pf
AGC board mod W6QJV	V3,6 P5		A9	Remove mod by W6QJV on my CX7
AGC front end RF	V3,10 P2		A9	Adjustment control
AGC noise	V1,1		A8	Improve AGC action
AGC noise	V1,9 NO 8		A9	Reduce AGC pop, add 6800 Ohm resistor
AGC noise	V3,11 P2		A9	Foil cut explanation
AGC oscillation	V3,2 P3		A2	Motorboating on low signal levels
AGC problem	V3,10 P2		A8	Check CR12 to see if wired in backwards
AGC product detector	V3,6 P1		A9	Reduces distortion, adjust injection into Q6 by adding pot
AGC Q6	V3,1 P3		A9	Replace Q6 with 40823
AGC S-Meter linearity		S-MTR	A9	Add pot for control, guide 'S-Meter read.'
AGC schematic error	V3,6 P5		A9	
AGC schematic error	V3,6 P5		A9	Correct schematic
AGC slow function	V1,1 P3/V1,7 P3	13	A9	Eliminate AGC pumping
<b>ALC</b>				
ALC low-impedance, w/linear	V1,8 P3/V3,10 P1			CX7 has low impedance input
ALC no reading	V3,7 P4		A5	Replace CR7
ALC, K6BE amplified	V3,3		A5	Prevent high SWR damage
<b>AUDIO</b>				
AUDIO anti-trip				Proper anti-trip operation
AUDIO C41,42				
AUDIO filter	V1,7 P3/V1,9 P2			CW audio filter

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AUDIO filter	V3,5 P3			Proper placement
AUDIO frequency response R/T	V1,9 N0. 22		A6	Improved frequency response
AUDIO lows	V3,4 P5.5		A6	Better audio quality
AUDIO output stage	V3,1 P4/V3,7 P1		A3	New audio out
AUDIO output stage	V3,4 P5. I			Separate 15 VDC regulator
AUDIO output stage	V3,5 P2.4		A3	Add heat sink for LM380
AUDIO output stage	V3,7 P1		A3	Removal of old audio output parts
AUDIO output stage				See K6BE notes at end of S1 news in blue book
AUDIO Q1			A6	Replace Q1 with 2N5485
AUDIO Q4 protect	V3,7 P5		A6	Add diode IN270
AUDIO Q5			A6	Replace Q5 with 2N3391
AUDIO quality	V3,7 P4		A9	Reduce IF input level to product detector
AUDIO sidetone gate	V3,7 P5		A6	Gate protection
<b>BAND</b>				
BAND change 1.8-2.8 MHz.	V3 ,7 P3		A2	Minimize spurious radiation
BAND change to 3.5-4.5 MHz	V3,7 P3		A2	Minimize spurious radiation
BANDSWITCH detent weak	V3,11 P4		A2	Too many washers on bandswitch in final cage
<b>BFO</b>				
BFO A/TO	V1,9 P4.20		A4	
<b>CALIBRATE</b>				
CALIBRATOR zero set	V3,8 P3		A9	Pad crystal to get to 100 kHz
<b>CARRIER</b>				
CARRIER frequency adjustment			A4	Reduce drift, separate USB and LSB adjust
<b>COUNTER</b>				
COUNTER display led				Add LED display
COUNTER grounding	V3,9 P3		A7	Ground all corners of the board
COUNTER isolation	V2,6		A7	
COUNTER LED replacements	V3,6 P4		A7	HP replacement LEDS

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COUNTER terminals bypass			A7	Reduce RF feedback
<b>CRYSTALS</b>				
CRYSTALS	V3,5 P4			International Crystal
<b>DRIVER</b>				
DRIVER C11	V1,9 P3, NO 2		A5	Prevent oscillations
DRIVER C30 output blocking cap	V1,11 P2/V1,12 P1		A5	Protect driver from PA tube short
DRIVER Q3 inverse feedback			A5	Reduce spurious oscillations
DRIVER Q3, Q4 replacement	V1,7 P1/V2,7 P3		A5	Heavy duty driver transistors 2N5641
DRIVER Q3, Q4 replacement	V2,2 P3		A5	Heavy duty driver transistors proper mounting reduces stress
DRIVER R 14	V1,9 P4		A5	Change to 1 Watt, prevent overheat
DRIVER Spurious oscillations	V2,10 P2		A5	Connect both emitter leads on board to prevent oscillation
DRIVER spurious oscillations	V3,7/V3,4 P5		A5	Bypassing, reduce spurious oscillations
DRIVER T/R control Q3	V1,9 P3		A5	Reduce heat dissipation
<b>FILAMENT</b>				
FILAMENT switch				Switch to turn off filament when listening
<b>FINAL</b>				
FINAL amplifier bias loss	V2,11 P2		A5	Intermittent loss of bias, high plate current, replace Q5
FINAL amplifier cooling	V3,11 P1			Enlarge beo hole, new thermal compound
FINAL amplifier toroids	V3,11 P4			Amidon replacements
FINAL cage	V2,4 P2			Add 4"x4" metal barrier
<b>FRONT END</b>				
FRONT END 10 MHz			A2	Add 10 MHz position at C
<b>HIGH PASS</b>				
HIGH PASS filter pad				Improve 160M gain

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<b>IF</b>				
IF rework	V3,4 P5.4			Put mods into CX7A
<b>KEYER</b>				
KEYER	V1,11 P2		A7	Slow start on dots
KEYER replacement	V3,5 P5		A7	
<b>METER</b>				
METER light	V1,9 P3.16			
<b>MICROPHONE</b>				
MICROPHONE input filter	V2,8			Reduce RF feedback
MICROPHONE jack filter	V2,8 P1			Prevent RF in mike input
<b>OSCILLATOR</b>				
OSCILLATOR 43.1 MHz	V1,9 P5		A4	Instability, defective CR8 and CR11, replace R47
OSCILLATOR 43.1 MHz	V3,7 P2			Turn off oscillator to eliminate spurious signals
OSCILLATOR 43.1 MHz			A4	Temperature compensation
<b>POWER SUPPLY</b>				
POWER SUPPLY diodes			A3	Use 3 amp units for CR12-CR15
POWER SUPPLY IC regulators	SIGNAL ONE NOTES		A3	Step by step from SIGNAL ONE
POWER SUPPLY IC regulators	V1,4/V2,2/V3,8		A3	
POWER SUPPLY IC regulators	V3,1 P3/V3,2 P2		A3	
POWER SUPPLY IC regulators	V3,6 P2		A3	34 VDC regulation
POWER SUPPLY IC regulators	V3,8 P1-3		A3	Step by step replacement instructions
POWER SUPPLY limiting resistors			A3	Prevent power supply burnout
POWER SUPPLY protection	V2,4 P2/V3,8 NO 2		A3	
POWER SUPPLY screen shunt	V3,9 P2 PARA 2			Protect ALC circuits
POWER SUPPLY T/R frequency shift	V1,4/V2,4 P2		A3	
POWER SUPPLY T/R frequency shift	V3,8 N0. 24		A3	Reduce frequency shift between T/R

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POWER SUPPLY transient diode	V1,8 P2		A3	Replace IN4734A with IN4735A
<b>PRODUCT DETECTOR</b>				
PRODUCT DETECTOR	V3 ,6 P1		A9	R- 8 substitution for injection
<b>PTO</b>				
PTO backlash	V1,7 P3/V1,12P4.6			
PTO backlash	V3,10 P2			Glue ceramic part to lead screw
PTO bypass	V3,7 P2,3			
PTO bypass terminals	V1,10 P4/V3,7			minimize spurious radiation
PTO drift	V3,11 P2		A1	C17, C18 check for reversal, put 150 ohm resistor outside can
PTO frequency shift	V2,6			Stabilize load impedance
PTO output level, etc	V3,9/V3,11 P3			Minimize spurious radiation
PTO temperature compensation	V1,9 NO. 15		A1	Reduce drift
<b>PTT</b>				
PTT line filter	V2,8			Reduce RF feedback
<b>R/ T</b>				
R/T, T/R voltages	SIGNAL ONE NOTES		A6	See pg 3/replace Q16,Q17 jumper R65, R66
R/T, T/R voltages	V1,9 P4 NO.24			Changes 15 to 13.5 Volts
R/T, T/R voltages	V3,8 P2 NO.24		A3	Three diode network addition
<b>RECEIVER</b>				
RECEIVER incremental tuning	V2,3/V2,7			
RECEIVER incremental tuning	V3,7 P5 NO.3			
<b>REED RELAY</b>				
REED RELAY contact protection	V1,7 P3/V1,8 P3			Prevent relay contact welding
<b>RF</b>				
RF driver mods	V1,9 NO.24 P5			Add mods to comply with CX7B schematic

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RF driver oscillation	V3,4 P5 NO.7		A5	Add .1 ufd cap
RF driver oscillations	V3,7 P5		A5	Add capacitor .1 ufd
<b>RLY</b> line filter	V1,7 V1,8 P3			Reduce RF feedback
<b>SCREEN</b>				
SCREEN fuse	V1,7	3		Add .05 amp fuse
SCREEN loading	V3,9		A3	
SCREEN supply loading	V3,9/V3,11 P2		A3	
SCREEN time delay		5		Use existing amperite relay
SCREEN zener protection		2		1-1N5276, 1-1N5279 adds to 300V plus
<b>SIDETONE</b>				
SIDETONE frequency	V1,5 P3		A6	Pot add to change frequency
SIDETONE hum	V1,9 P3 NO. 7			Reduces hum in sidetone
SIDETONE level adjust	V3,7 P5			Add proper pot
SIDETONE level control	V3,7 P5 NO.2			Allows level change
<b>SPOT</b>				
SPOT LEVEL HUM/HISS	V3,7 P5		A8	IF board grounding. Do not use transformer post for grounding.
<b>TRANSISTOR</b>				
TRANSISTOR replacement	V3,5 P2.3			Replace 2N5183 with 2N2222 or 2N2219
TRANSISTOR replacement	V3,5 P6			
<b>TRANSMIT</b>				
TRANSMIT lockup	V3,11 P4		A7	Replace Q8
<b>TUBE</b>				
TUBE 8072	V1,6 P2			Stress on tube from rigid mounting
<b>VOX</b>				

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VOX attack	V1,9 P3 N09		S86	C27 from 20 mfd to 10mfd (done on CX7A)