REV C

SH 1

DWG. NO. 150-042377

APPLICATION

PRODUCT LINE
C-5000

REVISIONS

REV	DESCRIPTION	DATE	APPROVED	APPROVED
A	Initial Release per DCA W6254	02/08/08	J. Jensen	L. Evans
B	Revised per DCA W7558	10/01/08	J. Jensen	L. Andujo
C	Revised per DCA W8091	04/13/09	J. Jensen	L. Andujo

APPROVALS		DATE
DRAWN	Leslie Evans	6/27/07
CHECKED	Jay Jensen	2/8/08
PRODUCT MANAGER		
ENGINEER	B. Louttit	2/8/08
ISSUED	Leslie Evans	2/8/08

Typed signatures indicate approval. Handwritten signature approval of this document is on file at Wulfsberg Electronics, Prescott, Arizona.

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TITLE:

SERVICE INSTRUCTION, WSI C-5000-17 CHANGE CLOCK TO 31.25KHZ AND BLANK DISPLAY DURING INITIALIZATION

SIZE	CAGE CODE	DWG NO.	REV.
A	1B7G3	150-042377	C

SCALE: NONE

DO NOT SCALE DRAWING

Wulfsberg Electronics
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SERVICE INSTRUCTION

EQUIPMENT: C-5000 **DATE:** 04/13/09

SERVICE INSTRUCTION NUMBER: WSI C-5000-17 **Revision C**

EFFECTIVITY

Effects C-5000 PN 31300-XX0X-XXXX built using:

PN 300-017305 C-5000 CPU Board Assy Rev N or higher and

PN 300-016290-0301 Serial Card Assy Rev AB or Higher

Note: Revision B of this instruction only applied to units marked with S/N 651 and 1117.

REASON

Change clock to 31.25 KHz to eliminate interference on 12MHz channeling, and add circuit to blank the display during unit initialization.

DESCRIPTION

Remove the existing 12MHz clock and replace it with a 31.25 kHz oscillator by installing the required selectable components. Parts of the unit still require a 500 kHz signal (which was derived from the 12MHz clock), so a small daughter board is installed to the CPU board to generate the 500 kHz signal. Display blanking during initialization is accomplished by installing additional components on the processor board.

COMPLIANCE

Upon customer request.

WARRANTY INFORMATION

This modification is an enhancement and is not covered under warranty.

APPROVAL

This modification does not affect the original approval.

MANPOWER

Not applicable.

REFERENCES

C-5000 Maintenance Manual, P/N 150-040127, or

C-5000 (P25) Maintenance Manual, P/N 150-041629 as applicable

MATERIAL INFORMATION

The parts required to modify this unit in accordance with this procedure are available from Cobham Avionics at (928) 708-1518.

PARTS REQUIRED

Item	Qty	Part Number	Description	Reference Designator
1	1	310-050500-01	C-5000 Clock Daughter Board (fully assembled)	A1
2	1	106-015986-01	Transistor, BSS123 MOSFET, SMD	Q202
3	1	139-042402-01	Crystal, 31.25 kHz	Y201
4	2	130-05000-0015	Resistor, Chip, 0805, 0 Ohm	R303, R238
5	1	234-014791-1003	Resistor, Chip, 1/4W, 1%, 1206, 100K Ohm	R409
6	1	195-042031-156	Capacitor, Tantalum, TE, 16V,15 uF, E Size	C418
7	2	210-040018-100	Cap, 10pF 0603	C218, C219
8	AR	123-241899-06	Wire, 30AWG, Teflon, Blue	N/A
9	AR	016-01082	Clear 3145-RTV	N/A
10	AR	600-016240	Kapton Tape	N/A
11	AR	16012-3	Loctite Accelerator 712, Bonder 444	N/A

MODIFICATION PROCEDURE

CAUTION

ANY DISASSEMBLY/ASSEMBLY OF THIS UNIT MUST BE DONE AT A STATIC SAFE WORKSTATION. REMOVED MODULES SHOULD BE PLACED IN ANTISTATIC BAGS WHEN NOT INSTALLED IN THE UNIT.

Note: Unless otherwise noted, the sequence of rework can be adjusted to facilitate the process.

Open the C-5000 and gain access to the CPU Board, PN 300-017305 per the Maintenance Manual. Perform the following modification:

Refer to figure 1 for component references.

1. Remove the following components: R403, C200, C201, X200
2. Install the following components: Item 4 R238, R303
3. Referring to figure 3, Install W1, W2, W3, item 1, to A1 daughter board, item 1.
4. Referring to figure 1, oriented as shown, mount A1 daughter board, item 1, atop U404 using item 11.
5. Complete wiring W1, W2, W3 per table 2. Secure W1, W2, W3 to the top of the CPU board using item 11.
6. Referring to figures 1 and 4 and using item 11, adhere Q202, C418 and R409 approximately where shown.
7. Solder one end of R409 to the cathode (-) of C418.
8. Complete the wiring of Q202, C418, R409 per table 3. Secure all wires using item 11.

9. Referring to figure 2, use item 10 (Kapton tape) cover the area between the pads for mounting Y201.

10. Solder Y201 in place forming the leads to the pads to ensure that the leads do not touch the case of Y201.

11. Install C218 by soldering the ends as shown, in figure 2, between Y201 and the pad of C201 closest to R205.

12. Install C219 as shown from the other pad of Y201 and the end of R205 closest to the C201 position.

13. Solder a jumper wire, item 8 from the pad of Y201 closest to R205 and pad B of the Y301 position. Route the wire approximately as shown in figure 1 to avoid vias and component solder joints. Secure Y201 to the board using item 9 (RTV 3145).

14. Apply MIL-I-46058C compliant conformal coating to newly installed part(s).

15. Identify the unit with the Identification Procedure as described, and reassemble the unit in reverse order of disassembly.

IDENTIFICATION PROCEDURE

Mark the CPU board with "WSI-**17**", and mark the unit serial number label HARDWARE MOD marking from table 1.

FOR C-5000 PART NUMBERS WITH 31.25KHz CPU CLOCK **400-031300-**					
P/N SUFFIX	**YY01-1XXX**	**YY01-2XXX**	**YY01-3XXX**	**YY02-1XXX**	**YY02-4XXX**
MOD	**34**	**30**	**7**	**5**	**6**

TABLE 1 HARDWARE MOD MARKINGS

TESTING PROCEDURE

Perform a complete functional test of the unit in accordance with the appropriate Maintenance Manual Return to Service procedure.

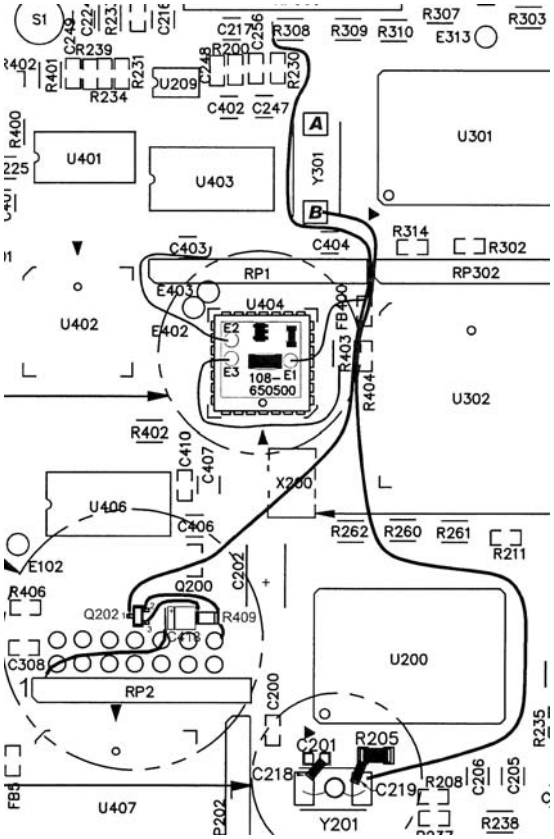

FIGURE 1 Reference Locations

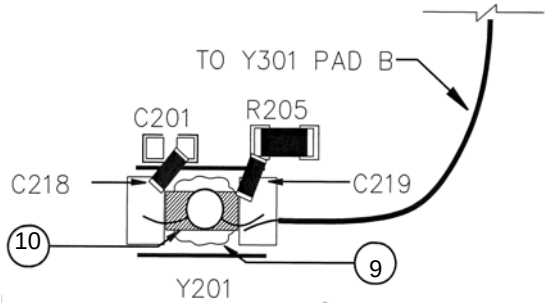

FIGURE 2 31.25KHz Crystal

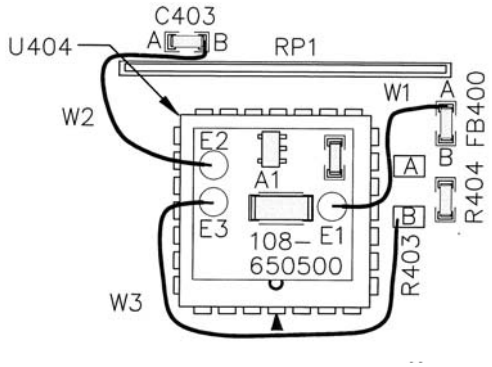

FIGURE 3 500KHz Clock

A1 DAUGHTER BOARD TO CPU WIRING				
REFERENCE	ITEM	FROM	TO	LENGTH
W1	8	A1E1	FB400A	AR
W2	8	A1E2	C403B	AR
W3	8	A1E3	R403B	AR

TABLE 2

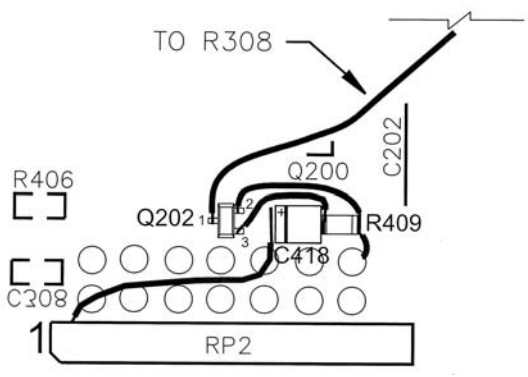

FIGURE 4 Screen Blanking

Q202, C418, R409 WIRING				
REF	ITEM	FROM	TO	LENGTH
C418	8	C418+	RP2 -1	AR
C418	8	C418 - / R409	Q202 - 3	AR
R409	8	R409 Opp. C418	Feed Thru Close	AR
R409	8	R409 Opp. C418	Q202 - 2	AR
Q202	8	Q202 - 1	R308 Close to C217	AR

TABLE 3