FreeFlight SYSTEMS

Service Bulletin SB 81440-XX-34-14

3700 Interstate 35, Waco TX. 76706 PHONE: 254-662-0000 FAX: 254-662-9452

SUBJECT: 2101 I/O Approach and 2101 I/O Approach Plus GPS Navigation System, Part numbers 81440-XX-XXXX

I. PLANNING INFORMATION

A. Effectivity

This Service Bulletin applies to 2101 I/O Approach and 2101 I/O Approach Plus GPS Navigators, all part numbers. This update is required to continue IFR flight operation.

B. Reason

This Service Bulletin advises all users of 2101 I/O (P/N 81440-00-XXXX, 81440-01-XXXX, 81440-10-XXXX) and 2101 I/O Plus (P/N 81440-02-XXXX, 81440-03-XXXX, 81440-12-XXXX, 81440-32-XXXX, 81440-33-XXXX and 81440-42-XXXX) of the updates required to use 4 MB database updates.

C. Description

To replace the existing Processor Board (A6) CCA with a modified CCA, so unit will be capable of addressing a 4 MB database.

- 2101 I/O with uses Processor Board 80212-11
- 2101 I/O Plus Processor uses 82875-01-A

D. Approval

This Service Bulletin contains no modification information that revises the approved configuration and, therefore, does not require governmental or other regulatory agency approval.

E. Manpower

The following man-hour estimates are based on incorporation concurrent with an unscheduled repair or during a scheduled modification:

Units	Compliance	Man Hours
All RDUs	During Repair	2.5

F. Weight and Balance

None

G. Electrical Load Data

Not Affected

H. Reference

ECN F05017
ECN F08012

I. Other Publications Affected

None

J. Interchangeability and Identification

Modified and unmodified units are not interchangeable.

Units modified according to this Service Bulletin have a strike over the number 14 on the Service Bulletin tag.

II. MATERIAL INFORMATION

A. Price and Availability

Incorporation of revision L, or later approved software, will be required to access the 4 MB database.

- 2101 I/O Approach Plus - 241L
- 2101 I/O Approach - 243L

The cost for this update is included in the purchase of software

B. Parts List

- For 2101 I/O Part number 81440-00, 01 and 10
  Service Bulletin kit 81440-XX-34-14A
  80212-11 Processor Board

- For 2101 I/O Plus Part number 81440- 02, 03, 12, 32, 33 and 42
  Service Bulletin Kit 81440-XX-34-14B
  82875-01-A Processor Board

C. Ordering Information

Operators of the 2101 I/O Approach and 2101 I/O Approach Plus units, wishing to upgrade their system(s) may send the unit(s) to an approved Level II Service Center or the FreeFlight Factory Service Center.

To upgrade the operating system at a Level II Service Center, send a purchase order requesting Service Bulletin kit P/N 81440-XX-34-14(X) to:

FreeFlight Systems
3700 Interstate 35 S.
Waco, TX 76706 USA

Attn.: Sales Dept.
Telephone 1 (254) 662-0000
Fax 1 (254) 662-9451

For FreeFlight Factory Service Center modification, send the Navigator and a purchase order requesting incorporation of Service Bulletin 81440-XX-34-14(X) to:

FreeFlight Systems	Attn.: Repair Dept.
3700 Interstate 35 S.	Telephone 1 (254) 662-0000
Waco, TX 76706 USA	Fax 1 (254) 662-9452

D. Warranty

This Service Bulletin does not affect the standard warranty of the unit from date of purchase. For units out of warranty, this modification will be covered for ninety (90) days.

III. ACCOMPLISHMENT INSTRUCTIONS

These hardware modifications may be accomplished at the FreeFlight Systems Factory Service Center or approve level 2 service centers.

CAUTION

Do not remove the NavData card from the system while the power is on. The system will automatically reset if the card is removed while power is on.

A. Record Configuration Settings

The configuration settings must be restored once the revised software has been installed and, therefore, the settings must be recorded prior to the modification.

Refer the 2101 I/O Approach Installation and Checkout Manual (PN 81454) or 2101 I/O Plus Installation and Checkout Manual (PN 82882), Section III.

1. Following the instructions, access the Installation Set Up submenu.
2. Record the configuration settings on the Configuration Record Sheet that follows.

Configuration Record Sheet

Plane Make and Model _____

Owner _____

Address _____

_____

_____

Unit Installed_____

Serial Number _____

Serial Port Configuration

PORT	FORMAT	BAUD	RATE
INPUT PORT1			
OUTPUT PORT 1			
INPUT PORT 2			
OUTPUT PORT 2			

I/O Setup Configuration

PARAMETER	CONFIGURATION
TAS INPUT	
HEADING INPUT	
PRESSURE ALTITUDE INPUT	
BAROMETRIC ALTITUDE INPUT	
RAT INPUT	
FUEL FLOW INPUT	
OLEO INPUT	
DADS	
FUEL	
SYNCHRO #1	
SYNCHRO #2	
SYNCHRO #3	
ANALOG AUTOPILOT OUTPUT	
DIGITAL OUTPUT#2	
DIGITAL OUTPUT #3	

B. Disassembly of Chassis

NOTE: Save all hardware for reassembly.

1. Place the unit on an anti-static mat.
2. Remove the NavData card.
   Refer to figures 1.
3. Remove 8 screws (Item 3) (4 from each side) from top of chassis (Item 2).
4. Remove 2 screws (Item 5) from bottom at rear. (Note for reassembly that Item 5 may be longer than Item 3.)
5. Remove 1 screw (Item 5) from center of top. (Note for reassembly that Item 5 may be longer than Item 3.)
6. Remove 8 screws (Item 1) from the rear of chassis (Item 2).
7. Remove nut (Item 9) and washer (Item 10) from GPS connector (Item 4). Align flat spot on GPS connector and push slightly inside unit.
8. Slide top of chassis toward the rear of the unit, using caution with connectors, and lift off.

   Refer to figure 1.
9. Remove the 4 screws (Item 12) that attach the Keyboard-Display Assembly (Item 1) to the sides of the chassis.
10. Remove the Keyboard-Display Assembly (Item 1).
11. Remove 7 screws (Item 11) from bottom of chassis.
12. Remove the 2 screws (Figure 1, Item 13) that attach the Power Supply (Figure 3, Item 102) to the chassis.
13. Remove CCA stack from chassis..
14. Remove the 4 screws (Item 12) that attach the Keyboard-Display Assembly (Item 1) to the sides of the chassis.
15. Remove the Keyboard-Display Assembly (Item 1).
16. Remove 7 screws (Item 11) from bottom of chassis.
17. Remove the 2 screws (Figure 1, Item 13) that attach the Power Supply (Figure 3, Item 102) to the chassis.
18. Remove CCA stack from chassis.
    Refer to figures 2.
19. Disconnect Filter/Power cable (Item 54) (Figure 4, Detail A) from the Power Supply CCA (Item 102).

20. Disconnect cable (Item 51) of the Driver CCA (Item 101) from the Power Supply CCA.
21. Disconnect the Power Supply (Item 102) from the IOP CCA (Item 107) and remove the Power Supply.
22. Remove 5 screws (Item 6) on the Driver CCA (Item 101).
23. Disconnect Filter CCA (Item 109) from IOP CCA (Item 107) by pulling up. Use care; the ribbon cable (Item 52) is easily damaged.
24. Unplug the 72-pin connector (Item 55) in the center of the Driver CCA (Item 101).
25. Simultaneously remove the Driver CCA (Item 101) and Filter CCA (Item 109) combination. Lay them aside carefully as ribbon cable is easily damaged.
26. Disconnect the cable (Item 53) from connector P4 on the Interface CCA (Item 103).
27. Remove 5 short standoffs (Item 7) from the Interface CCA.
28. Unplug the 36-pin connector (Item 56) and remove Interface CCA from GPS CCA (Item 105).
29. Remove 5 long standoffs (Item 8) from the GPS CCA (Item 105).
30. Unplug the 36-pin connector (Item 57) and remove GPS CCA (Item 105) from IOP CCA (Item 107) by lifting straight up.

C. Replace IOP CCA

2101 I/O –00,-01, and 10

1. Remove old IOP CCA, PN 80212-XX. Return FFS for credit.
2. Install new IOP CCA, P/N 80212-11 (Figure 5).

2101 I/O Plus –02, -03, -12, 32, 33, 42

1. Remove old IOP CCA, PN 82875-XX-A. Return to FFS for credit.
2. Install new IOP CCA, PN 82875-01-A (Figure 6).

D. Reassembly

Refer to figures 3.

1. Replace the GPS CCA (Item 105) on the IOP CCA (Item 107), carefully plugging in 36-pin connector (Item 57).
2. Replace 5 long standoffs (Item 8) on GPS CCA (Item 105). Note the route of the antenna cable (Figure 3, Item 50) around the standoff.
3. Reinstall Interface CCA (Item 103) over GPS CCA.
4. Install 5 short standoffs (Item 7) on Interface CCA (Item 103).
5. Reconnect cable (Item 53) to Interface CCA, making sure to orient non-white wire as shown in Detail B of figure 4.

6. Align 72-pin socket (Item 55) on CCA (Item 101) with pins on Interface CCA (Item 103) and carefully reinstall Driver CCA on Interface CCA.
7. Reinstall Filter CCA (Item 109), plugging into connector P701. Route the antenna cable between Filter CCA and the CCA stack.
8. Install 5 screws (Item 6) on Driver CCA (Item 101).
9. Reconnect Cable (Item 53) to connector on Interface CCA (Item 103), being sure to orient non-white wire as shown in Detail A of Figure 4.
10. Reinstall the Power Supply (Item 102), plugging in connectors on IOP CCA (Item 107).
11. Reconnect cable (Item 51) of the Driver CCA to the Power Supply CCA (Item 102).
12. Connect cable (Item 54) to Filter CCA (Item 109), being sure to orient non-white wire as shown in Figure 4, Detail A.
13. Place CCA stack into chassis. Attach Power Supply (Item 102) to the sidewall of the chassis with 2 screws (Figure 1, Item 13).
14. Install 7 screws (Item 11) in bottom of chassis.
15. Reinstall the Keyboard-Display assembly (Figure 1, Item 1). Attach with 4 screws (Figure 1, Item 12).

E. Reassemble Chassis

Refer to Figure 2.

1. Insert GPS connector (Item 4) through hole in rear of top of chassis (Item 2).
2. Slide top of chassis (Item 2) over bottom of chassis using care with rear connectors. Slide front edge under lip of keyboard.
3. Install washer (Item 10) and nut (Item 9) on GPS connector (Item 4) and tighten.
4. Install 8 screws (Item 1) in rear of unit.
5. Install 1 screw (Item 5) in center of top. (If Item 5 is longer than Item 3, make sure that the longer screw (Item 5), rather than the shorter screw (Item 3), is installed in the center top location.)
6. Install 10 screws (Item 3) in upper cover, 4 on each side, 2 on bottom at rear.

4. Mark out the “14” on the Service Bulletin label (Figure 1 - Item 8).

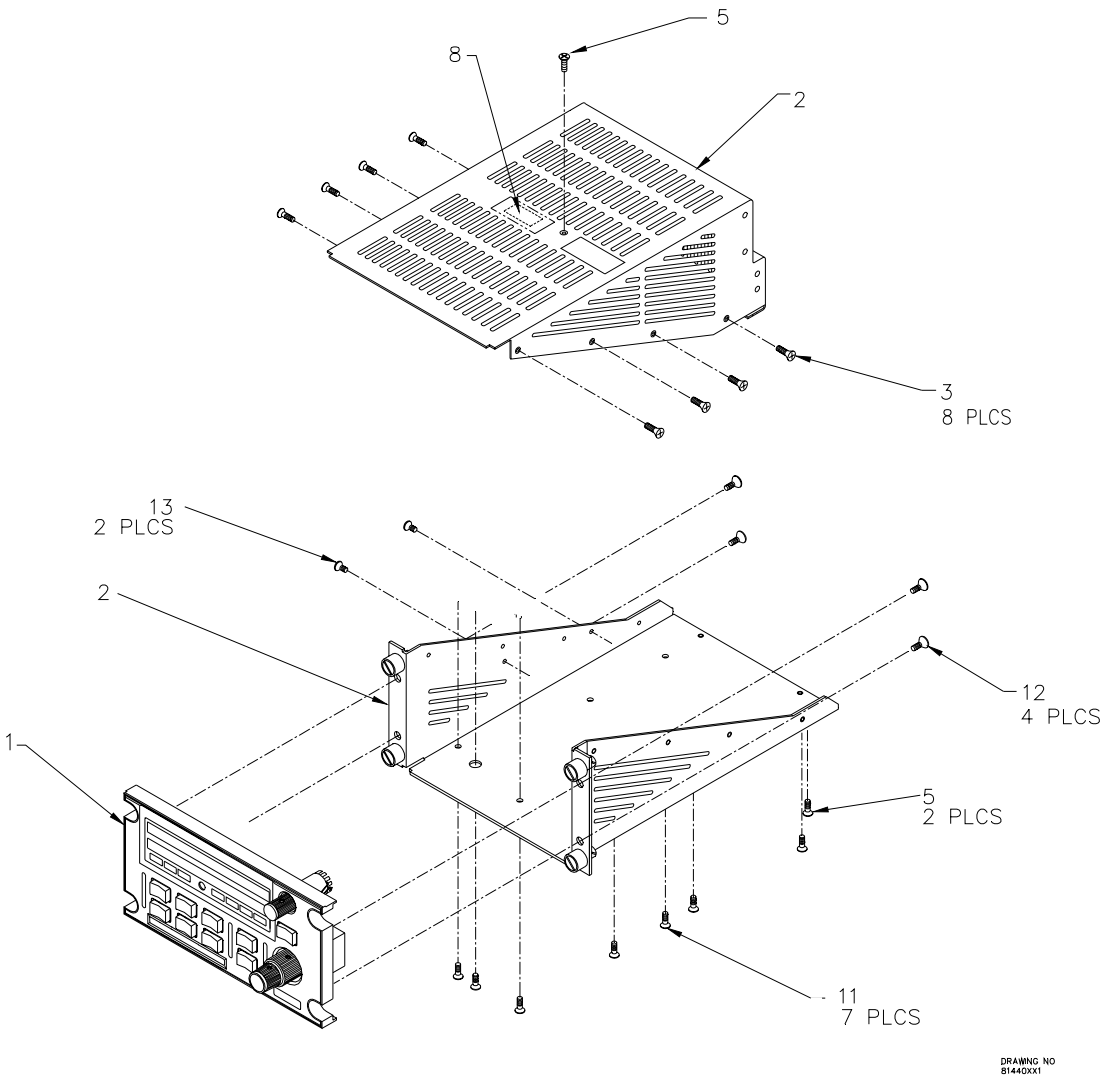

Figure 1
Rear Chassis

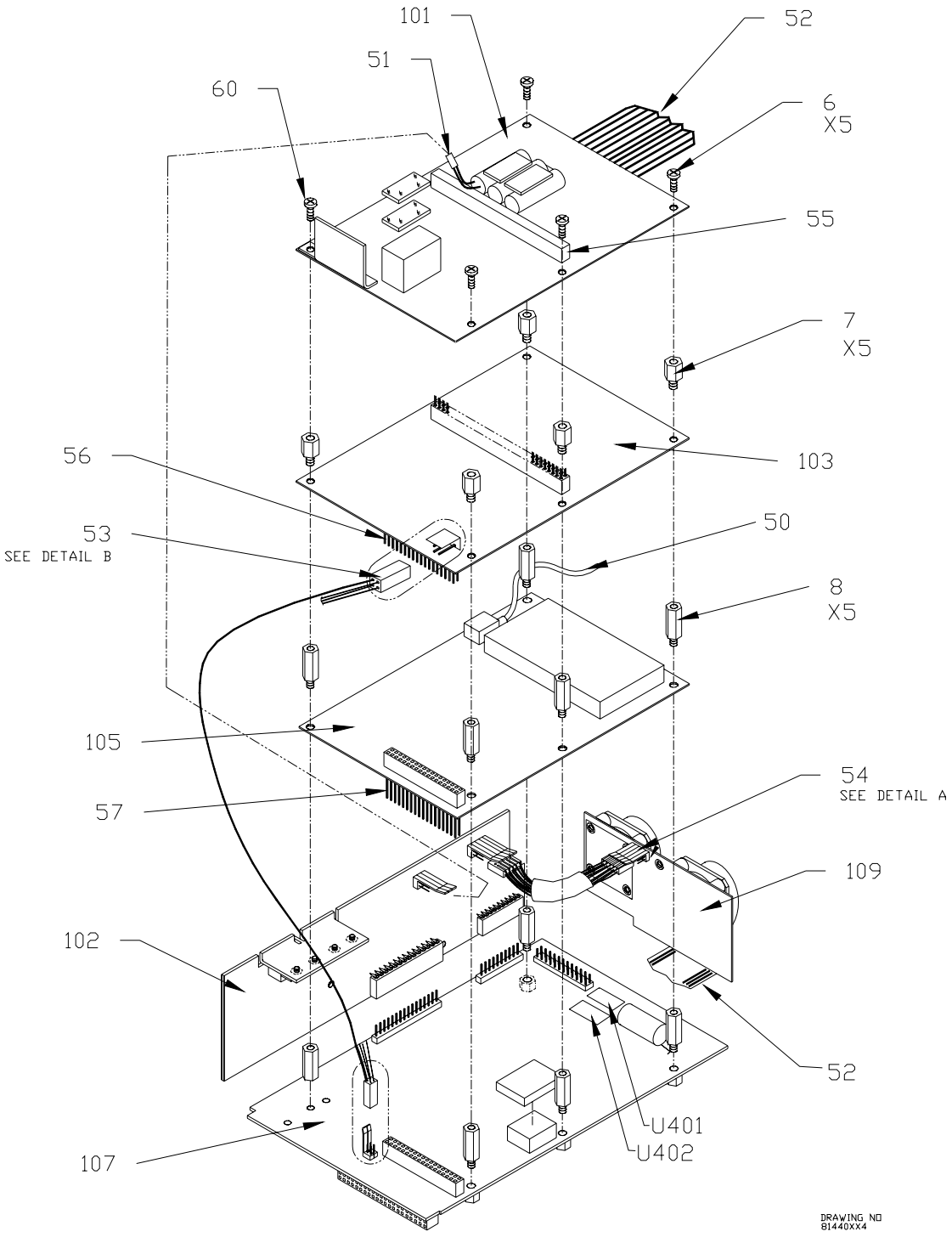

Figure 2
CCA Stack

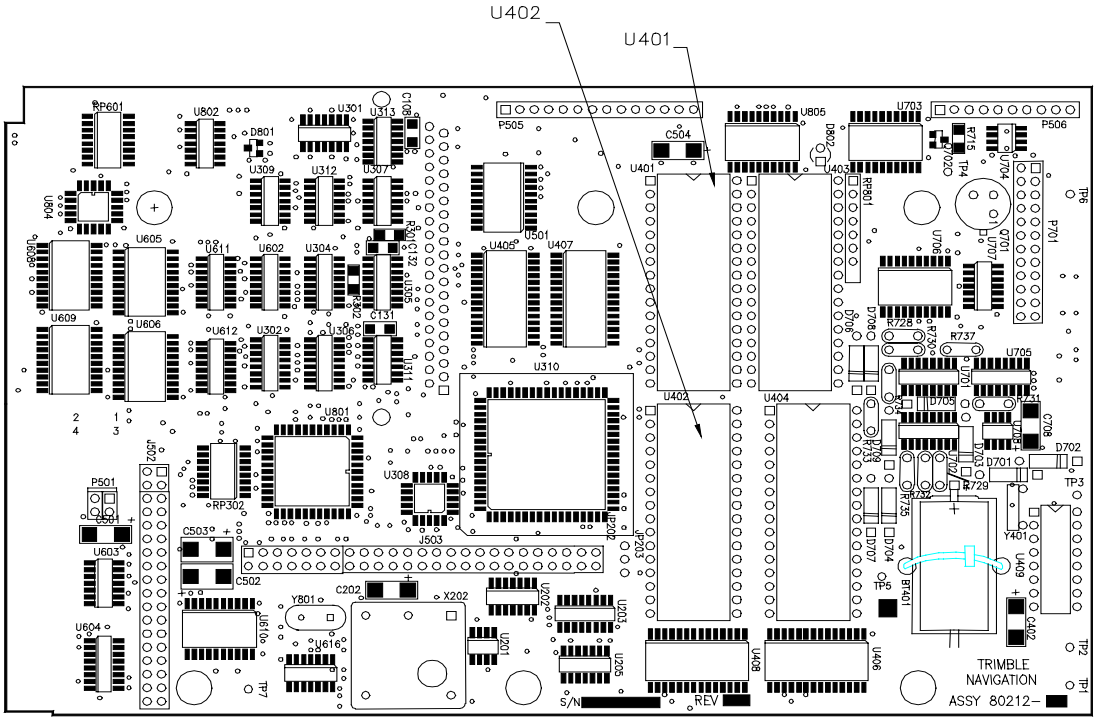

Figure 3 80212-11

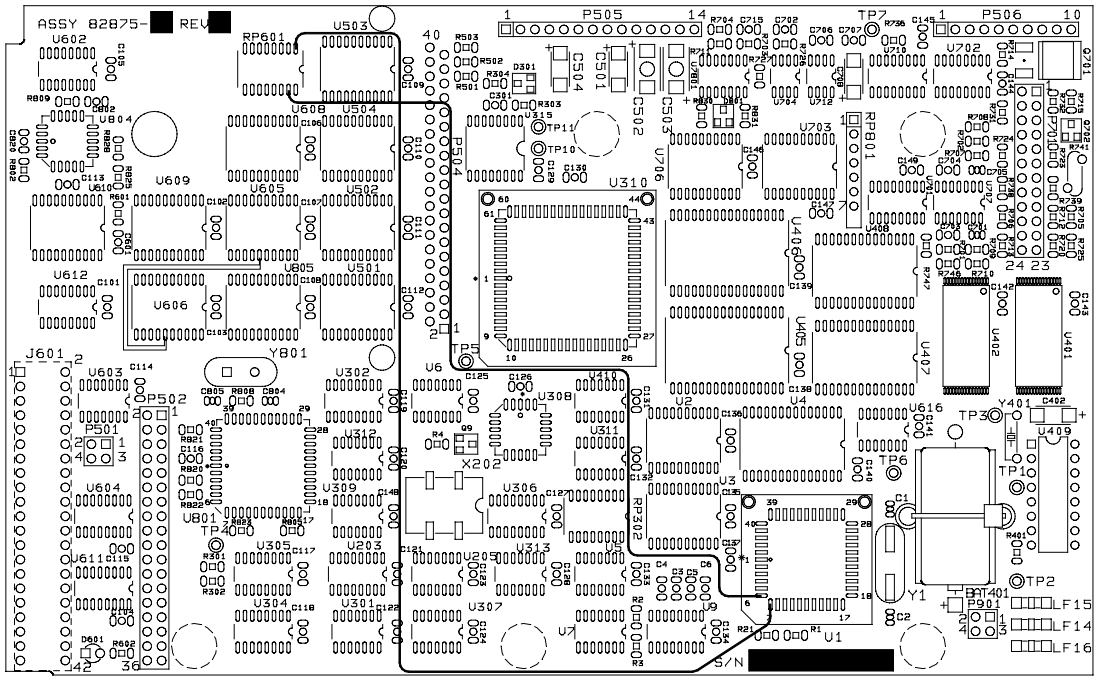

Figure 4 82875-01-A