TRIMBLE CUGR

BATTERY

REMOVAL/INSTALLATION

SERVICE BULLETIN

Prepared By

A Division of URS

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SERVICE BULLETIN GUIDANCE – REPLACEMENT OF CUGR MEMORY BATTERY

SUBJECT: Trimble Cargo Utility GPS Receiver (CUGR), AN/ASN-175, NSN 5826-01-441-9797, Part Number 82128-00 Memory Battery Removal/Installation Procedure.

I PLANNING INFORMATION

a. Effectivity: This Service Bulletin applies to the CUGR Radio Receiver, NSN 5826-01-441-9797

b. Reason: This service bulletin allows qualified field aviation maintenance personnel to remove and replace the CUGR receiver memory battery.

c. Description: Replacement of the memory battery requires partial disassembly of the CUGR radio receiver to access the card-mounted memory battery.

NOTE 1:

The Government does not possess technical data necessary for organic repair of this item. The scope of this Service Bulletin Guidance is limited to specific steps taken to replace the internal memory battery. A receiver indicating any other fault should be returned for repair in accordance with Post Warranty Support options discussed in the CUGR Support Plan.

d. Manpower estimates:

Avionics Technician for disassembly, cleaning, removal and replacement:	1.5 Man-hour
Quality Assurance:	0.5 Man-hour.

II MATERIAL INFORMATION

a. Price: $4.49, plus shipping (GSA Contract No. GS-06F-0044M)

b. Recommended Sources:

1. LSI Inc, Technical Support Supervisor, Matt Morrow, Ph. (732) 323-0602 ext. 2120
Part No. Tadiran TL-5104/P-BP

2. Newark Electronics
GSA Contract No. GS-06F-0044M
4801 N Ravenswood Ave.
Chicago, IL 60640-4409
Telephone: (773) 907-5317
Fax (773) 907-5214
Email: ddivenere@newark.com
Web Site: www.newark.com
Manufacture Part No. Tadiran TL-5104/P-BP
Item No. 87F6413

c. Parts List:
RTV (room-temperature vulcanizing) sealant
Cable Tie, small 3" (7.6 cm) length
Memory battery: 3.6V, AA size, Axial Leads Lithium Thionyl Chloride rated for 1.8 Amp Hour or better.

d. Tools Required:
#1 Phillips Head Screwdriver
Needle Nose Pliers
X-Acto Blade/Knife
Soldering Iron
Desoldering Tool
Small Diagonal Cutters

e. Ordering Information for Military Users: The battery is not stock-listed. Recommend direct procurement from one of the sources listed above or a battery of equivalent capabilities.

f. Alternatives: The replacement of the memory battery was covered during the manufacturer's warranty period. With expiration of warranty coverage, users have several options for replacing the memory battery: Owning units may return a CUGR radio receiver for replacement of the memory battery as a covered service under the post-warranty support contract, they may turn-in the faulty receiver and requisition a replacement receiver using CCSS/LMP procedures or they may replace the memory battery at the AVUM/AVIM facility using instructions provided in this bulletin. Further information on these alternatives is provided in the CUGR Support Plan dated Apr 2004.

III INSTRUCTIONS

*****CAUTION*****
All work must be performed on a static-free work area!

*****NOTE 2*****
Disregard all Warranty labels.

This section covers setup, disassembly, removal, cleaning, new battery installation, and reassembly.

A. Setup

a. Maintenance personnel should electrically ground to discharge any static at the workstation before proceeding with the work.

b. Power –up CUGR to confirm no fault other than "Failed Memory Battery" is displayed. Turn off power to proceed.

c. If CUGR displays other fault, see NOTE 1 at the front of this document.

d. Remove and set aside the Jeppesen NavData card from the front panel.

B. Disassembly and Removal

a. Remove the four screws each securing connector J1 and J2 (Fig. 1).

b. Remove nut and lock washer securing coaxial connector J3 (Fig. 1).

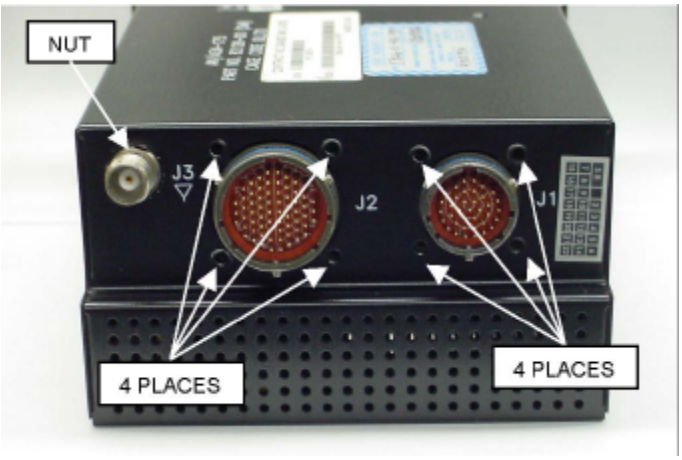

Figure 1

c. Remove 12 screws securing top cover and remove cover (See Figure 2). Disregard warranty seals. Slice with X-acto blade where seals bridge seams to facilitate disassembly.

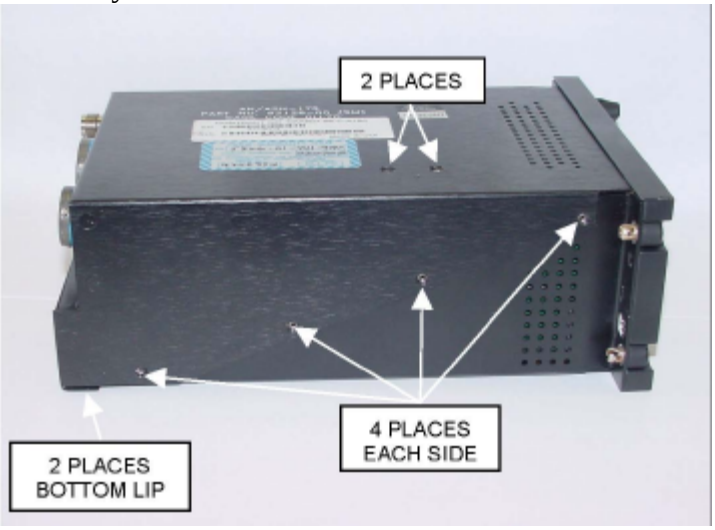

Figure 2

d. Remove Top Cover from chassis and set aside.

e. Remove the two screws on backside of both Dzus rail fasteners to release the front panel (Fig. 3). (See Figure 6 for a view of the chassis with front panel removed.)

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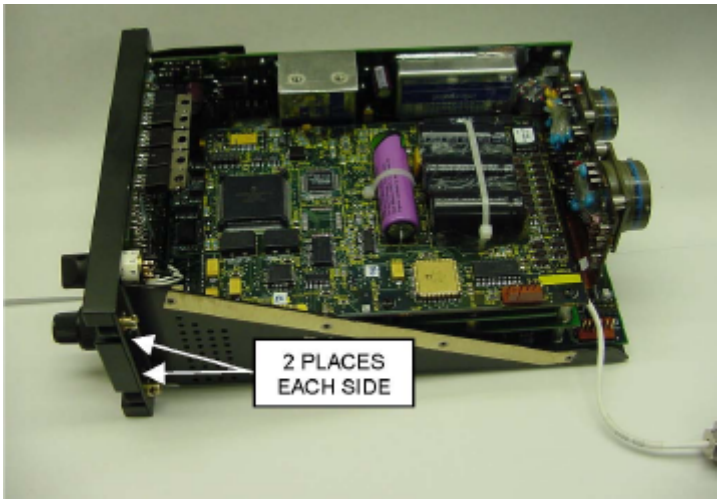

Figure 3

*****CAUTION*****

Removal of front panel may require some careful rocking side to side to disengage the multi-pin connector

f. Remove the five screws securing battery pc board (P/N 11340641) (Fig. 4).

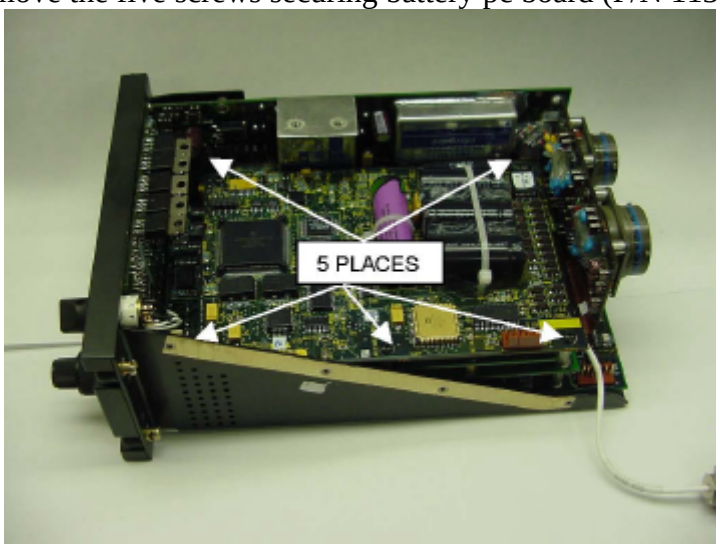

Figure 4

g. Remove all RTV from multi-pin connector and disconnect J1 – J2 plug from the pc board (Fig. 5).

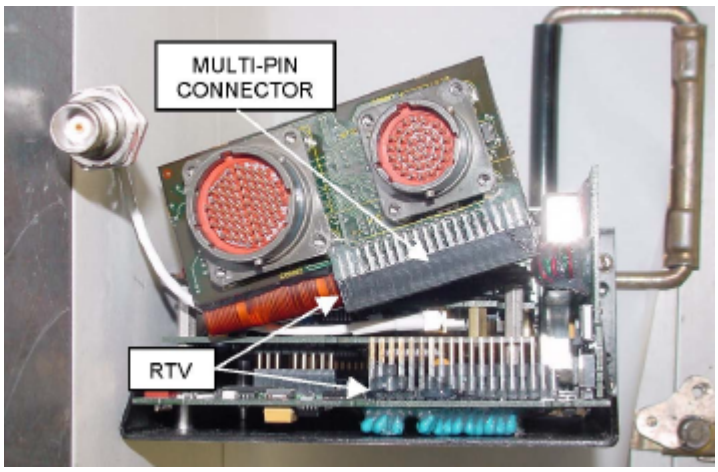

Figure 5

h. Remove battery pc board (P/N 11340641) by carefully lifting up and disconnecting multi-pin connector (Fig. 6).

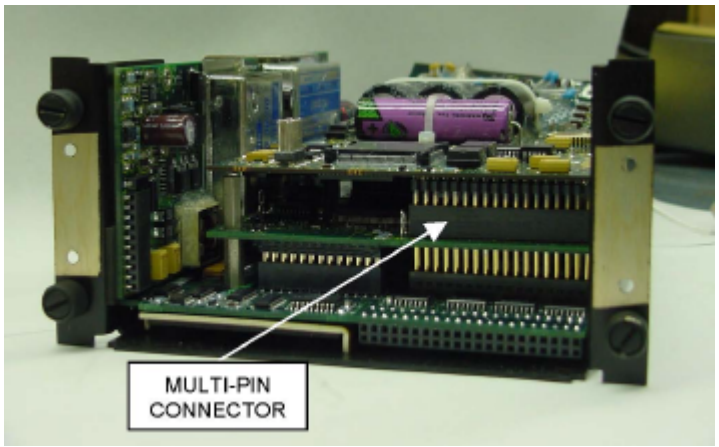

Figure 6

*****CAUTION*****
Extreme care should be taken when removing RTV and clipping the cable tie as to prevent damage to pc board and components. There is no source of supply for organic repair/replacement of pc boards and components.

i. Carefully Remove RTV from around battery with the X-acto blade/knife (Fig. 7).

j. Cut the cable tie around the battery with small diagonal cutters and remove (Fig. 7).

k. Unsolder battery leads and remove the battery from the pc board. It may be useful to first cut the battery leads to facilitate battery removal and access to the RTV between battery and capacitors.

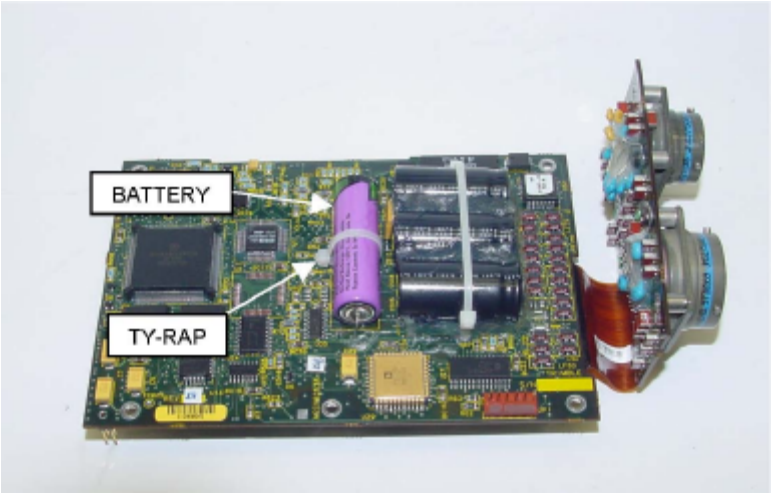

Figure 7

B. Cleaning

a. Clean the solder from the holes in the pc board with a desolder tool where the battery leads were removed. Or remove solder with a soldering iron and solder-wick.

b. Ensure battery lead holes in pc board are clear of solder so as to accept new battery leads.

NOTE 3:
If available, a Panavise or similar device is recommended for use during desoldering and soldering operations to preclude damage to other components.

C. Installation

a. Verify polarity (pc board hole is marked BT2+ for the positive lead), position battery leads through the pc board and secure the battery in place using a cable tie (Fig 8).

b. Solder battery leads to the pc board ensuring solder completely fills holes. Seal solder points with RTV.

c. Apply RTV along the length of battery where it rests on pc board and to the solder pads on the foil side of the pc board (See Figure 8).

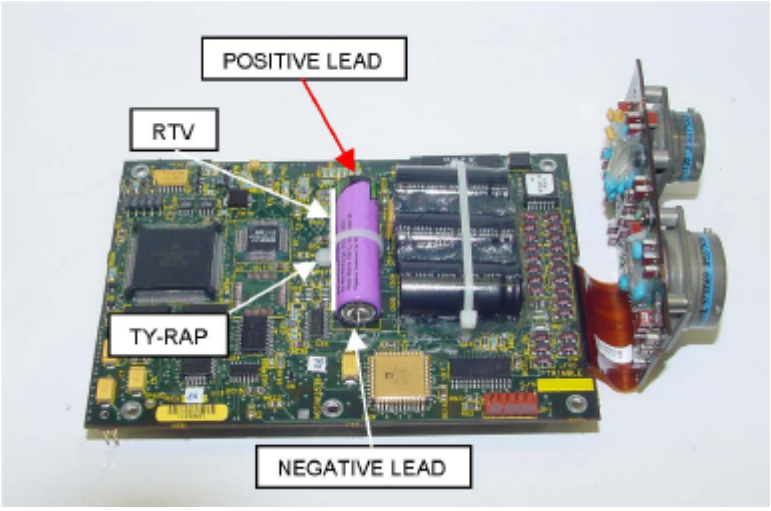

Figure 8

D. Reassembly

a. To reinstall battery pc board (P/N 11340641) position in place, visually align the pins of multi-pin connector then apply downward pressure to seat the connection (Fig. 9).

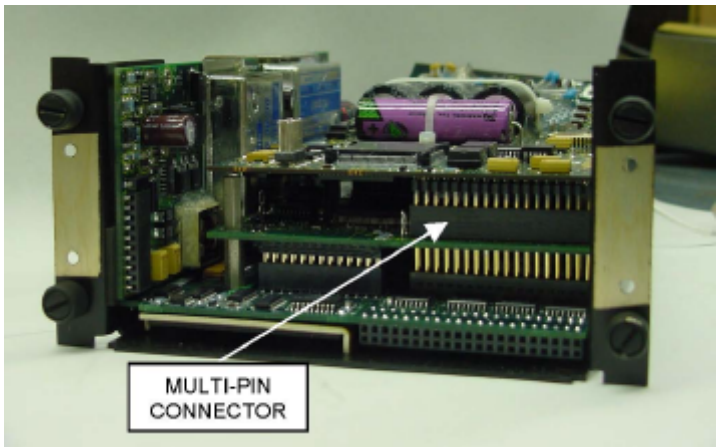

Figure 9

b. Reinstall J1 – J2 by mating the multi-pin connector to the plug in on pc board. Apply several dabs of RTV between the multi-pin connector and pc board (Fig. 10).

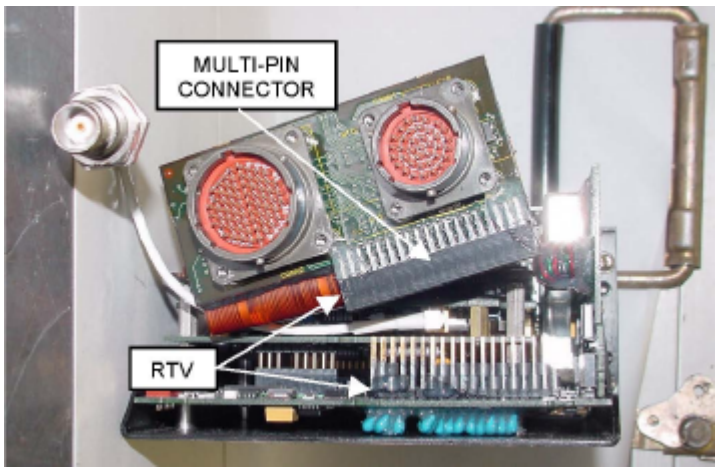

Figure 10

c. Reinstall five screws to secure the battery pc board (P/N 11340641) (Fig. 11).

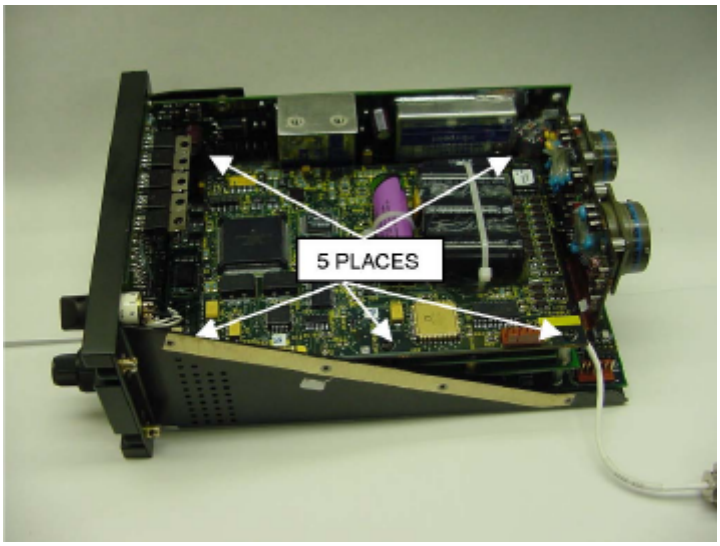

Figure 11

*****NOTE 4*****
Figure 11 shows the front panel re-installed as described in next paragraph.

d. Position front panel in place; visually align pins of multi-pin connector before applying pressure to seat connection. Secure front panel by installing two screws on the backside of both Dzus rail fasteners (Fig. 12).

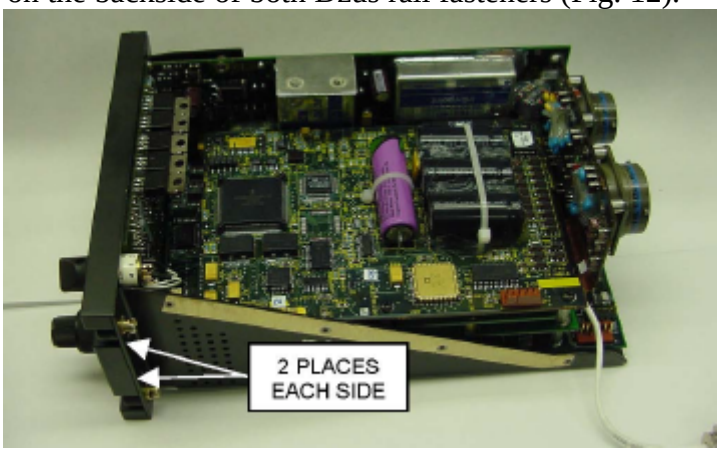

Figure 12

e. Position the top cover in place and secure it with 12 screws. Take care to route the RF connector through the appropriate opening in the top cover and check for alignment of J1 and J2 connectors before tightening the top cover (Fig. 13).

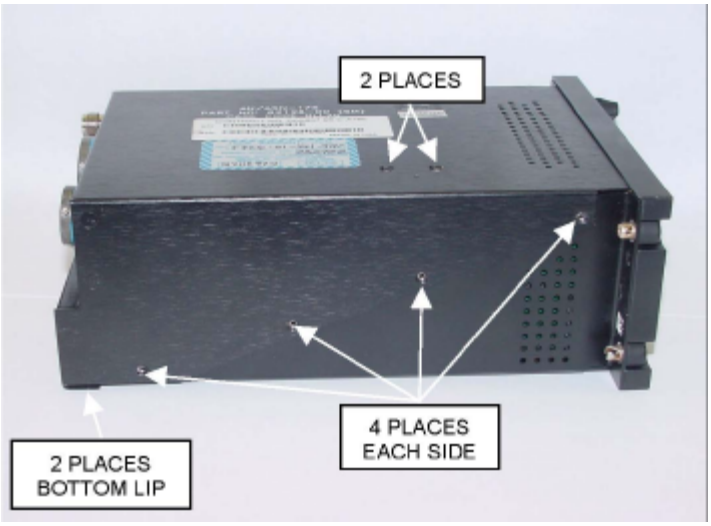

Figure 13

f. Reinstall nut to secure coaxial connector J3 (Fig. 14).

g. Reinstall screws four to secure connectors J1 and J2 (Fig. 14).

h. Perform inspection to ensure all screws are installed and all connectors are secured.

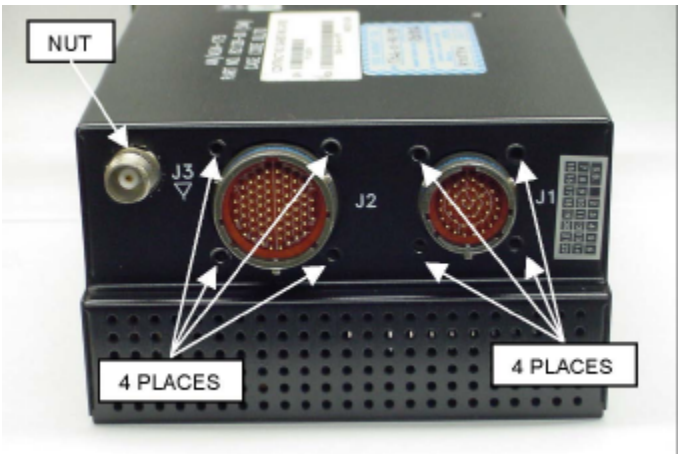

Figure 14

E. Functional Test

a. Replace the Jeppesen NavData card if it was removed.

b. Perform power-up and checkout the unit

c. Verify the receiver does not display “low memory battery” indicator or any other fault indicator.

d. Identification: Annotate the date of replacement of memory battery with a permanent marking (e.g. MEM BAT JAN 04).