

Ultra Electronics

TO: HOLDERS OF ULTRA ELECTRONICS SERVICE BULLETIN 6647-32-8

This page transmits Revision No. 01, dated Mar 1/97, to Service Bulletin 6647-32-8. Pages which have been revised are outlined below, together with the highlights of the revision.

Remove and insert the affected pages as listed

This revision is applicable to all models.

There have been no previous revisions to, or re-issues of, this Service Bulletin.

Page	Description
1	Revised to reflect the issuance of this revision.
2	Clarification of possible fault symptoms.

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This Service Bulletin complies with British Civil Airworthiness Requirements, Sect. A, Chapter A5-3.

Signed 

CAA Approval No. DAI 1501/39
May 15 1996

SERVICE BULLETIN No. 6647-32-8

LANDING GEAR - EXTENSION AND RETRACTION - CONTROL AND INTERFACE

MICROPROCESSOR PCB - PRECAUTIONARY REPLACEMENT OF OSCILLATOR, IC3

1. Planning Information

A. Effectivity

- (1) Airbus Industrie A319, A320 and A321, all models.
- (2) Landing Gear Control and Interface Units (LGCIUs), Part Nos. 664700500A4X, these serial numbers :

937, 938, 941 thru 944, 946 thru 954, 956 thru 962, 964, 965, 967 thru 969, 971 thru 976, 978 thru 981, 983, 984, 986 thru 991, 993, 995 thru 1014, 1016 thru 1018, 1020, 1022, 1023, 1025, 1026, 1028 thru 1031, 1034, 1035, 1038 thru 1040, 1043 thru 1045, 1047, 1049 thru 1055, 1057, 1058, 1060 thru 1062, 1064, 1065, 1067, 1068, 1070 thru 1072, 1074 thru 1081, 1083 thru 1086, 1088 thru 1102, 1104 thru 1129, 1131 thru 1134, 1136 thru 1149, 1151 thru 1154, 1156 thru 1164, 1166 thru 1171, 1173 thru 1192, 1194 thru 1198, 1200 thru 1202, 1204 thru 1206, 1208 thru 1220.

- (3) Microprocessor PCB, Part No. 001LG01-0340, these serial numbers :

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936, 1000, 1001, 1003, 1005 thru 1007, 1009, 1011 thru 1014, 1016, 1017, 1020 thru 1028, 1030 thru 1033, 1035, 1036, 1038 thru 1040, 1042 thru 1044, 1046, 1047, 1049, 1050, 1052, 1053, 1055, 1056, 1059 thru 1074, 1076 thru 1081, 1084, 1086, 1088, 1089, 1091 thru 1094, 1096, 1098, 1100, 1101, 1105, 1106, 1113 thru 1115, 1117 thru 1122, 1125, 1126, 1128, 1129, 1131, 1132, 1134 thru 1139, 1142 thru 1151, 1153 thru 1159, 1161 thru 1166, 1168 thru 1170, 1172 thru 1184, 1186 thru 1194, 1196, 1197, 1199 thru 1202, 1204 thru 1213, 1215 thru 1221, 1223 thru 1227, 1229 thru 1231, 1233, 1235 thru 1237, 1255.

(4) Microprocessor PCB, Part No. 001LG01-0450, these serial numbers :

1008, 1010, 1019, 1048, 1057, 1103, 1109, 1116, 1141, 1171, 1222, 1238, 1241 thru 1254, 1256 thru 1259, 1261 thru 1266, 1269, 1271, 1272, 1274 thru 1279, 1281 thru 1290, 1292.

Note that the serial numbers for LGCIUs and PCBs listed in sub-paras. (2), (3) and (4) reflect the as-delivered component configuration. Operators should be aware that in-service removals and exchanges may result in the existence of different configurations.

B. Reason

A batch of 6MHz, crystal-controlled oscillator ICs, delivered to Ultra Electronics and used on the LGCIU microprocessor PCBs, have been found to exhibit potential fault symptoms.

These symptoms could possibly result in the spurious generation of fault codes 138, 141 or 146, although the manufacturer is not aware of any in-service difficulties attributable to these ICs when used on Airbus equipment.

C. Description

This Service Bulletin introduces the precautionary replacement of the suspect ICs by devices from a new batch. Accomplishment of this Service Bulletin constitutes a complete fix.

No part number or type number changes are required and the LGCIU modification state is not affected.

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D. Compliance

Compliance with this Service Bulletin is recommended, when the LGCIU is removed from the aircraft for investigation/repair work. The manufacturer does not consider it necessary for Operators to remove LGCIUs solely to accomplish this Service Bulletin.

Compliance is achieved by either of the following methods :

- (1) Operators may carry out the IC replacement procedure themselves (see para. 2), using new ICs supplied by Ultra Electronics Controls Division.
- (2) Ultra Electronics Controls Division will implement this Service Bulletin on all LGCIUs returned for investigation/repair.

E. Approval

The technical data in this Service Bulletin is approved by the authority of CAA Approval No. DAI/1501/39.

F. Manpower

The work necessary to accomplish this Service Bulletin requires 1 (one) man-hour. Post-accomplishment testing will be covered by the normal acceptance test carried out at the conclusion of the investigation/repair work.

NOTE:

A cure time of 72 hours must be added to the above time. You may continue work on the LGCIU (to include the test procedure) during the cure time.

G. Material Cost and Availability

LGCIUs returned to the manufacturer for investigation/repair will have the microprocessor ICs replaced free of charge.

Alternatively, new ICs, Part No. 28747-170-8-8, will be supplied to Operators free of charge, on request. Suspect ICs which have been removed from the PCBs must be returned to Ultra Electronics (address in para. 2.G) for detailed investigation.

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Operators must have these consumables. Approved equivalents may be used :

- Toluene, purified, to BS6376 Pt. 2
- Iso-propyl alcohol, to BS1595
- Primer 1204 (Dow Corning).
- Conformal Coating 1-2577 (Dow Corning)

H. Tooling - Price and Availability

No special tools are necessary.

J. Weight and Balance

Weight and balance are not changed.

K. Electrical Load Data

Accomplishment of this Service Bulletin does not change the aircraft electrical load.

L. References

Ultra Electronics Component Maintenance Manual Ref. No. 32-31-39, Rev. 05.

2. Accomplishment Instructions

CAUTION: YOU MUST WORK ON THE LGCIU ONLY IN A CLEAN ROOM WITH A CONTROLLED AND FILTERED ATMOSPHERE. DO ALL WORK AT AN APPROVED METAL-OXIDE SEMICONDUCTOR (MOS) WORKSTATION. USE APPROVED ANTI-STATIC PROCEDURES TO PREVENT STATIC DISCHARGE DAMAGE.

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A. Disassemble the LGCIU

- (1) Refer to CMM 32-31-39, DISASSEMBLY, paras. 2.A and 2.B.
- (2) Remove the microprocessor PCB (IPL Fig. 2, item 55).

B. Remove IC3

- (1) Refer to IPL Fig. 7 and find IC3 on the PCB.
- (2) Apply small drops of Toluene from a small brush on to the area of the conformal coating near IC3.
- (3) Stop for one to two minutes.
- (4) Clean the area with a strong, natural-bristle brush.
- (5) If necessary, apply more toluene and clean the area again.
- (6) Dry the area and then apply iso-propyl alcohol to the area to remove the toluene.
- (7) Do the procedures in sub-paras. (2) to (6) on the other side of the PCB.
- (8) Unsolder and remove IC3. Use a desolder tool to remove all solder from the plated-through holes.
- (9) Retain IC3 for subsequent return to Ultra Electronics.

C. Install the New IC3

- (1) Inspect the legs of the new IC3 for cleanliness and for freedom from damage.
- (2) Install the new IC3 on the PCB and solder in position.
- (3) To aid future identification, put a small dot of red paint on the upper face of IC3.

D. Repair the Conformal Coating

- (1) Apply iso-propyl alcohol to the repaired areas on both sides of the PCB. Clean these areas.

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- (2) Apply one layer of primer 1204 to the repaired areas on both sides of the PCB. Apply the primer on to the undamaged coating and on to the new IC3.
- (3) Put the PCB into a fume extraction cabinet for one hour.
- (4) Apply one layer of conformal coating 1-2577 to the repaired areas on both sides of the PCB and on to the new IC3.
- (5) Put the PCB into a fume extraction cabinet for 72 hours. To make the repair faster, you can continue to work on the PCB. If you do this, the air in the workroom must be not less than 16°C and not more than 75% relative humidity. Do not touch the coated areas until they are cured.

E. Install the Modified Microprocessor PCB

- (1) Refer to CMM 32-31-39, ASSEMBLY, page 702. Do the procedure in para. 2.B.
- (2) Refer to CMM 32-31-39, ASSEMBLY, page 701. Do the procedure in para. 2.A.

F. Test

After accomplishment of this Service Bulletin, do normal acceptance testing as part of the investigation/repair procedure. Refer to CMM 32-31-39, Testing and Fault Isolation.

G. Notification

After accomplishment of this Service Bulletin, the Operator must tell the manufacturer this data :

- Service Bulletin Number.
- Serial Number(s) of the LGCIU(s) modified.
- Serial Number(s) of the Microprocessor PCB(s) modified.
- Date of modification(s).

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Send this data, together with the removed IC3(s) to :

Project Support Manager (A320),
Ultra Electronics Controls Division,
Bridport Road, Greenford, Middlesex,
UB6 8UA
United Kingdom

3. Material Information

New Part Number	Qty.	Keyword	Old Part Number	Inst. - Disposition
001LG01-0450	1	PCB, microprocessor	001LG01-0450	Reworked part
001LG01-0340	1	PCB, microprocessor	001LG01-0340	Reworked part
28747-170-8-8	1	Circuit, integrated, IC3	28747-170-8-8	Return old part to manufacturer. New part supplied.