

	Doc or ECO #:	ECO-70191-005	Date:	03/03/22	Author:	aeg
	Rev. #:	A				
Engineering Change Order (ECO)	Engineering Approval:	aeg	Date:	03/03/22	Quality Approval	AEG

P/N #:	70191	Effective Date:	April 20, 2022
Title:	Depth Rating Improvements		

1.0 Purpose / Summary

Add up-armor to crystals to improve depth rating

2.0 Parts Affected

Part Number	Notes	Removed	Added	Modified	REV
70191		☐	☐	☒	E
70188		☐	☐	☒	G
72247		☐	☐	☒	C

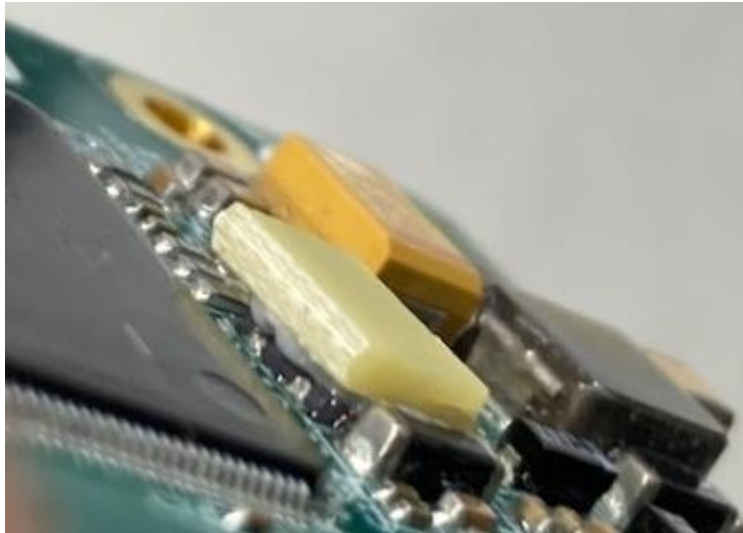
3.0 Detail

During a deep (>1km) dive communications were lost to the ROV.

This was traced to crushing of metal cased crystals on the PCBs. Notable on the ethernet hub and long haul modem board.

Adding a stiffing member on top of the crystals protects them from stress induced failures. A small laminate (PCB substrate) was fabricated and epoxied on top of the crystals.

	Doc or ECO #:	ECO-70191-005	Date:	03/03/22	Author:	aeg
	Rev. #:	A				
Engineering Change Order (ECO)	Engineering Approval:	aeg	Date:	03/03/22	Quality Approval	AEG



In tank pressure tests validated the improvement (3000psi). Multiple deep dive operations in excess of 1km have been accomplished with reworked comms modules.

4.0 Disposition of Material

Rework failed and FA stock as needed

Implement change in all WIP

5.0 Action Items

Action	Department	Acknowledgement Initials
Update BOM in Epicor	Engineering	JRK
Update Part and Assembly Revisions in Epicor	Engineering	JRK

6.0 Modified / Referenced Documents:

Document	Current Revision
WI-70191	D
WI-72247	C

	Doc or ECO #:	ECO-70191-005	Date:	03/03/22	Author:	aeg
	Rev. #:	A				
Engineering Change Order (ECO)	Engineering Approval:	aeg	Date:	03/03/22	Quality Approval	AEG

7.0 Revision History

Date Revised (mm-dd-yyyy)	Location of Change (section, paragraph no., step no., etc.)	Description of Change Made	Name of Person making the Change
03/03/2022	-	Initial Release	aeg