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KONGSBERG

Service Report

CUSTOMER: **WHOI**	**VESSEL / FACTORY / SITE:** **ATLANTIS**	**DATE:** **8/13/2018 - 8/15/2018**
LOCATION: **WOODS HOLE, MA**	**ENGINEER / TECHNICIAN** **CHUCK HOHING**	**SYSTEMS:** **EM122 1X1**
WORKORDER / PO: **SO01200S-LBR**	**ACCOUNT / PROJECT No:** N/A	**CUSTOMER PO:**

EQUIPMENT DELIVERED / INSTALLED / REPLACED.

QTY	Part Desc.	Part No.	Serial No.	Comments.
1	TX36LC	307677	212184	Bad clock, removed from the system

1. Main Purpose of Visit

- EM122 Service Visit.

2. Overview

- 08/13/2018
  - Travel from Lynnwood to Falmouth, MA.

- 08/14/2018
  - 0830 Onboard the Atlantis dockside at the WHOI pier. Worked with Allison on troubleshooting the EM122.
  - Opened a telnet window and upon initial boot of the EM122 only 13 of 24 TX36 boards connected. TX36#1 was reseated and then all 24 boards connected.
  - Began getting the following message in the telnet window: TrxBoard Msg 2080 - Rack 0 Slot 10: Warning, (2097152) Tx DCM 128Mhz stopped!!!!!
  - First reseated TX36#11 (slot 10) with no change. Moved #11 to slot 23 and the error followed the board.
  - A BIST was done and TX36#17 was found to have a failed High Voltage Bridge 1.
  - The Concurrent PP4305 CPU board (s/n M13217/036) installed was the ship's spare that replaced the original PP4305 CPU (s/n M15399/036) that was believed to have been faulty. A new BIOS battery had been installed.

My laptop was connected to the CPU serial port and the BIOS was checked. The following items were changed in the BIOS: Date and time were updated, Quick Boot Mode was Disabled, C Stat Support was changed from C1 to C1C2C3C4. All other settings were left as is. Saved, exited the BIOS then the system rebooted.

- Attempts to try and upgrade the software with the EMSWUpgrade program failed (both with the HWS and my laptop). The program failed to connect to the CPU. The EMSWInstall program was then run and this connected and after around 20 minutes the software install completed. After a reboot the EMSWUpgrade would now connect and we could see that all of the software/firmware were up to date.
- Next we used the ftpgetcms.dat and ftpputcmds.dat files in a command prompt window to get the TX Beam Weight files, modify them, and then put them back into the system. The files are modified to ignore shorted TX channels (below 30 ohms). See the Summary for the affected channels.
- The detailed TX channels BIST was run in telnet and the same channels were shorted as observed during the last Kongsberg service visit in October 2016. But now 4 channels (33 -36) were found to be “open” on TX36 #21. This board was moved to slot 22 and the “opens” stayed with the board.
- A new battery was installed in the original CPU as the battery read only 2.7v. Now this CPU was put back in the system and the BIOS modified as the other CPU.
- From the HWS we connected to the EM122 with the EMSWUpgrade program. First we upgraded the CPU version and TX and RX firmware, rebooted, then upgraded the Filter version. The upgrade was successful.
- The TX Beam Weight files were modified to shut off the shorted TX channels as was done on the spare CPU.
- BIST was run and the system was pinged for about 15 minutes with all indications normal.

3. Summary

- TX36 #11 (s/n 212184) has a bad clock and should be removed from the system. Should be sent in for repair.
- TX36 #17 (s/n 212190) has a bad HV bridge 1 but can be left in the system as it would cause no problems. A bad bridge means that 18 channels on this board are non-functioning. Should be sent in for repair eventually.
- TX36 #21 (s/n 212152) has four open channels but can be left in the system.
- Since there is no spare TX36 available then you should run for the time being with the last TX slot (24) open.
- The original CPU board is now functional and has the latest software/firmware and TX Beam Weight files.
- The spare CPU board can now be swapped in the system with no modifications needed.

- A total of 8 channels are disabled to prevent the TX36 boards from transmitting into shorts and thereby possibly damaging the boards. No change from the last Kongsberg service visit in 2016.
- List of disabled channels: TX36 #3 channel 22, TX36 #7 channel 4, TX36 #12 channels 34,9,10,15,16.

4. Time Sheet.

DAY	PLACE: PORT-ONSHORE, OFFSHORE, TRAVEL	ACTIVITIES	TIME FROM - TO	HOURS	OVERTIME
08/13/2018	Travel	Lynnwood to Falmouth, MA		8	
08/14/2018	Port	EM122 Service		10	
08/15/2018	Travel	Woods Hole to Boston		2	
08/15/2018	Travel	Boston to Lynnwood		8	

5. Signatures.

DATE:	*KM Representitive signature:*	*Work Accepted on behalf of Customer signature:*
08/16/2018		
	Printed: Chuck Hohing	*Printed:*