

PFR-166 Title: Command acq sequence support fails in ITOS 703p1-5

Assembly : EGSE		SubAssembly : ITOS			
Component :		Units Affected:	Units fixed:		
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Failure Occurred During (Check one $$					
\Box Functional test \Box Qualification test X S/C Integration \Box Launch operations \Box Other (Flight Assy)					
Environment when failure occurred:					
Ambient	\Box Vibration		□ Shock	□ Acoustic	
□ Thermal	Vacuum		Thermal-Vacuum	□ EMI/EMC	
Problem Description					

(In this section it is important to document the specific symptoms of the problem. In the event we see it happen again, we would like to know as much as possible.)

Upon upgrade to ITOS version 703p1-5, we noticed that command acq sequences – an 18 byte string of 0xAA bytes – were no longer being added to outgoing raw command stream generated by ITOS. For operations through ground systems, we request the pattern "cltu acq eos", but the generated command stream only showed a "cltu eos" pattern.

This acq sequence is important to ensure that the satellite receiver's bitsync locks up in cases where the ground system does not/cannot send idle patterns between radiated commands.

Note that with the EGSE setup and the Berkeley ground station, this acq sequence is not presently required, *however* it is critical that we be able to add acq sequences when interfacing through other ground stations, or if we have to turn off the idle pattern between radiated commands.

Analyses Performed to Determine Cause

(How do we know how the failure happened? Was it a bad part, bad handling, what?) Inspected the output command stream and saw that the 0xAA acq sequence was missing.

Corrective Action/ Resolution

(How do we fix the unit? And how do we make sure it doesn't happen again?) The ITOS group at Hammers has confirmed that it's a software problem (not a simple configuration issue). Hammers advises the fix will be delivered as part of the p1-6 release, expected in early July. This PFR can be closed.

Acceptance: MAM: Ron Jackson	; MSE: Ellen Taylor
PM: Peter Harvey	; Cognizant Engineer

Date of Closure_____