

## Command Action Procedure

<b>CAP #</b> 1708	<b>Originator:</b> Gregg Germain
<b>Date:</b> 9/15/2023	<b>Commands Checked By:</b> ACIS Ops
<b>Participants</b> OC	<b>Time of CAP execution:</b> 2023:263:00:00
<b>Required for</b> CC	
<b>Execution:</b> ACIS	

<b>Title:</b> Update TXINGS Parameter Values
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### Description/Rationale:

This procedure will update the *txings B* parameters to optimized values appropriate for the current state of the solar cycle.

### Restrictions/Warnings/Notes:

The default parameter values in *txings B* are selected to be maximally sensitive to radiation. If left unchanged, this would result in undesired and unnecessary shutdowns due to changes in baseline *txings* rates over the solar cycle. The ACIS team monitors the *txings* trends and determines optimal *txings* parameters which are tuned to current solar conditions and are accordingly updated by the ACIS team when required in order to avoid undesired radiation shutdowns.

This CAP loads the optimized *txings* parameters to replace the default settings. The CAP must be complete by the end of comm and 15 minutes before the eclipse penumbra at 2023:263:02:30:55.917.

Yes  No  CAP requires enabling of a disabled command? If yes, provide a list of Disabled Commands

CARD Items: None

### Schedule Requirements/Load Interaction:

CAP execution window: 2023:263:00:00:00 to 2023:263:02:15:55.917.

CAP duration: 10 minutes

CAP verified against the approved SEP1823 daily loads if applicable: N/A

- Yes  No  Daily load commands exist during execution window of CAP
- Yes  No  CAP requires specific DSN comm. or timing requirements
- Yes  No  CAP will be run concurrently with another CAP
- Yes  No  CAP requires commanding in the load to be executed to ensure success
- Yes  No  Daily load requires the CAP to be completed to ensure success
- Yes  No  CAP uses SCS slots. If yes, performs SCS cleanup

**Comments:**

The CAP commanding is ideally performed when ACIS is idle and should be well separated from any ACIS commanding in the load.

**Initial Conditions/Spacecraft Configuration:**

Telemetry is in FMT2, ACIS is running software version 58 or higher.

**CAP depends upon or changes the state of:**

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Telemetry Format               | <input type="checkbox"/> SIM Table Position               |
| <input type="checkbox"/> Safing Monitor En\Dis State (inc. RadMon) | <input type="checkbox"/> Grating Positions                |
| <input type="checkbox"/> OBSID                                     | <input type="checkbox"/> SI Mode                          |
| <input type="checkbox"/> Momentum State                            | <input checked="" type="checkbox"/> ACIS Parameter Blocks |
| <input type="checkbox"/> Attitude                                  | <input type="checkbox"/> HRC Configuration                |
| <input type="checkbox"/> PCAD Mode                                 | <input type="checkbox"/> SCS States or Contents           |
| <input type="checkbox"/> S/C Unit Configuration (H/W or S/W)       | <input type="checkbox"/> Dither State                     |
| <input type="checkbox"/> Ground System Configuration/Settings      | <input type="checkbox"/> FSW Element                      |
| <input type="checkbox"/> S/C Clock (VCDU)                          |   |

**Comments:**

The TLM FMT will be changed to FMT 2 by this CAP if necessary.

Prior to the issuance of commands, verify that ACIS is running flight software version 58 or higher, software housekeeping is being received and the hardware telemetry indicates no hardware issues.

**Risk/Comm. Loss/Worst Case Scenario:**

**What happens if comm. is lost during CAP execution?**

If comm is lost prior to completion of the first command uplink (step 3) then ACIS will have an elevated risk of an undesired autonomous radiation trigger.

If comm is lost after the first command uplink, but before the second command uplink which dumps memory to verify the setting update, then this will either be checked at the next available comm, or if weekly loads are running, the dump will be performed during the next belt passage. Successful execution of the first command alone would result in correctly updated *txings* parameters.

**What is the worst case scenario for CAP execution? (Assuming the CAP is executed correctly)**

The worst case scenario is a loss of comm prior to commanding will continue to have an elevated risk for an undesired radiation shutdown. This does not pose a Health and Safety risk, but increases the likelihood of an SCS-107 which would correspondingly impact Science.

**Required Products (Scripts, Displays, SOPs, etc.):**

Product Name	Version	On-Console
I_ACIS_E_NEW.dsp	N/A	<input checked="" type="checkbox"/>

F_MAIN.dsp [EHS]	N/A	<input checked="" type="checkbox"/>
F_MAIN.dec	2.88	<input checked="" type="checkbox"/>
C_SET_FORMAT.SSC	3.4	<input checked="" type="checkbox"/>

Command Load Name	Checksum (if applicable)	In ODB
1R_WBTXB38025.cld	N/A	<input checked="" type="checkbox"/>
1R_RBTXINGBLL.cld	N/A	<input checked="" type="checkbox"/>

**Instructions:**

1. ACIS Ops confirms that ACIS is running flight SW version **58 or higher**, that software telemetry is being received, and hardware telemetry indicates no hardware issues.
2. If TLM FMT = 2,  
Switch to EPS subformat  
Verifiers on F\_MAIN: CTUFMTSL = 2, COTLRDSF = EPS  
else  
Set telemetry format to 2, subformat to EPS  
Uses script C\_SET\_FORMAT with inputs FMT2 and EPS  
Verifiers on F\_MAIN: CTUFMTSL = 2, COTLRDSF = EPS
3. OC/CC uplinks command **1R\_WBTXB38025.cld (94 commands)**.  
ACIS verifies command echo (**19161**).
4. OC/CC uplinks command **1R\_RBTXINGBLL.cld (7 commands)**.  
ACIS verifies command echo (18704).
5. ACIS checks the dump contents and verifies the correct parameter settings are returned. If invalid, return to step 3.

<b>SOT Manager/Lead:</b>		<b>Mission Planning Manager:</b>	
<b>OC or Ops Manager:</b>		<b>FOM:</b>	
<b>Sys. Engineer:</b>		<b>Flight Director:</b>	