

STEREO CONFIGURATION CHANGE REQUEST

For Office Use Only	TITLE:	CLASS:	NUMBER:	
		I II	DATE:	
CONFIGURED ITEM:		ORIGINATOR:		PRIORITY:
STS Number:	Payload: STEREO	Name:	Dave Curtis	<input checked="" type="checkbox"/> Routine
Component :	Experiment: IMPACT	Organization:	U.C. Berkeley	<input type="checkbox"/> Urgent
Component Part #:	Serial #:	Phone:	510-642-5998	<input type="checkbox"/> Emergency
		Email:	dwc@ssl.berkeley.edu	
TYPE OF REQUEST:		RESPONSIBLE ORGANIZATION/INDIVIDUAL:		IMPACTS: (If yes attach additional pages)
<input type="checkbox"/>	Configuration			COST: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input type="checkbox"/>	Deviation #			SCHEDULE: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input checked="" type="checkbox"/>	Waiver #			
<input type="checkbox"/>	Other:			
REASONS FOR CHANGE:			RETEST REQUIRED:	
<input checked="" type="checkbox"/>	Improvement	<input type="checkbox"/> Test/Payload Failure	<input type="checkbox"/> New Document:	<input type="checkbox"/> No
<input type="checkbox"/>	Reliability	<input type="checkbox"/> Specification Requirements	<input type="checkbox"/> Other:	<input type="checkbox"/> Yes
PROPOSED CHANGE (Attach additional pages as required):				
<p style="color: blue;">The IDPU power converter also powers STE-U, mounted remotely. Both units connect secondary ground to chassis ground. This violates the Project EMC requirements as called out in 7381-9030d, section 3.2.2.6</p>				
RATIONALE (Attach additional pages as required):				
<p style="color: blue;">STE-U is powered by the IDPU low voltage power converter. Secondary ground is connected to chassis ground in both STE-U and the IDPU, creating the possibility that ground will return from STE-U via the chassis ground. The STE-U dissipates 80mW, and only 8mA of that current is unbalanced and might return via the chassis. The STE-U contains no switching loads, so the current is fairly constant. The IDPU to STE-U harness is about 1.2m long, located on the +X face of the spacecraft, over 4m from the MAG sensor.</p> <p style="color: blue;">Given the small size of the load and the distance from the MAG sensor, the worst case generated DC current loop is still well below the magnetometer requirements, while the DC nature of the load means that no significant AC currents will flow.</p> <p style="color: blue;">The alternative is to provide separate windings to power the STE-U in the IDPU power converter. Given the tiny load this will be very inefficient, and cost mass (~50g), power (~50mW), complication (reliability), and \$ (~50k).</p>				
DOCUMENTS/DRAWINGS AFFECTED (Document No./Title/Section) :				
AFFECTED (Check all that apply):				
FLIGHT SYSTEMS:		GROUND SYSTEMS:		
<input type="checkbox"/>	Avionics	<input type="checkbox"/>	Electrical and Cables	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Experiment	<input type="checkbox"/>	Software/Firmware	<input type="checkbox"/>
<input type="checkbox"/>	Structures and Mechanical	<input type="checkbox"/>	Other:	<input type="checkbox"/>
REQUIRED APPROVAL DATE: _____				
REQUIRED JUSTIFICATION:				

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				I	
				II	
DATE:					
CONTRACT/AGREEMENT NUMBER EFFECTIVITY:					
STEREO NAS5-97271		√	IMPACT S-13635Y	PLASTIC NAS5-00132	SECCHI S-13631Y
DOCUMENTS/DRAWINGS TO BE REVISED:					
Document/Drawing Number:		Document/Drawing Title:		Section(s) No.	EO No.:
PROCESSING APPROVAL:					
CCB					
Out of Board					
Emergency		Systems Engineer			Date
CCB APPROVAL:					
CCB ACTION DATE:		CCB ACTION ITEMS/CONDITIONS:			
Approved					
Denied					
Withdrawn					
Hold					
CLOSEOUT COMMENTS:				DATE OF CLOSEOUT:	
				CMO	