

## STEREO CONFIGURATION CHANGE REQUEST

For Office Use Only	TITLE:	CLASS:	NUMBER:	
		I II	DATE:	
CONFIGURED ITEM:		ORIGINATOR:		PRIORITY:
STS Number:	Payload: <b>STEREO</b>	Name:	<b>Dave Curtis</b>	<input checked="" type="checkbox"/> Routine
Component :	Experiment: <b>IMPACT</b>	Organization:	<b>U.C. Berkeley</b>	<input type="checkbox"/> Urgent
Component Part #:	Serial #:	Phone:	<b>510-642-5998</b>	<input type="checkbox"/> Emergency
		Email:	<b>dwc@ssl.berkeley.edu</b>	
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"/>	No
<input type="checkbox"/>	Reliability	<input type="checkbox"/> Specification Requirements	<input type="checkbox"/> New Document:	<input type="checkbox"/> Yes
			<input type="checkbox"/> Other:	
PROPOSED CHANGE (Attach additional pages as required):				
<p style="color: blue;">Use single-ended interfaces between the STEREO IDPU and the instruments (SEP, PLASTIC, and SWEA/STE) as described in the IMPACT Serial Interface document. This violates the Project EMC requirements as called out in 7381-9030d, section 3.1.7</p>				
RATIONALE (Attach additional pages as required):				
<p style="color: blue;">Proposed interface saves significant power over differential interfaces. The interface meets the intent of the requirement by providing a high impedance receiver, limited rise time signals, and coax interconnect to minimize and control return currents.</p> <p style="color: blue;">To first order no current gets forced into the chassis by this single-ended digital interface. The input circuit is high impedance, so the only DC current in the system is due to the bias current of the input gate, on the order of 1 micro amp max per signal (3 signals in the interface). Some of this current may find its way onto the chassis. The AC current in the system is due to charging of stray capacitance in the receiver. The input capacitance is on the order of 10pF. The rise time is limited on the transmitting end to 5V in a few hundred ns, giving a max current of 0.2uA. In fact the transmission line characteristics of the coax used to carry this signal will tend to make even this small current return through the coax shield rather than the chassis.</p> <p style="color: blue;">This plan was tentatively approved by Bob Manning early in the program; at this point in the design changing to a differential interface would also cost \$</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"/> Other:

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	