



# GLAST Mission Interface Change Notice (ICN)

ICN No.  
 009

SHEET 1 OF 2

**SPECTRUMASTRO**

**ORIGINATOR:** Tim Morse      **PHONE:** 480-892-8200      **DATE:** 10-15-03  
**CHANGE TITLE:** Reduce the High Speed Serial Science Data Rate      **ORG:** Spectrum Astro

DOCUMENT NUMBER	TITLE	VERSION
1196-EI-Y46311-000	LAT-SC ICD	A

**REASON FOR CHANGE:**  
 The LAT side of the Science Data Interface has moved from the SIU to the GASU to take advantage of functionality that already exists in the GASU and to reduce the complexity of the SIU. The result is a reduction in the nominal frequency of any interface signal from 8.25 MHz (SIU cPCI 33 MHz clock divided by 4) to 5 MHz (GASU 20 MHz system clock divided by 4).

**PROPOSED CHANGE:**  
 Change the nominal clock frequency to 5 MHz in Table 6-1. Clarify that the clock low period is between 40% and 60% of the total clock period.  
  
 See attached page.

**INSTRUMENT IMPACT**  
 Cost      No LAT Impact  
 Schedule

**SPACECRAFT IMPACT**  
 Cost  
 Schedule

**ORIGINATOR SIGNATURE:**

**APPROVAL SIGNATURES:**

Spectrum Instrument Interface Lead – Tim Morse	Spectrum Program Manager – Al Lepore
Instrument Systems Engineer – Dick Horn	Instrument Program Manager – Lowell Klaisner

CHANGE:

### 6.4.1 High Speed Serial Science Data

The maximum signal frequency of any one interface signal shall be 8.25 MHz.

#### 6.4.1.1 LVDS Science Data Interface Timing

The LAT/GBM Input/Output (LGIO) shall receive data from the LAT at a rate up to 66 Mbps.

The timing operation of the LAT interface is described below and shown in Figure 6-12 and Table 6-2.

**Table 6-1. LVDS Interface Timing Parameters**

Ref	Parameter	Min	Nominal	Max	Units
1	Rising Clock to Data Valid	-18	-	18	nS
2	Data Setup to Falling Clock	30	-	-	nS
3	Data Hold from Falling Clock	30	-	-	nS
4	Clock Low Period*	40%	50%	60%	nS
5	Clock Period*	-	200	-	nS
6	Data Valid to Falling Clock	30	-	-	nS
7	Falling Clock to SC Data Ready	0	-	18	nS
	Frequency	1	5	8.25	MHz
*	Note: Numbers typical for nominally Frequency				