Buffer Controller Internal Data Formats

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1. Data Storage in the BC

Defined in *pci3_lm.tdf* and *pci3_lm.tdf*.
Data created by the daughterboards for each L1 accept follows these steps in being read to L3. The data stored at various stages in the process is shown in **Table 1.**

1. Read from daughterboard to BC over PCI-3.
2. Stored in a location in the BC buffer memory (DPRAM) specified by the BM message *PUT_BUF*.
3. Read from BC buffer and stored in BC L3 Output FIFO controlled by BM message *GET_BUF*.
4. Read from L3 FIFO to SBC/VBD over VME (via PCI-3 and Universe II) when requested by SBC.

Table 1: Format of L3 data from daughterboards (DB), stored in Buffer (Buff) and stored in L3 Output FIFO (L3). Sources of data words are: "c" = created by, "p" = passed unmodified from previous step, "m" = modified by this step.

#	Name	Bits	DB	Buff	L3	Comments
0	Word Count	31..0	—	c	—	• N (count from 1) • created by BC as it receives data over PCI • used by BC to indicate number of words to read from buffer
1	Header *unused* *source* *BX*	 31..16 15..8 7..0	c	p	m	• beginning of data from DB • DBs only fill BX information • added when read from the buffer to FIFO • BX for this event
2	Data	31..0	c	p	p	• DB "data"
…	…	…	…	…	…	…
N-2	Data	31..0	c	p	p	• last "data" word from DB
N-1	Word Count	31..0	c	p	m	• N for DB and Buff N+1 for L3 (incl checksum error) - count from 1 • word count including checksum • created by DB – recalc by BC when buffer read
N	Checksum	31..0	c	p	m	• vertical parity of words 1 – N-1 • created by DB – recalc by BC when buffer read
N+1	Chck Err	31..0	—	—	c	• 1 = Error in checksum 0 = no error