

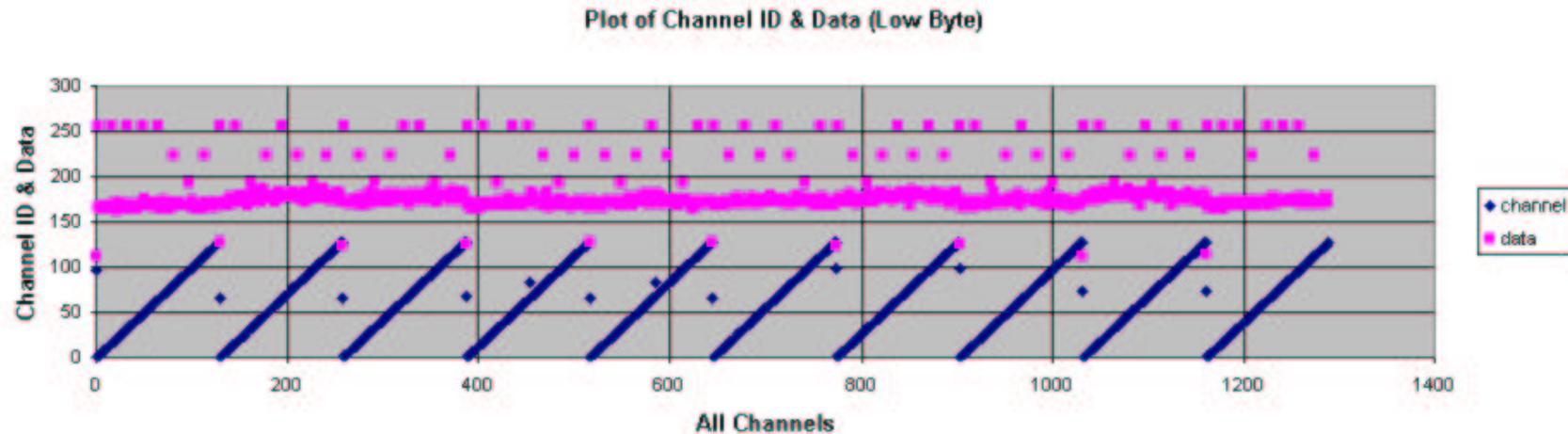
HOW ERROR-FREE ARE ERROR-FREE EVENTS?

background story:

observation by Eckhard and Russell last week:

- full readout error-free
- sparsified readout many errors
 - ➔ readout mode specific problems???

Typical “error-free” event in full readout mode:



- chip IDs messed up
- two channels wrong
 - ➔ errors are present in either mode,
but error check does not always work!

Technical details

spreadsheet-based readout has

two error check routines:

- original (in unpacker DLL) → full readout only
- my code (spreadsheet macro) → sparsified readout

Technical details

full readout error check has two problems:

- peculiar interaction with my code (aka “bug”)
 - ➔ some bit errors ignored
(not in Gustavo’s original spreadsheet)
- chip IDs are not verified at all!
 - (bad idea with current KSU readout problems)
 - code susceptible to similar problems
 - (is the last chip checked for channel IDs???)

Solution

short-term: use sparse readout with low threshold

→ read all channels, but have full error check
(including chip IDs)

mid-term: spreadsheet update

remove interference of two error check codes
check chip ID in full readout

(maybe merge error check codes)