

Jamming

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Jamming setup

- external pulse generator
 - two outputs to generated differential (LVDS) signal
 - signal sent to the SPILL input of the KC705 board
- SPILL generates a SOFT RESET
 - whenever a "SPILL up" is detected the KC705 sends a SOFT RESET to all ALCOR chips
- Jamming
 - pulse frequency: 20 kHz
 - pulse width: 500 ns

Jamming sequence

- program KC705
- initialise ALCOR chips
 - make sure that ECCR "*Column 0 Enable*" and "*Column 1 Enable*" bits stay zero
 - needed to modify programs for that, not big issue
- turn ON the Jamming pulser
- set KC705 in SPILL mode (mode = 0x5)
 - this will trigger a SOFT RESET at each SPILL signal
 - ALCOR chips are "jammed", frame counters do not increase
- enable columns in ECCR
 - manually set ECCR "*Column 0 Enable*" and "*Column 1 Enable*" to one
- reset KC705 SPILL mode (mode = 0x0)
 - stop sending SOFT RESET signals
 - ALCOR chips are "unjammed" all together, frame counters start increasing
- turn OFF the Jamming pulser
- ready to collect data with synchronised frames

Anomaly #1

first frame mismatch

first word is
the frame
number



chip-4 lane-0

chip-5 lane-0

70000000	70000000
00000000	00000000
0000249f	1c1c1c1c
5c5c5c5c	0000249f
1c1c1c1c	5c5c5c5c
000024a0	1c1c1c1c
5c5c5c5c	000024a0
1c1c1c1c	5c5c5c5c
000024a1	1c1c1c1c
5c5c5c5c	000024a1
1c1c1c1c	5c5c5c5c
000024a2	1c1c1c1c
5c5c5c5c	000024a2
1c1c1c1c	5c5c5c5c
000024a3	1c1c1c1c
5c5c5c5c	000024a3
1c1c1c1c	5c5c5c5c
000024a4	1c1c1c1c
5c5c5c5c	000024a4
1c1c1c1c	5c5c5c5c
000024a5	1c1c1c1c
5c5c5c5c	000024a5
1c1c1c1c	5c5c5c5c
000024a6	1c1c1c1c
5c5c5c5c	000024a6



first word is frame
header followed by
the same frame
number

Anomaly #2

rollover mismatch

first word is
the frame
header



chip-4 lane-0

chip-5 lane-0

70000000	70000000
00000000	00000000
1c1c1c1c	5c5c5c5c
000023fa	1c1c1c1c
5c5c5c5c	000023fa
1c1c1c1c	5c5c5c5c
000023fb	1c1c1c1c
5c5c5c5c	000023fb
1c1c1c1c	5c5c5c5c
000023fc	1c1c1c1c
5c5c5c5c	000023fc
1c1c1c1c	5c5c5c5c
000023fd	1c1c1c1c
5c5c5c5c	000023fd
1c1c1c1c	5c5c5c5c
000023fe	1c1c1c1c
5c5c5c5c	000023fe
1c1c1c1c	5c5c5c5c
000023ff	1c1c1c1c
5c5c5c5c	000023ff
1c1c1c1c	5c5c5c5c
00002400	1c1c1c1c
5c5c5c5c	00002400
1c1c1c1c	5c5c5c5c
00002401	1c1c1c1c



first word is a
rollover from the
previous frame
followed by a frame
header with the
same frame
number