

'LUMSHOCK.ASC' Anti-Tearing Method

MSX BASIC LINES	VRAM Slot ID on PAGE 1	VRAM Slot ID on PAGE 0	Current SET PAGE	Current Frame VRAM Slot ID	Next Frame VRAM Slot ID	Next SET PAGE
160	1	0	0	0	1	1
170	1	2	1	1	2	0
180	3	2	0	2	3	1
190	3	4	1	3	4	0
200	5	4	0	4	5	1
210	5	6	1	5	6	0
220	7	6	0	6	7	1
230	7	8	1	7	8	0
240	9	8	0	8	9	1
250	9	10	1	9	10	0
260	11	10	0	10	11	1
270	11	12	1	11	12	0
280	13	12	0	12	13	1
290	13	14	1	13	14	0
300	15	14	0	14	15	1
310	15	0	1	15	0	0

1x VRAM Slot ID = 1x Frame of SCREEN 12 = 64kB VRAM Bank

Range of VRAM Slot ID is from 0 to 15 (64kB x 16 = 1024kB).

This anti-tearing method uses a double buffer alternating page 0 and page 1.

The next frame is preloaded on the hidden page.

When SET PAGE changes the page the VRAM Slot ID is changed only in the hidden page.

To better understand, consider each VRAM Slot ID as a new page counter.

Operations Flow

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LINE 160 → initial VRAM Slot ID status: 15, 0 → 0,15 via SET PAGE → 0, 1 via OUT port
LINE 170 → initial VRAM Slot ID status: 0, 1 → 1, 0 via SET PAGE → 1, 2 via OUT port
LINE 180 → initial VRAM Slot ID status: 1, 2 → 2, 1 via SET PAGE → 2, 3 via OUT port
LINE 190 → initial VRAM Slot ID status: 2, 3 → 3, 2 via SET PAGE → 3, 4 via OUT port
LINE 200 → initial VRAM Slot ID status: 3, 4 → 4, 3 via SET PAGE → 4, 5 via OUT port
LINE 210 → initial VRAM Slot ID status: 4, 5 → 5, 4 via SET PAGE → 5, 6 via OUT port
LINE 220 → initial VRAM Slot ID status: 5, 6 → 6, 5 via SET PAGE → 6, 7 via OUT port
LINE 230 → initial VRAM Slot ID status: 6, 7 → 7, 6 via SET PAGE → 7, 8 via OUT port
LINE 240 → initial VRAM Slot ID status: 7, 8 → 8, 7 via SET PAGE → 8, 9 via OUT port
LINE 250 → initial VRAM Slot ID status: 8, 9 → 9, 8 via SET PAGE → 9,10 via OUT port
LINE 260 → initial VRAM Slot ID status: 9,10 → 10, 9 via SET PAGE → 10,11 via OUT port
LINE 270 → initial VRAM Slot ID status: 10,11 → 11,10 via SET PAGE → 11,12 via OUT port
LINE 280 → initial VRAM Slot ID status: 11,12 → 12,11 via SET PAGE → 12,13 via OUT port
LINE 290 → initial VRAM Slot ID status: 12,13 → 13,12 via SET PAGE → 13,14 via OUT port
LINE 300 → initial VRAM Slot ID status: 13,14 → 14,13 via SET PAGE → 14,15 via OUT port
LINE 310 → initial VRAM Slot ID status: 14,15 → 15,14 via SET PAGE → 15, 0 via OUT port
LINE 320 → GOTO 160 a infinite loop
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