|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Mapeo GPIO en /dev/dio/out/0** | | | | | | | |
|  | GPIO8 | GPIO7 | GPIO6 | GPIO5 | GPIO4 | GPIO3 | GPIO2 |
| 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 |
|  | | | | | | | |
| GPIO1 | GPIO0 | LED3 | LED2 | LED1 | RGB B | RGB G | RGB R |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

Fila se debe ejecutar antes que columna.

X = Mensaje

NI = No Importa

T = Período

|  |  |
| --- | --- |
| **latch** | 0 |
| **es\_fila** | 0 |
| **es\_col** | 0 |
| **clock\_fila** | 0 |
| **clock\_col** | 0 |
| **tiempo** | 0 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **es\_col\_1** | NI | NI | X23 | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 |
| **es\_col\_2** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **es\_col\_1** | X15 | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 |
| **es\_col\_2** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | X15 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | T | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **es\_fila** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| **es\_col\_1** | X7 | X7 | X6 | X6 | X5 | X5 | X4 | X4 | X3 | X3 | X2 | X2 | X1 | X1 | X0 | NI | NI | NI |
| **es\_col\_2** | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 | NI | NI | NI |
| **es\_col\_3** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| **tiempo** | T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | NI | NI | X23 | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 |
| **es\_col\_2** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 2\*T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X15 | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 |
| **es\_col\_2** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | X15 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 2\*T | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X7 | X7 | X6 | X6 | X5 | X5 | X4 | X4 | X3 | X3 | X2 | X2 | X1 | X1 | X0 | NI | NI | NI |
| **es\_col\_2** | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 | NI | NI | NI |
| **es\_col\_3** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| **tiempo** | 2\*T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | NI | NI | X23 | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 |
| **es\_col\_2** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 3\*T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X15 | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 |
| **es\_col\_2** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | X15 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 3\*T | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X7 | X7 | X6 | X6 | X5 | X5 | X4 | X4 | X3 | X3 | X2 | X2 | X1 | X1 | X0 | NI | NI | NI |
| **es\_col\_2** | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 | NI | NI | NI |
| **es\_col\_3** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| **tiempo** | 3\*T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | NI | NI | X23 | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 |
| **es\_col\_2** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 4\*T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X15 | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 |
| **es\_col\_2** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | X15 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 4\*T | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X7 | X7 | X6 | X6 | X5 | X5 | X4 | X4 | X3 | X3 | X2 | X2 | X1 | X1 | X0 | NI | NI | NI |
| **es\_col\_2** | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 | NI | NI | NI |
| **es\_col\_3** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| **tiempo** | 4\*T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | NI | NI | X23 | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 |
| **es\_col\_2** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 5\*T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X15 | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 |
| **es\_col\_2** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | X15 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 5\*T | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X7 | X7 | X6 | X6 | X5 | X5 | X4 | X4 | X3 | X3 | X2 | X2 | X1 | X1 | X0 | NI | NI | NI |
| **es\_col\_2** | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 | NI | NI | NI |
| **es\_col\_3** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| **tiempo** | 5\*T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | NI | NI | X23 | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 |
| **es\_col\_2** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 6\*T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X15 | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 |
| **es\_col\_2** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | X15 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 6\*T | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X7 | X7 | X6 | X6 | X5 | X5 | X4 | X4 | X3 | X3 | X2 | X2 | X1 | X1 | X0 | NI | NI | NI |
| **es\_col\_2** | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 | NI | NI | NI |
| **es\_col\_3** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| **tiempo** | 6\*T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | NI | NI | X23 | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 |
| **es\_col\_2** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 7\*T | | | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X15 | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 |
| **es\_col\_2** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | X15 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| **tiempo** | 7\*T | | | | | | | | | | | | | | | |

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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X7 | X7 | X6 | X6 | X5 | X5 | X4 | X4 | X3 | X3 | X2 | X2 | X1 | X1 | X0 | NI | NI | NI |
| **es\_col\_2** | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 | NI | NI | NI |
| **es\_col\_3** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | NI | NI | X23 | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 |
| **es\_col\_2** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X15 | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 |
| **es\_col\_2** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | X15 |
| **es\_col\_3** | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | X23 |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
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| **latch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **es\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **es\_col\_1** | X7 | X7 | X6 | X6 | X5 | X5 | X4 | X4 | X3 | X3 | X2 | X2 | X1 | X1 | X0 | NI | NI | NI |
| **es\_col\_2** | X15 | X14 | X14 | X13 | X13 | X12 | X12 | X11 | X11 | X10 | X10 | X9 | X9 | X8 | X8 | NI | NI | NI |
| **es\_col\_3** | X23 | X22 | X22 | X21 | X21 | X20 | X20 | X19 | X19 | X18 | X18 | X17 | X17 | X16 | X16 | NI | NI | NI |
| **clock\_fila** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| **clock\_col** | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| **tiempo** | 8\*T | | | | | | | | | | | | | | | | | |