

# Pin List: XEM7010

2024-07-22

| Connector | Pin | FPGA Pin | Description | Pin Attributes                 | Length (mm) | I/O Bank | BRK7010 |
|-----------|-----|----------|-------------|--------------------------------|-------------|----------|---------|
| MC1       | 1   |          | +VDC        |                                |             |          | J1-1    |
| MC1       | 2   |          | DGND        |                                |             |          | J1-2    |
| MC1       | 3   |          | +VDC        |                                |             |          | J1-3    |
| MC1       | 4   |          | +1.0VDD     | VCCINT,VCCBRAM                 |             |          | J1-4    |
| MC1       | 5   |          | +VDC        |                                |             |          | J1-5    |
| MC1       | 6   |          | +1.0VDD     | VCCINT,VCCBRAM                 |             |          | J1-6    |
| MC1       | 7   |          | +1.8VDD     | VCCAUX                         |             |          | J1-7    |
| MC1       | 8   | B20      | SYS_CLK_MC1 | IO_L16P_T2_16                  | 48.125      | 16       | J1-8    |
| MC1       | 9   |          | +3.3VDD     | VCCO_16,VCCO_13,VCCO_0,VCCO_14 |             |          | J1-9    |
| MC1       | 10  | M9       | XADC_VN     | VN_0                           |             | 0        | J1-10   |
| MC1       | 11  |          | +3.3VDD     | VCCO_16,VCCO_13,VCCO_0,VCCO_14 |             |          | J1-11   |
| MC1       | 12  | L10      | XADC_VP     | VP_0                           |             | 0        | J1-12   |
| MC1       | 13  |          | +3.3VDD     | VCCO_16,VCCO_13,VCCO_0,VCCO_14 |             |          | J1-13   |
| MC1       | 14  |          | DGND        |                                |             |          | J1-14   |
| MC1       | 15  | P5       | B35_L21P    | IO_L21P_T3_DQS_35              | 24.307      | 35       | J1-15   |
| MC1       | 16  | R1       | B35_L20P    | IO_L20P_T3_35                  | 14.142      | 35       | J1-16   |
| MC1       | 17  | P4       | B35_L21N    | IO_L21N_T3_DQS_35              | 23.098      | 35       | J1-17   |
| MC1       | 18  | P1       | B35_L20N    | IO_L20N_T3_35                  | 14.559      | 35       | J1-18   |
| MC1       | 19  | P6       | B35_L24P    | IO_L24P_T3_35                  | 24.406      | 35       | J1-19   |
| MC1       | 20  | P2       | B35_L22P    | IO_L22P_T3_35                  | 14.239      | 35       | J1-20   |
| MC1       | 21  | N5       | B35_L24N    | IO_L24N_T3_35                  | 23.362      | 35       | J1-21   |
| MC1       | 22  | N2       | B35_L22N    | IO_L22N_T3_35                  | 15.045      | 35       | J1-22   |
| MC1       | 23  | N4       | B35_L19P    | IO_L19P_T3_35                  | 22.611      | 35       | J1-23   |
| MC1       | 24  | M3       | B35_L16P    | IO_L16P_T2_35                  | 15.842      | 35       | J1-24   |
| MC1       | 25  | N3       | B35_L19N    | IO_L19N_T3_VREF_35             | 21.036      | 35       | J1-25   |
| MC1       | 26  | M2       | B35_L16N    | IO_L16N_T2_35                  | 14.378      | 35       | J1-26   |
| MC1       | 27  | M1       | B35_L15P    | IO_L15P_T2_DQS_35              | 16.752      | 35       | J1-27   |
| MC1       | 28  | M6       | B35_L23P    | IO_L23P_T3_35                  | 18.269      | 35       | J1-28   |
| MC1       | 29  | L1       | B35_L15N    | IO_L15N_T2_DQS_35              | 17.916      | 35       | J1-29   |
| MC1       | 30  | M5       | B35_L23N    | IO_L23N_T3_35                  | 17.034      | 35       | J1-30   |
| MC1       | 31  | L3       | B35_L14P    | IO_L14P_T2_SRCC_35             | 20.446      | 35       | J1-31   |

| Connector | Pin | FPGA Pin | Description | Pin Attributes        | Length (mm) | I/O Bank | BRK7010 |
|-----------|-----|----------|-------------|-----------------------|-------------|----------|---------|
| MC1       | 32  | L5       | B35_L18P    | IO_L18P_T2_35         | 16.943      | 35       | J1-32   |
| MC1       | 33  | K3       | B35_L14N    | IO_L14N_T2_SRCC_35    | 20.180      | 35       | J1-33   |
| MC1       | 34  | L4       | B35_L18N    | IO_L18N_T2_35         | 15.742      | 35       | J1-34   |
| MC1       | 35  |          | DGND        |                       |             |          | J1-35   |
| MC1       | 36  |          | VCCO_MC1    | VCCO_35               |             |          | J1-36   |
| MC1       | 37  | K1       | B35_L7P     | IO_L7P_T1_AD6P_35     | 16.338      | 35       | J1-37   |
| MC1       | 38  | K2       | B35_L9P     | IO_L9P_T1_DQS_AD7P_35 | 13.039      | 35       | J1-38   |
| MC1       | 39  | J1       | B35_L7N     | IO_L7N_T1_AD6N_35     | 16.780      | 35       | J1-39   |
| MC1       | 40  | J2       | B35_L9N     | IO_L9N_T1_DQS_AD7N_35 | 13.509      | 35       | J1-40   |
| MC1       | 41  | H2       | B35_L8P     | IO_L8P_T1_AD14P_35    | 18.024      | 35       | J2-1    |
| MC1       | 42  | K6       | B35_L17P    | IO_L17P_T2_35         | 15.409      | 35       | J2-2    |
| MC1       | 43  | G2       | B35_L8N     | IO_L8N_T1_AD14N_35    | 18.525      | 35       | J2-3    |
| MC1       | 44  | J6       | B35_L17N    | IO_L17N_T2_35         | 15.355      | 35       | J2-4    |
| MC1       | 45  | H3       | B35_L11P    | IO_L11P_T1_SRCC_35    | 18.459      | 35       | J2-5    |
| MC1       | 46  | J5       | B35_L10P    | IO_L10P_T1_AD15P_35   | 15.938      | 35       | J2-6    |
| MC1       | 47  | G3       | B35_L11N    | IO_L11N_T1_SRCC_35    | 18.414      | 35       | J2-7    |
| MC1       | 48  | H5       | B35_L10N    | IO_L10N_T1_AD15N_35   | 14.906      | 35       | J2-8    |
| MC1       | 49  | E2       | B35_L4P     | IO_L4P_T0_35          | 17.421      | 35       | J2-9    |
| MC1       | 50  | G1       | B35_L5P     | IO_L5P_T0_AD13P_35    | 10.487      | 35       | J2-10   |
| MC1       | 51  | D2       | B35_L4N     | IO_L4N_T0_35          | 17.989      | 35       | J2-11   |
| MC1       | 52  | F1       | B35_L5N     | IO_L5N_T0_AD13N_35    | 10.709      | 35       | J2-12   |
| MC1       | 53  | E1       | B35_L3P     | IO_L3P_T0_DQS_AD5P_35 | 15.758      | 35       | J2-13   |
| MC1       | 54  | F3       | B35_L6P     | IO_L6P_T0_35          | 11.904      | 35       | J2-14   |
| MC1       | 55  |          | DGND        |                       |             |          | J2-15   |
| MC1       | 56  |          | VCCO_MC1    | VCCO_35               |             |          | J2-16   |
| MC1       | 57  | D1       | B35_L3N     | IO_L3N_T0_DQS_AD5N_35 | 15.605      | 35       | J2-17   |
| MC1       | 58  | E3       | B35_L6N     | IO_L6N_T0_VREF_35     | 11.439      | 35       | J2-18   |
| MC1       | 59  | B1       | B35_L1P     | IO_L1P_T0_AD4P_35     | 16.244      | 35       | J2-19   |
| MC1       | 60  | C2       | B35_L2P     | IO_L2P_T0_AD12P_35    | 11.909      | 35       | J2-20   |
| MC1       | 61  | A1       | B35_L1N     | IO_L1N_T0_AD4N_35     | 16.248      | 35       | J2-21   |
| MC1       | 62  | B2       | B35_L2N     | IO_L2N_T0_AD12N_35    | 11.892      | 35       | J2-22   |
| MC1       | 63  | E13      | B16_L4P     | IO_L4P_T0_16          | 29.298      | 16       | J2-23   |
| MC1       | 64  | F13      | B16_L1P     | IO_L1P_T0_16          | 22.898      | 16       | J2-24   |
| MC1       | 65  | E14      | B16_L4N     | IO_L4N_T0_16          | 30.472      | 16       | J2-25   |

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|-----------|-----|----------|---------------|--------------------------------|-------------|----------|---------|
| MC1       | 66  | F14      | B16_L1N       | IO_L1N_T0_16                   | 23.925      | 16       | J2-26   |
| MC1       | 67  | C14      | B16_L3P       | IO_L3P_T0_DQS_16               | 29.485      | 16       | J2-27   |
| MC1       | 68  | D14      | B16_L6P       | IO_L6P_T0_16                   | 23.235      | 16       | J2-28   |
| MC1       | 69  | C15      | B16_L3N       | IO_L3N_T0_DQS_16               | 30.543      | 16       | J2-29   |
| MC1       | 70  | D15      | B16_L6N       | IO_L6N_T0_VREF_16              | 24.212      | 16       | J2-30   |
| MC1       | 71  | B15      | B16_L7P       | IO_L7P_T1_16                   | 30.140      | 16       | J2-31   |
| MC1       | 72  | F16      | B16_L2P       | IO_L2P_T0_16                   | 26.177      | 16       | J2-32   |
| MC1       | 73  | B16      | B16_L7N       | IO_L7N_T1_16                   | 31.240      | 16       | J2-33   |
| MC1       | 74  | E17      | B16_L2N       | IO_L2N_T0_16                   | 27.462      | 16       | J2-34   |
| MC1       | 75  | E16      | B16_L5P       | IO_L5P_T0_16                   | 32.146      | 16       | J2-35   |
| MC1       | 76  | D16      | B16_L5N       | IO_L5N_T0_16                   | 26.331      | 16       | J2-36   |
| MC1       | 77  | H4       | B35_L12P_MRCC | IO_L12P_T1_MRCC_35             | 25.470      | 35       | J2-37   |
| MC1       | 78  |          | DGND          |                                |             |          | J2-38   |
| MC1       | 79  | G4       | B35_L12N_MRCC | IO_L12N_T1_MRCC_35             | 25.477      | 35       | J2-39   |
| MC1       | 80  |          | DGND          |                                |             |          | J2-40   |
| MC2       | 1   |          | DGND          |                                |             |          | J3-1    |
| MC2       | 2   |          | +3.3VDD       | VCCO_16,VCCO_13,VCCO_0,VCCO_14 |             |          | J3-2    |
| MC2       | 3   | E12      | VCCBATT       | VCCBATT_0                      |             |          | J3-3    |
| MC2       | 4   |          | +3.3VDD       | VCCO_16,VCCO_13,VCCO_0,VCCO_14 |             |          | J3-4    |
| MC2       | 5   | V12      | FPGA_TCK      | TCK_0                          |             | 0        | J6-6    |
| MC2       | 6   |          | +3.3VDD       | VCCO_16,VCCO_13,VCCO_0,VCCO_14 |             |          | J3-6    |
| MC2       | 7   | T13      | FPGA_TMS      | TMS_0                          |             | 0        | J6-4    |
| MC2       | 8   | U13      | FPGA_TDO      | TDO_0                          |             | 0        | J6-8    |
| MC2       | 9   | R13      | FPGA_TDI      | TDI_0                          |             | 0        | J6-10   |
| MC2       | 10  | J16      | B15_IO0       | IO_0_15                        | 35.914      | 15       | J3-10   |
| MC2       | 11  | A20      | SYS_CLK_MC2   | IO_L16N_T2_16                  | 36.123      | 16       | J3-11   |
| MC2       | 12  | M17      | B15_IO25      | IO_25_15                       | 26.694      | 15       | J3-12   |
| MC2       | 13  |          | DGND          |                                |             |          | J3-13   |
| MC2       | 14  |          | DGND          |                                |             |          | J3-14   |
| MC2       | 15  | N18      | B15_L17P      | IO_L17P_T2_A26_15              | 19.524      | 15       | J3-15   |
| MC2       | 16  | N20      | B15_L18P      | IO_L18P_T2_A24_15              | 23.282      | 15       | J3-16   |
| MC2       | 17  | N19      | B15_L17N      | IO_L17N_T2_A25_15              | 18.290      | 15       | J3-17   |
| MC2       | 18  | M20      | B15_L18N      | IO_L18N_T2_A23_15              | 23.125      | 15       | J3-18   |
| MC2       | 19  | M15      | B15_L24P      | IO_L24P_T3_RS1_15              | 22.843      | 15       | J3-19   |

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|-----------|-----|----------|-------------|-------------------------|-------------|----------|---------|
| MC2       | 20  | M13      | B15_L20P    | IO_L20P_T3_A20_15       | 29.797      | 15       | J3-20   |
| MC2       | 21  | M16      | B15_L24N    | IO_L24N_T3_RS0_15       | 22.139      | 15       | J3-21   |
| MC2       | 22  | L13      | B15_L20N    | IO_L20N_T3_A19_15       | 31.393      | 15       | J3-22   |
| MC2       | 23  | N22      | B15_L15P    | IO_L15P_T2_DQS_15       | 13.365      | 15       | J3-23   |
| MC2       | 24  | M18      | B15_L16P    | IO_L16P_T2_A28_15       | 23.506      | 15       | J3-24   |
| MC2       | 25  | M22      | B15_L15N    | IO_L15N_T2_DQS_ADV_B_15 | 13.559      | 15       | J3-25   |
| MC2       | 26  | L18      | B15_L16N    | IO_L16N_T2_A27_15       | 24.311      | 15       | J3-26   |
| MC2       | 27  | M21      | B15_L10P    | IO_L10P_T1_AD11P_15     | 14.131      | 15       | J3-27   |
| MC2       | 28  | L14      | B15_L22P    | IO_L22P_T3_A17_15       | 26.961      | 15       | J3-28   |
| MC2       | 29  | L21      | B15_L10N    | IO_L10N_T1_AD11N_15     | 14.741      | 15       | J3-29   |
| MC2       | 30  | L15      | B15_L22N    | IO_L22N_T3_A16_15       | 25.847      | 15       | J3-30   |
| MC2       | 31  | L19      | B15_L14P    | IO_L14P_T2_SRCC_15      | 17.849      | 15       | J3-31   |
| MC2       | 32  | K21      | B15_L9P     | IO_L9P_T1_DQS_AD3P_15   | 19.341      | 15       | J3-32   |
| MC2       | 33  | L20      | B15_L14N    | IO_L14N_T2_SRCC_15      | 16.280      | 15       | J3-33   |
| MC2       | 34  | K22      | B15_L9N     | IO_L9N_T1_DQS_AD3N_15   | 18.139      | 15       | J3-34   |
| MC2       | 35  |          | VCCO_MC2    | VCCO_15                 |             |          | J3-35   |
| MC2       | 36  |          | DGND        |                         |             |          | J3-36   |
| MC2       | 37  | L16      | B15_L23P    | IO_L23P_T3_FOE_B_15     | 18.099      | 15       | J3-37   |
| MC2       | 38  | K18      | B15_L13P    | IO_L13P_T2_MRCC_15      | 21.659      | 15       | J3-38   |
| MC2       | 39  | K16      | B15_L23N    | IO_L23N_T3_FWE_B_15     | 17.957      | 15       | J3-39   |
| MC2       | 40  | K19      | B15_L13N    | IO_L13N_T2_MRCC_15      | 20.482      | 15       | J3-40   |
| MC2       | 41  | K13      | B15_L19P    | IO_L19P_T3_A22_15       | 19.850      | 15       | J4-1    |
| MC2       | 42  | J20      | B15_L11P    | IO_L11P_T1_SRCC_15      | 18.845      | 15       | J4-2    |
| MC2       | 43  | K14      | B15_L19N    | IO_L19N_T3_A21_VREF_15  | 18.658      | 15       | J4-3    |
| MC2       | 44  | J21      | B15_L11N    | IO_L11N_T1_SRCC_15      | 17.653      | 15       | J4-4    |
| MC2       | 45  | K17      | B15_L21P    | IO_L21P_T3_DQS_15       | 15.189      | 15       | J4-5    |
| MC2       | 46  | J15      | B15_L5P     | IO_L5P_T0_AD9P_15       | 23.279      | 15       | J4-6    |
| MC2       | 47  | J17      | B15_L21N    | IO_L21N_T3_DQS_A18_15   | 15.019      | 15       | J4-7    |
| MC2       | 48  | H15      | B15_L5N     | IO_L5N_T0_AD9N_15       | 23.163      | 15       | J4-8    |
| MC2       | 49  | H17      | B15_L6P     | IO_L6P_T0_15            | 14.638      | 15       | J4-9    |
| MC2       | 50  | J14      | B15_L3P     | IO_L3P_T0_DQS_AD1P_15   | 23.267      | 15       | J4-10   |
| MC2       | 51  | H18      | B15_L6N     | IO_L6N_T0_VREF_15       | 14.271      | 15       | J4-11   |
| MC2       | 52  | H14      | B15_L3N     | IO_L3N_T0_DQS_AD1N_15   | 23.206      | 15       | J4-12   |
| MC2       | 53  | J22      | B15_L7P     | IO_L7P_T1_AD2P_15       | 8.561       | 15       | J4-13   |

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|-----------|-----|----------|---------------|--------------------|-------------|----------|---------|
| MC2       | 54  | H20      | B15_L8P       | IO_L8P_T1_AD10P_15 | 18.002      | 15       | J4-14   |
| MC2       | 55  |          | VCCO_MC2      | VCCO_15            |             |          | J4-15   |
| MC2       | 56  |          | DGND          |                    |             |          | J4-16   |
| MC2       | 57  | H22      | B15_L7N       | IO_L7N_T1_AD2N_15  | 9.085       | 15       | J4-17   |
| MC2       | 58  | G20      | B15_L8N       | IO_L8N_T1_AD10N_15 | 18.367      | 15       | J4-18   |
| MC2       | 59  | H13      | B15_L1P       | IO_L1P_T0_AD0P_15  | 19.082      | 15       | J4-19   |
| MC2       | 60  | G17      | B15_L4P       | IO_L4P_T0_15       | 20.477      | 15       | J4-20   |
| MC2       | 61  | G13      | B15_L1N       | IO_L1N_T0_AD0N_15  | 18.085      | 15       | J4-21   |
| MC2       | 62  | G18      | B15_L4N       | IO_L4N_T0_15       | 19.113      | 15       | J4-22   |
| MC2       | 63  | G21      | B16_L24P      | IO_L24P_T3_16      | 10.585      | 16       | J4-23   |
| MC2       | 64  | G15      | B15_L2P       | IO_L2P_T0_AD8P_15  | 23.400      | 15       | J4-24   |
| MC2       | 65  | G22      | B16_L24N      | IO_L24N_T3_16      | 9.436       | 16       | J4-25   |
| MC2       | 66  | G16      | B15_L2N       | IO_L2N_T0_AD8N_15  | 21.166      | 15       | J4-26   |
| MC2       | 67  | E22      | B16_L22P      | IO_L22P_T3_16      | 9.107       | 16       | J4-27   |
| MC2       | 68  | E21      | B16_L23P      | IO_L23P_T3_16      | 15.837      | 16       | J4-28   |
| MC2       | 69  | D22      | B16_L22N      | IO_L22N_T3_16      | 8.856       | 16       | J4-29   |
| MC2       | 70  | D21      | B16_L23N      | IO_L23N_T3_16      | 15.901      | 16       | J4-30   |
| MC2       | 71  | D20      | B16_L19P      | IO_L19P_T3_16      | 11.292      | 16       | J4-31   |
| MC2       | 72  | C22      | B16_L20P      | IO_L20P_T3_16      | 15.072      | 16       | J4-32   |
| MC2       | 73  | C20      | B16_L19N      | IO_L19N_T3_VREF_16 | 11.427      | 16       | J4-33   |
| MC2       | 74  | B22      | B16_L20N      | IO_L20N_T3_16      | 14.729      | 16       | J4-34   |
| MC2       | 75  | B21      | B16_L21P      | IO_L21P_T3_DQS_16  | 10.022      | 16       | J4-35   |
| MC2       | 76  | A21      | B16_L21N      | IO_L21N_T3_DQS_16  | 15.970      | 16       | J4-36   |
| MC2       | 77  | J19      | B15_L12P_MRCC | IO_L12P_T1_MRCC_15 | 19.628      | 15       | J4-37   |
| MC2       | 78  |          | DGND          |                    |             |          | J4-38   |
| MC2       | 79  | H19      | B15_L12N_MRCC | IO_L12N_T1_MRCC_15 | 19.662      | 15       | J4-39   |
| MC2       | 80  |          | DGND          |                    |             |          | J4-40   |