

## ROG STRIX Z390-E GAMING

-Do not combine DIMMs from multiple kits—even ones of the same make and model. Mixing and matching DIMMs can result in failure to boot.

- Purchasing single DIMMs is not recommended because compatibility cannot be guaranteed.

For the best results, please ensure all memory modules are of the same version or have the same date code (D/C) from the same vendor. Check with the memory vendor to get the correct memory modules.

-The default DIMM frequency depends on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module.

Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value.

-The stability and compatibility of memory modules with XMP profiles that operate beyond the JEDEC memory standard are not guaranteed.

The stability and compatibility of these memory modules depend on the CPU's capabilities and other installed devices.

### DDR4 4266 Qualified Vendors List (QVL)

| Vendors        | Part No.            | Size        | SS/DS | Chip Brand | Chip NO. | Timing      | Voltage | DIMM socket support (Optional) |        |        |
|----------------|---------------------|-------------|-------|------------|----------|-------------|---------|--------------------------------|--------|--------|
|                |                     |             |       |            |          |             |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| <b>G.SKILL</b> | F4-4266C19Q-32GTZSW | 32GB(8GB*4) | SS    | Samsung    | -        | 19-19-19-39 | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4266C19Q-32GTZKK | 32GB(8GB*4) | SS    | Samsung    | -        | 19-19-19-39 | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4266C19Q-32GTZR  | 32GB(8GB*4) | SS    | Samsung    | -        | 19-19-19-39 | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4266C19Q-32GTRG  | 32GB(8GB*4) | SS    | Samsung    | -        | 19-19-19-39 | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4266C19Q-32GTRS  | 32GB(8GB*4) | SS    | Samsung    | -        | 19-19-19-39 | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4266C17Q-32GTZSW | 32GB(8GB*4) | SS    | Samsung    | -        | 17-18-18-38 | 1.45V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4266C17Q-32GTZKK | 32GB(8GB*4) | SS    | Samsung    | -        | 17-18-18-38 | 1.45V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4266C17Q-32GTZR  | 32GB(8GB*4) | SS    | Samsung    | -        | 17-18-18-38 | 1.45V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4266C17Q-32GTRG  | 32GB(8GB*4) | SS    | Samsung    | -        | 17-18-18-38 | 1.45V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4266C17Q-32GTRS  | 32GB(8GB*4) | SS    | Samsung    | -        | 17-18-18-38 | 1.45V   | •                              | •      | •      |

### DDR4 4133 Qualified Vendors List (QVL)

| Vendors        | Part No.                    | Size        | SS/DS | Chip Brand | Chip NO. | Timing       | Voltage | DIMM socket support (Optional) |        |        |
|----------------|-----------------------------|-------------|-------|------------|----------|--------------|---------|--------------------------------|--------|--------|
|                |                             |             |       |            |          |              |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| <b>G.SKILL</b> | F4-4133C19Q-32GTZR          | 32GB(8GB*4) | SS    | Samsung    | -        | 19-19-19-39  | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4133C19Q-32GTRG          | 32GB(8GB*4) | SS    | Samsung    | -        | 19-19-19-39  | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4133C19Q-32GTRS          | 32GB(8GB*4) | SS    | Samsung    | -        | 19-19-19-39  | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4133C19Q-32GTZSWC        | 32GB(8GB*4) | SS    | Samsung    | -        | 19-19-19-39  | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4133C19Q-32GTZKCC        | 32GB(8GB*4) | SS    | Samsung    | -        | 19-19-19-39  | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4133C17Q-32GTZR          | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4133C17Q-32GTRG          | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4133C17Q-32GTRS          | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4133C17Q-32GTZSW         | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.4V    | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4133C17Q-32GTZKK         | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.4V    | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M2B4133C19R ver4.31 | 16GB(8GB*2) | SS    | Samsung    | -        | 19-25-25-45R | 1.4V    | •                              | •      | •      |
| <b>CORSAIR</b> | CMK32GX4M4E4133C19R ver4.31 | 32GB(8GB*4) | SS    | Samsung    | -        | 19-25-25-45R | 1.4V    | •                              | •      | •      |
| <b>CORSAIR</b> | CMK32GX4M4K4133C19R ver4.31 | 32GB(8GB*4) | SS    | Samsung    | -        | 19-25-25-45R | 1.4V    | •                              | •      | •      |

### DDR4 4000 Qualified Vendors List (QVL)

| Vendors        | Part No.                    | Size        | SS/DS | Chip Brand | Chip NO. | Timing       | Voltage | DIMM socket support (Optional) |        |        |
|----------------|-----------------------------|-------------|-------|------------|----------|--------------|---------|--------------------------------|--------|--------|
|                |                             |             |       |            |          |              |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| <b>G.SKILL</b> | F4-4000C17D-16GTZSW         | 16GB(8GB*2) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C17D-16GTZKK         | 16GB(8GB*2) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C17D-16GTZR          | 16GB(8GB*2) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C17D-16GTRG          | 16GB(8GB*2) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C17D-16GTRS          | 16GB(8GB*2) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C18Q-16GTZ           | 16GB(4GB*4) | SS    | Samsung    | -        | 18-22-22-40  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C18Q-32GTZ           | 32GB(8GB*4) | SS    | Samsung    | -        | 18-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C18Q-32GTZSW         | 32GB(8GB*4) | SS    | Samsung    | -        | 18-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C18Q-32GTZKW         | 32GB(8GB*4) | SS    | Samsung    | -        | 18-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C18Q-32GTZR          | 32GB(8GB*4) | SS    | Samsung    | -        | 18-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C18Q-32GTRG          | 32GB(8GB*4) | SS    | Samsung    | -        | 18-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C18Q-32GTRS          | 32GB(8GB*4) | SS    | Samsung    | -        | 18-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C17Q-32GTZSW         | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C17Q-32GTZKK         | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C17Q-32GTZR          | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C17Q-32GTRG          | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-4000C17Q-32GTRS          | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M2E4000C19R ver4.31 | 16GB(8GB*2) | SS    | Samsung    | -        | 19-23-23-45R | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M2B4000C19R ver4.31 | 16GB(8GB*2) | SS    | Samsung    | -        | 19-23-23-45R | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK32GX4M4B4000C19R ver4.31 | 32GB(8GB*4) | SS    | Samsung    | -        | 19-23-23-45R | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMW16GX4M2K4000C19R ver4.31 | 16GB(8GB*2) | SS    | Samsung    | -        | 19-23-23-45R | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMW32GX4M4K4000C19R ver4.31 | 32GB(8GB*4) | SS    | Samsung    | -        | 19-23-23-45R | 1.35V   | •                              | •      | •      |
| <b>Hyper X</b> | HX440C19PB3/8               | 8GB         | SS    | Samsung    | -        | 19-21-21-42  | 1.35V   | •                              | •      | •      |
| <b>ADATA</b>   | AX4U400038G18-QRS           | 32GB(8GB*4) | SS    | Samsung    | -        | 18-19-19-39  | 1.4V    | •                              | •      | •      |
| <b>Hyper X</b> | HX440C19PB3AK2/16           | 16GB(8GB*2) | SS    | Samsung    | -        | 19-21-21-42  | 1.35V   | •                              | •      | •      |
| <b>Hyper X</b> | HX440C19PB3K2/16            | 16GB(8GB*2) | SS    | Samsung    | -        | 19-21-21-42  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMR16GX4M2F4000C19 ver4.31  | 16GB(8GB*2) | DS    | Samsung    | -        | 19-23-23-45  | 1.35V   | •                              | •      | •      |

### DDR4 3866 Qualified Vendors List (QVL)

| Vendors        | Part No.                   | Size        | SS/DS | Chip Brand | Chip NO. | Timing      | Voltage | DIMM socket support (Optional) |        |        |
|----------------|----------------------------|-------------|-------|------------|----------|-------------|---------|--------------------------------|--------|--------|
|                |                            |             |       |            |          |             |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| <b>G.SKILL</b> | F4-3866C19D-8GTZ           | 8GB(4GB*2)  | SS    | Samsung    | -        | 18-22-22-40 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3866C19Q-16GTZ          | 16GB(4GB*4) | SS    | Samsung    | -        | 18-22-22-40 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3866C18D-32GTZR         | 16GB(8GB*2) | SS    | Samsung    | -        | 18-19-19-39 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3866C18Q-32GTZ          | 32GB(8GB*4) | SS    | Samsung    | -        | 18-19-19-39 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3866C18Q-32GTZSW        | 32GB(8GB*4) | SS    | Samsung    | -        | 18-19-19-39 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3866C18Q-32GTZKW        | 32GB(8GB*4) | SS    | Samsung    | -        | 18-19-19-39 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3866C18Q-32GTZR         | 32GB(8GB*4) | SS    | Samsung    | -        | 18-19-19-39 | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK8GX4M2B3866C18 ver4.24  | 8GB(4GB*2)  | SS    | Samsung    | -        | 18-22-22-40 | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMD8GX4M2B3866C18 ver4.24  | 8GB(4GB*2)  | SS    | Samsung    | -        | 18-22-22-40 | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMD16GX4M2B3866C18 ver4.31 | 16GB(8GB*2) | SS    | Samsung    | -        | 18-22-22-40 | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M2B3866C18 ver4.31 | 16GB(8GB*2) | SS    | Samsung    | -        | 18-22-22-40 | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M4B3866C18 ver4.24 | 16GB(4GB*4) | SS    | Samsung    | -        | 18-22-22-40 | 1.35V   | •                              | •      | •      |

|                   |                             |             |    |         |   |              |       |   |   |   |
|-------------------|-----------------------------|-------------|----|---------|---|--------------|-------|---|---|---|
| <b>CORSAIR</b>    | CMK16GX4M4B3866C18R ver4.24 | 16GB(4GB*4) | SS | Samsung | - | 18-22-22-40R | 1.35V | • | • | • |
| <b>CORSAIR</b>    | CMD32GX4M4B3866C18 ver4.31  | 32GB(8GB*4) | SS | Samsung | - | 18-22-22-40  | 1.35V | • | • | • |
| <b>CORSAIR</b>    | CMK32GX4M4B3866C18R ver4.31 | 32GB(8GB*4) | SS | Samsung | - | 18-22-22-40R | 1.35V | • | • | • |
| <b>TEAM GROUP</b> | TCD44G3866C18ABK            | 16GB(4GB*4) | SS | Samsung | - | 18-20-20-39  | 1.35V | • | • | • |
| <b>ADATA</b>      | AX4U386638G18-QRS           | 32GB(8GB*4) | SS | Samsung | - | 18-19-19-39  | 1.35V | • | • | • |

#### DDR4 3733 Qualified Vendors List (QVL)

| Vendors            | Part No.                        | Size        | SS/DS | Chip Brand | Chip NO. | Timing       | Voltage | DIMM socket support (Optional) |        |        |
|--------------------|---------------------------------|-------------|-------|------------|----------|--------------|---------|--------------------------------|--------|--------|
|                    |                                 |             |       |            |          |              |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| <b>G.SKILL</b>     | F4-3733C17D-8GRK                | 8GB(4GB*2)  | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17D-8GTZ                | 8GB(4GB*2)  | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17D-8GVK                | 8GB(4GB*2)  | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17D-16GTZ               | 16GB(8GB*2) | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17Q-16GRK               | 16GB(4GB*4) | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17Q-16GTZ               | 16GB(4GB*4) | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17Q-16GVK               | 16GB(4GB*4) | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17D-16GTZ               | 16GB(8GB*2) | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17D-16GTZA              | 16GB(8GB*2) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17Q-32GTZ               | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17Q-32GTZSW             | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17Q-32GTZKW             | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b>     | F4-3733C17Q-32GTZR              | 32GB(8GB*4) | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b>     | CMD8GX4M2B3733C17 ver4.24       | 8GB(4GB*2)  | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b>     | CMK8GX4M2B3733C17 ver4.24       | 8GB(4GB*2)  | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b>     | CMD16GX4M2B3733C17 ver4.31      | 16GB(8GB*2) | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b>     | CMK16GX4M2B3733C17R ver4.31     | 16GB(8GB*2) | SS    | Samsung    | -        | 17-19-19-39R | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b>     | CMK16GX4M4B3733C17 ver4.24      | 16GB(4GB*4) | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b>     | CMD32GX4M4B3733C17 ver4.31      | 32GB(8GB*4) | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b>     | CMK32GX4M4B3733C17R ver4.31     | 32GB(8GB*4) | SS    | Samsung    | -        | 17-19-19-39R | 1.35V   | •                              | •      | •      |
| <b>APACER</b>      | AHU08GGB37CEU5H(EK.16GA6.GFBK2) | 16GB(8GB*2) | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>SUPERTALENT</b> | F3733UB8G                       | 8GB         | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>PATRIOT</b>     | PV416G373C7K                    | 16GB(8GB*2) | SS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |

#### DDR4 3600 Qualified Vendors List (QVL)

| Vendors        | Part No.                    | Size         | SS/DS | Chip Brand | Chip NO. | Timing       | Voltage | DIMM socket support (Optional) |        |        |
|----------------|-----------------------------|--------------|-------|------------|----------|--------------|---------|--------------------------------|--------|--------|
|                |                             |              |       |            |          |              |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| <b>G.SKILL</b> | F4-3600C17D-8GRK            | 8GB(4GB*2)   | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17D-8GTZ            | 8GB(4GB*2)   | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17D-8GVK            | 8GB(4GB*2)   | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17D-16GVK           | 16GB(8GB*2)  | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17D-16GTZ           | 16GB(8GB*2)  | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17D-16GSXW          | 16GB(8GB*2)  | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17D-16GTRG          | 16GB(8GB*2)  | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17D-16GTRS          | 16GB(8GB*2)  | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C16D-16GVK           | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C16D-16GTZ           | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C15D-16GTZ           | 16GB(8GB*2)  | SS    | Samsung    | -        | 15-15-15-35  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-16GSXW          | 16GB(8GB*2)  | SS    | Samsung    | -        | 19-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-16GSXK          | 16GB(8GB*2)  | SS    | Samsung    | -        | 19-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-16GSXF          | 16GB(8GB*2)  | SS    | Samsung    | -        | 19-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-16GSXWB         | 16GB(8GB*2)  | SS    | Samsung    | -        | 19-20-20-40  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-16GSXKB         | 16GB(8GB*2)  | SS    | Samsung    | -        | 19-20-20-40  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-16GTRG          | 16GB(8GB*2)  | SS    | Samsung    | -        | 19-20-20-40  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-16GTRS          | 16GB(8GB*2)  | SS    | Samsung    | -        | 19-20-20-40  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17Q-16GVK           | 16GB(4GB*4)  | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17Q-16GRK           | 16GB(4GB*4)  | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17Q-16GTZ           | 16GB(4GB*4)  | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17Q-32GVK           | 32GB(8GB*4)  | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17Q-32GTZ           | 32GB(8GB*4)  | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17Q-32GTZA          | 32GB(8GB*4)  | SS    | Samsung    | -        | 17-17-17-37  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C16Q-32GTZB          | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C16Q-32GTZSWB        | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C16Q-32GTZBKW        | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17Q-32GTZR          | 32GB(8GB*4)  | SS    | Samsung    | -        | 17-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19Q-32GSXW          | 32GB(8GB*4)  | SS    | Samsung    | -        | 19-20-20-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17D-32GSXW          | 32GB(16GB*2) | DS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17Q-64GTZ           | 64GB(16GB*4) | DS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17Q-64GTZSWB        | 64GB(16GB*4) | DS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17Q-64GTZKWB        | 64GB(16GB*4) | DS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C17Q-64GTZR          | 64GB(16GB*4) | DS    | Samsung    | -        | 17-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-32GSXW          | 32GB(16GB*2) | DS    | Sk Hynix   | -        | 19-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-32GSXK          | 32GB(16GB*2) | DS    | Sk Hynix   | -        | 19-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-32GSXF          | 32GB(16GB*2) | DS    | Sk Hynix   | -        | 19-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19Q-64GSXW          | 64GB(16GB*4) | DS    | Sk Hynix   | -        | 19-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19Q-64GSXK          | 64GB(16GB*4) | DS    | Sk Hynix   | -        | 19-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19Q-64GSXF          | 64GB(16GB*4) | DS    | Sk Hynix   | -        | 19-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-32GSXWB         | 32GB(16GB*2) | DS    | Sk Hynix   | -        | 19-20-20-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-32GSXKB         | 32GB(16GB*2) | DS    | Sk Hynix   | -        | 19-20-20-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-32GTRG          | 32GB(16GB*2) | DS    | Sk Hynix   | -        | 19-20-20-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19D-32GTRS          | 32GB(16GB*2) | DS    | Sk Hynix   | -        | 19-20-20-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19Q-64GSXWB         | 64GB(16GB*4) | DS    | Sk Hynix   | -        | 19-20-20-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19Q-64GSXKB         | 64GB(16GB*4) | DS    | Sk Hynix   | -        | 19-20-20-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19Q-64GTRG          | 64GB(16GB*4) | DS    | Sk Hynix   | -        | 19-20-20-39  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3600C19Q-64GTRS          | 64GB(16GB*4) | DS    | Sk Hynix   | -        | 19-20-20-39  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMD8GX4M2B3600C18 ver4.24   | 8GB(4GB*2)   | SS    | Samsung    | -        | 18-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK8GX4M2B3600C18 ver4.24   | 8GB(4GB*2)   | SS    | Samsung    | -        | 18-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M2B3600C16R ver4.31 | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-36R | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMD16GX4M2B3600C18 ver4.31  | 16GB(8GB*2)  | SS    | Samsung    | -        | 18-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M2B3600C18 ver4.31  | 16GB(8GB*2)  | SS    | Samsung    | -        | 18-19-19-39  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M2B3600C18R ver4.31 | 16GB(8GB*2)  | SS    | Samsung    | -        | 18-19-19-39R | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMR16GX4M2C3600C18 ver4.31  | 16GB(8GB*2)  | SS    | Samsung    | -        | 18-19-19-39R | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMW16GX4M2K3600C16 ver4.31  | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |

|           |                                 |              |    |          |   |              |       |   |   |   |
|-----------|---------------------------------|--------------|----|----------|---|--------------|-------|---|---|---|
| CORSAIR   | CMK16GX4M4B3600C18 ver4.24      | 16GB(4GB*4)  | SS | Samsung  | - | 18-19-19-39  | 1.35V | • | • | • |
| CORSAIR   | CMD32GX4M4B3600C16 ver4.31      | 32GB(8GB*4)  | SS | Samsung  | - | 16-18-18-36  | 1.35V | • | • | • |
| CORSAIR   | CMK32GX4M4B3600C16R ver4.31     | 32GB(8GB*4)  | SS | Samsung  | - | 16-18-18-36R | 1.35V | • | • | • |
| CORSAIR   | CMD32GX4M4B3600C18 ver4.31      | 32GB(8GB*4)  | SS | Samsung  | - | 18-19-19-39  | 1.35V | • | • | • |
| CORSAIR   | CMK32GX4M4B3600C18 ver4.31      | 32GB(8GB*4)  | SS | Samsung  | - | 18-19-19-39  | 1.35V | • | • | • |
| CORSAIR   | CMK32GX4M4B3600C18R ver4.31     | 32GB(8GB*4)  | SS | Samsung  | - | 18-19-19-39R | 1.35V | • | • | • |
| CORSAIR   | CMR32GX4M4C3600C18 ver4.31      | 32GB(8GB*4)  | SS | Samsung  | - | 18-19-19-39  | 1.35V | • | • | • |
| APACER    | AHU08GGB36CJU5H(EK.16GA4.GGBK2) | 16GB(8GB*2)  | SS | Samsung  | - | 18-18-18-42  | 1.35V | • | • | • |
| APACER    | AHU08GGB36CEU5H(EK.16GA4.GFBK2) | 8GB          | SS | Samsung  | - | 17-19-19-39  | 1.35V | • | • | • |
| ZADAK     | ZD4-SHD3600C17-08GAS            | 8GB          | SS | Samsung  | - | 17-19-19-39  | 1.35V | • | • | • |
| Hyper X   | HX436C17PB3K4/32                | 32GB(8GB*4)  | SS | Samsung  | - | 17-18-18-38  | 1.35V | • | • | • |
| Hyper X   | HX436C17PB3K2/32                | 32GB(16GB*2) | DS | Samsung  | - | 17-19-19-39  | 1.35V | • | • | • |
| Hyper X   | HX436C17PB3K2/32                | 32GB(16GB*2) | DS | Sk Hynix | - | 17-19-19-39  | 1.35V | • | • | • |
| Hyper X   | HX436C17PB3AK4/32               | 32GB(8GB*4)  | SS | Samsung  | - | 17-18-18-39  | 1.35V | • | • | • |
| Hyper X   | HX436C17PB3K4/64                | 64GB(16GB*4) | DS | Samsung  | - | 17-19-19-39  | 1.35V | • | • | • |
| Hyper X   | HX436C17PB3K4/64                | 64GB(16GB*4) | DS | Sk Hynix | - | 17-19-19-39  | 1.35V | • | • | • |
| ADATA     | AX4U360038G17-BRZ               | 8GB          | SS | Samsung  | - | 17-18-18-38  | 1.35V | • | • | • |
| TEAMGROUP | TFOD48G3600C18EBK               | 16GB(8GB*2)  | SS | Samsung  | - | 18-20-20-44  | 1.35V | • | • | • |
| TEAMGROUP | TF1D416G3600HC18EDC01           | 16GB(8GB*2)  | SS | Samsung  | - | 18-20-20-44  | 1.35V | • | • | • |
| TEAMGROUP | TF2D416G3600HC18EDC01           | 16GB(8GB*2)  | SS | Samsung  | - | 18-20-20-44  | 1.35V | • | • | • |
| TEAMGROUP | TF5D416G3600HC18EDC01           | 16GB(8GB*2)  | SS | Samsung  | - | 18-20-20-44  | 1.35V | • | • | • |
| TEAMGROUP | TF6D416G3600HC18EDC01           | 16GB(8GB*2)  | SS | Samsung  | - | 18-20-20-44  | 1.35V | • | • | • |
| PATRIOT   | PV48G360C7K                     | 8GB(4GB*2)   | SS | Samsung  | - | 17-18-18-36  | 1.35V | • | • | • |

#### DDR4 3466 Qualified Vendors List (QVL)

| Vendors | Part No.                        | Size         | SS/DS | Chip Brand | Chip NO. | Timing       | Voltage | DIMM socket support (Optional) |        |        |
|---------|---------------------------------|--------------|-------|------------|----------|--------------|---------|--------------------------------|--------|--------|
|         |                                 |              |       |            |          |              |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| G.SKILL | F4-3466C16D-8GRK                | 8GB(4GB*2)   | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16D-8GTZ                | 8GB(4GB*2)   | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16D-8GVK                | 8GB(4GB*2)   | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16Q-16GRK               | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16D-16GVR               | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16D-16GVK               | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16D-16GTZ               | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16D-16GTZKW             | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16D-16GTZSW             | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16D-16GTZSK             | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C18D-16GSXW              | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16Q-16GVK               | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16Q-32GVR               | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16Q-32GVK               | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16Q-32GTZ               | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16Q-32GTZSW             | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16Q-64GTZ               | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16Q-64GTZSW             | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3466C16Q-64GTZR              | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMD16GX4M2B3466C16 ver4.31      | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMK16GX4M2B3466C16 ver4.31      | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMK16GX4M2B3466C16R ver4.31     | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-36R | 1.35V   | •                              | •      | •      |
| CORSAIR | CMR16GX4M2C3466C16 ver4.31      | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMK16GX4M2B3466C16 ver5.32      | 16GB(8GB*2)  | SS    | Sk Hynix   | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMW16GX4M2C3466C16 ver5.32      | 16GB(8GB*2)  | SS    | Sk Hynix   | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMD16GX4M4B3466C16 ver4.24      | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMK16GX4M4B3466C16 ver4.24      | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMK16GX4M4B3466C16R ver4.24     | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-18-18-36R | 1.35V   | •                              | •      | •      |
| CORSAIR | CMD32GX4M4B3466C16 ver4.31      | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMU32GX4M4C3466C16 ver4.31      | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMU32GX4M4C3466C16R ver4.31     | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-36R | 1.35V   | •                              | •      | •      |
| CORSAIR | CMU32GX4M4B3466C16 ver4.24      | 32GB(8GB*4)  | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMD32GX4M2B3466C16 ver4.31      | 32GB(16GB*2) | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMK32GX4M2B3466C16 ver4.31      | 32GB(16GB*2) | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMK32GX4M2B3466C16R ver4.31     | 32GB(16GB*2) | DS    | Samsung    | -        | 16-18-18-36R | 1.35V   | •                              | •      | •      |
| CORSAIR | CMK32GX4M4B3466C16 ver4.31      | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMK32GX4M4B3466C16R ver4.31     | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-36R | 1.35V   | •                              | •      | •      |
| CORSAIR | CMR32GX4M4C3466C16 ver4.31      | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMD64GX4M4B3466C16 ver4.31      | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMK64GX4M4B3466C16 ver4.31      | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMK64GX4M4B3466C16R ver4.31     | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-36R | 1.35V   | •                              | •      | •      |
| CORSAIR | CMR64GX4M4C3466C16R ver4.31     | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| CORSAIR | CMW64GX4M4C3466C16 ver4.31      | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| APACER  | AHU08GGB34CJU5H(EK.16GA3.GGBK2) | 16GB(8GB*2)  | SS    | Samsung    | -        | 18-18-18-42  | 1.35V   | •                              | •      | •      |
| APACER  | AHU08GGB34CJU6H(EK.16GA3.GGAK2) | 16GB(8GB*2)  | SS    | Samsung    | -        | 18-18-18-42  | 1.35V   | •                              | •      | •      |
| Hyper X | HX434C19FBK2/16                 | 16GB(8GB*2)  | SS    | Micron     | -        | 19-23-23-42  | 1.2V    | •                              | •      | •      |
| Hyper X | HX434C19FBK2/32                 | 32GB(16GB*2) | DS    | Micron     | -        | 19-23-23-42  | 1.2V    | •                              | •      | •      |

#### DDR4 3400 Qualified Vendors List (QVL)

| Vendors | Part No.           | Size         | SS/DS | Chip Brand | Chip NO. | Timing      | Voltage | DIMM socket support (Optional) |        |        |
|---------|--------------------|--------------|-------|------------|----------|-------------|---------|--------------------------------|--------|--------|
|         |                    |              |       |            |          |             |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| G.SKILL | F4-3400C16D-16GRK  | 16GB(8GB*2)  | DS    | Samsung    | -        | 16-18-18-38 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16D-16GTZ  | 16GB(8GB*2)  | DS    | Samsung    | -        | 16-18-18-38 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16D-16GVK  | 16GB(8GB*2)  | DS    | Samsung    | -        | 16-18-18-38 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16D-16GSXW | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16D-32GRK  | 32GB(16GB*2) | DS    | Samsung    | -        | 16-18-18-38 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16D-32GVR  | 32GB(16GB*2) | DS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16D-32GVK  | 32GB(16GB*2) | DS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16D-32GTZ  | 32GB(16GB*2) | DS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16D-32GVK  | 32GB(16GB*2) | DS    | Samsung    | -        | 16-18-18-38 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16Q-16GRBD | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-18-18-38 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16Q-16GRKD | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16Q-16GRBD | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-18-18-38 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16Q-32GRK  | 32GB(8GB*4)  | DS    | Samsung    | -        | 16-18-18-38 | 1.35V   | •                              | •      | •      |
| G.SKILL | F4-3400C16Q-32GVK  | 32GB(8GB*4)  | DS    | Samsung    | -        | 16-18-18-38 | 1.35V   | •                              | •      | •      |

|                |                               |              |    |         |   |              |       |   |   |   |
|----------------|-------------------------------|--------------|----|---------|---|--------------|-------|---|---|---|
| <b>G.SKILL</b> | F4-3400C16Q-32GTZ             | 32GB(8GB*4)  | DS | Samsung | - | 16-18-18-38  | 1.35V | • | • | • |
| <b>G.SKILL</b> | F4-3400C16Q-32GTZSW           | 32GB(8GB*4)  | DS | Samsung | - | 16-18-18-38  | 1.35V | • | • | • |
| <b>G.SKILL</b> | F4-3400C16Q-32GVK             | 32GB(8GB*4)  | DS | Samsung | - | 16-18-18-38  | 1.35V | • | • | • |
| <b>G.SKILL</b> | F4-3400C16Q-64GRK             | 64GB(16GB*4) | DS | Samsung | - | 16-18-18-38  | 1.35V | • | • | • |
| <b>G.SKILL</b> | F4-3400C16Q-64GVR             | 64GB(16GB*4) | DS | Samsung | - | 16-16-16-36  | 1.35V | • | • | • |
| <b>G.SKILL</b> | F4-3400C16Q-64GVK             | 64GB(16GB*4) | DS | Samsung | - | 16-16-16-36  | 1.35V | • | • | • |
| <b>G.SKILL</b> | F4-3400C16Q-64GTZ             | 64GB(16GB*4) | DS | Samsung | - | 16-16-16-36  | 1.35V | • | • | • |
| <b>G.SKILL</b> | F4-3400C16Q-64GVK             | 64GB(16GB*4) | DS | Samsung | - | 16-18-18-38  | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMD16GX4M4B3400C16 ver. 4.24  | 16GB(4GB*4)  | SS | Samsung | - | 16-18-18-40  | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMR16GX4M2C3400C16 ver. 4.31  | 16GB(8GB*2)  | SS | Samsung | - | 16-18-18-36  | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMK16GX4M4B3400C16 ver. 4.23  | 16GB(4GB*4)  | SS | Samsung | - | 16-18-18-36  | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMK16GX4M2B3400C16 ver. 4.23  | 16GB(8GB*2)  | DS | Samsung | - | 16-18-18-36  | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMR32GX4M4C3400C16 ver. 4.31  | 32GB(8GB*4)  | SS | Samsung | - | 16-18-18-36  | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMU32GX4M4B3400C16 ver. 4.31  | 32GB(8GB*4)  | SS | Samsung | - | 16-18-18-36  | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMU32GX4M4C3400C16 ver. 4.31  | 32GB(8GB*4)  | SS | Samsung | - | 16-18-18-36  | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMU32GX4M4B3400C16R ver. 4.31 | 32GB(8GB*4)  | SS | Samsung | - | 16-18-18-36R | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMU32GX4M4C3400C16R ver. 4.31 | 32GB(8GB*4)  | SS | Samsung | - | 16-18-18-36R | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMK32GX4M4B3400C16 ver. 4.23  | 32GB(8GB*4)  | DS | Samsung | - | 16-18-18-36  | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMK32GX4M4C3400C16 ver. 4.23  | 32GB(8GB*4)  | DS | Samsung | - | 16-18-18-36  | 1.35V | • | • | • |
| <b>CORSAIR</b> | CMK32GX4M4C3400C16R ver. 4.23 | 32GB(8GB*4)  | DS | Samsung | - | 16-18-18-36R | 1.35V | • | • | • |
| <b>PATRIOT</b> | PV48G340C6K                   | 8GB(4GB*2)   | SS | Samsung | - | 16-18-18-36  | 1.35V | • | • | • |
| <b>PATRIOT</b> | PV416G340C6K                  | 16GB(8GB*2)  | SS | Samsung | - | 16-18-18-36  | 1.35V | • | • | • |
| <b>BTM</b>     | J4AGUH1G8UJBC                 | 16GB         | DS |         |   | 17-18-18-36  | 1.35V | • | • | • |

### DDR4 3333 Qualified Vendors List (QVL)

| Vendors        | Part No.                    | Size         | SS/DS | Chip Brand | Chip NO. | Timing       | Voltage | DIMM socket support (Optional) |        |        |
|----------------|-----------------------------|--------------|-------|------------|----------|--------------|---------|--------------------------------|--------|--------|
|                |                             |              |       |            |          |              |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| <b>G.SKILL</b> | F4-3333C16Q-16GRKD          | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-16GVR           | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-16GVK           | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-16GTZ           | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-16GTZB          | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-16GTZKW         | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-16GTZSW         | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-16GTZSK         | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16Q-32GVR           | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16Q-32GVK           | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16Q-32GTZ           | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16Q-32GTZB          | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16Q-32GTZSW         | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-32GVR           | 32GB(16GB*2) | DS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-32GVK           | 32GB(16GB*2) | DS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-32GTZ           | 32GB(16GB*2) | DS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-32GTZB          | 32GB(16GB*2) | DS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-32GTZKW         | 32GB(16GB*2) | DS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-32GTZSW         | 32GB(16GB*2) | DS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16D-32GTZSK         | 32GB(16GB*2) | DS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16Q-64GVR           | 64GB(16GB*4) | DS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16Q-64GVK           | 64GB(16GB*4) | DS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16Q-64GTZ           | 64GB(16GB*4) | DS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16Q-64GTZB          | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3333C16Q-64GTZSW         | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-38  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMD16GX4M2B3333C16 ver4.31  | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M2C3333C16 ver4.31  | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M2B3333C16 ver4.24  | 16GB(8GB*2)  | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M2B3333C16 ver5.32  | 16GB(8GB*2)  | SS    | Sk Hynix   | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMW16GX4M2C3333C16 ver4.31  | 16GB(8GB*2)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMD16GX4M4B3333C16 ver4.24  | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M4B3333C16 ver4.24  | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK16GX4M4B3333C16R ver4.24 | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-18-18-36R | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMD32GX4M4B3333C16 ver4.31  | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMR32GX4M4C3333C16 ver4.31  | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK32GX4M2B3333C16 ver4.31  | 32GB(8GB*4)  | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK32GX4M4B3333C16 ver4.31  | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK32GX4M4C3333C16 ver5.32  | 32GB(8GB*4)  | SS    | Sk Hynix   | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMW32GX4M4C3333C16 ver4.31  | 32GB(8GB*4)  | SS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMD32GX4M2B3333C16 ver4.31  | 32GB(16GB*2) | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMR32GX4M2C3333C16 ver4.31  | 32GB(16GB*2) | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMR32GX4M2C3333C16 ver5.32  | 32GB(16GB*2) | DS    | Sk Hynix   | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMD64GX4M4B3333C16 ver4.31  | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMR64GX4M4C3333C16 ver4.31  | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK64GX4M4B3333C16 ver4.31  | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>CORSAIR</b> | CMK64GX4M4B3333C16R ver4.31 | 64GB(16GB*4) | DS    | Samsung    | -        | 16-18-18-36R | 1.35V   | •                              | •      | •      |
| <b>A-DATA</b>  | AX4U3333W4G16               | 16GB(4GB*4)  | SS    | Samsung    | -        | 16-16-16-36  | 1.35V   | •                              | •      | •      |
| <b>Hyper X</b> | HX433C16PB3K4/32            | 32GB(8GB*4)  | SS    | Sk Hynix   | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>Hyper X</b> | HX433C16PB3K2/16            | 16GB(8GB*2)  | SS    | Sk Hynix   | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>Hyper X</b> | HX433C16PB3K2/32            | 32GB(16GB*2) | DS    | Sk Hynix   | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |
| <b>Hyper X</b> | HX433C16PB3K4/64            | 64GB(16GB*4) | DS    | Sk Hynix   | -        | 16-18-18-36  | 1.35V   | •                              | •      | •      |

### DDR4 3200 Qualified Vendors List (QVL)

| Vendors        | Part No.           | Size        | SS/DS | Chip Brand | Chip NO. | Timing      | Voltage | DIMM socket support (Optional) |        |        |
|----------------|--------------------|-------------|-------|------------|----------|-------------|---------|--------------------------------|--------|--------|
|                |                    |             |       |            |          |             |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| <b>G.SKILL</b> | F4-3200C16D-8GRK   | 8GB(4GB*2)  | SS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3200C16D-8GTZ   | 8GB(4GB*2)  | SS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3200C16D-8GVK   | 8GB(4GB*2)  | SS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3200C16Q-16GRR  | 16GB(4GB*4) | SS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3200C16Q-16GRB  | 16GB(4GB*4) | SS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3200C16Q-16GRKD | 16GB(4GB*4) | SS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3200C16Q-16GTZ  | 16GB(4GB*4) | SS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |
| <b>G.SKILL</b> | F4-3200C16Q-16GVK  | 16GB(4GB*4) | SS    | Samsung    | -        | 16-16-16-36 | 1.35V   | •                              | •      | •      |





|             |                                 |              |    |          |   |             |       |   |   |   |
|-------------|---------------------------------|--------------|----|----------|---|-------------|-------|---|---|---|
| Hyper X     | HX432C16PB3K4/32                | 32GB(8GB*4)  | SS | Micron   | - | 16-18-18-36 | 1.35V | • | • | • |
| Hyper X     | HX432C18FBK2/16                 | 16GB(8GB*2)  | SS | Micron   | - | 18-21-21-39 | 1.2V  | • | • | • |
| Hyper X     | HX432C18FBK2/32                 | 32GB(16GB*2) | DS | Micron   | - | 18-21-21-39 | 1.2V  | • | • | • |
| GEIL        | GEX416GB3200C16DC               | 16GB(8GB*2)  | SS | -        | - | 16-16-16-36 | 1.35V | • | • |   |
| APACER      | AHU08GGB32CDU5H(EK.16GA1.GEBK2) | 16GB(8GB*2)  | SS | Samsung  | - | 16-18-18-38 | 1.35V | • | • |   |
| APACER      | AHU08GGB32CDU6H(EK.16GA1.GEAK2) | 16GB(8GB*2)  | SS | Samsung  | - | 16-18-18-38 | 1.35V | • | • |   |
| APACER      | AHU16GGB32CDU5H(EK.32GA1.GEBK2) | 32GB(16GB*2) | DS | Samsung  | - | 16-18-18-38 | 1.35V | • | • |   |
| APACER      | AHU16GGB32CDU6H(EK.32GA1.GEAK2) | 32GB(16GB*2) | DS | Samsung  | - | 16-18-18-38 | 1.35V | • | • |   |
| FORZA       | NFMUD480E8-3200DH2A             | 16GB(8GB*2)  | SS | -        | - | 16-18-18-36 | 1.35V | • | • |   |
| ADATA       | AX4U320038G16-BRS               | 8GB          | SS | Samsung  | - | 16-18-18-36 | 1.35V | • | • | • |
| TEAMGROUP   | TF1D416G3200HC16CDC01           | 16GB(8GB*2)  | SS | SK Hynix | - | 16-18-18-38 | 1.35V | • | • |   |
| TEAMGROUP   | TF2D416G3200HC16CDC01           | 16GB(8GB*2)  | SS | SK Hynix | - | 16-18-18-38 | 1.35V | • | • |   |
| SUPERTALENT | F3200UB4G                       | 4GB          | SS | -        | - | 16-18-18-36 | 1.35V | • | • | • |
| SUPERTALENT | F3200UB16G                      | 16GB         | DS | -        | - | 16-18-18-36 | 1.35V | • | • | • |
| PATRIOT     | PV48G320C6K                     | 8GB(4GB*2)   | SS | -        | - | 16-16-16-36 | 1.35V | • | • |   |
| PATRIOT     | PV416G320C6K                    | 16GB(8GB*2)  | SS | -        | - | 16-16-16-36 | 1.35V | • | • |   |
| PATRIOT     | PVE416G320C6KGY                 | 16GB(8GB*2)  | SS | -        | - | 16-16-16-36 | 1.35V | • | • |   |
| PATRIOT     | PV432G320C6K                    | 32GB(16GB*2) | SS | -        | - | 16-16-16-36 | 1.35V | • | • |   |
| APACER      | AHU08GGB32CKU7M                 | 8GB          | SS | Samsung  | - | 16-18-18-38 | 1.35V | • | • | • |
| ZADAK       | ZD4-SHA3200C16-08GAS            | 8GB          | SS | Samsung  | - | 16-18-18-38 | 1.35V | • | • | • |
| KINGMAX     | GZOG43F-18SIGP                  | 8GB          | SS | -        | - | 16-18-18-38 | 1.35V | • | • | • |
| V-COLOR     | TL48G32S8CRGB16                 | 8GB          | SS | Samsung  | - | 16-18-18-38 | 1.35V | • | • | • |
| KLEVV       | IM48GU88A32-GIISEZ              | 32GB(8GB*4)  | DS | SK Hynix | - | 16-18-18-38 | 1.35V | • | • | • |
| Hyper X     | HX432C16PB3AK2/16               | 16GB(8GB*2)  | SS | Sk Hynix | - | 16-18-18-36 | 1.35V | • | • | • |
| Hyper X     | HX432C16PB3AK4/32               | 32GB(8GB*4)  | SS | Sk Hynix | - | 16-18-18-36 | 1.35V | • | • | • |
| Hyper X     | HX432C16PB3K2/32                | 32GB(16GB*2) | DS | Sk Hynix | - | 16-18-18-36 | 1.35V | • | • | • |
| Hyper X     | HX432C16PB3K4/64                | 64GB(16GB*4) | DS | Sk Hynix | - | 16-18-18-36 | 1.35V | • | • | • |
| PATRIOT     | PVR416G320C6K                   | 16GB(8GB*2)  | SS | Samsung  | - | 16-18-18-36 | 1.35V | • | • |   |
| Hyper X     | HX432C16PB3AK2/16               | 16GB(8GB*2)  | SS | Sk Hynix | - | 16-18-18-36 | 1.35V | • | • | • |
| Hyper X     | HX432C16PB3AK4/32               | 32GB(8GB*4)  | SS | Sk Hynix | - | 16-18-18-36 | 1.35V | • | • | • |
| Hyper X     | HX432C16PB3K2/32                | 32GB(16GB*2) | DS | Sk Hynix | - | 16-18-18-36 | 1.35V | • | • | • |
| Hyper X     | HX432C16PB3K4/64                | 64GB(16GB*4) | DS | Sk Hynix | - | 16-18-18-36 | 1.35V | • | • | • |
| PATRIOT     | PVR416G320C6K                   | 16GB(8GB*2)  | SS | Samsung  | - | 16-18-18-36 | 1.35V | • | • |   |
| Thermaltake | CL-W251-CA00SW-A                | 16GB(8GB*2)  | SS | SK Hynix | - | 16-18-18-38 | 1.35V | • | • |   |
| Thermaltake | CL-W252-CA00SW-A                | 32GB(8GB*4)  | SS | SK Hynix | - | 16-18-18-38 | 1.35V | • | • | • |

#### DDR4 3000 Qualified Vendors List (QVL)

| Vendors | Part No.                          | Size    | SS/DS | Chip Brand | Chip NO.         | Timing      | Voltage | DIMM socket support (Optional) |        |        |
|---------|-----------------------------------|---------|-------|------------|------------------|-------------|---------|--------------------------------|--------|--------|
|         |                                   |         |       |            |                  |             |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| ADATA   | AX4U300038G16-BBG(XMP)            | 8GB     | SS    | SK Hynix   | -                | 16-18-18-36 | 1.35    | •                              | •      |        |
| ADATA   | AX4U300038G16-BRS(XMP)            | 8GB     | SS    | SK Hynix   | -                | 16-18-18-36 | 1.35    | •                              | •      |        |
| ADATA   | AX4U300038G16-BRS(XMP)            | 8GB     | SS    | -          | -                | 16-16-18-36 | 1.35    | •                              | •      |        |
| Apacer  | EK.16GAW.KFBK2(XMP)               | 8GB     | DS    | SK Hynix   | -                | 16-18-18-38 | -       | •                              | •      |        |
| CORSAIR | CMD16GX4M2B3000C15(Ver4.23)(XMP)  | 2x 8GB  | DS    | -          | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMD16GX4M2B3000C15(Ver5.30)(XMP)  | 2x 8GB  | SS    | SK Hynix   | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMD16GX4M4B3000C15(Ver4.23)(XMP)  | 4x 4GB  | SS    | -          | -                | 15-17-17-35 | 1.35    | •                              | •      | •      |
| CORSAIR | CMD16GX4M4B3000C15(Ver5.29)(XMP)  | 4x 4GB  | DS    | -          | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMD32GX4M2B3000C15(Ver5.39)(XMP)  | 2x 16GB | DS    | SK Hynix   | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMD32GX4M4B3000C15(Ver4.23)(XMP)  | 4x 8GB  | DS    | -          | -                | 15-17-17-35 | 1.35    | •                              | •      | •      |
| CORSAIR | CMD32GX4M4C3000C15(Ver3.32)(XMP)  | 4x 8GB  | DS    | SK Hynix   | -                | 15-17-17-35 | 1.35    | •                              | •      | •      |
| CORSAIR | CMD32GX4M4C3000C15(Ver5.30)(XMP)  | 4x 8GB  | SS    | SK Hynix   | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMK16GX4M1B3000C15(Ver3.32)(XMP)  | 16GB    | DS    | Micron     | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMK16GX4M2B3000C15(Ver3.32)(XMP)  | 2x 8GB  | SS    | Micron     | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMK16GX4M2B3000C15(Ver4.23)(XMP)  | 2x 8GB  | DS    | -          | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMK16GX4M2B3000C15(Ver5.30)(XMP)  | 2x 8GB  | SS    | SK Hynix   | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMK16GX4M2B3000C15(Ver5.30)(XMP)  | 2x 8GB  | SS    | SK Hynix   | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMK16GX4M2B3000C15(Ver5.30)(XMP)  | 2x 8GB  | SS    | -          | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMK16GX4M2C3000C16(Ver3.31)(XMP)  | 2x 8GB  | SS    | Micron     | -                | 16-18-18-36 | 1.35    | •                              | •      |        |
| CORSAIR | CMK16GX4M2C3000C16(Ver3.31)(XMP)  | 2x 8GB  | SS    | Micron     | -                | 16-18-18-36 | 1.35    | •                              | •      |        |
| CORSAIR | CMK16GX4M4B3000C15(Ver5.29)(XMP)  | 4x 4GB  | SS    | -          | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMK32GX4M2B3000C15(Ver4.31)(XMP)  | 2x 16GB | DS    | -          | -                | 15-15-15-36 | 1.35    | •                              | •      |        |
| CORSAIR | CMK32GX4M4B3000C15(Ver4.24)(XMP)  | 4x 8GB  | DS    | Samsung    | -                | 15-17-17-35 | 1.35    | •                              | •      | •      |
| CORSAIR | CMK64GX4M4B3000C15(Ver4.31)(XMP)  | 4x 16GB | DS    | -          | -                | 15-17-17-35 | 1.35    | •                              | •      | •      |
| CORSAIR | CMK8GX4M2B3000C15(Ver4.23)(XMP)   | 2x 4GB  | DS    | -          | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMR128GX4M8C3000C16(Ver4.31)(XMP) | 8x 16GB | DS    | -          | -                | 16-18-18-36 | 1.35    | •                              | •      | •      |
| CORSAIR | CMR16GX4M2C3000C15(Ver4.31)(XMP)  | 2x 8GB  | SS    | SK Hynix   | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMR16GX4M2C3000C15(Ver5.30)(XMP)  | 2x 8GB  | SS    | SK Hynix   | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMR32GX4M2C3000C15(Ver4.31)(XMP)  | 2x 16GB | DS    | Samsung    | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMR32GX4M4C3000C15(Ver3.32)(XMP)  | 4x 8GB  | SS    | Micron     | -                | 15-17-17-35 | 1.35    | •                              | •      | •      |
| CORSAIR | CMR32GX4M4C3000C15(Ver4.31)(XMP)  | 4x 8GB  | SS    | SK Hynix   | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| CORSAIR | CMR64GX4M4C3000C15(Ver3.32)(XMP)  | 4x 16GB | DS    | Micron     | -                | 15-17-17-35 | 1.35    | •                              | •      | •      |
| CORSAIR | CMU16GX4M2C3000C15(Ver3.21)(XMP)  | 2x 8GB  | DS    | Micron     | -                | 15-15-15-36 | 1.35    | •                              | •      |        |
| crucial | BLE4G4D30AEEA.K8FE(XMP)           | 4GB     | SS    | Samsung    | -                | 15-16-16-35 | 1.35    | •                              | •      |        |
| crucial | BLE8G4D30AEEA.K16FE(XMP)          | 8GB     | DS    | Samsung    | -                | 15-16-16-35 | 1.35    | •                              | •      |        |
| crucial | BLT4G4D30AETA.K8FE(XMP)           | 4GB     | SS    | Samsung    | -                | 15-16-16-35 | 1.35    | •                              | •      |        |
| crucial | BLT8G4D30AETA.K16FE(XMP)          | 8GB     | DS    | Samsung    | -                | 15-16-16-35 | 1.35    | •                              | •      |        |
| Crucial | BLT8G4D30BET4K.C8FD(XMP)          | 8GB     | SS    | Micron     | -                | 16-18-18-38 | 1.35    | •                              | •      |        |
| G.SKILL | F4-3000C14Q2-128GVK(XMP)          | 8x 16GB | DS    | Samsung    | -                | 15-15-15-36 | 1.35    | •                              | •      | •      |
| G.SKILL | F4-3000C15D-8GTZB(XMP)            | 2x 4GB  | SS    | Samsung    | -                | 15-16-16-35 | 1.35    | •                              | •      |        |
| G.SKILL | F4-3000C15Q-16GRK(XMP)            | 4x 4GB  | SS    | Samsung    | -                | 15-15-15-35 | 1.35    | •                              | •      | •      |
| G.SKILL | F4-3000C15Q-16GRR(XMP)            | 4x 4GB  | SS    | SK Hynix   | -                | 15-15-15-35 | 1.35    | •                              | •      | •      |
| G.SKILL | F4-3000C15Q-32GRK(XMP)            | 4x 8GB  | DS    | Samsung    | -                | 15-15-15-35 | 1.35    | •                              | •      |        |
| G.SKILL | F4-3000C16D-16GTZR(XMP)           | 2x 8GB  | SS    | SK Hynix   | -                | 16-18-18-38 | 1.35    | •                              | •      |        |
| G.SKILL | F4-3000C16Q2-128GVKB(XMP)         | 8x 16GB | DS    | SK Hynix   | -                | 16-18-18-38 | 1.35    | •                              | •      | •      |
| GeIL    | GLR416GB3000C15ADC(XMP)           | 8GB     | SS    | SK Hynix   | -                | 15-17-17-35 | 1.35    | •                              | •      |        |
| GeIL    | GLR416GB3000C16QC(XMP)            | 4x 4GB  | SS    | Samsung    | -                | 16-16-16-36 | 1.35    | •                              | •      | •      |
| GeIL    | GWW416GB3000C15DC(XMP)            | 2x 8GB  | DS    | SK Hynix   | CG4L512G88BA093L | 15-17-17-35 | 1.35    | •                              | •      |        |
| Hyper X | HX430C15PB2K4/16(XMP)             | 4x 4GB  | SS    | SK Hynix   | -                | 15-16-16-39 | 1.35    | •                              | •      | •      |
| Hyper X | HX430C15PB3/16(XMP)               | 16GB    | DS    | SK Hynix   | -                | 15-17-17-36 | 1.35    | •                              | •      |        |
| Hyper X | HX430C15PB3/8(XMP)                | 8GB     | SS    | SK Hynix   | -                | 15-17-17-36 | 1.2     | •                              | •      |        |

|           |                             |         |    |          |                 |             |      |   |   |
|-----------|-----------------------------|---------|----|----------|-----------------|-------------|------|---|---|
| Hyper X   | HX430C15PB3K2/16(XMP)       | 2x 8GB  | SS | SK Hynix | -               | 15-17-17-36 | 1.35 | • | • |
| Hyper X   | HX430C15PB3K2/16(XMP)       | 2x 8GB  | SS | SK Hynix | -               | 15-17-17-36 | 1.2  | • | • |
| Hyper X   | HX430C15PB3K2/32(XMP)       | 2x 16GB | DS | SK Hynix | -               | 15-17-17-36 | 1.35 | • | • |
| Hyper X   | HX430C15PB3K2/32(XMP)       | 2x 16GB | DS | SK Hynix | -               | 15-17-17-36 | 1.35 | • | • |
| Hyper X   | HX430C15PB3K2/8(XMP)        | 2x 4GB  | SS | SK Hynix | -               | 15-17-17-36 | 1.35 | • | • |
| Hyper X   | HX430C15PB3K4/16(XMP)       | 4x 4GB  | SS | SK Hynix | -               | 15-17-17-36 | 1.35 | • | • |
| Hyper X   | HX430C15PB3K4/32(XMP)       | 4x 8GB  | SS | SK Hynix | -               | 15-17-17-36 | 1.35 | • | • |
| Hyper X   | HX430C15PB3K4/64(XMP)       | 4x 16GB | DS | SK Hynix | -               | 15-17-17-36 | 1.35 | • | • |
| Hyper X   | HX430C15PB3K4/64(XMP)       | 4x 16GB | DS | SK Hynix | -               | 15-17-17-36 | 1.35 | • | • |
| Hyper X   | HX430C15PB3K8/128(XMP)      | 8x 16GB | DS | SK Hynix | -               | 15-17-17-36 | 1.35 | • | • |
| Hyper X   | HX430C15SB2/4(XMP)          | 4GB     | SS | SK Hynix | -               | 15-15-15-36 | 1.35 | • | • |
| Hyper X   | HX430C15SB2K2/8(XMP)        | 2x 4GB  | SS | SK Hynix | -               | 15-15-15-36 | 1.35 | • | • |
| Hyper X   | HX430C15SB2K4/16(XMP)       | 4x 4GB  | SS | SK Hynix | -               | 15-15-15-36 | 1.35 | • | • |
| Hyper X   | HX430C15SB2K4/32(XMP)       | 4x 8GB  | DS | SK Hynix | -               | 15-17-17-39 | 1.35 | • | • |
| Hyper X   | HX430C15SBK2/16(XMP)        | 2x 8GB  | DS | SK Hynix | -               | 15-16-16-39 | 1.35 | • | • |
| Hyper X   | HX430C16PBK4/64(XMP)        | 4x 16GB | DS | SK Hynix | -               | 16-16-16-39 | 1.35 | • | • |
| Klevv     | IM44GU48A30-FGGHAZ(XMP)     | 4GB     | SS | SK Hynix | -               | 15-15-16-36 | 1.35 | • | • |
| Klevv     | IM44GU48A30-GIIHMC(XMP)     | 4GB     | SS | SK Hynix | -               | 16-18-18-36 | 1.35 | • | • |
| Klevv     | IM44GU48N30-FFFHAB(XMP)     | 4GB     | SS | SK Hynix | -               | 15-15-16-36 | 1.2  | • | • |
| Klevv     | IM48GU48A30-GIIHMC(XMP)     | 8GB     | DS | SK Hynix | -               | 15-15-15-35 | 1.35 | • | • |
| Klevv     | IM48GU88A30-FGGHMZ(XMP)     | 8GB     | DS | SK Hynix | -               | 15-15-16-36 | 1.35 | • | • |
| Klevv     | IM48GU88N30-FFFHMB(XMP)     | 8GB     | SS | SK Hynix | -               | 15-15-16-36 | 1.2  | • | • |
| Klevv     | IM4AGU88A30-FGGHMZ(XMP)     | 16GB    | DS | SK Hynix | -               | 15-15-16-36 | 1.35 | • | • |
| Klevv     | IM4AGU88N30-FFFHMB(XMP)     | 16GB    | DS | SK Hynix | -               | 15-15-16-36 | 1.2  | • | • |
| NEO FORZA | NFMUD416E8-3000DB2A(XMP)    | 16GB    | DS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD416E8-3000DB3A(XMP)    | 16GB    | DS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD416E8-3000DC2A(XMP)    | 16GB    | DS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD416E8-3000DC3A(XMP)    | 16GB    | DS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD416E8-3000DD2A(XMP)    | 16GB    | DS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD416E8-3000DD3A(XMP)    | 16GB    | DS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD416E8-3000DH2A(XMP)    | 16GB    | DS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD416E8-3000DH2A(XMP)    | 16GB    | DS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD480E8-3000DB2A(XMP)    | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD480E8-3000DB3A(XMP)    | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD480E8-3000DC2A(XMP)    | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD480E8-3000DC3A(XMP)    | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD480E8-3000DD2A(XMP)    | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD480E8-3000DD3A(XMP)    | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD480E8-3000DH2A(XMP)    | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD480E8-3000DH2A(XMP)    | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NFMUD480E8-3000DH2A(XMP)    | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NMUD416E82-3000DB30(XMP)    | 16GB    | DS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| NEO FORZA | NMUD480E82-3000DB30(XMP)    | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | -    | • | • |
| PATRIOT   | PV416G300C6K(XMP)           | 2x 8GB  | SS | -        | -               | 16-16-16-36 | -    | • | • |
| PATRIOT   | PV416G300C6K(XMP)           | 4x 8GB  | SS | -        | -               | 16-16-16-36 | 1.35 | • | • |
| PATRIOT   | PV432G300C6QK-PE000378(XMP) | 4x 8GB  | DS | -        | -               | 16-16-16-36 | 1.35 | • | • |
| PATRIOT   | PV48G300C6K(XMP)            | 4x 4GB  | SS | -        | -               | 16-16-16-36 | 1.35 | • | • |
| PATRIOT   | PVE48G300C6KRD(XMP)         | 2x 4GB  | SS | -        | -               | 16-16-16-36 | -    | • | • |
| Team      | TCD44G3000C16CBK(XMP)       | 4GB     | SS | SK Hynix | T4D5128HT-30    | 16-18-18-38 | 1.35 | • | • |
| Team      | TDRED48G3000HC16CDC01       | 2x 4GB  | SS | SK Hynix | T4D5128HT-30    | 16-18-18-38 | 1.35 | • | • |
| Team      | TDGED48G3000HC16CDC01       | 2x 4GB  | SS | SK Hynix | T4D5128HT-30    | 16-18-18-38 | 1.35 | • | • |
| Team      | TDRED416G3000HC16CQC01      | 4x 4GB  | SS | SK Hynix | T4D5128HT-30    | 16-18-18-38 | 1.35 | • | • |
| Team      | TDGED416G3000HC16CQC01      | 4x 4GB  | SS | SK Hynix | T4D5128HT-30    | 16-18-18-38 | 1.35 | • | • |
| Team      | TLRED48G3000HC16CDC01       | 2x 4GB  | SS | SK Hynix | T4D5128HT-30    | 16-18-18-38 | 1.35 | • | • |
| Team      | TLGD48G3000HC16CDC01        | 2x 4GB  | SS | SK Hynix | T4D5128HT-30    | 16-18-18-38 | 1.35 | • | • |
| Team      | TLRED416G3000HC16CQC01      | 4x 4GB  | SS | SK Hynix | T4D5128HT-30    | 16-18-18-38 | 1.35 | • | • |
| Team      | TLGD416G3000HC16CQC01       | 4x 4GB  | SS | SK Hynix | T4D5128HT-30    | 16-18-18-38 | 1.35 | • | • |
| Team      | TF3D48G3000HC16CBK(XMP)     | 8GB     | SS | Micron   | -               | 16-18-18-38 | 1.35 | • | • |
| Team      | TF3D416G3000HC16CDC01       | 2x 8GB  | SS | Micron   | -               | 16-18-18-38 | 1.35 | • | • |
| Team      | TF4D416G3000HC16CDC01       | 2x 8GB  | SS | Micron   | -               | 16-18-18-38 | 1.35 | • | • |
| Team      | TF1D416G3000HC16CDC01       | 2x 8GB  | SS | Micron   | -               | 16-18-18-38 | 1.35 | • | • |
| Team      | TF2D416G3000HC16CDC01       | 2x 8GB  | SS | Micron   | -               | 16-18-18-38 | 1.35 | • | • |
| Team      | TFRD48G3000C16CBK(XMP)      | 8GB     | DS | Samsung  | K4A4G085W/SBCPB | 16-18-18-38 | 1.35 | • | • |
| Team      | TFWD416G3000C16CBK(XMP)     | 16GB    | DS | SK Hynix | T4D10248HT-30   | 16-18-18-38 | 1.35 | • | • |
| V-color   | TL48G30S816RGB(XMP)         | 8GB     | SS | SK Hynix | -               | 16-18-18-38 | 1.35 | • | • |
| V-color   | TL48G30S8SRGB15(XMP)        | 8GB     | SS | Hynix    | -               | 15-15-16-35 | 1.35 | • | • |
| ZADAK     | ZD4-MO23000C16-08GAG(XMP)   | 8GB     | SS | Samsung  | -               | 16-18-18-38 | 1.35 | • | • |

#### DDR4 2933 Qualified Vendors List (QVL)

| Vendors | Part No.                          | Size    | SS/DS | Chip Brand | Chip NO. | Timing      | Voltage | DIMM socket support (Optional) |        |        |
|---------|-----------------------------------|---------|-------|------------|----------|-------------|---------|--------------------------------|--------|--------|
|         |                                   |         |       |            |          |             |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| CORSAIR | CMK128GX4M8Z2933C16(Ver4.31)      | 8x 16GB | DS    | Samsung    | -        | 16-18-18-36 | 1.35    | •                              | •      | •      |
| CORSAIR | CMK128GX4M8Z2933C16(Ver4.31)(XMP) | 8x 16GB | DS    | Samsung    | -        | 16-18-18-36 | 1.35    | •                              | •      | •      |
| G.SKILL | F4-2933C16D-16GFX(XMP)            | 2x 8GB  | SS    | Samsung    | -        | 16-16-16-36 | 1.35    | •                              | •      | •      |
| G.SKILL | F4-2933C16Q-32GFX(XMP)            | 4x 8GB  | SS    | Samsung    | -        | 16-16-16-36 | 1.35    | •                              | •      | •      |
| Hyper X | HX429C15PB3AK4/32(XMP)            | 4x 8GB  | SS    | -          | -        | 15-17-17-39 | 1.35    | •                              | •      | •      |
| Hyper X | HX429C17FB/16(XMP)                | 16GB    | DS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FB2/8(XMP)                | 8GB     | SS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FB2K2/16(XMP)             | 2x 8GB  | SS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FB2K4/32(XMP)             | 4x 8GB  | SS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FBK2/32(XMP)              | 2x 16GB | DS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FBK4/64(XMP)              | 4x 16GB | DS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FR/16(XMP)                | 16GB    | DS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FR2/8(XMP)                | 8GB     | SS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FR2K2/16(XMP)             | 2x 8GB  | SS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FR2K4/32(XMP)             | 4x 8GB  | SS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FRK2/32(XMP)              | 2x 16GB | DS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FRK4/64(XMP)              | 4x 16GB | DS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FW/16(XMP)                | 16GB    | DS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FW2/8(XMP)                | 8GB     | SS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FW2K2/16(XMP)             | 2x 8GB  | SS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FW2K4/32(XMP)             | 4x 8GB  | SS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FWK2/32(XMP)              | 2x 16GB | DS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |
| Hyper X | HX429C17FWK4/64(XMP)              | 2x 16GB | DS    | -          | -        | 17-19-19-39 | 1.2     | •                              | •      | •      |

**DDR4 2800 Qualified Vendors List (QVL)**

| Vendors   | Part No.                         | Size    | SS/DS | Chip Brand | Chip NO.       | Timing      | Voltage | DIMM socket support (Optional) |        |        |
|-----------|----------------------------------|---------|-------|------------|----------------|-------------|---------|--------------------------------|--------|--------|
|           |                                  |         |       |            |                |             |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| ADATA     | AX4U2800W8G15(XMP)               | 8GB     | DS    | SK Hynix   | -              | 15-15-15-36 | 1.25    | •                              | •      |        |
| ADATA     | AX4U2800W8G17-BRD(XMP)           | 8GB     | DS    | Samsung    | -              | 17-17-17-36 | 1.2     | •                              | •      |        |
| Apacer    | 78.BAGM8.AF20B(XMP)              | 4x 4GB  | SS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      | •      |
| Apacer    | 78.CAGM8.AF30B(XMP)              | 4x 8GB  | DS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      | •      |
| CORSAIR   | CMD16GX4M4A2800C16(Ver5.29)(XMP) | 4x 4GB  | SS    | -          | -              | 16-18-18-36 | 1.2     | •                              | •      | •      |
| CORSAIR   | CMD32GX4M4A2800C15(Ver5.29)(XMP) | 4x 8GB  | DS    | -          | -              | 15-17-17-36 | 1.2     | •                              | •      | •      |
| CORSAIR   | CMD32GX4M4A2800C16(Ver5.29)(XMP) | 4x 8GB  | DS    | -          | -              | 18-18-18-36 | 1.2     | •                              | •      | •      |
| CORSAIR   | CMK16GX4M4A2800C16(Ver4.23)(XMP) | 4x 4GB  | SS    | -          | -              | 16-16-18-36 | 1.2     | •                              | •      | •      |
| CORSAIR   | CMK16GX4M4A2800C16(Ver5.29)(XMP) | 4x 4GB  | SS    | -          | -              | 16-18-18-36 | 1.2     | •                              | •      | •      |
| CORSAIR   | CMK64GX4M8B2800C14(Ver4.24)(XMP) | 8x 8GB  | DS    | Samsung    | -              | 15-15-15-36 | 1.35    | •                              | •      | •      |
| G.SKILL   | F4-2800C14Q-64GVK(XMP)           | 4x 16GB | DS    | Samsung    | -              | 14-14-14-35 | 1.35    | •                              | •      |        |
| G.SKILL   | F4-2800C15Q2-128GRKD(XMP)        | 8x 16GB | DS    | Samsung    | -              | 15-15-15-36 | 1.35    | •                              | •      |        |
| G.SKILL   | F4-2800C15Q2-64GRK(XMP)          | 8x 8GB  | DS    | SK Hynix   | -              | 15-16-16-35 | 1.25    | •                              | •      | •      |
| G.SKILL   | F4-2800C15Q2-64GRK(XMP)          | 8x 8GB  | DS    | SK Hynix   | -              | 15-15-15-35 | 1.25    | •                              | •      | •      |
| G.SKILL   | F4-2800C16Q-16GRK(XMP)           | 4x 4GB  | SS    | Samsung    | -              | 16-16-16-36 | 1.2     | •                              | •      | •      |
| G.SKILL   | F4-2800C16Q-16GRR(XMP)           | 4x 4GB  | SS    | SK Hynix   | -              | 16-16-16-36 | 1.2     | •                              | •      | •      |
| G.SKILL   | F4-2800C16Q-32GRK(XMP)           | 4x 8GB  | DS    | Samsung    | -              | 16-16-16-36 | 1.2     | •                              | •      | •      |
| G.SKILL   | F4-2800C16Q-32GRR(XMP)           | 4x 8GB  | DS    | SK Hynix   | -              | 16-16-16-36 | 1.2     | •                              | •      | •      |
| GeIL      | GPR416GB2800C16QC(XMP)           | 4x 4GB  | SS    | SK Hynix   | -              | 16-16-16-36 | 1.2     | •                              | •      | •      |
| GeIL      | GPR432GB2800C16QC(XMP)           | 4x 8GB  | DS    | SK Hynix   | -              | 16-16-16-36 | 1.2     | •                              | •      | •      |
| Hyper X   | HX428C14PBK8/64(XMP)             | 8x 8GB  | DS    | SK Hynix   | -              | 14-15-15-39 | 1.35    | •                              | •      | •      |
| Hyper X   | HX428C14SB2/4(XMP)               | 4GB     | SS    | SK Hynix   | -              | 15-15-15-36 | 1.35    | •                              | •      |        |
| Hyper X   | HX428C14SB2/8(XMP)               | 8GB     | DS    | SK Hynix   | -              | 15-15-15-36 | 1.35    | •                              | •      |        |
| Hyper X   | HX428C14SB2K2/16(XMP)            | 2x 8GB  | DS    | SK Hynix   | -              | 15-15-15-36 | 1.35    | •                              | •      |        |
| Hyper X   | HX428C14SB2K2/8(XMP)             | 2x 4GB  | SS    | SK Hynix   | -              | 15-15-15-36 | 1.35    | •                              | •      |        |
| Hyper X   | HX428C14SB2K4/16(XMP)            | 4x 4GB  | SS    | SK Hynix   | -              | 15-15-15-36 | 1.35    | •                              | •      |        |
| Hyper X   | HX428C14SB2K4/32(XMP)            | 4x 8GB  | DS    | SK Hynix   | -              | 15-15-15-36 | 1.35    | •                              | •      |        |
| KINGMAX   | GLMG42F-18KIIA-CJBR4(XMP)        | 8GB     | SS    | KINGMAX    | -              | 17-17-17-39 | 1.2     | •                              | •      |        |
| Klevv     | IMA451U6MFR8N-DG0(Ver1.05)(XMP)  | 4GB     | SS    | SK Hynix   | -              | 16-16-16-36 | 1.2     | •                              | •      |        |
| NEO FORZA | NFMUD416E8-2800EB2A(XMP)         | 16GB    | DS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD416E8-2800EB3A(XMP)         | 16GB    | DS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD416E8-2800EC2A(XMP)         | 16GB    | DS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD416E8-2800EC3A(XMP)         | 16GB    | DS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD416E8-2800ED2A(XMP)         | 16GB    | DS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD416E8-2800EH2A(XMP)         | 16GB    | DS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD416E8-2800EH2A(XMP)         | 16GB    | DS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD480E8-2800DB2A(XMP)         | 8GB     | SS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD480E8-2800DB3A(XMP)         | 8GB     | SS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD480E8-2800DC2A(XMP)         | 8GB     | SS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD480E8-2800DC3A(XMP)         | 8GB     | SS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD480E8-2800DD2A(XMP)         | 8GB     | SS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD480E8-2800DD3A(XMP)         | 8GB     | SS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD480E8-2800DH2A(XMP)         | 8GB     | SS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| NEO FORZA | NFMUD480E8-2800DH2A(XMP)         | 8GB     | SS    | SK Hynix   | -              | 17-17-17-36 | -       | •                              | •      |        |
| Team      | TCD44G2800C16CBK(XMP)            | 4GB     | SS    | SK Hynix   | T4D5128HT-30   | 16-18-18-38 | 1.2     | •                              | •      |        |
| Team      | TDRED48G2800HC16CDC01            | 2x 4GB  | SS    | SK Hynix   | T4D5128HT-30   | 16-18-18-38 | 1.2     | •                              | •      |        |
| Team      | TDGED48G2800HC16CDC01            | 2x 4GB  | SS    | SK Hynix   | T4D5128HT-30   | 16-18-18-38 | 1.2     | •                              | •      |        |
| Team      | TLRED48G2800HC16CDC01            | 2x 4GB  | SS    | SK Hynix   | T4D5128HT-30   | 16-18-18-38 | 1.2     | •                              | •      |        |
| Team      | TLGD48G2800HC16CDC01             | 2x 4GB  | SS    | SK Hynix   | T4D5128HT-30   | 16-18-18-38 | 1.2     | •                              | •      |        |
| Team      | TFRD48G2800C16CBK(XMP)           | 8GB     | DS    | Samsung    | K4A4G085WSBCPB | 16-18-18-38 | 1.2     | •                              | •      |        |
| Team      | TFWD416G2800C16CBK(XMP)          | 16GB    | DS    | SK Hynix   | T4D10248HT-30  | 16-18-18-38 | 1.2     | •                              | •      |        |

**DDR4 2666 Qualified Vendors List (QVL)**

| Vendors | Part No.                          | Size    | SS/DS | Chip Brand | Chip NO.          | Timing      | Voltage | DIMM socket support (Optional) |        |        |
|---------|-----------------------------------|---------|-------|------------|-------------------|-------------|---------|--------------------------------|--------|--------|
|         |                                   |         |       |            |                   |             |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| ADATA   | AD4U2666316G19-B                  | 16GB    | DS    | SpecTek    | -                 | 19-19-19-43 | 1.2     | •                              | •      |        |
| ADATA   | AD4U266638G19                     | 8GB     | SS    | Nanya      | NT5AD1024MBA3-GZ  | 19-19-19-43 | 1.2     | •                              | •      |        |
| ADATA   | AD4U266638G19-B                   | 8GB     | SS    | SpecTek    | -                 | 19-19-19-43 | 1.2     | •                              | •      |        |
| ADATA   | AD4U2666W4G19                     | 4GB     | SS    | SpecTek    | -                 | 19-19-19-43 | 1.2     | •                              | •      |        |
| ADATA   | AO2P26KCST2                       | 16GB    | DS    | ADATA      | 43QA-0819HNA1810K | 19-19-19-43 | 1.2     | •                              | •      |        |
| ADATA   | AX4U266638G16-BRS(XMP)            | 8GB     | SS    | SK Hynix   | -                 | 16-16-16-39 | 1.2     | •                              | •      |        |
| ADATA   | AX4U266638G16-BRS(XMP)            | 8GB     | SS    | -          | -                 | 16-16-16-39 | 1.2     | •                              | •      |        |
| ADATA   | AX4U266638G16-BRZ(XMP)            | 8GB     | SS    | -          | -                 | 16-16-16-39 | 1.2     | •                              | •      |        |
| ADATA   | AX4U266638G16-DRZ(XMP)            | 2x 8GB  | SS    | SK Hynix   | -                 | 16-16-16-39 | 1.2     | •                              | •      |        |
| ADATA   | AX4U2666W4G16-BRZ(XMP)            | 4GB     | SS    | SK Hynix   | -                 | 16-16-16-39 | 1.2     | •                              | •      |        |
| Apacer  | AU08GGB26CQYBGH                   | 8GB     | SS    | Apacer     | AM6F63080HJMF5    | 19-19-19-43 | -       | •                              | •      |        |
| CORSAIR | CMD128GX4M8A2666C15(Ver4.31)(XMP) | 8x 16GB | DS    | Samsung    | -                 | 15-15-15-36 | 1.2     | •                              | •      | •      |
| CORSAIR | CMD16GX4M2A2666C15(Ver4.23)(XMP)  | 2x 8GB  | DS    | -          | -                 | 15-17-17-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMD16GX4M4A2666C15(Ver4.23)(XMP)  | 4x 4GB  | SS    | -          | -                 | 15-17-17-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMD16GX4M4A2666C16(Ver4.23)(XMP)  | 4x 4GB  | SS    | -          | -                 | 16-18-18-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMD16GX4M4A2666C16(Ver5.29)(XMP)  | 4x 4GB  | SS    | -          | -                 | 16-18-18-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMD32GX4M4A2666C15(Ver4.23)(XMP)  | 4x 8GB  | DS    | -          | -                 | 15-17-17-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMD32GX4M4A2666C15(Ver5.29)(XMP)  | 4x 8GB  | DS    | -          | -                 | 15-17-17-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMD32GX4M4A2666C16(Ver4.23)(XMP)  | 4x 8GB  | DS    | -          | -                 | 16-18-18-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMD64GX4M8A2666C15(Ver4.24)(XMP)  | 8x 8GB  | DS    | Samsung    | -                 | 15-15-15-36 | 1.2     | •                              | •      | •      |
| CORSAIR | CMD8GX4M2A2666C15(Ver4.23)(XMP)   | 2x 4GB  | DS    | -          | -                 | 15-17-17-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMD8GX4M2A2666C15(Ver4.23)(XMP)   | 2x 4GB  | DS    | -          | -                 | 15-17-17-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK128GX4M8A2666C16(Ver5.39)(XMP) | 8x 16GB | DS    | SK Hynix   | -                 | 16-18-18-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK16GX4M2A2666C16(Ver5.30)(XMP)  | 2x 8GB  | SS    | SK Hynix   | -                 | 16-18-18-35 | 1.2     | •                              | •      |        |
| CORSAIR | CMK16GX4M2D2666C16(Ver4.21)(XMP)  | 2x 8GB  | DS    | Samsung    | -                 | 16-18-18-35 | 1.2     | •                              | •      |        |
| CORSAIR | CMK16GX4M4A2666C16(Ver3.21)(XMP)  | 4x 4GB  | SS    | Micron     | -                 | 16-18-18-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK16GX4M4A2666C16(Ver4.23)(XMP)  | 4x 4GB  | SS    | -          | -                 | 16-18-18-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK32GX4M2A2666C16(Ver4.31)(XMP)  | 2x 16GB | DS    | -          | -                 | 16-18-18-35 | 1.2     | •                              | •      |        |
| CORSAIR | CMK32GX4M2A2666C16R(Ver3.31)(XMP) | 2x 16GB | DS    | Micron     | -                 | 15-15-15-36 | 1.2     | •                              | •      |        |
| CORSAIR | CMK32GX4M4A2666C15(Ver4.23)(XMP)  | 4x 8GB  | DS    | -          | -                 | 15-17-17-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK32GX4M4A2666C16(Ver3.20)(XMP)  | 4x 8GB  | DS    | Micron     | -                 | 15-15-15-36 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK32GX4M4A2666C16(Ver3.21)(XMP)  | 4x 8GB  | DS    | Micron     | -                 | 16-18-18-35 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK32GX4M4A2666C16(Ver5.30)(XMP)  | 4x 8GB  | SS    | SK Hynix   | -                 | 16-18-18-35 | 1.2     | •                              | •      | •      |

|          |                                    |         |    |          |                 |             |      |   |   |   |
|----------|------------------------------------|---------|----|----------|-----------------|-------------|------|---|---|---|
| CORSAIR  | CMK32GX4M4A2666C16(Ver5.30)(XMP)   | 4x 8GB  | SS | SK Hynix | -               | 16-18-18-35 | 1.2  | • | • | • |
| CORSAIR  | CMK32GX4M4A2666C16(Ver5.30)(XMP)   | 4x 8GB  | SS | SK Hynix | -               | 16-18-18-35 | 1.2  | • | • | • |
| CORSAIR  | CMK32GX4M4A2666C16R(Ver4.23)(XMP)  | 4x 8GB  | DS | -        | -               | 16-18-18-35 | 1.2  | • | • | • |
| CORSAIR  | CMK64GX4M4A2666C16(Ver3.31)(XMP)   | 4x 16GB | DS | Micron   | -               | 16-18-18-35 | 1.2  | • | • | • |
| CORSAIR  | CMK64GX4M4A2666C16(Ver4.31)(XMP)   | 4x 16GB | DS | Samsung  | -               | 15-15-15-36 | 1.2  | • | • | • |
| CORSAIR  | CMK8GX2M2D2666C16(Ver3.21)(XMP)    | 2x 4GB  | SS | Micron   | -               | 16-18-18-35 | 1.2  | • | • | • |
| CORSAIR  | CMK8GX4M2A2666C16(Ver3.22)(XMP)    | 2x 4GB  | SS | Micron   | -               | 16-18-18-35 | 1.2  | • | • | • |
| CORSAIR  | CMK8GX4M2D2666C16(Ver3.11)(XMP)    | 2x 4GB  | DS | Micron   | -               | 16-18-18-35 | 1.2  | • | • | • |
| CORSAIR  | CMR16GX4M2A2666C16(Ver5.30)(XMP)   | 2x 8GB  | SS | SK Hynix | -               | 16-18-18-35 | 1.2  | • | • | • |
| CORSAIR  | CMR64GX4M8A2666C16(Ver5.30)(XMP)   | 8x 8GB  | SS | SK Hynix | -               | 16-18-18-35 | 1.2  | • | • | • |
| CORSAIR  | CMU32GX4M4A2666C16(Ver5.30)(XMP)   | 4x 8GB  | SS | SK Hynix | -               | 16-18-18-35 | 1.2  | • | • | • |
| CORSAIR  | CMV16GX4M1A2666C18                 | 16GB    | DS | Micron   | -               | 18-18-18-43 | 1.2  | • | • | • |
| CORSAIR  | CMV4GX4M1A2666C18                  | 4GB     | SS | Micron   | -               | 18-18-18-43 | 1.2  | • | • | • |
| CORSAIR  | CMV8GX4M1A2666C18                  | 8GB     | SS | Micron   | -               | 18-18-18-43 | 1.2  | • | • | • |
| crucial  | BLE4G4D26AFAE.8FAD (XMP)           | 4GB     | SS | Micron   | -               | 16-17-17-36 | 1.2  | • | • | • |
| crucial  | BLE8G4D26AFAE.16FAD(XMP)           | 8GB     | DS | Micron   | -               | 16-17-17-36 | 1.2  | • | • | • |
| crucial  | BLS16G4D26BFSC.16FBD(XMP)          | 16GB    | DS | Micron   | -               | 16-18-18-38 | 1.2  | • | • | • |
| crucial  | BLS4G4D26BFSC.8FBR2(XMP)           | 4GB     | SS | Micron   | -               | 16-18-18-38 | 1.2  | • | • | • |
| crucial  | BLS8G4D26BFSC.16FBR2(XMP)          | 8GB     | DS | Micron   | -               | 16-18-18-38 | 1.2  | • | • | • |
| crucial  | BLS8G4D26BFSC.8FBR(XMP)            | 8GB     | SS | Micron   | -               | 16-18-18-38 | 1.2  | • | • | • |
| crucial  | BLT4G4D26AFTA.8FADG(XMP)           | 4GB     | SS | Micron   | -               | 16-16-16-39 | 1.2  | • | • | • |
| crucial  | BLT4G4D26AFTA.8FADG(XMP)           | 4x4GB   | SS | Micron   | -               | 16-17-17-36 | 1.2  | • | • | • |
| crucial  | BLT8G4D26AFTA.16FAD(XMP)           | 4x 8GB  | DS | Micron   | -               | 16-17-17-36 | 1.2  | • | • | • |
| crucial  | BLT8G4D26AFTA.16FAD(XMP)           | 8GB     | DS | Micron   | -               | 16-16-16-39 | 1.2  | • | • | • |
| G.SKILL  | F4-2666C15Q-16GRR(XMP)             | 4x 4GB  | SS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • | • |
| G.SKILL  | F4-2666C15Q-32GRR(XMP)             | 4x 8GB  | DS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • | • |
| G.SKILL  | F4-2666C16Q2-128GVK(XMP)           | 8x 16GB | DS | SK Hynix | -               | 16-16-16-36 | 1.2  | • | • | • |
| Hyper X  | HX426C13PB3/16(XMP)                | 16GB    | DS | SK Hynix | -               | 13-15-15-35 | 1.35 | • | • | • |
| Hyper X  | HX426C13PB3K2/32(XMP)              | 2x 16GB | DS | SK Hynix | -               | 13-15-15-35 | 1.35 | • | • | • |
| Hyper X  | HX426C13PB3K4/64(XMP)              | 4x 16GB | DS | SK Hynix | -               | 13-15-15-35 | 1.35 | • | • | • |
| Hyper X  | HX426C13SB2/4(XMP)                 | 4GB     | SS | SK Hynix | -               | 15-15-15-36 | 1.35 | • | • | • |
| Hyper X  | HX426C13SB2K2/16(XMP)              | 2x 8GB  | DS | Nanya    | NT5AD512M8B1-GN | 15-15-15-36 | 1.35 | • | • | • |
| Hyper X  | HX426C13SB2K2/8(XMP)               | 2x 4GB  | SS | SK Hynix | -               | 15-15-15-36 | 1.35 | • | • | • |
| Hyper X  | HX426C13SB2K4/16(XMP)              | 4x 4GB  | SS | SK Hynix | -               | 15-15-15-36 | 1.35 | • | • | • |
| Hyper X  | HX426C13SB2K4/32(XMP)              | 4x 8GB  | DS | Nanya    | NT5AD512M8B1-GN | 15-15-15-36 | 1.35 | • | • | • |
| Hyper X  | HX426C15FB/4                       | 4GB     | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FB/4                       | 4GB     | SS | Micron   | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FB/8                       | 8GB     | DS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FB/8                       | 8GB     | DS | Micron   | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FBK2/16                    | 2x 8GB  | DS | SK Hynix | -               | 15-15-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FBK2/16                    | 2x 8GB  | DS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FBK2/16                    | 2x 8GB  | DS | Micron   | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FBK2/8                     | 2x 4GB  | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FBK2/8                     | 2x 4GB  | SS | Micron   | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FBK4/16                    | 4x 4GB  | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FBK4/16                    | 4x 4GB  | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FBK4/16                    | 4x 4GB  | SS | Micron   | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FBK4/32                    | 4x 8GB  | DS | SK Hynix | -               | 15-15-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FBK4/32                    | 4x 8GB  | DS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15FBK4/32                    | 4x 8GB  | DS | Micron   | -               | 15-17-17-35 | 1.2  | • | • | • |
| Hyper X  | HX426C15SBK4/64(XMP)               | 4x 16GB | DS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • | • |
| Hyper X  | HX426C16FB/16                      | 16GB    | DS | SK Hynix | -               | 16-18-18-39 | 1.2  | • | • | • |
| Hyper X  | HX426C16FB2/8(XMP)                 | 8GB     | SS | SK Hynix | -               | 16-18-18-39 | 1.2  | • | • | • |
| Hyper X  | HX426C16FB2K2/16(XMP)              | 2x 8GB  | SS | SK Hynix | -               | 16-18-18-39 | 1.2  | • | • | • |
| Hyper X  | HX426C16FB2K4/32(XMP)              | 4x 8GB  | SS | SK Hynix | -               | 16-18-18-39 | 1.2  | • | • | • |
| Hyper X  | HX426C16FBK2/32                    | 2x 16GB | DS | SK Hynix | -               | 16-18-18-39 | 1.2  | • | • | • |
| Hyper X  | HX426C16FBK4/64                    | 4x 16GB | DS | SK Hynix | -               | 16-18-18-39 | 1.2  | • | • | • |
| Hyper X  | HX426C16FBK4/64                    | 4x 16GB | DS | SK Hynix | -               | 16-18-18-39 | -    | • | • | • |
| Hyper X  | HX426C16FW/16                      | 16GB    | DS | SK Hynix | -               | 16-18-18-39 | 1.2  | • | • | • |
| Hyper X  | HX426C16FWK2/32                    | 2x 16GB | DS | SK Hynix | -               | 16-18-18-39 | 1.2  | • | • | • |
| Hyper X  | HX426C16FWK4/64                    | 4x 16GB | DS | SK Hynix | -               | 16-18-18-39 | 1.2  | • | • | • |
| Kingston | KVR26N19D8/16                      | 16GB    | DS | Micron   | D9TZV           | 19-19-19-43 | 1.2  | • | • | • |
| Kingston | KVR26N19D8/16                      | 16GB    | DS | Micron   | D9VHP           | 19-19-19-43 | 1.2  | • | • | • |
| Kingston | KVR26N19S8/8                       | 8GB     | SS | Micron   | D9TZV           | 19-19-19-43 | 1.2  | • | • | • |
| Kingston | KVR26N19S8/8                       | 8GB     | SS | Micron   | -               | 19-19-19-43 | 1.2  | • | • | • |
| Klevv    | IM44GU48N26-FFFHAZ(XMP)            | 4GB     | SS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • | • |
| Klevv    | IM48GU88N26-FFFHMZ(XMP)            | 8GB     | SS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • | • |
| Klevv    | IM4AGU88N26-FFFHMZ(XMP)            | 16GB    | DS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • | • |
| Klevv    | KM4C8GX4N-2666-15-15-15-35-0 (XMP) | 8GB     | DS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • | • |
| Klevv    | KM4C8GX4N-2666-15-15-15-35-1(XMP)  | 8GB     | DS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • | • |
| Micron   | MTA16ATF2G64AZ-2G6E1               | 16GB    | DS | Micron   | D9WFL           | 19-19-19-43 | -    | • | • | • |
| Micron   | MTA16ATF2G64AZ-2G6H1               | 16GB    | DS | Micron   | D9VHP           | 19-19-19-43 | -    | • | • | • |
| Micron   | MTA8ATF1G64AZ-2G6E1                | 8GB     | SS | Micron   | D9VPP           | 19-19-19-43 | 1.2  | • | • | • |
| Micron   | MTA8ATF1G64AZ-2G6H1                | 8GB     | SS | Micron   | D9VHP           | 19-19-19-43 | -    | • | • | • |
| panram   | W4U2666PS-16G                      | 2x 16GB | DS | SK Hynix | DDR4-1GM8-26    | 16-18-18-35 | 1.2  | • | • | • |
| panram   | W4U2666PS-8G                       | 2x 8GB  | SS | SK Hynix | DDR4-1GM8-26    | 16-18-18-35 | 1.2  | • | • | • |
| SL LINK  | J4AGUH1G8QHBC                      | 16GB    | DS | SK Hynix | H5AN8G8NAFRVKC  | 19-19-19-43 | 1.2  | • | • | • |
| Team     | TCD44G2666C15BBK(XMP)              | 4GB     | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TDRED44G2666HC15B01                | 4GB     | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TDGED44G2666HC15B01                | 4GB     | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TDRED48G2666HC15BDC01              | 2x 4GB  | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TDGED48G2666HC15BDC01              | 2x 4GB  | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TDRED416G2666HC15BQC01             | 4x 4GB  | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TDGED416G2666HC15BQC01             | 4x 4GB  | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TLRED44G2666HC15B01                | 4GB     | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TLGD44G2666HC15B01                 | 4GB     | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TLRED48G2666HC15BDC01              | 2x 4GB  | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TLGD48G2666HC15BDC01               | 2x 4GB  | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TLRED416G2666HC15BQC01             | 4x 4GB  | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TLGD416G2666HC15BQC01              | 4x 4GB  | SS | SK Hynix | T4D5128HT-266   | 15-17-17-35 | 1.2  | • | • | • |
| Team     | TED416G2666C1901                   | 16GB    | DS | Micron   | -               | 19-19-19-43 | 1.2  | • | • | • |
| Team     | TED416G2666C19DC01                 | 2x 8GB  | SS | Micron   | -               | 19-19-19-43 | 1.2  | • | • | • |
| Team     | TED416G2666C19QC01                 | 4x 4GB  | SS | SK Hynix | -               | 19-19-19-43 | 1.2  | • | • | • |
| Team     | TED432G2666C19DC01                 | 2x 16GB | DS | Micron   | -               | 19-19-19-43 | 1.2  | • | • | • |

|         |                         |         |    |          |                |             |      |   |   |   |
|---------|-------------------------|---------|----|----------|----------------|-------------|------|---|---|---|
| Team    | TED432G2666C19QC01      | 4x 8GB  | SS | SK Hynix | -              | 19-19-19-43 | 1.2  | • | • | • |
| Team    | TED44G2666C1901         | 4GB     | SS | SK Hynix | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TED464G2666C19QC01      | 4x 16GB | DS | Micron   | -              | 19-19-19-43 | 1.2  | • | • | • |
| Team    | TED464G2666C19QC01      | 4x 16GB | DS | Micron   | -              | 19-19-19-43 | 1.2  | • | • | • |
| Team    | TED48G2666C1901         | 8GB     | SS | Micron   | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TED48G2666C19DC01       | 2x 4GB  | SS | SK Hynix | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TFRD416G2666C15BBK(XMP) | 16GB    | DS | Samsung  | K4ABG085WBBCPB | 15-17-17-35 | 1.2  | • | • |   |
| Team    | TFWD48G2666C15BBK(XMP)  | 8GB     | DS | Samsung  | K4A4G085WSBCPB | 15-17-17-35 | 1.2  | • | • |   |
| Team    | TPD416G2666HC1901       | 16GB    | DS | Micron   | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPD416G2666HC19BK       | 16GB    | DS | Micron   | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPD416G2666HC19DC01     | 2x 8GB  | SS | Micron   | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPD416G2666HC19QC01     | 4x 4GB  | SS | SK Hynix | -              | 19-19-19-43 | 1.2  | • | • | • |
| Team    | TPD432G2666HC19DC01     | 2x 16GB | DS | Micron   | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPD432G2666HC19QC01     | 4x 8GB  | SS | Micron   | -              | 19-19-19-43 | 1.2  | • | • | • |
| Team    | TPD44G2666HC1901        | 4GB     | SS | SK Hynix | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPD44G2666HC19BK        | 4GB     | SS | SK Hynix | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPD464G2666HC19QC01     | 4x 16GB | DS | Micron   | -              | 19-19-19-43 | 1.2  | • | • | • |
| Team    | TPRD464G2666HC19QC01    | 4x 16GB | DS | Micron   | -              | 19-19-19-43 | 1.2  | • | • | • |
| Team    | TPD48G2666HC1901        | 8GB     | SS | Micron   | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPD48G2666HC19BK        | 8GB     | SS | Micron   | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPD48G2666HC19DC01      | 2x 4GB  | SS | SK Hynix | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPRD416G2666HC1901      | 16GB    | DS | Micron   | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPRD416G2666HC19DC01    | 2x 8GB  | SS | Micron   | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPRD416G2666HC19QC01    | 4x 4GB  | SS | SK Hynix | -              | 19-19-19-43 | 1.2  | • | • | • |
| Team    | TPRD432G2666HC19DC01    | 2x 16GB | DS | Micron   | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPRD432G2666HC19QC01    | 4x 8GB  | SS | Micron   | -              | 19-19-19-43 | 1.2  | • | • | • |
| Team    | TPRD44G2666HC1901       | 4GB     | SS | SK Hynix | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPRD48G2666HC1901       | 8GB     | SS | Micron   | -              | 19-19-19-43 | 1.2  | • | • |   |
| Team    | TPRD48G2666HC19DC01     | 2x 4GB  | SS | SK Hynix | -              | 19-19-19-43 | 1.2  | • | • |   |
| SL LINK | J4BGUS2G8QHBC           | 32GB    | DS | Samsung  | -              | 19-19-19-43 | 1.2V | • | • | • |

### DDR4 2400 Qualified Vendors List (QVL)

| Vendors | Part No.                          | Size    | SS/DS | Chip Brand | Chip NO.         | Timing      | Voltage | DIMM socket support (Optional) |        |        |
|---------|-----------------------------------|---------|-------|------------|------------------|-------------|---------|--------------------------------|--------|--------|
|         |                                   |         |       |            |                  |             |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| ADATA   | AD4U2400316G17                    | 16GB    | DS    | Nanya      | NT5AD1024M8A3-GZ | 17-17-17-39 | 1.2     | •                              | •      |        |
| ADATA   | AD4U2400W4G17                     | 4GB     | SS    | -          | -                | 17-17-17-39 | 1.2     | •                              | •      |        |
| ADATA   | AD4U2400W8G17                     | 8GB     | DS    | SK Hynix   | H5AN8G8NBURUHC   | 17-17-17-39 | 1.2     | •                              | •      |        |
| ADATA   | AD4X240038G17                     | 8GB     | SS    | SpecTech   | PS023-093 TP     | 17-17-17-39 | 1.2     | •                              | •      |        |
| ADATA   | AD4X2400W4G17                     | 4GB     | SS    | SK Hynix   | H5AN4G8NBURUHC   | 17-17-17-39 | 1.2     | •                              | •      |        |
| Antec   | AMD4UZ124001508G-3S               | 8GB     | SS    | Samsung    | K4A8G085WBBCPB   | 15-15-15-39 | 1.2     | •                              | •      |        |
| Apacer  | 78.C1GMS.4010B                    | 4x 8GB  | DS    | Samsung    | K4A4G085WD       | 17-17-17-39 | -       | •                              | •      | •      |
| Apacer  | AU04GGB24CEWBGH                   | 4GB     | DS    | SK Hynix   | H5AN4G6NAFRUHC   | 17-17-17-39 | -       | •                              | •      |        |
| Apacer  | EK.08G2T.GEC(XMP)                 | 8GB     | SS    | Micron     | -                | 17-17-17-39 | -       | •                              | •      |        |
| Apacer  | EL.08G2T.GFM                      | 8GB     | SS    | SK Hynix   | AM6F6308MHHSB2   | 17-17-17-39 | -       | •                              | •      |        |
| Asgard  | VML41UE-MIC1U22Q1                 | 2GB     | SS    | Micron     | -                | 17-17-17-39 | 1.2     | •                              | •      |        |
| CORSAIR | CMD16GX4M4A2400C14(Ver4.23)(XMP)  | 4x 4GB  | SS    | -          | -                | 14-16-16-31 | 1.2     | •                              | •      | •      |
| CORSAIR | CMD32GX4M4A2400C14(Ver4.23)(XMP)  | 4x 8GB  | DS    | -          | -                | 14-16-16-31 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK128GX4M8A2400C14(Ver5.30)(XMP) | 8x 16GB | DS    | SK Hynix   | -                | 14-16-16-31 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK16GX4M2A2400C16(Ver3.31)(XMP)  | 2x 8GB  | DS    | Micron     | -                | 15-15-15-36 | 1.2     | •                              | •      |        |
| CORSAIR | CMK16GX4M2D2400C14(Ver4.21)(XMP)  | 2x 8GB  | DS    | Samsung    | -                | 14-16-16-31 | 1.2     | •                              | •      |        |
| CORSAIR | CMK16GX4M2Z2400C16(Ver3.31)       | 2x 8GB  | SS    | Micron     | -                | 16-16-16-39 | 1.2     | •                              | •      |        |
| CORSAIR | CMK16GX4M4A2400C14(Ver4.23)(XMP)  | 4x 4GB  | SS    | -          | -                | 14-16-16-31 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK16GX4M4A2400C14(Ver5.20)(XMP)  | 4x 4GB  | SS    | SK Hynix   | -                | 14-16-16-31 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK32GX4M4A2400C14(Ver3.31)(XMP)  | 4x 8GB  | SS    | -          | -                | 14-16-16-31 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK32GX4M4A2400C14(Ver4.23)(XMP)  | 4x 8GB  | DS    | -          | -                | 14-16-16-31 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK32GX4M4A2400C16(Ver3.31)(XMP)  | 4x 8GB  | SS    | Micron     | -                | 15-15-15-36 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK64GX4M4A2400C14(Ver3.31)(XMP)  | 4x 16GB | DS    | Micron     | -                | 15-15-15-36 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK64GX4M4A2400C14(Ver4.31)(XMP)  | 4x 16GB | DS    | Samsung    | -                | 15-15-15-36 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK64GX4M4A2400C16(Ver3.32)(XMP)  | 4x 16GB | DS    | -          | -                | 16-16-16-39 | 1.2     | •                              | •      | •      |
| CORSAIR | CMK8GX4M2D2400C14(Ver3.11)(XMP)   | 2x 4GB  | DS    | Micron     | -                | 14-16-16-31 | 1.2     | •                              | •      | •      |
| crucial | BLS16G4D240FSB.16FBD(XMP)         | 16GB    | DS    | Micron     | -                | 16-16-16-39 | 1.2     | •                              | •      |        |
| crucial | BLS4G4D240FSB.8FBD(XMP)           | 4GB     | SS    | Micron     | -                | 16-16-16-39 | 1.2     | •                              | •      |        |
| crucial | BLS8G4D240FSBK.8FBD(XMP)          | 8GB     | SS    | Micron     | -                | 16-16-16-39 | 1.2     | •                              | •      |        |
| crucial | CT16G4DFD824A.16FB1               | 16GB    | DS    | Micron     | D9TBH            | 17-17-17-39 | 1.2     | •                              | •      |        |
| crucial | CT16G4DFD824A.C16FDR1             | 16GB    | DS    | Micron     | C9BGV            | 17-17-17-39 | 1.2     | •                              | •      |        |
| crucial | CT8G4DFS824A.8FB1                 | 8GB     | SS    | Micron     | -                | 17-17-17-39 | 1.2     | •                              | •      |        |
| G.SKILL | F4-2400C14Q2-128GRK(XMP)          | 8x 16GB | DS    | Samsung    | -                | 14-14-14-34 | 1.2     | •                              | •      | •      |
| G.SKILL | F4-2400C14Q2-128GRK(XMP)          | 8x 16GB | DS    | Samsung    | -                | 15-15-15-36 | 1.2     | •                              | •      | •      |
| G.SKILL | F4-2400C14Q2-128GRK(XMP)          | 8x 16GB | DS    | SK Hynix   | -                | 14-14-14-34 | 1.2     | •                              | •      | •      |
| G.SKILL | F4-2400C15Q-16GRR(XMP)            | 4x 4GB  | SS    | Micron     | -                | 15-15-15-35 | 1.2     | •                              | •      | •      |
| G.SKILL | F4-2400C15Q2-128GRK(XMP)          | 8x 16GB | DS    | Samsung    | -                | 15-15-15-35 | 1.2     | •                              | •      | •      |
| G.SKILL | F4-2400C15Q2-128GVK(XMP)          | 8x 16GB | DS    | SK Hynix   | -                | 15-15-15-36 | 1.2     | •                              | •      | •      |
| G.SKILL | F4-2400C15Q2-64GRK(XMP)           | 8x 8GB  | DS    | Samsung    | -                | 15-15-15-35 | 1.2     | •                              | •      | •      |
| G.SKILL | F4-2400C15Q-32GRR(XMP)            | 4x 8GB  | DS    | Micron     | -                | 15-15-15-35 | 1.2     | •                              | •      | •      |
| GelL    | GASB416GB2400C16QC(XMP)           | 4GB     | SS    | Micron     | -                | 16-16-16-36 | 1.2     | •                              | •      |        |
| GelL    | GASB432GB2400C16QC(XMP)           | 8GB     | SS    | Micron     | -                | 16-16-16-36 | 1.2     | •                              | •      |        |
| GelL    | GEL416GB2400C17SC                 | 16GB    | DS    | GeLL       | C04LT0M00BA093A  | 17-17-17-39 | -       | •                              | •      |        |
| GelL    | GEL48GB2400C17SC                  | 8GB     | SS    | GeLL       | GEL48GB2400C17SC | 17-17-17-39 | -       | •                              | •      |        |
| GelL    | GFR416GB2400C16S(XMP)             | 16GB    | SS    | Micron     | -                | 16-16-16-36 | 1.2     | •                              | •      |        |
| GelL    | GFR432GB2400C16D(XMP)             | 16GB    | SS    | Micron     | -                | 16-16-16-36 | 1.2     | •                              | •      |        |
| GelL    | GLR464GB2400C14QC(XMP)            | 4x 16GB | DS    | Micron     | -                | 14-14-14-35 | 1.2     | •                              | •      | •      |
| GelL    | GLS48GB2400C16DC(XMP)             | 4GB     | SS    | Micron     | -                | 16-16-16-36 | 1.2     | •                              | •      |        |
| GelL    | GPR416GB2400C15QC(XMP)            | 4x 4GB  | SS    | Samsung    | -                | 15-15-15-35 | 1.2     | •                              | •      |        |
| GelL    | GPR432GB2400C15QC(XMP)            | 4x 8GB  | DS    | SK Hynix   | -                | 15-15-15-35 | 1.2     | •                              | •      | •      |
| GelL    | GPR432GB2400C16QC(XMP)            | 4x 8GB  | SS    | Micron     | -                | 16-16-16-36 | 1.2     | •                              | •      |        |
| GLOWAY  | TYP4U2400D17021C                  | 2GB     | SS    | Micron     | -                | 17-17-17-39 | 1.2     | •                              | •      |        |
| Hyper X | HX424C12PB2K4/16(XMP)             | 4x 4GB  | SS    | SK Hynix   | -                | 12-13-13-35 | 1.2     | •                              | •      | •      |
| Hyper X | HX424C12SB2/4(XMP)                | 4GB     | SS    | SK Hynix   | -                | 15-15-15-36 | 1.35    | •                              | •      |        |
| Hyper X | HX424C12SB2/8(XMP)                | 8GB     | DS    | SK Hynix   | -                | 15-15-15-36 | 1.35    | •                              | •      |        |
| Hyper X | HX424C12SB2K2/16(XMP)             | 2x 8GB  | DS    | SK Hynix   | -                | 15-15-15-36 | 1.35    | •                              | •      |        |
| Hyper X | HX424C12SB2K2/16(XMP)             | 2x 8GB  | DS    | Nanya      | NT5AD512M8B1-GN  | 15-15-15-36 | 1.35    | •                              | •      |        |
| Hyper X | HX424C12SB2K4/16(XMP)             | 4x 4GB  | SS    | SK Hynix   | -                | 15-15-15-36 | 1.35    | •                              | •      | •      |
| Hyper X | HX424C12SB2K4/32(XMP)             | 4x 8GB  | DS    | SK Hynix   | -                | 15-15-15-36 | 1.35    | •                              | •      | •      |

|          |                         |         |    |          |                 |             |      |   |   |
|----------|-------------------------|---------|----|----------|-----------------|-------------|------|---|---|
| Hyper X  | HX424C12SB2K4/32(XMP)   | 4x 8GB  | DS | Nanya    | NT5AD512M8B1-GN | 15-15-15-36 | 1.35 | • | • |
| Hyper X  | HX424C15B2K4/32(XMP)    | 4x 8GB  | SS | Micron   | -               | 15-15-15-35 | 1.2  | • | • |
| Hyper X  | HX424C15FB/4            | 4GB     | SS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • |
| Hyper X  | HX424C15FB/8(XMP)       | 8GB     | SS | SK Hynix | -               | 14-14-14-32 | 1.2  | • | • |
| Hyper X  | HX424C15FBK2/8          | 2x 4GB  | SS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • |
| Hyper X  | HX424C15FBK4/16         | 4x 4GB  | SS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • |
| Hyper X  | HX424C15FBK4/16         | 4x4GB   | SS | SK Hynix | -               | 14-14-14-32 | 1.2  | • | • |
| Hyper X  | HX424C15FBK4/32         | 4x 8GB  | DS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • |
| Hyper X  | HX424C15FBK4/64         | 4x 16GB | DS | Micron   | -               | 15-15-15-35 | 1.2  | • | • |
| J&A      | AD4U24001716-16M        | 16GB    | DS | SK Hynix | -               | 17-17-17-39 | -    | • | • |
| J&A      | JAD4U24001708-04M       | 4GB     | SS | SK Hynix | -               | 17-17-17-39 | -    | • | • |
| J&A      | JAD4U24001708-08M       | 8GB     | SS | -        | -               | 17-17-17-39 | -    | • | • |
| KINGMAX  | GLLF62F-DAKZIG-CLBU     | 4GB     | SS | KINGMAX  | KGDACZ-CU       | 17-17-17-39 | -    | • | • |
| KINGMAX  | GLLF62F-DAKZIG-CLBU     | 4GB     | SS | KINGMAX  | PS029-093-TP    | 17-17-17-39 | -    | • | • |
| KINGMAX  | GLLH22F-18KIIA-CFBU2    | 16GB    | DS | KINGMAX  | PS0223-093-TP   | 17-17-17-39 | -    | • | • |
| Kingston | KVR24N17D8/16           | 16GB    | DS | Micron   | D9SRJ           | 17-17-17-39 | 1.2  | • | • |
| Kingston | KVR24N17D8/8            | 8GB     | DS | Micron   | D9TGG           | 17-17-17-39 | 1.2  | • | • |
| Kingston | KVR24N17S6/4            | 4GB     | SS | -        | -               | 17-17-17-39 | 1.2  | • | • |
| Kingston | KVR24N17S8/4            | 4GB     | SS | Micron   | D9TGG           | 17-17-17-39 | 1.2  | • | • |
| Kingston | KVR24N17S8/8            | 8GB     | SS | Micron   | D9TBH           | 17-17-17-39 | 1.2  | • | • |
| Klevv    | IM44GU48N24-FFFHAB(XMP) | 4GB     | SS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • |
| Klevv    | IM44GU48N24-FFFHAZ(XMP) | 4GB     | SS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • |
| Klevv    | IM48GU88N24-FFFHMB(XMP) | 8GB     | SS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • |
| Klevv    | IM48GU88N24-FFFHMZ(XMP) | 8GB     | SS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • |
| Klevv    | IM4AGU88N24-FFFHMB(XMP) | 16GB    | DS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • |
| Klevv    | IM4AGU88N24-FFFHMZ(XMP) | 16GB    | DS | SK Hynix | -               | 15-15-15-35 | 1.2  | • | • |
| Micron   | MTA16ATF2G64AZ-2G3B1    | 16GB    | DS | Micron   | D9TBH           | 17-17-17-39 | 1.2  | • | • |
| Micron   | MTA8ATF1G64AZ-2G3B1     | 8GB     | SS | -        | -               | 17-17-17-39 | 1.2  | • | • |
| panram   | W4U2400PS-8G            | 8GB     | SS | SK Hynix | DTCCH912G2      | 14-14-14-31 | -    | • | • |
| PATRIOT  | PSD416G24002            | 16GB    | DS | Samsung  | K4A8G085WB      | 17-17-17-39 | 1.2  | • | • |
| PATRIOT  | PSD44G240081            | 4GB     | SS | Samsung  | K4A4G085WE      | 16-16-16-39 | 1.2  | • | • |
| PATRIOT  | PSD48G240081            | 8GB     | SS | Samsung  | K4A8G085WB      | 17-17-17-39 | 1.2  | • | • |
| PATRIOT  | PSD48G240082            | 8GB     | DS | -        | N/A             | 17-17-17-39 | 1.2  | • | • |
| PATRIOT  | PV432G240C5QK(XMP)      | 4x 8GB  | SS | -        | -               | 15-15-15-35 | 1.2  | • | • |
| PATRIOT  | PVE416G240C5KRD(XMP)    | 2x 8GB  | SS | -        | -               | 15-15-15-35 | -    | • | • |
| PATRIOT  | PVE48G240C5KRD(XMP)     | 2x 4GB  | SS | -        | -               | 15-15-15-35 | -    | • | • |
| SK Hynix | HMA81GU6AFR8N-UH        | 8GB     | SS | SK Hynix | H5AN8GBNAFRUHC  | 17-17-17-39 | -    | • | • |
| SK Hynix | HMA82GU6AFR8N-UH        | 16GB    | DS | SK Hynix | H5AN8GBNAFRUHC  | 17-17-17-39 | -    | • | • |
| SK Hynix | HMA851U6AFR6N-UH        | 4GB     | SS | SK Hynix | H5AN8G6NAFRUHC  | 17-17-17-39 | -    | • | • |
| Team     | TCD44G2400C14BK(XMP)    | 4GB     | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TDRED44G2400HC1401      | 4GB     | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TDGED44G2400HC1401      | 4GB     | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TDRED48G2400HC14DC01    | 2x 4GB  | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TDGED48G2400HC14DC01    | 2x 4GB  | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TDRED416G2400HC14QC01   | 4x 4GB  | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TDGED416G2400HC14QC01   | 4x 4GB  | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TLRED44G2400HC1401      | 4GB     | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TLGD44G2400HC1401       | 4GB     | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TLRED48G2400HC14DC01    | 2x 4GB  | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TLGD48G2400HC14DC01     | 2x 4GB  | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TLRED416G2400HC14QC01   | 4x 4GB  | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TLGD416G2400HC14QC01    | 4x 4GB  | SS | SK Hynix | H5AN4GBNAFRFTFC | 14-16-16-31 | 1.2  | • | • |
| Team     | TED416G2400C16BK        | 16GB    | DS | Micron   | T4D10248MT-24   | 16-16-16-39 | 1.2  | • | • |
| Team     | TED416G2400C1601        | 16GB    | DS | Micron   | T4D10248MT-24   | 16-16-16-39 | 1.2  | • | • |
| Team     | TED432G2400C16DC01      | 2x 16GB | DS | Micron   | T4D10248MT-24   | 16-16-16-39 | 1.2  | • | • |
| Team     | TPD416G2400HC1601       | 16GB    | DS | Micron   | T4D10248MT-24   | 16-16-16-39 | 1.2  | • | • |
| Team     | TPRD416G2400HC1601      | 16GB    | DS | Micron   | T4D10248MT-24   | 16-16-16-39 | 1.2  | • | • |
| Team     | TPD432G2400HC16DC01     | 2x 16GB | DS | Micron   | T4D10248MT-24   | 16-16-16-39 | 1.2  | • | • |
| Team     | TPRD432G2400HC16DC01    | 2x 16GB | DS | Micron   | T4D10248MT-24   | 16-16-16-39 | 1.2  | • | • |
| Team     | TED48G2400C16BK         | 8GB     | DS | SK Hynix | T4D5128HT-24    | 16-16-16-39 | 1.2  | • | • |
| Team     | TED48G2400C1601         | 8GB     | DS | SK Hynix | T4D5128HT-24    | 16-16-16-39 | 1.2  | • | • |
| Team     | TED416G2400C16DC01      | 2x 8GB  | DS | SK Hynix | T4D5128HT-24    | 16-16-16-39 | 1.2  | • | • |
| Team     | TED432G2400C16QC01      | 4x 8GB  | DS | SK Hynix | T4D5128HT-24    | 16-16-16-39 | 1.2  | • | • |
| Team     | TPD48G2400HC1601        | 8GB     | DS | SK Hynix | T4D5128HT-24    | 16-16-16-39 | 1.2  | • | • |
| Team     | TPRD48G2400HC1601       | 8GB     | DS | SK Hynix | T4D5128HT-24    | 16-16-16-39 | 1.2  | • | • |
| Team     | TPD416G2400HC16DC01     | 2x 8GB  | DS | SK Hynix | T4D5128HT-24    | 16-16-16-39 | 1.2  | • | • |
| Team     | TPRD416G2400HC16DC01    | 2x 8GB  | DS | SK Hynix | T4D5128HT-24    | 16-16-16-39 | 1.2  | • | • |
| Team     | TPD432G2400HC16QC01     | 4x 8GB  | DS | SK Hynix | T4D5128HT-24    | 16-16-16-39 | 1.2  | • | • |
| Team     | TPRD432G2400HC16QC01    | 4x 8GB  | DS | SK Hynix | T4D5128HT-24    | 16-16-16-39 | 1.2  | • | • |
| Team     | TF3D48G2400HC15BBK(XMP) | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • |
| Team     | TF3D48G2400HC15B01      | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • |
| Team     | TF3D416G2400HC15BDC01   | 2x 8GB  | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • |
| Team     | TF3D48G2400HC15B01      | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • |
| Team     | TF3D416G2400HC15BDC01   | 2x 8GB  | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • |
| Team     | TF4D48G2400HC15BBK(XMP) | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • |
| Team     | TF4D48G2400HC15B01      | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • |
| Team     | TF4D416G2400HC15BDC01   | 2x 8GB  | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • |
| Team     | TF3D48G2400HC15B01      | 8GB     | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • |
| Team     | TF3D416G2400HC15BDC01   | 2x 8GB  | SS | SK Hynix | -               | 15-17-17-35 | 1.2  | • | • |
| Team     | TFRD44G2400C15ABK(XMP)  | 4GB     | SS | SK Hynix | T4D5128HT-24    | 15-15-15-35 | 1.2  | • | • |
| Team     | TFRD48G2400C15ABK(XMP)  | 8GB     | SS | SK Hynix | T4D10248HT-24   | 15-15-15-35 | 1.2  | • | • |
| Team     | TFWD416G2400C15BBK(XMP) | 16GB    | DS | Team     | PP020-093E      | 15-17-17-35 | 1.2  | • | • |
| V-color  | TC48G24S817-IMS         | 8GB     | SS | V-color  | -               | 17-17-17-39 | 1.2  | • | • |
| V-color  | TD4G8C17-UH             | 4GB     | SS | SK Hynix | DW3J0460HM      | 15-15-15-36 | 1.2  | • | • |

#### DDR4 2133 Qualified Vendors List (QVL)

| Vendors       | Part No.        | Size   | SS/DS | Chip Brand | Chip NO.       | Timing      | Voltage | DIMM socket support (Optional) |        |        |
|---------------|-----------------|--------|-------|------------|----------------|-------------|---------|--------------------------------|--------|--------|
|               |                 |        |       |            |                |             |         | 1 DIMM                         | 2 DIMM | 4 DIMM |
| Apacer        | 78.B1GM3.AF00B  | 4x 4GB | SS    | SK Hynix   | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2     | •                              | •      | •      |
| Apacer        | 78.C1GM3.AF10B  | 4x 8GB | DS    | SK Hynix   | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2     | •                              | •      | •      |
| Apacer        | AHU08GGB13CGT7G | 4x 8GB | DS    | Apacer     | AM6F60080THMA1 | 15-15-15-36 | 1.2     | •                              | •      | •      |
| CENTURY MICRO | CD8G-D4U2133    | 8GB    | DS    | SK Hynix   | H5AN4G8NMFRTFC | 15-15-15-36 | -       | •                              | •      | •      |
| CENTURY MICRO | CK8GX4-D4U2133  | 4x 8GB | DS    | SK hynix   | H5AN4G8NMFRTFC | 15-15-15-35 | 1.2     | •                              | •      | •      |

|               |                                  |         |    |          |                |             |     |   |   |   |
|---------------|----------------------------------|---------|----|----------|----------------|-------------|-----|---|---|---|
| CORSAIR       | CMK16GX4M4A2133C13(Ver4.23)(XMP) | 4x 4GB  | SS | -        | -              | 13-15-15-28 | 1.2 | • | • | • |
| CORSAIR       | CMK32GX4M2A2133C13(Ver4.31)(XMP) | 2x 16GB | DS | -        | -              | 15-15-15-36 | 1.2 | • | • | • |
| CORSAIR       | CMK32GX4M4A2133C13(Ver4.23)(XMP) | 4x 8GB  | DS | -        | -              | 13-15-15-28 | 1.2 | • | • | • |
| CORSAIR       | CMK32GX4M4A2133C15(Ver3.20)      | 4x 8GB  | DS | -        | -              | 15-15-15-36 | 1.2 | • | • | • |
| CORSAIR       | CMK32GX4M4A2133C15(Ver5.29)      | 4x 8GB  | DS | -        | -              | 15-15-15-36 | 1.2 | • | • | • |
| CORSAIR       | CMV16GX4M1A2133C15               | 16GB    | DS | -        | -              | 15-15-15-36 | -   | • | • | • |
| CORSAIR       | CMV4GX4M1A2133C15                | 4GB     | SS | -        | -              | 15-15-15-36 | 1.2 | • | • | • |
| CORSAIR       | CMV8GX4M1A2133C15                | 8GB     | DS | -        | -              | 15-15-15-36 | 1.2 | • | • | • |
| crucial       | CT16G4DFS8213.16FB1              | 16GB    | DS | Micron   | D9TBH          | 15-15-15-36 | 1.2 | • | • | • |
| crucial       | CT4G4DFS8213.8FA2                | 4GB     | SS | Micron   | D9RGQ          | 15-15-15-36 | 1.2 | • | • | • |
| crucial       | CT4G4DFS8213.8FB1                | 4GB     | SS | Micron   | -              | 15-15-15-36 | 1.2 | • | • | • |
| crucial       | CT8G4DFS8213.16FA1               | 8GB     | DS | Micron   | D9RGQ          | 15-15-15-37 | 1.2 | • | • | • |
| crucial       | CT8G4DFS8213.8FB1                | 8GB     | SS | Micron   | -              | 15-15-15-36 | 1.2 | • | • | • |
| G.SKILL       | F4-2133C15Q-16GRR                | 4x 4GB  | SS | Micron   | -              | 15-15-15-35 | 1.2 | • | • | • |
| G.SKILL       | F4-2133C15Q2-128GVK              | 8x 16GB | DS | SK Hynix | -              | 15-15-15-36 | 1.2 | • | • | • |
| G.SKILL       | F4-2133C15Q2-64GRR               | 8x 8GB  | DS | SpecTek  | -              | 15-15-15-35 | 1.2 | • | • | • |
| G.SKILL       | F4-2133C15Q-32GRR                | 4x 8GB  | DS | Micron   | -              | 15-15-15-35 | -   | • | • | • |
| Gell          | GPR416GB2133C15QC                | 4x 4GB  | SS | Micron   | -              | 15-15-15-36 | 1.2 | • | • | • |
| Gell          | GPR432GB2133C15QC                | 4x 8GB  | SS | Micron   | -              | 15-15-15-36 | 1.2 | • | • | • |
| Hyper X       | HX421C13SB/4(XMP)                | 4GB     | SS | SK Hynix | -              | 15-15-15-36 | 1.2 | • | • | • |
| Hyper X       | HX421C13SB/8(XMP)                | 8GB     | DS | SK Hynix | -              | 15-15-15-36 | 1.2 | • | • | • |
| Hyper X       | HX421C13SBK2/16(XMP)             | 2x 8GB  | DS | SK Hynix | -              | 15-15-15-36 | 1.2 | • | • | • |
| Hyper X       | HX421C13SBK2/8(XMP)              | 2x 4GB  | SS | SK Hynix | -              | 15-15-15-36 | 1.2 | • | • | • |
| Hyper X       | HX421C13SBK4/16(XMP)             | 4x 4GB  | SS | SK Hynix | -              | 15-15-15-36 | 1.2 | • | • | • |
| Hyper X       | HX421C13SBK4/32(XMP)             | 4x 8GB  | DS | SK Hynix | -              | 15-15-15-36 | 1.2 | • | • | • |
| Hyper X       | HX421C14FB/4                     | 4GB     | SS | SK Hynix | -              | 14-14-14-35 | 1.2 | • | • | • |
| Hyper X       | HX421C14FB/8                     | 8GB     | DS | SK Hynix | -              | 14-14-14-35 | 1.2 | • | • | • |
| Hyper X       | HX421C14FBK4/32(XMP)             | 4x 8GB  | SS | Micron   | -              | 14-14-14-35 | 1.2 | • | • | • |
| Hyper X       | HX421C14FBK2/16                  | 2x 8GB  | DS | SK Hynix | -              | 14-14-14-35 | 1.2 | • | • | • |
| Hyper X       | HX421C14FBK2/8                   | 2x 4GB  | SS | SK Hynix | -              | 14-14-14-35 | 1.2 | • | • | • |
| Hyper X       | HX421C14FBK4/16                  | 4x 4GB  | SS | SK Hynix | -              | 14-14-14-35 | 1.2 | • | • | • |
| Hyper X       | HX421C14FBK4/32                  | 4x 8GB  | DS | SK Hynix | -              | 14-14-14-35 | 1.2 | • | • | • |
| Hyper X       | HX421C14FBK4/64                  | 4x 16GB | DS | Micron   | -              | 15-15-15-35 | 1.2 | • | • | • |
| Hyper X       | HX421C14FBK8/64                  | 8x 8GB  | DS | SK Hynix | -              | 14-14-14-35 | 1.2 | • | • | • |
| Kingston      | KVR21N15D8/16                    | 16GB    | DS | Micron   | D9VHP          | 15-15-15-36 | 1.2 | • | • | • |
| Kingston      | KVR21N15D8/8                     | 8GB     | DS | SK Hynix | H5AN4G8NAFR    | 15-15-15-36 | 1.2 | • | • | • |
| Kingston      | KVR21N15D8/8                     | 8GB     | DS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-37 | 1.2 | • | • | • |
| Kingston      | KVR21N15S8/4                     | 4GB     | SS | SK Hynix | H5AN4G8NAFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Kingston      | KVR21N15S8/4                     | 4GB     | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-37 | 1.2 | • | • | • |
| Klevv         | IM44GU48N21-FFFHAB(XMP)          | 4GB     | SS | SK Hynix | -              | 15-15-15-35 | 1.2 | • | • | • |
| Klevv         | IM48GU88N21-FFFHMB(XMP)          | 8GB     | SS | SK Hynix | -              | 15-15-15-35 | 1.2 | • | • | • |
| Klevv         | IM4AGU88N21-FFFHMB(XMP)          | 16GB    | DS | SK Hynix | -              | 15-15-15-35 | 1.2 | • | • | • |
| Klevv         | KM4C4GX4N-2133-15-15-15-35-0     | 4GB     | SS | SK Hynix | -              | 15-15-15-35 | 1.2 | • | • | • |
| Klevv         | KM4C4GX4N-2133-15-15-15-35-1     | 4x 4GB  | SS | SK Hynix | -              | 15-15-15-35 | 1.2 | • | • | • |
| Klevv         | KM4C8GX4N-2133-15-15-15-35-0     | 8GB     | DS | SK Hynix | -              | 15-15-15-35 | 1.2 | • | • | • |
| Klevv         | KM4C8GX4N-2133-15-15-15-35-1     | 4x 8GB  | DS | SK Hynix | -              | 15-15-15-35 | 1.2 | • | • | • |
| Micron        | MTA16ATF1G64AZ-2G1A1             | 8GB     | DS | Micron   | D9RGQ          | 15-15-15-37 | 1.2 | • | • | • |
| Micron        | MTA16ATF2G64AZ-2G1B1             | 16GB    | DS | Micron   | D9TBH          | 15-15-15-36 | 1.2 | • | • | • |
| Micron        | MTA8ATF1G64AZ-2G1B1              | 8GB     | SS | Micron   | -              | 15-15-15-36 | 1.2 | • | • | • |
| Micron        | MTA8ATF51264AZ-2G1A2             | 4GB     | SS | Micron   | D9RG0          | 15-15-15-36 | -   | • | • | • |
| panram        | W4U2133PS-8G                     | 8GB     | SS | SK Hynix | DTCCH872HA2    | 16-16-16-36 | -   | • | • | • |
| SanMax        | SMD-4G28HP-21P                   | 4GB     | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-37 | -   | • | • | • |
| SanMax        | SMD-8G28HP-21P                   | 8GB     | DS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-37 | -   | • | • | • |
| Silicon Power | SP004GBLFU213N01                 | 4GB     | SS | Samsung  | K4A4G085WD     | 15-15-15-37 | -   | • | • | • |
| Silicon Power | SP008GBLFU213N01                 | 8GB     | DS | Samsung  | K4A4G085WD     | 15-15-15-37 | -   | • | • | • |
| SK Hynix      | HMA41GU6MFR8N-TF                 | 8GB     | DS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-37 | 1.2 | • | • | • |
| SK Hynix      | HMA41GU7AFR8N-TF                 | 8GB     | DS | SK Hynix | H5AN4G8NAFRTFC | 15-15-15-36 | -   | • | • | • |
| SK Hynix      | HMA451U7AFR8N-TF                 | 4GB     | SS | SK Hynix | H5AN4G8NAFR    | 15-15-15-36 | -   | • | • | • |
| SK Hynix      | HMA82GU6MFR8N-TF                 | 16GB    | DS | SK Hynix | H5AN8G8NMFRTFC | 15-15-15-36 | -   | • | • | • |
| SK Hynix      | HMA82GU7MFR8N-TF                 | 16GB    | DS | SK Hynix | H5AN8G8NMFR    | 15-15-15-36 | -   | • | • | • |
| SUPER TALENT  | FBU2B008GM                       | 8GB     | DS | Micron   | D9RGQ          | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TED416G2133C15BK                 | 16GB    | DS | Micron   | T4D10248MT-24  | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TED416G2133C1501                 | 16GB    | DS | Micron   | T4D10248MT-24  | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TED432G2133C15DC01               | 2x 16GB | DS | Micron   | T4D10248MT-24  | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPD416G2133HC1501                | 16GB    | DS | Micron   | T4D10248MT-24  | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPRD416G2133HC1501               | 16GB    | DS | Micron   | T4D10248MT-24  | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPD432G2133HC15DC01              | 2x 16GB | DS | Micron   | T4D10248MT-24  | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPRD432G2133HC15DC01             | 2x 16GB | DS | Micron   | T4D10248MT-24  | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TED44GM2133C15ABK                | 4GB     | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TED44G2133C1501                  | 4GB     | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TED48G2133C15DC01                | 2x 4GB  | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TED416G2133C15QC01               | 4x 4GB  | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPD44G2133HC1501                 | 4GB     | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPRD44G2133HC1501                | 4GB     | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPD48G2133HC15DC01               | 2x 4GB  | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPRD48G2133HC15DC01              | 2x 4GB  | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPD416G2133HC15QC01              | 4x 4GB  | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPRD416G2133HC15QC01             | 4x 4GB  | SS | SK Hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TED48GM2133C15BK                 | 8GB     | DS | SK hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TED48G2133C1501                  | 8GB     | DS | SK hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TED416G2133C15DC01               | 2x 8GB  | DS | SK hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TED432G2133C15QC01               | 4x 8GB  | DS | SK hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPD48G2133HC1501                 | 8GB     | DS | SK hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPRD48G2133HC1501                | 8GB     | DS | SK hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPD416G2133HC15DC01              | 2x 8GB  | DS | SK hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPRD416G2133HC15DC01             | 2x 8GB  | DS | SK hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPD432G2133HC15QC01              | 4x 8GB  | DS | SK hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| Team          | TPRD432G2133HC15QC01             | 4x 8GB  | DS | SK hynix | H5AN4G8NMFRTFC | 15-15-15-36 | 1.2 | • | • | • |
| UMAX          | 84G44G93MC-21OMCALGF15           | 4GB     | SS | Micron   | D9RGQ          | 15-15-15-36 | -   | • | • | • |
| UMAX          | 84G48G93MC-21OMCGNGF15           | 8GB     | DS | Micron   | D9RGQ          | 15-15-15-36 | -   | • | • | • |

**V-color**

TC48G21S815-IMS

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**4-DIMM**

- **1 DIMM:** Supports one module inserted in any slot as single-channel memory configuration
- **2 DIMM:** Supports one pair of modules inserted into either the A2 slots or the B2 slots that operates in a dual-channel memory configuration
- **4 DIMM:** Supports 4 modules inserted into all slots as two pairs DIMMs operating in a dual-channel memory configuration