

DDR 256Mb/512Mb Industrial Temp.

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Product Planning & Application Engineering Team

**MEMORY DIVISION
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Samsung's DDR Industrial Temp.

□ To support Industrial temperature (-40 ~ 85) part, Samsung need to change the specifications of refresh cycle as following.

• Refresh cycle (Normal : Ta 85)

| | 256Mb | 512Mb |
|---------------|---------|---------|
| Refresh cycle | 8K/64ms | 8K/64ms |



• Refresh cycle for Industrial Temp.

| | 256Mb | 512Mb |
|---------------|---------|---------|
| Refresh cycle | 8K/32ms | 8K/32ms |

□ Industry want to use DDR Industrial Temp. parts for consumer product at least 256Mb density , Samsung considers of 1Gb DDR with Industrial Temp. development, but it will be determined by market demand. So Samsung recommends DDR 256Mb and 512Mb with Industrial temp. for current design.

Samsung's DDR Industrial Temp.

- From now, Samsung supports DDR 256Mb & 512Mb Industrial Temp.

| Density | PKG | Org. | Die | Partnumber | tREFI | Speed |
|---------|------|------|-------|--------------------|--------------------|--|
| 256Mb | TSOP | x8 | F-die | K4H560838F-T(U)I/P | 3.9us (8K/32ms) | B0 (DDR266 ; 2.5-3-3) B3 (DDR333 ; 2.5-3-3) |
| | | x16 | | K4H561638F-T(U)I/P | | |
| | FBGA | x16 | | K4H561638F-G(Z)I/P | | |
| 512Mb | TSOP | x8 | B-die | K4H510838B-T(U)I/P | | |
| | | x16 | | K4H511638B-T(U)I/P | | |
| | FBGA | x8 | | K4H510838B-G(Z)I/P | | |
| | | x16 | | K4H511638B-G(Z)I/P | | |