



Vendor Specific Component Capabilities (VSCC) Comm.bin Content for 2016 platforms

Application Note

April 2016

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Introduction

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|---|---|



Revision History

| Document Number | Revision Number | Description | Revision Date |
|-----------------|-----------------|---|---------------|
| N/A | 0.7 | Initial release | 10/16/2009 |
| | 0.8 | Added VSCC value. | 10/20/2009 |
| | 0.9 | Added VSCC values of EN25F32 and EN25Q64. | 11/20/2009 |
| | 1.0 | Added AMIC A25L016. Replaced with VSCC 200D for SST25VF064C. Changed EN25Q64 device ID to 3017h. Removed W25X128 (product release cancelled). Added alternative VSCC values. | 2/25/2010 |
| | 1.1 | Added MX25L6436E, MX25L12836E, MX25L3206E, and EN25Q128. Added alternative VSCC values. | 4/29/2010 |
| | 1.2 | Added EN25Q32A. Added alternative VSCC values. | 5/5/2010 |
| | 1.3 | Added MX25L8006E, MX25L8036E, MX25L1606E MX25L1636E, and MX25L6406E Added GD25Q80, GD25Q16, GD25Q32, GD25Q32A, and GD25Q64 Added N25Q032 and N25Q064 | 6/17/2010 |
| | 1.4 | Added EN25Q16 | 6/28/2010 |
| | 1.5 | Added AMIC A25L032 | 9/20/2010 |
| | 1.6 | Added EN25Q80A , EN25Q40, and AMIC A25LQ032 Added S25FL016K, S25FL032K, and S25FL064K | 11/9/2010 |
| | 1.7 | Added N25Q16, AT25DQ641 | 12/16/2010 |
| | 1.8 | Added MX25L4006E, FM25Q16, FM25Q32, and FM25Q64 Added overview and note | 1/24/2011 |
| | 1.9 | Added PM25LQ080C, W25Q16CV, W25Q64CV, MX25L3236D, MX25L12835E, MX25L25635E, MX25L25735E, PM25LQ016C, and PM25L032C. Added note #3. | 4/12/2011 |
| | 2.0 | Added AT25DQ161, EN25QH16 Changed from EN25Q32A(B) to EN25Q32B Removed GD25Q32A (product plan cancelled) Changed from PM25LQ018C to PM25LQ016C | 6/14/2011 |
| | 2.1 | EN25QH80, EN25F64, A25LQ16, and FM25Q128 Changed from A25LQ032 to A25LQ32A Changed from SST to SST/Microchip Removed W25X40V (EOL) Added Intel 7 Series/C216 Chipset Family SPI Programming Guide | 8/22/2011 |



| Document Number | Revision Number | Description | Revision Date |
|-----------------|-----------------|---|---------------|
| | 2.2 | Added F25L32PA(2S), F25L64PA, F25L16PA, F25L04PA F25L08PA, A25L040, and A25L080. Changed from MX25L3205D to MX25L3205A(D) | 10/07/2011 |
| | 2.3 | Updated Chingis devices IDs, Added F25L16PA(2S) and F25L32PA | 10/25/2011 |
| | 2.4 | Added W25Q64FV and GD25Q128 | 12/2/2011 |
| | 2.5 | Added alternative device ID for W25Q64FV Added W25Q128FV Added note #4 and #5 | 2/14/2012 |
| | 2.6 | Updated vscc value with 0x2009 and 0x2005 in vsccommn.bin for SST25VF016B, SST25VF032B, SST25VF040B, SST25F080B. | 4/30/2012 |
| | 2.7 | Updated Chingis device ID with 7F44h, 7F45h, 7F46h in vsccommn.bin for PM25LQ080C, PM25LQ016C, and PM25LQ032C | 6/7/2012 |
| | 2.8 | Added quad I/O devices of W25Q256FVFIQ, W25Q128FVFIQ, W25Q128FVSIQ, W25Q64FVSSIQ, W25Q32FVSSIQ, W25Q16CVSSIQ Added quad I/O devices of MX25L6475EM2I-10G and MX25L3275EM2I-10G Updated vscc values per the new definition of bits 7:5 for Lynx Point PCH | 6/11/2012 |
| | 2.9 | Updated vscc values in vsccommn.bin per the new definition of bits 7:5 for Lynx Point PCH Added PM25LD512C2 | 8/7/2012 |
| | 3.0 | Added 25LQ32B Added quad I/O devices of MX25L1675EM2I-10G and W25Q16DVSSIQ | 9/19/2012 |
| | 3.1 | Added A25QE16, A25QE32, GD25B16B, GD25B32B, GD25B64B, and MX25L12875F Changed Device ID of W25Q16CVSSIQ and W25Q16DVSSIQ Added note #7 | 10/31/2012 |
| | 3.2 | Added MX25L12835F and A25LQ64 | 11/30/2012 |
| | 3.2.1 | Added MX25L6473E, MX25L3273E, MX25L1673E Added MX25L8075E | 12/17/2012 |
| | 3.3 | Added MX25L12873F | 1/3/2013 |
| | 3.4 | Added S25FL128K Added MX25L8073E | 2/6/2013 |
| | 3.5 | Updated VSCC values of EN25QH series | 3/11/2013 |
| | 3.6 | Added GD25B128C Updated VSCC values of EN25QH series | 3/27/2013 |
| | 3.7 | Added GD25LQ64C Changed VSCC value of A25LQ64 Added MX25L12865E | 5/31/2013 |
| | 3.8 | Added N25Q064A13ESE4MF, W25R64FVSSIQ, W25R128FVSIQ, MX25L6450F Added note 8 | 6/14/2013 |



| Document Number | Revision Number | Description | Revision Date |
|-----------------|-----------------|---|---------------|
| | 3.9 | Added S25FL164K0XMFIQ10 and S25FL132K0XMFIQ10 | 11/27/2013 |
| | 4.0 | Updated device ids for S25FL164K, S25FL132K; Added GD25R64B and MX25L25635F Deleted EOLed spansion parts-S25FL016K, S25FL032K, S25FL064K, S25FL128K (not a real part as per vendor) Added Micron parts: MT25QL128ABA1ESEMS | 04/07/2014 |
| | 4.1 | Added Spansion Part: S25FL116K | 07/15/2014 |
| | 4.2 | Added Gigadevice parts: GD25B64C, GD25R64C, GD25R128C | 08/18/2014 |
| | 4.3 | Added Macronix part: MX25L12850F | 08/20/2014 |
| | 4.4 | Added Micron devices N25Q032A13ESEC0F,N25Q128A13ESEC0F,N25Q256A81ESF40F,N25Q512A81GSF40F,N25Q064A13ESE4MF,N25Q064A13ESED0F,N25Q032A11ESE40F,N25Q064A11ESE40F,N25Q128A11ESE40F,N25Q256A83ESF40F,N25Q512A83GSF40F,MT25QL256ABA8ESF-OSIT,MT25QL256ABA8ESF-MSIT,MT25QL512ABA8ESF-OSIT,MT25QU512ABA8ESF-OSIT Added Macronix device MX25L6495FM2I-08G Added EON devices EN25QH64A, EN25QH128A Added Gigadevice devices GD25LB64CSIG, GD25LB128CSIG Added ISSI devices IS25LP128,IC25LP128,IS25LP064,IC25LP064,IS25WP128,IC25WP128,IS25WP064,IC25WP064 | 1/8/2015 |
| | 4.5 | Added EON devices EN25Q40A, EN25Q80B, EN25QH16A, EN25QH32A | 1/21/2015 |
| | 4.6 | Added Macronix parts MX25L3273F, MX25L6473F, MX25L25735F Added Winbond parts W25X05CL, W25X10CL, W25Q10EW, W25X20CL, W25Q20CL, W25Q20EW, W25X40CL, W25Q40CL, W25Q40EW, W25Q80DV, W25Q80EW, W25Q16DV, W25Q16CL, W25Q16FW | 6/29/2015 |
| | 4.7 | Removed all the parts that do not support 2016 platforms. | 10/9/2015 |
| | 4.7.1 | Added Macronix parts MX25U1635F, MX25U3235F, MX25U6473F, MX25U6435F, MX25U12835F, MX25U25635F, MX25L25673G, MX66L51235F, MX25L51245G Added Gigadevice parts GD25Q256C, GD25LQ256C | 1/20/2016 |
| | 4.7.2 | Added Micron device N25Q128A, Gigadevice GD25B127C | 3/5/2016 |
| | 4.7.3 | Added Micron device N25Q256A | 4/5/2016 |



1 Introduction

1.1 Overview

Vscommn.bin file contains the serial flash device's Vendor ID, Device ID, and vendor-specific component capabilities information. The Vscommn.bin file is used by Flash Image Tool (FITC) and MEmanuf tool to select a serial flash device listed, to create flash image, and also to check if the Intel® Management Engine (Intel® ME) and BIOS VSCC customer created matches the VSCC entry in the vscommn.bin.

1.2 Terminology

| Term | Description |
|------|--|
| SPI | Serial Peripheral Interface |
| VSCC | Vendor-Specific Component Capabilities |
| RPMC | Replay Protected Monotonic Counter |

1.3 Reference Documents

| Document | Document No./Location |
|--|-----------------------|
| Intel® 6 Series Express Chipsets SPI Programming Guide | 445780 CDI/IBL |
| Intel® 7 Series Chipset and Intel® C216 Chipset SPI Programming Guide | 475653 CDI/IBL |
| Lynx Point Chipset Intel® 8 Series Chipset Family SPI Programming Guide | 485495 CDI/IBL |
| Broadwell Platform Controller Hub-Low Power (PCH-LP) – Serial Peripheral Interface (SPI) Programming Guide | 523462 CDI/IBL |
| Skylake Platform Controller Hub-Low Power (PCH-LP) – Serial Peripheral Interface (SPI) Programming Guide | 550696 CDI/IBL |

1.4 Platform Voltage Requirements

Kabylake: Supports 1.8V and 3.3V

Apollo Lake: Supports 1.8V



2 Serial Flash Parts List

These settings are not part recommendations, nor are they an indication these parts are supported on Intel platforms. All parts on this list have NOT been validated, and it is the responsibility of the customer to validate the flash parts used on their platform.

Flash parts may change opcodes and architectures so please refer to the respective flash datasheet and errata/application note and flash vendor to confirm.

Table 2-1. List of Serial Flash Devices Added to the VSCCOMMN.bin File

| Vendor | Part Name | Vendor ID | Device ID | VSCC Value (64 Byte Write Granularity) | VSCC Value (1 Byte Write Granularity) | Notes |
|----------|--------------------|-----------|-----------|--|---------------------------------------|-------|
| Winbond | W25Q10EW | 0xEFh | 6011h | 0x2025 | 0x2021 | 3,4 |
| Winbond | W25Q20EW | 0xEFh | 6012h | 0x2025 | 0x2021 | 3,4 |
| Winbond | W25Q40EW | 0xEFh | 6013h | 0x2025 | 0x2021 | 3,4 |
| Winbond | W25Q80EW | 0xEFh | 6014h | 0x2025 | 0x2021 | 3,4 |
| Winbond | W25Q16DV | 0xEFh | 4015h | 0x2025 | 0x2021 | 3 |
| Winbond | W25Q16FW | 0xEFh | 6015h | 0x2025 | 0x2021 | 3,4 |
| Winbond | W25Q32FV | 0xEFh | 6016h | 0x2025 | 0x2021 | 3 |
| Winbond | W25Q32FW | 0xEFh | 6016h | 0x2025 | 0x2021 | 3,4 |
| Winbond | W25Q64FV | 0xEFh | 4017h | 0x2025 | 0x2021 | 3 |
| Winbond | W25Q64JV | 0xEFh | 4017h | 0x2025 | 0x2021 | 3 |
| Winbond | W25R64FV | 0xEFh | 4017h | 0x2025 | 0x2021 | 3 |
| Winbond | W25Q64FW | 0xEFh | 6017h | 0x2025 | 0x2021 | 3,4 |
| Winbond | W25Q128FV | 0xEFh | 4018h | 0x2025 | 0x2021 | 3 |
| Winbond | W25R128FV | 0xEFh | 4018h | 0x2025 | 0x2021 | 3 |
| Winbond | W25Q128FW | 0xEFh | 6018h | 0x2025 | 0x2021 | 3,4 |
| Winbond | W25Q256FV | 0xEFh | 4019h | 0x2025 | 0x2021 | 3 |
| Winbond | W25M512JV | 0xEFh | 4019h | 0x2025 | 0x2021 | 3 |
| Macronix | MX25L6475EM2I -10G | 0xC2 | 2017h | 0x2045 | 0x2041 | 2,3 |
| Macronix | MX25L3275EM2I -10G | 0xC2 | 2016h | 0x2045 | 0x2041 | 2,3 |
| Macronix | MX25L1675EM2I -10G | 0xC2 | 2415h | 0x2045 | 0x2041 | 2,3 |
| Macronix | MX25L12875F | 0xC2 | 2018h | 0x2045 | 0x2041 | 2,3 |
| Macronix | MX25L12835F | 0xC2 | 2018h | 0x2045 | 0x2041 | |
| Macronix | MX25L6473E | 0xC2 | 2017h | 0x2045 | 0x2041 | 2,3 |



| Vendor | Part Name | Vendor ID | Device ID | VSCC Value (64 Byte Write Granularity) | VSCC Value (1 Byte Write Granularity) | Notes |
|----------------|-------------|-----------|-----------|--|---------------------------------------|-------|
| Macronix | MX25L3273E | 0xC2 | 2016h | 0x2045 | 0x2041 | 2,3 |
| Macronix | MX25L1673E | 0xC2 | 2415h | 0x2045 | 0x2041 | 3 |
| Macronix | MX25L8075E | 0xC2 | 2014h | 0x2045 | 0x2041 | 2,3 |
| Macronix | MX25L12873F | 0xC2 | 2018h | 0x2045 | 0x2041 | 3 |
| Macronix | MX25L8073E | 0xC2 | 2014h | 0x2045 | 0x2041 | 3 |
| Macronix | MX25L6450F | 0xC2 | 2017h | 0x2045 | 0x2041 | 3 |
| Macronix | MX25L12850F | 0xC2 | 2018h | 0x2045 | 0x2041 | 3 |
| Macronix | MX25L3273F | 0xC2 | 2016h | 0x2045 | 0x2041 | 3 |
| Macronix | MX25L6473F | 0xC2 | 2017h | 0x2045 | 0x2041 | 3 |
| Macronix | MX25L25735F | 0xC2 | 2019h | 0x2045 | 0x2041 | |
| Macronix | MX25L6445E | 0xC2 | 2017h | 0x2045 | 0x2041 | 2,3 |
| Macronix | MX25L6455E | 0xC2 | 2617h | 0x2045 | 0x2041 | 2 |
| Macronix | MX25L12855E | 0xC2 | 2618h | 0x2045 | 0x2041 | 2 |
| Macronix | MX25L6436E | 0xC2 | 2017h | 0x2045 | 0x2041 | 2 |
| Macronix | MX25L12836E | 0xC2 | 2018h | 0x2045 | 0x2041 | 2 |
| Macronix | MX25L8036E | 0xC2 | 2014h | 0x2045 | 0x2041 | 2 |
| Macronix | MX25L1636E | 0xC2 | 2015h | 0x2045 | 0x2041 | 2 |
| Macronix | MX25L12865E | 0xC2 | 2018h | 0x2045 | 0x2041 | 2 |
| Macronix | MX25L6495F | 0xC2 | 9517h | 0x2045 | 0x2041 | |
| Macronix | MX25L12835F | 0xC2 | 2018h | 0x2045 | 0x2041 | |
| Macronix | MX25L25635E | 0xC2 | 2019h | 0x2045 | 0x2041 | 2 |
| Macronix | MX25U1635F | 0xC2 | 2535h | 0x2045 | 0x2041 | 4 |
| Macronix | MX25U3235F | 0xC2 | 2536h | 0x2045 | 0x2041 | 4 |
| Macronix | MX25U6473F | 0xC2 | 2537h | 0x2045 | 0x2041 | 4 |
| Macronix | MX25U6435F | 0xC2 | 2537h | 0x2045 | 0x2041 | 4 |
| Macronix | MX25U12835F | 0xC2 | 2438h | 0x2045 | 0x2041 | 4 |
| Macronix | MX25U25635F | 0xC2 | 2539h | 0x2045 | 0x2041 | 4 |
| Macronix | MX25L25673G | 0xC2 | 2019h | 0x2045 | 0x2041 | 6 |
| Macronix | MX66L51235F | 0xC2 | 201Ah | 0x2045 | 0x2041 | |
| Macronix | MX25L51245G | 0xC2 | 201Ah | 0x2045 | 0x2041 | |
| Micron/Numonyx | N25Q128 | 0x20 | BA18h | 0x2005 | 0x2001 | 3 |
| Micron/Numonyx | N25Q032 | 0x20 | BA16h | 0x2005 | 0x2001 | 3 |
| Micron/Numonyx | N25Q064 | 0x20 | BA17h | 0x2005 | 0x2001 | 3 |



Serial Flash Parts List

| Vendor | Part Name | Vendor ID | Device ID | VSCC Value (64 Byte Write Granularity) | VSCC Value (1 Byte Write Granularity) | Notes |
|----------------|------------|-----------|-----------|--|---------------------------------------|-------|
| Micron/Numonyx | N25Q016 | 0x20 | BA15h | 0x2005 | 0x2001 | 3 |
| Micron/Numonyx | N25Q128A | 0x20 | BB18h | 0x2005 | 0x2001 | 4 |
| Micron/Numonyx | N25Q256A | 0x20 | BB19h | 0x2005 | 0x2001 | |
| EON | EN25QH16A | 0x1C | 7015h | 0x2005 | 0x2001 | 2,3 |
| EON | EN25QH32A | 0x1C | 7016h | 0x2005 | 0x2001 | 2,3 |
| EON | EN25QH256 | 0x1C | 7019h | 0x2005 | 0x2001 | 3 |
| EON | EN25QH128A | 0x1C | 7018h | 0x2005 | 0x2001 | 2,3 |
| EON | EN25QH64A | 0x1C | 7017h | 0x2005 | 0x2001 | 2,3 |
| EON | EN25QH80 | 0x1C | 7014h | 0x2005 | 0x2001 | 3 |
| Gigadevice | GD25B16B | 0xC8 | 4015h | 0x2025 | 0x2021 | 3 |
| Gigadevice | GD25B32B | 0xC8 | 4016h | 0x2025 | 0x2021 | 3 |
| Gigadevice | GD25B64B | 0xC8 | 4017h | 0x2025 | 0x2021 | 3 |
| Gigadevice | GD25B128C | 0xC8 | 4018h | 0x2025 | 0x2021 | 3 |
| Gigadevice | GD25LQ64C | 0xC8 | 6017h | 0x2025 | 0x2021 | 3,4 |
| Gigadevice | GD25R64B | 0xC8 | 4017h | 0x2025 | 0x2021 | 3 |
| Gigadevice | GD25R64C | 0xC8 | 4017h | 0x2025 | 0x2021 | 3 |
| Gigadevice | GD25B64C | 0xC8 | 4017h | 0x2025 | 0x2021 | 3 |
| Gigadevice | GD25R128C | 0xC8 | 4018h | 0x2025 | 0x2021 | 3 |
| Gigadevice | GD25LB64C | 0xC8 | 6017h | 0x2025 | 0x2021 | 3,4 |
| Gigadevice | GD25LB128C | 0xC8 | 6018h | 0x2025 | 0x2021 | 3,4 |
| Gigadevice | GD25Q256C | 0xC8 | 4019h | 0x2025 | 0x2021 | |
| Gigadevice | GD25LQ256C | 0xC8 | 6019h | 0x2025 | 0x2021 | 4 |
| Gigadevice | GD25B127C | 0xC8 | 4018h | 0x2025 | 0x2021 | 3 |

NOTES:

1. End of life
2. Products replaced by new ones
3. Device boots up in Quad mode by default
4. SPI voltage is 1.8V