



SL1680 Qualified Component List

PN: 538-000596-01 Rev N

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1. Introduction

This document lists the qualified components for Synaptics' SL1680 consumer. It includes the following lists:

- PMIC QVL
- LPDDR4 QVL
- eMMC QVL
- Wireless QVL
- DSI Panel QVL
- CSI Camera Modules QVL

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2. Qualified Component Lists

The recommended PMIC for the core power rail may vary from project to project. The customer should evaluate the core current consumption under worst-case conditions, choose the PMIC with proper output current ratings, meet the requirement DVFS and power-up sequence and ramping rate. For details, refer to Table 63 of the *SL1680 Datasheet* (PN: 505-001413-01) and the *SL1680 Dynamic Voltage/ Frequency Scaling Application Note* (PN: 506-001369-01).

Table 1. PMIC QVL

Item	Mfg	Part Number	I _{max} (A)	RDS (mOhm)	Adjustable Step (mV)	Default Vout (V)	Switch Frequency (MHz)	Efficiency	Type Interface	Package
1	Silergy	SY8827N	6	28	12.5	0.8	2.4	85%@0.8V,6A	I2C	CSP-20
2	TI	TPS62870Y1	6	7	5	0.8	Refer to datasheet	87%@0.8V,6A	I2C	VQFN-FCRLF
3	ETA	ETA3555CSU	5	40	12.5	0.8	2	78%@0.8V,5A	I2C	CSP-20

Table 2. LPDDR4 QVL

Item	Mfg	Part Number	Capacity	Width	Device DDR Type - Speed	Qualified DDR Type - Speed
1	CXMT	CXDB4ABAM-MK	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
2	CXMT	CXDB4CBAM-MK	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
3	CXMT	CXDB4CBAM-MJ	16Gb	x32	LPDDR4x-3200	LPDDR4x-3200
4	Foresee	FLXC1002G-N1	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
5	Foresee	NCLDXC1MG256M32	8Gb	x32	LPDDR4x-3200	LPDDR4x-3200
6	Hynix	H9HCNNNBKUMLXR-NEE	16Gb	x32	LPDDR4-3733	LPDDR4-3733
7	Micron	MT53E256M32D2DS-O53 WT:B	8Gb	x32	LPDDR4x-3733	LPDDR4x-3733
8	Micron	MT53E384M32D2DS-O53WT:E	12Gb	x32	LPDDR4x-3733	LPDDR4x-3733
9	Micron	MT53E384M32D2DS-O53 WT:E	12Gb	x32	LPDDR4x-3733	LPDDR4x-3733
10	Micron	MT53E384M32D2FW-O46 AIT:E	12Gb	x32	LPDDR4x-4266	LPDDR4x-3733
11	Micron	MT53D512M32D2DS-O46 AIT:D	16Gb	x32	LPDDR4x-4266	LPDDR4x-3733
12	Micron	MT53D512M32D2DS-O53 AIT:D	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
13	Micron	MT53E512M32D1ZW-O46 WTB	16Gb	x32	LPDDR4x-4266	LPDDR4x-3733
14	Micron	MT53E512M32D1ZW-O46 WTB	16Gb	x32	LPDDR4x-4266	LPDDR4x-3733
15	Rayson	RS384M32LZ4D2BNP-53BT	12Gb	x32	LPDDR4-3733	LPDDR4-3733
16	Samsung	K4F2E3S4HA-MGCL	12Gb	x32	LPDDR4-4266	LPDDR4-3733
17	Samsung	K4U6ES4AA-MGCL	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
18	Samsung	K4F6E3S4HM-MGCJ	16Gb	x32	LPDDR4-3733	LPDDR4-3733
19	Samsung	K4F8E3S4HD-MGCL	8Gb	x32	LPDDR4x-3732	LPDDR4x-3732
20	SK Hynix	H9HCNNNBKMMMLXR-NEI	16Gb	x32	LPDDR4x-3732	LPDDR4x-3732
21	Biwin	BWCC2X32N2A-16G-X	16Gb	X32	LPDDR4x-3733	LPDDR4x-3733
22	Foresee	FLXC2002G-W6	16Gb	X32	LPDDR4x-3733	LPDDR4x-3733
23	Hynix	H9HCNNNBKMMMLXR-NEE	16Gb	X32	LPDDR4x-3733	LPDDR4x-3733
24	Rayson	RS512M32L04D1BDS-53BT	16Gb	x32	LPDDR4x-3732	LPDDR4x-3732
25	Rayson	RS512M32LM4D2BDS-53BT	16Gb	x32	LPDDR4x-3732	LPDDR4x-3732

Item	Mfg	Part Number	Capacity	Width	Device DDR Type - Speed	Qualified DDR Type - Speed
26	HIKSEMI	HSEL4XSA2G-HD8	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
27	Foresee	FLXC2002G-N2	16Gb	x32	LPDDR4x-3732	LPDDR4x-3732
28	Foresee	FLXC2002G-26	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
29	Bitwin	BWMZAX32H2A-16G-X	16Gb	x32	LPDDR4x-4266	LPDDR4x-3733
30	Leahkinn	LTHS0066GS4-ZPK2	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
31	Bitwin	BWMZEX32H2A-16G-X	16Gb	x32	LPDDR4x-4266	LPDDR4x-3733
32	GigaDevice	GDB4CBQN-MK	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
33	GCAI	GD82D32MJO-42C2	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
34	Leahkinn	LTHS0066GS4-ZPK2-XT	16Gb	x32	LPDDR4x-4266	LPDDR4x-3733
35	DW Micro	DWCT536HLC0	16Gb	x32	LPDDR4x-4266	LPDDR4x-3733
36	ROCFOUR	MC4X512M32AQ2000A-42T	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
37	Micron	MT53E1G32D2FW-046 WT	32Gb	X32	LPDDR4x-4266	LPDDR4x-3733
38	Kingston	D1621XM4CDGVI	16Gb	x32	LPDDR4x-4266	LPDDR4x-3733
39	Keyway	KYCMAO2C4X-A0	16Gb	x32	LPDDR4x-3200	LPDDR4x-3200
40	Nanya	NT6AP512T32BL-J1	16Gb	x32	LPDDR4x-4266	LPDDR4x-3733
41	GigaDevice	GDB4CBQN-ML	16Gb	x32	LPDDR4x-4266	LPDDR4x-3733
42	Keymos	KL4X164CD-C7A	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733
43	Rocfour	MC4X512M32AQ200A-37N	16Gb	x32	LPDDR4x-3733	LPDDR4x-3733

Note: Validated with the Synaptics SoC using the Synaptics 4-layer reference design. Board-specific DDR tuning, and validation are required if the customer layout differs from the Synaptics reference PCB.

Table 3. eMMC QVL

Item	Mfg	Part Number	Capacity
1	Foresee	FEMDNN032G-A3A55	32GB
2	Foresee	FEMDNN064G-A3A56	64GB
3	ISSI	IS21TF08G-JCLI	8GB
4	ISSI	IS21ES08GA-JCLI	8GB
5	Kioxia	THGBMJG7C1LBAIL	16GB
6	Kioxia	THGAMRG7T13BAIL	16GB
7	Kioxia	THGAMVG7T13BAIL	16GB
8	Micron	MTFC16GAPALBH-IT	16GB
9	Micron	MTFC8GAKAJCN-1M WT	8GB
10	Micron	MTFC16GAPALBH-IT	16GB
11	Samsung	KLMAG1JETD-BO41	16GB
12	Samsung	KLM8G1GETF-BO41	8GB
13	SanDisk	SDINBDG4-16G-H	16GB
14	SanDisk	SDINBDA6-128G	128GB
15	Toshiba	THGBMJG7C1LBAIL	16GB
16	Yangtze Memory	YMEC7A2TB2A2C3	64GB

Item	Mfg	Part Number	Capacity
17	Yangtze Memory	YMEC7BOTE1A2C3	64GB
18	ESMT	FC51J32SJTS1A-2.5BWGE2A	32GB
19	HIKSEMI	HSEMSDS7S2B64G	64GB
20	SK Hynix	H26M51002KPR	16GB
21	Micron	MTFC32GAZAQHD-IT	32GB
22	Samsung	KLMBG2JETD-B041	32GB
23	SiliconGo	SGM8200C-S32BBG	32GB
24	SiliconGo	SGM8000C-S21BAG	16GB
25	Rayson	RS70B32G4S15G	32GB
26	Forsee	FEMDNN032G-C9A55	32GB
27	Phison	PTE4AOSP-32GE	32GB
28	HIKSEMI	HSEMSDS7D2B128G	128GB
29	Forsee	FEMDNN016G-C9A43	16GB
30	Phison	PTE7A0YJ-16GE	16GB
31	Phison	PTE4AOSP-16GE	16GB
32	Phison	PTE7A0YJ-32GE	32GB
33	Rayson	RS70B32G4M05G	32GB
34	Kioxia	THAMVGBT13BAIL	32GB

Note: SL1680 requires eMMC's RPMB feature for security storage functions. The eMMC devices in Table 3 are verified with SL1680, with RPMB feature included.

Table 4. Wireless QVL

Item	WiFi Vendor	WiFi Part Number	WiFi Standard	Tx/Rx Stream	Interface	Ampak M.2 Module P/N	M.2 Module Included in Machina Shipment? (Y/N)
1	Synaptics	SYN43752	WiFi 6	2x2	PCIe	AP12275_M2P	Yes
2	Synaptics	SYN43756	WiFi 6E	2x2	PCIe	AP12276_M2P	No

Note: Contact Synaptics for additional WiFi options.

Table 5. DSI Panel QVL

Item	Panel Vendor	Part Number	Disp. Size (Inch)	Resolution	Driver IC	MIPI Mode	MIPI Channels	Display Mode	Connector Interface	Touch Interface
1	Waveshare	HCO70TG35057-CO4V01	7	800 × 3(RGB) × 480	—	Video	2 ch.	Landscape	15-Pin FPC	I2C
2	ODS-FK01	VC4-KMS-V3D	7	800 × 3(RGB) × 480	—	Video	2 ch.	Landscape	15-Pin FPC	I2C

Table 6. CSI Camera Module QVL

Item	Panel Vendor	Part Number	Sensor (MPixel)	Resolution	Camcorder Type	MIPI Channels	Connector Interface	Control Interface
1	Hiletgo	OV5647	5	2560 x 1944	Video Camera	2 ch.	15-Pin FPC	I2C
2	Waveshare	IMX415	8	3840 x 2160	Video Camera	2/4 ch.	15/22-Pin FPC	I2C
3	Arducam	IMX477	12	4056 x 3040	Video Camera	2/4ch.	15/22-Pin FPC	I2C

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3. Revision History

Last Modified	Revision	Description
August 25, 2023	A	Initial release.
June 13, 2024	B	Removed HL7501 from Table 1. PMIC QVL.
June 20, 2024	C	Released as public document.
July 15, 2024	D	Added Table 5. DSI Panel QVL.
September 18, 2024	E	Updated Table 2. LPDDR4 QVL and Table 3. eMMC QVL.
November 15, 2024	F	Added TI part (item #2) and ETA part (item #3) to Table 1. PMIC QVL.
November 20, 2024	G	Updated Table 5. DSI Panel QVL. Added Table 6. CSI Camera Module QVL
November 22, 2024	H	Updated Table 6. CSI Camera Module QVL as follows: <ul style="list-style-type: none"> Item 1 (Hiletgo) – corrected Resolution Item 2 (Waveshare) – corrected MIPI Channels and Connector Interface
December 4, 2024	I	Added Item 24 (SiliconGo) to Table 3. eMMC QVL.
February 11, 2025	J	Added item #25 (Rayson) and item #26 (Forsee) to Table 3. eMMC QVL.
February 21, 2025	K	Updated the Qualified DDR Type – Speed for items #19 (Samsung), #20 (HK Hynix), #24 & #25 (Rayson) in Table 2. LPDDR4 QVL. Added items #26 through 31 in Table 2. LPDDR4 QVL.
July 17, 2025	L	Added item #27 (Phison) to Table 3. eMMC QVL.
September 30, 2025	M	Updated Table 4. Wireless QVL with Ampak M.2 Module P/N.
December 11, 2025	N	Updated Table 2. LPDDR4 QVL (added items 40 Nanya, 41 GigaDevice, 43 Keymos, and 43 Rocfour). Updated Table 3. eMMC QVL (added item 34 Kioxia).



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