



i.MX 93 OSM SOM Datasheet

Cargt, Inc

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Revision History

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NOTE: This datasheet only refers to the **V3** version of the SOM PCB

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PCB Rev #	Change Summary
-03	Initial Production Release

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2 Introduction

2.1 Product Overview

The Cargt designed i.MX93 SOM provides the Open Standards Module Large (OSM-L) layout in a Land Grid Array (LGA) format. The System-on-Module (SOM) contains the i.MX93 microprocessor from NXP Semiconductors, along with DDR RAM, eMMC Flash Memory, Discrete Wireless IC, EEPROM, PMIC, RTC. Consult the block diagram for a list of the peripheral functions that are provided to the connectors on this SOM module.

Note: Cargt also provides an Evaluation Kit that contains both a soldered SOM and the peripherals that are accessible to the SOM.

2.2 Glossary

Term	Definition
DDR RAM	Double Data Rate Random Access Memory
EEPROM	Electrically Erasable Programmable Read-Only Memory
eMMC	Embedded multi-Media Card
IC	Integrated Circuit
OSM	Open Standards Module
PMIC	Power Management Integrated Circuit
RTC	Real Time Clock
SOM	System-on-Module

2.3 Scope

This datasheet describes Cargt specific functions and connections for the product and what peripherals are provided by the microprocessor to the SOM connections. This document shows the memory interfaces and the Boot Mode configurations.

It provides the Pin Mapping Table, showing the cross-reference between the OSM-L Pin Functions and the i.MX93 Pins. This will allow the user to generate device trees and setup code.

This document is supplemental to any documentation that NXP Semiconductors provides, specifically their Datasheet and Reference manuals.

2.4 Reference Documents

3 Function Specifications

3.1 i.MX 9352 Processor Highlights

The NXP i.MX9352 is a power-efficient applications processor from the i.MX 93 family, designed for secure, connected industrial and IoT systems. The i.MX9352 is an excellent foundation for long-lifecycle, industrial HMI, automation, energy, and **edge-AI** applications.

It integrates **dual Arm® Cortex®-A55** cores running up to **1.7 GHz** for high-level application processing, alongside an **Arm Cortex®-M33** real-time core up to **250 MHz** for deterministic control and low-power operation.

An integrated **Arm® Ethos™-U65 neural processing unit (NPU)** enables efficient on-device machine-learning inference.

Advanced multimedia support includes 2D/3D graphics acceleration, flexible display interfaces (**MIPI-DSI, LVDS, RGB**), and **camera inputs**.

The i.MX9352 supports **LPDDR4/LPDDR4X** memory.

Robust industrial connectivity such as **dual Gigabit Ethernet (with TSN support)**, **CAN-FD**, **USB**, and a rich set of serial interfaces.

Built-in **EdgeLock® Secure Enclave** technology provides hardware-rooted security for **secure boot, key management**, and lifecycle protection.

3.2 SOM External Interfaces

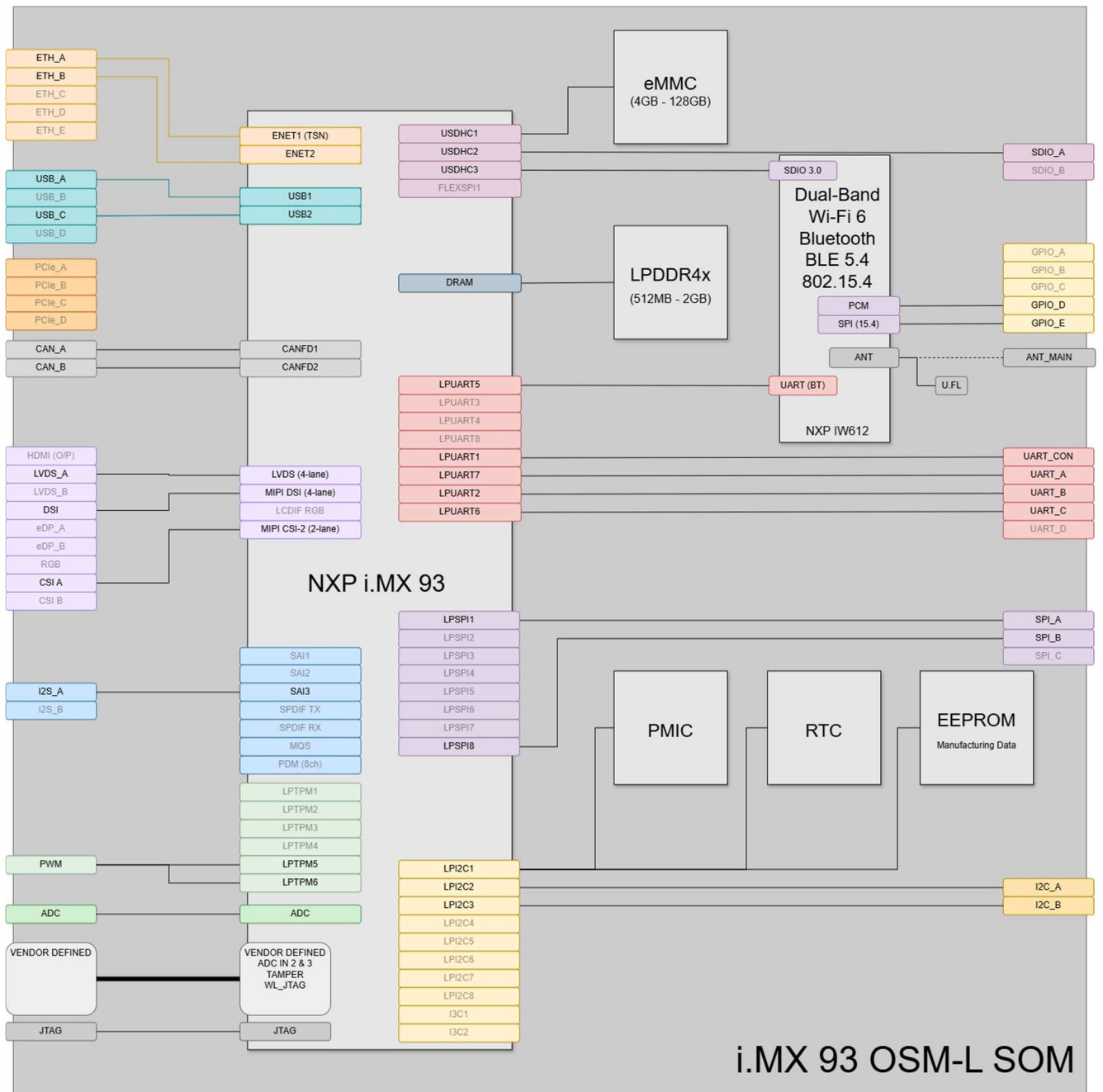


Figure 1 i.MX 93 OSM-L SOM Block Diagram

Features of the i.MX 93 OSM-L SOM include the following:

- eMMC up to 128GByte
- LPDDR4X up to 2GByte
- Wi-Fi 6 Dual Band
- Bluetooth 5.4
- Dual Gigabit Ethernet
- EEPROM (programmed by manufacturing)
- PMIC
- MIPI-CSI-2 2 lane
- MIPI-DSI 4 lane
- LVDS 4 lane
- 2x USB 2.0 Dual-Role
- 2x FlexCAN

The above list summarizes the dedicated interfaces provided to the host, but many other standard interfaces can be configured through multiplexed IO pins (e.g., SPI, I2C, UART). Peripheral Specifications are listed in Section 4, Peripheral Specifications, of this document and the default configuration of the pin multiplexing is listed Section 6, Pin Descriptions & Functions.

3.3 Electrical Specifications

3.4 Temperature Specifications

Dependent on the specification of the parts ordered by the customer.

The IMX9352CVVXMAB (normally fitted), is specified for an extended industrial temperature range of:

- **Junction temperature (Tj): -40 °C to +105 °C**

This temperature range applies to the industrial-grade variant (CVV) of the i.MX9352 and is suitable for industrial, energy, and embedded edge applications requiring reliable operation across wide environmental conditions.

[\[https://www.nxp.com/part/MIMX9352CVVXMAB\]](https://www.nxp.com/part/MIMX9352CVVXMAB)

However, it is the customer's responsibility to check with Cargt for a temperature rating of ALL components on the SOM to determine the lowest temperature rating.

4 Peripheral Specifications

4.1 Memory

4.1.1 Volatile Memory

Cargt's i.MX93 SOM is equipped with a single-channel 16-bit LPDDR4X memory interface, supporting capacities up to 2 GB.

4.1.2 Non-volatile Memory

4.1.2.1 eMMC (uSDHC1)

The i.MX 93 SOM uses a dedicated eMMC flash device that interfaces directly with the processor's uSDHC1 controller. This eMMC operates over an 8-bit data bus and supports transfer speeds up to HS400. The uSDHC3 interface is not exposed externally; its pins are only used internally within the SOM.

4.1.2.2 SD Card (uSDHC2)

The SOM exposes the processor's uSDHC2 interface on the OSM connector using a 4-bit SD 3.0 bus, enabling system designers to interface with external SD or SDIO peripherals. On Cargt's development boards, these uSDHC2 signals are routed to a microSD card slot, providing a convenient removable-storage option for evaluation and prototyping. The uSDHC2 pins are fully available to the host system and are not internally consumed by onboard SOM components.

4.1.2.3 Wi-Fi/Bluetooth (uSDHC3)

The SOM routes the processor's uSDHC3 interface internally to the onboard NXP IW612 wireless chip. This connection operates as a 4-bit SDIO 3.0 interface running at up to 200 MHz, providing a high-bandwidth link for Wi-Fi 6 and Bluetooth communication functions. The uSDHC3 pins are not exposed; they are dedicated exclusively to the IW612 subsystem.

4.1.2.4 EEPROM

The SOM contains a Cargt EEPROM containing data set during production, such as, Serial Number, SOM RAM size, etc.

4.2 Network Interfaces

4.2.1 Ethernet Interfaces

Two RGMII Interfaces are provided for dual-Gigabit Ethernet connectivity. Each interface has a dedicated MDIO interface.

4.2.1.1 Gigabit Ethernet A

The i.MX93's ENET1 interface is connected to OSM's ETH_A interface.

4.2.1.2 Gigabit Ethernet B

The i.MX93's ENET2 interface is connected to OSM's ETH_B interface.

4.2.2 CAN Interfaces

The SOM provides two independent CAN-FD interfaces. The i.MX93 CAN module implements the CAN-FD protocol as well as full compliance with the classical CAN 2.0B specification.

4.2.2.1 CAN A

The i.MX93's CAN1 interface is connected to OSM's CAN_A interface.

4.2.2.2 CAN B

The i.MX93's CAN2 interface is connected to OSM's CAN_B interface.

4.2.3 Wireless Interfaces

Cargt's i.MX 93 SOM includes NXP's IW612 tri-radio single-chip solution on-board. This solution supports the following technologies with a single antenna.

4.2.3.1 Wi-Fi 6

NXP's IW612 device provides support for the 802.11ax (Wi-Fi 6) standard and integrates the complete Wi-Fi subsystem, including the MAC, baseband processor, and direct-conversion radio, as well as an integrated power amplifier (PA), low-noise amplifier (LNA), and RF switching circuitry.

4.2.3.2 Bluetooth/Bluetooth Low Energy 5.4 and 802.15.4

The IW612 wireless solution also includes an independent Bluetooth 5.4 and 802.15.4 subsystem supporting Thread, Zigbee, and Dual-PAN mesh networking. It provides Bluetooth profiles such as Hands-Free (HFP), Advanced Audio Distribution Profile (A2DP), and Wideband Speech (WBS). For Bluetooth Low Energy, the IW612 enables a 2 Mbit/s high-speed data rate, extended-range operation, and support for extended advertising. LE Audio is also supported through isochronous channels to deliver improved audio performance.

4.3 Serial Communication Interfaces

4.3.1 USB

The SOM supports two independent High-Speed USB 2.0 Dual-Role interfaces.

4.3.1.1 *USB_A*

The i.MX 93's USB1 is connected to OSM's USB_A interface. It is intended to be used by the application.

4.3.1.2 *USB_C*

The i.MX 93's USB2 is connected to OSM's USB_C interface. It is intended to be used by the application.

4.3.2 *UART*

Four UART interfaces are brought out from the i.MX 93 SOM. A fifth interface is routed directly to the IW612 for Bluetooth connectivity.

4.3.2.1 *Console UART*

The i.MX 93's UART1 is intended to be used as a dedicated Console UART but can be repurposed for other uses by the application. It is connected to the OSM's console UART interface with a 2-wire connection.

4.3.2.2 *UART A*

The i.MX 93's UART7 is connected to OSM's UART A interface and supports a 4-wire interface. It is intended to be used by the application.

4.3.2.3 *UART B*

The i.MX 93's UART2 is connected to OSM's UART B interface and supports a 2-wire interface. It is intended to be used by the application.

4.3.2.4 *UART C*

The i.MX 93's UART6 is connected to OSM's UART C interface and supports a 2-wire interface. It is intended to be used by the application.

4.3.2.5 *Bluetooth UART*

The i.MX 93's UART5 is directly connected to the IW612 on the SOM for Bluetooth support and is not available for use by the application for any other purpose.

4.3.3 *SPI*

Two SPI interfaces are brought out on the i.MX 93 SOM for use by the application.

4.3.3.1 *SPI A*

The i.MX 93's SPI1 interface is connected to OSM's SPI A interface for use by the application.

4.3.3.2 SPI B

The i.MX 93's SPI8 interface is connected to OSM's SPI B interface for use by the application.

4.3.4 I2C

4.3.4.1 I2C A

The i.MX 93's I2C2 interface is connected to OSM's I2C A interface for use by the application.

4.3.4.2 I2C B

The i.MX 93's I2C3 interface is connected to OSM's I2C B interface for use by the application.

4.4 Display Interfaces

4.4.1 LVDS

The i.MX 93's LVDS interface is connected to OSM's LVDS A interface for use by the application. The backlight PWM is connected to TPM3 channel 3 and operates at 1.8V.

4.4.2 MIPI-DSI

The i.MX 93's MIPI DSI1 interface is connected to OSM's DSI interface for use by the application.

4.5 Camera Interfaces

4.5.1 MIPI-CSI

The i.MX 93's MIPI CSI1 interface is connected to OSM's CSI A interface for use by the application.

4.6 Audio Interfaces

4.6.1 I2S

The i.MX 93's SAI3 interface is connected to OSM's I2S A interface for use by the application.

4.7 Real-Time Clock

The i.MX93 SOC includes a real-time clock. For low power considerations, Cargt has added an I2C real-time clock as well.

5 System Integration

5.1 Boot Pins

The i.MX93 provides four Boot Mode pins that determine the processor's boot source during power-on initialization. All Boot Mode pins include internal pull-downs and are sampled on the rising edge of **POR_B**.

On Cargt's i.MX93 OSM SOM, only **BOOT_MODE[1:0]** are routed to the carrier as **BOOT_SEL0#** and **BOOT_SEL1#**. These pins include external pull-ups on the SOM, allowing the carrier to override them and select a specific boot mode. The supported boot configurations for **BOOT_MODE[1:0]** are shown below.

BOOT_MODE[1:0]	Boot Configuration	Notes
00	Boot from Internal Fuses	
01	Serial Downloader	Production Programming
10	USDHC1 8-bit eMMC 5.1	Recommended setting
11	USDCH2 4-bit SD	Default setting

Table 1 BOOT Mode Selection Switches Operation

If no pull-up or pull-down resistors are provided on the carrier, the SOM's internal configuration defaults the system to boot from the SD Card. For optimal performance, Cargt recommends configuring the system to boot from the eMMC device.

Because **BOOT_MODE[3:2]** are not exposed on the SOM, selecting Cortex-M33 boot modes is only possible through internal fuse settings.

6 Pin Descriptions & Functions

Table 2 Pin Mapping Table v3

00363 OSM-L Pin Mapping i.MX9352CVVXMAB									
Interface Group	Pin #	OSM Contact Name (functional)	SOC Pin Number	SOC Ball Name	Direction	Voltage	Type	PU/PD	Notes
Section 1: Active OSM Peripherals									
ADC	M18	ADC_0	B19	ADC_IN0	Input	1.8V	Analog		100pF load capacitor on SOM
ADC	N18	ADC_1	A20	ADC_IN1	Input	1.8V	Analog		100pF load capacitor on SOM
Boot	U19	BOOT_SELO#	E21	UART1_TXD	Input	1.8V	Open Drain	3k PU	Sampled on startup by SOC pin E21 (BOOT0), then connected to OSM pad D23 (UART1_TXD) through 680-ohm resistor after CARRIER_PWR_EN assertion
Boot	R18	BOOT_SEL1#	F21	UART2_TXD	Input	1.8V	Open Drain	3k PU	Sampled on startup by SOC pin F21 (BOOT1), then connected to OSM pad D13 (UART2_TXD) through 680-ohm resistor after CARRIER_PWR_EN assertion
Boot	T17	FORCE_RECOVERY#	J18	WDOG_ANY	Input	1.8V	Open Drain	100k PU	Connected to WDOG_B of PMIC
Boot	AA9	PWR_BTN#	A19	ONOFF	Input	1.8V	Open Drain	100k PU	
Boot	U17	RESET_IN#	N/A	N/A	Input	1.8V	Open Drain	100k PU	Connected to PMIC_RST_B of PMIC
Boot	Y14	RESET_OUT#	N/A	N/A	NC				
Camera	C2	CAM_MCK	N/A	N/A	NC				
Camera A	C4	CAM_A_SCL/CSI_A_TX_P	N/A	N/A	NC				
Camera A	C3	CAM_A_SDA/CSI_A_TX_N	N/A	N/A	NC				
Camera B	AB25	CAM_B_SCL/CSI_B_TX_P	N/A	N/A	NC				
Camera B	AB26	CAM_B_SDA/CSI_B_TX_N	N/A	N/A	NC				
CAN A (CAN1)	AB17	CAN_A_RX	J17	PDM_BIT_STREAM0	Input	1.8V	CMOS		
CAN A (CAN1)	AC17	CAN_A_TX	G17	PDM_CLK	Output	1.8V	CMOS		
CAN B (CAN2)	AB19	CAN_B_RX	W21	GPIO_IO27	Input	1.8V	CMOS		
CAN B (CAN2)	AC19	CAN_B_TX	V21	GPIO_IO25	Output	1.8V	CMOS		
Debug	AC18	DEBUG_EN	N/A	N/A	NC				
Debug	R19	JTAG_nRST	A16	POR_B	Input	1.8V	Open Drain	100k PU	Pulls down POR_B through Schottky diode
Debug	P19	JTAG_RTCK	N/A	N/A	NC				
Debug	N17	JTAG_TCK(SWCLK)	Y1	DAP_TCLK_SWCLK	Input	1.8V	CMOS		
Debug	P17	JTAG_TDI	W1	DAP_TDI	Input	1.8V	CMOS		
Debug	R17	JTAG_TDO(SWO)	Y2	DAP_TDO_TRACESWO	Output	1.8V	CMOS		
Debug	N19	JTAG_TMS(SWDIO)	W2	DAP_TMS_SWDIO	Input	1.8V	CMOS		
Ethernet	M17	ETH_IOPWR	N/A	N/A	Output	1.8V	Power		Eth voltage. It is used to provide the IO Voltage Level for all Ethernet interfaces
Ethernet A (ENET1)	F15	ETH_A_(R)(G)MII_COL	N/A	N/A	NC				
Ethernet A (ENET1)	E16	ETH_A_(R)(G)MII_CRS	N/A	N/A	NC				
Ethernet A (ENET1)	R15	ETH_A_(R)(G)MII_RX_CLK	AA7	ENET1_RXC	Input	1.8V	CMOS		
Ethernet A (ENET1)	M15	ETH_A_(R)(G)MII_RX_DV(_ER)	Y8	ENET1_RX_CTL	Input	1.8V	CMOS		
Ethernet A (ENET1)	L16	ETH_A_(R)(G)MII_RX_ER	N/A	N/A	NC				
Ethernet A (ENET1)	J15	ETH_A_(R)(G)MII_TX_CLK	U10	ENET1_TXC	Output	1.8V	CMOS		
Ethernet A (ENET1)	K16	ETH_A_(R)(G)MII_TX_EN(_ER)	V10	ENET1_TX_CTL	Output	1.8V	CMOS		
Ethernet A (ENET1)	K15	ETH_A_(S)(R)(G)MII_RXD0	AA8	ENET1_RD0	Input	1.8V	CMOS		
Ethernet A (ENET1)	L15	ETH_A_(S)(R)(G)MII_RXD1	Y9	ENET1_RD1	Input	1.8V	CMOS		
Ethernet A (ENET1)	N15	ETH_A_(S)(R)(G)MII_RXD2	AA9	ENET1_RD2	Input	1.8V	CMOS		
Ethernet A (ENET1)	P15	ETH_A_(S)(R)(G)MII_RXD3	Y10	ENET1_RD3	Input	1.8V	CMOS		
Ethernet A (ENET1)	H15	ETH_A_(S)(R)(G)MII_TXD0	W11	ENET1_TD0	Output	1.8V	CMOS		
Ethernet A (ENET1)	G15	ETH_A_(S)(R)(G)MII_TXD1	T12	ENET1_TD1	Output	1.8V	CMOS		
Ethernet A (ENET1)	H16	ETH_A_(S)(R)(G)MII_TXD2	U12	ENET1_TD2	Output	1.8V	CMOS		
Ethernet A (ENET1)	G16	ETH_A_(S)(R)(G)MII_TXD3	V12	ENET1_TD3	Output	1.8V	CMOS		
Ethernet A (ENET1)	N16	ETH_A_SDP	N/A	N/A	NC				
Ethernet A (ENET1)	T16	ETH_MDC	AA11	ENET1_MDC	Output	1.8V	CMOS		
Ethernet A (ENET1)	T15	ETH_MDIO	AA10	ENET1_MDIO	Bidirectional	1.8V	Open Drain		External pullup to ETH_IOPWR required for proper MDIO operation
Ethernet B (ENET2)	E1	ETH_B_(R)(G)MII_COL	N/A	N/A	NC				
Ethernet B (ENET2)	D2	ETH_B_(R)(G)MII_CRS	N/A	N/A	NC				
Ethernet B (ENET2)	P1	ETH_B_(R)(G)MII_RX_CLK	AA3	ENET2_RXC	Input	1.8V	CMOS		
Ethernet B (ENET2)	L1	ETH_B_(R)(G)MII_RX_DV(_ER)	Y4	ENET2_RX_CTL	Input	1.8V	CMOS		



Ethernet B (ENET2)	K2	ETH_B_(R)(G)MII_RX_ER	N/A	N/A	NC			
Ethernet B (ENET2)	H1	ETH_B_(R)(G)MII_TX_CLK	U6	ENET2_TXC	Output	1.8V	CMOS	
Ethernet B (ENET2)	J2	ETH_B_(R)(G)MII_TX_EN(_ER)	V6	ENET2_TX_CTL	Output	1.8V	CMOS	
Ethernet B (ENET2)	J1	ETH_B_(S)(R)(G)MII_RXD0	AA4	ENET2_RD0	Input	1.8V	CMOS	
Ethernet B (ENET2)	K1	ETH_B_(S)(R)(G)MII_RXD1	Y5	ENET2_RD1	Input	1.8V	CMOS	
Ethernet B (ENET2)	M1	ETH_B_(S)(R)(G)MII_RXD2	AA5	ENET2_RD2	Input	1.8V	CMOS	
Ethernet B (ENET2)	N1	ETH_B_(S)(R)(G)MII_RXD3	Y6	ENET2_RD3	Input	1.8V	CMOS	
Ethernet B (ENET2)	G1	ETH_B_(S)(R)(G)MII_TXD0	T8	ENET2_TD0	Output	1.8V	CMOS	
Ethernet B (ENET2)	F1	ETH_B_(S)(R)(G)MII_TXD1	U8	ENET2_TD1	Output	1.8V	CMOS	
Ethernet B (ENET2)	G2	ETH_B_(S)(R)(G)MII_TXD2	V8	ENET2_TD2	Output	1.8V	CMOS	
Ethernet B (ENET2)	F2	ETH_B_(S)(R)(G)MII_TXD3	T10	ENET2_TD3	Output	1.8V	CMOS	
Ethernet B (ENET2)	C6	ETH_B_MDC	Y7	ENET2_MDC	Output	1.8V	CMOS	
Ethernet B (ENET2)	C7	ETH_B_MDIO	AA6	ENET2_MDIO	Bidirectional	1.8V	Open Drain	External pullup to ETH_IOPWR required for proper MDIO operation
Ethernet B (ENET2)	M2	ETH_B_SDP	N/A	N/A	NC			
GPIO D	U32	GPIO_D_0	N/A	N/A	NC			
GPIO D	U33	GPIO_D_1	N/A	N/A	NC			
GPIO D	V32	GPIO_D_2	N/A	N/A INT SOM WIRELESS	Output	1.8V	CMOS	Alternate Function - PCM_MCLK (IW612)
GPIO D	V33	GPIO_D_3	N/A	N/A INT SOM WIRELESS	Bidirectional	1.8V	CMOS	Alternate Function - PCM_CLK (IW612)
GPIO D	W32	GPIO_D_4	N/A	N/A INT SOM WIRELESS	Output	1.8V	CMOS	Alternate Function - PCM_DOUT (IW612)
GPIO D	W33	GPIO_D_5	N/A	N/A INT SOM WIRELESS	Input	1.8V	CMOS	Alternate Function - PCM_DIN (IW612)
GPIO D	Y32	GPIO_D_6	N/A	N/A INT SOM WIRELESS	Bidirectional	1.8V	CMOS	Alternate Function - PCM_SYNC (IW612)
GPIO D	Y33	GPIO_D_7/SPI_C_CS1#	N/A	N/A INT SOM WIRELESS	Output	1.8V	CMOS	Alternate Function - SPI_INT (IW612)
GPIO E	AF32	GPIO_E_0	N/A	N/A INT SOM WIRELESS	Input	1.8V	CMOS	Alternate Function - SPI_CLK (IW612)
GPIO E	AF33	GPIO_E_1	N/A	N/A INT SOM WIRELESS	Input	1.8V	CMOS	Alternate Function - SPI_FRM (IW612)
GPIO E	AG32	GPIO_E_2	N/A	N/A INT SOM WIRELESS	Input	1.8V	CMOS	Alternate Function - SPI_RXD (IW612)
GPIO E	AG33	GPIO_E_3	N/A	N/A INT SOM WIRELESS	Output	1.8V	CMOS	Alternate Function - SPI_TXD (IW612)
GPIO E	AH32	GPIO_E_4	N/A	N/A INT SOM WIRELESS	Input	1.8V	CMOS	Alternate Function - WL_WAKE_IN (IW612)
GPIO E	AH33	GPIO_E_5	N/A	N/A INT SOM WIRELESS	Output	1.8V	CMOS	Alternate Function - WL_WAKE_OUT (IW612)
GPIO E	AJ32	GPIO_E_6	N/A	N/A INT SOM WIRELESS	Input	1.8V	CMOS	Alternate Function - BT_15.4_WAKE_IN (IW612)
GPIO E	AJ33	GPIO_E_7	N/A	N/A INT SOM WIRELESS	Output	1.8V	CMOS	Alternate Function - BT_15.4_WAKE_OUT (IW612)
I2C A (I2C2)	AA15	I2C_A_SCL	D20	I2C2_SCL	Output	1.8V	Open Drain	2.2k PU
I2C A (I2C2)	AA16	I2C_A_SDA	D21	I2C2_SDA	Bidirectional	1.8V	Open Drain	2.2k PU
I2C B (I2C3)	AA20	I2C_B_SCL	Y21	GPIO_IO29	Output	1.8V	Open Drain	2.2k PU
I2C B (I2C3)	AA21	I2C_B_SDA	W20	GPIO_IO28	Bidirectional	1.8V	Open Drain	2.2k PU
I2S (SAI3)	V18	I2S_MCLK	R20	GPIO_IO17	Output	1.8V	CMOS	
I2S A (SAI3)	W20	I2S_A_BITCLK	R21	GPIO_IO16	Output	1.8V	CMOS	
I2S A (SAI3)	V21	I2S_A_DATA_IN	T20	GPIO_IO20	Input	1.8V	CMOS	
I2S A (SAI3)	W21	I2S_A_DATA_OUT	T21	GPIO_IO21	Output	1.8V	CMOS	
I2S A (SAI3)	W18	I2S_A_LRCLK	V20	GPIO_IO26	Output	1.8V	CMOS	
LVDS	AN23	LVDS_BL_EN	N/A	N/A	NC			
LVDS	AN22	LVDS_BL_PWM	U21	GPIO_IO24	Output	1.8V	CMOS	TPM3 Channel 3
LVDS	AM11	LVDS_I2C_CLK	N/A	N/A	NC			
LVDS	AM12	LVDS_I2C_DAT	N/A	N/A	NC			
LVDS	AN14	LVDS_VDD_EN	N/A	N/A	NC			
LVDS A (LVDS)	AN12	LVDS_A_CLK_N	A3	LVDS_CLK_N	Output	-	PHY	
LVDS A (LVDS)	AN13	LVDS_A_CLK_P	B3	LVDS_CLK_P	Output	-	PHY	
LVDS A (LVDS)	AP17	LVDS_A_LANE0_N	A5	LVDS_D0_N	Output	-	PHY	
LVDS A (LVDS)	AP18	LVDS_A_LANE0_P	B5	LVDS_D0_P	Output	-	PHY	
LVDS A (LVDS)	AR15	LVDS_A_LANE1_N	A4	LVDS_D1_N	Output	-	PHY	
LVDS A (LVDS)	AR16	LVDS_A_LANE1_P	B4	LVDS_D1_P	Output	-	PHY	
LVDS A (LVDS)	AP14	LVDS_A_LANE2_N	A2	LVDS_D2_N	Output	-	PHY	
LVDS A (LVDS)	AP15	LVDS_A_LANE2_P	B2	LVDS_D2_P	Output	-	PHY	
LVDS A (LVDS)	AP11	LVDS_A_LANE3_N	B1	LVDS_D3_N	Output	-	PHY	
LVDS A (LVDS)	AP12	LVDS_A_LANE3_P	C1	LVDS_D3_P	Output	-	PHY	
MIPI CSI A (MIPI_CSI1)	B3	CSI_A_CLOCK_N	D10	MIPI_CSI1_CLK_N	Input	-	PHY	
MIPI CSI A (MIPI_CSI1)	B4	CSI_A_CLOCK_P	E10	MIPI_CSI1_CLK_P	Input	-	PHY	
MIPI CSI A (MIPI_CSI1)	C1	CSI_A_DATA0_N	A11	MIPI_CSI1_D0_N	Input	-	PHY	
MIPI CSI A (MIPI_CSI1)	B1	CSI_A_DATA0_P	B11	MIPI_CSI1_D0_P	Input	-	PHY	
MIPI CSI A (MIPI_CSI1)	A2	CSI_A_DATA1_N	A10	MIPI_CSI1_D1_N	Input	-	PHY	

MIPI CSI A (MIPI_CS11)	A3	CSI_A_DATA1_P	B10	MIPI_CS11_D1_P	Input	-	PHY	
MIPI CSI A	A5	CSI_A_DATA2_N	N/A	N/A	NC			
MIPI CSI A	A6	CSI_A_DATA2_P	N/A	N/A	NC			
MIPI CSI A	B6	CSI_A_DATA3_N	N/A	N/A	NC			
MIPI CSI A	B7	CSI_A_DATA3_P	N/A	N/A	NC			
MIPI DSI	AA3	DSI_TE	N/A	N/A	NC			
MIPI DSI (MIPI_DSI1)	AB8	DSI_CLOCK_N/LVDS_A_CLK_N	D6	MIPI_DSI1_CLK_N	Output	-	PHY	
MIPI DSI (MIPI_DSI1)	AB7	DSI_CLOCK_P/LVDS_A_CLK_P	E6	MIPI_DSI1_CLK_P	Output	-	PHY	
MIPI DSI (MIPI_DSI1)	AB11	DSI_DATA0_N/LVDS_A_LANE0_N	A6	MIPI_DSI1_D0_N	Output	-	PHY	
MIPI DSI (MIPI_DSI1)	AB10	DSI_DATA0_P/LVDS_A_LANE0_P	B6	MIPI_DSI1_D0_P	Output	-	PHY	
MIPI DSI (MIPI_DSI1)	AC9	DSI_DATA1_N/LVDS_A_LANE1_N	A7	MIPI_DSI1_D1_N	Output	-	PHY	
MIPI DSI (MIPI_DSI1)	AC8	DSI_DATA1_P/LVDS_A_LANE1_P	B7	MIPI_DSI1_D1_P	Output	-	PHY	
MIPI DSI (MIPI_DSI1)	AC6	DSI_DATA2_N/LVDS_A_LANE2_N	A8	MIPI_DSI1_D2_N	Output	-	PHY	
MIPI DSI (MIPI_DSI1)	AC5	DSI_DATA2_P/LVDS_A_LANE2_P	B8	MIPI_DSI1_D2_P	Output	-	PHY	
MIPI DSI (MIPI_DSI1)	AB5	DSI_DATA3_N/LVDS_A_LANE3_N	A9	MIPI_DSI1_D3_N	Output	-	PHY	
MIPI DSI (MIPI_DSI1)	AB4	DSI_DATA3_P/LVDS_A_LANE3_P	B9	MIPI_DSI1_D3_P	Output	-	PHY	
PWM	E18	PWM_O/DISP_BL_PWM	U18	GPIO_IO22	Output	1.8V	CMOS	TPM5 Channel 1
PWM	F18	PWM_1	U20	GPIO_IO23	Output	1.8V	CMOS	TPM6 Channel 1
PWM	G18	PWM_2	N/A	N/A	NC			
PWM	H18	PWM_3	N/A	N/A	NC			
PWM	J18	PWM_4	N/A	N/A	NC			
PWM	K18	PWM_5	N/A	N/A	NC			
SDIO A (SD2)	J21	SDIO_A_CD#	Y17	SD2_CD_B	Input	1.8V/3.3V	CMOS	
SDIO A (SD2)	F21	SDIO_A_CLK	AA19	SD2_CLK	Output	1.8V/3.3V	CMOS	
SDIO A (SD2)	E20	SDIO_A_CMD	Y19	SD2_CMD	Bidirectional	1.8V/3.3V	Open Drain	External pullup to SDIO_A_PWR required for proper CMD operation
SDIO A (SD2)	G20	SDIO_A_D0	Y18	SD2_DATA0	Bidirectional	1.8V/3.3V	CMOS	
SDIO A (SD2)	G21	SDIO_A_D1	AA18	SD2_DATA1	Bidirectional	1.8V/3.3V	CMOS	
SDIO A (SD2)	H20	SDIO_A_D2	Y20	SD2_DATA2	Bidirectional	1.8V/3.3V	CMOS	
SDIO A (SD2)	H21	SDIO_A_D3	AA20	SD2_DATA3	Bidirectional	1.8V/3.3V	CMOS	
SDIO A (SD2)	C20	SDIO_A_IOPWR	N/A	N/A	Output	1.8V/3.3V	Power	SDIO A voltage level set by SOC pin V18 (SD2_VSELECT), 100mA output max
SDIO A (SD2)	D21	SDIO_A_PWR_EN	AA17	SD2_RESET_B	Output	1.8V/3.3V	CMOS	
SDIO A (SD2)	D20	SDIO_A_WP	N/A	N/A	NC			
SDIO A (SD2)	N/A	N/A	V18	SD2_VSELECT	Output	1.8V	CMOS	PMIC SD_VSEL -> NVCC_SD2
SPI A (SPI1)	Y15	SPI_A_CS0#	G21	SAI1_TXFS	Output	1.8V	CMOS	SOC pin G21 (BOOT2) isolated from OSM pad Y15 until CARRIER_PWR_EN assertion to ensure logic low sampled at startup
SPI A (SPI1)	W15	SPI_A_HOLD_(IO3)	N/A	N/A	NC			
SPI A (SPI1)	U16	SPI_A_SCK	H21	SAI1_TXD0	Output	1.8V	CMOS	SOC pin H21 (BOOT3) isolated from OSM pad U16 until CARRIER_PWR_EN assertion to ensure logic low sampled at startup
SPI A (SPI1)	U15	SPI_A_SDI_(IO1)	G20	SAI1_TXC	Input	1.8V	CMOS	
SPI A (SPI1)	V15	SPI_A_SDO_(IO0)	H20	SAI1_RXD0	Output	1.8V	CMOS	
SPI A (SPI1)	W16	SPI_A_WP_(IO2)	N/A	N/A	NC			
SPI B (SPI8)	AA23	SPI_B_CS0#	N20	GPIO_IO12	Output	1.8V	CMOS	
SPI B (SPI8)	Y21	SPI_B_SCK	P21	GPIO_IO15	Output	1.8V	CMOS	
SPI B (SPI8)	Y22	SPI_B_SDI	N21	GPIO_IO13	Input	1.8V	CMOS	
SPI B (SPI8)	Y23	SPI_B_SDO	P20	GPIO_IO14	Output	1.8V	CMOS	
Test	C18	TEST_GENERIC	N/A	N/A	NC			
Test	M19	VCC_2_TEST	N/A	N/A	Output	1.8V	Analog	Test output - NVCC_BB5M_1V8
Test	Y16	VCC_3_TEST	N/A	N/A	Output	0.8V	Analog	Test output - VDD_ANA_0V8
Test	Y20	VCC_4_TEST	N/A	N/A	Output	0.6V	Analog	Test output - LPDDR4(X)_VDDQ
Test	Y3	VCC_5_TEST	N/A	N/A	Output	0.85V	Analog	Test output - VDD_SOC_0V85
Test	C5	VCC_6_TEST	N/A	N/A	Output	3.3V	Analog	Test output - VDD_3V3
Test	AA33	VCC_7_TEST	N/A	N/A	Output	1.1V	Analog	Test output - LPDDR4_VDD2_1V1
Test	B29	VCC_8_TEST	N/A	N/A	Output	1.8V/3.3V	Analog	Test output - NVCC_SD2
UART A (UART7)	C14	UART_A_CTS	N17	GPIO_IO10	Input	1.8V	CMOS	
UART A (UART7)	C13	UART_A_RTS	N18	GPIO_IO11	Output	1.8V	CMOS	
UART A (UART7)	A14	UART_A_RX	M21	GPIO_IO09	Input	1.8V	CMOS	
UART A (UART7)	B13	UART_A_TX	M20	GPIO_IO08	Output	1.8V	CMOS	
UART B (UART2)	D16	UART_B_CTS	N/A	N/A	NC			
UART B (UART2)	D15	UART_B_RTS	N/A	N/A	NC			

UART B (UART2)	D14	UART_B_RX	F20	UART2_RXD	Input	1.8V	CMOS		
UART B (UART2)	D13	UART_B_TX	F21	UART2_TXD	Output	1.8V	CMOS	3k PU	SOC pin F21 (BOOT0) isolated from OSM pad D13 until CARRIER_PWR_EN assertion to ensure boot jumper setting sampled correctly at startup
UART C (UART6)	A22	UART_C_RX	L18	GPIO_IO05	Input	1.8V	CMOS		
UART C (UART6)	B23	UART_C_TX	L17	GPIO_IO04	Output	1.8V	CMOS		
UART Console (UART1)	D22	UART_CON_RX	E20	UART1_RXD	Input	1.8V	CMOS		
UART Console (UART1)	D23	UART_CON_TX	E21	UART1_TXD	Output	1.8V	CMOS	3k PU	SOC pin E21 (BOOT1) isolated from OSM pad D23 until CARRIER_PWR_EN assertion to ensure boot jumper setting sampled correctly at startup
USB A (USB1)	AB13	USB_A_D_N	A14	USB1_D_N	Bidirectional	-	PHY		
USB A (USB1)	AC14	USB_A_D_P	B14	USB1_D_P	Bidirectional	-	PHY		
USB A (USB1)	AC16	USB_A_EN	N/A	N/A	NC				
USB A (USB1)	AB14	USB_A_ID	C11	USB1_ID	Input	1.8V	Open Drain		OSM spec dictates 10k pull-up on SOM. So set in S/W or add. OSM spec dictates 10k pull-up on SOM. So set in S/W or add. Series 30k current limit resistor Grounded with resistor
USB A (USB1)	AC15	USB_A_OC#	R18	GPIO_IO18	Input	1.8V	Open Drain		
USB A (USB1)	AB16	USB_A_VBUS	F12	USB1_VBUS	Input	5V	Power		
USB A (USB1)	N/A	N/A	D12	USB1_TXRTUNE	Input	1.8V	Analog		
USB C (USB2)	D11	USB_C_D_N	A15	USB2_D_N	Bidirectional	-	PHY		OSM spec dictates 10k pull-up on SOM. So set in S/W or add. OSM spec dictates 10k pull-up on SOM. So set in S/W or add.
USB C (USB2)	D10	USB_C_D_P	B15	USB2_D_P	Bidirectional	-	PHY		
USB C (USB2)	C10	USB_C_EN	N/A	N/A	NC				
USB C (USB2)	D9	USB_C_ID	E12	USB2_ID	Input	1.8V	Open Drain		
USB C (USB2)	C8	USB_C_OC#	R17	GPIO_IO19	Input	1.8V	Open Drain		Series 30k current limit resistor Grounded with resistor
USB C (USB2)	B11	USB_C_SSRX_N	N/A	N/A	NC				
USB C (USB2)	B10	USB_C_SSRX_P	N/A	N/A	NC				
USB C (USB2)	A9	USB_C_SSTX_N	N/A	N/A	NC				
USB C (USB2)	A8	USB_C_SSTX_P	N/A	N/A	NC				Series 30k current limit resistor Grounded with resistor
USB C (USB2)	C9	USB_C_VBUS	E14	USB2_VBUS	Input	5V	Power		
USB C (USB2)	N/A	N/A	D14	USB2_TXRTUNE	Input	1.8V	Analog		
Vendor	C16	VENDOR_DEFINED	B20	ADC_IN2	Input	1.8V	Analog		
Vendor	B22	VENDOR_DEFINED	B21	ADC_IN3	Input	1.8V	Analog		NC
Vendor	P16	VENDOR_DEFINED	N/A	N/A	NC				
Vendor	D6	VENDOR_DEFINED	N/A	N/A	NC				
Vendor	D7	VENDOR_DEFINED	N/A	N/A	NC				
Vendor	Y29	VENDOR_DEFINED	N/A	N/A	NC				NC
Vendor	Y30	VENDOR_DEFINED	N/A	N/A	NC				
Vendor	Y31	VENDOR_DEFINED	N/A	N/A	NC				
Vendor	AA29	VENDOR_DEFINED	F14	TAMPER1	Input	1.8V	CMOS		
Vendor	AA30	VENDOR_DEFINED	B16	TAMPER0	Input	1.8V	CMOS		NC
Vendor	AA31	VENDOR_DEFINED	N/A	N/A	NC				
Vendor	AK32	VENDOR_DEFINED	N/A	N/A	NC				
Vendor	AK33	VENDOR_DEFINED	N/A	N/A INT SOM WIRELESS	Input	1.8V	CMOS		
Vendor	AL32	VENDOR_DEFINED	N/A	N/A INT SOM WIRELESS	Input	1.8V	CMOS		JTAG_TCK (IW612)
Vendor	AL33	VENDOR_DEFINED	N/A	N/A INT SOM WIRELESS	Input	1.8V	CMOS		JTAG_TMS (IW612)
Vendor	AM32	VENDOR_DEFINED	N/A	N/A INT SOM WIRELESS	Output	1.8V	CMOS		JTAG_TDI (IW612)
Vendor	AM33	VENDOR_DEFINED	L20	GPIO_IO06	Input	1.8V	CMOS	Weak PD	JTAG_TDO (IW612)
— Section 2: Power & Ground —									
Power	V17	CARRIER_PWR_EN	N/A	N/A INT SOM WIRELESS	Output	1.8V	CMOS		PDn (IW612) Output from IMX93, input to IW612 if we leave R51 populated
Power	Y13	CARRIER_STDBY#	N/A	N/A	NC				Buffered output of POR_B
Power	W17	RTC_PWR	N/A	N/A	Input	3V	Power		RTC backup battery or supercap (1.2V - 5.5V range accepted)
Power	Y25	VCC_IN_5V	N/A	N/A	Input	5V	Power		
Power	Y26	VCC_IN_5V	N/A	N/A	Input	5V	Power		
Power	Y27	VCC_IN_5V	N/A	N/A	Input	5V	Power		
Power	Y28	VCC_IN_5V	N/A	N/A	Input	5V	Power		
Power	AE4	VCC_IN_5V	N/A	N/A	Input	5V	Power		
Power	AF4	VCC_IN_5V	N/A	N/A	Input	5V	Power		
Power	AG4	VCC_IN_5V	N/A	N/A	Input	5V	Power		
Power	AH3	VCC_IN_5V	N/A	N/A	Input	5V	Power		
Power	AH4	VCC_IN_5V	N/A	N/A	Input	5V	Power		
Power	AJ3	VCC_IN_5V	N/A	N/A	Input	5V	Power		
Power	AJ4	VCC_IN_5V	N/A	N/A	Input	5V	Power		
Power	AK4	VCC_IN_5V	N/A	N/A	Input	5V	Power		

Power	Y8	VCC_IN_5V	N/A	N/A	Input	5V	Power
Power	Y9	VCC_IN_5V	N/A	N/A	Input	5V	Power
Power	Y10	VCC_IN_5V	N/A	N/A	Input	5V	Power
Power	Y11	VCC_IN_5V	N/A	N/A	Input	5V	Power
Power	Y17	VCC_IN_5V	N/A	N/A	Input	5V	Power
Power	U18	VCC_OUT_IO	N/A	N/A	NC		
Power	AA18	VBAT	N/A	N/A	NC		
Power	AB18	VBAT	N/A	N/A	NC		
Power	Y19	VCC_IN_3V3	N/A	N/A	NC		
Ground	E15	GND	Multiple	VSS	GND	0V	Ground
Ground	E21	GND	Multiple	VSS	GND	0V	Ground
Ground	F16	GND	Multiple	VSS	GND	0V	Ground
Ground	F20	GND	Multiple	VSS	GND	0V	Ground
Ground	J16	GND	Multiple	VSS	GND	0V	Ground
Ground	J20	GND	Multiple	VSS	GND	0V	Ground
Ground	L18	GND	Multiple	VSS	GND	0V	Ground
Ground	M16	GND	Multiple	VSS	GND	0V	Ground
Ground	M20	GND	Multiple	VSS	GND	0V	Ground
Ground	P18	GND	Multiple	VSS	GND	0V	Ground
Ground	R16	GND	Multiple	VSS	GND	0V	Ground
Ground	R20	GND	Multiple	VSS	GND	0V	Ground
Ground	V16	GND	Multiple	VSS	GND	0V	Ground
Ground	V20	GND	Multiple	VSS	GND	0V	Ground
Ground	Y18	GND	Multiple	VSS	GND	0V	Ground
Ground	AA14	GND	Multiple	VSS	GND	0V	Ground
Ground	AA17	GND	Multiple	VSS	GND	0V	Ground
Ground	AA19	GND	Multiple	VSS	GND	0V	Ground
Ground	AA22	GND	Multiple	VSS	GND	0V	Ground
Ground	AB15	GND	Multiple	VSS	GND	0V	Ground
Ground	AB21	GND	Multiple	VSS	GND	0V	Ground
Ground	A4	GND	Multiple	VSS	GND	0V	Ground
Ground	A7	GND	Multiple	VSS	GND	0V	Ground
Ground	A10	GND	Multiple	VSS	GND	0V	Ground
Ground	B2	GND	Multiple	VSS	GND	0V	Ground
Ground	B5	GND	Multiple	VSS	GND	0V	Ground
Ground	B8	GND	Multiple	VSS	GND	0V	Ground
Ground	B9	GND	Multiple	VSS	GND	0V	Ground
Ground	C11	GND	Multiple	VSS	GND	0V	Ground
Ground	D1	GND	Multiple	VSS	GND	0V	Ground
Ground	D5	GND	Multiple	VSS	GND	0V	Ground
Ground	D8	GND	Multiple	VSS	GND	0V	Ground
Ground	D18	GND	Multiple	VSS	GND	0V	Ground
Ground	E2	GND	Multiple	VSS	GND	0V	Ground
Ground	H2	GND	Multiple	VSS	GND	0V	Ground
Ground	H4	GND	Multiple	VSS	GND	0V	Ground
Ground	L2	GND	Multiple	VSS	GND	0V	Ground
Ground	L4	GND	Multiple	VSS	GND	0V	Ground
Ground	P2	GND	Multiple	VSS	GND	0V	Ground
Ground	P4	GND	Multiple	VSS	GND	0V	Ground
Ground	R1	GND	Multiple	VSS	GND	0V	Ground
Ground	U2	GND	Multiple	VSS	GND	0V	Ground
Ground	U4	GND	Multiple	VSS	GND	0V	Ground
Ground	V1	GND	Multiple	VSS	GND	0V	Ground
Ground	W3	GND	Multiple	VSS	GND	0V	Ground
Ground	Y2	GND	Multiple	VSS	GND	0V	Ground
Ground	AA1	GND	Multiple	VSS	GND	0V	Ground
Ground	AA4	GND	Multiple	VSS	GND	0V	Ground
Ground	AA7	GND	Multiple	VSS	GND	0V	Ground
Ground	AA8	GND	Multiple	VSS	GND	0V	Ground

Ground	AA10	GND	Multiple	VSS	GND	0V	Ground
Ground	AA11	GND	Multiple	VSS	GND	0V	Ground
Ground	AB3	GND	Multiple	VSS	GND	0V	Ground
Ground	AB6	GND	Multiple	VSS	GND	0V	Ground
Ground	AB9	GND	Multiple	VSS	GND	0V	Ground
Ground	AC4	GND	Multiple	VSS	GND	0V	Ground
Ground	AC7	GND	Multiple	VSS	GND	0V	Ground
Ground	AC10	GND	Multiple	VSS	GND	0V	Ground
Ground	A26	GND	Multiple	VSS	GND	0V	Ground
Ground	A29	GND	Multiple	VSS	GND	0V	Ground
Ground	A32	GND	Multiple	VSS	GND	0V	Ground
Ground	B27	GND	Multiple	VSS	GND	0V	Ground
Ground	B28	GND	Multiple	VSS	GND	0V	Ground
Ground	B30	GND	Multiple	VSS	GND	0V	Ground
Ground	B33	GND	Multiple	VSS	GND	0V	Ground
Ground	C25	GND	Multiple	VSS	GND	0V	Ground
Ground	C32	GND	Multiple	VSS	GND	0V	Ground
Ground	C35	GND	Multiple	VSS	GND	0V	Ground
Ground	D28	GND	Multiple	VSS	GND	0V	Ground
Ground	D34	GND	Multiple	VSS	GND	0V	Ground
Ground	F33	GND	Multiple	VSS	GND	0V	Ground
Ground	F35	GND	Multiple	VSS	GND	0V	Ground
Ground	G34	GND	Multiple	VSS	GND	0V	Ground
Ground	H32	GND	Multiple	VSS	GND	0V	Ground
Ground	J33	GND	Multiple	VSS	GND	0V	Ground
Ground	J35	GND	Multiple	VSS	GND	0V	Ground
Ground	K34	GND	Multiple	VSS	GND	0V	Ground
Ground	M35	GND	Multiple	VSS	GND	0V	Ground
Ground	N34	GND	Multiple	VSS	GND	0V	Ground
Ground	T34	GND	Multiple	VSS	GND	0V	Ground
Ground	W34	GND	Multiple	VSS	GND	0V	Ground
Ground	AA25	GND	Multiple	VSS	GND	0V	Ground
Ground	AA26	GND	Multiple	VSS	GND	0V	Ground
Ground	AA27	GND	Multiple	VSS	GND	0V	Ground
Ground	AA28	GND	Multiple	VSS	GND	0V	Ground
Ground	AA32	GND	Multiple	VSS	GND	0V	Ground
Ground	AB28	GND	Multiple	VSS	GND	0V	Ground
Ground	AB31	GND	Multiple	VSS	GND	0V	Ground
Ground	AB34	GND	Multiple	VSS	GND	0V	Ground
Ground	AC27	GND	Multiple	VSS	GND	0V	Ground
Ground	AC30	GND	Multiple	VSS	GND	0V	Ground
Ground	AC33	GND	Multiple	VSS	GND	0V	Ground
Ground	AE2	GND	Multiple	VSS	GND	0V	Ground
Ground	AE34	GND	Multiple	VSS	GND	0V	Ground
Ground	AF35	GND	Multiple	VSS	GND	0V	Ground
Ground	AG3	GND	Multiple	VSS	GND	0V	Ground
Ground	AH2	GND	Multiple	VSS	GND	0V	Ground
Ground	AH34	GND	Multiple	VSS	GND	0V	Ground
Ground	AJ35	GND	Multiple	VSS	GND	0V	Ground
Ground	AK3	GND	Multiple	VSS	GND	0V	Ground
Ground	AL2	GND	Multiple	VSS	GND	0V	Ground
Ground	AL34	GND	Multiple	VSS	GND	0V	Ground
Ground	AM13	GND	Multiple	VSS	GND	0V	Ground
Ground	AM16	GND	Multiple	VSS	GND	0V	Ground
Ground	AM19	GND	Multiple	VSS	GND	0V	Ground
Ground	AM22	GND	Multiple	VSS	GND	0V	Ground
Ground	AM35	GND	Multiple	VSS	GND	0V	Ground
Ground	AN3	GND	Multiple	VSS	GND	0V	Ground
Ground	AN6	GND	Multiple	VSS	GND	0V	Ground

Ground	AN9	GND	Multiple	VSS	GND	0V	Ground
Ground	AN11	GND	Multiple	VSS	GND	0V	Ground
Ground	AN15	GND	Multiple	VSS	GND	0V	Ground
Ground	AN18	GND	Multiple	VSS	GND	0V	Ground
Ground	AN21	GND	Multiple	VSS	GND	0V	Ground
Ground	AN33	GND	Multiple	VSS	GND	0V	Ground
Ground	AP2	GND	Multiple	VSS	GND	0V	Ground
Ground	AP5	GND	Multiple	VSS	GND	0V	Ground
Ground	AP8	GND	Multiple	VSS	GND	0V	Ground
Ground	AP13	GND	Multiple	VSS	GND	0V	Ground
Ground	AP16	GND	Multiple	VSS	GND	0V	Ground
Ground	AP19	GND	Multiple	VSS	GND	0V	Ground
Ground	AP22	GND	Multiple	VSS	GND	0V	Ground
Ground	AP25	GND	Multiple	VSS	GND	0V	Ground
Ground	AP28	GND	Multiple	VSS	GND	0V	Ground
Ground	AP31	GND	Multiple	VSS	GND	0V	Ground
Ground	AP34	GND	Multiple	VSS	GND	0V	Ground
Ground	AR14	GND	Multiple	VSS	GND	0V	Ground
Ground	AR17	GND	Multiple	VSS	GND	0V	Ground
Ground	AR20	GND	Multiple	VSS	GND	0V	Ground
Ground	AR26	GND	Multiple	VSS	GND	0V	Ground
Ground	AR29	GND	Multiple	VSS	GND	0V	Ground
Ground	AR32	GND	Multiple	VSS	GND	0V	Ground
Ground	K32	GND	Multiple	VSS	GND	0V	Ground
Ground	M32	GND	Multiple	VSS	GND	0V	Ground
Ground	R32	GND	Multiple	VSS	GND	0V	Ground
Antenna	A21	ANT_GND	Multiple	VSS	GND	0V	Ground
Antenna	A19	ANT_GND	Multiple	VSS	GND	0V	Ground
Antenna	A18	ANT_GND	Multiple	VSS	GND	0V	Ground
Antenna	A17	ANT_GND	Multiple	VSS	GND	0V	Ground
Antenna	A15	ANT_GND	Multiple	VSS	GND	0V	Ground
Antenna	B15	ANT_GND	Multiple	VSS	GND	0V	Ground
Antenna	B16	ANT_GND	Multiple	VSS	GND	0V	Ground
Antenna	B17	ANT_GND	Multiple	VSS	GND	0V	Ground
Antenna	B18	ANT_GND	Multiple	VSS	GND	0V	Ground
Antenna	B19	ANT_GND	Multiple	VSS	GND	0V	Ground
Antenna	B20	ANT_GND	Multiple	VSS	GND	0V	Ground
Antenna	B21	ANT_GND	Multiple	VSS	GND	0V	Ground

— Section 3: Unused OSM Peripherals —

Antenna	A20	ANT_AUX	N/A	N/A	NC		
Antenna	C21	ANT_AUX_TEST	N/A	N/A	NC		
Antenna	C19	ANT_B_AUX_TEST	N/A	N/A	NC		
Antenna	C17	ANT_B_MAIN_TEST	N/A	N/A	NC		
Antenna	A16	ANT_MAIN	N/A	N/A INT SOM WIRELESS	Bidirectional	-	RF
Antenna	C15	ANT_MAIN_TEST	N/A	N/A	NC		Optional RF Pad - not connected by default
Embedded Display Port A	C34	eDP_A_AUX_N	N/A	N/A	NC		
Embedded Display Port A	C33	eDP_A_AUX_P	N/A	N/A	NC		
Embedded Display Port A	D32	eDP_A_AUX_SEL	N/A	N/A	NC		
Embedded Display Port A	D31	eDP_A_BL_EN	N/A	N/A	NC		
Embedded Display Port A	C31	eDP_A_BL_PWM	N/A	N/A	NC		
Embedded Display Port A	D33	eDP_A_HPD	N/A	N/A	NC		
Embedded Display Port A	A31	eDP_A_LANE0_N	N/A	N/A	NC		
Embedded Display Port A	A30	eDP_A_LANE0_P	N/A	N/A	NC		
Embedded Display Port A	B32	eDP_A_LANE1_N	N/A	N/A	NC		
Embedded Display Port A	B31	eDP_A_LANE1_P	N/A	N/A	NC		
Embedded Display Port A	A34	eDP_A_LANE2_N	N/A	N/A	NC		
Embedded Display Port A	A33	eDP_A_LANE2_P	N/A	N/A	NC		
Embedded Display Port A	B35	eDP_A_LANE3_N	N/A	N/A	NC		
Embedded Display Port A	B34	eDP_A_LANE3_P	N/A	N/A	NC		

Embedded Display Port B	H33	eDP_B_AUX_N	N/A	N/A	NC
Embedded Display Port B	G33	eDP_B_AUX_P	N/A	N/A	NC
Embedded Display Port B	F32	eDP_B_AUX_SEL	N/A	N/A	NC
Embedded Display Port B	E32	eDP_B_BL_EN	N/A	N/A	NC
Embedded Display Port B	E33	eDP_B_BL_PWM	N/A	N/A	NC
Embedded Display Port B	G32	eDP_B_HPD	N/A	N/A	NC
Embedded Display Port B	E35	eDP_B_LANE0_N	N/A	N/A	NC
Embedded Display Port B	D35	eDP_B_LANE0_P	N/A	N/A	NC
Embedded Display Port B	F34	eDP_B_LANE1_N	N/A	N/A	NC
Embedded Display Port B	E34	eDP_B_LANE1_P	N/A	N/A	NC
Embedded Display Port B	H35	eDP_B_LANE2_N	N/A	N/A	NC
Embedded Display Port B	G35	eDP_B_LANE2_P	N/A	N/A	NC
Embedded Display Port B	J34	eDP_B_LANE3_N	N/A	N/A	NC
Embedded Display Port B	H34	eDP_B_LANE3_P	N/A	N/A	NC
Ethernet C	AB35	ETH_C_(R)(G)MII_COL	N/A	N/A	NC
Ethernet C	AC34	ETH_C_(R)(G)MII_CRS	N/A	N/A	NC
Ethernet C	W35	ETH_C_(R)(G)MII_RX_CLK	N/A	N/A	NC
Ethernet C	T35	ETH_C_(R)(G)MII_RX_DV(_ER)	N/A	N/A	NC
Ethernet C	U34	ETH_C_(R)(G)MII_RX_ER	N/A	N/A	NC
Ethernet C	R35	ETH_C_(R)(G)MII_RXD2	N/A	N/A	NC
Ethernet C	P35	ETH_C_(R)(G)MII_RXD3	N/A	N/A	NC
Ethernet C	N35	ETH_C_(R)(G)MII_TX_CLK	N/A	N/A	NC
Ethernet C	V34	ETH_C_(R)(G)MII_TX_EN(_ER)	N/A	N/A	NC
Ethernet C	V35	ETH_C_(S)(R)(G)MII_RXD0	N/A	N/A	NC
Ethernet C	U35	ETH_C_(S)(R)(G)MII_RXD1	N/A	N/A	NC
Ethernet C	Y35	ETH_C_(S)(R)(G)MII_TXD0	N/A	N/A	NC
Ethernet C	AA35	ETH_C_(S)(R)(G)MII_TXD1	N/A	N/A	NC
Ethernet C	Y34	ETH_C_(S)(R)(G)MII_TXD2	N/A	N/A	NC
Ethernet C	AA34	ETH_C_(S)(R)(G)MII_TXD3	N/A	N/A	NC
Ethernet C	R34	ETH_C_SDP	N/A	N/A	NC
Ethernet C	N33	ETH_CDE_MDC	N/A	N/A	NC
Ethernet C	P33	ETH_CDE_MDIO	N/A	N/A	NC
Ethernet D	AF3	ETH_D_(R)(G)MII_COL	N/A	N/A	NC
Ethernet D	AE3	ETH_D_(R)(G)MII_CRS	N/A	N/A	NC
Ethernet D	AP1	ETH_D_(R)(G)MII_RX_CLK	N/A	N/A	NC
Ethernet D	AL1	ETH_D_(R)(G)MII_RX_DV(_ER)	N/A	N/A	NC
Ethernet D	AK2	ETH_D_(R)(G)MII_RX_ER	N/A	N/A	NC
Ethernet D	AM1	ETH_D_(R)(G)MII_RXD2	N/A	N/A	NC
Ethernet D	AN1	ETH_D_(R)(G)MII_RXD3	N/A	N/A	NC
Ethernet D	AH1	ETH_D_(R)(G)MII_TX_CLK	N/A	N/A	NC
Ethernet D	AJ2	ETH_D_(R)(G)MII_TX_EN(_ER)	N/A	N/A	NC
Ethernet D	AJ1	ETH_D_(S)(R)(G)MII_RXD0	N/A	N/A	NC
Ethernet D	AK1	ETH_D_(S)(R)(G)MII_RXD1	N/A	N/A	NC
Ethernet D	AF1	ETH_D_(S)(R)(G)MII_TXD0	N/A	N/A	NC
Ethernet D	AG1	ETH_D_(S)(R)(G)MII_TXD1	N/A	N/A	NC
Ethernet D	AG2	ETH_D_(S)(R)(G)MII_TXD2	N/A	N/A	NC
Ethernet D	AF2	ETH_D_(S)(R)(G)MII_TXD3	N/A	N/A	NC
Ethernet D	AM2	ETH_D_SDP	N/A	N/A	NC
Ethernet E	AR2	ETH_E_(R)(G)MII_COL	N/A	N/A	NC
Ethernet E	AN4	ETH_E_(R)(G)MII_CRS	N/A	N/A	NC
Ethernet E	AN10	ETH_E_(R)(G)MII_RX_CLK	N/A	N/A	NC
Ethernet E	AR8	ETH_E_(R)(G)MII_RX_DV(_ER)	N/A	N/A	NC
Ethernet E	AP7	ETH_E_(R)(G)MII_RX_ER	N/A	N/A	NC
Ethernet E	AR9	ETH_E_(R)(G)MII_RXD2	N/A	N/A	NC
Ethernet E	AR10	ETH_E_(R)(G)MII_RXD3	N/A	N/A	NC
Ethernet E	AR5	ETH_E_(R)(G)MII_TX_CLK	N/A	N/A	NC
Ethernet E	AP6	ETH_E_(R)(G)MII_TX_EN(_ER)	N/A	N/A	NC
Ethernet E	AR6	ETH_E_(S)(R)(G)MII_RXD0	N/A	N/A	NC
Ethernet E	AR7	ETH_E_(S)(R)(G)MII_RXD1	N/A	N/A	NC

Ethernet E	AR3	ETH_E_(S)(R)(G)MII_TXD0	N/A	N/A	NC
Ethernet E	AR4	ETH_E_(S)(R)(G)MII_TXD1	N/A	N/A	NC
Ethernet E	AP3	ETH_E_(S)(R)(G)MII_TXD2	N/A	N/A	NC
Ethernet E	AP4	ETH_E_(S)(R)(G)MII_TXD3	N/A	N/A	NC
Ethernet E	AP9	ETH_E_SDP	N/A	N/A	NC
GPIO A	D17	GPIO_A_0	N/A	N/A	NC
GPIO A	E17	GPIO_A_1	N/A	N/A	NC
GPIO A	F17	GPIO_A_2	N/A	N/A	NC
GPIO A	G17	GPIO_A_3	N/A	N/A	NC
GPIO A	H17	GPIO_A_4	N/A	N/A	NC
GPIO A	J17	GPIO_A_5	N/A	N/A	NC
GPIO A	K17	GPIO_A_6/SPI_A_CS1#	N/A	N/A	NC
GPIO A	L17	GPIO_A_7/SPI_B_CS1#	N/A	N/A	NC
GPIO B	D19	GPIO_B_0	N/A	N/A	NC
GPIO B	E19	GPIO_B_1	N/A	N/A	NC
GPIO B	F19	GPIO_B_2	N/A	N/A	NC
GPIO B	G19	GPIO_B_3	N/A	N/A	NC
GPIO B	H19	GPIO_B_4	N/A	N/A	NC
GPIO B	J19	GPIO_B_5	N/A	N/A	NC
GPIO B	K19	GPIO_B_6	N/A	N/A	NC
GPIO B	L19	GPIO_B_7	N/A	N/A	NC
GPIO C	D3	GPIO_C_0	N/A	N/A	NC
GPIO C	D4	GPIO_C_1	N/A	N/A	NC
GPIO C	E3	GPIO_C_2/CAM_B_PWR	N/A	N/A	NC
GPIO C	E4	GPIO_C_3/CAM_B_RST#	N/A	N/A	NC
GPIO C	F3	GPIO_C_4/DISP_VDD_EN	N/A	N/A	NC
GPIO C	F4	GPIO_C_5/DISP_BL_EN	N/A	N/A	NC
GPIO C	G3	GPIO_C_6/CAM_A_PWR	N/A	N/A	NC
GPIO C	G4	GPIO_C_7/CAM_A_RST#	N/A	N/A	NC
I2S B	T19	I2S_B_BITCLK	N/A	N/A	NC
I2S B	V19	I2S_B_DATA_IN	N/A	N/A	NC
I2S B	W19	I2S_B_DATA_OUT	N/A	N/A	NC
I2S B	T18	I2S_B_LRCLK	N/A	N/A	NC
LVDS B	AN16	LVDS_B_CLK_N	N/A	N/A	NC
LVDS B	AN17	LVDS_B_CLK_P	N/A	N/A	NC
LVDS B	AM20	LVDS_B_LANE0_N	N/A	N/A	NC
LVDS B	AM21	LVDS_B_LANE0_P	N/A	N/A	NC
LVDS B	AN19	LVDS_B_LANE1_N	N/A	N/A	NC
LVDS B	AN20	LVDS_B_LANE1_P	N/A	N/A	NC
LVDS B	AM17	LVDS_B_LANE2_N	N/A	N/A	NC
LVDS B	AM18	LVDS_B_LANE2_P	N/A	N/A	NC
LVDS B	AM14	LVDS_B_LANE3_N	N/A	N/A	NC
LVDS B	AM15	LVDS_B_LANE3_P	N/A	N/A	NC
MIPI CSI B	J32	CSI_B_CLOCK_N	N/A	N/A	NC
MIPI CSI B	K33	CSI_B_CLOCK_P	N/A	N/A	NC
MIPI CSI B	L32	CSI_B_DATA0_N	N/A	N/A	NC
MIPI CSI B	M33	CSI_B_DATA0_P	N/A	N/A	NC
MIPI CSI B	N32	CSI_B_DATA1_N	N/A	N/A	NC
MIPI CSI B	P32	CSI_B_DATA1_P	N/A	N/A	NC
MIPI CSI B	P34	CSI_B_DATA2_N	N/A	N/A	NC
MIPI CSI B	R33	CSI_B_DATA2_P	N/A	N/A	NC
MIPI CSI B	T32	CSI_B_DATA3_N	N/A	N/A	NC
MIPI CSI B	T33	CSI_B_DATA3_P	N/A	N/A	NC
Parallel RGB Display	M4	RGB_(PIXEL)CLK	N/A	N/A	NC
Parallel RGB Display	R4	RGB_B0	N/A	N/A	NC
Parallel RGB Display	R3	RGB_B1	N/A	N/A	NC
Parallel RGB Display	P3	RGB_B2	N/A	N/A	NC
Parallel RGB Display	N3	RGB_B3	N/A	N/A	NC
Parallel RGB Display	N4	RGB_B4	N/A	N/A	NC

Parallel RGB Display	M3	RGB_B5	N/A	N/A	NC
Parallel RGB Display	H3	RGB_CS#	N/A	N/A	NC
Parallel RGB Display	J4	RGB_DE	N/A	N/A	NC
Parallel RGB Display	K4	RGB_DISP	N/A	N/A	NC
Parallel RGB Display	W4	RGB_G0	N/A	N/A	NC
Parallel RGB Display	V3	RGB_G1	N/A	N/A	NC
Parallel RGB Display	V4	RGB_G2	N/A	N/A	NC
Parallel RGB Display	U3	RGB_G3	N/A	N/A	NC
Parallel RGB Display	T3	RGB_G4	N/A	N/A	NC
Parallel RGB Display	T4	RGB_G5	N/A	N/A	NC
Parallel RGB Display	K3	RGB_HSYNC	N/A	N/A	NC
Parallel RGB Display	Y7	RGB_R0	N/A	N/A	NC
Parallel RGB Display	AA6	RGB_R1	N/A	N/A	NC
Parallel RGB Display	Y6	RGB_R2	N/A	N/A	NC
Parallel RGB Display	AA5	RGB_R3	N/A	N/A	NC
Parallel RGB Display	Y5	RGB_R4	N/A	N/A	NC
Parallel RGB Display	Y4	RGB_R5	N/A	N/A	NC
Parallel RGB Display	J3	RGB_RESET#	N/A	N/A	NC
Parallel RGB Display	L3	RGB_VSYNC	N/A	N/A	NC
PCI Express	W2	PCle_CLKREQ#	N/A	N/A	NC
PCI Express	Y1	PCle_REFCLK_N	N/A	N/A	NC
PCI Express	W1	PCle_REFCLK_P	N/A	N/A	NC
PCI Express	R2	PCle_SM_ALERT#	N/A	N/A	NC
PCI Express	T1	PCle_SMCLK	N/A	N/A	NC
PCI Express	U1	PCle_SMDAT	N/A	N/A	NC
PCI Express	T2	PCle_WAKE#	N/A	N/A	NC
PCI Express A	AB2	PCle_A_HSI0_N	N/A	N/A	NC
PCI Express A	AB1	PCle_A_HSI0_P	N/A	N/A	NC
PCI Express A	AC3	PCle_A_HSO0_N	N/A	N/A	NC
PCI Express A	AC2	PCle_A_HSO0_P	N/A	N/A	NC
PCI Express A	V2	PCle_A_PERST#	N/A	N/A	NC
PCI Express B	M34	PCle_B_HSI0_N	N/A	N/A	NC
PCI Express B	L34	PCle_B_HSI0_P	N/A	N/A	NC
PCI Express B	L35	PCle_B_HSO0_N	N/A	N/A	NC
PCI Express B	K35	PCle_B_HSO0_P	N/A	N/A	NC
PCI Express B	L33	PCle_B_PERST#	N/A	N/A	NC
PCI Express C	AP32	PCle_C_HSI0_N	N/A	N/A	NC
PCI Express C	AP33	PCle_C_HSI0_P	N/A	N/A	NC
PCI Express C	AP35	PCle_C_HSI1_N	N/A	N/A	NC
PCI Express C	AN35	PCle_C_HSI1_P	N/A	N/A	NC
PCI Express C	AL35	PCle_C_HSI2_N	N/A	N/A	NC
PCI Express C	AK35	PCle_C_HSI2_P	N/A	N/A	NC
PCI Express C	AH35	PCle_C_HSI3_N	N/A	N/A	NC
PCI Express C	AG35	PCle_C_HSI3_P	N/A	N/A	NC
PCI Express C	AR33	PCle_C_HSO0_N	N/A	N/A	NC
PCI Express C	AR34	PCle_C_HSO0_P	N/A	N/A	NC
PCI Express C	AN34	PCle_C_HSO1_N	N/A	N/A	NC
PCI Express C	AM34	PCle_C_HSO1_P	N/A	N/A	NC
PCI Express C	AK34	PCle_C_HSO2_N	N/A	N/A	NC
PCI Express C	AJ34	PCle_C_HSO2_P	N/A	N/A	NC
PCI Express C	AG34	PCle_C_HSO3_N	N/A	N/A	NC
PCI Express C	AF34	PCle_C_HSO3_P	N/A	N/A	NC
PCI Express C	AE33	PCle_C_PERST#	N/A	N/A	NC
PCI Express D	AR18	PCle_D_HSI0_N	N/A	N/A	NC
PCI Express D	AR19	PCle_D_HSI0_P	N/A	N/A	NC
PCI Express D	AR21	PCle_D_HSI1_N	N/A	N/A	NC
PCI Express D	AR22	PCle_D_HSI1_P	N/A	N/A	NC
PCI Express D	AP26	PCle_D_HSI2_N	N/A	N/A	NC
PCI Express D	AP27	PCle_D_HSI2_P	N/A	N/A	NC

PCI Express D	AP29	PCle_D_HSI3_N	N/A	N/A	NC
PCI Express D	AP30	PCle_D_HSI3_P	N/A	N/A	NC
PCI Express D	AP20	PCle_D_HSO0_N	N/A	N/A	NC
PCI Express D	AP21	PCle_D_HSO0_P	N/A	N/A	NC
PCI Express D	AP23	PCle_D_HSO1_N	N/A	N/A	NC
PCI Express D	AP24	PCle_D_HSO1_P	N/A	N/A	NC
PCI Express D	AR27	PCle_D_HSO2_N	N/A	N/A	NC
PCI Express D	AR28	PCle_D_HSO2_P	N/A	N/A	NC
PCI Express D	AR30	PCle_D_HSO3_N	N/A	N/A	NC
PCI Express D	AR31	PCle_D_HSO3_P	N/A	N/A	NC
PCI Express D	AN32	PCle_D_PERST#	N/A	N/A	NC
SDIO B	T21	SDIO_B_CD#	N/A	N/A	NC
SDIO B	K20	SDIO_B_CLK	N/A	N/A	NC
SDIO B	K21	SDIO_B_CMD	N/A	N/A	NC
SDIO B	L20	SDIO_B_D0	N/A	N/A	NC
SDIO B	L21	SDIO_B_D1	N/A	N/A	NC
SDIO B	M21	SDIO_B_D2	N/A	N/A	NC
SDIO B	N20	SDIO_B_D3	N/A	N/A	NC
SDIO B	N21	SDIO_B_D4	N/A	N/A	NC
SDIO B	P20	SDIO_B_D5	N/A	N/A	NC
SDIO B	P21	SDIO_B_D6	N/A	N/A	NC
SDIO B	R21	SDIO_B_D7	N/A	N/A	NC
SDIO B	T20	SDIO_B_IOPWR	N/A	N/A	NC
SDIO B	U21	SDIO_B_PWR_EN	N/A	N/A	NC
SDIO B	U20	SDIO_B_WP	N/A	N/A	NC
SPI C	C30	SPI_C_CSD#	N/A	N/A	NC
SPI C	D29	SPI_C_SCK	N/A	N/A	NC
SPI C	C29	SPI_C_SDI	N/A	N/A	NC
SPI C	D30	SPI_C_SDO	N/A	N/A	NC
UART D	C22	UART_D_RX	N/A	N/A	NC
UART D	C23	UART_D_TX	N/A	N/A	NC
Universal Flash Storage	AC26	UFS_CLK	N/A	N/A	NC
Universal Flash Storage	AB27	UFS_RESET#	N/A	N/A	NC
Universal Flash Storage	AC32	UFS_RX0_N	N/A	N/A	NC
Universal Flash Storage	AC31	UFS_RX0_P	N/A	N/A	NC
Universal Flash Storage	AB33	UFS_RX1_N	N/A	N/A	NC
Universal Flash Storage	AB32	UFS_RX1_P	N/A	N/A	NC
Universal Flash Storage	AC29	UFS_TX0_N	N/A	N/A	NC
Universal Flash Storage	AC28	UFS_TX0_P	N/A	N/A	NC
Universal Flash Storage	AB30	UFS_TX1_N	N/A	N/A	NC
Universal Flash Storage	AB29	UFS_TX1_P	N/A	N/A	NC
USB B	AB23	USB_B_D_N	N/A	N/A	NC
USB B	AC22	USB_B_D_P	N/A	N/A	NC
USB B	AC20	USB_B_EN	N/A	N/A	NC
USB B	AB22	USB_B_ID	N/A	N/A	NC
USB B	AC21	USB_B_OC#	N/A	N/A	NC
USB B	AB20	USB_B_VBUS	N/A	N/A	NC
USB D	D26	USB_D_D_N	N/A	N/A	NC
USB D	D25	USB_D_D_P	N/A	N/A	NC
USB D	C26	USB_D_EN	N/A	N/A	NC
USB D	D27	USB_D_ID	N/A	N/A	NC
USB D	C28	USB_D_OC#	N/A	N/A	NC
USB D	B26	USB_D_SSRX_N	N/A	N/A	NC
USB D	B25	USB_D_SSRX_P	N/A	N/A	NC
USB D	A28	USB_D_SSTX_N	N/A	N/A	NC
USB D	A27	USB_D_SSTX_P	N/A	N/A	NC
USB D	C27	USB_D_VBUS	N/A	N/A	NC
Reserved	AA13	RESERVED	N/A	N/A	NC
Reserved	N2	RESERVED	N/A	N/A	NC

Reserved	AA2	RESERVED	N/A	N/A	NC
Reserved	AE32	RESERVED	N/A	N/A	NC
Reserved	AL3	RESERVED	N/A	N/A	NC
Reserved	AL4	RESERVED	N/A	N/A	NC
Reserved	AM3	RESERVED	N/A	N/A	NC
Reserved	AM4	RESERVED	N/A	N/A	NC
Reserved	AM5	RESERVED	N/A	N/A	NC
Reserved	AM6	RESERVED	N/A	N/A	NC
Reserved	AM7	RESERVED	N/A	N/A	NC
Reserved	AM8	RESERVED	N/A	N/A	NC
Reserved	AM9	RESERVED	N/A	N/A	NC
Reserved	AM10	RESERVED	N/A	N/A	NC
Reserved	AM23	RESERVED	N/A	N/A	NC
Reserved	AM24	RESERVED	N/A	N/A	NC
Reserved	AM25	RESERVED	N/A	N/A	NC
Reserved	AM26	RESERVED	N/A	N/A	NC
Reserved	AM27	RESERVED	N/A	N/A	NC
Reserved	AM28	RESERVED	N/A	N/A	NC
Reserved	AM29	RESERVED	N/A	N/A	NC
Reserved	AM30	RESERVED	N/A	N/A	NC
Reserved	AM31	RESERVED	N/A	N/A	NC
Reserved	AN2	RESERVED	N/A	N/A	NC
Reserved	AN5	RESERVED	N/A	N/A	NC
Reserved	AN7	RESERVED	N/A	N/A	NC
Reserved	AN8	RESERVED	N/A	N/A	NC
Reserved	AN24	RESERVED	N/A	N/A	NC
Reserved	AN25	RESERVED	N/A	N/A	NC
Reserved	AN26	RESERVED	N/A	N/A	NC
Reserved	AN27	RESERVED	N/A	N/A	NC
Reserved	AN28	RESERVED	N/A	N/A	NC
Reserved	AN29	RESERVED	N/A	N/A	NC
Reserved	AN30	RESERVED	N/A	N/A	NC
Reserved	AN31	RESERVED	N/A	N/A	NC
Reserved	AP10	RESERVED	N/A	N/A	NC

— Section 4: Internal SOM Connections —

Internal SOM - (CCM)	N/A	N/A	AA2	CCM_CLKO1	Input		BOARD_ID0
Internal SOM - (CCM)	N/A	N/A	Y3	CCM_CLKO2	Input		BOARD_ID1
Internal SOM - (CCM)	N/A	N/A	U4	CCM_CLKO3	Input		BOARD_ID2
Internal SOM - (CCM)	N/A	N/A	V4	CCM_CLKO4	Input		BOARD_ID3
Internal SOM - (CLK)	N/A	N/A	B17	CLKIN1	Input	1.8V	TP6
Internal SOM - (CLK)	N/A	N/A	A18	CLKIN2	Input	1.8V	TP7
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	H2	DRAM_CA0_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	G1	DRAM_CA1_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	F2	DRAM_CA2_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	E1	DRAM_CA3_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	E2	DRAM_CA4_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	D1	DRAM_CA5_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	G5	DRAM_CK_C_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	G4	DRAM_CK_T_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	H1	DRAM_CKE0_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	J4	DRAM_CKE1_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	F1	DRAM_CS0_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	G2	DRAM_CS1_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	L2	DRAM_DMIO_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	T2	DRAM_DMI1_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	N1	DRAM_DQ00_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	N2	DRAM_DQ01_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	M1	DRAM_DQ02_A			
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	M2	DRAM_DQ03_A			

Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	K1	DRAM_DQ04_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	K2	DRAM_DQ05_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	J1	DRAM_DQ06_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	J2	DRAM_DQ07_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	V1	DRAM_DQ08_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	V2	DRAM_DQ09_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	U2	DRAM_DQ10_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	U1	DRAM_DQ11_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	R1	DRAM_DQ12_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	R2	DRAM_DQ13_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	P2	DRAM_DQ14_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	P1	DRAM_DQ15_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	L4	DRAM_DQ50_C_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	N4	DRAM_DQ50_T_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	R5	DRAM_DQ51_C_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	R4	DRAM_DQ51_T_A					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	D4	DRAM_MTEST1					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	D2	DRAM_RESET_N					
Internal SOM - (DRAM)	N/A	N/A - INT SOM DRAM	E4	DRAM_ZQ					
Internal SOM - (GPIO)	N/A	N/A - INT SOM WIRELESS	J21	GPIO_IO00	Output	1.8V	CMOS		UART5_TXD
Internal SOM - (GPIO)	N/A	N/A - INT SOM WIRELESS	J20	GPIO_IO01	Input	1.8V	CMOS		UART5_RXD
Internal SOM - (GPIO)	N/A	N/A - INT SOM WIRELESS	K20	GPIO_IO02	Input	1.8V	CMOS		UART5_nCTS
Internal SOM - (GPIO)	N/A	N/A - INT SOM WIRELESS	K21	GPIO_IO03	Output	1.8V	CMOS		UART5_nRTS
Internal SOM - (GPIO)	N/A	N/A - INT SOM RTC	L21	GPIO_IO07	Input	1.8V	CMOS		RTC_nINT
Internal SOM - (I2C1)	N/A	N/A - INT SOM I2C	C20	I2C1_SCL	Output	1.8V	Open Drain	2.2k PU	Internal - EEPROM, PMIC, RTC
Internal SOM - (I2C1)	N/A	N/A - INT SOM I2C	C21	I2C1_SDA	Bidirectional	1.8V	Open Drain	2.2k PU	Internal - EEPROM, PMIC, RTC
Internal SOM - PDM	N/A	N/A - INT SOM PMIC	G18	PDM_BIT_STREAM1					
Internal SOM - (PMIC)	N/A	N/A - INT SOM PMIC	A17	PMIC_ON_REQ					
Internal SOM - (PMIC)	N/A	N/A - INT SOM PMIC	B18	PMIC_STBY_REQ					
Internal SOM - (RTC)	N/A	N/A - INT SOM PMIC	E16	RTC_XTALI					
Internal SOM - (RTC)	N/A	N/A	D16	RTC_XTALO					
Internal SOM - (SD1)	N/A	N/A - INT SOM EMMC	Y11	SD1_CLK					
Internal SOM - (SD1)	N/A	N/A - INT SOM EMMC	AA12	SD1_CMD					
Internal SOM - (SD1)	N/A	N/A - INT SOM EMMC	AA14	SD1_DATA0					
Internal SOM - (SD1)	N/A	N/A - INT SOM EMMC	AA15	SD1_DATA1					
Internal SOM - (SD1)	N/A	N/A - INT SOM EMMC	AA16	SD1_DATA2					
Internal SOM - (SD1)	N/A	N/A - INT SOM EMMC	AA13	SD1_DATA3					
Internal SOM - (SD1)	N/A	N/A - INT SOM EMMC	Y13	SD1_DATA4					
Internal SOM - (SD1)	N/A	N/A - INT SOM EMMC	Y14	SD1_DATA5					
Internal SOM - (SD1)	N/A	N/A - INT SOM EMMC	Y15	SD1_DATA6					
Internal SOM - (SD1)	N/A	N/A - INT SOM EMMC	Y16	SD1_DATA7					
Internal SOM - (SD1)	N/A	N/A - INT SOM EMMC	Y12	SD1_STROBE					
Internal SOM - (SD3)	N/A	N/A - INT SOM WIRELESS	V16	SD3_CLK					
Internal SOM - (SD3)	N/A	N/A - INT SOM WIRELESS	U16	SD3_CMD					
Internal SOM - (SD3)	N/A	N/A - INT SOM WIRELESS	T16	SD3_DATA0					
Internal SOM - (SD3)	N/A	N/A - INT SOM WIRELESS	V14	SD3_DATA1					
Internal SOM - (SD3)	N/A	N/A - INT SOM WIRELESS	U14	SD3_DATA2					
Internal SOM - (SD3)	N/A	N/A - INT SOM WIRELESS	T14	SD3_DATA3					
Internal SOM - (WDOG)	N/A	N/A - INT SOM PMIC	J18	WDOG_ANY	Output	1.8V	CMOS		
Internal SOM - (XTAL)	N/A	N/A - INT SOM	D18	XTALI_24M	Input	1.8V	Analog		
Internal SOM - (XTAL)	N/A	N/A - INT SOM	E18	XTALO_24M	Output	1.8V	Analog		

7 Mechanical

7.1 Description

The SOM PCB uses the OSM-L standard. See 3D CAD model for the most accurate dimensions. The attached drawing Figure 2 OSM-L Mechanical Drawing is for reference only. Height is dependent on the components that are available at the time of manufacture. See Cargt for the absolute maximum values regardless of supplier availability.

7.2 Dimensions

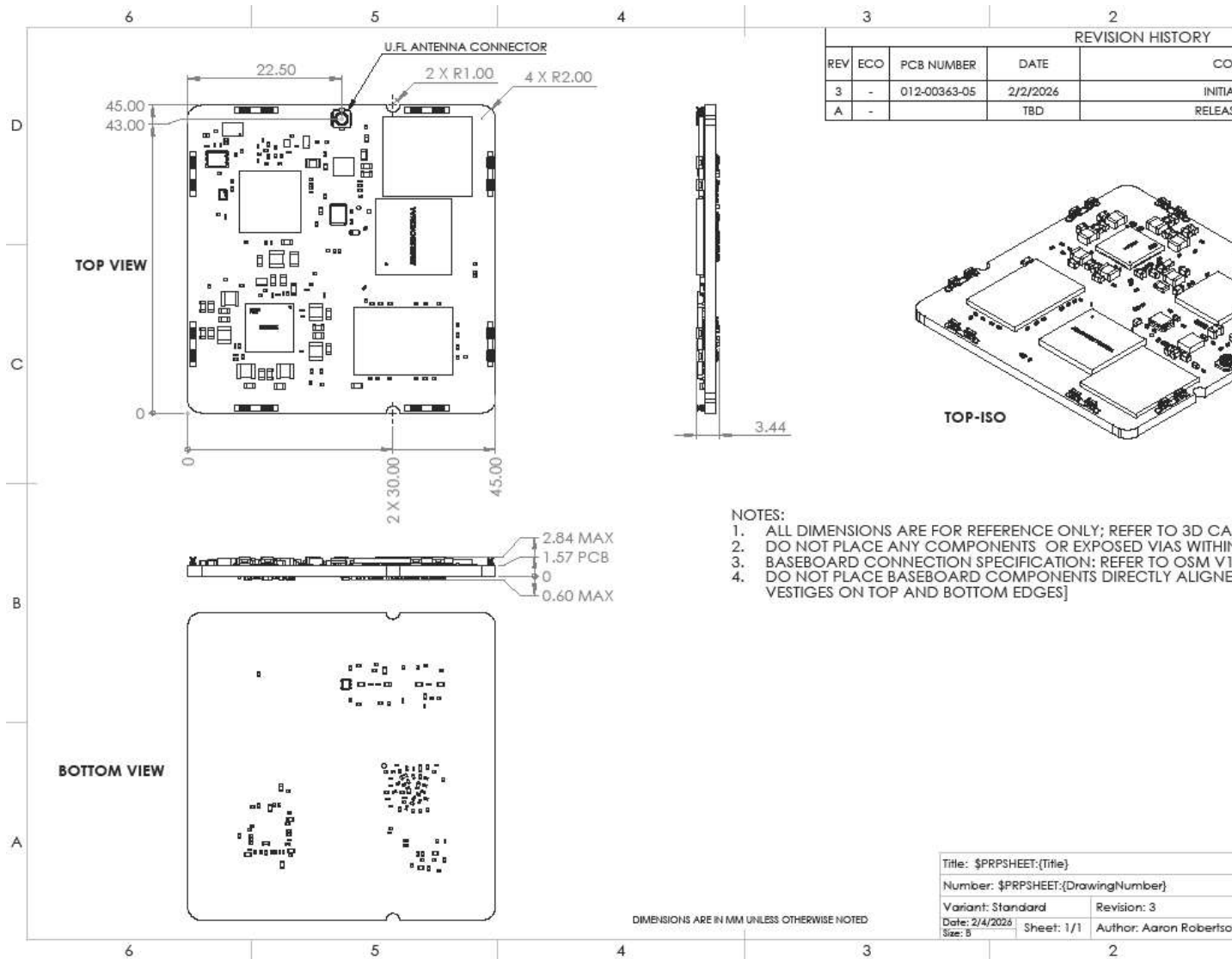


Figure 2 OSM-L Mechanical Drawing



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7.3 Soldering - Generic Reflow Profile

The profile should be similar to the graph below. Solder paste supplier requirements should be considered. All carrier PCB's should be profiled, with special care taken for carrier PCB's thicker than 1.6mm.

Updated RTS Profile: 70s TAL & 1.75°C/sec Cooling

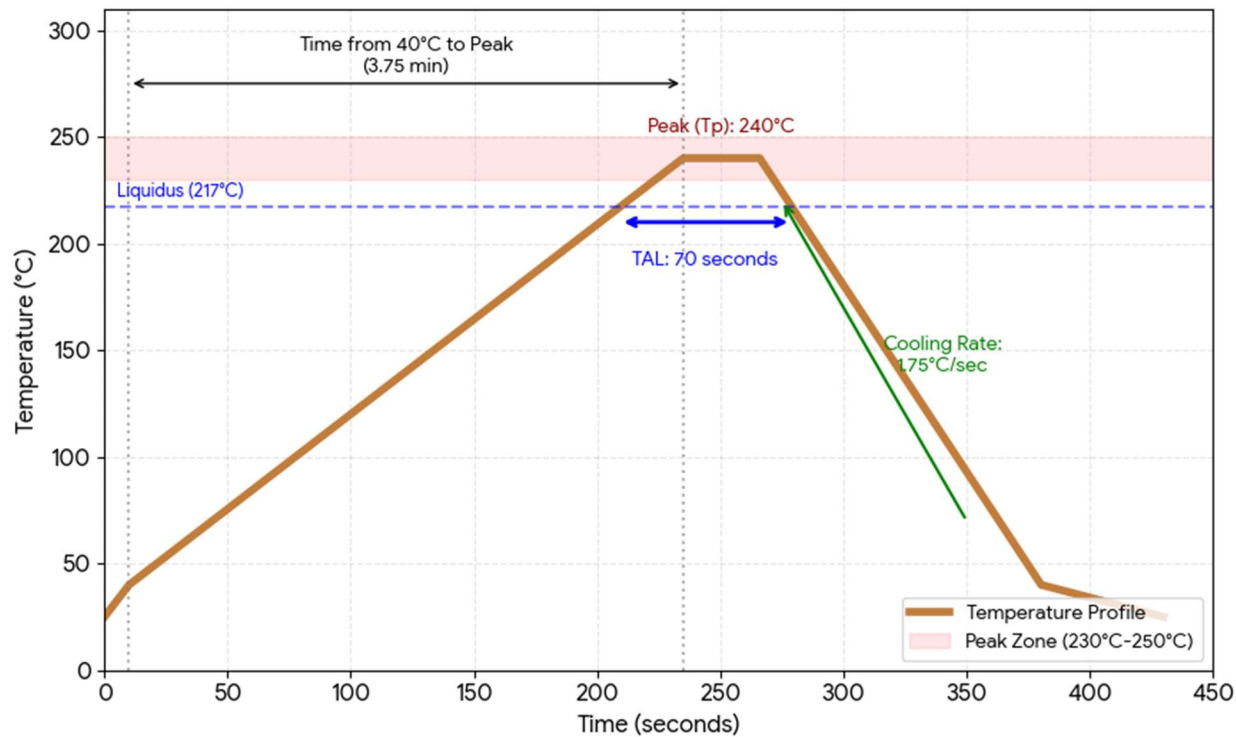


Figure 3 Reflow Profile Graph

Profile Feature	General Profile (IPC/JEDEC)	No Clean Flux (Recommended Starting Point)
Ramp Up Rate	<3°C	1-3°C/second
Time Above Liquidus (TAL)	30-90 seconds	30-90 seconds