

QFN Style Solder-Down Computer On Module

- 29mm square
- 2.6mm total height
- QS family pin-compatible
- Solder-down version
- QFN type lead style
 - 1mm pitch
 - 108 pads
 - Thermal pad
- Visual solder joint inspection possible after soldering
- Single-sided assembly
- 3.3V power supply



Key Features

- STM32MP255 Dual ARM® Cortex®-A35, 1.5 GHz
ARM® Cortex®-M33, 400 MHz
Vivante® NPU, 1.35 TOPS
- RAM 1 GB LPDDR4
- ROM 4 GB eMMC
- Grade Industrial
- Temperature -40°C to 85°C
- Display support
 - LVDS Display Interface
 - 3D GPU: OpenGL® ES 3.1 - Vulkan 1.1, OpenCL™ 1.2, OpenVX™ 1.1, Up to 149 Mtriangle/s, 900 Mpixel/s
 - VPU: H264/VP8 up to FHD (1920×1080)@60 fps
- Connectivity
 - 2x USB 2.0 + PCIe or 1x USB 2.0 + 1x USB 3.0
 - 2x Gb Ethernet, RGMII
 - 1x eMMC/SD
 - 3x CAN-FD
 - 3x UART, 3x I²C, 2x SPI, PWM, SAI
 - Up to 60x 3.3V General Purpose I/O
 - MIPI-CSI (2-lane)

OS Support

- Linux

**Dual
Cortex®-A35
STM32MP2**



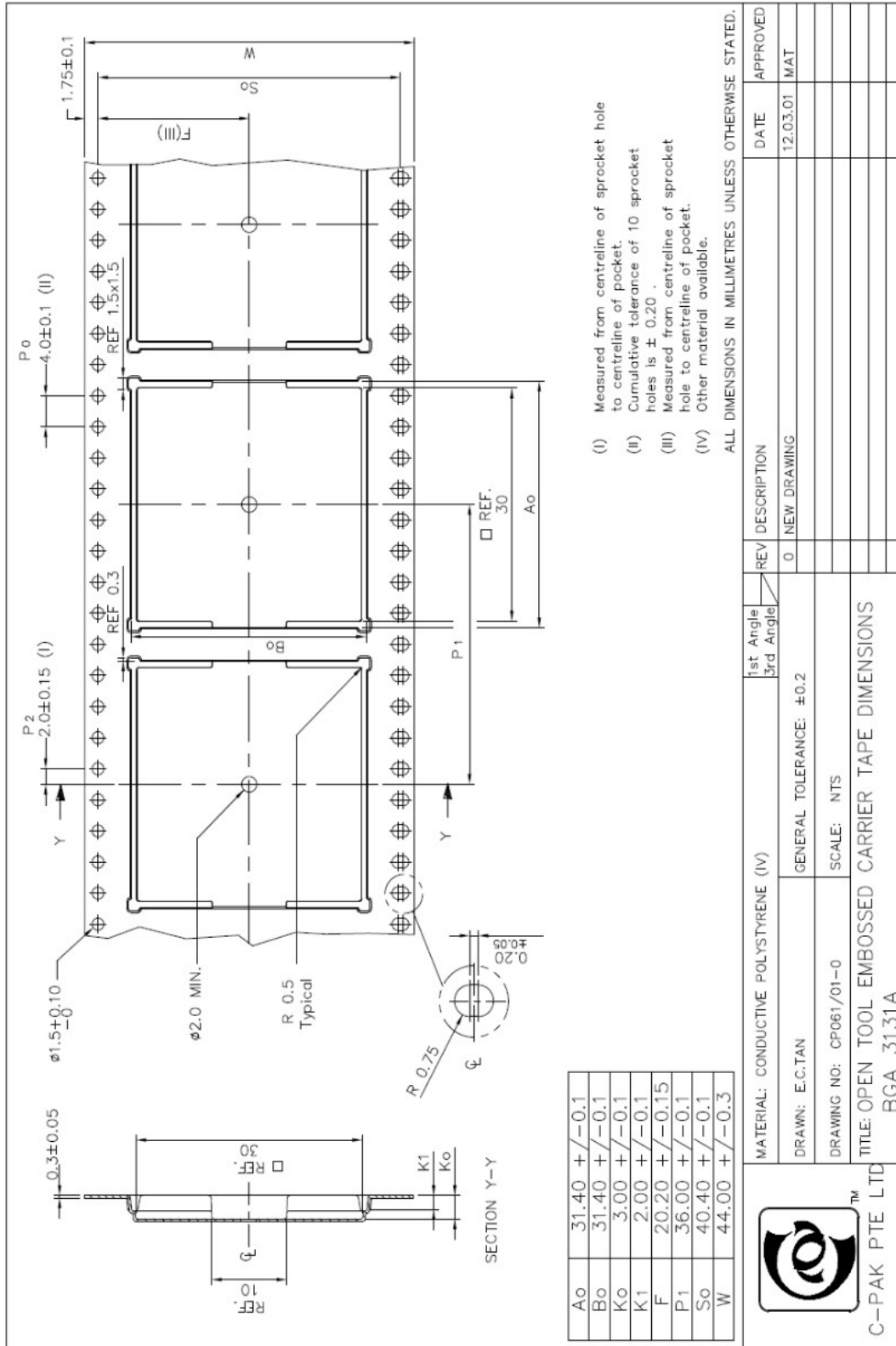
STM32MP255F

System	Dual Cortex-A35 @ 1.2GHz / up to 1.5GHz	Multimedia / AI	
Power Supply Regulators	Core 1 @ 1.5GHz L1 32kB I / 32kB D	Core 2 @ 1.5GHz L1 32kB I / 32kB D	3D GPU: OpenGL ES3.1 / Vulkan 1.1 / OpenCL 1.2
Crystal & Internal oscillators	NEON SIMD MPE	NEON SIMD MPE	AI / NN HW Acceleration: up to 1.35 TOPS
Cyclic Redundancy Check (CRC)	512kB L2 cache		1080p60 H.264, VP8 Video Decoder / Encoder
Watchdogs (I & W)	TrustZone		24b RGB Disp. 1080p @ 60fps
96-bit unique ID			LVDS Display 8 lanes with PHY
Up to 176 GPIOs			DSI Display 4 lanes with PHY
			Camera I/F MIPI CSI-2, 2 lanes
			Lite-ISP (Camera Pipeline)
			Camera I/F 16-bit Parallel
Security	Cortex-M33 @ 400MHz	Connectivity	
RIF: Isolation and safe sharing of system resources	16 kB I-Cache	16 kB D-Cache	1Gbps ETH/TSN port
Octal SPI OTF Decryption	FPU / MPU / NVIC	TrustZone	1Gbps ETH/TSN port
DRAM OTF Encryption/Dec.	DDR4/LPDDR4 32b @ 1.2GHz		3x CAN-FD / TTCAN
DES, TDES, AES-256 with SCA	DDR3(L) 32b @ 1066MHz		3x SDIO3.0 / SD 3 / eMMC 5.1
SHA-256/512, SHA-3, HMAC	Shared RAM 640kB including 128kB Retention RAM		16-bit SLC NAND, 8-bit-ECC
PKA ECC/RSA with SCA	Backup RAM 8kB / Boot ROM 128kB / OTP fuse 12kb		USB2.0 Host HS + HS PHY
16x Tamper pins	Control		2x Octal SPI, 8x SPI
T°, V, F and 32KHz detection	3x 16-bit motor control PWM synchronized AC timer		USB Type-C connector support
Secure RTC	10x 16-bit timer	5x 16-bit LP timer	5x UART, 4x USART
Analog true RNG	4x 32-bit timer		4x I ² C, 4x I ³ C, 3x I ³ S
			Audio
			SPDIF Rx 4 inputs
			4x SAI
			MDF 8 channels / 8 filters
			Analog
			3x 12-bit ADC 5 MSPS
			Temperature sensor

QS93 | QSMP-23 | QSMP-25 | Differentiating Features

	QS93 i.MX 9352	QSMP-23 STM32MP235	QSMP-25 STM32MP255
Primary Arm [®] Core	2x Cortex [®] -A55 1.5 GHz	2x Cortex [®] -A35 1.2 GHz	2x Cortex [®] -A35 1.5 GHz
Secondary Arm [®] Core	Cortex-M33 250 MHz	Cortex-M33 400 MHz	Cortex-M33 400 MHz
RAM	1GB LPDDR4	1GB LPDDR4	1GB LPDDR4
ROM	4 GB eMMC	4 GB eMMC	4 GB eMMC
GPU	2D GFX	66 MTrg/s 400 MPix/s 12.8 GFlops	133 MTrg/s 800 MPix/s 25.6 GFlops
AI/ML/DSP	0.5 TOPS	0.6 TOPS	1.2 TOPS
VPU	-	Decode	De-/Encode
Connectivity	USB 2.0	USB 2.0	USB 2.0, USB 3.0 or PCIe
QS Size	100 pins 27mm square	100 pins 27mm square	108 pins 29mm square
Grade / Temperature	Industrial -40°C to 85°C	Industrial -40°C to 85°C	Industrial -40°C to 85°C

Packaging



PINOUT (STM32MP2 pads named PA, PB, etc. can be used as GPIO ports)							
IN	QSCOM STANDARD	MP2 PAD	Alternate Function 0-3	Alternate Function 4-7	Alternate Function 8-11	Alternate Function 12-15	Remarks Additional functions
1st SPI							
1	SPIA_NSS	PD5	TRACED1 SPI4_NSS HDP4 SAI1_D4	SAI1_FS_B - - -	TIM1_CH3N TIM4_CH2 OCTOSPIM_P1_IO1 -	- DCMI/PSSI/DCMIPP_D13 - EVENTOUT	
2	SPIA_MISO	PD4	DEBUG_TRACED0 SPI4_MISO HDP_HDP3 SAI1_D3	SAI1_SD_B - - -	TIM1_CH4N TIM4_CH1 OCTOSPIM_P1_IO0 -	- DCMIPP_D14/PSSI_D14 - EVENTOUT	
3	SPIA_MOSI	PD6	TRACED2 SPI4_MOSI HDP5 -	SAI1_SCK_B MDF1_SDI2 - -	TIM1_CH2N TIM4_CH3 OCTOSPIM_P1_IO2 -	DCMI/PSSI/DCMIPP_D12 - EVENTOUT	
4	SPIA_SCK	PD7	TRACED3 SPI4_SCK SPI1_RDY -	SAI1_MCLK_B MDF1_CK12 - -	TIM1_CH1N TIM4_CH4 OCTOSPIM_P1_IO3 -	- DCMI/PSSI/DCMIPP_D11 - EVENTOUT	
I2C							
5	I2CA_SCL	PB5	- - I2S2_MCK UART4_DE/UART4_RTS	SAI4_SD_B MDF1_CK14 - -	TIM20_CH1 I2C2_SCL OCTOSPIM_P2_IO5 -	FMC_D8/FMC_DA8 I3C2_SCL SDMMC3_D123DIR EVENTOUT	
6	I2CA_SDA	PB4	- - SPI2_RDY UART4_CTS	SAI4_FS_B MDF1_SDI4 TIM14_CH1 -	TIM20_CH2 I2C2_SDA OCTOSPIM_P2_IO4 -	- I3C2_SDA - EVENTOUT	
7	INTA	PD15	- - SPI1_RDY -	DSIHOST_TE I2C5_SDA FDCAN1_TX -	TIM1_BKIN2 TIM5_ETR I2C7_SCL FMC_D3/FMC_DA3	SDMMC3_CKIN DCMIPP_D0/DCMI_D0/PSSI_D0 - EVENTOUT	
8	I2CB_SCL	PG6	TRACED4 HDP4 SPI5_SCK SPI1_SCK/I2S1_CK	- - - TIM2_CH4	- I2C6_SCL - -	- LCD_R6 DCMI/PSSI/DCMIPP_DE EVENTOUT	
9	I2CB_SDA	PG5	TRACED3 HDP3 - USART6_RTS	- - - TIM2_CH3	- I2C6_SDA - -	- LCD_R5 DCMI/PSSI/DCMIPP_PCLK EVENTOUT	
10	INTB	PD14	- - I2S1_MCK -	- - - FDCAN1_RX	TIM11_CH1 - I2C7_SDA FMC_D4/FMC_DA4	SDMMC3_D3 DCMIPP_D1/PSSI_D1 - EVENTOUT	
CAN							
11	CANA_RX	PB11	- - I2S3_MCK -	- - USART1_CTS/USART1_NSS FDCAN1_RX	TIM20_BKIN2 TIM12_CH2 OCTOSPIM_P2_NCLK OCTOSPIM_P2_NCS2	FMC_AD14/FMC_D14 OCTOSPIM_P1_NCS2 - EVENTOUT	
12	CANA_TX	PB9	- - SPI3_RDY -	- - USART1_RTS FDCAN1_TX	TIM20_BKIN TIM10_CH1 OCTOSPIM_P2_DQS OCTOSPIM_P2_NCS2	FMC_D13/FMC_DA13 - - EVENTOUT	
13	CANB_RX	PI10	- - SAI1_SCK_A SPI1_SCK/I2S1_CK SPDIFRX1_IN0	- - FDCAN2_RX MDF1_CCK0 -	- - - TIM4_CH1 SDVSEL1 - -	FMC_AD12/FMC_D12 DSI_TE - EVENTOUT	
14	CANB_TX	PI9	- - SPI7_MOSI SPI2_MOSI/I2S2_SDO	- - FDCAN2_TX - UART9_CTS	TIM16_BKIN SDVSEL2 FMC_NWAIT -	- LCD_B0 - EVENTOUT	
SAI							
15	SAI_TX	PD1	- - HDP_HDP1 I2S1_SDI/SPI1_MISO SAI1_CK2	- - SAI4_SD_A UART7_DE/UART7_RTS TIM15_CH1	TIM1_BKIN FDCAN3_RX OCTOSPIM_P1_NCLK OCTOSPIM_P1_NCS2	OCTOSPIM_P2_NCS2 DCMIPP_HSYNC/PSSI_DE - EVENTOUT	
16	SAI_RX	PI3	- - - LPTIM1_IN2	- - SAI4_SD_B - USART1_CTS	TIM8_CH2 - - -	- LTDC_B6 DCMIPP_D14/PSSI_D14 EVENTOUT	
17	SAI_SCK	PD2	- - HDP_HDP2 I2S1_WS/SPI1_NSS SAI1_CK1	- - SAI4_SCK_A UART7_CTS TIM15_BKIN	TIM1_ETR FDCAN3_TX OCTOSPIM_P1_DQS OCTOSPIM_P1_NCS2	- DCMIPP_VSYNC/PSSI_RDY - EVENTOUT	

IN	QSCOM STANDARD	MP2 PAD	Alternate Function 0-3	Alternate Function 4-7	Alternate Function 8-11	Alternate Function 12-15	Remarks Additional functions
18	SAI_FS	PD0	DEBUG_TRACECLK HDP_HDP0 SPI7_RDY SAI1_D2	- SAI4_FS_A UART7_RX TIM15_CH2	- - OCTOSPIM_P1_CLK -	- DCMIPP_PIXCLK/PSSI_PDCK - EVENTOUT	
ETHERNET 1							
19	ENET_RST	PB2	- - I2S2_SDO/SPI2_MOSI	- MDF1_CK13 TIM17_BKIN TIM16_BKIN	- TIM20_CH2N - OCTOSPIM_P2_IO2	- - -	
20	ENET_CK125	PH9	- - SPI6_NSS	- SAI3_MCLK_A - USART6_RX TIM15_CH1N	- - ETH1_CLK125 ETH1_RX_ER	- - EVENTOUT	ADC3_INP4
21	ENET_INT	PF5	- - SPI6_SCK	- SAI3_MCLK_A - USART6_TX TIM4_CH3	- ETH1_MDIO ETH1_CLK ETH2_PHY_INTN ETH1_PHY_INTN	- - LTDC_B6 -	
22	ENET_MDIO	PA10	- - SPI4_MISO	- SAI2_SD_B - USART2_RX LPTIM5_IN1	- TIM2_CH2 - ETH1_MDIO -	- LTDC_R6 DCMIPP_D15/PSSI_D15 ETH3_RXD1	
23	ENET_MDC	PF4	- RTC_OUT2 SPI6_NSS	- SAI3_SCK_A - USART6_RX TIM4_CH4	- ETH1_MDC ETH2_CLK ETH2_PPS_OUT ETH1_PPS_OUT	- - LTDC_B7 -	
24	ENET_RXC	PA14	- SPI8_NSS LPTIM2_CH2	- SAI4_FS_B MDF1_CCK1 -	- - ETH1_RX_CLK/REF_CLK -	- - - EVENTOUT	
25	ENET_RX_CTL	PA11	- SPI8_SCK LPTIM2_CH1	- SAI4_SD_B MDF1_SDI4 -	- - ETH1_RXDV/RXCTL/CRSDV -	- - - EVENTOUT	
26	ENET_RXD0	PF1	- SPI8_MISO LPTIM2_IN2	- SAI4_SCK_B MDF1_CK14 USART2_CK	- - ETH1_RXD0 -	- - - EVENTOUT	
27	ENET_RXD1	PC2	- SPI8_MOSI LPTIM2_IN1	- SAI4_MCLK_B MDF1_SDI3 USART2_RTS	- - ETH1_RXD1 -	- - - EVENTOUT	
28	ENET_RXD2	PH12	- SPI3_NSS/I2S3_WS SPI6_MISO	- - -	- TIM10_CH1 - ETH1_RXD2 -	- - - EVENTOUT	
29	ENET_RXD3	PH13	- SPI3_SCK/I2S3_CK SPI6_MOSI	- - TIM15_BKIN	- TIM11_CH1 - ETH1_RXD3 -	- - - EVENTOUT	
30	ENET_TX_CTL	PA13	- SPI8_RDY I2S3_MCK LPTIM2_ETR	- MDF1_CK13 USART2_CTS/USART2_NSS	- I2C7_SMBA ETH1_TX_EN/TX_CTL -	- - EVENTOUT	
31	ENET_TXC	PC0	- LPTIM1_CH1 - SPI6_SCK	- SAI3_MCLK_B USART6_TX -	- DCMI/PSSI/DCMIPP_D0 ETH2_RX_CLK/REF_CLK ETH1_TX_CLK	- ETH1_GTX_CLK LCD_G7 - EVENTOUT	
32	ENET_TXD3	PH11	- - SPI6_MISO	- SAI3_FS_A - TIM15_CH2	- ETH2_MDIO ETH1_TXD3 -	- - - EVENTOUT	
33	ENET_TXD2	PH10	- SPI1_SCK/I2S1_CK SPI6_MOSI	- SAI3_SCK_A - TIM15_CH1	- ETH2_MDC ETH1_TXD2 -	- - - EVENTOUT	ADC3_INP8, ADC3_INN4
34	ENET_TXD1	PC1	- - SPI3_MOSI/I2S3_SDO	- - USART2_TX	- I2C7_SCL ETH1_TXD1 -	- - - EVENTOUT	
35	ENET_TXD0	PA15	- - SPI3_MISO/I2S3_SDI	- - USART2_RX	- I2C7_SDA ETH1_TXD0 -	- - - EVENTOUT	
SD							
36	SD_CD	PA4	- - -	- - USART2_TX FDCAN2_TX	- TIM2_CH1 - LTDC_R1 -	- - ETH1_PTP_AUX_TS ETH3_PPS_OUT	

IN	QSCOM STANDARD	MP2 PAD	Alternate Function 0-3	Alternate Function 4-7	Alternate Function 8-11	Alternate Function 12-15	Remarks Additional functions
37	SD_D1	PE5	TRACED1 LPTIM2_IN2 SPI1_NSS/I2S1_WS SPI3_NSS/I2S3_WS	SAI1_FS_B - USART3_RTS FDCAN1_RX	- - SDMMC1_D1 -	- - - EVENTOUT	
38	SD_D0	PE4	TRACED0 LPTIM2_IN1 SPI1_MOSI/I2S1_SDO SPI3_MISO/I2S3_SDI	SAI1_SD_B - USART3_CTS/USART3_NSS FDCAN1_TX	- - SDMMC1_D0 -	- - - EVENTOUT	
39	SD_CLK	PE3	TRACECLK - SPI1_RDY SPI3_SCK/I2S3_CK	SAI1_MCLK_B - USART3_TX -	TIM11_CH1 - SDMMC1_CK -	- - - EVENTOUT	
40	SD_CMD	PE2	- LPTIM2_ETR SPI1_MISO/I2S1_SDI SPI3_MOSI/I2S3_SDO	SAI1_SCK_B - - -	TIM10_CH1 - SDMMC1_CMD -	- - - EVENTOUT	
41	SD_D3	PE1	TRACED3 LPTIM2_CH2 I2S1_MCK I2S3_MCK	- - USART3_RX -	- - SDMMC1_D3 -	- - - EVENTOUT	
42	SD_D2	PE0	TRACED2 LPTIM2_CH1 SPI1_SCK/I2S1_CK SPI3_RDY	- - USART3_CK -	- - SDMMC1_D2 -	- - - EVENTOUT	

USB

43	USBA_VBUS	UCPD1_CC2					
44	USBA_DN	USBH_HS_DM					
45	USBA_DP	USBH_HS_DP					
46	USBB_VBUS	UCPD1_CC1					
47	USBB_DN	USB3DR_DM					
48	USBB_DP	USB3DR_DP					

POWER SUPPLY & RESET

49	VIN	3.3V power supply input					
50							
51	NRST	Open drain reset to reset of external devices, or to reset the device. Connected to STM32MP2 NRST and PCA9450 POR_B, 10K-PU					
52	BOOT_MODE	Connected to STM32MP2 BOOT1, 10K-PU. BOOT[0,2,3]=L					H: Boot from eMMC L: Boot from USB

MISC

53		PB15	- LPTIM1_IN2 SPI5_SCK UART8_DE/UART8_RTS	SAI2_SD_B UART5_RX - TIM3_CH2	TIM5_CH1 - ETH1_PPS_OUT -	FMC_A18 LTDC_R4 DCMIPP_D8/PSSI_D8 EVENTOUT	ADC1_INP15, ADC3_INP5
54		PF3	- - - UART8_RX	SAI2_SCK_B MDF1_CCK0 - TIM3_CH4	TIM8_BKIN2 ETH1_CLK ETH2_PPS_OUT -	FMC_A20 LTDC_R6 DCMIPP_HSYNC/PSSI_DE EVENTOUT	ADC1_INP16, ADC1_INN15
55		PG3	- LPTIM1_ETR SPI5_MOSI UART8_TX	SAI2_FS_B - - TIM3_CH3	TIM8_ETR ETH2_CLK ETH2_PHY_INTN -	FMC_A19 LTDC_R5 DCMIPP_PIXCLK/PSSI_PDCK EVENTOUT	WKUP6, ADC1_INP3, ADC2_INP3, ADC3_INP3, TAMP_IN7
56		PG2	- RTC_REFIN I2S3_MCK I3C3_SDA	SAI2_FS_A - USART3_CK -	TIM5_CH3 I2C3_SDA ETH2_MII_TX_CLK ETH2_RGMII_CLK125	FMC_CLK LTDC_HSYNC - EVENTOUT	WKUP5, ADC1_INP2, ADC2_INP2

MIPI-CSI

57	CSI1_D1_P	CSI_D1P					
58	CSI1_D1_N	CSI_D1N					
59	CSI1_D0_P	CSI_D0P					
60	CSI1_D0_N	CSI_D0N					
61	CSI1_CLK_P	CSI_CKP					
62	CSI1_CLK_N	CSI_CKN					

IN	QSCOM STANDARD	MP2 PAD	Alternate Function 0-3	Alternate Function 4-7	Alternate Function 8-11	Alternate Function 12-15	Remarks Additional functions
85	DSI_DP0 LVDS_TX0P	LVDS_D0P					
86	DSI_DN0 LVDS_TX0N	LVDS_D0N					
87	DSI_CKP LVDS_CLKP	LVDS_D4P					
88	DSI_CKN LVDS_CLKN	LVDS_D4N					
UART							
89	UARTA_RXD	PB6	- I2S2_SDI/SPI2_MISO UART4_RX	SAI4_SCK_B - -	TIM20_CH1N - OCTOSPIM_P2_IO6 -	FMC_D9/FMC_DA9 - SDMMC3_D0DIR EVENTOUT	
90	UARTA_TXD	PB7	- I2S3_CK/SPI3_SCK UART4_TX	SAI4_MCLK_B - -	TIM20_ETR TIM12_CH1 OCTOSPIM_P2_IO7 -	FMC_D10/FMC_DA10 - SDMMC3_CDIRE EVENTOUT	
91	UARTB_RXD	PI7	- - -	- - USART3_RX TIM2_CH1	- - - TIM3_CH2	- - - LTDC_HSYNC EVENTOUT	
92	UARTB_TXD	PI6	- RCC_MCO_1 - -	- - USART3_TX TIM2_ETR	- - - TIM3_CH1	- - - LTDC_VSYNC EVENTOUT	WKUP4
93	UARTC_RXD	PG10	- DEBUG_TRACED8 HDP_HDP0 - -	- - UART5_RX -	- - - TIM8_CH4N	- - - LTDC_G4 DCMIPP_D4/PSSI_D4 EVENTOUT	
94	UARTC_TXD	PG9	- DEBUG_TRACED7 - -	- - UART5_TX -	- - - TIM5_CH4	- - - LTDC_G3 DCMIPP_D3/PSSI_D3 EVENTOUT	
95	UARTC_CTS	PG1	- LPTIM1_IN1 I2S3_MCK I3C3_SCL	SAI2_SD_A UART5_CTS USART3_CTS	TIM5_CH4 I2C3_SCL ETH2_MII_RX_ER ETH2_RXD3	FMC_NBL0 LTDC_VSYNC DCMIPP_D11/PSSI_D11 EVENTOUT	CTS/RTS input signal WKUP3, TAMP_IN4 ADC1_INP6, ADC1_INN2, ADC2_INP6, ADC2_INN2,
96	UARTC_RTS	PG8	- DEBUG_TRACED6 HDP_HDP6 SPI5_RDY SPI1_RDY	USART6_CK UART5_DE/ UART5_RTS UART9_TX -	TIM5_CH3 - - -	- - - LTDC_G2 DCMIPP_D2/PSSI_D2 EVENTOUT	RTS/CTS output signal
2nd SPI							
97	SPIB_NSS	PA8	- LPTIM2_CH2 SPI7_NSS	SAI1_FS_B - USART1_CK	USART2_RX I2C5_SCL -	LTDC_B2 DCMIPP_D4/DCMI_D4/PSSI_D4 -	
98	SPIB_MISO	PD12	- SPI7_MISO I2S2_SDI/SPI2_MISO SPDIFRX_IN2	UART8_DE/UART8_RTS - -	TIM4_ETR SDMMC3_CMD FMC_D6/FMC_DA6	FMC_D1/FMC_DA1 - -	
99	SPIB_MOSI	PG11	- DEBUG_TRACED9 HDP_HDP1 SPI7_MOSI	- - -	TIM8_CH4 - -	- - LTDC_G5 DCMIPP_D5/PSSI_D5	
100	SPIB_SCK	PB13	- - SPI7_SCK	FDCAN1_TX SAI1_SD_B UART8_RX -	- - - SDMMC3_CK FMC_D5/FMC_DA5	FMC_D0/FMC_DA0 - -	
USB3/PCIe							
25A		PCIE_CLKOUTN					
26A		PCIE_CLKOUTP					
50A		PB8	- I2S3_SDO/SPI3_MOSI -	PCIE_CLKREQN - USART1_TX TIM17_CH1	TIM20_CH4 - OCTOSPIM_P2_NCS1 -	FMC_D12/FMC_DA12 - - EVENTOUT	
51A		VBAT					
75A		COMBOPHY_TX1P					
76A		COMBOPHY_TX1N					
100A		COMBOPHY_RX1P					
1A		COMBOPHY_RX1N					

Pins used for manufacturing and debugging – leave unconnected

PIN	(SPM32MP2 PAD NAME)	PIN	(SPM32MP2 PAD NAME)	PIN	(SPM32MP2 PAD NAME)
C1	JTAG_TDI (JTDI)			C3	JTAG_TCK (JTCK_SWCLK)
		B2	JTAG_TDO (JTDO_TRACESWO)		
A1	JTAG_TRST_B (NJTRST)			A3	JTAG_TMS (JTMS_SWDIO)

Onboard peripherals wiring

USED FOR	MP2 PAD	Alternate Function 0-3	Alternate Function 4-7	Alternate Function 8-11	Alternate Function 12-14	Remarks
eMMC	CMD	PE15 - SPI7_MOSI -	SAI1_SCK_A MDF1_SDI6 - TIM15_CH1N	TIM1_CH1N - FMC_NOE	SDMMC2_CMD - -	10K-PU
	CLK	PE14 - SPI7_NSS -	SAI1_MCLK_A MDF1_CK16 - TIM15_BKIN	TIM1_BKIN - FMC_NWE	SDMMC2_CK - -	10K-PU
	DAT0	PE13 - SPI7_MISO -	SAI1_SD_A - TIM15_CH1	TIM1_CH2N - FMC_RNB	SDMMC2_D0 - -	10K-PU
	DAT1	PE11 - SPI7_SCK SAI4_D3 -	SAI1_FS_A - TIM15_CH2	TIM1_CH3N - FMC_A16/FMC_CLE	SDMMC2_D1 - -	
	DAT2	PE8 - SPI4_MOSI - SAI4_CK1 -	SAI4_MCLK_A MDF1_CK10 - TIM15_CH2	TIM1_CH1 - FMC_A17/FMC_ALE	SDMMC2_D2 - -	
	DAT3	PE12 - SPI4_NSS - SAI4_CK2 -	SAI4_SCK_A MDF1_SDI0 USART1_RTS -	TIM1_CH2 - FMC_NE2 FMC_NCE1	SDMMC2_D3 - -	
	DAT4	PE10 - SPI4_SCK - SAI4_D1 -	SAI4_SD_A USART1_CTS -	TIM1_CH3 - FMC_NE3 FMC_NCE2	SDMMC2_D4 SDMMC2_CKIN -	
	DAT5	PE9 - SPI4_MISO - SAI4_D2 -	SAI4_FS_A USART1_CK -	TIM1_CH4 - FMC_D0/FMC_DA0	SDMMC2_D5 SDMMC2_CDIR -	
	DAT6	PE6 - SPI4_RDY - USART1_TX -	SPDIFRX_IN2 USART1_TX -	TIM1_ETR - FMC_D1/FMC_DA1	SDMMC2_D6 SDMMC2_D0DIR -	
	DAT7	PE7 - SAI4_D4 -	SPDIFRX_IN3 USART1_RX -	TIM1_CH4N - TIM14_CH1 FMC_D2/FMC_DA2	SDMMC2_D7 SDMMC2_D123DIR -	
PMIC PCA9450A	SDA	PI1 DEBUG_TRACED15 HDP_HDP7 SPI7_NSS -	MDF1_SDI6 - -	TIM8_CH3N I2C1_SDA I3C1_SDA -	LTDC_B4 DCMIPP_D8/PSSI_D8	1K-PU
	SCL	PG13 DEBUG_TRACED11 HDP_HDP3 SPI7_SCK -	MDF1_CK16 - -	TIM8_CH2N I2C1_SCL I3C1_SCL -	LTDC_G7 DCMIPP_D7/PSSI_D7	10K-PU
	IRQ_B	PD11 DEBUG_TRACED7 I2S1_CK/SPI1_SCK SAI1_MCLK_A -	UART4_TX MDF1_CK10 I2C4_SCL -	TIM1_CH1 - OCTOSPIM_P1_IO7 SDMMC1_D4	SDMMC1_CKIN DCMIPP_D7/DCMI_D7/PSSI_D7 -	10K-PU
	POR_B	NRST				10K-PU
	PMIC_ON_REQ	PWR_ON				
	PMIC_STBY_REQ	PWR_LP				
	WDOG_B	PD8 DEBUG_TRACED4 SPI4_RDY I2S1_MCK SAI1_FS_A -	UART4_CTS MDF1_SDI1 - -	TIM1_CH4 TIM4_ETR OCTOSPIM_P1_IO4 SDMMC1_D7	SDMMC1_D123DIR DCMIPP_D10/PSSI_D10 -	10K-PU

Electrical characteristics

Absolute maximum ratings

Parameter	Symbol	Min	Max	Remarks
Power supply	VIN	0V	3.7V	VDD=VIN
Input voltage on USB DN/DP pins	USBA_DN/DP USBB_DN/DP	0V	5.5V	
Input voltage on any other pins		0V	3.6V	
Storage temperature range	T _{STORAGE}	-40°C	85°C	

Operating ranges

Parameter	Symbol	Min	Max	Remarks
Power supply	VIN	3.1V	3.6V	
I/O input low level voltage	V _{IL}	-	0.3 x VIN	
I/O input high level voltage	V _{IH}	0.7 x VIN	-	
I/O output voltage	Refer to STM32MP2 datasheet, chap. Output voltage levels.			VDD=VIN=3.3V typ.
Operating temperature range	T _{AMB}	-40°C	85°C	
Processor junction temperature	T _J	-40°C	125°C	

Power supply currents

Parameter	Symbol	VIN	Current	Remarks
At U-Boot prompt	I _{UBOOT}	3.3V	245mA	All pins left unconnected
At Linux prompt	I _{LINUX}	3.3V	245mA	
Sleep	I _{SLEEP}	3.3V	24mA	
Maximum calculated	I _{MAX}	3.3V	1200mA	Calculated on max. IDD's @ 80% onboard power supply efficiency.
Power supply rating	I _{SUPP}	3.3V	1.8A	With margin for sizing the power supply