



ConnectCore MP25

System-on-module

Hardware Reference Manual

Revision history—90002593

Revision	Date	Description
1P	August 2024	Initial draft.
2P	April 2025	Added data for pads F23 and J22; added revision information to E-tec socket part number; split 802.11ga data into separate table entries; removed MCS9 from 802.11ac; replaced Data rate (Mbps) tables with a single table with all GI values; removed channel 14 and 40/80MHz channels from RF channels table and added 6 Gz data; removed 2.4 GHz and 5 GHz data tables; replaced Transmit power table.
3P	May 2025	Added power consumption values; added comment to pad AA7.
4P	March 2026	Added assembly instructions; added SDIO note to Bootstrap topic; added comment to pads C3, D3, E3, E4, C5, C6, D5, D6, D7, C7, D8, C8, D9, C9, D4, C4; modified signal name for pads AC13 and C10; modified comment for pad AA7; added Power-off power consumption use case; changed the minimum VSYS input voltage from 3.7 V to 4.1 V.

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- Firmware version
- Operating system/browser (if applicable)
- Logs (from time of reported issue)
- Trace (if possible)
- Description of issue
- Steps to reproduce

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About the ConnectCore MP25

The Digi ConnectCore® MP25 System-on-Module (SOM) platform is a highly integrated, cost-effective, connected, secure embedded solution, built on the STM32MP2 MPU family. It integrates memory, power management, pre-certified wireless connectivity and advanced Digi TrustFence device security with a complete, open-source Linux software platform based on the Yocto Project.

Features and functionality

The ConnectCore MP25 system-on-module is based on the STM32MP2 processor from STMicroelectronics. This processor offers a number of interfaces, most of them multiplexed and not available simultaneously. The module has the following features:

- STM32MP2 ARM Cortex-A35:
 - Cortex-A35 operating at up to 1.5 GHz.
 - 32 KB L1 instruction cache.
 - 32 KB L1 data cache.
 - 512 KB unified level 2 cache.
 - Arm® NEON™ and Arm® TrustZone®
- Up to 1 GB, 16-bit DDR4 memory.
- Up to 8 GB, 8-bit eMMC flash memory.
- STPMIC25A Power Management IC (PMIC):
 - x7 adjustable buck SMPS converter.
 - x6 adjustable general purpose LDOs.
 - x1 DDR3L/DDR4/lpDDR/general purpose LDO.
 - x1 USB PHY LDO.
 - x1 reference voltage VREFDDR for DDR memory LDO.
- IEEE 802.11 a/b/g/n/ac/ax WLAN interface.
- Bluetooth version 5.4.
- Debug interfaces:
 - Arm® CoreSight™ trace and debug: SWD and JTAG interfaces
- STM32MP2 interfaces:
 - x8 I2C.
 - x3 I3C.
 - x4 UART.
 - x5 USART.
 - x1 low-power UART
 - x8 SPI, three I2Ss full-duplex master/slave.
 - x4 SAI.

- x1 SPDIF Rx.
- x3 SDMMC.
- x1 USB 2.0 Host with embedded Hi-Speed PHY.
- x1 USB 2.0/3.0 dual-role data with both Hi-Speed and SuperSpeed PHYs.
- x1 USB Type-C Power Delivery control with two CC lines PHY.
- x1 PCI Express with embedded 5 Gbits/s PHY (shared with USB 3.0 SuperSpeed).
- x3 FDCAN.
- x2 Gigabit Ethernet.
- x1 Gigabit Ethernet Switch connected to ETH1.
- x1 Flexible memory control (FMC) interface.
- x2 Octo-SPI Flash memory interface.
- x2 camera interfaces for CMOS sensors, one with ISP.
- x1 MIPI CSI camera interface.
- x1 LCD-TFT display controller.
- x1 MIPI DSI display interface.
- x1 LVDS display interface.

Safety instructions

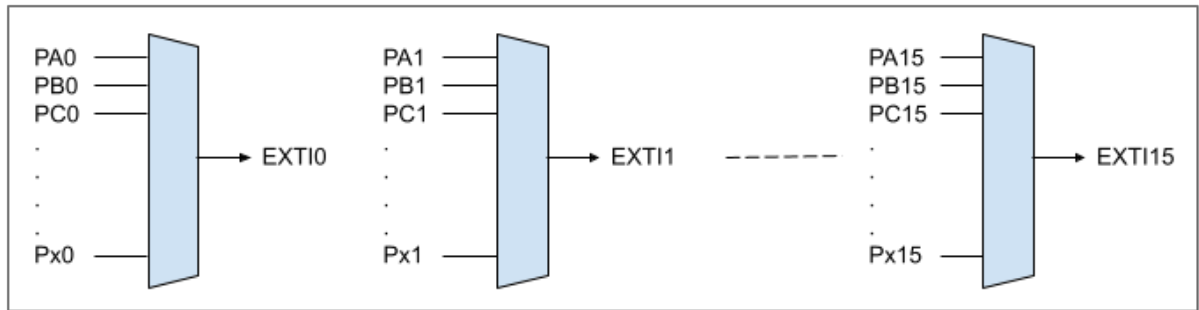
- The ConnectCore MP25 module cannot be guaranteed operation due to the radio link and so should not be used for interlocks in safety critical devices such as machines or automotive applications.
- The ConnectCore MP25 module has not been approved for use in (this list is not exhaustive):
 - nuclear applications
 - explosive or flammable atmospheres
- There are no user serviceable components inside the ConnectCore MP25 module. Do not modify the ConnectCore MP25 in any way. Modifications may exclude the module from any warranty and can cause the ConnectCore MP25 to operate outside of regulatory compliance for a given country, leading to the possible illegal operation of the radio.
- Use industry standard ESD protection when handling the ConnectCore MP25 module.
- Take care while handling to avoid electrical damage to the PCB and components.
- Do not expose ConnectCore MP25 module to water or moisture.
- Use this product with the antennas specified in the ConnectCore MP25 module user guides.

Limitations and notices

GPIO

The ConnectCore MP25 SoC has a limitation in the number of GPIOs that can be used as interrupt lines. The Extended Interrupt and Event Controllers (EXTI1 and EXTI2) can only handle up to 16 GPIO lines working as interrupt (EXTI0..EXTI15). The multiplexers work as shown in the following figure:

EXTI mux GPIO selection



This means that if pin 1 of two given ports (for instance, PB1 and PD1) have been selected to work as interrupt, pin 1 of any other GPIO port cannot simultaneously work as interrupt.

When designing your hardware, avoid using the same GPIO numbers as interrupt lines of three or more peripherals.

Latch-up

Latch-up is a condition that can cause excessive current draw and result in excessive heating of the microprocessor or its power supplies. This excessive heating can permanently damage the microprocessor and/or its supporting components.

The microprocessor used on this module, like all CMOS devices, can be driven into a latch-up condition if any I/O pin is driven outside of its associated power rail. Care must be taken to:



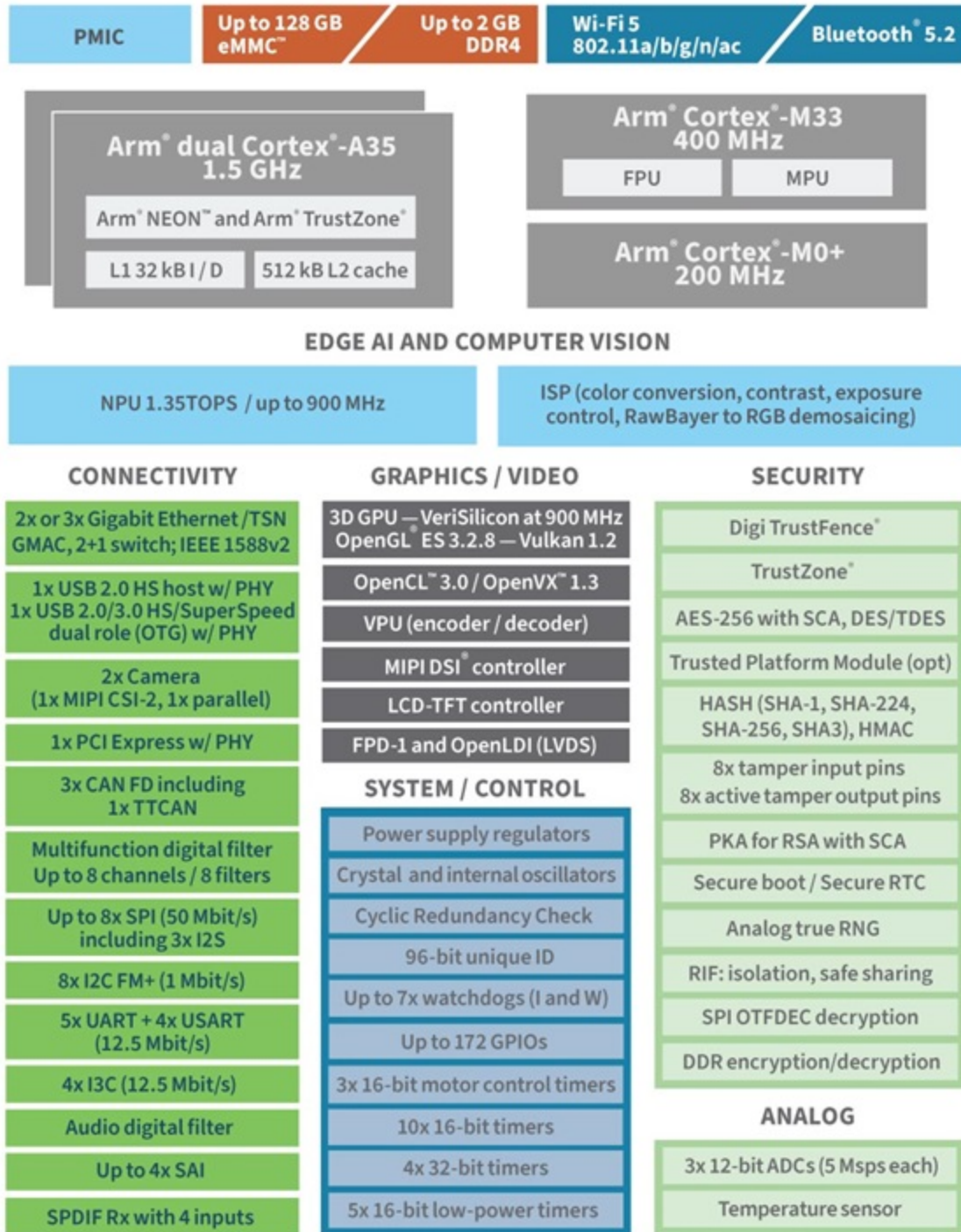
- Never drive an I/O pin beyond its positive rail or below ground.
- Never drive an I/O pin from an external power source during the power-on or reset sequences.
- Never hot-swap the module or interrupt its ground connection to external circuitry.

When you use an external supply on the carrier board supporting the ConnectCore MP25 module, make sure this supply is NOT back driving STM32MP2 I/Os while their power rails are not enabled. For example, this can happen when an external 3.3V supply is available on the carrier board and this supply powers components driven by STM32MP2 I/Os. In this case, Digi recommends you enable the external power supply after internal 3.3V is enabled, or add the necessary protection circuitry to avoid back voltage (leakage).

Block diagrams

The figures below show block diagrams of the ConnectCore MP25 module and of the STMicroelectronics STM32MP2 application processor.

ConnectCore MP25 module



STMicroelectronics STM32MP2 application processor

Power interfaces

System-on-module power architecture

The ConnectCore MP25 requires two primary power supply inputs: VSYS and VSYS2, which are the input power supplies to the on-module ST STPMIC25A power management IC (PMIC) that generates all required supply voltages for the module as well as the external interfaces.

The following table summarizes the PMIC regulators and switches on the ConnectCore MP25 SOM:

PMIC regulator	SOM power rail name	Input power supply	Internally used	Externally available
BUCK1	-	VSYS2	YES	NO
BUCK2	-	VSYS2	YES	NO
BUCK3	-	VSYS2	YES	NO
BUCK4	VDDIO	VSYS	YES	YES
BUCK5	1V8	VSYS2	YES	YES
BUCK6	-	VSYS2	YES	NO
BUCK7	3V3	VSYS	YES	YES
LDO1	-	VSYS	YES	NO
LDO2	-	VSYS	YES	NO
LDO3	-	-	YES	NO
LDO4	-	VSYS	YES	NO
LDO5	-	VSYS	YES	NO
LDO6	LDO6	VSYS	NO	YES
LDO7	LDO7	VSYS	NO	YES
LDO8	LDO8	VSYS	YES	YES

In addition to the input power supplies of the PMIC, there are two additional power domains of the SOM that can be set externally.

- VCC_LICELL (VBAT pad of the MCU), which powers the low power V_{SW} domain of the CPU that supplies:
 - RTC
 - TAMP
 - LSI
 - LSE
 - IWDG5
 - Backup registers
 - LPSRAM1

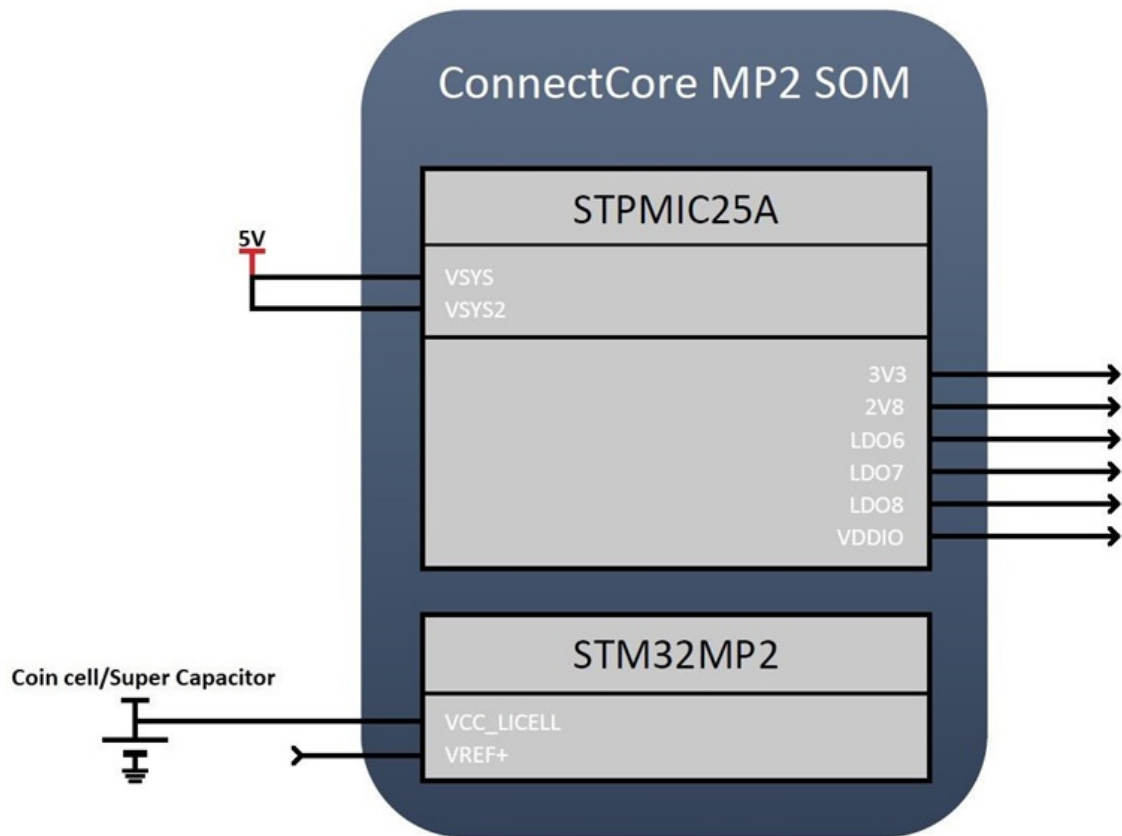
- Retention RAM
- Backup SRAM

V_{SW} is supplied from VCC_LICELL only when there is no other supply on the system (low-power applications). Voltage on VCC_LICELL can be provided externally by a coin-cell/supercap. If low-power application is not required, then VBAT must be tied to VDDIO.

- VREF+, which is an external voltage reference for the ADC when the internal reference buffer is disabled. This supply can also be used as an output voltage reference for external components when using the internal voltage buffer.

Reference power diagram

The following diagram represents the power architecture of the ConnectCore MP25 module in a typical application:



Electrical characteristics

Input power rails

The following table lists the electrical specifications of all input power rails for the ConnectCore MP25:

Device	SOM power rail	Input voltage (V)		
		Minimum	Typical	Maximum
PMIC	VSYS	4.1	-	5.5
	VSYS2	2.8	-	5.5
CPU	VCC_LICELL	2.3	-	3.6
	VREF+	1.1	-	1.8

Output power rails

The following table lists the electrical specifications of all output power rails for the ConnectCore MP25:

SOM power rail	Used internally in the SOM	Output voltage			Accuracy (%)		Continuous output current (mA) ¹	Turn-on time (us)		Turn-off time (ms)
		Min	Typ	Max	Min	Max		Typ	Max	Max
3V3	YES	-	3.3	-	-4	4	2500	235	400	1.5
1V8	YES	-	1.8	-	-4	4	500	235	400	1.5
LDO6	NO	0.9	-	4.0	-2	2	400	160	-	1.5
LDO7	NO	0.9	-	4.0	-2	2	400	160	-	1.5
LDO8	YES	-	1.8	-	-2	2	150	160	-	1.5
VDDIO	YES	-	3.3	-	-4	4	500	235	400	1.5

Note Some of the electrical characteristics may depend on the configuration and operation mode of the different regulators. For a complete description of the electrical characteristics of the different output power rails (PMIC regulators), see the STM32MP2 datasheet.

¹ The maximum output current involves both external and internal circuitry. For those regulators that are used internally in the SOM, the current available outside will be lower.

Bootstrap

The ConnectCore MP25 system-on-module can be configured to boot from different devices and interfaces as determined by the boot ROM. The configuration of the booting process of the CPU is done through the BOOT pin and OTP bytes.

BOOT3	BOOT2	BOOT1	BOOT0	A35 master	M33 master
0	0	0	0	UART/USB	UART/USB
0	0	0	1	SD-Card	-
0	0	1	0	eMMC	-
0	0	1	1	Development	Development
0	1	0	0	Serial NOR	-
0	1	1	1	-	SD-Card
1	0	0	0	-	eMMC
1	0	1	1	-	Serial NOR
1	1	0	0	Development	Development
1	1	1	1	UART/USB	UART/USB

Note If the configured boot device is not valid, the system falls back to USB downloader.

Note SDMMC1 and SDMMC2 are the only bootable SDIO interfaces. These interfaces are already used inside the SOM to connect the Wireless chip and the eMMC. This means that wireless variants of the SOM cannot boot from external SDIO device. Only non-wireless variants can access SDMMC1.



CAUTION! Digi highly recommends you include a recover mechanism on every design using the ConnectCore MP25 module.

To boot from a UART port, it is mandatory to access one of the UARTs defined by ST for this purpose on the specific pads:

Signal	Pin			
	USART2	USART6	UART8	UART9
Rx	PA8	PF4	PF3	PB14
Tx	PA4	PF5	PG3	PD13

For further information, refer to STMicroelectronics documentation.

Wireless interfaces

The ConnectCore MP25 System-on-Module combines a wireless local area network (WLAN) and Bluetooth dual solution to support IEEE802.11 a/b/g/n/ac/ax WLAN standards and Bluetooth 5.4, enabling seamless integration of WLAN/Bluetooth and Low Energy technology. Digi also offers a non-wireless variant of the ConnectCore MP25 module.

The following sections include specifications for the wireless interfaces available on the ConnectCore MP25 module.

WLAN IEEE 802.11a/b/g/n/ac/ax

The following sections specify the performance of the WLAN IEEE 802.11a/b/g/n/ac/ax interface on the ConnectCore MP25 module.

Modulation and data rates

The following tables list modulation values for the ConnectCore MP25 module, which supports the following WLAN standards:

Mode	Modulation & coding	Rate
802.11b	DBPSK	1 Mbps
	DQPSK	2 Mbps
	CCK	5.5 Mbps
	CCK	11 Mbps

Mode	Modulation & coding	Rate
802.11g	BPSK-1/2	6 Mbps
	BPSK-3/4	9 Mbps
	QPSK-1/2	12 Mbps
	QPSK-3/4	18 Mbps
	16QAM-1/2	24 Mbps
	16QAM-3/4	36 Mbps
	64QAM-2/3	48 Mbps
	64QAM-3/4	54 Mbps
802.11a	BPSK-1/2	6 Mbps
	BPSK-3/4	9 Mbps
	QPSK-1/2	12 Mbps
	QPSK-3/4	18 Mbps
	16QAM-1/2	24 Mbps
	16QAM-3/4	36 Mbps
	64QAM-2/3	48 Mbps
	64QAM-3/4	54 Mbps

Mode	Modulation & coding	Rate
802.11n	BPSK-1/2	MCS0
	QPSK-1/2	MCS1
	QPSK-3/4	MCS2
	16QAM-1/2	MCS3
	16QAM-3/4	MCS4
	64QAM-2/3	MCS5
	64QAM-3/4	MCS6
	64QAM-5/6	MCS7
802.11ac	BPSK-1/2	MCS0
	QPSK-1/2	MCS1
	QPSK-3/4	MCS2
	16QAM-1/2	MCS3
	16QAM-3/4	MCS4
	64QAM-2/3	MCS5
	64QAM-3/4	MCS6
	64QAM-5/6	MCS7
	256QAM-3/4	MCS8

Mode	Modulation & coding	Rate
802.11ax	BPSK-1/2	MCS0
	QPSK-1/2	MCS1
	QPSK-3/4	MCS2
	16QAM-1/2	MCS3
	16QAM-3/4	MCS4
	64QAM-2/3	MCS5
	64QAM-3/4	MCS6
	64QAM-5/6	MCS7
	256QAM-3/4	MCS8
	256QAM-5/6	MCS9
	1024QAM-3/4	MCS10
	1024QAM-5/6	MCS11

Data rate (Mbps)

Data rate (Mbps)	802.11b		802.11g / 802.11a			802.11n				802.11ac				802.11ax						
	1 Mbps	11 Mbps	6 Mbps	24 Mbps	54 Mbps	MCS0		MCS7		MCS0		MCS8		MCS0			MCS11			
						0.8 μs	0.4 μs	0.8 μs	0.4 μs	0.8 μs	0.4 μs	0.8 μs	0.4 μs	3.2 μs	1.6 μs	0.8 μs	3.2 μs	1.6 μs	0.8 μs	
Guard Interval																				
	1	11	6	24	54	6.5	7.2	65	72.2	6.5	7.2	78	86.7	7.3	8.1	8.6	121.9	135.4	143.4	

RF channels

The ConnectCore MP25 module supports the following frequency bands:

RF band	Ch. BW	Ch. spacing	Channel number (Center freq. MHz)
2.4 GHz	20 MHz	5 MHz	1(2412), 2(2417), 3(2422), 4(2427), 5(2432), 6(2437), 7(2442), 8(2447), 9(2452), 10(2457), 11(2462), 12(2467), 13(2472)
5 GHz	20 MHz	20 MHz	36(5180), 40(5200), 44(5220), 48(5240), 52(5260), 56(5280), 60(5300), 64(5320), 100(5500), 104(5520), 108(5540), 112(5560), 116(5580), 120(5600), 124(5620), 128(5640), 132(5660), 136(5680), 140(5700), 144(5720), 149(5745), 153(5765), 157(5785), 161(5805), 165(5825)
6 GHz	20 MHz	20 MHz	1(5955), 5(5975), 9(5995), 13(6015), 17(6035), 21(6055), 25(6075), 29(6095), 33(6115), 37(6135), 41(6155), 45(6175), 49(6195), 53(6215), 57(6235), 61(6255), 65(6275), 69(6295), 73(6315), 77(6335), 81(6355), 85(6375), 89(6395), 93(6415), 97(6435), 101(6455), 105(6475), 109(6495), 113(6515), 117(6535), 121(6555), 125(6575), 129(6595), 133(6615), 137(6635), 141(6655), 145(6675), 149(6695), 153(6715), 157(6735), 161(6755), 165(6775), 169(6795), 173(6815), 177(6835), 181(6855), 185(6875), 189(6895), 193(6915), 197(6935), 201(6955), 205(6975), 209(6995), 213(7015), 217(7035), 221(7055), 225(7075), 229(7095), 233(7115)

Note Dependent upon regulatory bodies.

Transmit power

The following table lists nominal transmit power values for the ConnectCore MP25 module based on Murata LBEE5HY2FY-922 specification.

RF band	Standard	Output power (dBm)
2.4 GHz	802.11b	20 (1 Mbps) - 19 (11 Mbps)
	802.11g	17 (6 Mbps) - 17 (54 Mbps)
	802.11n	17 (MCS0) - 16 (MCS7)
	802.11ax	17 (MCS0) - 14 (MCS11)
5 GHz	802.11a	16 (6 Mbps) - 16 (54 Mbps)
	802.11n	16 (MCS0) - 14 (MCS7)
	802.11ac	16 (MCS0) - 13 (MCS8)
	802.11ax	16 (MCS0) - 10 (MCS11)
6 GHz	802.11a	16 (6 Mbps) - 16 (24 Mbps)
	802.11ax	16 (MCS0) - 10 (MCS11)

Note Effective output power values are dependent upon configured regulatory domain.

Antenna ports

The ConnectCore MP25 module has one antenna port on the module via a dedicated U.FL connector. The antenna port supports WLAN and Bluetooth functionality.

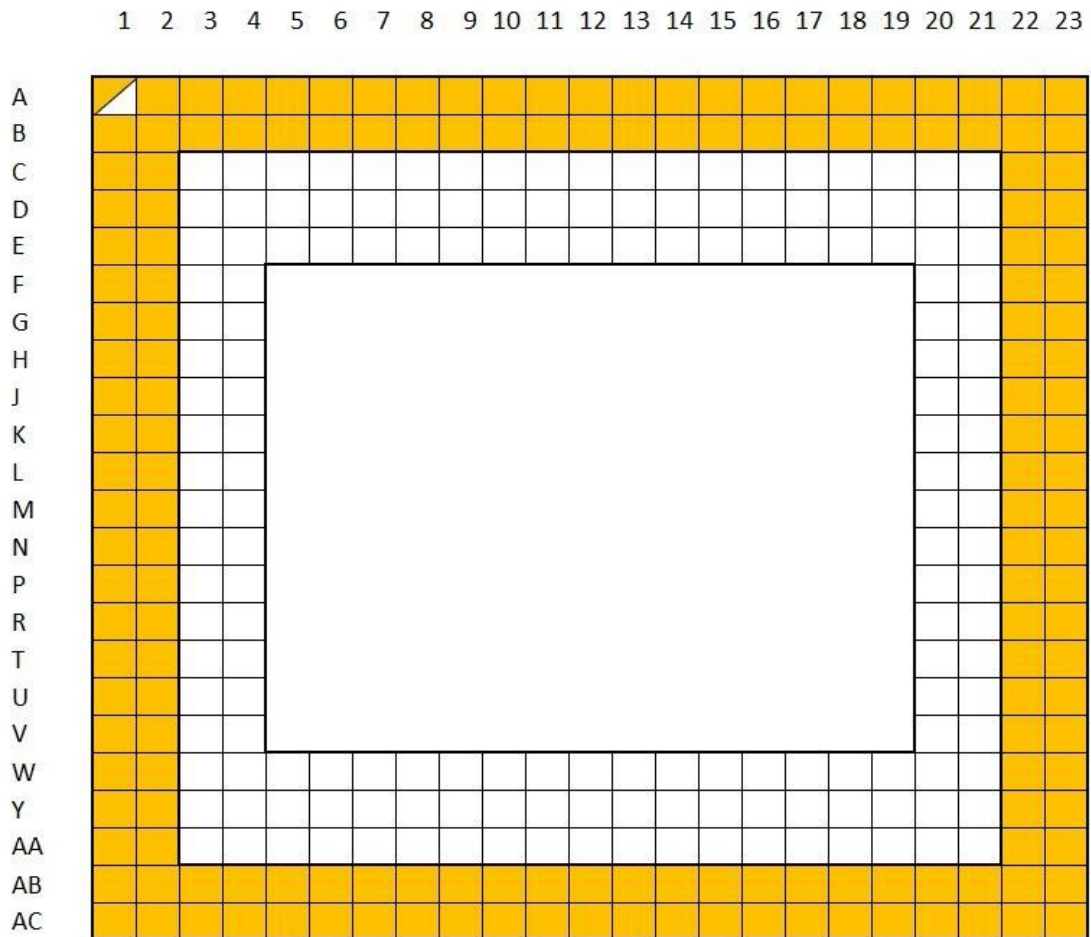
Bluetooth

The ConnectCore MP25 module supports both Bluetooth and Bluetooth Low Energy protocols:

- Bluetooth 5.4
- Integrated WLAN-Bluetooth coexistence

Module pinout

The ConnectCore MP25 module provides LGA 334 pins. The general layout can be found on the following diagram (view from top side):



Note Orange cells represent external ring pads, a group of pads that supports a subset of the SOM functionality. You can use these external pads to meet limited-functionality design requirements, simplifying the assembly process of the module.

External signals and pin multiplexing

The following tables provide the pinout information of the ConnectCore MP25 module. For additional information related to the signals listed in the table, refer to the STMicroelectronics STM32MP2 technical documentation.

Digi ConnectCore Smart IOmux tool

The Digi ConnectCore Smart IOmux tool can dramatically simplify pin configuration and resolution. You can enter the list of interfaces required by your project and use the Smart IOmux graphical interface to mock up configuration options, resulting in full pin assignment and device tree snippets that match your desired functionality. See the [Smart IOmux User Guide](#) for more information and download instructions.

Note See [Limitations and notices](#) for important information on designing your hardware.

Pad signals and multiplexing

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
A1	GND					
A2	RF_ANT_EXT					
A3	GND					
A4	LVDS1_D0_N	LVDS1_D0N				
A5	LVDS1_D0_P	LVDS1_D0P				
A6	GND					
A7	LVDS1_D1_N	LVDS1_D1N				
A8	LVDS1_D1_P	LVDS1_D1P				
A9	GND					
A10	LVDS1_D2_N	LVDS1_D2N				
A11	LVDS1_D2_P	LVDS1_D2P				
A12	USART2_TX	PA4	AF6: USART2_TX AF7: FDCAN2_TX AF8: TIM2_CH1 AF10: LCD_R1 AF13: ETH1_PTP_AUX_TS AF14: ETH3_PPS_OUT AF15: EVENTOUT		VDDIO	
A13	USART2_RX	PA8	AF1: LPTIM2_CH2 AF2: SPI7_NSS AF4: SAI1_FS_B AF6: USART1_CK		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF8: USART2_RX AF9: I2C5_SCL AF12: LCD_B2 AF13: DCM1_D4/PSSI_D4/DCMIPP_D4 AF15: EVENTOUT			
A14	I2C1_SCL	PG13	AF0: TRACED11 AF1: HDP3 AF2: SPI7_SCK AF5: MDF1_CK16 AF8: TIM8_CH2N AF9: I2C1_SCL AF10: I3C1_SCL AF13: LCD_G7 AF14: DCM1_D7/PSSI_D7/DCMIPP_D7 AF15: EVENTOUT		VDDIO	
A15	DSI_D0_N	DSI_D0N				
A16	DSI_D0_P	DSI_D0P				
A17	GND					
A18	DSI_D1_N	DSI_D1N				
A19	DSI_D1_P	DSI_D1P				
A20	GND					
A21	DSI_CK_N	DSI_CKN				
A22	DSI_CK_P	DSI_CKP				
A23	GND					
B1	ETH1_TXD3	PH11	AF3: SPI6_MISO AF4: SAI3_FS_A AF7: TIM15_CH2		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF9: ETH2_MDIO AF10: ETH1_MII_TXD3/ETH1_RGMII_TXD3 AF15: EVENTOUT			
B2	GND					
B3	3V3					
B4	GND					
B5	LVDS1_CLK_N	LVDS1_D4N				
B6	LVDS1_CLK_P	LVDS1_D4P				
B7	GND					
B8	LVDS1_D3_N	LVDS1_D3N				
B9	LVDS1_D3_P	LVDS1_D3P				
B10	PB0	PB0	AF2: SPI2_SCK/I2S2_CK AF6: USART1_CK AF7: TIM16_CH1 AF8: TIM20_CH4N AF10: OCTOSPIM_P2_IO0 AF15: EVENTOUT		VDDIO	
B11	GND					
B12	PB6	PB6	AF2: SPI2_MISO/I2S2_SDI AF3: UART4_RX AF4: SAI4_SCK_B AF8: TIM20_CH1N AF10: OCTOSPIM_P2_IO6 AF12: FMC_AD9/FMC_D9 AF14: SDMMC3_D0DIR AF15: EVENTOUT		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
B13	1V8					
B14	I2C1_SDA	PI1	AF0: TRACED15 AF1: HDP7 AF2: SPI7_NSS AF5: MDF1_SDI6 AF8: TIM8_CH3N AF9: I2C1_SDA AF10: I3C1_SDA AF13: LCD_B4 AF14: DCM1_D8/PSSI_D8/DCMIPP_D8 AF15: EVENTOUT		VDDIO	
B15	GND					
B16	DSI_D2_N	DSI_D2N				
B17	DSI_D2_P	DSI_D2P				
B18	GND					
B19	DSI_D3_N	DSI_D3N				
B20	DSI_D3_P	DSI_D3P				
B21	PB3	PB3	AF2: SPI2_NSS/I2S2_WS AF5: MDF1_SDI3 AF8: TIM20_CH3 AF10: OCTOSPIM_P2_IO3 AF12: FMC_NCE3 AF15: EVENTOUT		VDDIO	
B22	PF12	PF12	AF0: TRACECLK AF2: SPI5_MISO AF3: SPI1_MISO/I2S1_SDI AF6: UART9_RTS/UART9_DE AF8: TIM5_CH1 AF13: LCD_CLK		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF14: DCM1_D0/PSSI_D0/DCMIPP_D0 AF15: EVENTOUT			
B23	USB1_D_P	USB3DR_DP				
C1	ETH1_TXD2	PH10	AF2: SPI1_SCK/I2S1_CK AF3: SPI6_MOSI AF4: SAI3_SCK_A AF7: TIM15_CH1 AF9: ETH2_MDC AF10: ETH1_MII_TXD2/ETH1_RGMII_TXD2 AF15: EVENTOUT	ADC3_INP8 ADC3_INN4	VDDIO	
C2	ETH1_GTX_CLK	PC0	AF1: LPTIM1_CH1 AF3: SPI6_SCK AF4: SAI3_MCLK_B AF5: USART6_TX AF9: DCM1_D0/PSSI_D0/DCMIPP_D0 AF10: ETH2_MII_RX_CLK/ETH2_RGMII_RX_CLK/ETH2_RMII_REF_CLK AF11: ETH1_MII_TX_CLK AF12: ETH1_RGMII_GTX_CLK AF13: LCD_G7 AF15: EVENTOUT		VDDIO	
C3	PCM_OUT					Signal connected to the Wireless MAC.
C4	WL_REG_EN/PI7	PI7	AF6: USART3_RX AF7: TIM2_CH1 AF8: TIM3_CH2 AF13: LCD_HSYNC		VDDIO	Signal only available in non-wireless variants.

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF15: EVENTOUT			
C5	USART1_TX	PG14	AF0: TRACED12 AF1: HDP4 AF2: SPI7_RDY AF5: MDF1_CK15 AF6: USART1_TX AF8: TIM8_BKIN2 AF13: LCD_B1 AF14: DCM1_D9/PSSI_D9/DCMIPP_D9 AF15: EVENTOUT		VDDIO	Signal only available in non-wireless variants.
C6	USART1_RX	PG15	AF0: TRACED13 AF1: HDP5 AF3: LPTIM1_CH2 AF5: MDF1_SDI5 AF6: USART1_RX AF8: TIM8_ETR AF13: LCD_B2 AF14: DCM1_D10/PSSI_D10/DCMIPP_D10 AF15: EVENTOUT		VDDIO	Signal only available in non-wireless variants.
C7	WLAN_SD1_CLK	PE3	AF0: TRACECLK AF2: SPI1_RDY AF3: SPI3_SCK/I2S3_CK AF4: SAI1_MCLK_B AF6: USART3_TX AF8: TIM11_CH1 AF10: SDMMC1_CK AF15: EVENTOUT		LDO8	Signal only available in non-wireless variants.
C8	WLAN_SD1_D1	PE5	AF0: TRACED1 AF1: LPTIM2_IN2 AF2: SPI1_NSS/I2S1_WS AF3: SPI3_NSS/I2S3_WS		LDO8	Signal only available in non-wireless variants.

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF4: SAI1_FS_B AF6: USART3_RTS/USART3_DE AF7: FDCAN1_RX AF10: SDMMC1_D1 AF15: EVENTOUT			
C9	WLAN_SD1_D3	PE1	AF0: TRACED3 AF1: LPTIM2_CH2 AF2: I2S1_MCK AF3: I2S3_MCK AF6: USART3_RX AF10: SDMMC1_D3 AF15: EVENTOUT		LDO8	Signal only available in non-wireless variants.
C10	LDO8					
C11	NC					
C12	NC					
C13	NC					
C14	NC					
C15	NC					
C16	NC					
C17	NC					
C18	NC					
C19	NC					
C20	NC					
C21	NC					

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
C22	NC					
C23	USB1_D_N	USB3DR_DM				
D1	ETH1_TXD1	PC1	AF2: SPI3_MOSI/I2S3_SDO AF6: USART2_TX AF9: I2C7_SCL AF10: ETH1_MII_TXD1/ETH1_RGMII_TXD1/ETH1_RMII_TXD1 AF15: EVENTOUT		VDDIO	
D2	GND					
D3	PCM_CLK					Signal connected to the Wireless MAC.
D4	BT_REG_EN/PZ5	PZ5	AF1: MCO1 AF2: LPTIM3_ETR AF3: SPI8_SCK AF5: ADF1_CCK0 AF6: LPUART1_RTS/LPUART1_DE AF7: LPTIM5_IN1 AF10: LPTIM4_CH2 AF15: EVENTOUT	TAMP_OUT8	VSW	Signal only available in non-wireless variants.
D5	USART1_RTS	PB9	AF1: SPI3_RDY AF6: USART1_RTS/USART1_DE AF7: FDCAN1_TX AF8: TIM20_BKIN AF9: TIM10_CH1 AF10: OCTOSPIM_P2_DQS AF11: OCTOSPIM_P2_NCS2 AF12: FMC_AD13/FMC_D13 AF15: EVENTOUT		VDDIO	Signal only available in non-wireless variants.

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
D6	USART1_CTS	PB11	AF1: I2S3_MCK AF6: USART1_CTS/USART1_NSS AF7: FDCAN1_RX AF8: TIM20_BKIN2 AF9: TIM12_CH2 AF10: OCTOSPIM_P2_NCLK AF11: OCTOSPIM_P2_NCS2 AF12: FMC_AD14/FMC_D14 AF13: OCTOSPIM_P1_NCS2 AF15: EVENTOUT		VDDIO	Signal only available in non-wireless variants.
D7	WLAN_SD1_CMD	PE2	AF1: LPTIM2_ETR AF2: SPI1_MISO/I2S1_SDI AF3: SPI3_MOSI/I2S3_SDO AF4: SAI1_SCK_B AF8: TIM10_CH1 AF10: SDMMC1_CMD AF15: EVENTOUT		LDO8	Signal only available in non-wireless variants.
D8	WLAN_SD1_D0	PE4	AF0: TRACED0 AF1: LPTIM2_IN1 AF2: SPI1_MOSI/I2S1_SDO AF3: SPI3_MISO/I2S3_SDI AF4: SAI1_SD_B AF6: USART3_CTS/USART3_NSS AF7: FDCAN1_TX AF10: SDCMMC1_D0 AF15: EVENTOUT		LDO8	Signal only available in non-wireless variants.
D9	WLAN_SD1_D2	PE0	AF0: TRACED2 AF1: LPTIM2_CH1 AF2: SPI1_SCK/I2S1_CK AF3: SPI3_RDY AF6: USART3_CK AF10: SDMMC1_D2 AF15: EVENTOUT		LDO8	Signal only available in non-wireless variants.

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
D10	WL_DEV_WAKE					
D11	NC					
D12	NC					
D13	NC					
D14	NC					
D15	NC					
D16	NC					
D17	NC					
D18	NC					
D19	NC					
D20	VDDIO					
D21	LDO6					
D22	NC					
D23	GND					
E1	ETH1_TXD0	PA15	AF2: SPI3_MISO/I2S3_SDI AF6: USART2_RX AF9: I2C7_SDA AF10: ETH1_MII_TXD0/ETH1_RGMII_TXD0/ETH1_RMII_TXD0 AF15: EVENTOUT		VDDIO	
E2	ETH1_TX_CTL/EN	PA13	AF1: SPI8_RDY AF2: I2S3_MCK AF3: LPTIM2_ETR AF5: MDF1_CK13		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF6: USART2_CTS/USART2_NSS AF9: I2C7_SMBA AF10: ETH1_MII_TX_EN/ETH1_RGMII_TX_CTL/ETH1_RMII_TX_EN AF15: EVENTOUT			
E3	PCM_SYNC					Signal connected to the Wireless MAC.
E4	PCM_IN					Signal connected to the Wireless MAC.
E5	WL_HOST_WAKE					
E6	BT_HOST_WAKE					
E7	BT_DEV_WAKE					
E8	GND					
E9	PCIE_CLKIN_N	PCIE_CLKINN				
E10	PCIE_CLKIN_P	PCIE_CLKINP				
E11	GND					
E12	PCIE_CLKOUT_N	PCIE_CLKOUTN				
E13	PCIE_CLKOUT_P	PCIE_CLKOUTP				
E14	GND					

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
E15	PCIE_TX1_N	COMBOPHY_TX1N				
E16	PCIE_TX1_P	COMBOPHY_TX1P				
E17	GND					
E18	PCIE_RX1_N	COMBOPHY_RX1N				
E19	PCIE_RX1_P	COMBOPHY_RX1P				
E20	GND					
E21	RESERVED					
E22	NC					
E23	NC					
F1	GND					
F2	ETH1_RX_CTL/DV	PA11	AF1: SPI8_SCK AF2: LPTIM2_CH1 AF4: SAI4_SD_B AF5: MDF1_SDI4 AF10: ETH1_MII_RX_DV/ETH1_RGMII_RX_CTL/ETH1_RMII_CRS_DV AF15: EVENTOUT		VDDIO	
F3	3V3					
F4	PH2	PH2	AF1: LPTIM2_CH1 AF2: SPI7_RDY AF3: SPDIFRX1_IN3 AF4: SAI1_SCK_B AF5: I3C3_SDA AF7: TIM16_CH1 AF8: I2C5_SDA AF9: I2C3_SDA AF14: ETH3_RGMII_GTX_CLK		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF15: EVENTOUT			
F20	TPM_SPI_CLK					
F21	NRSTC1MS					
F22	VCC_LICELL					
F23	NRST	NRST			VDDIO	Reset line of the module.
G1	ETH1_RXD0	PF1	AF1: SPI8_MISO AF2: LPTIM2_IN2 AF4: SAI4_SCK_B AF5: MDF1_CK14 AF6: USART2_CK AF10: ETH1_MII_RXD0/ETH1_RGMII_RXD0/ETH1_RMII_RXD0 AF15: EVENTOUT		VDDIO	
G2	ETH1_RX_CLK	PA14	AF1: SPI8_NSS AF2: LPTIM2_CH2 AF4: SAI4_FS_B AF5: MDF1_CCK1 AF10: ETH1_MII_RX_CLK/ETH1_RGMII_RX_CLK/ETH1_RMII_REF_CLK AF15: EVENTOUT		VDDIO	
G3	PB15	PB15	AF1: LPTIM1_IN2 AF2: SPI5_SCK AF3: UART8_RTS/UART8_DE AF4: SAI2_SD_B AF5: UART5_RX AF7: TIM3_CH2 AF8: TIM5_CH1 AF10: ETH1_PPS_OUT AF12: FMC_A18	ADC1_INP15 ADC3_INP5	VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF13: LCD_R4 AF14: DCM1_D8/PSSI_D8/DCMIPP_D8 AF15: EVENTOUT			
G4	GND					
G20	TPM_SPI_MISO					
G21	TPM_SPI_MOSI					
G22	BOOT0	BOOT0				
G23	BOOT1	BOOT1				
H1	ETH1_RXD1	PC2	AF1: SPI8_MOSI AF2: LPTIM2_IN1 AF4: SAI4_MCLK_B AF5: MDF1_SDI3 AF6: USART2_RTS/USART2_DE AF10: ETH1_MII_RXD1/ETH1_RGMII_RXD1/ETH1_RMII_RXD1 AF15: EVENTOUT		VDDIO	
H2	ETH1_CLK125	PH9	AF3: SPI6_NSS AF4: SAI3_MCLK_A AF6: USART6_RX AF7: TIM15_CH1N AF10: ETH1_RGMII_CLK125 AF11: ETH1_MII_RX_ER AF15: EVENTOUT	ADC3_INP4	VDDIO	
H3	GND					
H4	PA3	PA3	AF1: LPTIM2_ETR AF2: SPI7_MOSI AF5: MDF1_CK17 AF6: USART1_TX AF8: I3C1_SCL		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF9: I2C7_SMBA AF10: I2C1_SCL AF11: LCD_B1 AF13: DCM1_D2/PSSI_D2/DCMIPP_D2 AF14: ETH3_RGMII_TX_CTL/ETH3_RMII_TX_EN AF15: EVENTOUT			
H20	TPM_SPI_I2C					
H21	TPM_SPI_CS					
H22	BOOT2	BOOT2				
H23	BOOT3	BOOT3				
J1	ETH1_RXD2	PH12	AF2: SPI3_NSS/I2S3_WS AF3: SPI6_MISO AF8: TIM10_CH1 AF10: ETH1_MII_RXD2/ETH1_RGMII_RXD2 AF15: EVENTOUT		VDDIO	
J2	PA12	PA12	AF2: SPI6_MOSI AF4: SAI3_FS_A AF7: TIM4_CH1 AF8: I2C4_SCL AF9: I2C6_SCL AF10: ETH1_PHY_INTN AF15: EVENTOUT		VDDIO	
J3	PA6	PA6	AF3: SPI4_SCK AF4: SAI2_FS_B AF5: MDF1_SDI6 AF6: USART2_CK AF7: TIM13_CH1 AF8: TIM2_ETR		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF10: LCD_G4 AF12: FMC_NE1 AF13: DCMI_D12/PSSI_D12/DCMIPP_D12 AF14: ETH3_RGMII_TXD0/ETH3_RMII_TXD0 AF15: EVENTOUT			
J4	PA2	PA2	AF1: LPTIM2_IN1 AF2: SPI7_MISO AF5: MDF1_SDI7 AF6: USART1_RX AF8: I3C1_SDA AF10: I2C1_SDA AF11: LCD_B0 AF13: DCMI_D3/PSSI_D3/DCMIPP_D3 AF14: ETH3_RGMII_RX_CTL/ETH3_RMII_CRS_DV AF15: EVENTOUT		VDDIO	
J20	GND					
J21	GND					
J22	PMIC_PONKEY_N				VDDIO	Power ON key of the module.
J23	PWR_ON	PWR_ON				
K1	ETH1_RXD3	PH13	AF2: SPI3_SCK/I2S3_CK AF3: SPI6_MOSI AF7: TIM15_BKIN AF8: TIM11_CH1 AF10: ETH1_MII_RXD3/ETH1_RGMII_RXD3 AF15: EVENTOUT		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
K2	ETH1_MDIO	PF2	AF2: SPI3_RDY AF6: I2C4_SMBA AF8: TIM12_CH1 AF9: I2C2_SCL AF10: ETH1_MDIO AF11: ETH2_MII_COL AF12: FMC_NE4 AF13: I3C2_SCL AF15: EVENTOUT	ADC1_INP13 ADC1_INN11 ADC2_INP13 ADC2_INN11 ADC3_INP13 ADC3_INN11	VDDIO	
K3	PA7	PA7	AF2: AUDIOCLK AF3: SPI6_RDY AF4: PCIE_CLKREQN AF5: MDF1_CCK0 AF6: USART1_CTS/USART1_NSS AF7: TIM4_ETR AF8: I2C2_SMBA AF9: I2C6_SMBA AF10: LCD_B5 AF11: I2C3_SMBA AF12: I2C4_SMBA AF13: DCM1_D6/PSSI_D6/DCMIPP_D6 AF14: ETH3_RGMII_TXD1/ETH3_RMII_TXD1 AF15: EVENTOUT		VDDIO	
K4	GND					
K20	VSYS					
K21	VSYS					
K22	VSYS					
K23	VSYS					
L1	GND					

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
L2	ETH1_MDC	PF0	AF2: SPI3_SCK/I2S3_CK AF7: FDCAN2_RX AF8: TIM12_CH2 AF9: I2C2_SDA AF10: ETH1_MDC AF11: ETH2_MII_CRIS AF13: I3C2_SDA AF15: EVENTOUT	ADC1_INP11 ADC2_INP11 ADC3_INP11	VDDIO	
L3	PH6	PH6	AF1: LPTIM2_IN2 AF4: SAI1_MCLK_B AF5: I3C3_SCL AF7: TIM16_CH1N AF8: I2C5_SCL AF9: I2C3_SCL AF10: I2C1_SMBA AF14: ETH3_RGMII_TXD2 AF15: EVENTOUT		VDDIO	
L4	PA5	PA5	AF3: SPI4_MOSI AF4: SAI2_MCLK_B AF5: SAI2_SD_B AF6: USART2_RTS/USART2_DE AF7: FDCAN2_RX AF8: TIM2_CH4 AF10: LCD_G0 AF12: FMC_A0 AF13: DCM1_D13/PSSI_D13/DCMIPP_D13 AF14: ETH3_RGMII_RX_CLK/ETH3_RMII_REF_CLK AF15: EVENTOUT		VDDIO	
L20	VSYS2					
L21	VSYS2					

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
L22	VSYS2					
L23	VSYS2					
M1	ETH1_CLK	PF3	AF3: UART8_RX AF4: SAI2_SCK_B AF5: MDF1_CCK0 AF7: TIM3_CH4 AF8: TIM8_BKIN2 AF9: ETH1_CLK AF10: ETH2_PPS_OUT AF12: FMC_A20 AF13: LCD_R6 AF14: DCM1_HSYNC/PSSI_DE/DCMIPP_HSYNC AF15: EVENTOUT	ADC1_INP16 ADC1_INN15	VDDIO	
M2	ETH1_RST	PB2	AF2: SPI2_MOSI/I2S2_SDO AF5: MDF1_CK13 AF6: TIM17_BKIN AF7: TIM16_BKIN AF8: TIM20_CH2N AF10: OCTOSPIM_P2_IO2 AF15: EVENTOUT		VDDIO	
M3	PH3	PH3	AF2: SPI1_NSS/I2S1_WS AF6: UART7_RX AF7: TIM17_CH1N AF9: TIM5_CH3 AF10: I2C7_SCL AF14: ETH3_RGMII_TXD3 AF15: EVENTOUT		VDDIO	
M4	NC					
M20	NC					

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
M21	3V3					
M22	3V3					
M23	GND					
N1	3V3					
N2	NC					
N3	PA9	PA9	AF3: SPI4_NSS AF4: SAI2_SCK_B AF6: USART2_CTS/USART2_NSS AF7: LPTIM5_ETR AF8: TIM2_CH3 AF10: ETH1_MDC AF12: LCD_G7 AF13: PSSI_D14/DCMIPP_D14 AF14: ETH3_RGMII_RXD0/ETH3_RMII_RXD0 AF15: EVENTOUT		VDDIO	
N4	GND					
N20	NC					
N21	1V8					
N22	1V8					
N23	USB2_D_P	USBH_HS_DP				
P1	NC					
P2	GND					
P3	PA10	PA10	AF3: SPI4_MISO AF4: SAI2_SD_B AF6: USART2_RX		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF7: LPTIM5_IN1 AF8: TIM2_CH2 AF10: ETH1_MDIO AF12: LCD_R6 AF13: PSSI_D15/DCMIPP_D15 AF14: ETH3_RGMII_RXD1/ETH3_RMII_RXD1 AF15: EVENTOUT			
P4	NC					
P20	GND					
P21	NC					
P22	GND					
P23	USB2_D_N	USBH_HS_DM				
R1	NC					
R2	SAI4_MCLK_B	PI0	AF0: TRACED14 AF1: HDP6 AF3: LPTIM1_IN1 AF4: SAI4_MCLK_B AF6: USART1_CK AF8: TIM8_BKIN AF13: LCD_B3 AF14: DCM1_D11/PSSI_D11/DCMIPP_D11 AF15: EVENTOUT		VDDIO	
R3	PH7	PH7	AF2: SPI1_MOSI/I2S1_SDO AF4: UART4_TX AF6: UART7_RTS/UART7_DE AF7: TIM17_CH1 AF9: TIM5_CH4		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF10: I2C7_SDA AF14: ETH3_RGMII_RXD2 AF15: EVENTOUT			
R4	GND					
R20	NC					
R21	NC					
R22	PH5	PH5	AF4: SAI2_FS_A AF6: UART8_CTS AF7: TIM2_CH1 AF8: UART7_RX AF10: LCD_G1 AF11: USB3DR_VBUSEN AF12: USBH_HS_VBUSEN AF13: ETH2_PTP_AUX_TS AF15: EVENTOUT	WKUP2	VDDIO	
R23	PH4	PH4	AF6: UART7_TX AF7: TIM17_BKIN AF9: TIM5_CH2 AF10: LCD_R0 AF11: USB3DR_OVRCUR AF12: USBH_HS_OVRCUR AF13: ETH1_PTP_AUX_TS AF14: ETH3_PPS_OUT AF15: EVENTOUT	BOOTFAILN	VDDIO	
T1	GND					
T2	SAI4_SCK_B	PI2	AF3: LPTIM1_ETR AF4: SAI4_SCK_B AF6: USART1_RTS/USART1_DE AF8: TIM8_CH1 AF13: LCD_B5		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF14: DCMI_D13/PSSI_D13/DCMIPP_D13 AF15: EVENTOUT			
T3	PH8	PH8	AF2: SPI1_MISO/I2S1_SDI AF3: SPDIFRX1_IN3 AF4: UART4_RX AF6: UART7_CTS AF9: TIM5_CH1 AF10: I2C3_SMBA AF11: I2C5_SMBA AF14: ETH3_RGMII_RXD3 AF15: EVENTOUT		VDDIO	
T4	NC					
T20	NC					
T21	GND					
T22	NC					
T23	SPI3_MISO	PB10	AF1: SPI3_MISO/I2S3_SDI AF6: USART1_RX AF7: TIM17_CH1N AF10: OCTOSPIM_P2_CLK AF12: FMC_AD15/FMC_D15 AF15: EVENTOUT		VDDIO	
U1	SAI4_SD_A	PD1	AF1: HDP1 AF2: SPI1_MISO/I2S1_SDI AF3: SAI1_CK2 AF5: SAI4_SD_A AF6: UART7_RTS/UART7_DE AF7: TIM15_CH1 AF8: TIM1_BKIN AF9: FDCAN3_RX		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF10: OCTOSPIM_P1_NCLK AF11: OCTOSPIM_P1_NCS2 AF12: OCTOSPIM_P2_NCS2 AF13: DCM1_HSYNC/PSSI_DE/DCMIPP_HSYNC AF15: EVENTOUT			
U2	SAI4_SD_B	PI3	AF3: LPTIM1_IN2 AF4: SAI4_CD_B AF6: USART1_CTS/USART1_NSS AF8: TIM8_CH2 AF13: LCD_B6 AF14: PSSI_D14/DCMIPP_D14 AF15: EVENTOUT		VDDIO	
U3	GND					
U4	NC					
U20	NC					
U21	NC					
U22	SPI3_SS	PB1	AF1: SPI3_NSS/I2S3_WS AF7: TIM16_CH1N AF8: TIM20_CH3N AF10: OCTOSPIM_P2_IO1 AF12: FMC_NCE4 AF15: EVENTOUT		VDDIO	
U23	SPI3_SCK	PB7	AF1: SPI3_SCK/I2S3_CK AF3: UART4_TX AF4: SAI4_MCLK_B AF8: TIM20_ETR AF9: TIM12_CH1 AF10: OCTOSPIM_P2_IO7 AF12: FMC_AD10/FMC_D10		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF14: SDMMC3_CD AF15: EVENTOUT			
V1	USART6_RTS	PG5	AF0: TRACED3 AF1: HDP3 AF3: USART6_RTS/USART6_DE AF7: TIM2_CH3 AF9: I2C6_SDA AF13: LCD_R5 AF14: DCMI_PIXCLK/PSSI_PDCK/DCMIPP_PIXCLK AF15: EVENTOUT		VDDIO	
V2	SAI4_FS_B	PI4	AF3: LPTIM1_CH1 AF4: SAI4_FS_B AF8: TIM8_CH3 AF13: LCD_B7 AF14: PSSI_D15/DCMIPP_D15 AF15: EVENTOUT		VDDIO	
V3	PA1	PA1	AF2: SPI6_MISO AF4: SAI3_SD_A AF5: USART1_RTS/USART1_DE AF6: USART6_CK AF7: TIM4_CH2 AF8: I2C4_SDA AF9: I2C6_SDA AF11: LCD_R3 AF13: DCMI_D5/PSSI_D5/DCMIPP_D5 AF14: ETH3_PHY_INTN AF15: EVENTOUT		VDDIO	
V4	NC					
V20	GND					

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
V21	NC					
V22	SPI3_MOSI	PB8	AF1: SPI3_MOSI/I2S3_SDO AF4: PCIE_CLKREQN AF6: USART1_TX AF7: TIM17_CH1 AF8: TIM20_CH4 AF10: OCTOSPIM_P2_NCS1 AF12: FMC_AD12/FMC_D12 AF15: EVENTOUT		VDDIO	
V23	GND					
W1	USART6_TX	PF13	AF0: TRACED0 AF1: HDP0 AF2: AUDIOCLK AF3: USART6_TX AF4: SPI2_NSS/I2S2_WS AF5: MDF1_CK17 AF6: USART3_CTS/USART3_NSS AF7: FDCAN3_TX AF8: TIM3_CH3 AF13: LCD_R2 AF15: EVENTOUT		VDDIO	
W2	USART6_RX	PF14	AF0: TRACED1 AF1: HDP1 AF3: USART6_RX AF5: MDF1_SDI7 AF6: USART3_RTS/USART3_DE AF7: FDCAN3_RX AF8: TIM3_CH4 AF13: LCD_R3 AF15: EVENTOUT		VDDIO	
W3	PG2	PG2	AF1: RTC_REFIN AF2: I2S3_MCK	WKUP5 ADC1_INP2	VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF3: I3C3_SDA AF4: SAI2_FS_A AF6: USART3_CK AF8: TIM5_CH3 AF9: I2C3_SDA AF10: ETH2_MII_TX_CLK AF11: ETH2_RGMII_CLK125 AF12: FMC_CLK AF13: LCD_HSYNC AF15: EVENTOUT	ADC2_INP2		
W4	GND					
W5	NC					
W6	ETH2_TXD0	PC7	AF3: SPI6_MOSI AF4: SAI3_SD_B AF8: TIM8_CH2N AF10: ETH2_MII_TXD0/ETH2_RGMII_TXD0/ETH2_RMII_TXD0 AF11: ETH1_MII_TXD2/ETH1_RGMII_TXD2 AF13: LCD_B4 AF14: DCM1_D1/PSSI_D1/DCMIPP_D1 AF15: EVENTOUT	ADC3_INP9 ADC3_INN5	VDDIO	
W7	ETH2_TXD1	PC8	AF1: LPTIM1_ETR AF3: SPI6_NSS AF4: SAI3_SCK_B AF6: USART6_CTS/USART6_NSS AF8: TIM8_CH2 AF10: ETH2_MII_TXD1/ETH2_RGMII_TXD1/ETH2_RMII_TXD1 AF11: ETH1_MII_TXD3/ETH1_RGMII_TXD3 AF13: LCD_B3		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF14: DCM1_D2/PSSI_D2/DCMIPP_D2 AF15: EVENOUT			
W8	ETH2_TXD2	PC9	AF1: MCO1 AF2: SPI3_MISO/I2S3_SDI AF4: SAI2_SCK_A AF7: TIM13_CH1 AF8: TIM8_CH4N AF9: USBH_HS_OVRCUR AF10: ETH2_MII_TXD2/ETH2_RGMII_TXD2 AF11: USB3DR_OVRCUR AF12: FMC_A22 AF13: LCD_G2 AF14: DCM1_D7/PSSI_D7/DCMIPP_D7 AF15: EVENTOUT	ADC1_INP8 ADC1_INN4 ADC2_INP8 ADC2_INN4	VDDIO	
W9	ETH2_TXD3	PC10	AF2: SPI3_MOSI/I2S3_SDO AF7: LPTIM4_ETR AF8: TIM8_CH4 AF9: USBH_HS_VBUSEN AF10: ETH2_MII_TXD3/ETH2_RGMII_TXD3 AF11: USB3DR_VBUSEN AF12: FMC_A23 AF13: LCD_G3 AF14: DCM1_D6/PSSI_D6/DCMIPP_D6 AF15: EVENTOUT	ADC1_INP5 ADC2_INP5	VDDIO	
W10	ETH2_RXD0	PG0	AF1: LPTIM1_IN1 AF3: I3C3_SDA AF5: MDF1_SDI2 AF8: TIM8_CH3N AF9: I2C3_SDA AF10: ETH2_MII_RXD0/ETH2_RGMII_RXD0/ETH2_RMII_RXD0	ADC1_INP18 ADC1_INN17	VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF11: ETH1_MII_RXD2/ETH1_RGMII_RXD2 AF13: LCD_G5 AF14: DCM1_D4/PSSI_D4/DCMIPP_D4 AF15: EVENTOUT			
W11	ETH2_RXD1	PC12	AF1: LPTIM1_CH2 AF3: I3C3_SCL AF5: MDF1_CK12 AF8: TIM8_CH3 AF9: I2C3_SCL AF10: ETH2_MII_RXD1/ETH2_RGMII_RXD1/ETH2_RMII_RXD1 AF11: ETH1_MII_RXD3/ETH1_RGMII_RXD3 AF13: LCD_G1 AF14: DCM1_D5/PSSI_D5/DCMIPP_D5 AF15: EVENTOUT	ADC1_INP17	VDDIO	
W12	ETH2_RXD2	PF9	AF3: SAI3_SD_B AF4: SAI2_SD_A AF5: MDF1_SDI5 AF6: UART8_RTS/UART8_DE AF7: TIM2_CH2 AF10: ETH2_MII_RXD2/ETH2_RGMII_RXD2 AF11: ETH2_MDIO AF15: EVENTOUT		VDDIO	
W13	ETH2_RXD3	PC11	AF1: LPTIM1_CH1 AF2: SPI5_NSS AF4: SAI2_MCLK_A AF5: UART5_RTS/UART5_DE AF6: USART3_RTS/USART3_DE AF7: TIM3_CH1 AF8: TIM5_ETR	ADC1_INP7 ADC1_INN3 ADC2_INP7 ADC2_INN3 ADC3_INP7 ADC3_INN3	VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF10: ETH2_MII_RXD3/ETH2_RGMII_RXD3 AF12: FMC_NBL1 AF13: LCD_R2 AF14: DCM1_D10/PSSI_D10/DCMIPP_D10 AF15: EVENTOUT			
W14	PG1	PG1	AF1: LPTIM1_IN1 AF2: I2S3_MCK AF3: I3C3_SCL AF4: SAI2_SD_A AF5: UART5_CTS AF6: USART3_CTS/USART3_NSS AF8: TIM5_CH4 AF9: I2C3_SCL AF10: ETH2_MII_RX_ER AF11: ETH2_MII_RXD3/ETH2_RGMII_RXD3 AF12: FMC_NBL0 AF13: LCD_VSYNC AF14: DCM1_D11/PSSI_D11/DCMIPP_D11 AF15: EVENTOUT	WKUP3 ADC1_INP6 ADC1_INN2 ADC2_INP6 ADC2_INN2 TAMP_N4	VDDIO/VSW	
W15	NC					
W16	NC					
W17	3V3					
W18	PG4	PG4	AF2: SPI5_MISO AF3: SAI3_FS_B AF7: LPTIM4_IN1 AF8: TIM8_BKIN AF10: ETH2_PPS_OUT	PVD_IN ADC1_INP4 ADC2_INP4	VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF11: ETH2_MDC AF12: FMC_A21 AF13: LCD_R7 AF14: DCMI_VSYNC/PSSI_RDY/DCMIPP_VSYNC AF15: EVENTOUT			
W19	PI8/LPO32	PI8	AF15: EVENTOUT	RTC_OUT2/RTC_LSCO TAMP_IN1/TAMP_OUT2	VSW	
W20	UCPD_CC1	UCPD1_CC1		UCPD1_CC1		
W21	UCPD_CC2	UCPD1_CC2		UCPD1_CC2		
W22	NC					
W23	PI6	PI6	AF1: MCO1 AF6: USART3_TX AF7: TIM2_ETR AF8: TIM3_CH1 AF13: LCD_VSYNC AF15: EVENTOUT	WKUP4	VDDIO	
Y1	USART6_CTS	PF15	AF0: TRACED2 AF1: HDP2 AF2: SPI2_RDY AF3: USART6_CTS/USART6_NSS AF4: SPI2_SCK/I2S2_CK AF6: USART3_CK AF7: TIM2_CH2 AF8: TIM3_ETR AF9: I2C6_SMBA AF13: LCD_R4 AF15: EVENTOUT		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
Y2	PI9	PI9	AF1: SPI7_MOSI AF2: SPI2_MOSI/I2S2_SDO AF4: FDCAN2_TX AF6: UART9_CTS AF8: TIM16_BKIN AF9: SDVSEL2 AF10: FMC_NWAIT AF12: DSI_TE AF13: LCD_B0 AF15: EVENTOUT		VDDIO	
Y3	PI10	PI10	AF1: SAI1_SCK_A AF2: SPI1_SCK/I2S1_CK AF3: SPDIFRX1_IN0 AF4: FDCAN2_RX AF5: MDF1_CCK0 AF8: TIM4_CH1 AF9: SDVSEL1 AF12: FMC_AD12/FMC_D12 AF13: DSI_TE AF15: EVENTOUT		VDDIO	
Y4	NC					
Y5	NC					
Y6	ETH2_TX_CTL/EN	PC4	AF3: SPI6_MISO AF4: SAI3_FS_B AF10: ETH2_MII_TX_EN/ETH2_RGMII_TX_CTL/ETH2_RMII_TX_EN AF12: ETH1_RGMII_CLK125 AF13: LCD_R0 AF15: EVENTOUT	TAMP_IN1	VDDIO/VSW	
Y7	GND					
Y8	ETH2_GTX_CLK	PF7	AF2: SPDIFRX1_IN1	TAMP_IN2	VDDIO/VSW	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF3: SPI6_SCK AF4: SAI3_SD_A AF7: TIM2_ETR AF10: ETH2_RGMII_GTX_CLK AF11: ETH2_MII_TX_CLK AF13: LCD_R1 AF15: EVENTOUT			
Y9	ETH2_RX_CLK	PF6	AF1: RTC_OUT2 AF3: SAI3_MCLK_B AF6: USART6_CK AF7: TIM12_CH1 AF9: I2C3_SMBA AF10: ETH2_MII_RX_CLK/ETH2_RGMII_RX_CLK/ETH2_RMII_REF_CLK AF13: LCD_B0 AF15: EVENTOUT	TAMP_IN5	VDDIO/VSW	
Y10	GND					
Y11	ETH2_CLK125	PF8	AF1: RTC_REFIN AF3: SAI3_SCK_B AF6: USART3_RX AF7: TIM12_CH2 AF9: ETH1_CLK AF10: ETH2_RGMII_CLK125 AF11: ETH2_MII_RX_ER AF12: ETH2_MII_RX_DV/ETH2_RGMII_RX_CTL/ETH2_RMII_CRS_DV AF13: LCD_G0 AF15: EVENTOUT		VDDIO	
Y12	ETH2_RX_CTL/DV	PC3	AF1: LPTIM1_IN2 AF2: SPI3_NSS/I2S3_WS AF3: SPI6_RDY AF6: USART6_RTS/USART6_DE	ADC1_INP12 ADC1_INN10 ADC2_INP12 ADC2_INN10	VDDIO/VSW	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF7: FDCAN2_TX AF10: ETH2_MII_RX_DV/ETH2_RGMII_RX_CTL/ETH2_RMII_CRSDV AF11: ETH1_MII_RX_ER AF13: LCD_G6 AF14: DCMID3/PSSI_D3/DCMIPP_D3 AF15: EVENTOUT	ADC3_INP12 ADC3_INN10 TAMP_IN3		
Y13	GND					
Y14	ETH2_MDC	PC6	AF1: RTC_REFIN AF2: SPDIFRX1_IN0 AF5: MDF1_CK11 AF8: TIM8_CH1 AF9: I2C4_SCL AF10: ETH2_MDC AF11: ETH1_MII_CRSDV AF12: FMC_A24 AF13: ETH1_PHY_INTN AF14: LCD_CLK AF15: EVENTOUT	ADC1_INP9 ADC1_INN5 ADC2_INP9 ADC2_INN5	VDDIO	
Y15	ETH2_MDIO	PC5	AF2: SPDIFRX1_IN1 AF5: MDF1_SDI1 AF8: TIM8_CH1N AF9: I2C4_SDA AF10: ETH2_MDIO AF11: ETH1_MII_COL AF12: FMC_A25 AF13: ETH1_PPS_OUT AF14: LCD_DE AF15: EVENTOUT	ADC1_INP10 ADC2_INP10 ADC3_INP10 TAMP_IN6	VDDIO/VSW	
Y16	ETH2_RST	PG6	AF0: TRACED4 AF1: HDP4 AF2: SPI5_SCK		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF3: SPI1_SCK/I2S1_CK AF7: TIM2_CH4 AF9: I2C6_SCL AF13: LCD_R6 AF14: DCM1_HSYNC/PSSI_DE/DCMIPP_HSYNC AF15: EVENTOUT			
Y17	PF5	PF5	AF2: SPI6_SCK AF4: SAI3_MCLK_A AF6: USART6_TX AF7: TIM4_CH3 AF8: ETH1_MDIO AF9: ETH1_CLK AF10: ETH2_PHY_INTN AF11: ETH1_PHY_INTN AF13: LCD_B6 AF15: EVENTOUT		VDDIO	
Y18	GND					
Y19	ETH2_CLK	PF4	AF1: RTC_OUT2 AF2: SPI6_NSS AF4: SAI3_SCK_A AF6: USART6_RX AF7: TIM4_CH4 AF8: ETH1_MDC AF9: ETH2_CLK AF10: ETH2_PPS_OUT AF11: ETH1_PPS_OUT AF13: LCD_B7 AF15: EVENTOUT		VDDIO	
Y20	NC					
Y21	NC					

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
Y22	NC					
Y23	PZ4	PZ4	AF0: DBTRGI AF1: DBTRGO AF2: MCO2 AF3: SPI8_RDY AF4: MDF1_CCK1 AF5: ADF1_CCK1 AF6: LPUART1_RX AF7: LPTIM4_CH1 AF8: I2C8_SCL AF11: I3C4_SCL AF15: EVENTOUT	TAMP_IN5/TAMP_OUT6	VSW	
AA1	PD3	PD3	AF1: SAI1_MCLK_A AF2: SPI2_SCK/I2S2_CK AF3: SAI1_D1 AF5: SAI4_MCLK_A AF6: UART7_TX AF7: TIM15_CH1N AF8: TIM1_BKIN2 AF9: SDVSEL2 AF10: OCTOSPIM_P1_NCS1 AF13: PSSI_D15/DCMIPP_D15 AF15: EVENTOUT		VDDIO	
AA2	PD4	PD4	AF0: TRACED0 AF1: SPI4_MISO AF2: HDP3 AF3: SAI1_D3 AF4: SAI1_SD_B AF8: TIM1_CH4N AF9: TIM4_CH1 AF10: OCTOSPIM_P1_IO0 AF13: PSSI_D14/DCMIPP_D14 AF15: EVENTOUT		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
AA3	NC					
AA4	NC					
AA5	NC					
AA6	NC					
AA7	3V3_RF_EN/PZ6	PZ6	AF0: DBTRGI AF1: DBTRGO AF3: SPI8_NSS AF4: TIM8_CH3 AF5: ADF1_SDIO AF6: LPUART1_CTS AF7: LPTIM5_OUT AF10: LPTIM4_CH2 AF15: EVENTOUT	TAMP_IN8	VSW	This line is not used inside the SOM. It is available for external usage.
AA8	LDO7					
AA9	SDMMC1_D4	PD11	AF0: TRACED7 AF2: SPI1_SCK/I2S1_CK AF3: SAI1_MCLK_A AF4: UART4_TX AF5: MDF1_CKIO AF6: I2C4_SCL AF8: TIM1_CH1 AF9: SDVSEL1 AF10: OCTOSPIM_P1_IO7 AF11: SDMMC1_D4 AF12: SDMMC1_CKIN AF13: DCM1_D7/PSSI_D7/DCMIPP_D7 AF15: EVENTOUT		VDDIO	
AA10	SDMMC1_D5	PD10	AF0: TRACED6 AF1: HDP7 AF3: SAI1_SCK_A		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF4: UART4_RX AF5: MDF1_SDI0 AF6: I2C4_SDA AF8: TIM1_CH2 AF9: TIM14_CH1 AF10: OCTOSPIM_P1_IO6 AF11: SDMMC1_D5 AF12: SDMMC1_CDIR AF13: DCM1_D8/PSSI_D8/DCMIPP_D8 AF15: EVENTOUT			
AA11	SDMMC1_D6	PD9	AF0: TRACED5 AF1: HDP6 AF2: SPI1_MOSI/I2S1_SDO AF3: SAI1_SD_A AF4: UART4_RTS/UART4_DE AF5: MDF1_CK11 AF8: TIM1_CH3 AF10: OCTOSPIM_P1_IO5 AF11: SDMMC1_D6 AF12: SDMMC1_D0DIR AF13: DCM1_D9/PSSI_D9/DCMIPP_D9 AF15: EVENTOUT		VDDIO	
AA12	SDMMC1_D7	PD8	AF0: TRACED4 AF1: SPI4_RDY AF2: I2S1_MCK AF3: SAI1_FS_A AF4: UART4_CTS AF5: MDF1_SDI1 AF8: TIM1_CH4 AF9: TIM4_ETR AF10: OCTOSPIM_P1_IO4 AF11: SDMMC1_D7 AF12: SDMMC1_D123DIR AF13: DCM1_D10/PSSI_D10/DCMIPP_		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			D10 AF15: EVENTOUT			
AA13	JTRST	JTRST				
AA14	JTMS-SWDIO	JTMS-SWDIO				
AA15	JTDO-TRACESWO	JTDO-TRACESWO				
AA16	GND					
AA17	JTCK-SWCLK	JTCK-SWCLK				
AA18	JTDI	JTDI				
AA19	PZ8	PZ8	AF2: LPTIM3_IN1 AF3: SPI8_MISO AF4: MDF1_SDI5 AF5: ADF1_SDI0 AF6: LPUART1_RX AF7: LPTIM4_CH1 AF8: I2C8_SMBA AF9: LPTIM5_ETR AF15: EVENTOUT		VDDIO	
AA20	NC					
AA21	NC					
AA22	GND					
AA23	CSI_D1_N	CSI_D1N				
AB1	PD2	PD2	AF1: HDP2 AF2: SPI1_NSS/I2S1_WS AF3: SAI1_CK1 AF5: SAI4_SCK_A AF6: UART7_CTS AF7: TIM15_BKIN		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF8: TIM1_ETR AF9: FDCAN3_TX AF10: OCTOSPIM_P1_DQS AF11: OCTOSPIM_P1_NCS2 AF13: DCMI_VSYNC/PSSI_RDY/DCMIPP_VSYNC AF15: EVENTOUT			
AB2	PD0	PD0	AF0: TRACECLK AF1: HDP0 AF2: SPI7_RDY AF3: SAI1_D2 AF5: SAI4_FS_A AF6: UART7_RX AF7: TIM15_CH2 AF9: SDVSEL1 AF10: OCTOSPIM_P1_CLK AF13: DCMI_PIXCLK/PSSI_PDCK/DCMIPP_PIXCLK AF15: EVENTOUT		VDDIO	
AB3	PD5	PD5	AF0: TRACED1 AF1: SPI4_NSS AF2: HDP4 AF3: SAI1_D4 AF4: SAI1_FS_B AF8: TIM1_CH3N AF9: TIM4_CH2 AF10: OCTOSPIM_P1_IO1 AF13: DCMI_D13/PSSI_D13/DCMIPP_D13 AF15: EVENTOUT		VDDIO	
AB4	PD6	PD6	AF0: TRACED2 AF1: SPI4_MOSI AF2: HDP5		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF4: SAI1_SCK_B AF5: MDF1_SDI2 AF8: TIM1_CH2N AF9: TIM4_CH3 AF10: OCTOSPIM_P1_IO2 AF13: DCM1_D12/PSSI_D12/DCMIPP_D12 AF15: EVENTOUT			
AB5	PZ2	PZ2	AF2: LPTIM3_CH1 AF3: SPI8_SCK AF5: ADF1_CCK0 AF6: LPUART1_RTS/LPUART1_DE AF7: LPTIM4_ETR AF8: I2C8_SCL AF11: I3C4_SCL AF15: EVENTOUT	TAMP_IN3/TAMP_OUT7	VSW	
AB6	PZ3	PZ3	AF0: DBTRGI AF1: DBTRGO AF2: LPTIM3_ETR AF3: SPI8_NSS AF4: MDF1_SDI5 AF5: ADF1_SDI0 AF6: LPUART1_CTS AF7: LPTIM4_IN1 AF8: I2C8_SDA AF10: LPTIM4_CH2 AF11: I3C4_SDA AF15: EVENTOUT	TAMP_OUT4	VSW	
AB7	UART5_CTS	PI5	AF2: SPI5_MOSI AF3: SPI1_MOSI/I2S1_SDO AF5: UART5_CTS AF6: UART9_RX AF8: TIM5_CH2		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF13: LCD_DE AF14: DCM1_D1/PSSI_D1/DCMIPP_D1 AF15: EVENTOUT			
AB8	UART5_RTS	PG8	AF0: TRACED6 AF1: HDP6 AF2: SPI5_RDY AF3: SPI1_RDY AF4: USART6_CK AF5: UART5_RTS/UART5_DE AF6: UART9_TX AF8: TIM5_CH3 AF13: LCD_G2 AF14: DCM1_D2/PSSI_D2/DCMIPP_D2 AF15: EVENTOUT		VDDIO	
AB9	SDMMC3_CK	PB13	AF2: SPI7_SCK AF4: SAI1_SD_B AF5: UART8_RX AF10: SDMMC3_CK AF11: FMC_AD5/MDC_D5 AF12: FMC_AD0/FMC_D0 AF15: EVENTOUT		VDDIO	
AB10	GND					
AB11	SDMMC3_D0	PB14	AF2: SPI2_SCK/I2S2_CK AF5: MDF1_CK17 AF6: UART9_RX AF9: TIM4_CH2 AF10: SDMMC3_D0 AF11: FMC_AD7/FMC_D7 AF12: FMC_AD2/FMC_D2 AF15: EVENTOUT		VDDIO	
AB12	GND					

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
AB13	SDMMC3_D2	PB12	AF5: UART8_CTS AF7: TIM13_CH1 AF9: DSI_TE AF10: SDMMC3_D2 AF11: FMC_NWAIT AF14: DCMI_D12/PSSI_D12/DCMIPP_D12 AF15: EVENTOUT		VDDIO	
AB14	PZ9	PZ9	AF1: MCO2 AF3: SPI8_RDY AF4: MDF1_CK15 AF6: LPUART1_TX AF7: LPTIM4_ETR AF8: I2C8_SDA AF10: LPTIM3_CH2 AF11: I3C4_SDA AF15: EVENTOUT		VDDIO	
AB15	PG3	PG3	AF1: LPTIM1_ETR AF2: SPI5_MOSI AF3: UART8_TX AF4: SAI2_FS_B AF7: TIM3_CH3 AF8: TIM8_ETR AF9: ETH2_CLK AF10: ETH2_PHY_INTN AF12: FMC_A19 AF13: LCD_R5 AF14: DCMI_PIXCLK/PSSI_PDCK/DCMIPP_PIXCLK AF15: EVENTOUT	WKUP6 ADC1_INP3 ADC2_INP3 ADC3_INP3 TAMP_IN7	VDDIO/VSW	
AB16	I2C2_SCL	PB5	AF2: I2S2_MCK AF3: UART4_RTS/UART4_DE AF4: SAI4_SD_B		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF5: MDF1_CK14 AF8: TIM20_CH1 AF9: I2C2_SCL AF10: OCTOSPIM_P2_IO5 AF12: FMC_AD8/FMC_D8 AF13: I3C2_SCL AF14: SDMMC3_D123DIR AF15: EVENTOUT			
AB17	PF10	PF10	AF1: MCO2 AF2: SPI3_RDY AF4: SAI2_MCLK_A AF5: MDF1_CK16 AF6: UART8_TX AF7: TIM2_CH3 AF10: ETH2_MII_TXD2/ETH2_RGMII_TXD2 AF15: EVENTOUT	ADC3_INP2	VDDIO	
AB18	PZ7	PZ7	AF3: SPI8_MOSI AF4: MDF1_CCK1 AF5: ADF1_CCK1 AF6: LPUART1_TX AF7: LPTIM5_IN1 AF10: LPTIM3_CH2 AF15: EVENTOUT		VDDIO	
AB19	PG7	PG7	AF0: TRACED5 AF1: HDP5 AF2: SPI5_NSS AF3: SPI1_NSS/I2S1_WS AF6: UART9_CTS AF8: TIM5_ETR AF13: LCD_R7 AF14: DCMI_VSYNC/PSSI_RDY/DCMIPP_VSYNC		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF15: EVENTOUT			
AB20	GND					
AB21	NC					
AB22	NC					
AB23	CSI_D1_P	CSI_D1P				
AC1	GND					
AC2	ANA0	ANA0		ADC1_INP0 ADC1_INN1 ADC2_INP0 ADC2_INN1 ADC3_INP0 ADC3_INN1		
AC3	ANA1	ANA1		ADC1_INP1 ADC2_INP1 ADC3_INP1		
AC4	VREF+	VREF+				
AC5	PD7	PD7	AF0: TRACED3 AF1: SPI4_SCK AF2: SPI1_RDY AF4: SAI1_MCLK_B AF5: MDF1_CK12 AF8: TIM1_CH1N AF9: TIM4_CH4 AF10: OCTOSPIM_P1_IO3 AF13: DCM1_D11/PSSI_D11/DCMIPP_D11 AF15: EVENTOUT		VDDIO	
AC6	PZ0	PZ0	AF2: LPTIM3_IN1	CPU3_SWDIO	VSW	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF3: SPI8_MOSI AF4: TIM8_CH1 AF6: LPUART1_TX AF7: LPTIM5_OUT AF8: I2C8_SDA AF10: LPTIM3_CH2 AF11: I3C4_SDA AF15: EVENTOUT	TAMP_OUT3		
AC7	PZ1	PZ1	AF2: LPTIM3_CH1 AF3: SPI8_MISO AF4: TIM8_CH2 AF6: LPUART1_RX AF7: LPTIM5_ETR AF8: I2C8_SCL AF9: I2C8_SMBA AF11: I3C4_SCL AF15: EVENTOUT	CPU3_SWCLK TAMP_OUT5	VSW	
AC8	UART5_TX	PG9	AF0: TRACED7 AF5: UART5_TX AF8: TIM5_CH4 AF13: LCD_G3 AF14: DCM1_D3/PSSI_D3/DCMIPP_D3 AF15: EVENTOUT		VDDIO	
AC9	UART5_RX	PG10	AF0: TRACED8 AF1: HDPO AF5: UART5_RX AF8: TIM8_CH4N AF13: LCD_G4 AF14: DCM1_D4/PSSI_D4/DCMIPP_D4 AF15: EVENTOUT		VDDIO	
AC10	SDMMC3_CMD	PD12	AF1: SPI7_MISO AF2: SPI2_MISO/I2S2_SDI		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF3: SPDIFRX1_IN2 AF5: UART8_RTS/UART8_DE AF9: TIM4_ETR AF10: SDMMC3_CMD AF11: FMC_AD6/FMC_D6 AF12: FMC_AD1/FMC_D1 AF15: EVENTOUT			
AC11	SDMMC3_D1	PD13	AF2: SPI2_NSS/I2S2_WS AF5: MDF1_SDI7 AF6: UART9_TX AF9: TIM4_CH4 AF10: SDMMC3_D1 AF11: FMC_AD11/FMC_D11 AF12: FMC_NWE AF15: EVENTOUT		VDDIO	
AC12	SDMMC3_D3	PI11	AF2: I2S2_MCK AF5: UART8_TX AF6: UART9_RTS/UART9_DE AF9: TIM4_CH3 AF10: SDMMC3_D3 AF11: FMC_AD15/FMC_D15 AF15: EVENTOUT		VDDIO	
AC13	VDDIO					
AC14	FDCAN1_TX	PG11	AF0: TRACED9 AF1: HDP1 AF2: SPI7_MOSI AF7: FDCAN1_TX AF8: TIM8_CH4 AF13: LCD_G5 AF14: DCM1_D5/PSSI_D5/DCMIPP_D5 AF15: EVENTOUT		VDDIO	
AC15	FDCAN1_RX	PG12	AF0: TRACED10		VDDIO	

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
			AF1: HDP2 AF2: SPI7_MISO AF7: FDCAN1_RX AF8: TIM8_CH1N AF13: LCD_G6 AF14: DCM1_D6/PSSI_D6/DCMIPP_D6 AF15: EVENTOUT			
AC16	I2C2_SDA	PB4	AF2: SPI2_RDY AF3: UART4_CTS AF4: SAI4_FS_B AF5: MDF1_SDI4 AF6: TIM14_CH1 AF8: TIM20_CH2 AF9: I2C2_SDA AF10: OCTOSPIM_P2_IO4 AF13: I3C2_SDA AF15: EVENTOUT		VDDIO	
AC17	PF11	PF11	AF1: MCO1 AF2: SPDIFRX1_IN0 AF3: SPI6_RDY AF4: SAI2_SCK_A AF5: MDF1_SDI6 AF6: UART8_RX AF7: TIM2_CH4 AF10: ETH2_MII_TXD3/ETH2_RGMII_TXD3 AF15: EVENTOUT	ADC3_INP6 ADC3_INN2	VDDIO	
AC18	GND					
AC19	CSI_CLK_N	CSI_CKN				
AC20	CSI_CLK_P	CSI_CKP				

Pad	ConnectCore MP25 signal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group	Comments
AC21	CSI_D0_N	CSI_D0N				
AC22	CSI_D0_P	CSI_D0P				
AC23	GND					

Module specifications

The following sections describe the specifications for the ConnectCore MP25 SOM.

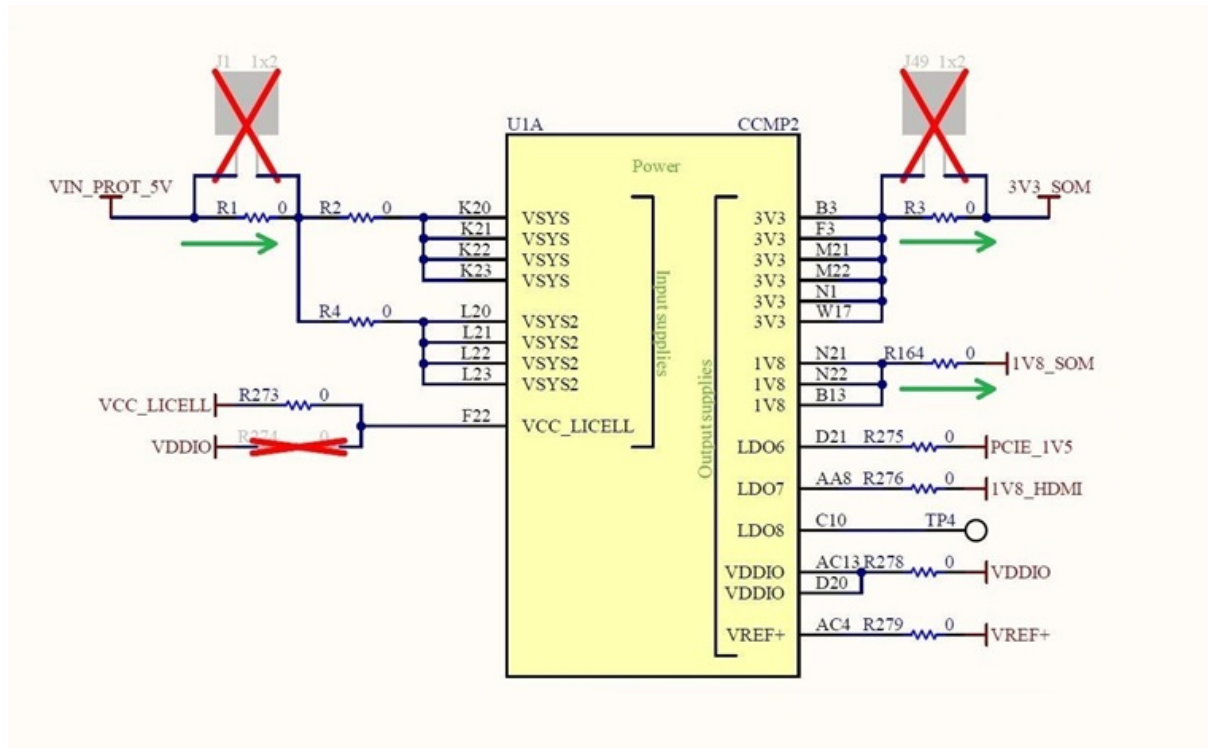
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Power consumption

This section contains information about the power consumption of the ConnectCore MP25 system-on-module. All presented results, unless otherwise noted, were measured with ConnectCore MP25 variant -01 on a ConnectCore MP25 DVK at ambient temperature (25°C).

The power consumption in the ConnectCore MP25 DVK is calculated as follows:

$$\text{Module Power consumption (W)} = I_{R1} * 5V - I_{R3} * 3.3V - I_{R164} * 1.8V$$



Note These power consumption numbers should be considered guidelines only, never as fixed or absolute values. Actual values will depend entirely upon individual setup and system application.

Power consumption use cases

The power consumption of the ConnectCore MP25 system-on-module was evaluated in the following use cases:

System IDLE

In this use case, the system is running Digi Embedded Yocto.

Standby

In this mode, the system suspends to RAM and operation can be resumed without performing a new boot cycle. RAM memory is in self-refresh.

Note that in order to achieve the deepest standby power mode it is necessary to disable all wake-up sources except the internal RTC.

Power-off

System in power-off. Module keeps power at mains 5V power supply (VSYS/VSYS2).

RTC

System on RTC (Real-time clock) mode keeping time of the system, powered from a coin cell with no other power supply attached.

Results

Use case	Power consumption	Notes
System IDLE	1.75 W	
Standby	42.5 mW	
Power-off	11 mW	
RTC	70 μ W	Refer to ST documentation for detailed description of the SoC RTC power consumption.

Mechanical specifications

This section provides mechanical dimensions and host PCB footprint guidance for the Digi SMTplus[®] form factor of the ConnectCore MP25 module.

Note See the ConnectCore MP25 product page for mechanical design documents, drawings, and other resources.

Host PCB footprint and cutout

Host PCBs must have a cutout to accommodate the components on the bottom side of the module:

- Cutout tolerances: +/- 0.15 mm
- Corner radius: 0.5 mm

Label

The MAC address and serial number of the SOM are encoded in the data matrix on the SOM label.

Environmental specifications

Operating temperature: -40 to 85 C.



CAUTION! Your final product may require additional thermal management such as passive (heatsink/spreader) or active (airflow) cooling to achieve the maximum operating temperature without exceeding the processor junction temp limit.

Socket options

For testing, prototyping, and other primarily development-related purposes, Digi International and E-tec Interconnect AG have developed sockets allowing the easy insertion and removal of modules in a carrier board design.

All drawings, user instructions, schematics and PCB footprints are posted on the ConnectCore MP25 technical support website.

Note The ConnectCore MP25 Development Board (Digi P/N CC-WMP255-KIT) has been designed to support a LPF334-129M-23ACEW55L socket, and can be used as a reference design.

The socket is sold and built by [E-tec Interconnect AG](#). The table below provides part numbers for the ConnectCore MP25 socket components.

Socket model	E-tec part number
ConnectCore MP25	LPF334-129M-23ACEW55L rev0b

Note Please direct all socket-related purchase inquiries to E-tec Interconnect AG (info@e-tec.com).

Assembly instructions

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Moisture sensitivity and shelf life

The ConnectCore MP25 is classified as a Level 3 Moisture Sensitive Device in accordance with IPC/JEDEC J-STD-020.

1. Calculated shelf life in sealed packaging: 12 months at <math><40^{\circ}\text{C}</math> and <math><90\%</math> relative humidity (RH).
2. Environmental condition during production: 30°C / 60% RH according to IPC/JEDEC J-STD-033C paragraph 5.
3. After module is removed from sealed packaging, modules that will be subjected to reflow solder temperatures are required to be:
 - a. Mounted within 168 hours.
 - b. Stored per J-STD-033.
4. Baking is required, before mounting if:
 - a. the packaging humidity indicator indicates 10% RH or higher.
 - b. either 3a or 3b are not met.
5. If baking is required, bake modules in trays for 4-6 hours at 125°C ; maximum stacking height is 10 trays.

Mounting

The ConnectCore MP25 has been designed with easy integration into existing SMT processes in mind. This section contains guidance for mounting the module on your carrier board.

Coplanarity

The coplanarity measured is <math><0.003\text{''}</math> bow and twist (98% confidence interval). It is important that the carrier board is also coplanar. It is recommended that the assembly be supported during the reflow process with a fixture to minimize the potential bow of the carrier card.

Solder paste print

The following solder paste type has been approved for mounting the module on a carrier board:

- SAC305 No-Clean solder paste

The following solder paste printing parameters are recommended:

- Stencil thickness: 0.100 mm / 4 mil

Stencil

Digi recommends a laser cut stencil. Based on the actual coplanarity characteristics of your carrier board, adjustments may be required to determine the optimal solder paste volume.

SMT pick and place

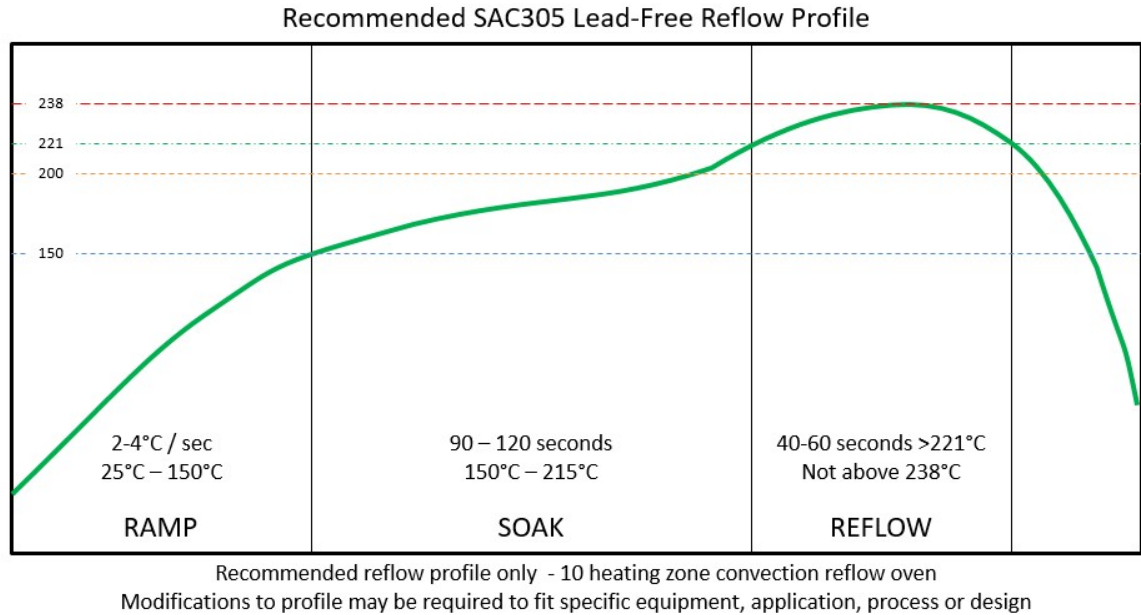
- Placement nozzle: Largest available on the machine.
- Placement Speed: Slowest speed for the machine.
- Placement alignment: 10% of pad diameter (compensating for module weight and supporting alignment). The module should be placed last as part of the assembly/mounting process to eliminate unexpected shifting.

SMT process parameter reference

Process	SMT process	Specification recommendations
Screen Print	Solder paste	SAC 305 No-Clean
	Stencil thickness	0.100 mm or 0.125 mm
PnP	Placement nozzle	Largest available on machine
	Speed	Slowest possible with PnP machine
	Placement sequence	Last, if possible
	Placement alignment	10% maximum off center of pad
Reflow	See Reflow oven profile .	

Reflow oven profile

- Keep SOM below 238°C during the reflow cycle.
- Time Above Liquidous (TAL) is recommended to be between 40 to 60 seconds.
- Use of 40AWG K-type thermocouple and M.O.L.E or equivalent thermal profiler is recommended.

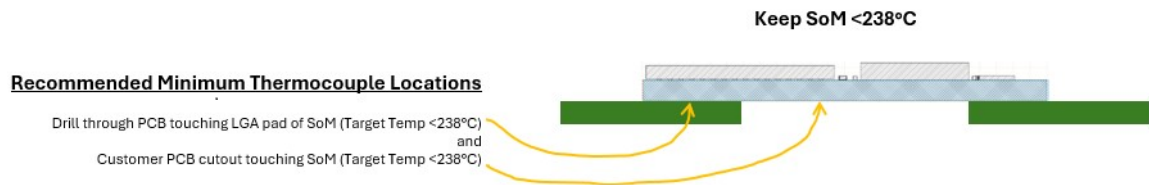


Two thermocouple locations are recommended to achieve proper attachment of SOM:

- Attach thermocouple to bottom of SOM located in the center of the cutout with the thermocouple touching the SOM.
- Drill hole through bottom of PCB near corner of SOM deep enough to reach SOM.
- Insert thermocouple into hole touching SOM and secure.

Note Digi recommends X-ray analysis after reflow to confirm proper mounting and solder reflow.

The ConnectCore MP25 is approved to withstand a total of four (4) reflow cycles. Two (2) reflow cycles are required for manufacturing the ConnectCore MP25. Two (2) reflow cycles are remaining for mounting the module on the carrier board. Digi strongly recommends soldering the ConnectCore MP25 during the last reflow cycles of the carrier board manufacturing process.



Conformal coating

ConnectCore MP25 variants without thermal putty may be conformally coated using an IPC-CC-830 compliant Acrylic (Type AR) coating material. The material shall be applied by spray application per IPC-A-610. DIP coating method shall not be used. If other coating material is required Urethane (Type UR), Silicone (Type SR) or Epoxy (Type ER) please contact Digi.