ConnectCore MP25

System-on-module

Hardware Reference Manual

Revision history–90002593

Revision	Date	Description
1P	August 2024	Initial draft.

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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.

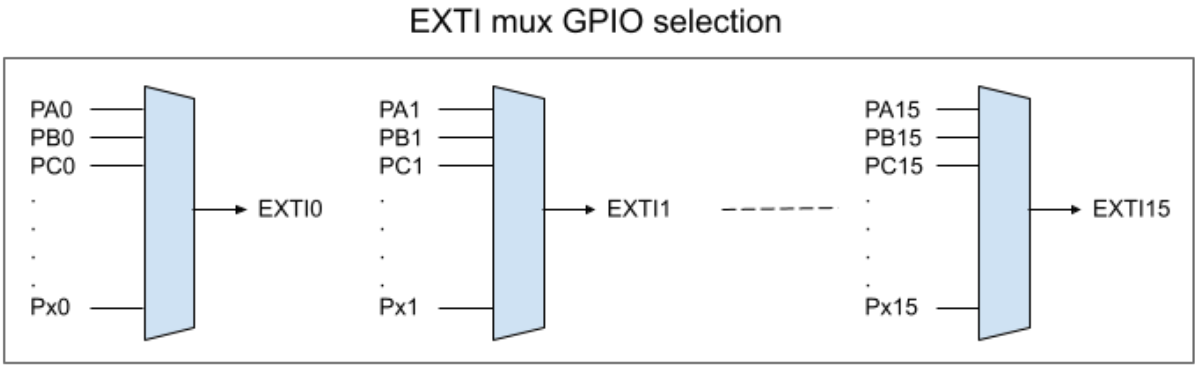
Safety instructions

- 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:



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:

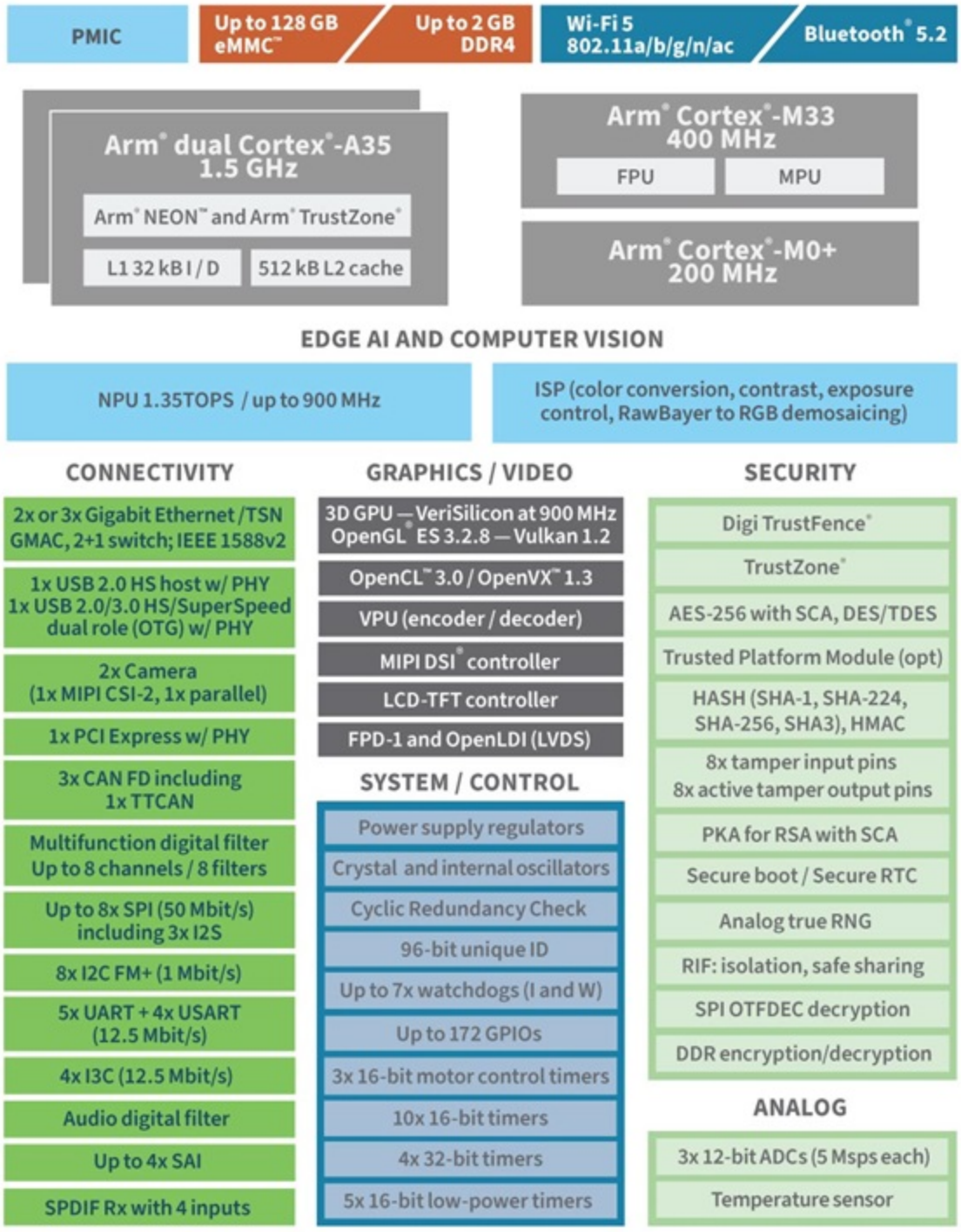
- Never drive an I/O pin beyond its positive rail or below ground.
- Never drive an I/O pin from an external power source during the power-on or reset sequences.
- Never hot-swap the module or interrupt its ground connection to external circuitry.

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).

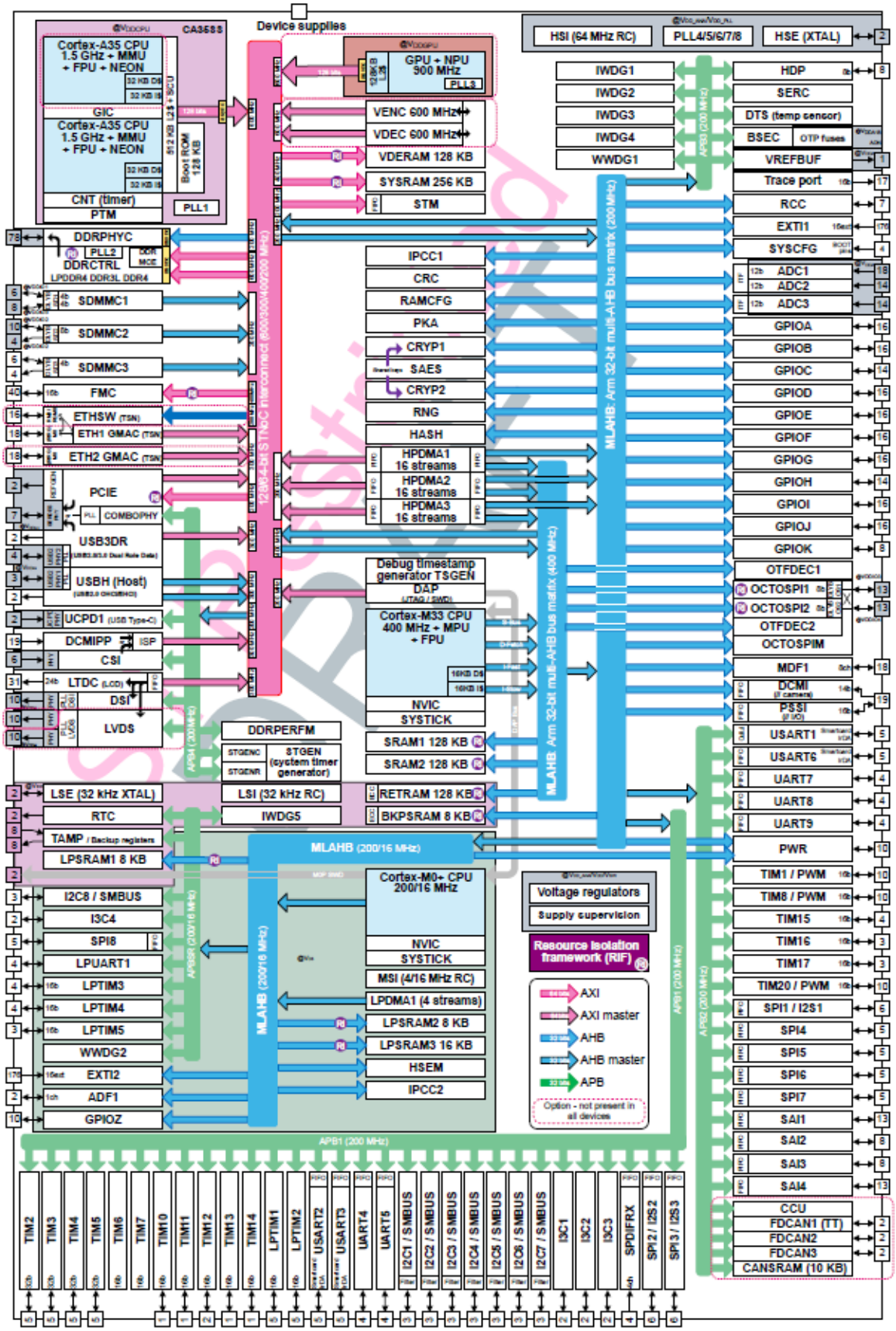
Block diagrams

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


Device supplies
Cortex-A35 CPU 1.5 GHz + MMU + FPU + NEON
GIC
Cortex-A35 CPU 1.5 GHz + MMU + FPU + NEON
CNT (timer)
PTM
PLL1
GPU + NPU 900 MHz
PLL3
VENC 600 MHz
VDEC 600 MHz
VDERAM 128 KB
SYSRAM 256 KB
STM
HSI (64 MHz RC)
PLL4/5/6/7/8
HSE (XTAL)
IWDG1
IWDG2
IWDG3
IWDG4
WWDG1
HDP
SERC
DTS (temp sensor)
BSEC
OTP fuses
VREFBUF
Trace port
RCC
EXTI1
SYSCFG
ADC1
ADC2
ADC3
GPIOA
GPIOB
GPIOC
GPIOD
GPIOE
GPIOF
GPIOG
GPIOH
GPIOI
GPIOJ
GPIOK
OTFDEC1
OCTOSPI1
OCTOSPI2
OTFDEC2
OCTOSPIM
MDF1
DCMI
PSSI
USART1
USART6
UART7
UART8
UART9
PWR
TIM1 / PWM
TIM8 / PWM
TIM15
TIM16
TIM17
TIM20 / PWM
SPI1 / I2S1
SPI4
SPI5
SPI6
SPI7
SAI1
SAI2
SAI3
SAI4
CCU
FDCAN1 (TT)
FDCAN2
FDCAN3
CANSRAM (10 KB)
DDRPHYC
PLL2
DDRCTRL
LPDDR4 DDR3L DDR4
SDMMC1
SDMMC2
SDMMC3
FMC
ETHSW (TSN)
ETH1 GMAC (TSN)
ETH2 GMAC (TSN)
PCIE
COMBOPHY
USB3DR
USBH (Host)
UCPD1 (USB Type-C)
DCMIPP
ISP
CSI
LTDC (LCD)
DSI
LVDS
IPCC1
CRC
RAMCFG
PKA
CRYP1
SAES
CRYP2
RNG
HASH
HPDMA1 16 streams
HPDMA2 16 streams
HPDMA3 16 streams
Debug timestamp generator TSGEN
DAP
Cortex-M33 CPU 400 MHz + MPU + FPU
NVIC
SYSTICK
SRAM1 128 KB
SRAM2 128 KB
RETRAM 128 KB
BKPSRAM 8 KB
DDRPERFM
STGEN (system timer generator)
LSI (32 kHz RC)
IWDG5
LSE (32 kHz XTAL)
RTC
TAMP / Backup registers
LPSRAM1 8 KB
MLAHB (200/16 MHz)
Cortex-M0+ CPU 200/16 MHz
NVIC
SYSTICK
MSI (4/16 MHz RC)
LPDMA1 (4 streams)
LPSRAM2 8 KB
LPSRAM3 16 KB
HSEM
IPCC2
I2C8 / SMBUS
I3C4
SPI8
LPUART1
LPTIM3
LPTIM4
LPTIM5
WWDG2
EXTI2
ADF1
GPIOZ
Voltage regulators
Supply supervision
Resource isolation framework (RIF)
AXI
AXI master
AHB
AHB master
APB
Option - not present in all devices
MLAHB: Arm 32-bit multi-AHB bus matrix (200 MHz)
MLAHB: Arm 32-bit multi-AHB bus matrix (400 MHz)
APB1 (200 MHz)
APB2 (200 MHz)
APB3 (200 MHz)
APB4 (200/16 MHz)
APB5 (200/16 MHz)
TIM2
TIM3
TIM4
TIM5
TIM6
TIM7
TIM10
TIM11
TIM12
TIM13
TIM14
LPTIM1
LPTIM2
USART2
USART3
UART4
UART5
I2C1 / SMBUS
I2C2 / SMBUS
I2C3 / SMBUS
I2C4 / SMBUS
I2C5 / SMBUS
I2C6 / SMBUS
I2C7 / SMBUS
I3C1
I3C2
I3C3
SPDIFRX
SPI2 / I2S2
SPI3 / I2S3

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

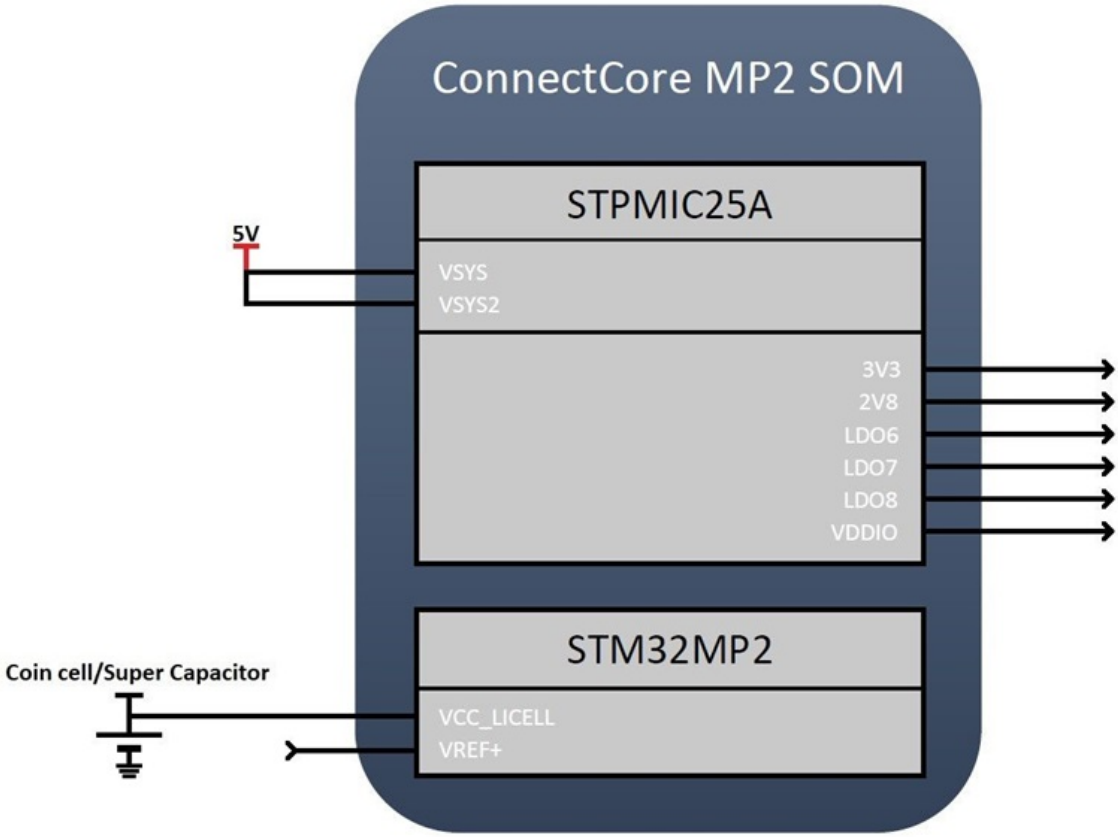
- LPSRAM1
- Retention RAM
- Backup SRAM

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	3.7	-	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	S-NOR	-
0	1	1	1	-	SD-Card
1	0	0	0	-	eMMC
1	0	1	1	-	S-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.

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:

	Pin			
Signal	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
802.11ga	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
802.11n	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

Mode	Modulation & coding	Rate
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
	256QAM-5/6	MCS9
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) - Non Short Guard Interval (Non-SGI)

Data rate (Mbps)		802.11b		802.11ga		802.11n		802.11ac			802.11ax		
Modulation		DBPSK 1 Mbps	CCK 11 Mbps	BPSK-1/2 6 Mbps	64QAM-3/4 54 Mbps	BPSK-1/2 MCS0	64QAM-5/6 MCS7	BPSK-1/2 MCS0	64QAM-5/6 MCS7	256QAM-5/6 MCS9	BPSK-1/2 MCS0	64QAM-5/6 MCS7	1024QAM-5/6 MCS11
2.4 GHz	HT20	1	11	6	54	6.5	65	6.5	65		4	81	135
	HT40					13.5	135	13.5	135	180	8	163	271
5 GHz	HT20			6	54	6.5	65	6.5	65		4	81	135
	HT40					13.5	135	13.5	135	180	8	163	271
	HT80							29.3	292.5	390	17	340	600

Data rate (Mbps) - Short Guard Interval (SGI)

Data rate (Mbps)		802.11b		802.11ga		802.11n		802.11ac			802.11ax		
Modulation		DBPSK 1 Mbps	CCK 11 Mbps	BPSK-1/2 6 Mbps	64QAM-3/4 54 Mbps	BPSK-1/2 MCS0	64QAM-5/6 MCS7	BPSK-1/2 MCS0	64QAM-5/6 MCS7	256QAM-5/6 MCS9	BPSK-1/2 MCS0	64QAM-5/6 MCS7	1024QAM-5/6 MCS11
2.4 GHz	HT20	1	11	6	54	7.2	72.2	7.2	72.2		8.6	86	143
	HT40					15	150	15	150	200	17.2	172	287

Data rate (Mbps)		802.11b		802.11ga		802.11n		802.11ac			802.11ax		
Modulation		DBPSK 1 Mbps	CCK 11 Mbps	BPSK-1/2 6 Mbps	64QAM-3/4 54 Mbps	BPSK-1/2 MCS0	64QAM-5/6 MCS7	BPSK-1/2 MCS0	64QAM-5/6 MCS7	256QAM-5/6 MCS9	BPSK-1/2 MCS0	64QAM-5/6 MCS7	1024QAM-5/6 MCS11
5 GHz	HT20			6	54	7.2	72.2	7.2	72.2		8.6	86	143
	HT40					15	150	15	150	200	17.2	172	287
	HT80							32.5	325	433.3	36	360	600

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), 14(2484)
	40 MHz	5 MHz	3(2422), 11(2462)
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)
	40 MHz	40 MHz	38(5190), 46(5230), 54(5270), 62(5310), 102(5510), 110(5550), 118(5590), 126(5630), 134(5670), 142(5710), 151 (5755), 159(5795)
	80 MHz	80 MHz	42(5210), 58(5290), 106(5530), 122(5610), 138(5690), 155(5775)

Note Dependent upon regulatory bodies.

2.4 GHz

2.4 GHz band channel #	Center frequency (MHz)	EUROPE (ETSI)	NORTH AMERICA (FCC)	JAPAN
1	2412	✓	✓	✓
2	2417	✓	✓	✓
3	2422	✓	✓	✓
4	2427	✓	✓	✓
5	2432	✓	✓	✓
6	2437	✓	✓	✓
7	2442	✓	✓	✓
8	2447	✓	✓	✓
9	2452	✓	✓	✓
10	2457	✓	✓	✓
11	2462	✓	✓	✓
12	2467	✓	No	✓
13	2472	✓	No	✓
14	2484	No	No	802.11b only

5 GHz

5 GHz band channel #	Center frequency (MHz)	EUROPE (ETSI)	NORTH AMERICA (FCC)	JAPAN
36	5180	Indoors	✓	✓
40	5200	Indoors	✓	✓
44	5220	Indoors	✓	✓
48	5240	Indoors	✓	✓
52	5260	Indoors / DFS / TPC	DFS	DFS / TPC
56	5280	Indoors / DFS / TPC	DFS	DFS / TPC
60	5300	Indoors / DFS / TPC	DFS	DFS / TPC
64	5320	Indoors / DFS / TPC	DFS	DFS / TPC
100	5500	DFS / TPC	DFS	DFS / TPC
104	5520	DFS / TPC	DFS	DFS / TPC
108	5540	DFS / TPC	DFS	DFS / TPC
112	5560	DFS / TPC	DFS	DFS / TPC
116	5580	DFS / TPC	DFS	DFS / TPC
120	5600	DFS / TPC	DFS	DFS / TPC
124	5620	DFS / TPC	DFS	DFS / TPC
128	5640	DFS / TPC	DFS	DFS / TPC
132	5660	DFS / TPC	DFS	DFS / TPC
136	5680	DFS / TPC	DFS	DFS / TPC

5 GHz band channel #	Center frequency (MHz)	EUROPE (ETSI)	NORTH AMERICA (FCC)	JAPAN
140	5700	DFS / TPC	DFS	DFS / TPC
149	5745	SRD	✓	No Access
153	5765	SRD	✓	No Access
157	5785	SRD	✓	No Access
161	5805	SRD	✓	No Access
165	5825	SRD	✓	No Access

Note
DFS = Dynamic Frequency Selection
TPC = Transmit Power Control
SRD = Short Range Devices 25 mW max power

Transmit power

The following table lists nominal transmit power values for the ConnectCore MP25 module based on Murata LBEE5HY2GY-SMP specification.

RF band (GHz)	Standard	Output power (dBm)
2.4	802.11b	18 (1 Mbps) - 18 (11 Mbps)
	802.11g	17 (6 Mbps) - 17 (54 Mbps)
	802.11n	16 (MCS0) - 16 (MCS7)
	802.11ax	12 (MCS0) - 12 (MCS11)
5	802.11a	16 (6Mbps) - 16 (54 Mbps)
	802.11n (HT20)	14 (MCS0) - 14 (MCS7)
	802.11ac (VHT20)	12 (MCS0) - 12 (MCS8)
	802.11ax (HE20)	9 (MCS0) - 9 (MCS11)

Note Output power values are subject to change.

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.

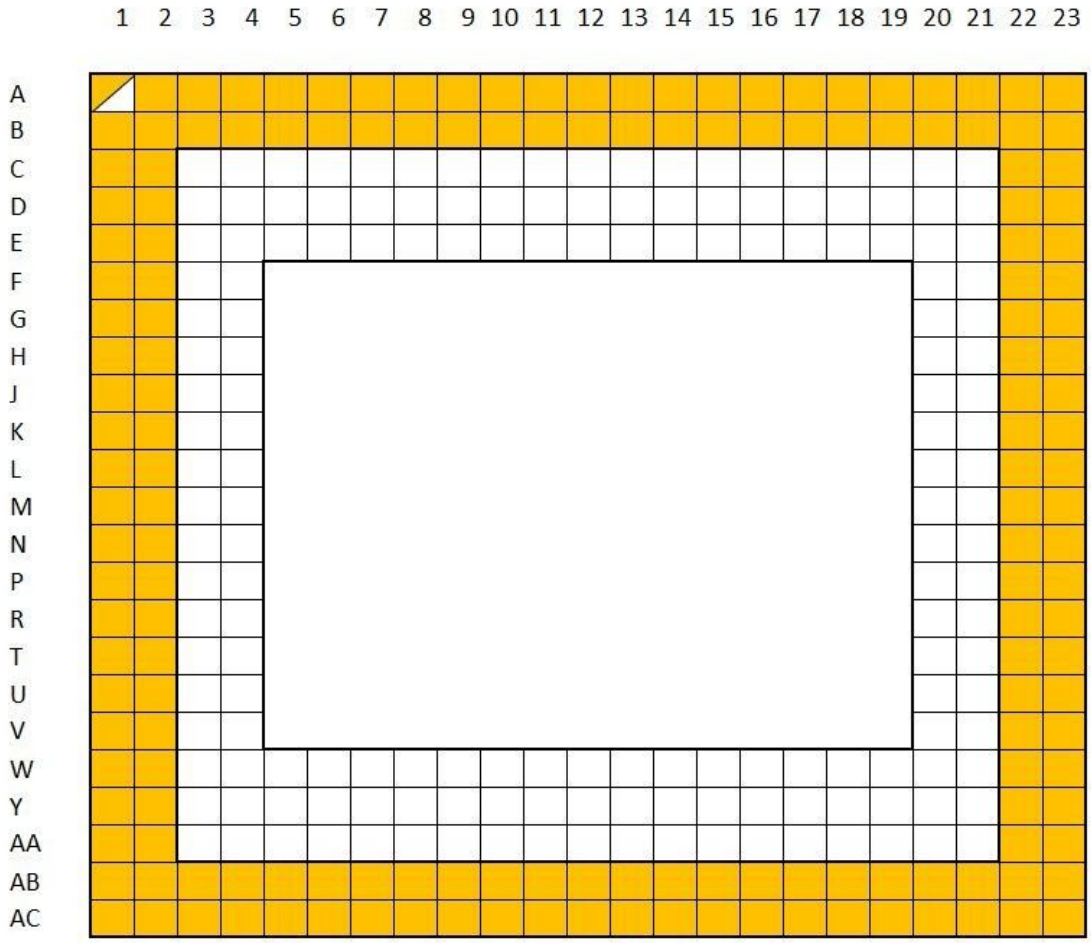
Bluetooth

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.

Note See Limitations and notices for important information on designing your hardware.

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.

Pad signals and multiplexing

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
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 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF8: USART2_RX **AF9**: I2C5_SCL **AF12**: LCD_B2 **AF13**: DCMI_D4/PSSI_D4/DCMIPP_D4 **AF15**: EVENTOUT		
A14	I2C1_SCL	PG13	**AF0**: TRACED11 **AF1**: HDP3 **AF2**: SPI7_SCK **AF5**: MDF1_CKI6 **AF8**: TIM8_CH2N **AF9**: I2C1_SCL **AF10**: I3C1_SCL **AF13**: LCD_G7 **AF14**: DCMI_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 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			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 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
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**: DCMI_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 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF14: DCMI_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**: DCMI_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				
C4	WL_REG_EN/PI7	PI7	**AF6**: USART3_RX **AF7**: TIM2_CH1 **AF8**: TIM3_CH2 **AF13**: LCD_HSYNC **AF15**: EVENTOUT		VDDIO
C5	USART1_TX	PG14	**AF0**: TRACED12 **AF1**: HDP4 **AF2**: SPI7_RDY **AF5**: MDF1_CKI5		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF6: USART1_TX **AF8**: TIM8_BKIN2 **AF13**: LCD_B1 **AF14**: DCMI_D9/PSSI_D9/DCMIPP_D9 **AF15**: EVENTOUT		
C6	USART1_RX	PG15	**AF0**: TRACED13 **AF1**: HDP5 **AF3**: LPTIM1_CH2 **AF5**: MDF1_SDI5 **AF6**: USART1_RX **AF8**: TIM8_ETR **AF13**: LCD_B2 **AF14**: DCMI_D10/PSSI_D10/DCMIPP_D10 **AF15**: EVENTOUT		VDDIO
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
C8	WLAN_SD1_D1	PE5	**AF0**: TRACED1 **AF1**: LPTIM2_IN2 **AF2**: SPI1_NSS/I2S1_WS **AF3**: SPI3_NSS/I2S3_WS **AF4**: SAI1_FS_B **AF6**: USART3_RTS/USART3_DE **AF7**: FDCAN1_RX **AF10**: SDMMC1_D1 **AF15**: EVENTOUT		LDO8
C9	WLAN_SD1_D3	PE1	**AF0**: TRACED3		LDO8

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF1: LPTIM2_CH2 **AF2**: I2S1_MCK **AF3**: I2S3_MCK **AF6**: USART3_RX **AF10**: SDMMC1_D3 **AF15**: EVENTOUT		
C10	NC				
C11	NC				
C12	NC				
C13	NC				
C14	NC				
C15	NC				
C16	NC				
C17	NC				
C18	NC				
C19	NC				
C20	NC				
C21	NC				
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_		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			TXD1/ETH1_RMII_TXD1 **AF15**: EVENTOUT		
D2	GND				
D3	PCM_CLK				
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
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
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

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
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
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
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
D10	WL_DEV_WAKE				
D11	NC				
D12	NC				
D13	NC				
D14	NC				
D15	NC				

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
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_CKI3 **AF6**: USART2_CTS/USART2_NSS **AF9**: I2C7_SMBA **AF10**: ETH1_MII_TX_EN/ETH1_RGMII_TX_CTL/ETH1_RMII_TX_EN **AF15**: EVENTOUT		VDDIO
E3	PCM_SYNC				
E4	PCM_IN				
E5	WL_HOST_WAKE				

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
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				
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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF4: SAI4_SD_B **AF5**: MDF1_SDI4 **AF10**: ETH1_MII_RX_DV/ETH1_RGMII_RX_CTL/ETH1_RMII_CRS_DV **AF15**: EVENTOUT		
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 **AF15**: EVENTOUT		VDDIO
F20	TPM_SPI_CLK				
F21	NRSTC1MS				
F22	VCC_LICELL				
F23	NRST				
G1	ETH1_RXD0	PF1	**AF1**: SPI8_MISO **AF2**: LPTIM2_IN2 **AF4**: SAI4_SCK_B **AF5**: MDF1_CKI4 **AF6**: USART2_CK **AF10**: ETH1_MII_RXD0/ETH1_RGMII_RXD0/ETH1_RMII_RXD0 **AF15**: EVENTOUT		VDDIO
G2	ETH1_RX_CLK	PA14	**AF1**: SPI8_NSS		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			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		
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 **AF13**: LCD_R4 **AF14**: DCMI_D8/PSSI_D8/DCMIPP_D8 **AF15**: EVENTOUT	ADC1_INP15 ADC3_INP5	VDDIO
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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF15: EVENTOUT		
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_CKI7 **AF6**: USART1_TX **AF8**: I3C1_SCL **AF9**: I2C7_SMBA **AF10**: I2C1_SCL **AF11**: LCD_B1 **AF13**: DCMI_D2/PSSI_D2/DCMIPP_D2 **AF14**: ETH3_RGMII_TX_CTL/ETH3_RMII_TX_EN **AF15**: EVENTOUT		VDDIO
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_		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			RXD2 **AF15**: EVENTOUT		
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 **AF10**: LCD_G4 **AF12**: FMC_NE1 **AF13**: DCMI_D12/PSSI_D12/DCMIPP_D12 **AF14**: ETH3_RGMII_TXD0/ETH3_RMII_TXD0 **AF15**: EVENTOUT		VDDIO
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

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
J20	GND				
J21	GND				
J22	PMIC_PONKEY_N				
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
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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF13: DCMI_D6/PSSI_D6/DCMIPP_D6 **AF14**: ETH3_RGMII_TXD1/ETH3_RMII_TXD1 **AF15**: EVENTOUT		
K4	GND				
K20	VSYS				
K21	VSYS				
K22	VSYS				
K23	VSYS				
L1	GND				
L2	ETH1_MDC	PF0	**AF2**: SPI3_SCK/I2S3_CK **AF7**: FDCAN2_RX **AF8**: TIM12_CH2 **AF9**: I2C2_SDA **AF10**: ETH1_MDC **AF11**: ETH2_MII_CRS **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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF5: SAI2_SD_B **AF6**: USART2_RTS/USART2_DE **AF7**: FDCAN2_RX **AF8**: TIM2_CH4 **AF10**: LCD_G0 **AF12**: FMC_A0 **AF13**: DCMI_D13/PSSI_D13/DCMIPP_D13 **AF14**: ETH3_RGMII_RX_CLK/ETH3_RMII_REF_CLK **AF15**: EVENTOUT		
L20	VSYS2				
L21	VSYS2				
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**: DCMI_HSYNC/PSSI_DE/DCMIPP_HSYNC **AF15**: EVENTOUT	ADC1_INP16 ADC1_INN15	VDDIO
M2	ETH1_RST	PB2	**AF2**: SPI2_MOSI/I2S2_SDO **AF5**: MDF1_CKI3 **AF6**: TIM17_BKIN **AF7**: TIM16_BKIN **AF8**: TIM20_CH2N		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF10: OCTOSPIM_P2_IO2 **AF15**: EVENTOUT		
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				
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

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
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 **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		VDDIO
P4	NC				
P20	GND				
P21	NC				
P22	GND				
P23	USB2_D_N	USBH_HS_DM			
R1	NC				
R2	SAI4_MCLK_B	PI0	**AF0**: TRACED14		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF1: HDP6 **AF3**: LPTIM1_IN1 **AF4**: SAI4_MCLK_B **AF6**: USART1_CK **AF8**: TIM8_BKIN **AF13**: LCD_B3 **AF14**: DCMI_D11/PSSI_D11/DCMIPP_D11 **AF15**: EVENTOUT		
R3	PH7	PH7	**AF2**: SPI1_MOSI/I2S1_SDO **AF4**: UART4_TX **AF6**: UART7_RTS/UART7_DE **AF7**: TIM17_CH1 **AF9**: TIM5_CH4 **AF10**: I2C7_SDA **AF14**: ETH3_RGMII_RXD2 **AF15**: EVENTOUT		VDDIO
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	BOOTFAILN	VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF10: LCD_R0 **AF11**: USB3DR_OVRCUR **AF12**: USBH_HS_OVRCUR **AF13**: ETH1_PTP_AUX_TS **AF14**: ETH3_PPS_OUT **AF15**: EVENTOUT		
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 **AF14**: DCMI_D13/PSSI_D13/DCMIPP_D13 **AF15**: EVENTOUT		VDDIO
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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF10: OCTOSPIM_P2_CLK **AF12**: FMC_AD15/FMC_D15 **AF15**: EVENTOUT		
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 **AF10**: OCTOSPIM_P1_NCLK **AF11**: OCTOSPIM_P1_NCS2 **AF12**: OCTOSPIM_P2_NCS2 **AF13**: DCMI_HSYNC/PSSI_DE/DCMIPP_HSYNC **AF15**: EVENTOUT		VDDIO
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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF8: TIM20_CH3N **AF10**: OCTOSPIM_P2_IO1 **AF12**: FMC_NCE4 **AF15**: EVENTOUT		
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 **AF14**: SDMMC3_CDIR **AF15**: EVENTOUT		VDDIO
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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			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		
V4	NC				
V20	GND				
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_CKI7 **AF6**: USART3_CTS/USART3_NSS **AF7**: FDCAN3_TX **AF8**: TIM3_CH3 **AF13**: LCD_R2 **AF15**: EVENTOUT		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
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 **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	WKUP5 ADC1_INP2 ADC2_INP2	VDDIO
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**: DCMI_D1/PSSI_D1/DCMIPP_D1 **AF15**: EVENTOUT	ADC3_INP9 ADC3_INN5	VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
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 **AF14**: DCMI_D2/PSSI_D2/DCMIPP_D2 **AF15**: EVENOUT		VDDIO
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**: DCMI_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**: DCMI_D6/PSSI_D6/DCMIPP_D6 **AF15**: EVENTOUT	ADC1_INP5 ADC2_INP5	VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
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 **AF11**: ETH1_MII_RXD2/ETH1_RGMII_RXD2 **AF13**: LCD_G5 **AF14**: DCMI_D4/PSSI_D4/DCMIPP_D4 **AF15**: EVENTOUT	ADC1_INP18 ADC1_INN17	VDDIO
W11	ETH2_RXD1	PC12	**AF1**: LPTIM1_CH2 **AF3**: I3C3_SCL **AF5**: MDF1_CKI2 **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**: DCMI_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

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
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 **AF10**: ETH2_MII_RXD3/ETH2_RGMII_RXD3 **AF12**: FMC_NBL1 **AF13**: LCD_R2 **AF14**: DCMI_D10/PSSI_D10/DCMIPP_D10 **AF15**: EVENTOUT	ADC1_INP7 ADC1_INN3 ADC2_INP7 ADC2_INN3 ADC3_INP7 ADC3_INN3	VDDIO
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**: DCMI_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	PVD_IN	VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF3: SAI3_FS_B **AF7**: LPTIM4_IN1 **AF8**: TIM8_BKIN **AF10**: ETH2_PPS_OUT **AF11**: ETH2_MDC **AF12**: FMC_A21 **AF13**: LCD_R7 **AF14**: DCMI_VSYNC/PSSI_RDY/DCMIPP_VSYNC **AF15**: EVENTOUT	ADC1_INP4 ADC2_INP4	
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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF9: I2C6_SMBA **AF13**: LCD_R4 **AF15**: EVENTOUT		
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

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
Y7	GND				
Y8	ETH2_GTX_CLK	PF7	**AF2**: SPDIFRX1_IN1 **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	TAMP_IN2	VDDIO/VSW
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	ADC1_INP12 ADC1_INN10	VDDIO/VSW

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF3: SPI6_RDY **AF6**: USART6_RTS/USART6_DE **AF7**: FDCAN2_TX **AF10**: ETH2_MII_RX_DV/ETH2_RGMII_RX_CTL/ETH2_RMII_CRS_DV **AF11**: ETH1_MII_RX_ER **AF13**: LCD_G6 **AF14**: DCMI_D3/PSSI_D3/DCMIPP_D3 **AF15**: EVENTOUT	ADC2_INP12 ADC2_INN10 ADC3_INP12 ADC3_INN10 TAMP_IN3	
Y13	GND				
Y14	ETH2_MDC	PC6	**AF1**: RTC_REFIN **AF2**: SPDIFRX1_IN0 **AF5**: MDF1_CKI1 **AF8**: TIM8_CH1 **AF9**: I2C4_SCL **AF10**: ETH2_MDC **AF11**: ETH1_MII_CRS **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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF1: HDP4 **AF2**: SPI5_SCK **AF3**: SPI1_SCK/I2S1_CK **AF7**: TIM2_CH4 **AF9**: I2C6_SCL **AF13**: LCD_R6 **AF14**: DCMI_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				

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
Y21	NC				
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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF13: PSSI_D14/DCMIPP_D14 **AF15**: EVENTOUT		
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_SDI0 **AF6**: LPUART1_CTS **AF7**: LPTIM5_OUT **AF10**: LPTIM4_CH2 **AF15**: EVENTOUT	TAMP_IN8	VSW
AA8	LDO7				
AA9	SDMMC1_D4	PD11	**AF0**: TRACED7 **AF2**: SPI1_SCK/I2S1_CK **AF3**: SAI1_MCLK_A **AF4**: UART4_TX **AF5**: MDF1_CKI0 **AF6**: I2C4_SCL **AF8**: TIM1_CH1 **AF9**: SDVSEL1 **AF10**: OCTOSPIM_P1_IO7 **AF11**: SDMMC1_D4 **AF12**: SDMMC1_CKIN **AF13**: DCMI_D7/PSSI_D7/DCMIPP_D7 **AF15**: EVENTOUT		VDDIO
AA10	SDMMC1_D5	PD10	**AF0**: TRACED6		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF1: HDP7 **AF3**: SAI1_SCK_A **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**: DCMI_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_CKI1 **AF8**: TIM1_CH3 **AF10**: OCTOSPIM_P1_IO5 **AF11**: SDMMC1_D6 **AF12**: SDMMC1_D0DIR **AF13**: DCMI_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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF12: SDMMC1_D123DIR **AF13**: DCMI_D10/PSSI_D10/DCMIPP_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		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF7: TIM15_BKIN **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 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF4: SAI1_SCK_B **AF5**: MDF1_SDI2 **AF8**: TIM1_CH2N **AF9**: TIM4_CH3 **AF10**: OCTOSPIM_P1_IO2 **AF13**: DCMI_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 **AF13**: LCD_DE		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF14: DCMI_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**: DCMI_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_CKI7 **AF6**: UART9_RX **AF9**: TIM4_CH2 **AF10**: SDMMC3_D0 **AF11**: FMC_AD7/FMC_D7 **AF12**: FMC_AD2/FMC_D2 **AF15**: EVENTOUT		VDDIO
AB12	GND				
AB13	SDMMC3_D2	PB12	**AF5**: UART8_CTS		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF7: TIM13_CH1 **AF9**: DSI_TE **AF10**: SDMMC3_D2 **AF11**: FMC_NWAIT **AF14**: DCMI_D12/PSSI_D12/DCMIPP_D12 **AF15**: EVENTOUT		
AB14	PZ9	PZ9	**AF1**: MCO2 **AF3**: SPI8_RDY **AF4**: MDF1_CKI5 **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 **AF5**: MDF1_CKI4 **AF8**: TIM20_CH1		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			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_CKI6 **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 **AF15**: EVENTOUT		VDDIO
AB20	GND				

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
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_CKI2 **AF8**: TIM1_CH1N **AF9**: TIM4_CH4 **AF10**: OCTOSPIM_P1_IO3 **AF13**: DCMI_D11/PSSI_D11/DCMIPP_D11 **AF15**: EVENTOUT		VDDIO
AC6	PZ0	PZ0	**AF2**: LPTIM3_IN1 **AF3**: SPI8_MOSI **AF4**: TIM8_CH1 **AF6**: LPUART1_TX **AF7**: LPTIM5_OUT **AF8**: I2C8_SDA	CPU3_SWDIO TAMP_OUT3	VSW

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF10: LPTIM3_CH2 **AF11**: I3C4_SDA **AF15**: EVENTOUT		
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**: DCMI_D3/PSSI_D3/DCMIPP_D3 **AF15**: EVENTOUT		VDDIO
AC9	UART5_RX	PG10	**AF0**: TRACED8 **AF1**: HDP0 **AF5**: UART5_RX **AF8**: TIM8_CH4N **AF13**: LCD_G4 **AF14**: DCMI_D4/PSSI_D4/DCMIPP_D4 **AF15**: EVENTOUT		VDDIO
AC10	SDMMC3_CMD	PD12	**AF1**: SPI7_MISO **AF2**: SPI2_MISO/I2S2_SDI **AF3**: SPDIFRX1_IN2 **AF5**: UART8_RTS/UART8_DE **AF9**: TIM4_ETR **AF10**: SDMMC3_CMD **AF11**: FMC_AD6/FMC_D6		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			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	LDO8				
AC14	FDCAN1_TX	PG11	**AF0**: TRACED9 **AF1**: HDP1 **AF2**: SPI7_MOSI **AF7**: FDCAN1_TX **AF8**: TIM8_CH4 **AF13**: LCD_G5 **AF14**: DCMI_D5/PSSI_D5/DCMIPP_D5 **AF15**: EVENTOUT		VDDIO
AC15	FDCAN1_RX	PG12	**AF0**: TRACED10 **AF1**: HDP2 **AF2**: SPI7_MISO **AF7**: FDCAN1_RX **AF8**: TIM8_CH1N **AF13**: LCD_G6		VDDIO

Pad	ConnectCore MP25 sigal name	STM32MP2 pad name	Alternate functions	Additional functions	Power group
			AF14: DCMI_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			
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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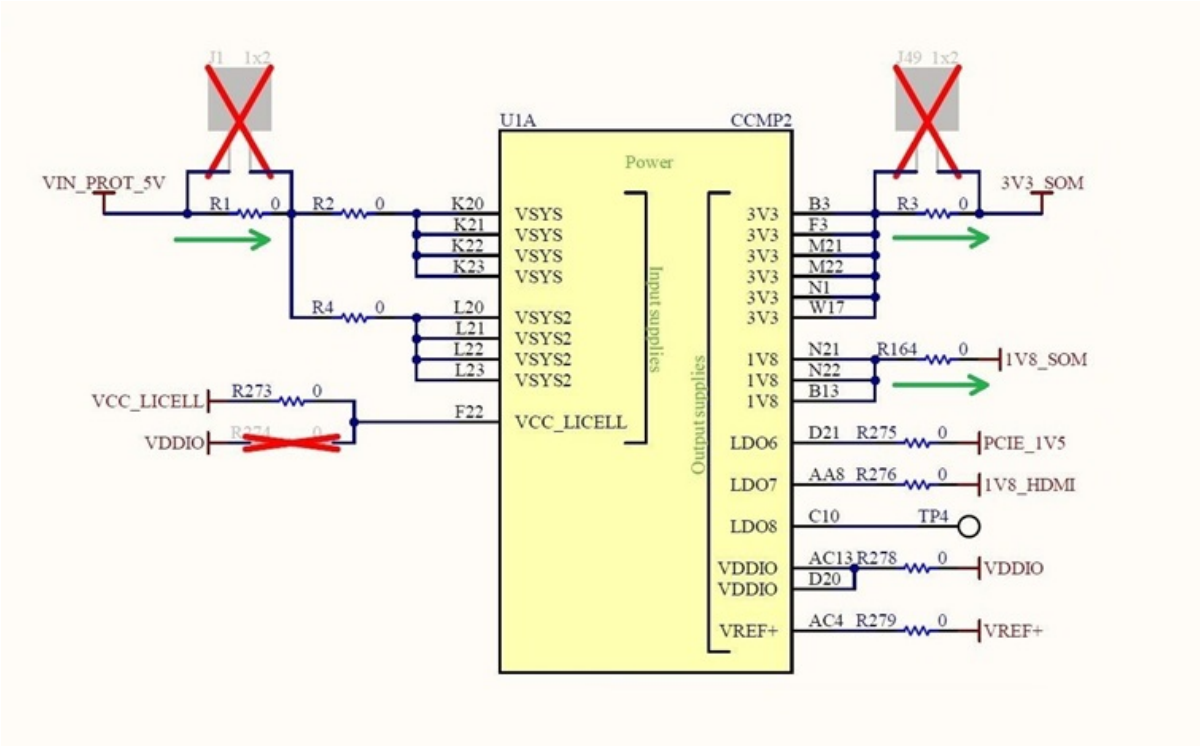
Power consumption

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 (25ºC).

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

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:

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.

System IDLE

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

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
Standby	*TBD*	
IDLE	*TBD*	
RTC	*TBD*	

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.

All sockets are sold and built by E-tec Interconnect AG. The table below provides an overview of the available part numbers.

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

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