

2. Device overview

2.1. Device information

Table 2-1. GD32F407xx devices features and peripheral list

Part Number		GD32F407xx											
		RE	RG	RK	VE	VG	VK	VE	VG	VK	ZE	ZG	ZK
Flash	Code area (KB)	512	512	512	512	512	512	512	512	512	512	512	512
	Data area (KB)	0	512	2560	0	512	2560	0	512	2560	0	512	2560
	Total (KB)	512	1024	3072	512	1024	3072	512	1024	3072	512	1024	3072
SRAM (KB)		192	192	192	192	192	192	192	192	192	192	192	192
Timers	General timer(16-bit)	8 (2-3, 8-13)	8 (2-3, 8-13)	8 (2-3, 8-13)	8 (2-3, 8-13)	8 (2-3, 8-13)	8 (2-3, 8-13)	8 (2-3, 8-13)	8 (2-3, 8-13)	8 (2-3, 8-13)	8 (2-3, 8-13)	8 (2-3, 8-13)	8 (2-3, 8-13)
	General timer(32-bit)	2 (1, 4)	2 (1, 4)	2 (1, 4)	2 (1, 4)	2 (1, 4)	2 (1, 4)	2 (1, 4)	2 (1, 4)	2 (1, 4)	2 (1, 4)	2 (1, 4)	2 (1, 4)
	Advanced timer(16-bit)	2 (0, 7)	2 (0, 7)	2 (0, 7)	2 (0, 7)	2 (0, 7)	2 (0, 7)	2 (0, 7)	2 (0, 7)	2 (0, 7)	2 (0, 7)	2 (0, 7)	2 (0, 7)
	Basic timer(16-bit)	2 (5, 6)	2 (5, 6)	2 (5, 6)	2 (5, 6)	2 (5, 6)	2 (5, 6)	2 (5, 6)	2 (5, 6)	2 (5, 6)	2 (5, 6)	2 (5, 6)	2 (5, 6)
	SysTick	1	1	1	1	1	1	1	1	1	1	1	1
	Watchdog	2	2	2	2	2	2	2	2	2	2	2	2
	RTC	1	1	1	1	1	1	1	1	1	1	1	1
Connectivity	USART	4	4	4	4	4	4	4	4	4	4	4	4
	UART	2	2	2	2	2	2	2	2	2	2	2	2
	I2C	3	3	3	3	3	3	3	3	3	3	3	3
	SPI/I2S	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)
	SDIO	1	1	1	1	1	1	1	1	1	1	1	1
	CAN	2	2	2	2	2	2	2	2	2	2	2	2
	USB	FS+H S	FS+H S	FS+H S	FS+H S	FS+H S	FS+H S	FS+H S	FS+H S	FS+H S	FS+H S	FS+H S	FS+H S
	ENET	1	1	1	1	1	1	1	1	1	1	1	1
	DCI	1	1	1	1	1	1	1	1	1	1	1	1
GPIO		51	51	51	82	82	82	82	82	82	114	114	114

Part Number	GD32F407xx											
	RE	RG	RK	VE	VG	VK	VE	VG	VK	ZE	ZG	ZK
EXMC/SDRAM	0/0	0/0	0/0	1/0	1/0	1/0	1/0	1/0	1/0	1/1	1/1	1/1
ADC(CHs)	3(16)	3(16)	3(16)	3(16)	3(16)	3(16)	3(16)	3(16)	3(16)	3(24)	3(24)	3(24)
DAC	2	2	2	2	2	2	2	2	2	2	2	2
Package	LQFP64			LQFP100			BGA100			LQFP144		

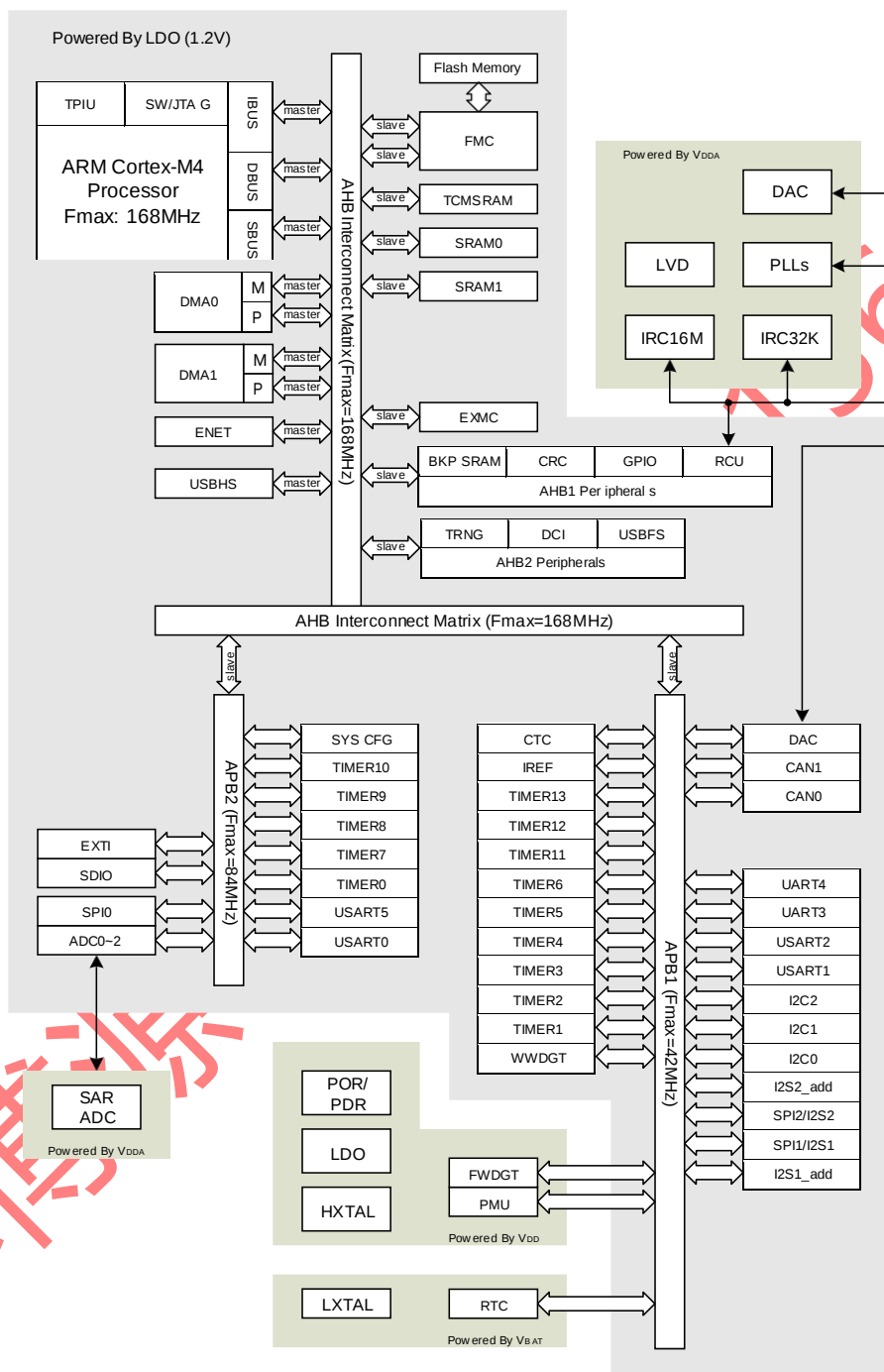
Table 2-2. GD32F407xx devices features and peripheral list (Cont.)

Part Number		GD32F407xx		
		IE	IG	IK
Flash	Code area (KB)	512	512	512
	Data area (KB)	0	512	2560
	Total (KB)	512	1024	3072
SRAM (KB)		192	192	192
Timers	General timer(16-bit)	8 (2-3,8-13)	8 (2-3,8-13)	8 (2-3,8-13)
	General timer(32-bit)	2 (1,4)	2 (1,4)	2 (1,4)
	Advanced timer(16-bit)	2 (0,7)	2 (0,7)	2 (0,7)
	Basic timer(16-bit)	2 (5,6)	2 (5,6)	2 (5,6)
	SysTick	1	1	1
	Watchdog	2	2	2
	RTC	1	1	1
Connectivity	USART	4	4	4
	UART	2	2	2
	I2C	3	3	3
	SPI/I2S	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)	3/2 (0-2)/(1-2)
	SDIO	1	1	1
	CAN	2	2	2
	USB	FS+HS	FS+HS	FS+HS
	ENET	1	1	1
	DCI	1	1	1

Part Number	GD32F407xx		
	IE	IG	IK
GPIO	140	140	140
EXMC/SDRAM	1/1	1/1	1/1
ADC(CHs)	3(24)	3(24)	3(24)
DAC	2	2	2
Package	BGA176		

2.2. Block diagram

Figure 2-1. GD32F407xx block diagram



2.3. Pinouts and pin assignment

Figure 2-2. GD32F407Ix BGA176 pinouts

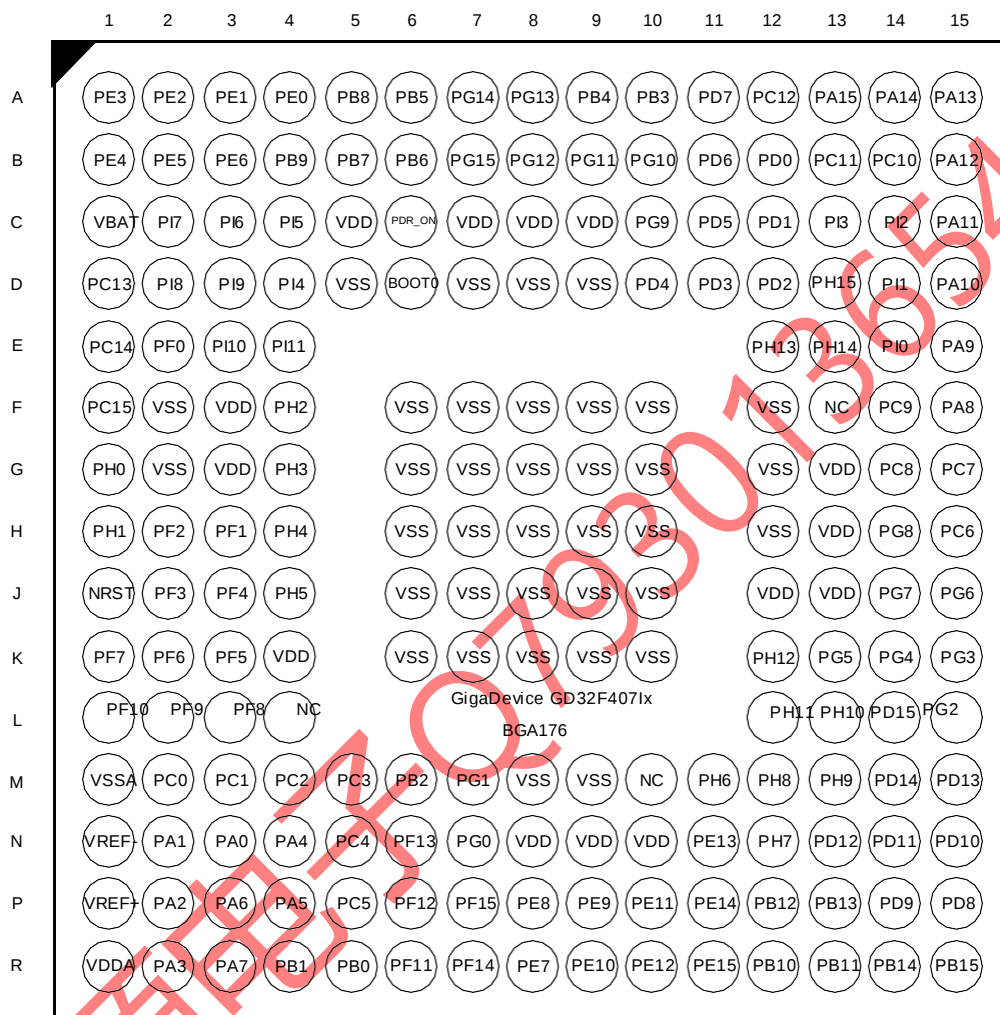


Figure 2-3. GD32F407Vx BGA100 pinouts

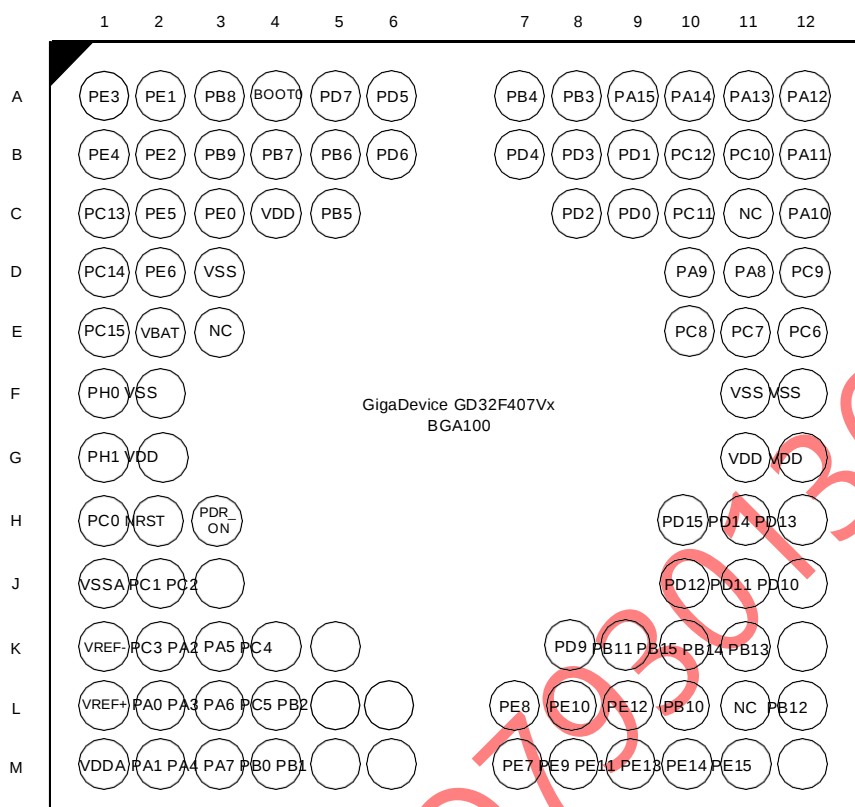


Figure 2-4. GD32F407Zx LQFP144 pinouts



Figure 2-5. GD32F407Vx LQFP100 pinouts

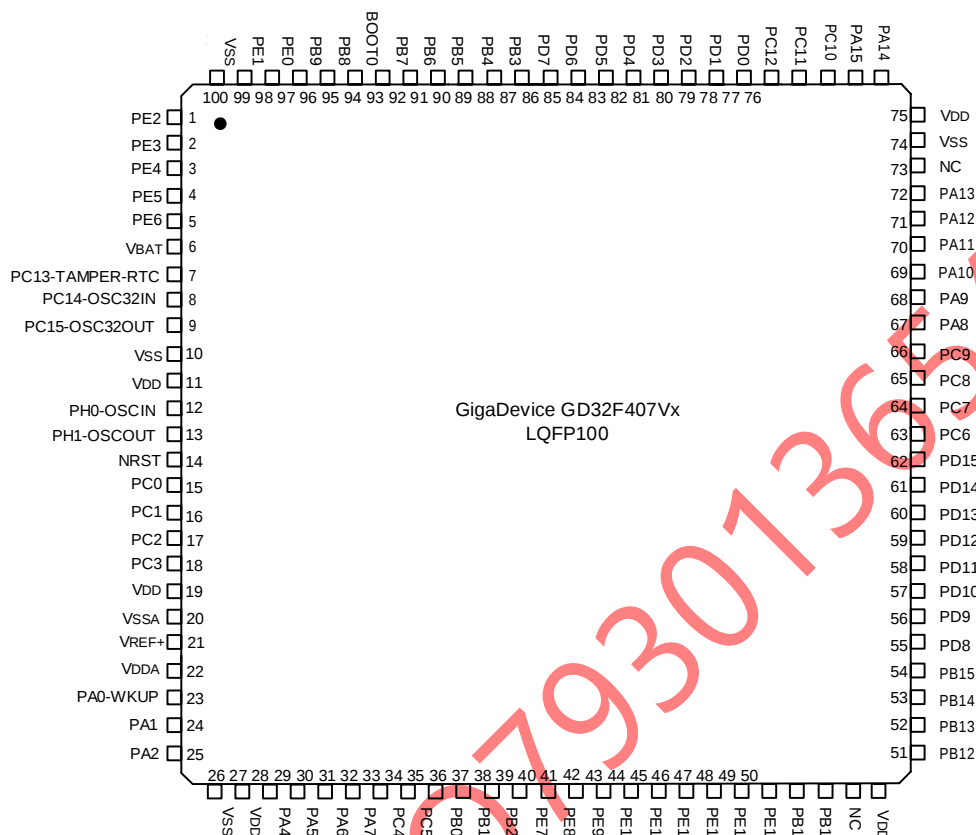
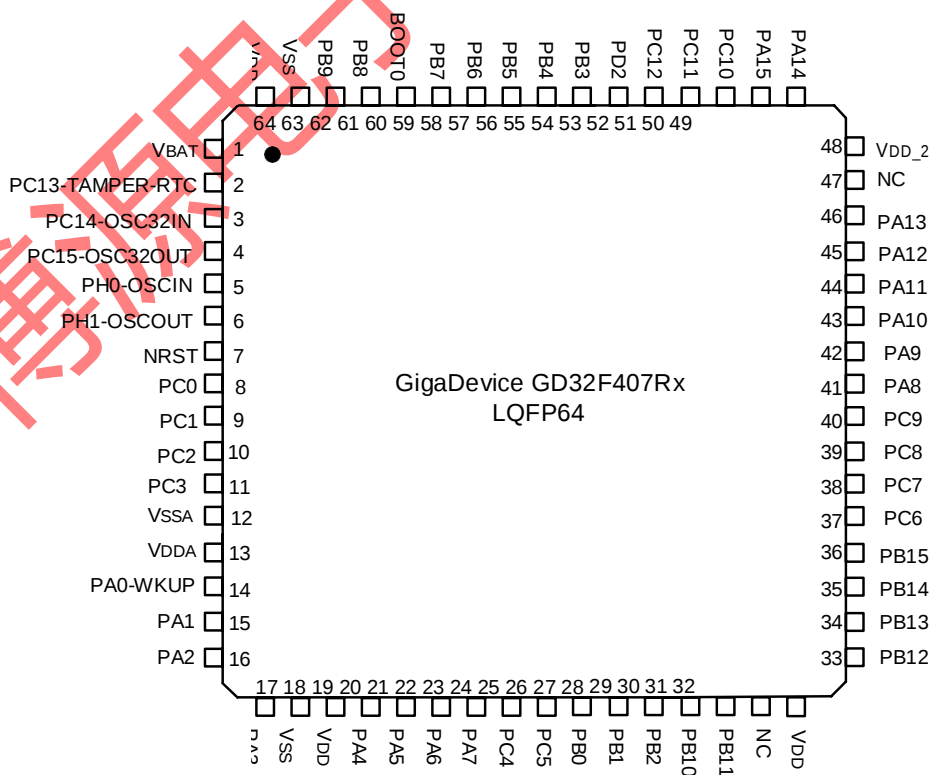


Figure 2-6. GD32F407Rx LQFP64 pinouts



2.4. Memory map

Table 2-3. GD32F407xx memory map

Pre-defined Regions	Bus	Address	Peripherals
External Device	AHB	0xC000 0000 - 0xDFFF FFFF	EXMC - SDRAM
		0xA000 1000 - 0xBFFF FFFF	Reserved
0xA000 0000 - 0xA000 0FFF		EXMC - SWREG	
0x9000 0000 - 0x9FFF FFFF		EXMC - PC CARD	
0x7000 0000 - 0x8FFF FFFF		EXMC - NAND	
0x6000 0000 - 0x6FFF FFFF		EXMC - NOR/PSRAM/SRAM	
External RAM			
Peripheral	AHB2	0x5006 0C00 - 0x5FFF FFFF	Reserved
		0x5006 0800 - 0x5006 0BFF	TRNG
		0x5005 0400 - 0x5006 07FF	Reserved
		0x5005 0000 - 0x5005 03FF	DCI
		0x5004 0000 - 0x5004 FFFF	Reserved
		0x5000 0000 - 0x5003 FFFF	USBFS
	AHB1	0x4008 0000 - 0x4FFF FFFF	Reserved
		0x4004 0000 - 0x4007 FFFF	USBHS
		0x4002 BC00 - 0x4003 FFFF	Reserved
		0x4002 B000 - 0x4002 BBFF	Reserved
		0x4002 A000 - 0x4002 AFFF	Reserved
		0x4002 8000 - 0x4002 9FFF	ENET
		0x4002 6800 - 0x4002 7FFF	Reserved
		0x4002 6400 - 0x4002 67FF	DMA1
		0x4002 6000 - 0x4002 63FF	DMA0
		0x4002 5000 - 0x4002 5FFF	Reserved
		0x4002 4000 - 0x4002 4FFF	BKP SRAM
		0x4002 3C00 - 0x4002 3FFF	FMC
		0x4002 3800 - 0x4002 3BFF	RCU
		0x4002 3400 - 0x4002 37FF	Reserved
		0x4002 3000 - 0x4002 33FF	CRC
		0x4002 2400 - 0x4002 2FFF	Reserved
		0x4002 2000 - 0x4002 23FF	GPIOI
		0x4002 1C00 - 0x4002 1FFF	GPIOH
		0x4002 1800 - 0x4002 1BFF	GPIOG
		0x4002 1400 - 0x4002 17FF	GPIOF
		0x4002 1000 - 0x4002 13FF	GPIOE
		0x4002 0C00 - 0x4002 0FFF	GPIOD
		0x4002 0800 - 0x4002 0BFF	GPIOC
		0x4002 0400 - 0x4002 07FF	GPIOB
		0x4002 0000 - 0x4002 03FF	GPIOA

Pre-defined Regions	Bus	Address	Peripherals
	APB2	0x4001 6C00 - 0x4001 FFFF	Reserved
		0x4001 6800 - 0x4001 6BFF	Reserved
		0x4001 5800 - 0x4001 67FF	Reserved
		0x4001 5400 - 0x4001 57FF	Reserved
		0x4001 5000 - 0x4001 53FF	Reserved
		0x4001 4C00 - 0x4001 4FFF	Reserved
		0x4001 4800 - 0x4001 4BFF	TIMER10
		0x4001 4400 - 0x4001 47FF	TIMER9
		0x4001 4000 - 0x4001 43FF	TIMER8
		0x4001 3C00 - 0x4001 3FFF	EXTI
		0x4001 3800 - 0x4001 3BFF	SYSCFG
		0x4001 3400 - 0x4001 37FF	Reserved
		0x4001 3000 - 0x4001 33FF	SPI0
		0x4001 2C00 - 0x4001 2FFF	SDIO
		0x4001 2400 - 0x4001 2BFF	Reserved
		0x4001 2300 - 0x4001 23FF	ADC0 ⁽¹⁾
		0x4001 2200 - 0x4001 22FF	ADC2
		0x4001 2100 - 0x4001 21FF	ADC1
		0x4001 2000 - 0x4001 20FF	ADC0
		0x4001 1800 - 0x4001 1FFF	Reserved
	APB1	0x4001 1400 - 0x4001 17FF	USART5
		0x4001 1000 - 0x4001 13FF	USART0
		0x4001 0800 - 0x4001 0FFF	Reserved
		0x4001 0400 - 0x4001 07FF	TIMER7
		0x4001 0000 - 0x4001 03FF	TIMER0
		0x4000 C800 - 0x4000 FFFF	Reserved
		0x4000 C400 - 0x4000 C7FF	IREF
		0x4000 8000 - 0x4000 C3FF	Reserved
		0x4000 7C00 - 0x4000 7FFF	Reserved
		0x4000 7800 - 0x4000 7BFF	Reserved
		0x4000 7400 - 0x4000 77FF	DAC
		0x4000 7000 - 0x4000 73FF	PMU
		0x4000 6C00 - 0x4000 6FFF	CTC
		0x4000 6800 - 0x4000 6BFF	CAN1
		0x4000 6400 - 0x4000 67FF	CAN0
		0x4000 6000 - 0x4000 63FF	Reserved
		0x4000 5C00 - 0x4000 5FFF	I2C2
		0x4000 5800 - 0x4000 5BFF	I2C1
		0x4000 5400 - 0x4000 57FF	I2C0
		0x4000 5000 - 0x4000 53FF	UART4

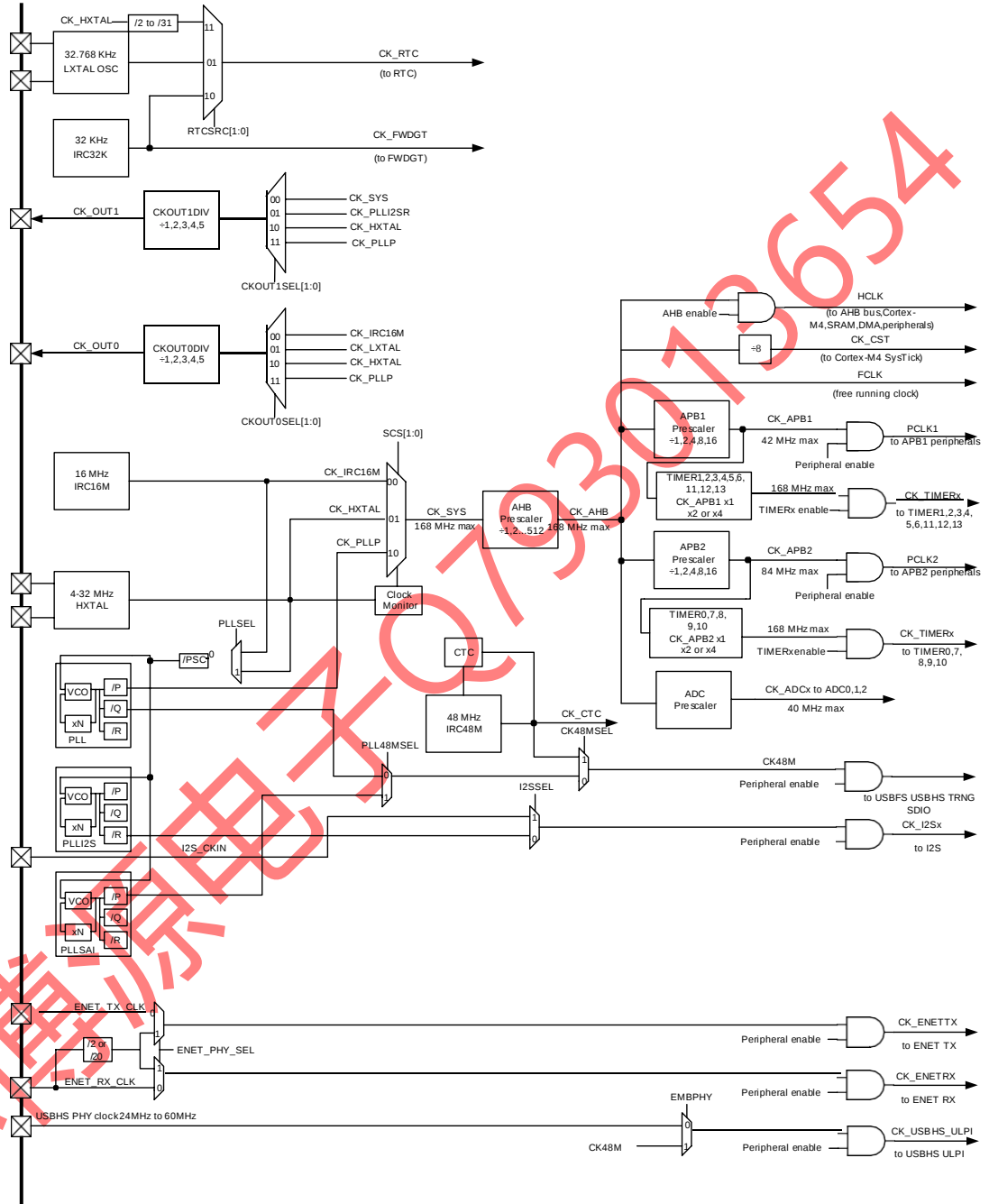
Pre-defined Regions	Bus	Address	Peripherals
		0x4000 4C00 - 0x4000 4FFF	UART3
		0x4000 4800 - 0x4000 4BFF	USART2
		0x4000 4400 - 0x4000 47FF	USART1
		0x4000 4000 - 0x4000 43FF	I2S2_add
		0x4000 3C00 - 0x4000 3FFF	SPI2/I2S2
		0x4000 3800 - 0x4000 3BFF	SPI1/I2S1
		0x4000 3400 - 0x4000 37FF	I2S1_add
		0x4000 3000 - 0x4000 33FF	FWDGT
		0x4000 2C00 - 0x4000 2FFF	WWDGT
		0x4000 2800 - 0x4000 2BFF	RTC
		0x4000 2400 - 0x4000 27FF	Reserved
		0x4000 2000 - 0x4000 23FF	TIMER13
		0x4000 1C00 - 0x4000 1FFF	TIMER12
		0x4000 1800 - 0x4000 1BFF	TIMER11
		0x4000 1400 - 0x4000 17FF	TIMER6
		0x4000 1000 - 0x4000 13FF	TIMER5
		0x4000 0C00 - 0x4000 0FFF	TIMER4
		0x4000 0800 - 0x4000 0BFF	TIMER3
		0x4000 0400 - 0x4000 07FF	TIMER2
		0x4000 0000 - 0x4000 03FF	TIMER1
SRAM	AHB	0x2007 0000 - 0x3FFF FFFF	Reserved
		0x2003 0000 - 0x2006 FFFF	Reserved
		0x2002 0000 - 0x2002 FFFF	Reserved
		0x2001 C000 - 0x2001 FFFF	SRAM1(16KB)
		0x2000 0000 - 0x2001 BFFF	SRAM0(112KB)
Code	AHB	0x1FFF C010 - 0x1FFF FFFF	Reserved
		0x1FFF C000 - 0x1FFF C00F	Option bytes(Bank 0)
		0x1FFF 7A10 - 0x1FFF BFFF	Reserved
		0x1FFF 7800 - 0x1FFF 7A0F	Reserved
		0x1FFF 0000 - 0x1FFF 77FF	Boot loader(30KB)
		0x1FFE C010 - 0x1FFE FFFF	Reserved
		0x1FFE C000 - 0x1FFE C00F	Option bytes(Bank 1)
		0x1001 0000 - 0x1FFE BFFF	Reserved
		0x1000 0000 - 0x1000 FFFF	TCMSRAM(64KB)
		0x0830 0000 - 0x0FFF FFFF	Reserved
		0x0800 0000 - 0x082F FFFF	Main Flash(3072KB)
		0x0000 0000 - 0x07FF FFFF	Aliased to the boot device

Note:

(1) ADC_SSTAT, ADC_SYNCCTL, ADC_SYNCDATA based on base address of ADC0.

2.5. Clock tree

Figure 2-7. GD32F407xx clock tree



Legend:

- HXTAL: High speed crystal oscillator
- LXTAL: Low speed crystal oscillator
- IRC16M: Internal 16M RC oscillators
- IRC32K: Internal 32K RC oscillator
- IRC48M: Internal 48M RC oscillators

2.6. Pin definitions

2.6.1. GD32F407Ixx BGA176 pin definitions

Table 2-4. GD32F407Ixx BGA176 pin definitions

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PE2	A2	I/O	5VT	Default: PE2 Alternate: TRACECK, ENET_MII_TXD3, EXMC_A23, EVENTOUT
PE3	A1	I/O	5VT	Default: PE3 Alternate: TRACED0, EXMC_A19, EVENTOUT
PE4	B1	I/O	5VT	Default: PE4 Alternate: TRACED1, EXMC_A20, DCI_D4, EVENTOUT
PE5	B2	I/O	5VT	Default: PE5 Alternate: TRACED2, TIMER8_CH0, EXMC_A21, DCI_D6, EVENTOUT
PE6	B3	I/O	5VT	Default: PE6 Alternate: TRACED3, TIMER8_CH1, EXMC_A22, DCI_D7, EVENTOUT
V _{BAT}	C1	P	-	Default: V _{BAT}
PI8	D2	I/O	5VT	Default: PI8 Alternate: EVENTOUT Additional: RTC_TAMP1, RTC_TAMP0, RTC_TS
PC13- TAMPER- RTC	D1	I/O	5VT	Default: PC13 Alternate: EVENTOUT Additional: RTC_TAMP0, RTC_OUT, RTC_TS
PC14- OSC32IN	E1	I/O	5VT	Default: PC14 Alternate: EVENTOUT Additional: OSC32IN
PC15- OSC32O UT	F1	I/O	5VT	Default: PC15 Alternate: EVENTOUT Additional: OSC32OUT
PI9	D3	I/O	5VT	Default: PI9 Alternate: CAN0_RX, EXMC_D30, EVENTOUT
PI10	E3	I/O	5VT	Default: PI10 Alternate: ENET_MII_RX_ER, EXMC_D31, EVENTOUT
PI11	E4	I/O	5VT	Default: PI11 Alternate: USBHS_ULPI_DIR, EVENTOUT
V _{SS}	F2	P	-	Default: V _{SS}
V _{DD}	F3	P	-	Default: V _{DD}
PF0	E2	I/O	5VT	Default: PF0

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: I2C1_SDA, EXMC_A0, EVENTOUT, CTC_SYNC
PF1	H3	I/O	5VT	Default: PF1 Alternate: I2C1_SCL, EXMC_A1, EVENTOUT
PF2	H2	I/O	5VT	Default: PF2 Alternate: I2C1_SMBA, EXMC_A2, EVENTOUT
PF3	J2	I/O	5VT	Default: PF3 Alternate: EXMC_A3, EVENTOUT, I2C1_TXFRAME Additional: ADC2_IN9
PF4	J3	I/O	5VT	Default: PF4 Alternate: EXMC_A4, EVENTOUT Additional: ADC2_IN14
PF5	K3	I/O	5VT	Default: PF5 Alternate: EXMC_A5, EVENTOUT Additional: ADC2_IN15
V _{SS}	G2	P	-	Default: V _{SS}
V _{DD}	G3	P	-	Default: V _{DD}
PF6	K2	I/O	5VT	Default: PF6 Alternate: TIMER9_CH0, EXMC_NIORD, EVENTOUT Additional: ADC2_IN4
PF7	K1	I/O	5VT	Default: PF7 Alternate: TIMER10_CH0, EXMC_NREG, EVENTOUT Additional: ADC2_IN5
PF8	L3	I/O	5VT	Default: PF8 Alternate: TIMER12_CH0, EXMC_NIOWR, EVENTOUT Additional: ADC2_IN6
PF9	L2	I/O	5VT	Default: PF9 Alternate: TIMER13_CH0, EXMC_CD, EVENTOUT Additional: ADC2_IN7
PF10	L1	I/O	5VT	Default: PF10 Alternate: EXMC_INTR, DCI_D11, EVENTOUT Additional: ADC2_IN8
PH0	G1	I/O	5VT	Default: PH0, OSCIN Alternate: EVENTOUT Additional: OSCIN
PH1	H1	I/O	5VT	Default: PH1, OSCOUT Alternate: EVENTOUT Additional: OSCOUT
NRST	J1	-	-	Default: NRST
PC0	M2	I/O	5VT	Default: PC0 Alternate: USBHS_ULPI_STP, EXMC_SDNWE, EVENTOUT Additional: ADC012_IN10

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PC1	M3	I/O	5VT	Default: PC1 Alternate: SPI2_MOSI, I2S2_SD, SPI1_MOSI, I2S1_SD, ENET_MDC, EVENTOUT Additional: ADC012_IN11
PC2	M4	I/O	5VT	Default: PC2 Alternate: SPI1_MISO, I2S1_ADD_SD, USBHS_ULPI_DIR, ENET_MII_TXD2, EXMC_SDNE0, EVENTOUT Additional: ADC012_IN12
PC3	M5	I/O	5VT	Default: PC3 Alternate: SPI1_MOSI, I2S1_SD, USBHS_ULPI_NXT, ENET_MII_TX_CLK, EXMC_SDCKE0, EVENTOUT Additional: ADC012_IN13
V _{DD}	G3	P	-	Default: V _{DD}
V _{SSA}	M1	P	-	Default: V _{SSA}
V _{REFN}	N1	P	-	Default: V _{REF-}
V _{REFP}	P1	P	-	Default: V _{REF+}
V _{DDA}	R1	P	-	Default: V _{DDA}
PA0-WKUP	N3	I/O	5VT	Default: PA0 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER4_CH0, TIMER7_ETI, USART1_CTS, UART3_TX, ENET_MII_CRS, EVENTOUT Additional: ADC012_IN0, WKUP
PA1	N2	I/O	5VT	Default: PA1 Alternate: TIMER1_CH1, TIMER4_CH1, USART1_RTS, UART3_RX, ENET_MII_RX_CLK, ENET_RMII_REF_CLK, EVENTOUT Additional: ADC012_IN1
PA2	P2	I/O	5VT	Default: PA2 Alternate: TIMER1_CH2, TIMER4_CH2, TIMER8_CH0, I2S_CKIN, USART1_TX, ENET_MDIO, EVENTOUT Additional: ADC012_IN2
PH2	F4	I/O	5VT	Default: PH2 Alternate: ENET_MII_CRS, EXMC_SDCKE0, EVENTOUT
PH3	G4	I/O	5VT	Default: PH3 Alternate: ENET_MII_COL, EXMC_SDNE0, EVENTOUT, I2C1_TXFRAME
PH4	H4	I/O	5VT	Default: PH4 Alternate: I2C1_SCL, USBHS_ULPI_NXT, EVENTOUT
PH5	J4	I/O	5VT	Default: PH5 Alternate: I2C1_SDA, EXMC_SDNWE, EVENTOUT
PA3	R2	I/O	5VT	Default: PA3

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: TIMER1_CH3, TIMER4_CH3, TIMER8_CH1, I2S1_MCK, USART1_RX, USBHS_ULPI_D0, ENET_MII_COL, EVENTOUT Additional: ADC012_IN3
NC	L4	-	-	-
V _{DD}	K4	P	-	Default: V _{DD}
PA4	N4	I/O		Default: PA4 Alternate: SPI0_NSS, SPI2_NSS, I2S2_WS, USART1_CK, USBHS_SOF, DCI_HSYNC, EVENTOUT Additional: ADC01_IN4, DAC_OUT0
PA5	P4	I/O		Default: PA5 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER7_CH0_ON, SPI0_SCK, USBHS_ULPI_CK, EVENTOUT Additional: ADC01_IN5, DAC_OUT1
PA6	P3	I/O	5VT	Default: PA6 Alternate: TIMER0_BRKIN, TIMER2_CH0, TIMER7_BRKIN, SPI0_MISO, I2S1_MCK, TIMER12_CH0, SDIO_CMD, DCI_PIXCLK, EVENTOUT Additional: ADC01_IN6
PA7	R3	I/O	5VT	Default: PA7 Alternate: TIMER0_CH0_ON, TIMER2_CH1, TIMER7_CH0_ON, SPI0_MOSI, TIMER13_CH0, ENET_MII_RX_DV, ENET_RMII_CRS_DV, EXMC_SDNWE, EVENTOUT Additional: ADC01_IN7
PC4	N5	I/O	5VT	Default: PC4 Alternate: ENET_MII_RXD0, ENET_RMII_RXD0, EXMC_SDNE0, EVENTOUT Additional: ADC01_IN14
PC5	P5	I/O	5VT	Default: PC5 Alternate: USART2_RX, ENET_MII_RXD1, ENET_RMII_RXD1, EXMC_SDCKE0, EVENTOUT Additional: ADC01_IN15
PB0	R5	I/O	5VT	Default: PB0 Alternate: TIMER0_CH1_ON, TIMER2_CH2, TIMER7_CH1_ON, SPI2_MOSI, I2S2_SD, USBHS_ULPI_D1, ENET_MII_RXD2, SDIO_D1, EVENTOUT Additional: ADC01_IN8, IREF
PB1	R4	I/O	5VT	Default: PB1 Alternate: TIMER0_CH2_ON, TIMER2_CH3,

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				TIMER7_CH2_ON, USBHS_ULPI_D2, ENET_MII_RXD3, SDIO_D2, EVENTOUT Additional: ADC01_IN9
PB2	M6	I/O	5VT	Default: PB2, BOOT1 Alternate: TIMER1_CH3, SPI2_MOSI, I2S2_SD, USBHS_ULPI_D4, SDIO_CK, EVENTOUT
PF11	R6	I/O	5VT	Default: PF11 Alternate: EXMC_SDNRAS, DCI_D12, EVENTOUT
PF12	P6	I/O	5VT	Default: PF12 Alternate: EXMC_A6, EVENTOUT
V _{SS}	M8	P	-	Default: V _{SS}
V _{DD}	N8	P	-	Default: V _{DD}
PF13	N6	I/O	5VT	Default: PF13 Alternate: EXMC_A7, EVENTOUT
PF14	R7	I/O	5VT	Default: PF14 Alternate: EXMC_A8, EVENTOUT
PF15	P7	I/O	5VT	Default: PF15 Alternate: EXMC_A9, EVENTOUT
PG0	N7	I/O	5VT	Default: PG0 Alternate: EXMC_A10, EVENTOUT
PG1	M7	I/O	5VT	Default: PG1 Alternate: EXMC_A11, EVENTOUT
PE7	R8	I/O	5VT	Default: PE7 Alternate: TIMER0_ETI, EXMC_D4, EVENTOUT
PE8	P8	I/O	5VT	Default: PE8 Alternate: TIMER0_CH0_ON, EXMC_D5, EVENTOUT
PE9	P9	I/O	5VT	Default: PE9 Alternate: TIMER0_CH0, EXMC_D6, EVENTOUT
V _{SS}	M9	P	-	Default: V _{SS}
V _{DD}	N9	P	-	Default: V _{DD}
PE10	R9	I/O	5VT	Default: PE10 Alternate: TIMER0_CH1_ON, EXMC_D7, EVENTOUT
PE11	P10	I/O	5VT	Default: PE11 Alternate: TIMER0_CH1, EXMC_D8, EVENTOUT
PE12	R10	I/O	5VT	Default: PE12 Alternate: TIMER0_CH2_ON, EXMC_D9, EVENTOUT
PE13	N11	I/O	5VT	Default: PE13 Alternate: TIMER0_CH2, EXMC_D10, EVENTOUT
PE14	P11	I/O	5VT	Default: PE14 Alternate: TIMER0_CH3, EXMC_D11, EVENTOUT
PE15	R11	I/O	5VT	Default: PE15

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: TIMER0_BRKIN, EXMC_D12, EVENTOUT
PB10	R12	I/O	5VT	Default: PB10 Alternate: TIMER1_CH2, I2C1_SCL, SPI1_SCK, I2S1_CK, I2S2_MCK, USART2_TX, USBHS_ULPI_D3, ENET_MII_RX_ER, SDIO_D7, EVENTOUT
PB11	R13	I/O	5VT	Default: PB11 Alternate: TIMER1_CH3, I2C1_SDA, I2S_CKIN, USART2_RX, USBHS_ULPI_D4, ENET_MII_TX_EN, ENET_RMII_TX_EN, EVENTOUT
NC	M10	P	-	Default: V _{CORE}
V _{DD}	N10	P	-	Default: V _{DD}
PH6	M11	I/O	5VT	Default: PH6 Alternate: I2C1_SMBA, TIMER11_CH0, ENET_MII_RXD2, EXMC_SDNE1, DCI_D8, EVENTOUT
PH7	N12	I/O	5VT	Default: PH7 Alternate: I2C2_SCL, ENET_MII_RXD3, EXMC_SDCKE1, DCI_D9, EVENTOUT
PH8	M12	I/O	5VT	Default: PH8 Alternate: I2C2_SDA, EXMC_D16, DCI_HSYNC, EVENTOUT
PH9	M13	I/O	5VT	Default: PH9 Alternate: I2C2_SMBA, TIMER11_CH1, EXMC_D17, DCI_D0, EVENTOUT
PH10	L13	I/O	5VT	Default: PH10 Alternate: TIMER4_CH0, EXMC_D18, DCI_D1, EVENTOUT, I2C2_TXFRAME
PH11	L12	I/O	5VT	Default: PH11 Alternate: TIMER4_CH1, EXMC_D19, DCI_D2, EVENTOUT
PH12	K12	I/O	5VT	Default: PH12 Alternate: TIMER4_CH2, EXMC_D20, DCI_D3, EVENTOUT
V _{SS}	H12	P	-	Default: V _{SS}
V _{DD}	J12	P	-	Default: V _{DD}
PB12	P12	I/O	5VT	Default: PB12 Alternate: TIMER0_BRKIN, I2C1_SMBA, SPI1_NSS, I2S1_WS, USART2_CK, CAN1_RX, USBHS_ULPI_D5, ENET_MII_TXD0, ENET_RMII_TXD0, USBHS_ID, EVENTOUT
PB13	P13	I/O	5VT	Default: PB13 Alternate: TIMER0_CH0_ON, SPI1_SCK, I2S1_CK, USART2_CTS, CAN1_TX, USBHS_ULPI_D6, ENET_MII_TXD1, ENET_RMII_TXD1, EVENTOUT,

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				I2C1_TXFRAME Additional: USBHS_VBUS
PB14	R14	I/O	5VT	Default: PB14 Alternate: TIMER0_CH1_ON, TIMER7_CH1_ON, SPI1_MISO, I2S1_ADD_SD, USART2_RTS, TIMER11_CH0, USBHS_DM, EVENTOUT
PB15	R15	I/O	5VT	Default: PB15 Alternate: RTC_REFIN, TIMER0_CH2_ON, TIMER7_CH2_ON, SPI1_MOSI, I2S1_SD, TIMER11_CH1, USBHS_DP, EVENTOUT
PD8	P15	I/O	5VT	Default: PD8 Alternate: USART2_TX, EXMC_D13, EVENTOUT
PD9	P14	I/O	5VT	Default: PD9 Alternate: USART2_RX, EXMC_D14, EVENTOUT
PD10	N15	I/O	5VT	Default: PD10 Alternate: USART2_CK, EXMC_D15, EVENTOUT
PD11	N14	I/O	5VT	Default: PD11 Alternate: USART2_CTS, EXMC_A16, EVENTOUT
PD12	N13	I/O	5VT	Default: PD12 Alternate: TIMER3_CH0, USART2_RTS, EXMC_A17, EVENTOUT
PD13	M15	I/O	5VT	Default: PD13 Alternate: TIMER3_CH1, EXMC_A18, EVENTOUT
V _{DD}	J13	P	-	Default: V _{DD}
PD14	M14	I/O	5VT	Default: PD14 Alternate: TIMER3_CH2, EXMC_D0, EVENTOUT
PD15	L14	I/O	5VT	Default: PD15 Alternate: TIMER3_CH3, EXMC_D1, EVENTOUT, CTC_SYNC
PG2	L15	I/O	5VT	Default: PG2 Alternate: EXMC_A12, EVENTOUT
PG3	K15	I/O	5VT	Default: PG3 Alternate: EXMC_A13, EVENTOUT
PG4	K14	I/O	5VT	Default: PG4 Alternate: EXMC_A14, EVENTOUT
PG5	K13	I/O	5VT	Default: PG5 Alternate: EXMC_A15, EVENTOUT
PG6	J15	I/O	5VT	Default: PG6 Alternate: EXMC_INT1, DCI_D12, EVENTOUT
PG7	J14	I/O	5VT	Default: PG7 Alternate: USART5_CK, EXMC_INT2, DCI_D13,

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				EVENTOUT
PG8	H14	I/O	5VT	Default: PG8 Alternate: USART5_RTS, ENET_PPS_OUT, EXMC_SDCLK, EVENTOUT
V _{SS}	G12	P	-	Default: V _{SS}
V _{DD}	H13	P	-	Default: V _{DD}
PC6	H15	I/O	5VT	Default: PC6 Alternate: TIMER2_CH0, TIMER7_CH0, I2S1_MCK, USART5_TX, SDIO_D6, DCI_D0, EVENTOUT
PC7	G15	I/O	5VT	Default: PC7 Alternate: TIMER2_CH1, TIMER7_CH1, SPI1_SCK, I2S1_CK, I2S2_MCK, USART5_RX, SDIO_D7, DCI_D1, EVENTOUT
PC8	G14	I/O	5VT	Default: PC8 Alternate: TRACED0, TIMER2_CH2, TIMER7_CH2, USART5_CK, SDIO_D0, DCI_D2, EVENTOUT
PC9	F14	I/O	5VT	Default: PC9 Alternate: CK_OUT1, TIMER2_CH3, TIMER7_CH3, I2C2_SDA, I2S_CKIN, SDIO_D1, DCI_D3, EVENTOUT
PA8	F15	I/O	5VT	Default: PA8 Alternate: CK_OUT0, TIMER0_CH0, I2C2_SCL, USART0_CK, USBFS_SOF, SDIO_D1, EVENTOUT, CTC_SYNC
PA9	E15	I/O	5VT	Default: PA9 Alternate: TIMER0_CH1, I2C2_SMBA, SPI1_SCK, I2S1_CK, USART0_TX, SDIO_D2, DCI_D0, EVENTOUT Additional: USBFS_VBUS
PA10	D15	I/O	5VT	Default: PA10 Alternate: TIMER0_CH2, USART0_RX, USBFS_ID, DCI_D1, EVENTOUT, I2C2_TXFRAME
PA11	C15	I/O	5VT	Default: PA11 Alternate: TIMER0_CH3, USART0_CTS, USART5_TX, CAN0_RX, USBFS_DM, EVENTOUT
PA12	B15	I/O	5VT	Default: PA12 Alternate: TIMER0_ETI, USART0_RTS, USART5_RX, CAN0_TX, USBFS_DP, EVENTOUT
PA13	A15	I/O	5VT	Default: JTMS, SWDIO, PA13 Alternate: EVENTOUT
NC	F13	-	-	-
V _{SS}	F12	P	-	Default: V _{SS}
V _{DD}	G13	P	-	Default: V _{DD}

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PH13	E12	I/O	5VT	Default: PH13 Alternate: TIMER7_CH0_ON, CAN0_TX, EXMC_D21, EVENTOUT
PH14	E13	I/O	5VT	Default: PH14 Alternate: TIMER7_CH1_ON, EXMC_D22, DCI_D4, EVENTOUT
PH15	D13	I/O	5VT	Default: PH15 Alternate: TIMER7_CH2_ON, EXMC_D23, DCI_D11, EVENTOUT
PI0	E14	I/O	5VT	Default: PI0 Alternate: TIMER4_CH3, SPI1_NSS, I2S1_WS, EXMC_D24, DCI_D13, EVENTOUT
PI1	D14	I/O	5VT	Default: PI1 Alternate: SPI1_SCK, I2S1_CK, EXMC_D25, DCI_D8, EVENTOUT
PI2	C14	I/O	5VT	Default: PI2 Alternate: TIMER7_CH3, SPI1_MISO, I2S1_ADD_SD, EXMC_D26, DCI_D9, EVENTOUT
PI3	C13	I/O	5VT	Default: PI3 Alternate: TIMER7_ETI, SPI1_MOSI, I2S1_SD, EXMC_D27, DCI_D10, EVENTOUT
V _{SS}	D9	P	-	Default: V _{SS}
V _{DD}	C9	P	-	Default: V _{DD}
PA14	A14	I/O	5VT	Default: JTCK, SWCLK, PA14 Alternate: EVENTOUT
PA15	A13	I/O	5VT	Default: JTDI, PA15 Alternate: TIMER1_CH0, TIMER1_ETI, SPI0_NSS, SPI2_NSS, I2S2_WS, USART0_TX, EVENTOUT
PC10	B14	I/O	5VT	Default: PC10 Alternate: SPI2_SCK, I2S2_CK, USART2_TX, UART3_TX, SDIO_D2, DCI_D8, EVENTOUT
PC11	B13	I/O	5VT	Default: PC11 Alternate: I2S2_ADD_SD, SPI2_MISO, USART2_RX, UART3_RX, SDIO_D3, DCI_D4, EVENTOUT
PC12	A12	I/O	5VT	Default: PC12 Alternate: I2C1_SDA, SPI2_MOSI, I2S2_SD, USART2_CK, UART4_TX, SDIO_CK, DCI_D9, EVENTOUT
PD0	B12	I/O	5VT	Default: PD0 Alternate: SPI2_MOSI, I2S2_SD, CAN0_RX, EXMC_D2, EVENTOUT
PD1	C12	I/O	5VT	Default: PD1

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: SPI1_NSS, I2S1_WS, CAN0_TX, EXMC_D3, EVENTOUT
PD2	D12	I/O	5VT	Default: PD2 Alternate: TIMER2_ETI, UART4_RX, SDIO_CMD, DCI_D11, EVENTOUT
PD3	D11	I/O	5VT	Default: PD3 Alternate: TRACED1, SPI1_SCK, I2S1_CK, USART1_CTS, EXMC_CLK, DCI_D5, EVENTOUT
PD4	D10	I/O	5VT	Default: PD4 Alternate: USART1_RTS, EXMC_NOE, EVENTOUT
PD5	C11	I/O	5VT	Default: PD5 Alternate: USART1_TX, EXMC_NWE, EVENTOUT
V _{SS}	D8	P	-	Default: V _{SS}
V _{DD}	C8	P	-	Default: V _{DD}
PD6	B11	I/O	5VT	Default: PD6 Alternate: SPI2_MOSI, I2S2_SD, USART1_RX, EXMC_NWAIT, DCI_D10, EVENTOUT
PD7	A11	I/O	5VT	Default: PD7 Alternate: USART1_CK, EXMC_NE0, EXMC_NCE1, EVENTOUT
PG9	C10	I/O	5VT	Default: PG9 Alternate: USART5_RX, EXMC_NE1, EXMC_NCE2, DCI_VSYNC, EVENTOUT
PG10	B10	I/O	5VT	Default: PG10 Alternate: EXMC_NCE3_0, EXMC_NE2, DCI_D2, EVENTOUT
PG11	B9	I/O	5VT	Default: PG11 Alternate: ENET_MII_TX_EN, ENET_RMII_TX_EN, EXMC_NCE3_1, DCI_D3, EVENTOUT
PG12	B8	I/O	5VT	Default: PG12 Alternate: USART5_RTS, EXMC_NE3, EVENTOUT
PG13	A8	I/O	5VT	Default: PG13 Alternate: TRACED2, USART5_CTS, ENET_MII_TXD0, ENET_RMII_TXD0, EXMC_A24, EVENTOUT
PG14	A7	I/O	5VT	Default: PG14 Alternate: TRACED3, USART5_TX, ENET_MII_TXD1, ENET_RMII_TXD1, EXMC_A25, EVENTOUT
V _{SS}	D7	P	-	Default: V _{SS}
V _{DD}	C7	P	-	Default: V _{DD}
PG15	B7	I/O	5VT	Default: PG15 Alternate: USART5_CTS, EXMC_SDNCAS, DCI_D13,

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				EVENTOUT
PB3	A10	I/O	5VT	Default: JTDO, PB3 Alternate: TRACESWO, TIMER1_CH1, SPI0_SCK, SPI2_SCK, I2S2_CK, USART0_RX, I2C1_SDA, EVENTOUT
PB4	A9	I/O	5VT	Default: NJTRST, PB4 Alternate: TIMER2_CH0, SPI0_MISO, SPI2_MISO, I2S2_ADD_SD, I2C2_SDA, SDIO_D0, EVENTOUT, I2C0_TXFRAME
PB5	A6	I/O	5VT	Default: PB5 Alternate: TIMER2_CH1, I2C0_SMBA, SPI0_MOSI, SPI2_MOSI, I2S2_SD, CAN1_RX, USBHS_ULPI_D7, ENET_PPS_OUT, EXMC_SDCKE1, DCI_D10, EVENTOUT
PB6	B6	I/O	5VT	Default: PB6 Alternate: TIMER3_CH0, I2C0_SCL, USART0_TX, CAN1_TX, EXMC_SDNE1, DCI_D5, EVENTOUT
PB7	B5	I/O	5VT	Default: PB7 Alternate: TIMER3_CH1, I2C0_SDA, USART0_RX, EXMC_NL, DCI_VSYNC, EVENTOUT
BOOT0	D6	I/O	5VT	Default: BOOT0
PB8	A5	I/O	5VT	Default: PB8 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER3_CH2, TIMER9_CH0, I2C0_SCL, CAN0_RX, ENET_MII_TXD3, SDIO_D4, DCI_D6, EVENTOUT
PB9	B4	I/O	5VT	Default: PB9 Alternate: TIMER1_CH1, TIMER3_CH3, TIMER10_CH0, I2C0_SDA, SPI1_NSS, I2S1_WS, CAN0_TX, SDIO_D5, DCI_D7, EVENTOUT
PE0	A4	I/O	5VT	Default: PE0 Alternate: TIMER3_ETI, EXMC_NBL0, DCI_D2, EVENTOUT
PE1	A3	I/O	5VT	Default: PE1 Alternate: TIMER0_CH1_ON, EXMC_NBL1, DCI_D3, EVENTOUT
V _{SS}	D5	P	-	Default: V _{SS}
PDR_ON	C6	P	-	Default: PDR_ON
V _{DD}	C5	P	-	Default: V _{DD}
PI4	D4	I/O	5VT	Default: PI4 Alternate: TIMER7_BRKIN, EXMC_NBL2, DCI_D5, EVENTOUT
PI5	C4	I/O	5VT	Default: PI5 Alternate: TIMER7_CH0, EXMC_NBL3, DCI_VSYNC, EVENTOUT

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PI6	C3	I/O	5VT	Default: PI6 Alternate: TIMER7_CH1, EXMC_D28, DCI_D6, EVENTOUT
PI7	C2	I/O	5VT	Default: PI7 Alternate: TIMER7_CH2, EXMC_D29, DCI_D7, EVENTOUT

Notes:

(1) Type: I = input, O = output, P = power.

(2) I/O Level: 5VT = 5 V tolerant.

2.6.2. GD32F407Zx LQFP144 pin definitions

Table 2-5. GD32F407Zx LQFP144 pin definitions

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PE2	1	I/O	5VT	Default: PE2 Alternate: TRACECK, ENET_MII_TXD3, EXMC_A23, EVENTOUT
PE3	2	I/O	5VT	Default: PE3 Alternate: TRACED0, EXMC_A19, EVENTOUT
PE4	3	I/O	5VT	Default: PE4 Alternate: TRACED1, EXMC_A20, DCI_D4, EVENTOUT
PE5	4	I/O	5VT	Default: PE5 Alternate: TRACED2, TIMER8_CH0, EXMC_A21, DCI_D6, EVENTOUT
PE6	5	I/O	5VT	Default: PE6 Alternate: TRACED3, TIMER8_CH1, EXMC_A22, DCI_D7, EVENTOUT
V _{BAT}	6	P	-	Default: V _{BAT}
PC13- TAMPER- RTC	7	I/O	5VT	Default: PC13 Alternate: EVENTOUT Additional: RTC_TAMP0, RTC_OUT, RTC_TS
PC14- OSC32IN	8	I/O	5VT	Default: PC14 Alternate: EVENTOUT Additional: OSC32IN
PC15- OSC32O UT	9	I/O	5VT	Default: PC15 Alternate: EVENTOUT Additional: OSC32OUT
PF0	10	I/O	5VT	Default: PF0 Alternate: I2C1_SDA, EXMC_A0, EVENTOUT, CTC_SYNC
PF1	11	I/O	5VT	Default: PF1 Alternate: I2C1_SCL, EXMC_A1, EVENTOUT
PF2	12	I/O	5VT	Default: PF2

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: I2C1_SMBA, EXMC_A2, EVENTOUT
PF3	13	I/O	5VT	Default: PF3 Alternate: EXMC_A3, EVENTOUT, I2C1_TXFRAME Additional: ADC2_IN9
PF4	14	I/O	5VT	Default: PF4 Alternate: EXMC_A4, EVENTOUT Additional: ADC2_IN14
PF5	15	I/O	5VT	Default: PF5 Alternate: EXMC_A5, EVENTOUT Additional: ADC2_IN15
V _{SS}	16	P	-	Default: V _{SS}
V _{DD}	17	P	-	Default: V _{DD}
PF6	18	I/O	5VT	Default: PF6 Alternate: TIMER9_CH0, EXMC_NIORD, EVENTOUT Additional: ADC2_IN4
PF7	19	I/O	5VT	Default: PF7 Alternate: TIMER10_CH0, EXMC_NREG, EVENTOUT Additional: ADC2_IN5
PF8	20	I/O	5VT	Default: PF8 Alternate: TIMER12_CH0, EXMC_NIOWR, EVENTOUT Additional: ADC2_IN6
PF9	21	I/O	5VT	Default: PF9 Alternate: TIMER13_CH0, EXMC_CD, EVENTOUT Additional: ADC2_IN7
PF10	22	I/O	5VT	Default: PF10 Alternate: EXMC_INTR, DCI_D11, EVENTOUT Additional: ADC2_IN8
PH0	23	I/O	5VT	Default: PH0, OSCIN Alternate: EVENTOUT Additional: OSCIN
PH1	24	I/O	5VT	Default: PH1, OSCOUT Alternate: EVENTOUT Additional: OSCOUT
NRST	25	-	-	Default: NRST
PC0	26	I/O	5VT	Default: PC0 Alternate: USBHS_ULPI_STP, EXMC_SDNWE, EVENTOUT Additional: ADC012_IN10
PC1	27	I/O	5VT	Default: PC1 Alternate: SPI2_MOSI, I2S2_SD, SPI1_MOSI, I2S1_SD, ENET_MDC, EVENTOUT Additional: ADC012_IN11

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PC2	28	I/O	5VT	Default: PC2 Alternate: SPI1_MISO, I2S1_ADD_SD, USBHS_ULPI_DIR, ENET_MII_TXD2, EXMC_SDNE0, EVENTOUT Additional: ADC012_IN12
PC3	29	I/O	5VT	Default: PC3 Alternate: SPI1_MOSI, I2S1_SD, USBHS_ULPI_NXT, ENET_MII_TX_CLK, EXMC_SDCKE0, EVENTOUT Additional: ADC012_IN13
V _{DD}	30	P	-	Default: V _{DD}
V _{SSA}	31	P	-	Default: V _{SSA}
V _{REFP}	32	P	-	Default: V _{REFP}
V _{DDA}	33	P	-	Default: V _{DDA}
PA0-WKUP	34	I/O	5VT	Default: PA0 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER4_CH0, TIMER7_ETI, USART1_CTS, UART3_TX, ENET_MII_CRS, EVENTOUT Additional: ADC012_IN0, WKUP
PA1	35	I/O	5VT	Default: PA1 Alternate: TIMER1_CH1, TIMER4_CH1, USART1_RTS, UART3_RX, ENET_MII_RX_CLK, ENET_RMII_REF_CLK, EVENTOUT Additional: ADC012_IN1
PA2	36	I/O	5VT	Default: PA2 Alternate: TIMER1_CH2, TIMER4_CH2, TIMER8_CH0, I2S_CKIN, USART1_TX, ENET_MDIO, EVENTOUT Additional: ADC012_IN2
PA3	37	I/O	5VT	Default: PA3 Alternate: TIMER1_CH3, TIMER4_CH3, TIMER8_CH1, I2S1_MCK, USART1_RX, USBHS_ULPI_D0, ENET_MII_COL, EVENTOUT Additional: ADC012_IN3
V _{SS}	38	P	-	Default: V _{SS}
V _{DD}	39	P	-	Default: V _{DD}
PA4	40	I/O		Default: PA4 Alternate: SPI0_NSS, SPI2_NSS, I2S2_WS, USART1_CK, USBHS_SOF, DCI_HSYNC, EVENTOUT Additional: ADC01_IN4, DAC_OUT0
PA5	41	I/O		Default: PA5 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER7_CH0_ON, SPI0_SCK, USBHS_ULPI_CK, EVENTOUT Additional: ADC01_IN5, DAC_OUT1

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PA6	42	I/O	5VT	Default: PA6 Alternate: TIMER0_BRKIN, TIMER2_CH0, TIMER7_BRKIN, SPI0_MISO, I2S1_MCK, TIMER12_CH0, SDIO_CMD, DCI_PIXCLK, EVENTOUT Additional: ADC01_IN6
PA7	43	I/O	5VT	Default: PA7 Alternate: TIMER0_CH0_ON, TIMER2_CH1, TIMER7_CH0_ON, SPI0_MOSI, TIMER13_CH0, ENET_MII_RX_DV, ENET_RMII_CRS_DV, EXMC_SDNWE, EVENTOUT Additional: ADC01_IN7
PC4	44	I/O	5VT	Default: PC4 Alternate: ENET_MII_RXD0, ENET_RMII_RXD0, EXMC_SDNE0, EVENTOUT Additional: ADC01_IN14
PC5	45	I/O	5VT	Default: PC5 Alternate: USART2_RX, ENET_MII_RXD1, ENET_RMII_RXD1, EXMC_SDCKE0, EVENTOUT Additional: ADC01_IN15
PB0	46	I/O	5VT	Default: PB0 Alternate: TIMER0_CH1_ON, TIMER2_CH2, TIMER7_CH1_ON, SPI2_MOSI, I2S2_SD, USBHS_ULPI_D1, ENET_MII_RXD2, SDIO_D1, EVENTOUT Additional: ADC01_IN8, IREF
PB1	47	I/O	5VT	Default: PB1 Alternate: TIMER0_CH2_ON, TIMER2_CH3, TIMER7_CH2_ON, USBHS_ULPI_D2, ENET_MII_RXD3, SDIO_D2, EVENTOUT Additional: ADC01_IN9
PB2	48	I/O	5VT	Default: PB2, BOOT1 Alternate: TIMER1_CH3, SPI2_MOSI, I2S2_SD, USBHS_ULPI_D4, SDIO_CK, EVENTOUT
PF11	49	I/O	5VT	Default: PF11 Alternate: EXMC_SDNRAS, DCI_D12, EVENTOUT
PF12	50	I/O	5VT	Default: PF12 Alternate: EXMC_A6, EVENTOUT
V _{SS}	51	P	-	Default: V _{SS}
V _{DD}	52	P	-	Default: V _{DD}
PF13	53	I/O	5VT	Default: PF13 Alternate: EXMC_A7, EVENTOUT
PF14	54	I/O	5VT	Default: PF14 Alternate: EXMC_A8, EVENTOUT
PF15	55	I/O	5VT	Default: PF15

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: EXMC_A9, EVENTOUT
PG0	56	I/O	5VT	Default: PG0 Alternate: EXMC_A10, EVENTOUT
PG1	57	I/O	5VT	Default: PG1 Alternate: EXMC_A11, EVENTOUT
PE7	58	I/O	5VT	Default: PE7 Alternate: TIMER0_ETI, EXMC_D4, EVENTOUT
PE8	59	I/O	5VT	Default: PE8 Alternate: TIMER0_CH0_ON, EXMC_D5, EVENTOUT
PE9	60	I/O	5VT	Default: PE9 Alternate: TIMER0_CH0, EXMC_D6, EVENTOUT
V _{SS}	61	P	-	Default: V _{SS}
V _{DD}	62	P	-	Default: V _{DD}
PE10	63	I/O	5VT	Default: PE10 Alternate: TIMER0_CH1_ON, EXMC_D7, EVENTOUT
PE11	64	I/O	5VT	Default: PE11 Alternate: TIMER0_CH1, EXMC_D8, EVENTOUT
PE12	65	I/O	5VT	Default: PE12 Alternate: TIMER0_CH2_ON, EXMC_D9, EVENTOUT
PE13	66	I/O	5VT	Default: PE13 Alternate: TIMER0_CH2, EXMC_D10, EVENTOUT
PE14	67	I/O	5VT	Default: PE14 Alternate: TIMER0_CH3, EXMC_D11, EVENTOUT
PE15	68	I/O	5VT	Default: PE15 Alternate: TIMER0_BRKIN, EXMC_D12, EVENTOUT
PB10	69	I/O	5VT	Default: PB10 Alternate: TIMER1_CH2, I2C1_SCL, SPI1_SCK, I2S1_CK, I2S2_MCK, USART2_TX, USBHS_ULPI_D3, ENET_MII_RX_ER, SDIO_D7, EVENTOUT
PB11	70	I/O	5VT	Default: PB11 Alternate: TIMER1_CH3, I2C1_SDA, I2S_CKIN, USART2_RX, USBHS_ULPI_D4, ENET_MII_TX_EN, ENET_RMII_TX_EN, EVENTOUT
NC	71	P	-	Default: V _{CORE}
V _{DD}	72	P	-	Default: V _{DD}
PB12	73	I/O	5VT	Default: PB12 Alternate: TIMER0_BRKIN, I2C1_SMBA, SPI1_NSS, I2S1_WS, USART2_CK, CAN1_RX, USBHS_ULPI_D5, ENET_MII_TXD0, ENET_RMII_TXD0, USBHS_ID, EVENTOUT
PB13	74	I/O	5VT	Default: PB13 Alternate: TIMER0_CH0_ON, SPI1_SCK, I2S1_CK,

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				USART2_CTS, CAN1_TX, USBHS_ULPI_D6, ENET_MII_TXD1, ENET_RMII_TXD1, EVENTOUT, I2C1_TXFRAME Additional: USBHS_VBUS
PB14	75	I/O	5VT	Default: PB14 Alternate: TIMER0_CH1_ON, TIMER7_CH1_ON, SPI1_MISO, I2S1_ADD_SD, USART2_RTS, TIMER11_CH0, USBHS_DM, EVENTOUT
PB15	76	I/O	5VT	Default: PB15 Alternate: RTC_REFIN, TIMER0_CH2_ON, TIMER7_CH2_ON, SPI1_MOSI, I2S1_SD, TIMER11_CH1, USBHS_DP, EVENTOUT
PD8	77	I/O	5VT	Default: PD8 Alternate: USART2_TX, EXMC_D13, EVENTOUT
PD9	78	I/O	5VT	Default: PD9 Alternate: USART2_RX, EXMC_D14, EVENTOUT
PD10	79	I/O	5VT	Default: PD10 Alternate: USART2_CK, EXMC_D15, EVENTOUT
PD11	80	I/O	5VT	Default: PD11 Alternate: USART2_CTS, EXMC_A16, EVENTOUT
PD12	81	I/O	5VT	Default: PD12 Alternate: TIMER3_CH0, USART2_RTS, EXMC_A17, EVENTOUT
PD13	82	I/O	5VT	Default: PD13 Alternate: TIMER3_CH1, EXMC_A18, EVENTOUT
V _{SS}	83	P	-	Default: V _{SS}
V _{DD}	84	P	-	Default: V _{DD}
PD14	85	I/O	5VT	Default: PD14 Alternate: TIMER3_CH2, EXMC_D0, EVENTOUT
PD15	86	I/O	5VT	Default: PD15 Alternate: TIMER3_CH3, EXMC_D1, EVENTOUT, CTC_SYNC
PG2	87	I/O	5VT	Default: PG2 Alternate: EXMC_A12, EVENTOUT
PG3	88	I/O	5VT	Default: PG3 Alternate: EXMC_A13, EVENTOUT
PG4	89	I/O	5VT	Default: PG4 Alternate: EXMC_A14, EVENTOUT
PG5	90	I/O	5VT	Default: PG5 Alternate: EXMC_A15, EVENTOUT
PG6	91	I/O	5VT	Default: PG6 Alternate: EXMC_INT1, DCI_D12, EVENTOUT
PG7	92	I/O	5VT	Default: PG7 Alternate: USART5_CK, EXMC_INT2, DCI_D13, EVENTOUT

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PG8	93	I/O	5VT	Default: PG8 Alternate: USART5_RTS, ENET_PPS_OUT, EXMC_SDCLK, EVENTOUT
V _{SS}	94	P	-	Default: V _{SS}
V _{DD}	95	P	-	Default: V _{DD}
PC6	96	I/O	5VT	Default: PC6 Alternate: TIMER2_CH0, TIMER7_CH0, I2S1_MCK, USART5_TX, SDIO_D6, DCI_D0, EVENTOUT
PC7	97	I/O	5VT	Default: PC7 Alternate: TIMER2_CH1, TIMER7_CH1, SPI1_SCK, I2S1_CK, I2S2_MCK, USART5_RX, SDIO_D7, DCI_D1, EVENTOUT
PC8	98	I/O	5VT	Default: PC8 Alternate: TRACED0, TIMER2_CH2, TIMER7_CH2, USART5_CK, SDIO_D0, DCI_D2, EVENTOUT
PC9	99	I/O	5VT	Default: PC9 Alternate: CK_OUT1, TIMER2_CH3, TIMER7_CH3, I2C2_SDA, I2S_CKIN, SDIO_D1, DCI_D3, EVENTOUT
PA8	100	I/O	5VT	Default: PA8 Alternate: CK_OUT0, TIMER0_CH0, I2C2_SCL, USART0_CK, USBFS_SOF, SDIO_D1, EVENTOUT, CTC_SYNC
PA9	101	I/O	5VT	Default: PA9 Alternate: TIMER0_CH1, I2C2_SMBA, SPI1_SCK, I2S1_CK, USART0_TX, SDIO_D2, DCI_D0, EVENTOUT Additional: USBFS_VBUS
PA10	102	I/O	5VT	Default: PA10 Alternate: TIMER0_CH2, USART0_RX, USBFS_ID, DCI_D1, EVENTOUT, I2C2_TXFRAME
PA11	103	I/O	5VT	Default: PA11 Alternate: TIMER0_CH3, USART0_CTS, USART5_TX, CAN0_RX, USBFS_DM, EVENTOUT
PA12	104	I/O	5VT	Default: PA12 Alternate: TIMER0_ETI, USART0_RTS, USART5_RX, CAN0_TX, USBFS_DP, EVENTOUT
PA13	105	I/O	5VT	Default: JTMS, SWDIO, PA13 Alternate: EVENTOUT
NC	106	-	-	-
V _{SS}	107	P	-	Default: V _{SS}
V _{DD}	108	P	-	Default: V _{DD}
PA14	109	I/O	5VT	Default: JTCK, SWCLK, PA14 Alternate: EVENTOUT
PA15	110	I/O	5VT	Default: JTDI, PA15

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: TIMER1_CH0, TIMER1_ETI, SPI0_NSS, SPI2_NSS, I2S2_WS, USART0_TX, EVENTOUT
PC10	111	I/O	5VT	Default: PC10 Alternate: SPI2_SCK, I2S2_CK, USART2_TX, UART3_TX, SDIO_D2, DCI_D8, EVENTOUT
PC11	112	I/O	5VT	Default: PC11 Alternate: I2S2_ADD_SD, SPI2_MISO, USART2_RX, UART3_RX, SDIO_D3, DCI_D4, EVENTOUT
PC12	113	I/O	5VT	Default: PC12 Alternate: I2C1_SDA, SPI2_MOSI, I2S2_SD, USART2_CK, UART4_TX, SDIO_CK, DCI_D9, EVENTOUT
PD0	114	I/O	5VT	Default: PD0 Alternate: SPI2_MOSI, I2S2_SD, CAN0_RX, EXMC_D2, EVENTOUT
PD1	115	I/O	5VT	Default: PD1 Alternate: SPI1_NSS, I2S1_WS, CAN0_TX, EXMC_D3, EVENTOUT
PD2	116	I/O	5VT	Default: PD2 Alternate: TIMER2_ETI, UART4_RX, SDIO_CMD, DCI_D11, EVENTOUT
PD3	117	I/O	5VT	Default: PD3 Alternate: TRACED1, SPI1_SCK, I2S1_CK, USART1_CTS, EXMC_CLK, DCI_D5, EVENTOUT
PD4	118	I/O	5VT	Default: PD4 Alternate: USART1_RTS, EXMC_NOE, EVENTOUT
PD5	119	I/O	5VT	Default: PD5 Alternate: USART1_TX, EXMC_NWE, EVENTOUT
V _{SS}	120	P	-	Default: V _{SS}
V _{DD}	121	P	-	Default: V _{DD}
PD6	122	I/O	5VT	Default: PD6 Alternate: SPI2_MOSI, I2S2_SD, USART1_RX, EXMC_NWAIT, DCI_D10, EVENTOUT
PD7	123	I/O	5VT	Default: PD7 Alternate: USART1_CK, EXMC_NE0, EXMC_NCE1, EVENTOUT
PG9	124	I/O	5VT	Default: PG9 Alternate: USART5_RX, EXMC_NE1, EXMC_NCE2, DCI_VSYNC, EVENTOUT
PG10	125	I/O	5VT	Default: PG10 Alternate: EXMC_NCE3_0, EXMC_NE2, DCI_D2, EVENTOUT
PG11	126	I/O	5VT	Default: PG11

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: ENET_MII_TX_EN, ENET_RMII_TX_EN, EXMC_NCE3_1, DCI_D3, EVENTOUT
PG12	127	I/O	5VT	Default: PG12 Alternate: USART5_RTS, EXMC_NE3, EVENTOUT
PG13	128	I/O	5VT	Default: PG13 Alternate: TRACED2, USART5_CTS, ENET_MII_TXD0, ENET_RMII_TXD0, EXMC_A24, EVENTOUT
PG14	129	I/O	5VT	Default: PG14 Alternate: TRACED3, USART5_TX, ENET_MII_TXD1, ENET_RMII_TXD1, EXMC_A25, EVENTOUT
V _{SS}	130	P	-	Default: V _{SS}
V _{DD}	131	P	-	Default: V _{DD}
PG15	132	I/O	5VT	Default: PG15 Alternate: USART5_CTS, EXMC_SDNCAS, DCI_D13, EVENTOUT
PB3	133	I/O	5VT	Default: JTDO, PB3 Alternate: TRACESWO, TIMER1_CH1, SPI0_SCK, SPI2_SCK, I2S2_CK, USART0_RX, I2C1_SDA, EVENTOUT
PB4	134	I/O	5VT	Default: NJTRST, PB4 Alternate: TIMER2_CH0, SPI0_MISO, SPI2_MISO, I2S2_ADD_SD, I2C2_SDA, SDIO_D0, EVENTOUT, I2C0_TXFRAME
PB5	135	I/O	5VT	Default: PB5 Alternate: TIMER2_CH1, I2C0_SMBA, SPI0_MOSI, SPI2_MOSI, I2S2_SD, CAN1_RX, USBHS_ULPI_D7, ENET_PPS_OUT, EXMC_SDCKE1, DCI_D10, EVENTOUT
PB6	136	I/O	5VT	Default: PB6 Alternate: TIMER3_CH0, I2C0_SCL, USART0_TX, CAN1_TX, EXMC_SDNE1, DCI_D5, EVENTOUT
PB7	137	I/O	5VT	Default: PB7 Alternate: TIMER3_CH1, I2C0_SDA, USART0_RX, EXMC_NL, DCI_VSYNC, EVENTOUT
BOOT0	138	I/O	5VT	Default: BOOT0
PB8	139	I/O	5VT	Default: PB8 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER3_CH2, TIMER9_CH0, I2C0_SCL, CAN0_RX, ENET_MII_TXD3, SDIO_D4, DCI_D6, EVENTOUT
PB9	140	I/O	5VT	Default: PB9 Alternate: TIMER1_CH1, TIMER3_CH3, TIMER10_CH0, I2C0_SDA, SPI1_NSS, I2S1_WS, CAN0_TX, SDIO_D5, DCI_D7, EVENTOUT

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PE0	141	I/O	5VT	Default: PE0 Alternate: TIMER3_ETI, EXMC_NBL0, DCI_D2, EVENTOUT
PE1	142	I/O	5VT	Default: PE1 Alternate: TIMER0_CH1_ON, EXMC_NBL1, DCI_D3, EVENTOUT
PDR_ON	143	P	-	Default: PDR_ON
V _{DD}	144	P	-	Default: V _{DD}

Notes:

(1) Type: I = input, O = output, P = power.

(2) I/O Level: 5VT = 5 V tolerant.

2.6.3. GD32F407Vx LQFP100 pin definitions

Table 2-6. GD32F407Vx LQFP100 pin definitions

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PE2	1	I/O	5VT	Default: PE2 Alternate: TRACECK, ENET_MII_TXD3, EXMC_A23, EVENTOUT
PE3	2	I/O	5VT	Default: PE3 Alternate: TRACED0, EXMC_A19, EVENTOUT
PE4	3	I/O	5VT	Default: PE4 Alternate: TRACED1, EXMC_A20, DCI_D4, EVENTOUT
PE5	4	I/O	5VT	Default: PE5 Alternate: TRACED2, TIMER8_CH0, EXMC_A21, DCI_D6, EVENTOUT
PE6	5	I/O	5VT	Default: PE6 Alternate: TRACED3, TIMER8_CH1, EXMC_A22, DCI_D7, EVENTOUT
V _{BAT}	6	P	-	Default: V _{BAT}
PC13-TAMPER-RTC	7	I/O	5VT	Default: PC13 Alternate: EVENTOUT Additional: RTC_TAMP0, RTC_OUT, RTC_TS
PC14-OSC32IN	8	I/O	5VT	Default: PC14 Alternate: EVENTOUT Additional: OSC32IN
PC15-OSC32OUT	9	I/O	5VT	Default: PC15 Alternate: EVENTOUT Additional: OSC32OUT
V _{SS}	10	P	-	Default: V _{SS}
V _{DD}	11	P	-	Default: V _{DD}

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PH0	12	I/O	5VT	Default: PH0, OSCIN Alternate: EVENTOUT Additional: OSCIN
PH1	13	I/O	5VT	Default: PH1, OSCOUT Alternate: EVENTOUT Additional: OSCOUT
NRST	14	-	-	Default: NRST
PC0	15	I/O	5VT	Default: PC0 Alternate: USBHS_ULPI_STP, EXMC_SDNWE, EVENTOUT Additional: ADC012_IN10
PC1	16	I/O	5VT	Default: PC1 Alternate: SPI2_MOSI, I2S2_SD, SPI1_MOSI, I2S1_SD, ENET_MDC, EVENTOUT Additional: ADC012_IN11
PC2	17	I/O	5VT	Default: PC2 Alternate: SPI1_MISO, I2S1_ADD_SD, USBHS_ULPI_DIR, ENET_MII_TXD2, EVENTOUT Additional: ADC012_IN12
PC3	18	I/O	5VT	Default: PC3 Alternate: SPI1_MOSI, I2S1_SD, USBHS_ULPI_NXT, ENET_MII_TX_CLK, EVENTOUT Additional: ADC012_IN13
V _{DD}	19	P	-	Default: V _{DD}
V _{SSA}	20	P	-	Default: V _{SSA}
V _{REFP}	21	P	-	Default: V _{REF+}
V _{DDA}	22	P	-	Default: V _{DDA}
PA0-WKUP	23	I/O	5VT	Default: PA0 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER4_CH0, TIMER7_ETI, USART1_CTS, UART3_TX, ENET_MII_CRS, EVENTOUT Additional: ADC012_IN0, WKUP
PA1	24	I/O	5VT	Default: PA1 Alternate: TIMER1_CH1, TIMER4_CH1, USART1_RTS, UART3_RX, ENET_MII_RX_CLK, ENET_RMII_REF_CLK, EVENTOUT Additional: ADC012_IN1
PA2	25	I/O	5VT	Default: PA2 Alternate: TIMER1_CH2, TIMER4_CH2, TIMER8_CH0, I2S_CKIN, USART1_TX, ENET_MDIO, EVENTOUT Additional: ADC012_IN2

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PA3	26	I/O	5VT	Default: PA3 Alternate: TIMER1_CH3, TIMER4_CH3, TIMER8_CH1, I2S1_MCK, USART1_RX, USBHS_ULPI_D0, ENET_MII_COL, EVENTOUT Additional: ADC012_IN3
V _{SS}	27	P	-	Default: V _{SS}
V _{DD}	28	P	-	Default: V _{DD}
PA4	29	I/O		Default: PA4 Alternate: SPI0_NSS, SPI2_NSS, I2S2_WS, USART1_CK, USBHS_SOF, DCI_HSYNC, EVENTOUT Additional: ADC01_IN4, DAC_OUT0
PA5	30	I/O		Default: PA5 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER7_CH0_ON, SPI0_SCK, USBHS_ULPI_CK, EVENTOUT Additional: ADC01_IN5, DAC_OUT1
PA6	31	I/O	5VT	Default: PA6 Alternate: TIMER0_BRKIN, TIMER2_CH0, TIMER7_BRKIN, SPI0_MISO, I2S1_MCK, TIMER12_CH0, SDIO_CMD, DCI_PIXCLK, EVENTOUT Additional: ADC01_IN6
PA7	32	I/O	5VT	Default: PA7 Alternate: TIMER0_CH0_ON, TIMER2_CH1, TIMER7_CH0_ON, SPI0_MOSI, TIMER13_CH0, ENET_MII_RX_DV, ENET_RMII_CRS_DV, EXMC_SDNWE, EVENTOUT Additional: ADC01_IN7
PC4	33	I/O	5VT	Default: PC4 Alternate: ENET_MII_RXD0, ENET_RMII_RXD0, EVENTOUT Additional: ADC01_IN14
PC5	34	I/O	5VT	Default: PC5 Alternate: USART2_RX, ENET_MII_RXD1, ENET_RMII_RXD1, EVENTOUT Additional: ADC01_IN15
PB0	35	I/O	5VT	Default: PB0 Alternate: TIMER0_CH1_ON, TIMER2_CH2, TIMER7_CH1_ON, SPI2_MOSI, I2S2_SD, USBHS_ULPI_D1, ENET_MII_RXD2, SDIO_D1, EVENTOUT Additional: ADC01_IN8, IREF
PB1	36	I/O	5VT	Default: PB1

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: TIMER0_CH2_ON, TIMER2_CH3, TIMER7_CH2_ON, USBHS_ULPI_D2, ENET_MII_RXD3, SDIO_D2, EVENTOUT Additional: ADC01_IN9
PB2	37	I/O	5VT	Default: PB2, BOOT1 Alternate: TIMER1_CH3, SPI2_MOSI, I2S2_SD, USBHS_ULPI_D4, SDIO_CK, EVENTOUT
PE7	38	I/O	5VT	Default: PE7 Alternate: TIMER0_ETI, EXMC_D4, EVENTOUT
PE8	39	I/O	5VT	Default: PE8 Alternate: TIMER0_CH0_ON, EXMC_D5, EVENTOUT
PE9	40	I/O	5VT	Default: PE9 Alternate: TIMER0_CH0, EXMC_D6, EVENTOUT
PE10	41	I/O	5VT	Default: PE10 Alternate: TIMER0_CH1_ON, EXMC_D7, EVENTOUT
PE11	42	I/O	5VT	Default: PE11 Alternate: TIMER0_CH1, EXMC_D8, EVENTOUT
PE12	43	I/O	5VT	Default: PE12 Alternate: TIMER0_CH2_ON, EXMC_D9, EVENTOUT
PE13	44	I/O	5VT	Default: PE13 Alternate: TIMER0_CH2, EXMC_D10, EVENTOUT
PE14	45	I/O	5VT	Default: PE14 Alternate: TIMER0_CH3, EXMC_D11, EVENTOUT
PE15	46	I/O	5VT	Default: PE15 Alternate: TIMER0_BRKIN, EXMC_D12, EVENTOUT
PB10	47	I/O	5VT	Default: PB10 Alternate: TIMER1_CH2, I2C1_SCL, SPI1_SCK, I2S1_CK, I2S2_MCK, USART2_TX, USBHS_ULPI_D3, ENET_MII_RX_ER, SDIO_D7, EVENTOUT
PB11	48	I/O	5VT	Default: PB11 Alternate: TIMER1_CH3, I2C1_SDA, I2S_CKIN, USART2_RX, USBHS_ULPI_D4, ENET_MII_TX_EN, ENET_RMII_TX_EN, EVENTOUT
NC	49	P	-	Default: V _{CORE}
V _{DD}	50	P	-	Default: V _{DD}
PB12	51	I/O	5VT	Default: PB12 Alternate: TIMER0_BRKIN, I2C1_SMBA, SPI1_NSS, I2S1_WS, USART2_CK, CAN1_RX, USBHS_ULPI_D5, ENET_MII_TXD0, ENET_RMII_TXD0, USBHS_ID, EVENTOUT
PB13	52	I/O	5VT	Default: PB13

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: TIMER0_CH0_ON, SPI1_SCK, I2S1_CK, USART2_CTS, CAN1_TX, USBHS_ULPI_D6, ENET_MII_TXD1, ENET_RMII_TXD1, EVENTOUT, I2C1_TXFRAME Additional: USBHS_VBUS
PB14	53	I/O	5VT	Default: PB14 Alternate: TIMER0_CH1_ON, TIMER7_CH1_ON, SPI1_MISO, I2S1_ADD_SD, USART2_RTS, TIMER11_CH0, USBHS_DM, EVENTOUT
PB15	54	I/O	5VT	Default: PB15 Alternate: RTC_REFIN, TIMER0_CH2_ON, TIMER7_CH2_ON, SPI1_MOSI, I2S1_SD, TIMER11_CH1, USBHS_DP, EVENTOUT
PD8	55	I/O	5VT	Default: PD8 Alternate: USART2_TX, EXMC_D13, EVENTOUT
PD9	56	I/O	5VT	Default: PD9 Alternate: USART2_RX, EXMC_D14, EVENTOUT
PD10	57	I/O	5VT	Default: PD10 Alternate: USART2_CK, EXMC_D15, EVENTOUT
PD11	58	I/O	5VT	Default: PD11 Alternate: USART2_CTS, EXMC_A16, EVENTOUT
PD12	59	I/O	5VT	Default: PD12 Alternate: TIMER3_CH0, USART2_RTS, EXMC_A17, EVENTOUT
PD13	60	I/O	5VT	Default: PD13 Alternate: TIMER3_CH1, EXMC_A18, EVENTOUT
PD14	61	I/O	5VT	Default: PD14 Alternate: TIMER3_CH2, EXMC_D0, EVENTOUT
PD15	62	I/O	5VT	Default: PD15 Alternate: TIMER3_CH3, EXMC_D1, EVENTOUT, CTC_SYNC
PC6	63	I/O	5VT	Default: PC6 Alternate: TIMER2_CH0, TIMER7_CH0, I2S1_MCK, USART5_TX, SDIO_D6, DCI_D0, EVENTOUT
PC7	64	I/O	5VT	Default: PC7 Alternate: TIMER2_CH1, TIMER7_CH1, SPI1_SCK, I2S1_CK, I2S2_MCK, USART5_RX, SDIO_D7, DCI_D1, EVENTOUT
PC8	65	I/O	5VT	Default: PC8 Alternate: TRACED0, TIMER2_CH2, TIMER7_CH2, USART5_CK, SDIO_D0, DCI_D2, EVENTOUT

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PC9	66	I/O	5VT	Default: PC9 Alternate: CK_OUT1, TIMER2_CH3, TIMER7_CH3, I2C2_SDA, I2S_CKIN, SDIO_D1, DCI_D3, EVENTOUT
PA8	67	I/O	5VT	Default: PA8 Alternate: CK_OUT0, TIMER0_CH0, I2C2_SCL, USART0_CK, USBFS_SOF, SDIO_D1, EVENTOUT, CTC_SYNC
PA9	68	I/O	5VT	Default: PA9 Alternate: TIMER0_CH1, I2C2_SMBA, SPI1_SCK, I2S1_CK, USART0_TX, SDIO_D2, DCI_D0, EVENTOUT Additional: USBFS_VBUS
PA10	69	I/O	5VT	Default: PA10 Alternate: TIMER0_CH2, USART0_RX, USBFS_ID, DCI_D1, EVENTOUT, I2C2_TXFRAME
PA11	70	I/O	5VT	Default: PA11 Alternate: TIMER0_CH3, USART0_CTS, USART5_TX, CAN0_RX, USBFS_DM, EVENTOUT
PA12	71	I/O	5VT	Default: PA12 Alternate: TIMER0_ETI, USART0_RTS, USART5_RX, CAN0_TX, USBFS_DP, EVENTOUT
PA13	72	I/O	5VT	Default: JTMS, SWDIO, PA13 Alternate: EVENTOUT
NC	73	-	-	-
V _{SS}	74	P	-	Default: V _{SS}
V _{DD}	75	P	-	Default: V _{DD}
PA14	76	I/O	5VT	Default: JTCK, SWCLK, PA14 Alternate: EVENTOUT
PA15	77	I/O	5VT	Default: JTDI, PA15 Alternate: TIMER1_CH0, TIMER1_ETI, SPI0_NSS, SPI2_NSS, I2S2_WS, USART0_TX, EVENTOUT
PC10	78	I/O	5VT	Default: PC10 Alternate: SPI2_SCK, I2S2_CK, USART2_TX, UART3_TX, SDIO_D2, DCI_D8, EVENTOUT
PC11	79	I/O	5VT	Default: PC11 Alternate: I2S2_ADD_SD, SPI2_MISO, USART2_RX, UART3_RX, SDIO_D3, DCI_D4, EVENTOUT
PC12	80	I/O	5VT	Default: PC12 Alternate: I2C1_SDA, SPI2_MOSI, I2S2_SD, USART2_CK, UART4_TX, SDIO_CK, DCI_D9, EVENTOUT
PD0	81	I/O	5VT	Default: PD0 Alternate: SPI2_MOSI, I2S2_SD, CAN0_RX, EXMC_D2,

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				EVENTOUT
PD1	82	I/O	5VT	Default: PD1 Alternate: SPI1_NSS, I2S1_WS, CAN0_TX, EXMC_D3, EVENTOUT
PD2	83	I/O	5VT	Default: PD2 Alternate: TIMER2_ETI, UART4_RX, SDIO_CMD, DCI_D11, EVENTOUT
PD3	84	I/O	5VT	Default: PD3 Alternate: TRACED1, SPI1_SCK, I2S1_CK, USART1_CTS, EXMC_CLK, DCI_D5, EVENTOUT
PD4	85	I/O	5VT	Default: PD4 Alternate: USART1_RTS, EXMC_NOE, EVENTOUT
PD5	86	I/O	5VT	Default: PD5 Alternate: USART1_TX, EXMC_NWE, EVENTOUT
PD6	87	I/O	5VT	Default: PD6 Alternate: SPI2_MOSI, I2S2_SD, USART1_RX, EXMC_NWAIT, DCI_D10, EVENTOUT
PD7	88	I/O	5VT	Default: PD7 Alternate: USART1_CK, EXMC_NE0, EXMC_NCE1, EVENTOUT
PB3	89	I/O	5VT	Default: JTDO, PB3 Alternate: TRACESWO, TIMER1_CH1, SPI0_SCK, SPI2_SCK, I2S2_CK, USART0_RX, I2C1_SDA, EVENTOUT
PB4	90	I/O	5VT	Default: NJTRST, PB4 Alternate: TIMER2_CH0, SPI0_MISO, SPI2_MISO, I2S2_ADD_SD, I2C2_SDA, SDIO_D0, EVENTOUT, I2C0_TXFRAME
PB5	91	I/O	5VT	Default: PB5 Alternate: TIMER2_CH1, I2C0_SMBA, SPI0_MOSI, SPI2_MOSI, I2S2_SD, CAN1_RX, USBHS_ULPI_D7, ENET_PPS_OUT, DCI_D10, EVENTOUT
PB6	92	I/O	5VT	Default: PB6 Alternate: TIMER3_CH0, I2C0_SCL, USART0_TX, CAN1_TX, DCI_D5, EVENTOUT
PB7	93	I/O	5VT	Default: PB7 Alternate: TIMER3_CH1, I2C0_SDA, USART0_RX, EXMC_NL, DCI_VSYNC, EVENTOUT
BOOT0	94	I/O	5VT	Default: BOOT0
PB8	95	I/O	5VT	Default: PB8 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER3_CH2,

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				TIMER9_CH0, I2C0_SCL, CAN0_RX, ENET_MII_TXD3, SDIO_D4, DCI_D6, EVENTOUT
PB9	96	I/O	5VT	Default: PB9 Alternate: TIMER1_CH1, TIMER3_CH3, TIMER10_CH0, I2C0_SDA, SPI1_NSS, I2S1_WS, CAN0_TX, SDIO_D5, DCI_D7, EVENTOUT
PE0	97	I/O	5VT	Default: PE0 Alternate: TIMER3_ETI, EXMC_NBL0, DCI_D2, EVENTOUT
PE1	98	I/O	5VT	Default: PE1 Alternate: TIMER0_CH1_ON, EXMC_NBL1, DCI_D3, EVENTOUT
V _{SS}	99	P	-	Default: V _{SS}
V _{DD}	100	P	-	Default: V _{DD}

Notes:

(1) Type: I = input, O = output, P = power.

(2) I/O Level: 5VT = 5 V tolerant.

2.6.4. GD32F407Vx BGA100 pin definitions

Table 2-7. GD32F407Zx BGA100 pin definitions

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PE2	B2	I/O	5VT	Default: PE2 Alternate: TRACECK, ENET_MII_TXD3, EXMC_A23, EVENTOUT
PE3	A1	I/O	5VT	Default: PE3 Alternate: TRACED0, EXMC_A19, EVENTOUT
PE4	B1	I/O	5VT	Default: PE4 Alternate: TRACED1, EXMC_A20, DCI_D4, EVENTOUT
PE5	C2	I/O	5VT	Default: PE5 Alternate: TRACED2, TIMER8_CH0, EXMC_A21, DCI_D6, EVENTOUT
PE6	D2	I/O	5VT	Default: PE6 Alternate: TRACED3, TIMER8_CH1, EXMC_A22, DCI_D7, EVENTOUT
V _{BAT}	E2	P	-	Default: V _{BAT}
PC13- TAMPER- RTC	C1	I/O	5VT	Default: PC13 Alternate: EVENTOUT Additional: RTC_TAMP0, RTC_OUT, RTC_TS
PC14-	D1	I/O	5VT	Default: PC14

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
OSC32IN				Alternate: EVENTOUT Additional: OSC32IN
PC15-OSC32OUT	E1	I/O	5VT	Default: PC15 Alternate: EVENTOUT Additional: OSC32OUT
V _{SS}	F2	P	-	Default: V _{SS}
V _{DD}	G2	P	-	Default: V _{DD}
PH0	F1	I/O	5VT	Default: PH0, OSCIN Alternate: EVENTOUT Additional: OSCIN
PH1	G1	I/O	5VT	Default: PH1, OSCOUT Alternate: EVENTOUT Additional: OSCOUT
NRST	H2	-	-	Default: NRST
PC0	H1	I/O	5VT	Default: PC0 Alternate: USBHS_ULPI_STP, EXMC_SDNWE, EVENTOUT Additional: ADC012_IN10
PC1	J2	I/O	5VT	Default: PC1 Alternate: SPI2_MOSI, I2S2_SD, SPI1_MOSI, I2S1_SD, ENET_MDC, EVENTOUT Additional: ADC012_IN11
PC2	J3	I/O	5VT	Default: PC2 Alternate: SPI1_MISO, I2S1_ADD_SD, USBHS_ULPI_DIR, ENET_MII_TXD2, EVENTOUT Additional: ADC012_IN12
PC3	K2	I/O	5VT	Default: PC3 Alternate: SPI1_MOSI, I2S1_SD, USBHS_ULPI_NXT, ENET_MII_TX_CLK, EVENTOUT Additional: ADC012_IN13
V _{SSA}	J1	P	-	Default: V _{SSA}
V _{REFN}	K1	P	-	Default: V _{REFN}
V _{REFP}	L1	P	-	Default: V _{REFP}
V _{DDA}	M1	P	-	Default: V _{DDA}
PA0-WKUP	L2	I/O	5VT	Default: PA0 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER4_CH0, TIMER7_ETI, USART1_CTS, UART3_TX, ENET_MII_CRS, EVENTOUT Additional: ADC012_IN0, WKUP
PA1	M2	I/O	5VT	Default: PA1 Alternate: TIMER1_CH1, TIMER4_CH1, USART1_RTS, UART3_RX, ENET_MII_RX_CLK, ENET_RMII_REF_CLK,

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				EVENTOUT Additional: ADC012_IN1
PA2	K3	I/O	5VT	Default: PA2 Alternate: TIMER1_CH2, TIMER4_CH2, TIMER8_CH0, I2S_CKIN, USART1_TX, ENET_MDIO, EVENTOUT Additional: ADC012_IN2
PA3	L3	I/O	5VT	Default: PA3 Alternate: TIMER1_CH3, TIMER4_CH3, TIMER8_CH1, I2S1_MCK, USART1_RX, USBHS_ULPI_D0, ENET_MII_COL, EVENTOUT Additional: ADC012_IN3
NC	E3	-	-	-
PA4	M3	I/O		Default: PA4 Alternate: SPI0_NSS, SPI2_NSS, I2S2_WS, USART1_CK, USBHS_SOF, DCI_HSYNC, EVENTOUT Additional: ADC01_IN4, DAC_OUT0
PA5	K4	I/O		Default: PA5 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER7_CH0_ON, SPI0_SCK, USBHS_ULPI_CK, EVENTOUT Additional: ADC01_IN5, DAC_OUT1
PA6	L4	I/O	5VT	Default: PA6 Alternate: TIMER0_BRKIN, TIMER2_CH0, TIMER7_BRKIN, SPI0_MISO, I2S1_MCK, TIMER12_CH0, SDIO_CMD, DCI_PIXCLK, EVENTOUT Additional: ADC01_IN6
PA7	M4	I/O	5VT	Default: PA7 Alternate: TIMER0_CH0_ON, TIMER2_CH1, TIMER7_CH0_ON, SPI0_MOSI, TIMER13_CH0, ENET_MII_RX_DV, ENET_RMII_CRS_DV, EXMC_SDNWE, EVENTOUT Additional: ADC01_IN7
PC4	K5	I/O	5VT	Default: PC4 Alternate: ENET_MII_RXD0, ENET_RMII_RXD0, EVENTOUT Additional: ADC01_IN14
PC5	L5	I/O	5VT	Default: PC5 Alternate: USART2_RX, ENET_MII_RXD1, ENET_RMII_RXD1, EVENTOUT Additional: ADC01_IN15
PB0	M5	I/O	5VT	Default: PB0 Alternate: TIMER0_CH1_ON, TIMER2_CH2,

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				TIMER7_CH1_ON, SPI2_MOSI, I2S2_SD, USBHS_ULPI_D1, ENET_MII_RXD2, SDIO_D1, EVENTOUT Additional: ADC01_IN8, IREF
PB1	M6	I/O	5VT	Default: PB1 Alternate: TIMER0_CH2_ON, TIMER2_CH3, TIMER7_CH2_ON, USBHS_ULPI_D2, ENET_MII_RXD3, SDIO_D2, EVENTOUT Additional: ADC01_IN9
PB2	L6	I/O	5VT	Default: PB2, BOOT1 Alternate: TIMER1_CH3, SPI2_MOSI, I2S2_SD, USBHS_ULPI_D4, SDIO_CK, EVENTOUT
PE7	M7	I/O	5VT	Default: PE7 Alternate: TIMER0_ETI, EXMC_D4, EVENTOUT
PE8	L7	I/O	5VT	Default: PE8 Alternate: TIMER0_CH0_ON, EXMC_D5, EVENTOUT
PE9	M8	I/O	5VT	Default: PE9 Alternate: TIMER0_CH0, EXMC_D6, EVENTOUT
PE10	L8	I/O	5VT	Default: PE10 Alternate: TIMER0_CH1_ON, EXMC_D7, EVENTOUT
PE11	M9	I/O	5VT	Default: PE11 Alternate: TIMER0_CH1, EXMC_D8, EVENTOUT
PE12	L9	I/O	5VT	Default: PE12 Alternate: TIMER0_CH2_ON, EXMC_D9, EVENTOUT
PE13	M10	I/O	5VT	Default: PE13 Alternate: TIMER0_CH2, EXMC_D10, EVENTOUT
PE14	M11	I/O	5VT	Default: PE14 Alternate: TIMER0_CH3, EXMC_D11, EVENTOUT
PE15	M12	I/O	5VT	Default: PE15 Alternate: TIMER0_BRKIN, EXMC_D12, EVENTOUT
PB10	L10	I/O	5VT	Default: PB10 Alternate: TIMER1_CH2, I2C1_SCL, SPI1_SCK, I2S1_CK, I2S2_MCK, USART2_TX, USBHS_ULPI_D3, ENET_MII_RX_ER, SDIO_D7, EVENTOUT
PB11	K9	I/O	5VT	Default: PB11 Alternate: TIMER1_CH3, I2C1_SDA, I2S_CKIN, USART2_RX, USBHS_ULPI_D4, ENET_MII_TX_EN, ENET_RMII_TX_EN, EVENTOUT
NC	L11	P	-	Default: V _{CORE}
V _{SS}	F12	P	-	Default: V _{SS}
V _{DD}	G12	P	-	Default: V _{DD}
PB12	L12	I/O	5VT	Default: PB12

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: TIMER0_BRKIN, I2C1_SMBA, SPI1_NSS, I2S1_WS, USART2_CK, CAN1_RX, USBHS_ULPI_D5, ENET_MII_TXD0, ENET_RMII_TXD0, USBHS_ID, EVENTOUT
PB13	K12	I/O	5VT	Default: PB13 Alternate: TIMER0_CH0_ON, SPI1_SCK, I2S1_CK, USART2_CTS, CAN1_TX, USBHS_ULPI_D6, ENET_MII_TXD1, ENET_RMII_TXD1, EVENTOUT, I2C1_TXFRAME Additional: USBHS_VBUS
PB14	K11	I/O	5VT	Default: PB14 Alternate: TIMER0_CH1_ON, TIMER7_CH1_ON, SPI1_MISO, I2S1_ADD_SD, USART2_RTS, TIMER11_CH0, USBHS_DM, EVENTOUT
PB15	K10	I/O	5VT	Default: PB15 Alternate: RTC_REFIN, TIMER0_CH2_ON, TIMER7_CH2_ON, SPI1_MOSI, I2S1_SD, TIMER11_CH1, USBHS_DP, EVENTOUT
PD9	K8	I/O	5VT	Default: PD9 Alternate: USART2_RX, EXMC_D14, EVENTOUT
PD10	J12	I/O	5VT	Default: PD10 Alternate: USART2_CK, EXMC_D15, EVENTOUT
PD11	J11	I/O	5VT	Default: PD11 Alternate: USART2_CTS, EXMC_A16, EVENTOUT
PD12	J10	I/O	5VT	Default: PD12 Alternate: TIMER3_CH0, USART2_RTS, EXMC_A17, EVENTOUT
PD13	H12	I/O	5VT	Default: PD13 Alternate: TIMER3_CH1, EXMC_A18, EVENTOUT
PD14	H11	I/O	5VT	Default: PD14 Alternate: TIMER3_CH2, EXMC_D0, EVENTOUT
PD15	H10	I/O	5VT	Default: PD15 Alternate: TIMER3_CH3, EXMC_D1, EVENTOUT, CTC_SYNC
PC6	E12	I/O	5VT	Default: PC6 Alternate: TIMER2_CH0, TIMER7_CH0, I2S1_MCK, USART5_TX, SDIO_D6, DCI_D0, EVENTOUT
PC7	E11	I/O	5VT	Default: PC7 Alternate: TIMER2_CH1, TIMER7_CH1, SPI1_SCK, I2S1_CK, I2S2_MCK, USART5_RX, SDIO_D7, DCI_D1, EVENTOUT

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PC8	E10	I/O	5VT	Default: PC8 Alternate: TRACED0, TIMER2_CH2, TIMER7_CH2, USART5_CK, SDIO_D0, DCI_D2, EVENTOUT
PC9	D12	I/O	5VT	Default: PC9 Alternate: CK_OUT1, TIMER2_CH3, TIMER7_CH3, I2C2_SDA, I2S_CKIN, SDIO_D1, DCI_D3, EVENTOUT
PA8	D11	I/O	5VT	Default: PA8 Alternate: CK_OUT0, TIMER0_CH0, I2C2_SCL, USART0_CK, USBFS_SOF, SDIO_D1, EVENTOUT, CTC_SYNC
PA9	D10	I/O	5VT	Default: PA9 Alternate: TIMER0_CH1, I2C2_SMBA, SPI1_SCK, I2S1_CK, USART0_TX, SDIO_D2, DCI_D0, EVENTOUT Additional: USBFS_VBUS
PA10	C12	I/O	5VT	Default: PA10 Alternate: TIMER0_CH2, USART0_RX, USBFS_ID, DCI_D1, EVENTOUT, I2C2_TXFRAME
PA11	B12	I/O	5VT	Default: PA11 Alternate: TIMER0_CH3, USART0_CTS, USART5_TX, CAN0_RX, USBFS_DM, EVENTOUT
PA12	A12	I/O	5VT	Default: PA12 Alternate: TIMER0_ETI, USART0_RTS, USART5_RX, CAN0_TX, USBFS_DP, EVENTOUT
PA13	A11	I/O	5VT	Default: JTMS, SWDIO, PA13 Alternate: EVENTOUT
NC	C11	-	-	-
V _{SS}	F11	P	-	Default: V _{SS}
V _{DD}	G11	P	-	Default: V _{DD}
PA14	A10	I/O	5VT	Default: JTCK, SWCLK, PA14 Alternate: EVENTOUT
PA15	A9	I/O	5VT	Default: JTDI, PA15 Alternate: TIMER1_CH0, TIMER1_ETI, SPI0_NSS, SPI2_NSS, I2S2_WS, USART0_TX, EVENTOUT
PC10	B11	I/O	5VT	Default: PC10 Alternate: SPI2_SCK, I2S2_CK, USART2_TX, UART3_TX, SDIO_D2, DCI_D8, EVENTOUT
PC11	C10	I/O	5VT	Default: PC11 Alternate: I2S2_ADD_SD, SPI2_MISO, USART2_RX, UART3_RX, SDIO_D3, DCI_D4, EVENTOUT
PC12	B10	I/O	5VT	Default: PC12 Alternate: I2C1_SDA, SPI2_MOSI, I2S2_SD, USART2_CK,

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				UART4_TX, SDIO_CK, DCI_D9, EVENTOUT
PD0	C9	I/O	5VT	Default: PD0 Alternate: SPI2_MOSI, I2S2_SD, CAN0_RX, EXMC_D2, EVENTOUT
PD1	B9	I/O	5VT	Default: PD1 Alternate: SPI1_NSS, I2S1_WS, CAN0_TX, EXMC_D3, EVENTOUT
PD2	C8	I/O	5VT	Default: PD2 Alternate: TIMER2_ETI, UART4_RX, SDIO_CMD, DCI_D11, EVENTOUT
PD3	B8	I/O	5VT	Default: PD3 Alternate: TRACED1, SPI1_SCK, I2S1_CK, USART1_CTS, EXMC_CLK, DCI_D5, EVENTOUT
PD4	B7	I/O	5VT	Default: PD4 Alternate: USART1_RTS, EXMC_NOE, EVENTOUT
PD5	A6	I/O	5VT	Default: PD5 Alternate: USART1_TX, EXMC_NWE, EVENTOUT
PD6	B6	I/O	5VT	Default: PD6 Alternate: SPI2_MOSI, I2S2_SD, USART1_RX, EXMC_NWAIT, DCI_D10, EVENTOUT
PD7	A5	I/O	5VT	Default: PD7 Alternate: USART1_CK, EXMC_NE0, EXMC_NCE1, EVENTOUT
PB3	A8	I/O	5VT	Default: JTDO, PB3 Alternate: TRACESWO, TIMER1_CH1, SPI0_SCK, SPI2_SCK, I2S2_CK, USART0_RX, I2C1_SDA, EVENTOUT
PB4	A7	I/O	5VT	Default: NJTRST, PB4 Alternate: TIMER2_CH0, SPI0_MISO, SPI2_MISO, I2S2_ADD_SD, I2C2_SDA, SDIO_D0, EVENTOUT, I2C0_TXFRAME
PB5	C5	I/O	5VT	Default: PB5 Alternate: TIMER2_CH1, I2C0_SMBA, SPI0_MOSI, SPI2_MOSI, I2S2_SD, CAN1_RX, USBHS_ULPI_D7, ENET_PPS_OUT, DCI_D10, EVENTOUT
PB6	B5	I/O	5VT	Default: PB6 Alternate: TIMER3_CH0, I2C0_SCL, USART0_TX, CAN1_TX, DCI_D5, EVENTOUT
PB7	B4	I/O	5VT	Default: PB7 Alternate: TIMER3_CH1, I2C0_SDA, USART0_RX, EXMC_NL, DCI_VSYNC, EVENTOUT
BOOT0	A4	I/O	5VT	Default: BOOT0

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PB8	A3	I/O	5VT	Default: PB8 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER3_CH2, TIMER9_CH0, I2C0_SCL, CAN0_RX, ENET_MII_TXD3, SDIO_D4, DCI_D6, EVENTOUT
PB9	B3	I/O	5VT	Default: PB9 Alternate: TIMER1_CH1, TIMER3_CH3, TIMER10_CH0, I2C0_SDA, SPI1_NSS, I2S1_WS, CAN0_TX, SDIO_D5, DCI_D7, EVENTOUT
PE0	C3	I/O	5VT	Default: PE0 Alternate: TIMER3_ETI, EXMC_NBL0, DCI_D2, EVENTOUT
PE1	A2	I/O	5VT	Default: PE1 Alternate: TIMER0_CH1_ON, EXMC_NBL1, DCI_D3, EVENTOUT
V _{SS}	D3	P	-	Default: V _{SS}
PDR_ON	H3	P	-	Default: PDR_ON
V _{DD}	C4	P	-	Default: V _{DD}

Notes:

- (1) Type: I = input, O = output, P = power.
(2) I/O Level: 5VT = 5 V tolerant.

2.6.5. GD32F407Rx LQFP64 pin definitions

Table 2-8. GD32F407Rx LQFP64 pin definitions

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
V _{BAT}	1	P	-	Default: V _{BAT}
PC13-TAMPER-RTC	2	I/O	5VT	Default: PC13 Alternate: EVENTOUT Additional: RTC_TAMP0, RTC_OUT, RTC_TS
PC14-OSC32IN	3	I/O	5VT	Default: PC14 Alternate: EVENTOUT Additional: OSC32IN
PC15-OSC32OUT	4	I/O	5VT	Default: PC15 Alternate: EVENTOUT Additional: OSC32OUT
PH0	5	I/O	5VT	Default: PH0, OSCIN Alternate: EVENTOUT Additional: OSCIN
PH1	6	I/O	5VT	Default: PH1, OSCOUT

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: EVENTOUT Additional: OSCOUT
NRST	7	-	-	Default: NRST
PC0	8	I/O	5VT	Default: PC0 Alternate: USBHS_ULPI_STP, EVENTOUT Additional: ADC012_IN10
PC1	9	I/O	5VT	Default: PC1 Alternate: SPI2_MOSI, I2S2_SD, SPI1_MOSI, I2S1_SD, ENET_MDC, EVENTOUT Additional: ADC012_IN11
PC2	10	I/O	5VT	Default: PC2 Alternate: SPI1_MISO, I2S1_ADD_SD, USBHS_ULPI_DIR, ENET_MII_TXD2, EVENTOUT Additional: ADC012_IN12
PC3	11	I/O	5VT	Default: PC3 Alternate: SPI1_MOSI, I2S1_SD, USBHS_ULPI_NXT, ENET_MII_TX_CLK, EVENTOUT Additional: ADC012_IN13
V _{SSA}	12	P	-	Default: V _{SSA}
V _{DDA}	13	P	-	Default: V _{DDA}
PA0-WKUP	14	I/O	5VT	Default: PA0 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER4_CH0, TIMER7_ETI, USART1_CTS, UART3_TX, ENET_MII_CRS, EVENTOUT Additional: ADC012_IN0, WKUP
PA1	15	I/O	5VT	Default: PA1 Alternate: TIMER1_CH1, TIMER4_CH1, USART1_RTS, UART3_RX, ENET_MII_RX_CLK, ENET_RMII_REF_CLK, EVENTOUT Additional: ADC012_IN1
PA2	16	I/O	5VT	Default: PA2 Alternate: TIMER1_CH2, TIMER4_CH2, TIMER8_CH0, I2S_CKIN, USART1_TX, ENET_MDIO, EVENTOUT Additional: ADC012_IN2
PA3	17	I/O	5VT	Default: PA3 Alternate: TIMER1_CH3, TIMER4_CH3, TIMER8_CH1, I2S1_MCK, USART1_RX, USBHS_ULPI_D0, ENET_MII_COL, EVENTOUT Additional: ADC012_IN3
V _{SS}	18	P	-	Default: V _{SS}
V _{DD}	19	P	-	Default: V _{DD}

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PA4	20	I/O		Default: PA4 Alternate: SPI0_NSS, SPI2_NSS, I2S2_WS, USART1_CK, USBHS_SOF, DCI_HSYNC, EVENTOUT Additional: ADC01_IN4, DAC_OUT0
PA5	21	I/O		Default: PA5 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER7_CH0_ON, SPI0_SCK, USBHS_ULPI_CK, EVENTOUT Additional: ADC01_IN5, DAC_OUT1
PA6	22	I/O	5VT	Default: PA6 Alternate: TIMER0_BRKIN, TIMER2_CH0, TIMER7_BRKIN, SPI0_MISO, I2S1_MCK, TIMER12_CH0, SDIO_CMD, DCI_PIXCLK, EVENTOUT Additional: ADC01_IN6
PA7	23	I/O	5VT	Default: PA7 Alternate: TIMER0_CH0_ON, TIMER2_CH1, TIMER7_CH0_ON, SPI0_MOSI, TIMER13_CH0, ENET_MII_RX_DV, ENET_RMII_CRS_DV, EVENTOUT Additional: ADC01_IN7
PC4	24	I/O	5VT	Default: PC4 Alternate: ENET_MII_RXD0, ENET_RMII_RXD0, EVENTOUT Additional: ADC01_IN14
PC5	25	I/O	5VT	Default: PC5 Alternate: USART2_RX, ENET_MII_RXD1, ENET_RMII_RXD1, EVENTOUT Additional: ADC01_IN15
PB0	26	I/O	5VT	Default: PB0 Alternate: TIMER0_CH1_ON, TIMER2_CH2, TIMER7_CH1_ON, SPI2_MOSI, I2S2_SD, USBHS_ULPI_D1, ENET_MII_RXD2, SDIO_D1, EVENTOUT Additional: ADC01_IN8, IREF
PB1	27	I/O	5VT	Default: PB1 Alternate: TIMER0_CH2_ON, TIMER2_CH3, TIMER7_CH2_ON, USBHS_ULPI_D2, ENET_MII_RXD3, SDIO_D2, EVENTOUT Additional: ADC01_IN9
PB2	28	I/O	5VT	Default: PB2, BOOT1 Alternate: TIMER1_CH3, SPI2_MOSI, I2S2_SD, USBHS_ULPI_D4, SDIO_CK, EVENTOUT
PB10	29	I/O	5VT	Default: PB10

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
				Alternate: TIMER1_CH2, I2C1_SCL, SPI1_SCK, I2S1_CK, I2S2_MCK, USART2_TX, USBHS_ULPI_D3, ENET_MII_RX_ER, SDIO_D7, EVENTOUT
PB11	30	I/O	5VT	Default: PB11 Alternate: TIMER1_CH3, I2C1_SDA, I2S_CKIN, USART2_RX, USBHS_ULPI_D4, ENET_MII_TX_EN, ENET_RMII_TX_EN, EVENTOUT
NC	31	P	-	Default: V _{CORE}
V _{DD}	32	P	-	Default: V _{DD}
PB12	33	I/O	5VT	Default: PB12 Alternate: TIMER0_BRKIN, I2C1_SMBA, SPI1_NSS, I2S1_WS, USART2_CK, CAN1_RX, USBHS_ULPI_D5, ENET_MII_TXD0, ENET_RMII_TXD0, USBHS_ID, EVENTOUT
PB13	34	I/O	5VT	Default: PB13 Alternate: TIMER0_CH0_ON, SPI1_SCK, I2S1_CK, USART2_CTS, CAN1_TX, USBHS_ULPI_D6, ENET_MII_TXD1, ENET_RMII_TXD1, EVENTOUT, I2C1_TXFRAME Additional: USBHS_VBUS
PB14	35	I/O	5VT	Default: PB14 Alternate: TIMER0_CH1_ON, TIMER7_CH1_ON, SPI1_MISO, I2S1_ADD_SD, USART2_RTS, TIMER11_CH0, USBHS_DM, EVENTOUT
PB15	36	I/O	5VT	Default: PB15 Alternate: RTC_REFIN, TIMER0_CH2_ON, TIMER7_CH2_ON, SPI1_MOSI, I2S1_SD, TIMER11_CH1, USBHS_DP, EVENTOUT
PC6	37	I/O	5VT	Default: PC6 Alternate: TIMER2_CH0, TIMER7_CH0, I2S1_MCK, USART5_TX, SDIO_D6, DCI_D0, EVENTOUT
PC7	38	I/O	5VT	Default: PC7 Alternate: TIMER2_CH1, TIMER7_CH1, SPI1_SCK, I2S1_CK, I2S2_MCK, USART5_RX, SDIO_D7, DCI_D1, EVENTOUT
PC8	39	I/O	5VT	Default: PC8 Alternate: TRACED0, TIMER2_CH2, TIMER7_CH2, USART5_CK, SDIO_D0, DCI_D2, EVENTOUT
PC9	40	I/O	5VT	Default: PC9 Alternate: CK_OUT1, TIMER2_CH3, TIMER7_CH3, I2C2_SDA, I2S_CKIN, SDIO_D1, DCI_D3, EVENTOUT

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PA8	41	I/O	5VT	Default: PA8 Alternate: CK_OUT0, TIMER0_CH0, I2C2_SCL, USART0_CK, USBFS_SOF, SDIO_D1, EVENTOUT, CTC_SYNC
PA9	42	I/O	5VT	Default: PA9 Alternate: TIMER0_CH1, I2C2_SMBA, SPI1_SCK, I2S1_CK, USART0_TX, SDIO_D2, DCI_D0, EVENTOUT Additional: USBFS_VBUS
PA10	43	I/O	5VT	Default: PA10 Alternate: TIMER0_CH2, USART0_RX, USBFS_ID, DCI_D1, EVENTOUT, I2C2_TXFRAME
PA11	44	I/O	5VT	Default: PA11 Alternate: TIMER0_CH3, USART0_CTS, USART5_TX, CAN0_RX, USBFS_DM, EVENTOUT
PA12	45	I/O	5VT	Default: PA12 Alternate: TIMER0_ETI, USART0_RTS, USART5_RX, CAN0_TX, USBFS_DP, EVENTOUT
PA13	46	I/O	5VT	Default: JTMS, SWDIO, PA13 Alternate: EVENTOUT
NC	47	-	-	
V _{DD}	48	P	-	Default: V _{DD}
PA14	49	I/O	5VT	Default: JTCK, SWCLK, PA14 Alternate: EVENTOUT
PA15	50	I/O	5VT	Default: JTDI, PA15 Alternate: TIMER1_CH0, TIMER1_ETI, SPI0_NSS, SPI2_NSS, I2S2_WS, USART0_TX, EVENTOUT
PC10	51	I/O	5VT	Default: PC10 Alternate: SPI2_SCK, I2S2_CK, USART2_TX, UART3_TX, SDIO_D2, DCI_D8, EVENTOUT
PC11	52	I/O	5VT	Default: PC11 Alternate: I2S2_ADD_SD, SPI2_MISO, USART2_RX, UART3_RX, SDIO_D3, DCI_D4, EVENTOUT
PC12	53	I/O	5VT	Default: PC12 Alternate: I2C1_SDA, SPI2_MOSI, I2S2_SD, USART2_CK, UART4_TX, SDIO_CK, DCI_D9, EVENTOUT
PD2	54	I/O	5VT	Default: PD2 Alternate: TIMER2_ETI, UART4_RX, SDIO_CMD, DCI_D11, EVENTOUT
PB3	55	I/O	5VT	Default: JTDO, PB3 Alternate: TRACESWO, TIMER1_CH1, SPI0_SCK, SPI2_SCK, I2S2_CK, USART0_RX, I2C1_SDA, EVENTOUT

Pin Name	Pins	Pin Type ⁽¹⁾	I/O Level ⁽²⁾	Functions description
PB4	56	I/O	5VT	Default: NJTRST, PB4 Alternate: TIMER2_CH0, SPI0_MISO, SPI2_MISO, I2S2_ADD_SD, I2C2_SDA, SDIO_D0, EVENTOUT, I2C0_TXFRAME
PB5	57	I/O	5VT	Default: PB5 Alternate: TIMER2_CH1, I2C0_SMBA, SPI0_MOSI, SPI2_MOSI, I2S2_SD, CAN1_RX, USBHS_ULPI_D7, ENET_PPS_OUT, DCI_D10, EVENTOUT
PB6	58	I/O	5VT	Default: PB6 Alternate: TIMER3_CH0, I2C0_SCL, USART0_TX, CAN1_TX, DCI_D5, EVENTOUT
PB7	59	I/O	5VT	Default: PB7 Alternate: TIMER3_CH1, I2C0_SDA, USART0_RX, DCI_VSYNC, EVENTOUT
BOOT0	60	I/O	5VT	Default: BOOT0
PB8	61	I/O	5VT	Default: PB8 Alternate: TIMER1_CH0, TIMER1_ETI, TIMER3_CH2, TIMER9_CH0, I2C0_SCL, CAN0_RX, ENET_MII_TXD3, SDIO_D4, DCI_D6, EVENTOUT
PB9	62	I/O	5VT	Default: PB9 Alternate: TIMER1_CH1, TIMER3_CH3, TIMER10_CH0, I2C0_SDA, SPI1_NSS, I2S1_WS, CAN0_TX, SDIO_D5, DCI_D7, EVENTOUT
V _{SS}	63	P	-	Default: V _{SS}
V _{DD}	64	P	-	Default: V _{DD}

Notes:

(1) Type: I = input, O = output, P = power.

(2) I/O Level: 5VT = 5 V tolerant.

2.6.6. GD32F407xx pin alternate functions

Table 2-9. Port A alternate functions summary

[illegible]

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PA15	JTDI	TIMER1_CH0 /TIMER1_ETI				SPI0_N SS	SPI2_NSS/2 S2_WS	USART0_T X								EVENTOUT

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Table 2-10. Port B alternate functions summary

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PB0		TIMER0_C H1_ON	TIMER2_C H2	TIMER7_C H1_ON				SPI2_MOSI I2S2_SD			USBHS_U LPI_D1	ENET_MII_ RXD2	SDIO_D 1			EVENTOUT
PB1		TIMER0_C H2_ON	TIMER2_C H3	TIMER7_C H2_ON							USBHS_U LPI_D2	ENET_MII_ RXD3	SDIO_D 2			EVENTOUT
PB2		TIMER1_C H3						SPI2_MOSI I2S2_SD			USBHS_U LPI_D4		SDIO_C K			EVENTOUT
PB3	JTDO/TRA CESWO	TIMER1_C H1				SPI0_SCK	SPI2_SCK I2S2_CK	USART0_R X		I2C1_SDA						EVENTOUT
PB4	NJTRST		TIMER2_C H0		I2C0_TxF RAME	SPI0_MIS O	SPI2_MIS O	I2S2_ADD_ SD		I2C2_SDA			SDIO_D 0			EVENTOUT
PB5			TIMER2_C H1		I2C0_SMB A	SPI0_MO SI	SPI2_MO SI/I2S2_S D			CAN1_RX	USBHS_U LPI_D7	ENET_PPS _OUT	EXMC_S DCKE1	DCI_D10		EVENTOUT
PB6			TIMER3_C H0		I2C0_SCL			USART0_T X		CAN1_TX			EXMC_S DNE1	DCI_D5		EVENTOUT
PB7			TIMER3_C H1		I2C0_SDA			USART0_R X					EXMC_N L	DCI_VSY NC		EVENTOUT
PB8		TIMER1_C H0/TIMER 1_ETI	TIMER3_C H2	TIMER9_C H0	I2C0_SCL					CAN0_RX		ENET_MII_ TXD3	SDIO_D 4	DCI_D6		EVENTOUT
PB9		TIMER1_C H1	TIMER3_C H3	TIMER10_ CH0	I2C0_SDA	SPI1_NSS I2S1_WS				CAN0_TX			SDIO_D 5	DCI_D7		EVENTOUT
PB10		TIMER1_C H2			I2C1_SCL	SPI1_SCK I2S1_CK	I2S2_MCK	USART2_T X			USBHS_U LPI_D3	ENET_MII_ RX_ER	SDIO_D 7			EVENTOUT
PB11		TIMER1_C H3			I2C1_SDA	I2S_CKIN		USART2_R X			USBHS_U LPI_D4	ENET_MII_ TX_EN/ENE T_RMII_TX_ EN				EVENTOUT
PB12		TIMER0_B RKIN			I2C1_SMB A	SPI1_NSS I2S1_WS		USART2_C K		CAN1_RX	USBHS_U LPI_D5	ENET_MII_ TXD0/ENET _RMII_TXD 0	USBHS_ ID			EVENTOUT
PB13		TIMER0_C H0_ON			I2C1_TxF RAME	SPI1_SCK I2S1_CK		USART2_C TS		CAN1_TX	USBHS_U LPI_D6	ENET_MII_ TXD1/ENET _RMII_TXD 1				EVENTOUT
PB14		TIMER0_C H1_ON		TIMER7_C H1_ON		SPI1_MIS O	I2S1_ADD_ SD	USART2_R TS		TIMER11_ CH0			USBHS_ DM			EVENTOUT

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PB15	RTC_REFIN	TIMER0_CH2_ON		TIMER7_CH2_ON		SPI1_MOSI/2S1_SD				TIMER11_CH1			USBHS_DP			EVENTOUT

Table 2-11. Port C alternate functions summary

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PC0											USBHS_ULPI_STP	EXMC_SDNWE				EVENTOUT
PC1						SPI2_MOSI/2S2_SD		SPI1_MOSI/2S1_SD				ENET_MD				EVENTOUT
PC2						SPI1_MISO	I2S1_ADD_SD				USBHS_ULPI_DIR	ENET_MII_TXD2	EXMC_SDN0			EVENTOUT
PC3						SPI1_MOSI/2S1_SD					USBHS_ULPI_NXT	ENET_MII_TX_CLK	EXMC_SDNCKE0			EVENTOUT
PC4												ENET_MII_RXD0/ENET_RMII_RXD0	EXMC_SDN0			EVENTOUT
PC5								USART2_RX				ENET_MII_RXD1/ENET_RMII_RXD1	EXMC_SDNCKE0			EVENTOUT
PC6			TIMER2_CH0	TIMER7_CH0		I2S1_MCK			USART5_TX				SDIO_D6	DCI_D0		EVENTOUT
PC7			TIMER2_CH1	TIMER7_CH1		SPI1_SCK/I2S1_CLK	I2S2_MCK		USART5_RX				SDIO_D7	DCI_D1		EVENTOUT
PC8	TRACED0		TIMER2_CH2	TIMER7_CH2					USART5_CLK				SDIO_D0	DCI_D2		EVENTOUT
PC9	CK_OUT1		TIMER2_CH3	TIMER7_CH3	I2C2_SDA	I2S1_CLKIN							SDIO_D1	DCI_D3		EVENTOUT
PC10						SPI2_SCK/I2S2_CLK		USART2_TX	UART3_TX				SDIO_D2	DCI_D8		EVENTOUT
PC11						I2S2_ADD_SD	SPI2_MISO	USART2_RX	UART3_RX				SDIO_D3	DCI_D4		EVENTOUT
PC12					I2C1_SDA		SPI2_MOSI/2S2_SD	USART2_CLK	UART4_TX				SDIO_CLK	DCI_D9		EVENTOUT
PC13																EVENTOUT

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PC14																EVENTOUT
PC15																EVENTOUT

Table 2-12. Port D alternate functions summary

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PD0							SPI2_MOSI/2S2_SD			CAN0_RX			EXMC_D2			EVENTOUT
PD1								SPI1_NSS/2S1_WS		CAN0_TX			EXMC_D3			EVENTOUT
PD2			TIMER2_ETI						UART4_RX				SDIO_CMD	DCI_D11		EVENTOUT
PD3	TRACED1					SPI1_SCK/2S1_CK		USART1_CTS					EXMC_CLK	DCI_D5		EVENTOUT
PD4								USART1_RTS					EXMC_NOE			EVENTOUT
PD5								USART1_TX					EXMC_NWE			EVENTOUT
PD6						SPI2_MOSI/2S2_SD		USART1_RX					EXMC_NWAIT	DCI_D10		EVENTOUT
PD7								USART1_CK					EXMC_NE0/EXMC_NCE1			EVENTOUT
PD8								USART2_TX					EXMC_D13			EVENTOUT
PD9								USART2_RX					EXMC_D14			EVENTOUT
PD10								USART2_CK					EXMC_D15			EVENTOUT
PD11								USART2_CTS					EXMC_A16			EVENTOUT
PD12			TIMER3_CH0					USART2_RTS					EXMC_A17			EVENTOUT
PD13			TIMER3_CH1										EXMC_A18			EVENTOUT

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PD14			TIMER3_CH2										EXMC_D0			EVENTOUT
PD15	CTC_SYN C		TIMER3_CH3										EXMC_D1			EVENTOUT

Table 2-13. Port E alternate functions summary

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PE0			TIMER3_ETI										EXMC_NBL0	DCI_D2		EVENTOUT
PE1		TIMER0_CH1 _ON											EXMC_NBL1	DCI_D3		EVENTOUT
PE2	TRACECK											ENET_MI I_TXD3	EXMC_A23			EVENTOUT
PE3	TRACED0												EXMC_A19			EVENTOUT
PE4	TRACED1												EXMC_A20	DCI_D4		EVENTOUT
PE5	TRACED2			TIMER8_CH0									EXMC_A21	DCI_D6		EVENTOUT
PE6	TRACED3			TIMER8_CH1									EXMC_A22	DCI_D7		EVENTOUT
PE7		TIMER0_ETI											EXMC_D4			EVENTOUT
PE8		TIMER0_CH0 _ON											EXMC_D5			EVENTOUT
PE9		TIMER0_CH0											EXMC_D6			EVENTOUT
PE10		TIMER0_CH1 _ON											EXMC_D7			EVENTOUT
PE11		TIMER0_CH1											EXMC_D8			EVENTOUT
PE12		TIMER0_CH2 _ON											EXMC_D9			EVENTOUT
PE13		TIMER0_CH2											EXMC_D10			EVENTOUT

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PE14		TIMER0_CH3											EXMC_D11			EVENTOUT
PE15		TIMER0_BRKIN											EXMC_D12			EVENTOUT

Table 2-14. Port F alternate functions summary

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PF0	CTC_SYNC				I2C1_SDA								EXMC_A0			EVENTOUT
PF1					I2C1_SCL								EXMC_A1			EVENTOUT
PF2					I2C1_SMB_A								EXMC_A2			EVENTOUT
PF3					I2C1_TXF_RAME								EXMC_A3			EVENTOUT
PF4													EXMC_A4			EVENTOUT
PF5													EXMC_A5			EVENTOUT
PF6				TIMER9_CH0									EXMC_NIORD			EVENTOUT
PF7				TIMER10_CH0									EXMC_NREG			EVENTOUT
PF8										TIMER12_CH0			EXMC_NIOWR			EVENTOUT
PF9										TIMER13_CH0			EXMC_CD			EVENTOUT
PF10													EXMC_INTR	DCI_D11		EVENTOUT
PF11													EXMC_SDNRAS	DCI_D12		EVENTOUT
PF12													EXMC_A6			EVENTOUT
PF13													EXMC_A7			EVENTOUT
PF14													EXMC_A8			EVENTOUT

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PF15													EXMC_A9			EVENTOUT

Table 2-15. Port G alternate functions summary

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PG0													EXMC_A10			EVENTOUT
PG1													EXMC_A11			EVENTOUT
PG2													EXMC_A12			EVENTOUT
PG3													EXMC_A13			EVENTOUT
PG4													EXMC_A14			EVENTOUT
PG5													EXMC_A15			EVENTOUT
PG6													EXMC_INT 1	DCI_D12		EVENTOUT
PG7									USART5_ CK				EXMC_INT 2	DCI_D13		EVENTOUT
PG8									USART5_ RTS			ENET_PPS _OUT	EXMC_SD CLK			EVENTOUT
PG9									USART5_ RX				EXMC_NE 1/EXMC_N CE2	DCI_VSY NC		EVENTOUT
PG10													EXMC_NC E3_0/EXM C_NE2	DCI_D2		EVENTOUT
PG11												ENET_MII_ TX_EN/EN ET_RMII_T X_EN	EXMC_NC E3_1	DCI_D3		EVENTOUT
PG12									USART5_ RTS				EXMC_NE 3			EVENTOUT
PG13	TRACED2								USART5_ CTS			ENET_MII_ TXD0/ENE T_RMII_TX D0	EXMC_A24			EVENTOUT

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PG14	TRACED3								USART5_TX			ENET_MII_TXD1/ENET_RMII_TX_D1	EXMC_A25			EVENTOUT
PG15									USART5_CTS				EXMC_SDNCAS	DCI_D13		EVENTOUT

Table 2-16. Port H alternate functions summary

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PH0																EVENTOUT
PH1																EVENTOUT
PH2												ENET_MII_CRS	EXMC_SDCKE0			EVENTOUT
PH3					I2C1_TXFRA ME							ENET_MII_COL	EXMC_SDN E0			EVENTOUT
PH4					I2C1_SCL						USBHS_U LPI_NXT					EVENTOUT
PH5					I2C1_SDA								EXMC_SDN WE			EVENTOUT
PH6					I2C1_SMBA					TIMER11_CH0		ENET_MII_RXD2	EXMC_SDN E1	DCI_D8		EVENTOUT
PH7					I2C2_SCL							ENET_MII_RXD3	EXMC_SDC KE1	DCI_D9		EVENTOUT
PH8					I2C2_SDA								EXMC_D16	DCI_HS YNC		EVENTOUT
PH9					I2C2_SMBA					TIMER11_CH1			EXMC_D17	DCI_D0		EVENTOUT
PH10			TIMER4_CH0		I2C2_TXFRA ME								EXMC_D18	DCI_D1		EVENTOUT
PH11			TIMER4_CH1										EXMC_D19	DCI_D2		EVENTOUT
PH12			TIMER4_CH2										EXMC_D20	DCI_D3		EVENTOUT
PH13				TIMER7_C H0_ON						CAN0_TX			EXMC_D21			EVENTOUT

PH14				TIMER7_CH1_ON									EXMC_D22	DCI_D4		EVENTOUT
PH15				TIMER7_CH2_ON									EXMC_D23	DCI_D11		EVENTOUT

Table 2-17. Port I alternate functions summary

Pin Name	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15
PI0			TIMER4_CH3			SPI1_NSS/I2S1_WS							EXMC_D24	DCI_D13		EVENTOUT
PI1						SPI1_SCK/I2S1_CK							EXMC_D25	DCI_D8		EVENTOUT
PI2				TIMER7_CH3		SPI1_MISO	I2S1_ADD_SD						EXMC_D26	DCI_D9		EVENTOUT
PI3				TIMER7_ETI		SPI1_MOSI/I2S1_SD							EXMC_D27	DCI_D10		EVENTOUT
PI4				TIMER7_BRKIN									EXMC_NBL2	DCI_D5		EVENTOUT
PI5				TIMER7_CH0									EXMC_NBL3	DCI_VSYNC		EVENTOUT
PI6				TIMER7_CH1									EXMC_D28	DCI_D6		EVENTOUT
PI7				TIMER7_CH2									EXMC_D29	DCI_D7		EVENTOUT
PI8																EVENTOUT
PI9										CAN0_RX			EXMC_D30			EVENTOUT
PI10												ENET_MII_RX_ER	EXMC_D31			EVENTOUT
PI11											USBHS_ULPI_DIR					EVENTOUT