Porting Guide

STM32G473 Series to N32H473 Series

Introduction

The migration guide primarily outlines the disparities between the STM32G473 series and the N32H473 series, facilitating a seamless transition from developing with the STM32G473 series to the N32H473 series.

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Road,
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

Table of Contents

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Road,
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

1 Overview

The N32H473 series is the latest high-performance general-purpose secure MCU product developed by Nsing Technologies based on the Cortex-M4 core. It supports multiple packaging forms such as UQFN32, UQFN48, LQFP48, LQFP64,LQFP80,LQFP100,LQFP128, and it is compatible with the corresponding packaging pins of the STM32G473 series.

This guide mainly introduces the differences in resources and IO functions between two series of chips, as follows:

- Resource Differences: Introduce the differences in resources such as general basic modules, communication peripherals, analog peripherals, timers, etc. under various corresponding packaging
- Hardware differences: Introduction includes differences in pin layout and functional mapping
- Minimum System Design: N32H473 Minimum System Design Considerations
- Main functional differences: Introduce the main functional differences of each module

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

2 Resource Differences

2.1 UFQFPN48/UQFN48 Packaging Resource Differences

The comparison of resource differences between STM32G473 UFQFPN48 package and N32H473 UQFN48 package is shown in the following table:

Device model		STM32G473CBU6/3 STM32G473CCU6/3 STM32G473CEU6/3			N32H473CCU7/8 N32H473CEU7/8	
FLASH(KB)		128	256	512	256	512
SRAM(KB)	General SRAM	80+16			112	160
	CCM SRAM	32			32	
	Backup SRAM	-			4	
Core		Cortex-M4F			Cortex-M4F	
Maximum frequency		170MHz			200MHz	
Work environment		1.71～3.6V/-40～80℃/125℃			1.8～3.6V/-40～105℃/125℃	
Storage Expansion	FEMC	NO			No	
	xSPI	1*QSPI			1*xSPI(Octal mode is not supported)	
DMA		2*8CH			2*8CH	
Timer	Advanced	3*16bit			3*16bit	
	General	5*16bit + 2*32bit			7*16bit + 3*16bit	
	Basic	2*16bit			2*32bit	
	Lower power	1*16bit			2*16bit	
	SysTick	1			1	
	IWDG	1*12bit			1*12bit	
	WWDG	1*7bit			1*14bit	
Communication interface	SPI	3			5	
	I2S	2			2	
	I2C	4			4	
	USART	3			4	
	UART	0			4	
	LPUART	1			-	
	FDCAN	3			2	
	USB FS	Yes			Yes	
	UCPD	Yes			-	
	SAI	Yes			-	
RTC		Yes			Yes	
Tamper pins		2			2	
CORDIC		Yes			Yes	
FMAC		Yes			Yes	
GPIO		42			42	
Wakeup pins		3			3	
12bit ADC		5			4	
ADC channels		21			21	
12bit DAC		4			8	
DAC channels		7 (external*3 + internal*4)			8 (external*4 + internal*4)	
VREFBUF		Yes			Yes	
PGA		6			4	
COMP		7			7	
Algorithm support		RNG、CRC7/8/16/32			DES/3DES、AES、SHA1/SHA224/SHA256、SM3、SM4、MD5、CRC16/CRC32、TRNG	
Safety protection		RDP、PCROP、WRP、Securable memory area、Force boot from FLASH			Read write protection (RDP/WRP), storage encryption, partition protection, secure boot	
Package		UFQFPN48			UQFPN48	

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

2.2 LQFP48 Packaging Resource Differences

The comparison of resource differences between STM32G473 LQFP48 package and N32H473 LQFP48 package is shown in the following table:

Device model		STM32G473CBT6/3 STM32G473CCT6/3 STM32G473CET6/3			N32H473CCU7/8 N32H473CEU7/8	
FLASH(KB)		128	256	512	256	512
SRAM(KB)	General SRAM	80+16			112	160
	CCM SRAM	32			32	
	Backup SRAM	-			4	
Core		Cortex-M4F			Cortex-M4F	
Maximum frequency		170MHz			200MHz	
Work environment		1.71～3.6V/-40～85℃/125℃			1.8～3.6V/-40～105℃/125℃	
Storage Expansion	FEMC	NO			No	
	xSPI	1*QSPI			1*xSPI(Octal mode is not supported)	
DMA		2*8CH			2*8CH	
Timer	Advanced	3*16bit			3*16bit	
	General	5*16bit + 2*32bit			7*16bit+3*16bit	
	Basic	2*16bit			2*32bit	
	Lower power	1*16bit			2*16bit	
	SysTick	1			1	
	IWDG	1*12bit			1*12bit	
	WWDG	1*7bit			1*14bit	
Communication interface	SPI	3			5	
	I2S	2			2	
	I2C	4			4	
	USART	3			4	
	UART	0			4	
	LPUART	1			-	
	FDCAN	3			2	
	USB FS Device	Yes			Yes	
	UCPD	Yes			-	
	SAI	Yes			-	
RTC		Yes			Yes	
Tamper pins		2			2	
CORDIC		Yes			Yes	
FMAC		Yes			Yes	
GPIO		38			38	
Wakeup pins		3			3	
12bit ADC		5			4	
ADC channels		20			20	
12bit DAC		4			8	
DAC channels		7 (external*3 + internal*4)			8 (external*4 + internal*4)	
VREFBUF		Yes			Yes	
PGA		6			4	
COMP		7			7	
Algorithm support		RNG、CRC7/8/16/32			DES/3DES、AES、SHA1/SHA224/SHA256、SM3、SM4、MD5、CRC16/CRC32、TRNG	
Safety protection		RDP、PCROP、WRP、Securable memory area、Force boot from FLASH			Read write protection (RDP/WRP), storage encryption, partition protection, secure boot	
Package		LQFP48/UFQFPN48			UQFPN48	

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

2.3 LQFP64 Packaging Resource Differences

The comparison of resource differences between STM32G473 LQFP64 package and N32H473 LQFP64 package is shown in the following table:

Device model		STM32G473RBT6/3 STM32G473RCT6/3 STM32G473RET6/3			N32H473RCL7/8 N32H473REL7/8	
FLASH(KB)		128	256	512	256	512
SRAM(KB)	General SRAM	80+16			112	160
	CCM SRAM	32			32	
	Backup SRAM	-			4	
Core		Cortex-M4F			Cortex-M4F	
Maximum frequency		170MHz			200MHz	
Work environment		1.71～3.6V/-40～85℃/125℃			1.8～3.6V/-40～105℃/125℃	
Storage Expansion	FEMC	No			No	
	xSPI	1*QSPI			Yes	
DMA		2*8CH			2*8CH	
Timer	Advanced	3*16bit			3*16bit	
	General	5*16bit + 2*32bit			7*16bit+3*16bit	
	Basic	2*16bit			2*32bit	
	Lower power	1*16bit			2*16bit	
	SysTick	1			1	
	IWDG	1*12bit			1*12bit	
	WWDG	1*7bit			1*14bit	
Communication interface	SPI	3			5	
	I2S	2			2	
	I2C	4			4	
	USART	3			4	
	UART	2			4	
	LPUART	1			-	
	FDCAN	3			2	
	USB FS Device	Yes			Yes	
	UCPD	Yes			-	
	SAI	Yes			-	
RTC		Yes			Yes	
Tamper pins		2			2	
CORDIC		Yes			Yes	
FMAC		Yes			Yes	
GPIO		52			52	
Wakeup pins		4			4	
12bit ADC		5			4	
ADC channels		26			26	
12bit DAC		4			8	
DAC channels		7 (external*3 + internal*4)			8 (external*4 + internal*4)	
VREFBUF		Yes			Yes	
PGA		6			4	
COMP		7			7	
Algorithm support		RNG、CRC7/8/16/32			DES/3DES、AES、SHA1/SHA224/SHA256、SM3、SM4、MD5、CRC16/CRC32、TRNG	
Safety protection		RDP、PCROP、WRP、Securable memory area、Force boot from FLASH			Read write protection (RDP/WRP), storage encryption, partition protection, secure boot	
Package		LQFP64			LQFP64	

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

2.4 LQFP80 Packaging Resource Differences

The comparison of resource differences between STM32G473 LQFP80 package and N32H473 LQFP80 package is shown in the following table:

Device model		STM32G473MBT6/3 STM32G473MCT6/3 STM32G473MET6/3			N32H473MCL7/8 N32H473MEL7/8	
FLASH(KB)		128	256	512	256	512
SRAM(KB)	General SRAM	80+16			112	160
	CCM SRAM	32			32	
	Backup SRAM	-			4	
Core		Cortex-M4F			Cortex-M4F	
Maximum frequency		170MHz			200MHz	
Work environment		1.71～3.6V/-40～85℃/125℃			1.8～3.6V/-40～105℃/125℃	
Storage Expansion	FEMC	NO			No	
	xSPI	1*QSPI			Yes	
DMA		2*8CH			2*8CH	
Timer	Advanced	3*16bit			3*16bit	
	General	5*16bit + 2*32bit			7*16bit+3*16bit	
	Basic	2*16bit			2*32bit	
	Lower power	1*16bit			2*16bit	
	SysTick	1			1	
	IWDG	1*12bit			1*12bit	
	WWDG	1*7bit			1*14bit	
Communication interface	SPI	4			6	
	I2S	2			2	
	I2C	4			4	
	USART	3			4	
	UART	2			4	
	LPUART	1			-	
	FDCAN	3			2	
	USB FS Device	Yes			Yes	
	UCPD	Yes			-	
	SAI	Yes			-	
RTC		Yes			Yes	
Tamper pins		3			2	
CORDIC		Yes			Yes	
FMAC		Yes			Yes	
GPIO		66			66	
Wakeup pins		4			4	
12bit ADC		5			4	
ADC channels		41			38	
12bit DAC		4			8	
DAC channels		7 (external*3 + internal*4)			8 (external*4 + internal*4)	
VREFBUF		Yes			Yes	
PGA		6			4	
COMP		7			7	
Algorithm support		RNG、CRC7/8/16/32			DES/3DES、AES、SHA1/SHA224/SHA256、SM3、SM4、MD5、CRC16/CRC32、TRNG	
Safety protection		RDP、PCROP、WRP、Securable memory area、Force boot from FLASH			Read write protection (RDP/WRP), storage encryption, partition protection, secure boot	
Package		LQFP80			LQFP80	

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

2.5 LQFP100 Packaging Resource Differences

The comparison of resource differences between STM32G473 LQFP100 package and N32H473 LQFP100 package is shown in the following table:

Device model		STM32G473VBT6/3 STM32G473VCT6/3 STM32G473VET6/3			N32H473VCL7/8 N32H473VEL7/8	
FLASH(KB)		128	256	512	256	512
SRAM(KB)	General SRAM	80+16			112	160
	CCM SRAM	32			32	
	Backup SRAM	-			4	
Core		Cortex-M4F			Cortex-M4F	
Maximum frequency		170MHz			200MHz	
Work environment		1.71～3.6V/-40～85℃/125℃			1.8～3.6V/-40～105℃/125℃	
Storage Expansion	FEMC	Address and data bus multiplexing mode			Address and data bus multiplexing mode	
	xSPI	1*QSPI			Yes	
DMA		2*8CH			2*8CH	
Timer	Advanced	3*16bit			3*16bit	
	General	5*16bit + 2*32bit			7*16bit + 3*16bit	
	Basic	2*16bit			2*32bit	
	Lower power	1*16bit			2*16bit	
	SysTick	1			1	
	IWDG	1*12bit			1*12bit	
	WWDG	1*7bit			1*14bit	
Communication interface	SPI	4			6	
	I2S	2			2	
	I2C	4			4	
	USART	3			4	
	UART	2			4	
	LPUART	1			-	
	FDCAN	3			2	
	USB FS Device	Yes			Yes	
	UCPD	Yes			-	
	SAI	Yes			-	
RTC		Yes			Yes	
Tamper pins		3			3	
CORDIC		Yes			Yes	
FMAC		Yes			Yes	
GPIO		86			86	
Wakeup pins		5			5	
12bit ADC		5			4	
ADC channels		42			45	
12bit DAC		4			8	
DAC channels		7 (external*3 + internal*4)			8 (external*4 + internal*4)	
VREFBUF		Yes			Yes	
PGA		6			4	
COMP		7			7	
Algorithm support		RNG、CRC7/8/16/32			DES/3DES、AES、SHA1/SHA224/SHA256、SM3、SM4、MD5、CRC16/CRC32、TRNG	
Safety protection		RDP、PCROP、WRP、Securable memory area、Force boot from FLASH			Read write protection (RDP/WRP), storage encryption, partition protection, secure boot	
Package		LQFP100			LQFP100	

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

2.6 LQFP128 Packaging Resource Differences

The comparison of resource differences between STM32G473 LQFP128 package and N32H473 LQFP128 package is shown in the following table:

Device model		STM32G473QBT6/3 STM32G473QCT6/3 STM32G473QET6/3			N32H473QCL7/8 N32H473QEL7/8	
FLASH(KB)		128	256	512	256	512
SRAM(KB)	General SRAM	80+16			112	160
	CCM SRAM	32			32	
	Backup SRAM	-			4	
Core		Cortex-M4F			Cortex-M4F	
Maximum frequency		170MHz			200MHz	
Work environment		1.71～3.6V/-40～85℃/125℃			1.8～3.6V/-40～105℃/125℃	
Storage Expansion	FEMC	Yes			Yes	
	xSPI	1*QSPI			Yes	
DMA		2*8CH			2*8CH	
Timer	Advanced	3*16bit			3*16bit	
	General	5*16bit + 2*32bit			7*16bit + 3*16bit	
	Basic	2*16bit			2*32bit	
	Lower power	1*16bit			2*16bit	
	SysTick	1			1	
	IWDG	1*12bit			1*12bit	
	WWDG	1*7bit			1*14bit	
Communication interface	SPI	4			6	
	I2S	2			2	
	I2C	4			4	
	USART	3			4	
	UART	2			4	
	LPUART	1			-	
	FDCAN	3			2	
	USB FS Device	Yes			Yes	
	UCPD	Yes			-	
	SAI	Yes			-	
RTC		Yes			Yes	
Tamper pins		3			3	
CORDIC		Yes			Yes	
FMAC		Yes			Yes	
GPIO		107			107	
Wakeup pins		5			5	
12bit ADC		5			4	
ADC channels		42			51	
12bit DAC		4			8	
DAC channels		7 (external*3 + internal*4)			8 (external*4 + internal*4)	
VREFBUF		Yes			Yes	
PGA		6			4	
COMP		7			7	
Algorithm support		RNG、CRC7/8/16/32			DES/3DES、AES、SHA1/SHA224/SHA256、SM3、SM4、MD5、CRC16/CRC32、TRNG	
Safety protection		RDP、PCROP、WRP、Securable memory area、Force boot from FLASH			Read write protection (RDP/WRP), storage encryption, partition protection, secure boot	
Package		LQFP128			LQFP128	

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

3 Hardware Differences

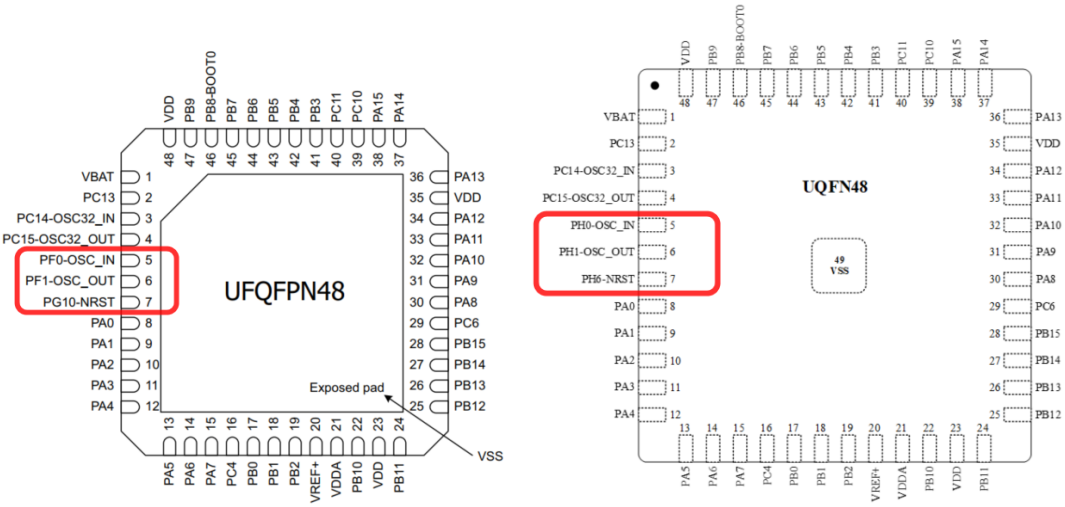
3.1 Pin layout

The N32H473 series is basically compatible with the STM32G473 series pins, with the following specific differences:

- OSC_IN pin can be reused as GPIO: it is PF0 for STM32G473 and PH0 for N32H473.
- OSC_OUT pin can be reused as GPIO: it is PF1 for STM32G473 and PH1 for N32H473.
- NRST pin can be reused as GPIO: it is PG10 for STM32G473 and PH6for N32H473.

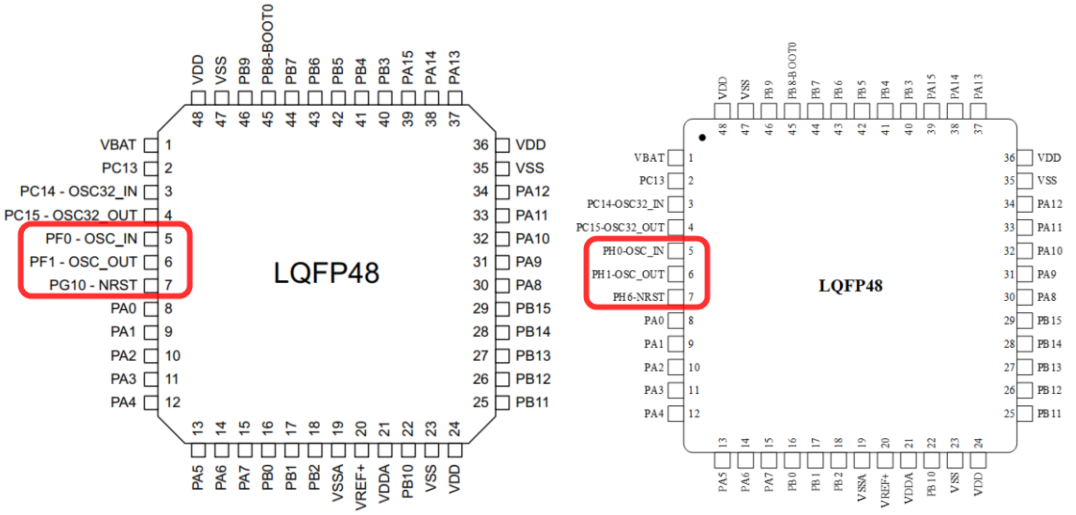
3.1.1 UFQFPN48/UQFN48

On the left is the pin distribution diagram of STM32G473 series UFQFPN48, and on the right is the pin distribution diagram of N32H473 series UQFN48:



3.1.2 LQFP48

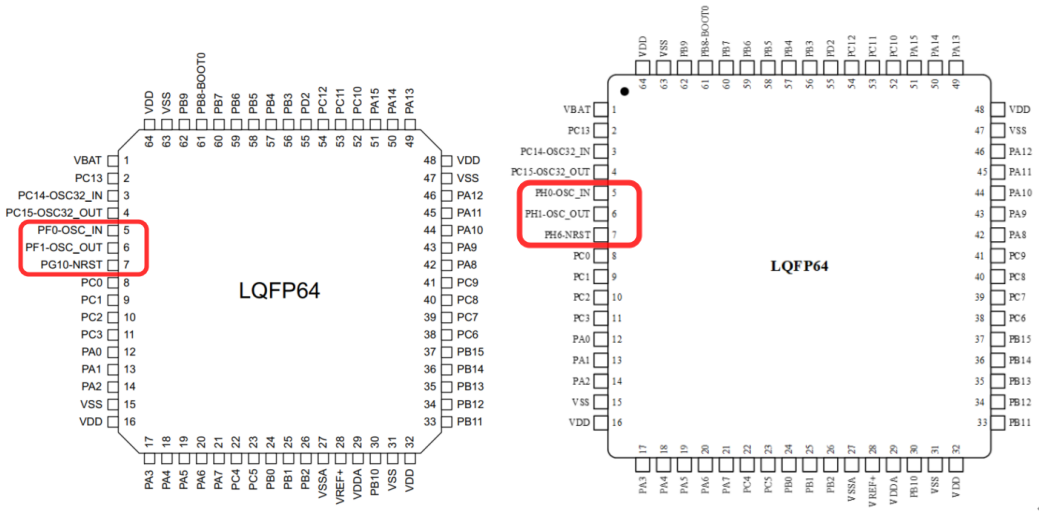
On the left is the pin distribution diagram of STM32G473 series LQFP48, and on the right is the pin distribution diagram of N32H473 series LQFP48:



NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

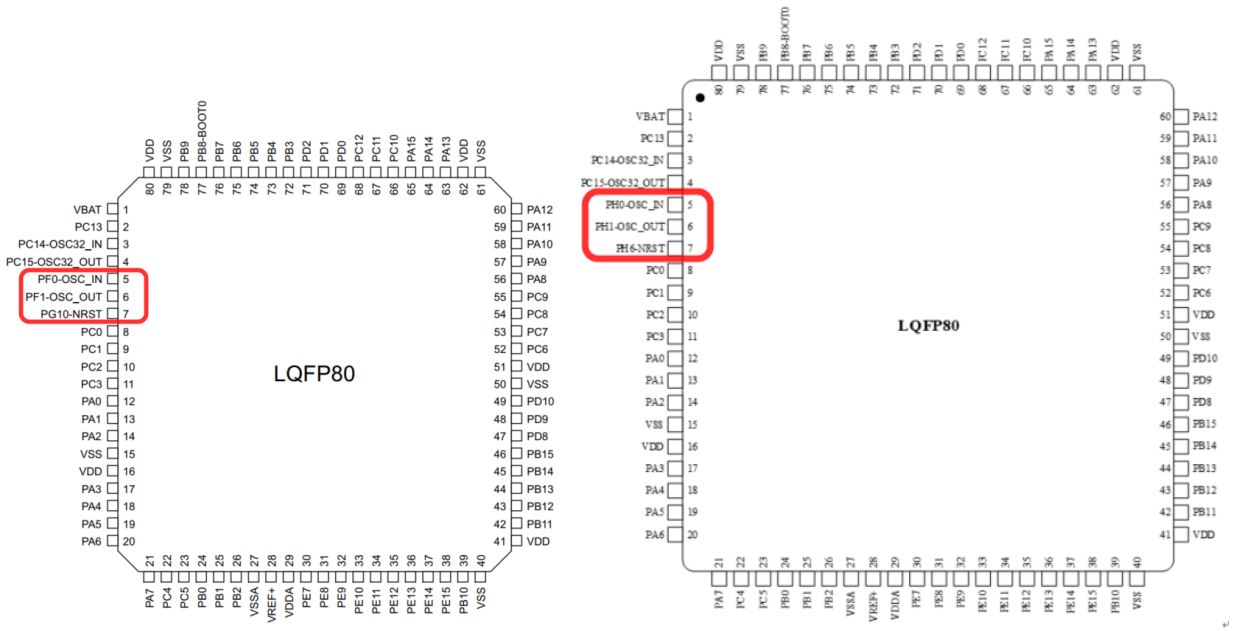
3.1.3 LQFP64

On the left is the pin distribution diagram of STM32G473 series LQFP64, and on the right is the pin distribution diagram of N32H473 series LQFP64:



3.1.4 LQFP80

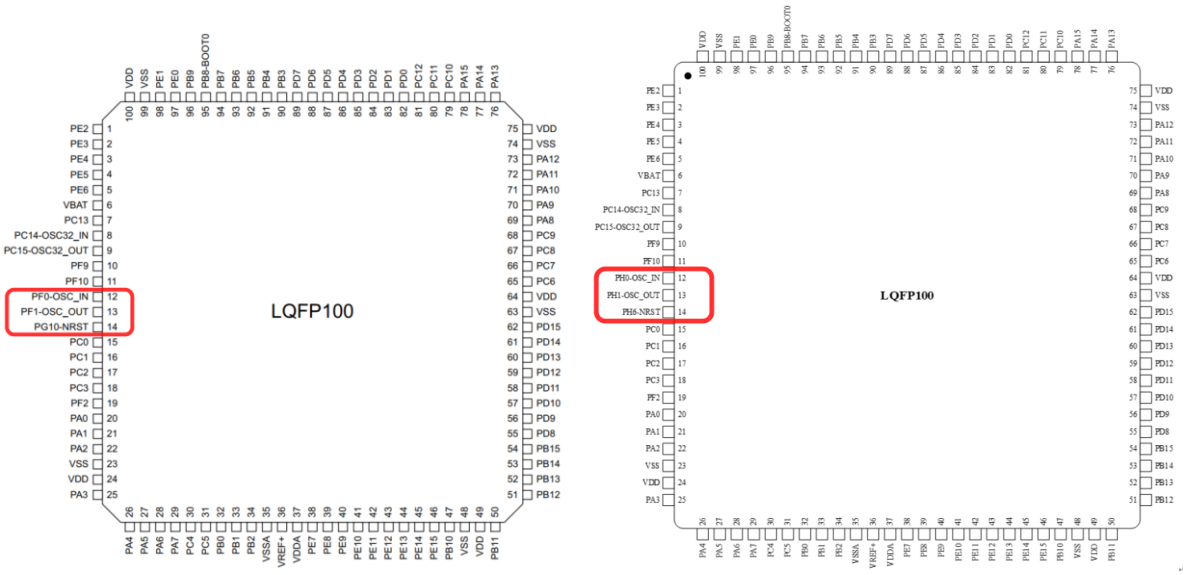
On the left is the pin distribution diagram of STM32G473 series LQFP80, and on the right is the pin distribution diagram of N32H473 series LQFP80:



3.1.5 LQFP100

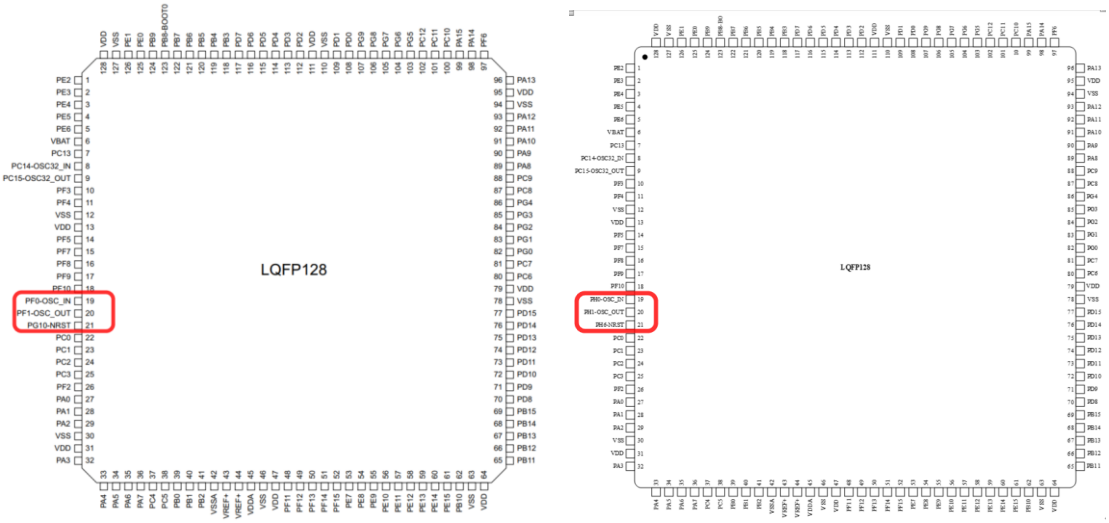
On the left is the pin distribution diagram of STM32G473 series LQFP100, and on the right is the pin distribution diagram of N32H473 series LQFP100:

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg



3.1.6 **LQFP128**

On the left is the pin distribution diagram of STM32G473 series LQFP128, and on the right is the pin distribution diagram of N32H473 series LQFP128:



3.2 **Pin Function Mapping**

The N32H473 series provides more peripheral multiplexing functionality on each pin, making practical applications more flexible. Some of the pin functions have differences or do not meet the requirements. Based on the multiplexing function of STM32G473, the main differences are as follows:

- The RTS_DE, TX, and RX signals of the N32H473 series USART3, USART5, and UART8 can be mapped to any IO
- The TX and RX signals of the N32H473 series FDCAN1, FDCAN2, and FDCAN3 can be mapped to any IO
- STM32G473 series supports UCPD inteface, but N32H473 series do not support
- STM32G473 series supports SAI interface, but N32H473 series do not support

The differences in pin reuse function are detailed in the table below. Based on the reuse function of STM32G473

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

series, the highlighted red parts are the pins with differences or that do not meet the function requirements:

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
-	-	-	-	1	1	PE2	TRACECK SAI1_CK1 SAI1_MCLK_A SPI4_SCK FMC_A23 EVENTOUT TIM3_CH1 TIM20_CH1	GTIM2_CH1 SPI4_SCK ATIM3_CH1 USART4_TX FEMC_A23 EVENTOUT
-	-	-	-	2	2	PE3	TRACED0 SAI1_SD_B SPI4_NSS FMC_A19 EVENTOUT TIM3_CH2 TIM20_CH2	GTIM2_CH2 SPI4_NSS ATIM3_CH2 USART4_RX FEMC_A19 EVENTOUT
-	-	-	-	3	3	PE4	TRACED1 SAI1_D2 SAI1_FS_A SPI4_NSS FMC_A20 EVENTOUT TIM3_CH3 TIM20_CH1N	GTIM2_CH3 SPI4_NSS ATIM3_CH1N FEMC_A20 EVENTOUT
-	-	-	-	4	4	PE5	TRACED2 SAI1_CK2 SAI1_SCK_A SPI4_MISO FMC_A21 EVENTOUT TIM3_CH4 TIM20_CH2N	GTIM5_CH1 GTIM2_CH4 SPI4_MISO ATIM3_CH2N FEMC_A21 EVENTOUT
-	-	-	-	5	5	PE6	TRACED3 SAI1_D1 SAI1_SD_A SPI4_MOSI FMC_A22 EVENTOUT TIM20_CH3N WKUP3 RTC_TAMP3	GTIM5_CH2 SPI4_MOSI ATIM3_CH3N LPTIM2_IN1 FEMC_A22 EVENTOUT WKUP3 RTC_TAMP3
1	1	1	1	6	6	VBAT	VBAT	VBAT
2	2	2	2	7	7	PC13	EVENTOUT TIM1_BKIN TIM1_CH1N TIM8_CH4N WKUP2 RTC_TAMP1 RTC_TS RTC_OUT1	RTC_OUT1 ATIM1_CH1N ATIM1_BKIN ATIM2_CH4N LPTIM2_ETR XSPI_RXDS ATIM3_BKIN EVENTOUT WKUP2 RTC_TAMP1

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
3	3	3	3	8	8	PC14-OSC32_IN	EVENTOUT OSC32_IN	GTIM7_CH3 EVENTOUT OSC32_IN
4	4	4	4	9	9	PC15_OSC32_OUT	EVENTOUT OSC32_OUT	GTIM7_CH4 EVENTOUT OSC32_OUT
-	-	-	-	-	10	PF3	FMC_A3 EVENTOUT TIM20_CH4 I2C3_SCL	ATIM3_CH4 I2C3_SCL XSPI_IO1 FEMC_A3 EVENTOUT ADC3_IN17
-	-	-	-	-	11	PF4	FMC_A4 EVENTOUT TIM20_CH1N I2C3_SDA COMP1_OUT	ATIM3_CH1N COMP1_OUT I2C3_SDA XSPI_IO2 GTIM5_CH1 I2C3_SCL FEMC_A4 EVENTOUT ADC3_IN0
-	-	-	-	-	12	VSS	VSS	VSS
-	-	-	-	-	13	VDD	VDD	VDD
-	-	-	-	-	14	PF5	FMC_A5 EVENTOUT TIM20_CH2N	ATIM3_CH2N XSPI_IO3 GTIM5_CH2 I2C3_SDA FEMC_A5 EVENTOUT ADC3_IN13
-	-	-	-	-	15	PF7	SAI1_MCLK_B QSPI1_BK1_IO2 FMC_A1 EVENTOUT TIM20_BKIN TIM5_CH2	GTIM7_CH1 ATIM3_BKIN GTIM4_CH2 XSPI_IO2 SPI5_SCK UART7_TX GTIM8_ETR FEMC_A1 EVENTOUT ADC1_IN15 PGA1_VINP PGA2_VINP PGA3_VINP
-	-	-	-	-	16	PF8	SAI1_SCK_B QSPI1_BK1_IO0 FMC_A24 EVENTOUT TIM20_BKIN2 TIM5_CH3	GTIM9_CH1 ATIM3_BKIN2 GTIM4_CH3 XSPI_IO0 SPI5_MISO ADC2_IN1 PGA1_VINM COMP1_INP FEMC_A24 EVENTOUT

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
-	-	-	-	10	17	PF9	SAI1_FS_B SPI2_SCK QSPI1_BK1_IO1 FMC_A25 EVENTOUT TIM20_BKIN TIM15_CH1 TIM5_CH4	GTIM10_CH1 ATIM3_BKIN GTIM8_CH1 SPI2_SCK GTIM4_CH4 XSPI_IO1 SPI5_MOSI FEMC_A25 EVENTOUT ADC4_IN17 PGA2_VINM
-	-	-	-	11	18	PF10	SAI1_D3 SPI2_SCK QSPI1_CLK FMC_A0 EVENTOUT TIM20_BKIN2 TIM15_CH2	ATIM3_BKIN2 GTIM8_CH2 SPI2_SCK XSPI_CLK FEMC_A0 EVENTOUT ADC4_IN0 PGA1_VINM PGA2_VINM PGA3_VINM PGA4_VINM COMP2_INP
5	5	5	5	12	19	PF0-OSC_IN PH0-OSC_IN	SPI2_NSS I2S2_WS EVENTOUT TIM1_CH3N I2C2_SDA OSC_IN ADC1_IN10	I2C2_SDA SPI2_NSS/I2S2_WS ATIM1_CH3N USART2_RX GTIM5_CH3 ATIM3_CH1N EVENTOUT OSC_IN ADC1_IN10
6	6	6	6	13	20	PF1-OSC_OUT PH1-OSC_OUT	SPI2_SCK I2S2_CK EVENTOUT OSC_OUT ADC2_IN10 COMP3_INM	I2C2_SCL SPI2_SCK/I2S2_CK USART2_TX GTIM5_CH4 ATIM3_CH2N EVENTOUT OSC_OUT ADC2_IN10 COMP3_INM COMP3_INP
7	7	7	7	14	21	PG10-NRST PH6-NRST	EVENTOUT NRST MCO	MCO1 EVENTOUT NRST
-	-	8	8	15	22	PC0	EVENTOUT TIM1_CH1 LPTIM1_IN1 LPUART1_RX ADC12_IN6 COMP3_INM	LPTIM1_IN1 ATIM1_CH1 UART7_RX I2C3_SCL USART4_TX XSPI_RXDS GTIM10_CH1 EVENTOUT

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
								ADC12_IN6 COMP7_INM COMP3_INM PGA3_VINP COMP3_INP
-	-	9	9	16	23	PC1	SAI1_SD_A QSPI1_BK2_IO0 EVENTOUT TIM1_CH2 LPTIM1_OUT LPUART1_TX ADC12_IN7 COMP3_INP	LPTIM1_OUT ATIM1_CH2 UART7_TX XSPI_IO4 SPI3_MOSI/I2S3_SD SPI2_MOSI/I2S2_SD I2C3_SDA USART4_RX GTIM10_CH2 EVENTOUT ADC12_IN7 COMP7_INP COMP3_INP PGA3_VINM COMP1_INP
-	-	10	10	17	24	PC2	QSPI1_BK2_IO1 EVENTOUT TIM1_CH3 TIM20_CH2 LPTIM1_IN2 ADC12_IN8 COMP3_OUT	SPI2_MISO I2S2_AUX_SD LPTIM1_IN2 ATIM1_CH3 COMP3_OUT COMP7_OUT ATIM3_CH2 XSPI_IO5 SPI3_NSS/I2S3_WS GTIM10_CH3 UAR7_TX EVENTOUT ADC12_IN8 PGA1_VINP
-	-	11	11	18	25	PC3	SAI1_D1 SAI1_SD_A QSPI1_BK2_IO2 EVENTOUT TIM1_CH4 TIM1_BKIN2 LPTIM1_ETR ADC12_IN9 OPAMP5_VINP	SPI2_MOSI/I2S2_SD LPTIM1_ETR ATIM1_CH4 ATIM1_BKIN2 XSPI_IO6 SPI3_SCK/I2S3_CK GTIM10_CH4 UAR7_RX EVENTOUT ADC12_IN9 PGA2_VINP PGA3_VINP PGA4_VINP COMP5_INP PGA1_VINM COMP2_INP
-	-	-	-	19	26	PF2	FMC_A2 EVENTOUT	I2C2_SMBA ATIM3_CH3 XSPI_IO0

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
							TIM20_CH3 I2C2_SMBA	FEMC_A2 EVENTOUT ADC1_IN13
8	8	12	12	20	27	PA0	EVENTOUT TIM2_CH1 TIM5_CH1 TIM8_BKIN TIM8_ETR TIM2_ETR USART2_CTS WKUP1 RTC_TAMP2 ADC12_IN1 COMP1_INM COMP3_INP COMP1_OUT	USART2_CTS UART6_TX GTIM1_CH1_ETR GTIM4_CH1 ATIM2_ETR COMP1_OUT ATIM2_BKIN SPI3_MISO ATIM3_CH3N EVENTOUT ADC12_IN3 WKUP1 COMP1_INM COMP3_INP RTC_TAMP2
9	9	13	13	21	28	PA1	EVENTOUT TIM2_CH2 TIM5_CH2 TIM15_CH1N USART2_RTS_DE RTC_REFIN ADC12_IN2 COMP1_INP OPAMP1_VINP OPAMP3_VINP OPAMP6_VINM	USART2_RTS_DE UART6_RX GTIM4_CH2 GTIM1_CH2 RTC_REFIN GTIM8_CH1N SPI4_MOSI SPI3_MOSI/I2S3_SD SPI6_SCK ATIM3_CH4N EVENTOUT ADC12_IN4 COMP1_INP PGA1_VINP PGA3_VINP PGA4_VINM PGA2_VINP RTC_REFIN
10	10	14	14	22	29	PA2	QSPI1_BK1_NCS EVENTOUT TIM2_CH3 TIM5_CH3 TIM15_CH1 USART2_TX LPUART1_TX UCPD1_FRSTX WKUP4 LSCO ADC1_IN3 COMP2_INM COMP2_OUT OPAMP1_VOUT	USART2_TX GTIM4_CH3 GTIM5_CH1 GTIM1_CH3 COMP2_OUT GTIM8_CH1_ETR XSPI_NSS0 UART7_TX I2S_CKIN COMP3_OUT SPI6_NSS EVENTOUT ADC1_IN5 COMP2_INM PGA1_VINM PGA2_VINM PGA2_VINP

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
								WKUP4 PGA3_VINM LSCO
-	-	15	15	23	30	VSS	VSS	VSS
-	-	16	16	24	31	VDD	VDD	VDD
11	11	17	17	25	32	PA3	SAI1_CK1 SAI1_MCLK_A QSPI1_CLK EVENTOUT TIM2_CH4 TIM5_CH4 TIM15_CH2 USART2_RX LPUART1_RX ADC1_IN4 COMP2_INP OPAMP1_VINM OPAMP1_VINP OPAMP5_VINM	USART2_RX GTIM4_CH4 GTIM5_CH2 GTIM1_CH4 GTIM8_CH2 XSPI_CLK UART7_RX I2S2_MCK MCO2 EVENTOUT ADC1_IN2 PGA1_VINM PGA1_VINP COMP2_INP PGA2_VINM COMP5_INP
12	12	18	18	26	33	PA4	SAI1_FS_B SPI1_NSS SPI3_NSS I2S3_WS EVENTOUT TIM3_CH2 USART2_CK ADC2_IN17 DAC1_OUT1 COMP1_INM	SPI1_NSS SPI3_NSS/I2S3_WS USART2_CK GTIM2_CH2 XSPI_NSS1 I2C2_SCL SPI6_MISO GTIM7_CH1 LPTIM2_IN2 USART1_TX EVENTOUT ADC2_IN17 DAC1_OUT COMP1_INM COMP2_INM COMP3_INM COMP4_INM COMP5_INM COMP6_INM COMP7_INM PGA4_VINP PGA2_VINP
13	13	19	19	27	34	PA5	SPI1_SCK EVENTOUT TIM2_CH1 TIM2_ETR UCPD1_FRSTX ADC2_IN13 DAC1_OUT2 COMP2_INM OPAMP2_VINM	SPI1_SCK GTIM1_CH1_ETR ATIM2_CH1N XSPI_CLK I2C2_SDA SPI6_MOSI USART1_RX XSPI_IO0

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
								GTIM7_CH2 EVENTOUT ADC2_IN13 DAC2_OUT COMP1_INM COMP2_INM COMP3_INM COMP4_INM COMP5_INM COMP6_INM COMP7_INM PGA1_VINP PGA2_VINM PGA3_VINP PGA1_VINM PGA3_VINM
14	14	20	20	28	35	PA6	SPI1_MISO QSPI1_BK1_IO3 EVENTOUT TIM16_CH1 TIM3_CH1 TIM8_BKIN TIM1_BKIN LPUART1_CTS ADC2_IN3 DAC2_OUT1 COMP1_OUT OPAMP2_VOUT	SPI1_MISO ATIM2_BKIN GTIM9_CH1 GTIM2_CH1 ATIM1_BKIN COMP1_OUT XSPI_IO3 UART7_CTS I2S2_MCK XSPI_IO0 COMP2_OUT EVENTOUT ADC2_IN0 DAC3_OUT COMP1_INM PGA3_VINP
15	15	21	21	29	36	PA7	SPI1_MOSI QSPI1_BK1_IO2 EVENTOUT TIM17_CH1 TIM3_CH2 TIM8_CH1N TIM1_CH1N UCPD1_FRSTX ADC2_IN4 COMP2_INP COMP2_OUT OPAMP1_VINP OPAMP2_VINP	SPI1_MOSI ATIM2_CH1N GTIM7_CH1 GTIM2_CH2 ATIM1_CH1N GTIM10_CH1 COMP2_OUT XSPI_IO2 XSPI_IO1 MCO1 GTIM9_CH2 EVENTOUT ADC2_IN2 COMP2_INP PGA1_VINP PGA2_VINP COMP6_INM DAC4_OUT COMP1_INP
16	-	22	22	30	37	PC4	QSPI1_BK2_IO3 EVENTOUT	ATIM1_ETR I2C2_SCL

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
							TIM1_ETR USART1_TX I2C2_SCL ADC2_IN5	USART1_TX XSPI_IO7 XSPI_IO2 UART7_TX I2C3_SCL LPTIM2_OUT ATIM3_CH3N EVENTOUT ADC2_IN5 PGA3_VINM COMP4_INM COMP5_INP
-	-	23	23	31	38	PC5	SAI1_D3 EVENTOUT TIM15_BKIN TIM1_CH4N USART1_RX WKUP5 ADC2_IN11 OPAMP1_VINM OPAMP2_VINM	GTIM8_BKIN ATIM1_CH4N USART1_RX XSPI_IO3 UART7_RX COMP4_OUT I2C3_SDA GTIM5_ETR EVENTOUT ADC2_IN11 PGA1_VINM PGA2_VINM PGA4_VINP COMP6_INP WKUP5
17	16	24	24	32	39	PB0	QSPI1_BK1_IO1 EVENTOUT TIM3_CH3 TIM8_CH2N TIM1_CH2N UCPD1_FRSTX ADC3_IN12 ADC1_IN15 COMP4_INP OPAMP2_VINP OPAMP3_VINP	GTIM2_CH3 ATIM2_CH2N ATIM1_CH2N XSPI_IO1 SPI5_SCK SPI3_MOSI/I2S3_SD COMP5_OUT USART4_TX EVENTOUT ADC3_IN12 COMP4_INP PGA2_VINP PGA3_VINP COMP3_INP PGA2_VINM ADC1_IN1
18	17	25	25	33	40	PB1	QSPI1_BK1_IO0 EVENTOUT TIM3_CH4 TIM8_CH3N TIM1_CH3N ADC3_IN1 ADC1_IN12 COMP1_INP COMP4_OUT	GTIM2_CH4 ATIM2_CH3N ATIM1_CH3N COMP4_OUT XSPI_IO0 UART7_RTS_DE SPI5_NSS USART4_RX COMP1_OUT EVENTOUT

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
							OPAMP3_VOUT OPAMP6_VINM	ADC1_IN12 COMP1_INP PGA4_VINM COMP2_INM COMP2_INP PGA1_VINP ADC3_IN1
19	18	26	26	34	41	PB2	QSPI1_BK2_IO1 EVENTOUT TIM5_CH1 TIM20_CH1 LPTIM1_OUT I2C3_SMBA RTC_OUT2 ADC2_IN12 COMP4_INM OPAMP3_VINM	RTC_OUT2 LPTIM1_OUT GTIM4_CH1 ATIM3_CH1 I2C3_SMBA XSPI_IO5 GTIM1_CH4 SPI3_MOSI/I2S3_SD UART6_TX SPI1_NSS GTIM6_ETR EVENTOUT ADC2_IN12 COMP4_INM PGA3_VINM
-	19	27	27	35	42	VSSA	-	
20	20	28	28	36	43	VREF+	VREFBUF_OUT	VREFBUF_OUT
-	-	-	-	-	44	VREF+	VREFBUF_OUT	VREFBUF_OUT
21	21	29	29	37	45	VDDA	-	
-	-	-	-	-	46	VSS	-	
-	-	-	-	-	47	VDD	-	
-	-	-	-	-	48	PF11	FMC_NE4 EVENTOUT TIM20_ETR	ATIM3_ETR SPI5_MOSI FEMC_NE4 EVENTOUT
-	-	-	-	-	49	PF12	FMC_A6 EVENTOUT TIM20_CH1	ATIM3_CH1 FEMC_A6 EVENTOUT
-	-	-	-	-	50	PF13	FMC_A7 EVENTOUT TIM20_CH2 I2C4_SMBA	ATIM3_CH2 I2C4_SMBA MCO1 FEMC_A7 EVENTOUT
-	-	-	-	-	51	PF14	FMC_A8 EVENTOUT TIM20_CH3 I2C4_SCL	ATIM3_CH3 I2C4_SCL MCO2 FEMC_A8 EVENTOUT
-	-	-	-	-	52	PF15	FMC_A9 EVENTOUT TIM20_CH4 I2C4_SDA	ATIM3_CH4 I2C4_SDA FEMC_A9 EVENTOUT
-	-	-	30	38	53	PE7	SAI1_SD_B FMC_D4 EVENTOUT TIM1_ETR	ATIM1_ETR UART7_RX UART6_RX SPI1_SCK

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
							ADC3_IN4 COMP4_INP	GTIM4_CH2 GTIM9_CH4 FEMC_D4 EVENTOUT ADC3_IN4 COMP4_INP COMP3_INM
-	-	-	31	39	54	PE8	SAI1_SCK_B FMC_D5 EVENTOUT TIM5_CH3 TIM1_CH1N ADC345_IN6 COMP4_INM	ATIM1_CH1N GTIM4_CH3 UART7_TX SPI1_MISO FEMC_D5 EVENTOUT ADC34_IN6 COMP4_INM PGA2_VINP COMP2_INM
-	-	-	32	40	55	PE9	SAI1_FS_B FMC_D6 EVENTOUT TIM5_CH4 TIM1_CH1 ADC3_IN2	ATIM1_CH1 GTIM4_CH4 SPI1_MOSI FEMC_D6 EVENTOUT ADC3_IN2
-	-	-	33	41	56	PE10	SAI1_MCLK_B QSPI1_CLK FMC_D7 EVENTOUT TIM1_CH2N ADC345_IN14	ATIM1_CH2N XSPI_CLK SPI2_NSS/I2S2_WS ATIM1_CH1N GTIM2_CH1 GTIM9_CH1 USART4_TX FEMC_D7 EVENTOUT ADC34_IN14
-	-	-	34	42	57	PE11	SPI4_NSS QSPI1_BK1_NCS FMC_D8 EVENTOUT TIM1_CH2 ADC345_IN15	ATIM1_CH2 SPI4_NSS XSPI_NSS0 SPI5_NSS SPI2_SCK/I2S2_CK USART4_RX FEMC_D8 EVENTOUT ADC34_IN15
-	-	-	35	43	58	PE12	SPI4_SCK QSPI1_BK1_IO0 FMC_D9 EVENTOUT TIM1_CH3N ADC345_IN16	ATIM1_CH3N SPI4_SCK XSPI_IO0 SPI5_SCK SPI2_MISO GTIM7_CH4 FEMC_D9 EVENTOUT ADC34_IN16
-	-	-	36	44	59	PE13	SPI4_MISO QSPI1_BK1_IO1	ATIM1_CH3 SPI4_MISO

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
							FMC_D10 EVENTOUT TIM1_CH3 ADC3_IN3	XSPI_IO1 SPI5_MISO SPI2_MOSI/I2S2_SD FEMC_D10 EVENTOUT ADC3_IN3
-	-	-	37	45	60	PE14	SPI4_MOSI QSPI1_BK1_IO2 FMC_D11 EVENTOUT TIM1_CH4 TIM1_BKIN2 ADC4_IN1	ATIM1_CH4 SPI4_MOSI ATIM1_BKIN2 XSPI_IO2 SPI5_MOSI FEMC_D11 EVENTOUT ADC4_IN5
-	-	-	38	46	61	PE15	QSPI1_BK1_IO3 FMC_D12 EVENTOUT TIM1_BKIN TIM1_CH4N USART3_RX ADC4_IN2	ATIM1_BKIN ATIM1_CH4N XSPI_IO3 I2C1_SDA USART4_RX GTIM10_CH1 FEMC_D12 EVENTOUT ADC4_IN2
22	22	30	39	47	62	PB10	SAI1_SCK_A QSPI1_CLK EVENTOUT TIM2_CH3 TIM1_BKIN USART3_TX LPUART1_RX COMP5_INM OPAMP3_VINM OPAMP4_VINM	SPI2_SCK/I2S2_CK I2C2_SCL GTIM1_CH3 UART7_RX XSPI_CLK ATIM1_BKIN COMP3_OUT FEMC_D11 EVENTOUT COMP5_INM PGA3_VINM PGA4_VINM COMP1_INP
-	23	31	40	48	63	VSS	VSS	VSS
23	24	32	41	49	64	VDD	VDD	VDD
24	25	33	42	50	65	PB11	QSPI1_BK1_NCS EVENTOUT TIM2_CH4 USART3_RX LPUART1_TX ADC12_IN14 COMP6_INP OPAMP4_VINP OPAMP6_VOUT	I2C2_SDA GTIM1_CH4 UART7_TX XSPI_NSS0 I2S_CKIN COMP5_OUT FEMC_D12 EVENTOUT ADC12_IN14 COMP6_INP PGA4_VINP COMP2_INP

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
25	26	34	43	51	66	PB12	SPI2_NSS I2S2_WS EVENTOUT TIM5_ETR TIM1_BKIN USART3_CK LPUART1_RTS_DE FDCAN2_RX I2C2_SMBA ADC4_IN3 ADC1_IN11 COMP7_INM OPAMP4_VOUT OPAMP6_VINP	SPI2_NSS/I2S2_WS I2C2_SMBA USART3_CK ATIM1_BKIN GTIM4_ETR UART7_RTS_DE SPI4_NSS COMP4_OUT GTIM9_CH3 EVENTOUT COMP3_INM ADC1_IN11 COMP7_INM PGA4_VINP ADC4_IN1
26	27	35	44	52	67	PB13	SPI2_SCK I2S2_CK EVENTOUT TIM1_CH1N USART3_CTS LPUART1_CTS FDCAN2_TX ADC3_IN5 COMP5_INP OPAMP3_VINP OPAMP4_VINP OPAMP6_VINP	SPI2_SCK/I2S2_CK USART3_CTS ATIM1_CH1N UART7_CTS SPI4_SCK ATIM1_CH2 GTIM10_CH2 GTIM9_CH4 EVENTOUT ADC3_IN5 COMP5_INP PGA3_VINP PGA4_VINP COMP4_INM
27	28	36	45	53	68	PB14	SPI2_MISO EVENTOUT TIM15_CH1 TIM1_CH2N USART3_RTS_DE ADC4_IN4 ADC1_IN5 COMP7_INP COMP4_OUT OPAMP2_VINP OPAMP5_VINP	SPI2_MISO ATIM1_CH2N GTIM8_CH1 ATIM2_CH2N I2S2_AUX_SD COMP4_OUT GTIM9_CH2 USART4_CK EVENTOUT ADC4_IN4 COMP3_INP PGA2_VINP ADC1_IN0 COMP7_INP COMP3_INM
28	29	37	46	54	69	PB15	SPI2_MOSI I2S2_SD EVENTOUT TIM15_CH2 TIM15_CH1N TIM1_CH3N RTC_REFIN ADC4_IN5 ADC2_IN15	SPI2_MOSI/I2S2_SD ATIM1_CH3N ATIM2_CH3N GTIM8_CH2 GTIM8_CH1N COMP3_OUT ATIM2_CH4 UART8_CTS EVENTOUT

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
							COMP6_INM COMP3_OUT OPAMP5_VINM	RTC_REFIN COMP6_INM ADC2_IN15 PGA2_VINM COMP4_INP ADC4_IN3
-	-	-	47	55	70	PD8	FMC_D13 EVENTOUT USART3_TX ADC4_IN12 ADC5_IN12 OPAMP4_VINM	SPI3_NSS/I2S3_WS ATIM1_CH3 GTIM10_CH1 FEMC_D13 EVENTOUT ADC4_IN12 PGA4_VINM COMP6_INM
-	-	-	48	56	71	PD9	FMC_D14 EVENTOUT USART3_RX ADC4_IN13 ADC5_IN13 OPAMP6_VINP	SPI3_SCK/I2S3_CK ATIM1_CH3N GTIM9_CH3 GTIM7_ETR GTIM10_CH2 FEMC_D14 EVENTOUT ADC4_IN13 PGA4_VINP COMP6_INP
-	-	-	49	57	72	PD10	FMC_D15 EVENTOUT USART3_CK ADC345_IN7 COMP6_INM	USART3_CK ATIM1_CH4 ATIM3_ETR FEMC_D15 EVENTOUT ADC34_IN7 COMP6_INM COMP5_INM
-	-	-	-	58	73	PD11	FMC_A16 EVENTOUT TIM5_ETR USART3_CTS I2C4_SMBA ADC345_IN8 COMP6_INP OPAMP4_VINP	USART3_CTS GTIM4_ETR I2C4_SMBA SPI3_MISO USART4_TX I2C1_SCL GTIM10_CH3 FEMC_CLE/FEMC_A16 EVENTOUT ADC34_IN8 PGA4_VINP COMP6_INP
-	-	-	-	59	74	PD12	FMC_A17 EVENTOUT TIM4_CH1 USART3_RTS_DE ADC345_IN9 COMP5_INP OPAMP5_VINP	GTIM3_CH1 SPI3_MOSI/I2S3_SD COMP7_OUT GTIM6_CH1 FEMC_ALE/FEMC_A17 EVENTOUT ADC34_IN9 COMP5_INP PGA2_VINP

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
-	-	-	-	60	75	PD13	FMC_A18 EVENTOUT TIM4_CH2 ADC345_IN10 COMP5_INM	GTIM3_CH2 XSPI_RXDS GTIM6_CH2 FEMC_A18 EVENTOUT ADC34_IN10 COMP5_INM
-	-	-	-	61	76	PD14	FMC_D0 EVENTOUT TIM4_CH3 ADC345_IN11 COMP7_INP OPAMP2_VINP	GTIM3_CH3 I2C4_SCL ATIM2_CH1 GTIM10_CH4 GTIM6_CH3 FEMC_D0 EVENTOUT ADC34_IN11 PGA2_VINP COMP7_INP
-	-	-	-	62	77	PD15	SPI2_NSS FMC_D1 EVENTOUT TIM4_CH4 COMP7_INM	GTIM3_CH4 SPI2_NSS I2C4_SDA ATIM2_CH2 ATIM2_CH1N GTIM8_CH1 GTIM6_CH4 FEMC_D1 EVENTOUT COMP3_INM COMP7_INM COMP3_INP
-	-	-	50	63	78	VSS	VSS	VSS
-	-	-	51	64	79	VDD	VDD	VDD
29	-	38	52	65	80	PC6	I2S2_MCK EVENTOUT TIM3_CH1 TIM8_CH1 I2C4_SCL COMP6_OUT	I2S2_MCK ATIM2_CH1 USART4_TX GTIM2_CH1 COMP6_OUT I2C4_SCL SPI2_NSS/I2S2_WS USART2_CTS ATIM2_CH2 FEMC_A16 EVENTOUT
-	-	39	53	66	81	PC7	I2S3_MCK EVENTOUT TIM3_CH2 TIM8_CH2 I2C4_SDA COMP5_OUT	I2S3_MCK ATIM2_CH2 USART4_RX GTIM2_CH2 SHRTIM1_FALT5 COMP5_OUT I2C4_SDA SPI2_SCK/I2S_CK USART2_RTS_DE ATIM2_CH2N GTIM8_CH2

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
								FEMC_A17 EVENTOUT
-	-	-	-	-	82	PG0	FMC_A10 EVENTOUT TIM20_CH1N	ATIM3_CH1N UART7_TX GTIM7_CH2 FEMC_A10 EVENTOUT
-	-	-	-	-	83	PG1	FMC_A11 EVENTOUT TIM20_CH2N	ATIM3_CH2N UART7_RX GTIM7_CH3 FEMC_A11 EVENTOUT
-	-	-	-	-	84	PG2	SPI1_SCK FMC_A12 EVENTOUT TIM20_CH3N	ATIM3_CH3N SPI1_SCK I2C2_SCL GTIM5_ETR FEMC_A12 EVENTOUT
-	-	-	-	-	85	PG3	SPI1_MISO FMC_A13 EVENTOUT TIM20_BKIN TIM20_CH4N I2C4_SCL	ATIM3_BKIN I2C4_SCL SPI1_MISO ATIM3_CH4N I2C2_SDA FEMC_A13 EVENTOUT
-	-	-	-	-	86	PG4	SPI1_MOSI FMC_A14 EVENTOUT TIM20_BKIN2 I2C4_SDA	ATIM3_BKIN2 I2C4_SDA SPI1_MOSI GTIM6_ETR FEMC_A14 EVENTOUT
-	-	40	54	67	87	PC8	EVENTOUT TIM3_CH3 TIM8_CH3 TIM20_CH3 I2C3_SCL COMP7_OUT	ATIM2_CH3 GTIM2_CH3 USART4_CK COMP3_OUT ATIM3_CH3 COMP7_OUT I2C3_SCL SPI2_MISO USART2_TX EVENTOUT
-	-	41	55	68	88	PC9	I2SCKIN EVENTOUT TIM3_CH4 TIM8_CH4 TIM8_BKIN2 I2C3_SDA	I2S_CKIN MCO2 ATIM2_CH4 I2C3_SDA GTIM2_CH4 ATIM2_BKIN2 COMP6_OUT SPI2_MOSI/I2S2_SD USART2_RX

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
								ATIM2_CH3N GTIM8_CH3 FEMC_NOE EVENTOUT PGA3_VINP PGA4_VINM COMP4_INP
30	30	42	56	69	89	PA8	SAI1_CK2 SAI1_SCK_A I2S2_MCK EVENTOUT TIM1_CH1 TIM4_ETR USART1_CK FDCAN3_RX I2C3_SCL I2C2_SDA MCO ADC5_IN1 COMP7_OUT OPAMP5_VOUT	MCO1 USART1_CK ATIM1_CH1 I2C3_SCL I2C2_SDA I2S2_MCK I2C2_SMBA COMP7_OUT GTIM3_ETR COMP3_OUT EVENTOUT ADC3_IN18
31	31	43	57	70	90	PA9	SAI1_FS_A I2S3_MCK EVENTOUT TIM1_CH2 TIM15_BKIN TIM2_CH3 USART1_TX UCPD1_DBCC1 I2C3_SMBA I2C2_SCL ADC5_IN2 COMP5_OUT	USART1_TX ATIM1_CH2 I2C3_SMBA I2C2_SCL I2S3_MCK COMP5_OUT GTIM8_BKIN GTIM1_CH3 SPI2_SCK/I2S2_CK I2C4_SCL I2C1_SCL EVENTOUT ADC4_IN18
32	32	44	58	71	91	PA10	SAI1_D1 SAI1_SD_A SPI2_MISO EVENTOUT TIM17_BKIN TIM1_CH3 TIM2_CH4 TIM8_BKIN USART1_RX UCPD1_DBCC2 USB_CRS_SYNC I2C2_SMBA COMP6_OUT PVD_IN	USART1_RX ATIM1_CH3 GTIM10_BKIN I2C2_SMBA SPI2_MISO COMP6_OUT GTIM1_CH4 ATIM2_BKIN I2C2_SDA I2S2_AUX_SD SPI5_MOSI I2C4_SDA FEMC_NWE EVENTOUT PVD_IN
33	33	45	59	72	92	PA11	SPI2_MOSI I2S2_SD EVENTOUT TIM1_CH1N	USART1_CTS ATIM1_CH4 USB_FS_DM SPI2_MOSI/I2S2_SD

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
							TIM4_CH1 TIM1_CH4 TIM1_BKIN2 USART1_CTS FDCAN1_RX USB_DM COMP1_OUT	ATIM1_CH1N COMP1_OUT GTIM3_CH1 ATIM1_BKIN2 SPI4_MISO USART4_TX COMP5_OUT ATIM2_CH3N EVENTOUT
34	34	46	60	73	93	PA12	I2SCKIN EVENTOUT TIM16_CH1 TIM1_CH2N TIM4_CH2 TIM1_ETR USART1_RTS_DE FDCAN1_TX USB_DP COMP2_OUT	USART1_RTS_DE ATIM1_ETR USB_FS_DP GTIM9_CH1 I2S_CKIN ATIM1_CH2N COMP2_OUT GTIM3_CH2 SPI4_MOSI USART4_RX COMP6_OUT SPI2_NSS EVENTOUT
-	35	47	61	74	94	VSS	VSS	VSS
35	36	48	62	75	95	VDD	VDD	VDD
36	37	49	63	76	96	PA13	SAI1_SD_B EVENTOUT TIM16_CH1N TIM4_CH3 IR_OUT USART3_CTS I2C4_SCL I2C1_SCL SWDIO-JTMS	JTMS-SWDIO GTIM9_CH1N I2C4_SCL I2C1_SCL IR_OUT USART3_CTS GTIM3_CH3 UART6_TX GTIM8_CH3 EVENTOUT
-	-	-	-	-	97	PF6	SAI1_SD_B QSPI1_BK1_IO3 EVENTOUT TIM5_ETR TIM4_CH4 TIM5_CH1 USART3_RTS I2C2_SCL	GTIM6_CH1 GTIM4_ETR GTIM3_CH4 I2C2_SCL GTIM4_CH1 XSPI_IO3 SPI5_NSS UART7_RX EVENTOUT ADC2_IN16
37	38	50	64	77	98	PA14	SAI1_FS_B EVENTOUT TIM8_CH2 TIM1_BKIN LPTIM1_OUT USART2_TX I2C4_SMBA I2C1_SDA SWCLK-JTCK	JTCK-SWCLK LPTIM1_OUT I2C4_SMBA I2C1_SDA ATIM2_CH2 ATIM1_BKIN USART2_TX UART6_RX

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
								GTIM8_CH4 EVENTOUT
38	39	51	65	78	99	PA15	SPI1_NSS SPI3_NSS I2S3_WS EVENTOUT TIM2_CH1 TIM8_CH1 TIM1_BKIN TIM2_ETR UART4_RTS_DE USART2_RX FDCAN3_TX I2C1_SCL JTDI	JTDI SPI3_NSS/I2S3_WS GTIM1_CH1_ETR SPI1_NSS ATIM2_CH1 I2C1_SCL USART2_RX UART6_RTS_DE ATIM1_BKIN UART1_TX USART2_CTS ATIM2_CH1N ATIM3_ETR EVENTOUT
39	-	52	66	79	100	PC10	SPI3_SCK I2S3_CK EVENTOUT TIM8_CH1N UART4_TX USART3_TX	SPI3_SCK/I2S3_CK UART6_TX ATIM2_CH1N XSPI_NSS1 COMP3_OUT GTIM9_CH4 EVENTOUT
40	-	53	67	80	101	PC11	SPI3_MISO EVENTOUT TIM8_CH2N UART4_RX USART3_RX I2C3_SDA	UART6_RX SPI3_MISO I2S3_AUX_SD ATIM2_CH2N I2C3_SDA XSPI_CLK COMP4_OUT GTIM10_ETR ATIM3_CH2 EVENTOUT
-	-	54	68	81	102	PC12	SPI3_MOSI I2S3_SD EVENTOUT TIM5_CH2 TIM8_CH3N UART5_TX USART3_CK UCPD1_FRSTX	SPI3_MOSI/I2S3_SD USART3_CK GTIM4_CH2 ATIM2_CH3N I2C2_SDA XSPI_IO0 ATIM2_CH2N ATIM3_CH3 EVENTOUT
-	-	-	-	-	103	PG5	SPI1_NSS FMC_A15 EVENTOUT TIM20_ETR LPUART1_CTS	ATIM3_ETR SPI1_NSS UART7_CTS FEMC_A15 EVENTOUT
-	-	-	-	-	104	PG6	FMC_INT EVENTOUT TIM20_BKIN LPUART1_RTS_DE I2C3_SMBA	ATIM3_BKIN I2C3_SMBA UART7_RTS_DE FEMC_INT2 EVENTOUT

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
-	-	-	-	-	105	PG7	SAI1_CK1 SAI1_MCLK_A FMC_INT EVENTOUT LPUART1_TX I2C3_SCL	USART4_CK I2C3_SCL UART7_TX FEMC_INT3 EVENTOUT
-	-	-	-	-	106	PG8	FMC_NE3 EVENTOUT LPUART1_RX I2C3_SDA	USART4_RTS_DE I2C3_SDA UART7_RX XSPI_NSS1 FEMC_NE3 EVENTOUT
-	-	-	-	-	107	PG9	SPI3_SCK FMC_NCE FMC_NE2 EVENTOUT TIM15_CH1N USART1_TX	USART4_RX SPI3_SCK USART1_TX GTIM8_CH1N SPI2_MOSI GTIM6_CH2 SPI2_MISO FEMC_NE2/ FEMC_NCE3 EVENTOUT
-	-	-	69	82	108	PD0	FMC_D2 EVENTOUT TIM8_CH4N FDCAN1_RX	ATIM2_CH4N SPI4_MISO SPI3_MOSI UART6_TX XSPI_IO1 ATIM3_CH4 FEMC_D2 EVENTOUT
-	-	-	70	83	109	PD1	FMC_D3 EVENTOUT TIM8_CH4 TIM8_BKIN2 FDCAN1_TX	ATIM2_CH4 ATIM2_BKIN2 SPI2_NSS/I2S2_WS UART6_RX XSPI_IO2 I2C1_SDA FEMC_D3 EVENTOUT
-	-	-	-	-	110	VSS	VSS	VSS
-	-	-	-	-	111	VDD	VDD	VDD
-	-	55	71	84	112	PD2	EVENTOUT TIM3_ETR TIM8_BKIN UART5_RX	GTIM2_ETR ATIM2_BKIN SPI3_NSS/I2S3_WS XSPI_IO3 ATIM2_CH3N SPI2_MOSI ATIM1_CH4 ATIM2_CH4N ATIM3_CH4 GTIM5_CH2 EVENTOUT
-	-	-	-	85	113	PD3	QSPI1_BK2_NCS FMC_CLK	USART2_CTS GTIM1_CH1_ETR

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
							EVENTOUT TIM2_CH1 TIM2_ETR USART2_CTS	XSPI_NSS0 SPI2_SCK/I2S2_CK FEMC_CLK EVENTOUT
-	-	-	-	86	114	PD4	QSPI1_BK2_IO0 FMC_NOE EVENTOUT TIM2_CH2 USART2_RTS_DE	USART2_RTS_DE GTIM1_CH2 XSPI_IO4 FEMC_NOE EVENTOUT
-	-	-	-	87	115	PD5	QSPI1_BK2_IO1 FMC_NWE EVENTOUT USART2_TX	USART2_TX XSPI_IO5 GTIM6_CH1 ATIM1_CH4N FEMC_NWE EVENTOUT
-	-	-	-	88	116	PD6	SAI1_D1 SAI1_SD_A QSPI1_BK2_IO2 FMC_NWAIT EVENTOUT TIM2_CH4 USART2_RX	USART2_RX GTIM1_CH4 XSPI_IO6 SPI3_MOSI/I2S3_SD GTIM9_ETR FEMC_NWAIT EVENTOUT
-	-	-	-	89	117	PD7	QSPI1_BK2_IO3 FMC_NCE FMC_NE1 EVENTOUT TIM2_CH3 USART2_CK	USART2_CK GTIM1_CH3 XSPI_IO7 FEMC_NE1/ FEMC_NCE2 EVENTOUT
41	40	56	72	90	118	PB3	SAI1_SCK_B SPI1_SCK SPI3_SCK I2S3_CK EVENTOUT TIM2_CH2 TIM4_ETR TIM8_CH1N TIM3_ETR USART2_TX FDCAN3_RX UCPD1_CRS_SYNC JTDO-TRACESWO	JTDO-TRACESWO SPI3_SCK/I2S3_CK GTIM1_CH2 SPI1_SCK GTIM3_ETR ATIM2_CH1N USART2_TX GTIM2_ETR USART1_RX I2C2_SDA USART2_RTS_DE ATIM2_BKIN EVENTOUT
42	41	57	73	91	119	PB4	SAI1_MCLK_B SPI1_MISO SPI3_MISO EVENTOUT TIM16_CH1 TIM3_CH1 TIM8_CH2N TIM17_BKIN UART5_RTS_DE USART2_RX FDCAN3_TX	NJTRST SPI3_MISO GTIM2_CH1 SPI1_MISO I2S3_AUX_SD GTIM9_CH1_ETR ATIM2_CH2N USART2_RX GTIM10_BKIN I2C3_SDA ATIM2_ETR LPTIM2_IN1

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
							UCPD1_CC2 JTRST	USART2_TX EVENTOUT
43	42	58	74	92	120	PB5	SAI1_SD_B SPI1_MOSI SPI3_MOSI I2S3_SD EVENTOUT TIM16_BKIN TIM3_CH2 TIM8_CH3N TIM17_CH1 LPTIM1_IN1 UART5_CTS USART2_CK FDCAN2_RX I2C1_SMBA I2C3_SDA	I2C1_SMBA GTIM2_CH2 SPI1_MOSI SPI3_MOSI/I2S3_SD GTIM9_BKIN ATIM2_CH3N USART2_CK I2C3_SDA GTIM10_CH1 LPTIM1_IN1 UART5_CTS USART2_RX EVENTOUT
44	43	59	75	93	121	PB6	SAI1_FS_B EVENTOUT TIM16_CH1N TIM4_CH1 TIM8_CH1 TIM8_ETR TIM8_BKIN2 LPTIM1_ETR USART1_TX FDCAN2_TX UCPD1_CC1 COMP4_OUT	I2C1_SCL GTIM3_CH1 USART1_TX GTIM9_CH1N ATIM2_CH1 ATIM2_ETR ATIM2_BKIN2 COMP4_OUT LPTIM1_ETR COMP5_OUT FEMC_NE2/ FEMC_NCE3 EVENTOUT
45	44	60	76	94	122	PB7	FMC_NL EVENTOUT TIM17_CH1N TIM4_CH2 TIM8_BKIN TIM3_CH4 LPTIM1_IN2 UART4_CTS USART1_RX I2C4_SDA I2C1_SDA COMP3_OUT	I2C1_SDA USART1_RX GTIM3_CH2 GTIM10_CH1N ATIM2_BKIN GTIM2_CH4 I2C4_SDA COMP3_OUT LPTIM_IN2 COMP6_OUT UART6_CTS FEMC_NADV EVENTOUT PVD_IN
46	45	61	77	95	123	PB8-BOOT0	SAI1_CK1 SAI1_MCLK_A EVENTOUT TIM16_CH1 TIM4_CH3 TIM8_CH2 TIM1_BKIN	GTIM3_CH3 GTIM6_CH1 I2C1_SCL GTIM9_CH1 COMP1_OUT ATIM2_CH2 ATIM1_BKIN

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

UFQFPN48	LQFP48	LQFP64	LQFP80	LQFP100	LQFP128	Pin name	Pins Reuse function	
							STM32G473	N32H473
							USART3_RX FDCAN1_RX I2C1_SCL COMP1_OUT	SPI5_MOSI FEMC_NWAIT GTIM9_CH4 EVENTOUT
47	46	62	78	96	124	PB9	SAI1_D2 SAI1_FS_A EVENTOUT TIM17_CH1 TIM4_CH4 TIM8_CH3 TIM1_CH3N IR_OUT USART3_TX FDCAN1_TX I2C1_SDA COMP2_OUT	SPI2_NSS/I2S2_WS GTIM3_CH4 GTIM7_CH1 I2C1_SDA GTIM10_CH1 COMP2_OUT ATIM2_CH3 ATIM1_CH3N FEMC_NE1/ FEMC_NCE2 EVENTOUT IR-OUT
-	-	-	-	97	125	PE0	FMC_NBL0 EVENTOUT TIM4_ETR TIM20_CH4N TIM16_CH1 TIM20_ETR USART1_TX	GTIM3_ETR ATIM3_ETR ATIM3_CH4N GTIM9_CH1 USART1_TX FEMC_NBL0 EVENTOUT
-	-	-	-	98	126	PE1	FMC_NBL1 EVENTOUT TIM17_CH1 TIM20_CH4 USART1_RX	GTIM10_CH1 ATIM3_CH4 USART1_RX FEMC_NBL1 EVENTOUT
-	47	63	79	99	127	VSS	VSS	VSS
48	48	64	80	100	128	VDD	VDD	VDD

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

4 Minimum System Design

The minimum system design for N32H473 has the following considerations, which can be referred to in the hardware design guide "CN_UG_N32H47X&N32H48X Series Hardware Design Guide":

- **Power supply**

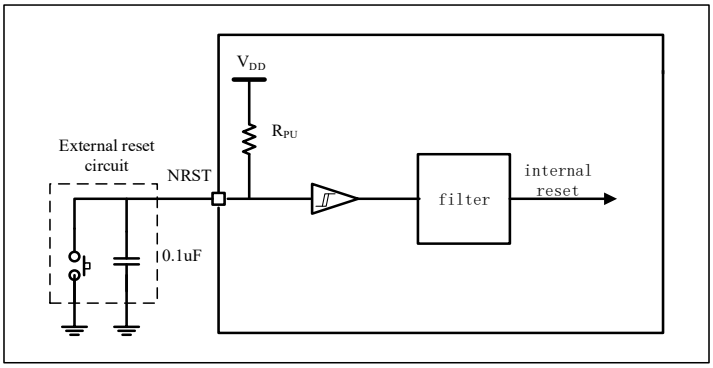
VDD is the main power supply for MCU and must be powered by a stable external power supply with a voltage range of 1.8V~3.6V. A 0.1uF decoupling capacitor should be placed nearby for all VDD pins, and an additional 10uF decoupling capacitor should be added to one VDD pin. Please refer to the hardware design guide for the specific design of decoupling capacitors.

VDDA is an analog power supply that provides power to ADC, DAC, and COMP. It is recommended to place a 0.1uF and a 10uF capacitor on the VDDA input pin.

VREF+serves as the reference voltage, providing reference levels for ADC and DAC. When VERF+ uses the built-in reference source VREFBUF, it is recommended to place a 0.1uF and a 1uF capacitor near the VREF+ pin. When VERF+ is powered externally, it is recommended to place a 0.1uF and a 10uF capacitor near the VREF+ pin.

- **External pin reset circuit**

When a low level (external reset) appears on the NRST pin, a system reset will occur. The external NRST pin reset reference circuit is as follows:



Note: The reset pin NRST cannot be left hanging during design. The external capacitor 0.1uF is given as a typical reference value. If the reset time needs to be accelerated, the NRST pin can be pulled up. In addition, users can decide whether to add a reset button according to their actual product needs.

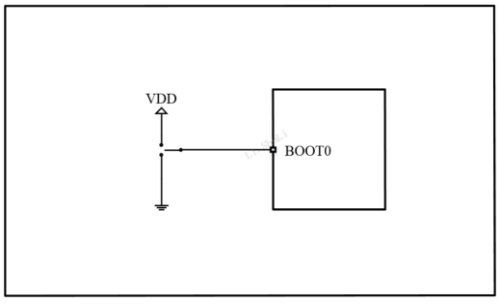
- External clock circuit

The N32H473 series MCU includes two external clocks: an external high-speed clock HSE (4MHz~32MHz) and an external low-speed clock LSE (typically using 32.768KHz).

HSE and LSE are configured with corresponding load capacitors based on the crystal oscillator characteristics. For details, please refer to the external clock characteristic description in the relevant data manual

- Boot pin connection

The following figure shows the external connections required for selecting a boot memory for the N32H473 series chip. Please refer to the relevant sections of the user manual for the startup mode.



NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

5 Main Functional Differences

The following table only lists the main differences. For other detailed functions, please refer to the data manual and user manual:

Device model	STM32G473 series	N32H473 series
System		
System Clock	Main frequency 170M, AHB bus up to 170M	Main frequency 200M, AHB bus up to 200M
External clock source	HSE 4-48M (Bypass 1-48M)	HSE 4-32M (Bypass 1-50M)
Internal clock source	HSI(16M,48M)、LSI(32K)	HSI(8M)、LSI(32K)
operation temperature	-40～85℃ or -40～105℃	-40～105℃ or -40～125℃
External interrupt	➢ 16 configurable external pin interrupts ➢ 28 configurable peripheral interrupts	➢ 16 configurable external pin interrupts, supporting full pin mapping ➢ 16 configurable peripheral interrupts
PVD	➢ Seven configurable gears ➢ Support external PVD input pin	➢ 2 configurable voltage detect range ➢ 8 configurable gears for each range ➢ Support external PVD input pin
Low power mode	➢ Eight low-power modes: Sleep mode Low-power run mode Low-power sleep mode Stop0 mode Stop1 mode Standby mode Shutdown mode VBAT mode	➢ Four low-power modes: Sleep mode Stop0 mode Standby mode VBAT mode
Low speed clock output	➢ Not supported	➢ Supports low-speed clock output in Stop0/Standby mode
Memory		
FLASH	➢ Support dual BANK ➢ Page size 4KB	➢ Support single BANK ➢ Page size 8KB
SRAM	➢ 80KB SRAM1,first 32KB support parity check ➢ 16KB SRAM2 ➢ 32KB CCM SRAM, support parity check	➢ 160KB general-purpose SRAM, supporting parity check ➢ 32KB CCM SRAM, supporting ECC ➢ 4KB Backup SRAM, supports ECC
Expanded storage	➢ QSPI： 1/2/4-bit data bus ➢ FSMC Support 1*NAND FLASH	➢ QSPI： 1/2/4/8-bit data bus Configurable data endian ➢ FEMC Support 2*NAND FLASH
Peripherals		
Advanced Timer	➢ Name:TIM1/8/20 ➢ Maximum resolution is 5.88ns ➢ Support 6 comparison outputs, including 4 external input/output channels and 4 pairs of complementary output channels	➢ Name:ATIM1/2/3 ➢ Maximum resolution is 5ns ➢ Support 9 comparison outputs, ➢ Support 4 external input/output channels ➢ Support 4 pairs of complementary output channels
General Timer	➢ Name:TIM2/3/4/5/15/16/17 ➢ Maximum resolution is 5.88ns ➢ TIM2/5 support 32bit counting ➢ TIM3/4/15/16/17 support 16bit计数 ➢ TIM2/3/4/5 support 4 comparison outputs, including 4 external input/output channels ➢ TIM15/16/17 support 2 comparison outputs, including 2 external input/output channels and 1 pair complementary output channels ➢ TIM15/16/17 supports brake input	➢ Name:GTIM1~10 ➢ GTIM1~7 Maximum resolution is 5.56ns ➢ GTIM8~10 Maximum resolution is 5ns ➢ GTIM1~10 support 16bit counting ➢ GTIM1~7 support 4 comparison outputs, including 4 external input/output channels ➢ GTIM8/9/10 support 5 comparison outputs, including 4 external input/output channels and 1 pair complementary output channels ➢ GTIM8/9/10 supports brake input
Basic timer	➢ Name:TIM6/7 ➢ Maximum resolution is 5.88ns ➢ Support 16bit counting	➢ Name:BTIM1/2 ➢ Maximum resolution is 5.56ns ➢ Support 32bit counting
LPTIM	➢ 1	➢ 2
WWDG	➢ 7bit	➢ 14bit
IWDG	➢ 1	➢ 1
SPI	➢ 4*SPI ➢ Maximum 75MHz	➢ 6*SPI ➢ Maximum 60MHz

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

I2S	➢ 2*I2S ➢ Supports half duplex communication	➢ 2*I2S ➢ Supports full duplex communication
I2C	➢ Compatible with SMBus 3.0 ➢ Support wakeup from STOP mode	➢ Compatible with SMBus 2.0 ➢ Wakeup from STOP mode is not suported
USART	➢ 3*USART ➢ Support auto baud rate detection	➢ 4*USART ➢ Auto baud rate detection s not suported ➢ USART3 TX/RX/RTS_DE supports full pin mapping
UART	➢ 2*UART ➢ Support auto baud rate detection	➢ 4*UART ➢ Do not support auto baud rate detection ➢ UART5/8 TX/RX/RTS_DE supports full pin mapping
LPUART	➢ 1	➢ Not supported
CAN	➢ 3*FDCAN ➢ Full pin mapping is not supported	➢ 2*FDAN ➢ Support full pin mapping
USB FS	➢ 1*USB FS Device	➢ 1*USB FS Device
UCPD	➢ 1	➢ Not supported
SAI	➢ 1	➢ Not supported
RTC	➢ 3 tamper detection pins ➢ One timestamp triggers the input pin	➢ 3 tamper detection pins ➢ 16 external interrupts EXTI0~15 can be configured as timestamp trigger sources
ADC	➢ 5*ADC ➢ Up to 42 external channels ➢ Maximum 4MSPS	➢ 4*ADC ➢ Up to 51 external channels ➢ Maximum 4.7MSPS
DAC	➢ 4*DAC ➢ Up to 3 external channels	➢ 8*DAC ➢ Up to 4 external channels
VREFBUF	➢ Can be configured with 2.048, 2.5, and 2.9V ➢ Configurable output	➢ Can be configured with 2.048, 2.5, and 2.9V ➢ Configurable output
COMP	➢ 7*COMP ➢ Support wakeup from Sleep and STOP mode	➢ 7*COMP ➢ Support wakeup from Sleep mode ➢ Configurable filter for output
PGA	➢ 6*OPAMP ➢ Support output pins	➢ 4*PGA ➢ Output pin is not supported
Algorithm	➢ Support CRC7/8/16/32,with configurable polynomial	➢ Support CRC16/32, with fix polynomial ➢ Support AES128/192/256 ➢ Support DES/3DES ➢ Support SM4 ➢ Support SHA1/224/256 ➢ Support MD5 ➢ Support SM3
Secure	➢ RDP ➢ PCROP ➢ WRP ➢ Securable memory area ➢ Force boot from FLASH	➢ RDP ➢ WRP ➢ Storage encryption ➢ Partition protection ➢ Safe startup
Pins		
GPIO	➢ Does not support digital filtering ➢ Other differences can be found in the pin function mapping	➢ Configurable digital filtering ➢ Other differences can be found in the pin function mapping

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Ro
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

6 Version History

Version	Date	Changes
V1.0.0	2024.11.12	Initial version

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Road,
Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg

7 Disclaimer

This document is the exclusive property of NSING TECHNOLOGIES PTE. LTD. (Hereinafter referred to as NSING). This document, and the product of NSING described herein (Hereinafter referred to as the Product) are owned by NSING under the laws and treaties of Republic of Singapore and other applicable jurisdictions worldwide. The intellectual properties of the product belong to Nations Technologies Inc. and Nations Technologies Inc. does not grant any third party any license under its patents, copyrights, trademarks, or other intellectual property rights. Names and brands of third party may be mentioned or referred thereto (if any) for identification purposes only. NSING reserves the right to make changes, corrections. enhancements, modifications, and improvements to this document at any time without notice. Please contact NSING and obtain the latest version of this document before placing orders. Although NATIONS has attempted to provide accurate and reliable information, NATIONS assumes no responsibility for the accuracy and reliability of this document. It is the responsibility of the user of this document to properly design, program, and test the functionality and safety of any application made of this information and any resulting product. In no event shall NATIONS be liable for any direct, indirect, incidental, special, exemplary, or consequential damages arising in any way out of the use of this document or the Product.

NATIONS Products are neither intended nor warranted for usage in systems or equipment, any malfunction or failure of which may cause loss of human life, bodily injury or severe property damage. Such applications are deemed, Insecure Usage'. Insecure usage includes, but is not limited to: equipment for surgical implementation, atomic energy control instruments, airplane or spaceship instruments, all types of safety devices, and other applications intended to supporter sustain life. All Insecure Usage shall be made at user's risk. User shall indemnify NATIONS and hold NATIONS harmless from and against all claims, costs, damages, and other liabilities, arising from or related to any customer's Insecure Usage Any express or implied warranty with regard to this document or the Product, including, but not limited to. The warranties of merchantability, fitness for a particular purpose and non-infringement are disclaimed to the fullest extent permitted by law. Unless otherwise explicitly permitted by NATIONS, anyone may not use, duplicate, modify, transcribe or otherwise distribute this document for any purposes, in whole or in part.

NSING Technologies Pte. Ltd.
Add: NSING, Teletech Park #02-28, 20 Science Park Road, Singapore 117674
Tel: +65 69268090
Email: sales@nsing.com.sg