

Introduction

After its establishment in 1983 and until the present day, Holtek Semiconductor has released an unceasing stream of competitive semiconductor devices onto the global market. While continuing to concentrate its design efforts in the 8-bit and 32-bit microcontroller development area, the extensive and increasing range of peripheral semiconductor products should also not be ignored. At the foundation of these successful product developments exists many years of semiconductor design experience accumulated by the company's professional engineering design teams. The results of these extensive efforts have led to Holtek customers being provided with a huge range of high quality industrial grade semiconductor devices. Among Holtek's many customers are included a wide array of popular global brand consumer appliances and industrial products, which shows the global confidence in the company's devices. With this background, Holtek remains fully committed to a continuous expansion of its high quality and superior price-performance semiconductor devices well into the future.

Product Device Range

Holtek's product development focus will remain firmly in the microcontroller area for both 8-bit and Arm® core based 32-bit microcontrollers. These highly functionally integrated microcontrollers includes digital and analog features such as A/D converters, comparators, LCD drivers, PWM generators, high current LED drivers, touch switches, SPI, I²C, UART and USB interfaces, voice functions, RF functions etc. All of the company's 32-bit and 8-bit microcontroller devices meet with full industry specifications in having a wide voltage and temperature operating range. In addition to its microcontrollers there exists a wide range of peripheral devices such as stand-alone touch switch ICs, LCD drivers, power management devices, video processors, sensors etc. The company will also be expanding its range of functional modules such as PIR modules, infrared modules, temperature/humidity modules etc, further increasing the Holtek product diversity and opening up applications into a wider market area.

Product Development Strategy

In following market trends and customer requirements, Holtek's commitment to new product development and innovation can be seen through its continuously expanding device functionality. As the world of IOT continues to extend its reach into demands for an increasingly connected lifestyle, Holtek's multi-function product range stands in a strong position to have a strong presence in this rapidly expanding market area. The integration of features such as RF functions, voice, touch key and power management functions into its microcontroller range demonstrates this commitment to IOT product trends. Holtek's range of standard microcontroller products will continue to expand but alongside it will be the design of application specific products such as those for motor control, personal health care, home appliances and many others. With its long history of working alongside its customers to assist in the design their custom microcontrollers, Holtek welcomes product manufacturers to contact them to discuss new custom microcontroller design possibilities. Additionally, and as no functionally rich microcontroller is useful without an appropriate development platform, all of Holtek's products are fully supported by a comprehensive range of hardware and software development tools to simplify the designer product development process. Holtek's obligation to ISO compliance and its string of innovation awards and intellectual properties provide further evidence of the company's commitment to product development excellence.

Marketing Service Network

Holtek's range of semiconductor products is fully complemented by its extensive global marketing network with a sales presence in most parts of the world. Having established a large number of worldwide sales offices and agents, Holtek's global marketing structure is well placed to take advantage of any new market opportunities and trends as they arise.

Selecting Your Holtek Device

As the range of 8-bit and 32-bit microcontroller devices covers such a vast range of types and functions, Holtek recommends that customers consult its on-line "Product Selector" to assist them in their selection of the most suitable microcontroller for their specific application. With Holtek continually releasing new products onto the market, it should be noted that the website version, rather than the printed version of the selection guide, will contain the most up to date product information.

To use our MCU Product Selector, please visit: www.holtek.com.

General Purpose MCU	Display MCU	1.8V~5.5V MCU
32-Bit Flash MCU 3 8-Bit Flash MCU 6 High Supply Voltage Flash MCU 7	8-Bit LCD Display Flash MCU 8 8-Bit LCD / LED Flash MCU 9	1.8V~5.5V Flash MCU 10
USB MCU	Motor MCU & Peripheral	OPA MCU
USB Interface Flash MCU 12	DC Motor Flash MCU 13 Motor Driver Peripheral 13	OPA Flash MCU 14
Health & Measurement	Security & Safety	Touch MCU & Peripheral
24-Bit A/D MCU 15 24-Bit A/D Peripheral 15 Health Care Flash MCU 16 Measurement Flash MCU 17 R to F MCU 17	Security & Safety MCU 18 Security & Safety IC 19	Touch Flash MCU 20 Ultra-Low Power Touch Flash MCU 23 High Supply Voltage Touch Flash MCU 23 Touch Key IC 24
Voice & Music MCU	Wireless	Communication
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32-Bit Flash MCU																					
Cortex-M0+ 32-Bit MCU																					
Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	Timers ¹	Cap. ² or PWM	Cpm. PWM ³	RTC	Interface	Others	I/O	Package							
HT32F52220	40MHz	2.0V ~ 3.6V	16KB	4KB	—	1 Msps 12-bit ×8	BFTM×1 SCTM×2 GPTM×1	6	—	—	USART×1 UART×1 SPI×1 I ² C×1	—	19	24SSOP							
HT32F52230			32KB	4KB			23						28SSOP								
HT32F52231	40MHz	2.0V ~ 3.6V	32KB	4KB	—	1 Msps 12-bit ×12	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12	3	√	USART×1 UART×2 SPI×2 I ² C×2	CRC	19	24SSOP							
HT32F52241			64KB	8KB			23						28SSOP								
HT32F52243	40MHz	2.0V ~ 3.6V	64KB	8KB	6CH	1 Msps 12-bit ×12	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12	3	√	USART×2 UART×4 SPI×2 I ² C×3	CRC DIV	26	33QFN							
HT32F52253			128KB	16KB			38						46QFN								
HT32F52253													40	48LQFP							
HT32F52253													52	64LQFP							
Cortex-M0+ 32-Bit USB MCU																					
Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	DAC	Timers ¹	Cap. ² or PWM	Cpm. PWM ³	RTC	SCI ⁴	USB ⁵	EBI ⁶	I ² S	Interface	Others	I/O	Package	
HT32F52331	48MHz	2.0V ~ 3.6V	32KB	4KB	—	1 Msps 12-bit ×12	—	—	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12	3	√	1	√	—	—	USART×1 UART×2 SPI×2 I ² C×2	CRC	24	33QFN	
HT32F52341			64KB	8KB					38										48LQFP		
HT32F52342	48MHz	2.0V ~ 3.6V	64KB	8KB	6CH	1 Msps 12-bit ×12	2	—	BFTM×2 SCTM×2 GPTM×2 MCTM×1	14	3	√	2	√	√	√	USART×2 UART×2 SPI×2 I ² C×2	CRC	26	33QFN	
HT32F52352			128KB	16KB					39										48LQFP		
HT32F52344	60MHz	1.65V ~ 3.6V	64KB	8KB	6CH	1 Msps 12-bit ×12	2	—	BFTM×2 SCTM×2 GPTM×1 MCTM×1	10	3	√	—	√	√	—	UART×2 SPI×2 I ² C×1	CRC DIV	26	33QFN	
HT32F52354			128KB	8KB					38										46QFN		
HT32F52354																			40	48LQFP	
HT32F52354																				54	64LQFP
HT32F52357	60MHz	1.65V ~ 3.6V	128KB	16KB	6CH	1 Msps 12-bit ×12	2	500Ksps 12-bit×2	BFTM×2 SCTM×2 PWM×2 GPTM×1 MCTM×1	18	3	√	2	√	√	√	USART×2 UART×4 SPI×2 QSPI×1 I ² C×2	AES CRC DIV	37	46QFN	
HT32F52367			256KB	32KB					39										48LQFP		
HT32F52367																				53	64LQFP
HT32F52367																				67	80LQFP
Cortex-M0+ 32-Bit LCD MCU																					
Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	DAC	Timers ¹	Cap. ² or PWM	RTC	SCI ⁴	USB ⁵	I ² S	LCD	Interface	Others	I/O	Package		
HT32F57331	60MHz	1.65V ~ 3.6V	32KB	4KB	—	1 Msps 12-bit ×10	—	—	BFTM×2 PWM×2 GPTM×1	12	√	1	√	—	29x4 ~ 25x8	USART×1 UART×2 SPI×2 I ² C×2	CRC DIV	37	46QFN		
HT32F57341			64KB	8KB					39									48LQFP			
HT32F57342	60MHz	1.65V ~ 3.6V	64KB	8KB	6CH	1 Msps 12-bit ×10	2	500Ksps 12-bit×2	BFTM×2 SCTM×2 PWM×2 GPTM×1	14	√	2	√	√	37x4 ~ 33x8	USART×1 UART×2 SPI×2 I ² C×2	AES CRC DIV	37	46QFN		
HT32F57352			128KB	16KB					39									48LQFP			
HT32F57352																			53	64LQFP	
HT32F57352																				67	80LQFP
Cortex-M0+ 32-Bit 5V MCU																					
Part No.	Max. Freq.	VDD	Flash	SRAM	ADC	Timers ¹	Cap. ² or PWM	Cpm. PWM ³	RTC	Interface	Others	I/O	Package								
HT32F50220	20MHz	2.5V ~ 5.5V	16KB	4KB	1 Msps 12-bit×12	BFTM×1 PWM×2 GPTM×1	12	—	√	UART×2 SPI×2 I ² C×1	DIV	18	24QFN								
HT32F50230			32KB	4KB								19	24SSOP								
HT32F50231			32KB	4KB								23	28SSOP								
HT32F50241			64KB	8KB								22	28SOP								
HT32F50241												26	33QFN								
HT32F50241												38	46QFN								
HT32F50241												36	44LQFP								
HT32F50241												40	48LQFP								
Cortex-M0+ 32-Bit 5V USB MCU																					
Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	Timers ¹	Cap. ² or PWM ³	RTC	USB ⁵	Interface	Others	I/O	Package							
HT32F50343	60MHz	2.5V ~ 5.5V	64KB	12KB	6CH	1 Msps 12-bit×12	BFTM×2 SCTM×2 8-PWM×3 GPTM×1	30	√	√	UART×2 SPI×2 I ² C×2 SLED×8 ⁷	CRC DIV	23	32QFN							
HT32F50343													35	46QFN							
HT32F50343													37	48LQFP							
HT32F50343													51	64LQFP							

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timers, 8-PWM: 8 Output channel PWM Timer, GPTM: General-Purpose Timers, MCTM: Motor Control Timer.
 2. Cap.: Input Capture.
 3. Cpm. PWM: Complementary PWM for 3-phase motor control or inverter application.
 4. SCI: ISO7816-3 Smart Card Interface.
 5. USB 2.0 Full Speed device.
 6. EBI: External Bus Interface for NOR Flash / SRAM / LCD.
 7. SLED: Strip LED Controller.

32-Bit Flash MCU

Cortex-M0+ 32-Bit Music Synthesizer MCU

Part No.	Max. Freq.	VDD	Flash	Ext. Flash	SRAM	PDMA	Audio DAC	ADC	Timers ¹	I ² S	RTC	USB ²	MIDI Engine ³	SB Coding	Echo	Interface	I/O	Package
HT32F0006	48MHz	2.0V~3.6V	128KB	SPI	16KB	6CH	16-bit x2	1Msps 12-bitx16	BFTMx2 SCTMx4 GPTMx1	√	√	√	√	√	√	USARTx1 UARTx1 SPIx1 QSPIx1 I ² Cx1 I ² Sx1	52	48/64LQFP

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timers, GPTM: General-Purpose Timers.
 2. USB 2.0 Full Speed device.
 3. 32-CH Music Synthesis Engine.

Cortex-M0+ 32-Bit Music Synthesizer MCU with Data Flash ROM

Part No.	Max. Freq.	VDD	Flash	Data Flash ⁷	SRAM	PDMA	Audio DAC	ADC	Timers ¹	I ² S	RTC	USB ⁵	MIDI Engine ⁶	SB Coding	Echo	Interface	I/O	Package
HT32F61355	48MHz	2.3V~3.6V	128KB	32Mbits	16KB	6CH	16-bit x2	1Msps 12-bitx16	BFTMx2 SCTMx4 GPTMx1	√	√	√	√	√	√	USARTx1 UARTx1 SPIx1 QSPIx1 I ² Cx1	43	48LQFP 64LQFP
HT32F61356				64Mbits														
HT32F61357				128Mbits														

Cortex-M0+ 32-Bit Data Bridge MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	Timers ¹	Cap. ² or PWM	RTC	USB ⁵	Interface	Others	I/O	Package
HT32F0008	60MHz	1.65V~3.6V	64KB	16KB	6CH	BFTMx2 PWMx2 GPTMx1	12	√	√	USARTx1 UARTx1 SPIx1 I ² Cx1	AES CRC DIV	19 28 40 42	24QFN 33QFN 46QFN 48LQFP

Cortex-M0+ 32-Bit BLDC MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	OPA	Timer ¹	Cap. ² or PWM	Cpm. PWM ³	RTC	Interface	Others	I/O	Package
HT32F65230	60MHz	2.5V~5.5V	32KB	4KB	6CH	1 Mspsx2 12-bitx10	3	2	BFTMx2 SCTMx4 GPTMx1 MCTMx1	12	3	√	USARTx1 UARTx1 SPIx1 I ² Cx1	CRC DIV	40	48LQFP
HT32F65240			64KB	8KB												

Enhanced 24-Bit A/D Cortex-M0+ 32-Bit MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	ADC		Timers ¹	Cap. ² or PWM	Cpm. PWM ³	RTC	Interface	Others	I/O	Package
HT32F59041	20MHz	2.5V~5.5V	64KB	8KB	SAR ADC 1Msps 12-bitx12	Delta Sigma ADC 24-bitx4	BFTMx2 PWMx2 GPTMx1 MCTMx1	16	3	√	USARTx1 UARTx2 SPIx1 I ² Cx1	CRC DIV	30	48LQFP

Enhanced 24-Bit A/D Cortex-M0+ 32-Bit LCD MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	ADC		Timers ¹	Cap. ² or PWM	RTC	SCI ⁴	USB ⁵	LCD	Inter- face	Others	I/O	Package
HT32F59741	60MHz	1.65V~3.6V	64KB	8KB	SAR ADC 1Msps 12-bitx10	Delta Sigma ADC 24-bitx4	BFTMx2 PWMx2 GPTMx1	12	√	1	√	19x4 ~ 15x8	USARTx1 UARTx2 SPIx1 I ² Cx1	CRC DIV	43	64LQFP

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timers, 8-PWM: 8 Output channel PWM Timer, GPTM: General-Purpose Timers, MCTM: Motor Control Timer.
 2. Cap.: Input Capture.
 3. Cpm. PWM: Complementary PWM for 3-phase motor control or inverter application.
 4. SCI: ISO7816-3 Smart Card Interface.
 5. USB 2.0 Full Speed device.
 6. 32-CH Music Synthesis Engine.
 7. QSPI Flash ROM.

32-Bit Flash MCU
Cortex-M3 32-Bit MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timers ^{*1}	Cap. ^{*2} or PWM	Cpm. PWM ^{*3}	RTC	SCI ^{*4}	USB ^{*5}	EBI ^{*6}	I ² S	Inter-face	Others	I/O	Package
HT32F12345	96MHz	2.0V ~ 3.6V	64KB	16KB	12CH	1 Msps 12-bit x12	2	BFTMx2 GPTMx2 MCTMx2	16	6	√	—	√	√	√	SDIOx1 USARTx2 UARTx2 SPIx2 I ² Cx2	CRC	37 37 51	46QFN 48LQFP 64LQFP
HT32F12365	96MHz	2.0V ~ 3.6V	256KB	64KB	12CH	1 Msps 12-bit x16	2	BFTMx2 GPTMx2 MCTMx2	16	6	√	2	√	√	√	SDIOx1 USARTx2 UARTx2 SPIx2 I ² Cx2	AES CRC	37 37 51 80	46QFN 48LQFP 64LQFP 100LQFP
HT32F12366			256KB	128KB															
HT32F12364	72MHz	1.65V ~ 3.6V	256KB	128KB	6CH	1 Msps 12-bit x8	—	BFTMx2 SCTMx2 PWMx1 GPTMx1	10	—	√	1	√	√	—	USARTx1 UARTx2 SPIx2 I ² Cx2	AES CRC	32 38 52	40QFN 48LQFP 64LQFP

Cortex-M3 32-Bit Fingerprint MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timers ^{*1}	Cap. ^{*2} or PWM	Cpm. PWM ^{*3}	RTC	SCI ^{*4}	USB ^{*5}	EBI ^{*6}	CSIF ^{*7}	Inter-face	Others	I/O	Package
HT32F22366	96MHz	2.0V ~ 3.6V	256KB	128KB	12CH	1 Msps 12-bit x16	2	BFTMx2 SCTMx2 GPTMx2 MCTMx2	16	6	√	2	√	√	√	SDIOx1 USARTx2 UARTx2 SPIx2 I ² Cx2 I ² Sx1	AES CRC	37 38 51 80	46QFN 48LQFP 64LQFP 100LQFP

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timers, GPTM: General-Purpose Timers, MCTM: Motor Control Timer.
 2. Cap.: Input Capture.
 3. Cpm. PWM: Complementary PWM for 3-phase motor control or inverter application.
 4. SCI: ISO7816-3 Smart Card Interface.
 5. USB 2.0 Full Speed device.
 6. EBI: External Bus Interface for NOR Flash / SRAM / LCD.
 7. CSIF: CMOS Sensor Interface.

8-Bit Flash MCU
Small Package Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	PWM	Comparator	Interface	Package		
HT68F0017	8MHz	1.8V~5.5V	8MHz or 32kHz	0.5K×12	16×8	—	2	—	8	8-bit×1	—	—	—	—	8/10SOP		
HT66F302	4MHz 8MHz	1.8V~5.5V	4MHz, 8MHz or 32kHz	1K×14	64×8	32×8	2	—	8	10-bit STM×1 10-bit PTM×1	12-bit×4	—	—	—	8/10SOP		
HT68F002	8MHz	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×8	2	—	8	10-bit STM×1	—	8-bit ×1	—	—	8SOP, 10MSOP		
HT66F0021		1.8V~5.5V				32×14 [#]				6	8-bit×1				10-bit×4	8SOP	
HT66F002		2.2V~5.5V				32×8				8	10-bit STM×1				12-bit×4	8SOP, 10MSOP	
HT68F0025		—		2K×14		32×8	4			8	10-bit STM×1				—	—	8/10SOP
HT66F0025		—									12-bit×4						
HT66F007	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~ 20MHz or 32kHz	2K×16	160×8	512×8	8	—	8	10-bit CTM×2 16-bit STM×1	12-bit×5	—	1	—	8DIP/SOP 10MSOP		
HT66F008	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~ 20MHz or 32kHz	4K×16	256×8	1024×8	8	—	8	10-bit CTM×2 16-bit STM×1	12-bit×5	—	1	—	8DIP/SOP 10MSOP		
HT66F2030	8MHz	1.8V~5.5V	8MHz or 32kHz	2K×15	128×8	32×8	4	—	14	10-bit CTM×1 10-bit PTM×1	12-bit×5	—	—	SPI/I ² C×1 UART×1	8SOP, 10MSOP 16NSOP/QFN		
HT66F2040*	8MHz	1.8V~5.5V	8MHz or 32kHz	4K×16	512×8	512×8	8	√	18	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit×8	—	2	SPI/I ² C/UART×1 UART×1	8SOP, 10MSOP 16NSOP/QFN 20SSOP		
HT66F2050*				8K×16													

* Under development, available in 4Q, 2020.
Note: # Emulated EEPROM.

Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	PWM	SCOM	Package
HT68F003	8MHz	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×8	2	14	10-bit STM×1 10-bit PTM×1	—	—	—	16NSOP
HT66F0031		1.8V~5.5V				32×14 [#]			8-bit×1	10-bit×4	8-bit×1		
HT66F003		2.2V~5.5V				32×8			10-bit STM×1 10-bit PTM×1	12-bit×4	—		
HT66F004	8MHz	2.2V~5.5V	8MHz or 32kHz	2K×15	96×8	32×8	4	18	10-bit PTM×2	12-bit×8	—	4	16NSOP 20DIP/SOP/SSOP/NSOP
HT66F0041		1.8V~5.5V		2K×14	64×8	32×14 [#]			8-bit×1	10-bit×4	8-bit×1	—	16/20NSOP, 20SSOP

Note: # Emulated EEPROM.

Flash MCU with High Current Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	High Current I/O	PWM	Package
HT68F0036	8MHz	1.8V~5.5V	8MHz or 32kHz	1K×14	64×8	32×14 [#]	2	13	8-bit×1	7	8-bit×1	16NSOP

Note: # Emulated EEPROM.

8-Bit Flash MCU

A/D Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	RTC	Comparator	SCOM/SSEG	High Current LED Driver	Interface	Package
HT66F017	8MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×16	128×8	64×8	8	—	14	16-bit CTM×1 16-bit STM×1	12-bit ×4	—	1	—	—	—	16NSOP
HT66F0172	8MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×16	128×8	—	8	—	18	10-bit PTM×2	12-bit ×8	√	—	SCOM×6 SSEG×14	22	SPI/I ² C×1 UART×1	20SOP/SSOP
HT66F0174						22			24SOP/SSOP								
HT66F0175	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×16	128×8	64×8	8	—	18	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	10-bit ×8	—	—	—	18	—	16/20NSOP 24SOP/SSOP
HT66F0176									22								16/20NSOP 24SOP/SSOP
HT66F0181	8MHz	1.8V~5.5V	8MHz or 32kHz	4K×15	128×8	32×15 [#]	6	—	18	10-bit PTM×1 10-bit STM×1	10-bit ×8	—	—	—	18	—	16/20NSOP 20SOP/SSOP
HT66F0186	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	4K×16	1024×8	4096×8	8	—	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×8	√	1	SCOM×6 SSEG×18	26	SPI/I ² C×1 UART×1	20NSOP 24/28SOP 24/28SSOP
HT66F019	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	8K×16	256×8	64×8	8	—	18	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×8	√	1	—	18	SPI/I ² C×1 UART×1	20NSOP
HT66F3185	8MHz 12MHz 16MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	4K×16	256×8	128×8	8	√	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×12	√	1	(SCOM/ SSEG)×22 SSEG×4	26	SPI/I ² C×1 UART×1	16/20NSOP 20/24/28SOP 20/24/28SSOP 24/28QFN
HT66F3195				8K×16	512×8												24/28SSOP 24/28QFN
HT66F489	8MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	8K×16	384×8	64×8	8	—	26	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	12-bit ×8	√	—	SCOM×6 SSEG×20	26	SPI/I ² C×1 UART×1	28SOP/SSOP

Note: # Emulated EEPROM.
SCOM/SSEG: Software Control LCD Common/Segment.

A/D Flash MCU with High Accuracy / Low Current LIRC

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Package
HT66F2630	2/4/8MHz	1.8V~5.5V	400kHz~8MHz or 32kHz	2K×16	128×8	64×8	8	18	16-bit PTM×1	12-bit ×4	8SOP, 10MSOP 16SSOP, 16/20NSOP

Advanced A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	SCOM	RTC	Comparator	CRC	Interface	Package
HT66F2350	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	8K×16	768×8	256×8	16	√	44	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×12	4	√	2	√	SPI/I ² C×1 SPIA×1 UART×2	48LQFP
HT66F2360	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	1536×8	256×8	16	√	58	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×16	4	√	2	√	SPI/I ² C×1 SPIA×1 UART×2	48/64LQFP
HT66F2362		1.8V~5.5V			2048×8	1024×8			44								28SOP, 32QFN 44/48LQFP
HT66F2370	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	512×8	3072×8	16	√	58	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×16	4	√	2	√	SPI/I ² C×1 SPIA×1 UART×3	48/64LQFP
HT66F2372		1.8V~5.5V			2048×8				44								28SOP 44/48LQFP
HT66F2390	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	64K×16	4096×8	1024×8	16	√	58	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×16	4	√	2	√	SPI/I ² C×1 SPIA×1 UART×3	48/64LQFP

Note: These devices are European standard IEC 60730 and U.S. standard UL 60730 certified.

High Supply Voltage Flash MCU

12V High Current Driver A/D Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	HVIO	Timer	ADC	LDO Output Voltage	OVP	Interface	Package
HT66F2730	8/12/16MHz	7.5V~12V	4.5V~5.5V	32kHz~16MHz	2K×16	128×8	64×8	4	10	10	10-bit STM×1 10-bit PTM×1	12-bit ×4	5.0V	—	SPI/I ² C/ UART×1	16NSOP-EP 20NSOP 24SOP/SSOP-EP
HT66F2740					4K×16	256×8	128×8	8	14		10-bit STM×1 10-bit PTM×1 10-bit CTM×1	12-bit ×8		1		16NSOP-EP 24/28SOP 24SSOP-EP

8-Bit LCD Display Flash MCU
A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	LCD	RTC	ADC	Comparator	Interface	Package
HT67F40	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×15	256×8	128×8	8	—	44	10-bit CTM×1 10-bit ETM×1 16-bit STM×1	32×4 33×3	√	12-bit ×8	2	SPI/I ² C×1 SPIA×1	48/64LQFP
HT67F50	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	384×8	256×8	8	—	52	10-bit CTM×2 10-bit ETM×1 16-bit STM×1	40×4 41×3	√	12-bit ×8	2	SPI/I ² C×1 SPIA×1	48/64/80 LQFP
HT67F60A	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1024×8	128×8	16	√	47	10-bit CTM×2 10-bit ETM×1 16-bit STM×3	56×4	√	12-bit ×12	2	SPI/I ² C×1 SPIA×1	48/64/80 LQFP

A/D Flash MCU with LCD Driver & High Accuracy HIRC

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	LCD	RTC	ADC	IR LED Driver	Interface	Package
HT67F2432	4MHz	1.8V~ 5.5V	4MHz or 32kHz	2K×16	128×8	32×16 [#]	6	—	26	9-bit Timer×1 10-bit CTM×1	20×4	√	10-bit ×5	—	UART×1	24/28 SOP/SSOP
HT67F2352*	4MHz	1.8V~ 5.5V	4MHz or 32kHz	8K×16	512×8	128×8	8	√	44	10-bit CTM×1 10-bit PTM×1 16-bit STM×1	30×4 29×5 28×6	√	10-bit ×8	√	UART×1	32/44/48 LQFP

* Under development, available in 4Q, 2020.
Note: # Emulated EEPROM.

Advanced A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	LCD	RTC	Comparator	CRC	Interface	Package
HT67F2350	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	768×8	256×8	16	√	57	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	12-bit ×12	46×4 44×6 42×8	√	2	√	SPI/I ² C×1 SPIA×1 UART×2	48/64LQFP
HT67F2360	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1536×8	256×8	16	√	71	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	12-bit ×16	56×4 54×6 52×8	√	2	√	SPI/I ² C×1 SPIA×1 UART×2	64/80LQFP
HT67F2362		1.8V~ 5.5V			2048×8	1024×8			57								46×4 44×6 42×8
HT67F2370	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	3072×8	512×8	16	√	71	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	12-bit ×16	56×4 54×6 52×8	√	2	√	SPI/I ² C×1 SPIA×1 UART×3	64/80LQFP
HT67F2372*		1.8V~ 5.5V							2048×8								57
HT67F2390	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	64K×16	4096×8	1024×8	16	√	71	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	12-bit ×16	56×4 54×6 52×8	√	2	√	SPI/I ² C×1 SPIA×1 UART×3	64/80LQFP

* Under development, available in 1Q, 2021.
Note: These devices are European standard IEC 60730 and U.S. standard UL 60730 certified.

8-Bit LCD / LED Flash MCU
A/D Flash MCU with six Timer & High Current LED Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	SCOM	High Current LED Driver	RTC	Interface	Package
HT66F0042	8MHz 12MHz 16MHz	2.2V~ 5.5V	32kHz~ 16MHz	2K×15	96×8	32×8	6	22	10-bit PTM×4 10-bit CTM×2	12-bit ×8	4	22	√	SPI/I ² C×1	20/24SOP/SSOP
HT66F0082				4K×16	128×8	64×8		26				26			24/28SOP/SSOP

Note: The HT66F0042/0082 devices include 6 Timer Modules and are suitable for use in products requiring multiple PWM functions such as RGB lighting.

RGB LED Controller Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Stack	I/O	Timer	Multiple RGB LED	Constant Current	Interface	Package
HT45F0060	8MHz	2.2V~5.5V	8MHz	1K×14	64×8	2	8	10-bit CTM×3	—	3	Cascading Transceiver	8SOP/DFN 10SOP
HT45F0062	8MHz	2.2V~5.5V	8MHz	2K×16	128×8	4	14	10-bit CTM×1	√	12	I ² C×1, Cascading Transceiver	16NSOP-EP 16QFN
HT45F0063	8MHz	2.2V~5.5V	8MHz	4K×16	256×8	4	20	10-bit CTM×1	√	15	I ² C×1, Cascading Transceiver	24SSOP-EP 24QFN

A/D Flash MCU with LCD & High Current LED Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	LCD	High Current LED Driver	RTC	Interface	Package
HT67F489	8MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	64×8	8	—	42	10-bit CTM×3 10-bit PTM×1	12-bit ×10	20×8 20×4	8	√	UART×1	44LQFP
HT67F4892					384×8				50						32×4/32×8 28×4/28×8	SPI/I ² C×1 UART×1
HT67F2355*	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 12MHz or 32kHz	8K×16	512×8	512×8	8	√	46	10-bit CTM×3 10-bit PTM×1	12-bit ×10	32×4/31×5 30×6/28×8	46	√	SPI/I ² C×1 UART×1	44/48LQFP

* Under development, available in 4Q, 2020.

1.8V~5.5V Flash MCU
1.8V~5.5V I/O Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Stack	I/O	Timer	Package
HT68F0017	8MHz	1.8V~5.5V	8MHz or 32kHz	0.5K×12	16×8	2	8	8-bit×1	8/10SOP

1.8V~5.5V I/O Flash MCU with High Accuracy HIRC

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Stack	I/O	IR Carrier	Package
HT68F2420	4MHz±0.4%	1.8V~5.5V	4MHz or 32kHz	1K×13	32×8	2	16	√	8SOP, 16/20NSOP, 20SSOP

1.8V~5.5V Advanced A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	RTC	SCOM/SSEG	Comparator	High Current LED Driver	Interface	Package
HT66F317	4MHz 8MHz 12MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	2K×16	128×8	64×8	8	—	22	10-bit PTM×2	12-bit ×8	√	SCOM×4	—	22	—	16NSOP, 20/24SOP, 20/24SSOP
HT66F318	4MHz 8MHz 12MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	4K×16	192×8	64×8	8	—	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×8	√	SCOM×4	1	26	I ² C×1 UART×1	20/24/28SOP, 20/24/28SSOP
HT66F319	4MHz 8MHz 12MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	8K×16	256×8	64×8	8	—	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×8	√	SCOM×4	1	26	I ² C×1 UART×1	16NSOP, 20/24/28SOP, 20/24/28SSOP
HT66F3185	8MHz 12MHz 16MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	4K×16	256×8	128×8	8	√	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×12	√	(SCOM/SSEG)×22 SSEG×4	1	26	SPI/I ² C×1 UART×1	16/20NSO, 20/24/28SOP, 20/24/28SSOP, 24/28QFN
HT66F3195				8K×16													512×8

Note: SCOM/SSEG: Software Control LCD Common/Segment.

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	SCOM	Comparator	RTC	CRC	Interface	Package
HT66F2362	8MHz 12MHz 16MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	16K×16	2048×8	1024×8	16	√	44	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×16	4	2	√	√	SPI/I ² C×1 SPIA×1 UART×2	28SOP, 32QFN, 44/48LQFP
HT66F2372	8MHz 12MHz 16MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	32K×16	3072×8	2048×8	16	√	44	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×16	4	2	√	√	SPI/I ² C×1 SPIA×1 UART×3	28SOP, 44/48LQFP

Note: These devices are European standard IEC 60730 and U.S. standard UL 60730 certified.

1.8V~5.5V A/D Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	PWM	High Current LED Driver	Interface	Package
HT66F302	4/8MHz	1.8V~5.5V	4MHz, 8MHz or 32kHz	1K×14	64×8	32×8	2	—	8	10-bit STM×1 10-bit PTM×1	12-bit ×4	—	—	—	8/10SOP
HT66F303									14						16NSOP
HT66F0181	8MHz	1.8V~5.5V	8MHz or 32kHz	4K×15	128×8	32×15 [#]	6	—	18	10-bit PTM×1 10-bit STM×1	10-bit ×8	—	18	—	16/20NSOP, 20SSOP/SOP
HT66F0021	8MHz	1.8V~5.5V	8MHz or 32kHz	1K×14	64×8	32×14 [#]	2	—	6	8-bit×1	10-bit ×4	8-bit ×1	—	—	8SOP
HT66F0031	8MHz	1.8V~5.5V	8MHz or 32kHz	1K×14	64×8	32×14 [#]	2	—	14	8-bit×1	10-bit ×4	8-bit ×1	—	—	16NSOP
HT66F0041	8MHz	1.8V~5.5V	8MHz or 32kHz	2K×14	64×8	32×14 [#]	4	—	18	8-bit×1	10-bit ×4	8-bit ×1	—	—	16/20NSOP, 20SSOP
HT66F2030	8MHz	1.8V~5.5V	8MHz or 32kHz	2K×15	128×8	32×8	4	—	14	10-bit CTM×1 10-bit PTM×1	12-bit ×5	—	14	SPI/I ² C×1 UART×1	8SOP, 10MSOP, 16NSOP/QFN
HT66F2040*	8MHz	1.8V~5.5V	8MHz or 32kHz	4K×16	512×8	512×8	8	√	18	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×8	—	18	SPI/I ² C/UART×1 UART×1	8SOP, 10MSOP, 16NSOP/QFN, 20SSOP
HT66F2050*				8K×16											

* Under development, available in 4Q, 2020.

Note: # Emulated EEPROM.

1.8V~5.5V Flash MCU

1.8V~5.5V Flash MCU with LCD Driver															
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	LCD	RTC	Power Switch	Interface	Package
HT69F340	4/8/12MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	4K×16	256×8	64×8	8	√	39	10-bit PTM×1 10-bit CTM×1	24×4 25×3	√	—	SPI/I ² C×1	48LQFP
HT69F3742	2/4/8MHz	1.8V~5.5V	400kHz~8MHz or 32kHz	4K×16	128×8	128×8	4	—	9	10-bit STM×1	23×4 24×3	—	√	—	Dice 46QFN
HT69F350	4/8/12MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	8K×16	512×8	64×8	8	√	55	10-bit PTM×1 10-bit CTM×1 16-bit STM×1	36×4 37×3	√	—	SPI/I ² C×1	48/64LQFP
HT69F360	4/8/12MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	16K×16	1024×8	128×8	8	√	63	10-bit PTM×2 10-bit CTM×1 16-bit STM×1	48×4 49×3	√	—	SPI/I ² C×1 UART×1	64/80LQFP

1.8V~5.5V Advanced A/D Flash MCU with LCD Driver																	
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	LCD	RTC	CRC	Comparator	Interface	Package
HT67F2362	8MHz 12MHz 16MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	16K×16	2048×8	1024×8	16	√	57	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	12-bit ×16	46×4 44×6 42×8	√	√	2	SPI/I ² C×1 SPIA×1 UART×2	48/64LQFP
HT67F2372*	8MHz 12MHz 16MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	32K×16	3072×8	2048×8	16	√	57	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	12-bit ×16	46×4 44×6 42×8	√	√	2	SPI/I ² C×1 SPIA×1 UART×3	48/64LQFP
HT67F370	4MHz 8MHz 12MHz	1.8V~5.5V	400kHz~20MHz or 32kHz	32K×16	2048×8	256×8	8	√	63	10-bit PTM×2 10-bit CTM×1 16-bit STM×1	12-bit ×12	48×4 49×3	√	—	—	SPI/I ² C×1 UART×1	64/80LQFP

* Under development, available in 1Q, 2021.
Note: These devices are European standard IEC 60730 and U.S. standard UL 60730 certified.

1.8V~5.5V A/D Flash MCU with LCD Driver & High Accuracy HIRC																
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	LCD	RTC	IR LED Driver	Interface	Package
HT67F2432	4MHz	1.8V~5.5V	4MHz or 32kHz	2K×16	128×8	32×16 [#]	6	—	26	9-bit Timer×1 10-bit CTM×1	10-bit ×5	20×4	√	—	UART×1	24/28 SOP/SSOP
HT67F2352*	4MHz	1.8V~5.5V	4MHz or 32kHz	8K×16	512×8	128×8	8	√	44	10-bit CTM×1 10-bit PTM×1 16-bit STM×1	10-bit ×8	30×4 29×5 28×6	√	√	UART×1	32/44/48 LQFP

* Under development, available in 4Q, 2020.
Note: # Emulated EEPROM.

1.8V~5.5V A/D Flash MCU with LCD & High Current LED Driver																
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	ADC	Timer	LCD	High Current LED Driver	RTC	Interface	Package
HT67F2355*	4MHz 8MHz 12MHz	1.8V~5.5V	400kHz~12MHz or 32kHz	8K×16	512×8	512×8	8	√	46	12-bit ×10	10-bit CTM×3 10-bit PTM×1	32×4/31×5 30×6/28×8	46	√	SPI/I ² C×1 UART×1	44/48 LQFP

* Under development, available in 4Q, 2020.

1.8V~5.5V Ultra-Low Power Flash MCU with LCD Driver																
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	MDU [#]	Stack	IAP	I/O	Timer	ADC	LCD	RTC	Interface	Package
HT66F2560	1/2/4/8/12MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	16K×16	2048×8	256×8	16-bit	16	√	42	16-bit PTM×2 16-bit STM×3	12-bit ×8	SCOM ×4	√	SPI/I ² C×1 SPIA×1 UART×2	48LQFP
HT69F2562	4/8/12MHz	1.8V~5.5V	400kHz~12MHz or 32kHz	16K×16	2304×8	128×8	—	16	√	19	10-bit CTM×2 16-bit STM×1	—	32×4	√	SPI×1 SPI/I ² C/UART×1	64LQFP

Note: # MDU: Multiplier Divider Unit.
The power consumption of the RTC on standby current is less than 200nA at 3V.

1.8V~5.5V Ultra-Low Power Flash MCU with EPD Driver															
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	EPD [#]	RTC	Interface	Package
HT67F2567	4/8/12MHz	1.8V~5.5V	400kHz~12MHz or 32kHz	16K×16	2304×8	128×8	16	√	19	10-bit CTM×2 16-bit STM×1	12-bit ×7	SEG×64 COM×1 BG×1	√	SPI×1 SPI/I ² C/UART×1	100LQFP
HT67F2567G															Gold Bump

Note: # EPD: Electronic Paper Displays.
The power consumption of the RTC on standby current is less than 200nA at 3V.

1.8V~5.5V MCU

USB Interface Flash MCU
I/O Flash USB MCU (USB 2.0 Low Speed)

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Stack	IAP/ISP	I/O	Timer	End-points	LDO Driving Current	PWM	Interface	Package
HT68FB240	12MHz	2.2V~5.5V	32kHz~16MHz	4K×16	160×8	8	√	34	10-bit CTM×2	3	20mA	3	SPI/I ² C×1	48LQFP

I/O Flash USB MCU (USB 2.0 Full Speed)

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Stack	IAP/ISP	I/O	Timer	End-points	LDO Driving Current	VDDIO	Interface	Package
HT68FB550	12MHz	2.2V~5.5V	32kHz~16MHz	8K×16	512×8	8	√	25	10-bit CTM×2 10-bit STM×1 16-bit STM×1	6	70mA	√	SPI/I ² C×1 SPIA×1	24/28SSOP 48LQFP
HT68FB560	12MHz	2.2V~5.5V	32kHz~16MHz	16K×16	768×8	12	√	37	10-bit CTM×2 10-bit STM×1 16-bit STM×1	8	70mA	√	SPI/I ² C×1 SPIA×1	24/28SSOP 48LQFP

A/D Flash USB MCU (USB 2.0 Full Speed)

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP/ISP	I/O	Timer	ADC	RTC	MDU [#]	End-points	LDO Driving Current	VDDIO	Comparator	Interface	Package
HT66FB540	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	4K×16	512×8	—	8	√	25	10-bit CTM×2 10-bit STM×1 16-bit STM×1	12-bit ×8	√	—	4	70mA	√	2	SPI/I ² C×1 SPIA×1	28SSOP 48LQFP
HT66FB542	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	4K×16	256×8	—	8	√	17	10-bit CTM×2 10-bit STM×1 16-bit STM×1	12-bit ×4	—	—	4	70mA	√	1	SPI/I ² C×1 SPIA×1	24SSOP
HT66FB550	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	8K×16	768×8	—	8	√	37	10-bit CTM×2 10-bit STM×1 16-bit STM×1	12-bit ×16	√	—	6	70mA	√	2	SPI/I ² C×1 SPIA×1	28SSOP 48LQFP
HT66FB560	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	1024×8	—	12	√	45	10-bit CTM×2 10-bit STM×1 16-bit STM×1	12-bit ×16	√	—	8	70mA	√	2	SPI/I ² C×1 SPIA×1	48/64 LQFP
HT66FB570	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	1024×8	256×8	12	√	55	10-bit PTM×5 16-bit STM×1	12-bit ×24	√	—	8	70mA	√	2	SPI/I ² C×1 SPIA×1 UART×1	48/64 LQFP
HT66FB582	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	48K×16	1024×8	16K×8	12	√	41	10-bit PTM×5 16-bit STM×1	12-bit ×16	√	16-bit	8	70mA	√	2	SPI/I ² C×1 SPIA×1 UART×1	46QFN 48LQFP

Note: # MDU: Multiplier Divider Unit.

USB Flash RGB LED MCU (USB 2.0 Full Speed)

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP/ISP	I/O	Timer	ADC	End-points	LDO Driving Current	VDDIO	Interface	RGB LED Driver	LED PWM	Const. Current	Package
HT68FB541	12MHz	3.0V~5.5V	400kHz~16MHz or 32kHz	4K×16	256×8	64×8	8	√	18	16-bit×2	—	4	70mA	√	SPI×1	8	3×8	—	24SSOP
HT68FB571	12MHz	3.0V~5.5V	400kHz~16MHz or 32kHz	8K×16	512×8	64×8	8	√	41	16-bit×2	—	4	70mA	√	SPI×1	42	16×8	—	28SSOP 48LQFP
HT66FB572	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	8K×16	1024×8	256×8	12	√	34	10-bit PTM×3 16-bit STM×1	12-bit ×8	8	70mA	√	SPI/I ² C×1 SPIA×1 UART×1	40	15×8	15	48/64 LQFP
HT66FB574	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	1024×8	256×8	12	√	38	10-bit PTM×3 16-bit STM×1	12-bit ×12	8	70mA	√	SPI/I ² C×1 SPIA×1 UART×1	64	24×8	24	48/64/80 LQFP
HT66FB576	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	1024×8	256×8	12	√	52	10-bit PTM×3 16-bit STM×1	12-bit ×16	8	70mA	√	SPI/I ² C×1 SPIA×1 UART×1	128	48×8	48	80LQFP 128LQFP-EP

DC Motor Flash MCU

Power Tool Controller Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	OCP	HVO	Interface	Package
HT45F3630	8MHz 32kHz	12V	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	2K×16	64×8	32×8	6	12	10-bit PTM×2	12-bit ×8	1	1	I ² C×1	16SSOP

Servo Motor Flash MCU with H-Bridge Driver

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	H-Bridge Driver	LDO	Interface	Package
HT45F4830	8MHz	3.5V~ 10V	3.0V	32kHz~ 8MHz	2K×16	128×8	32×8	4	—	4	10-bit PTM×1 16-bit PTM×1	12-bit ×4	600mA Min.	3.0V	—	8SOP-EP
HT45F4840	16MHz	6.0V~ 12V	3.3V or 5.0V	32kHz~ 16MHz	4K×16	256×8	—	6	√	8	10-bit PTM×1 16-bit STM×1 16-bit CTM×1	12-bit ×4	— √	3.3V or 5.0V	UART×1	10SOP 16NSOP/QFN
HT45F4842										6						10SOP-EP 24QFN

BLDC Motor Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	OCP	PWM	Comp- arator	OPA	Inter- face	Package
HT66FM5230	20MHz	4.5V~ 5.5V	32kHz~ 20MHz	2K×16	256×8	32×8	6	18	10-bit CTM×1 10-bit STM×1 16-bit CAPTM×1 16-bit CTM×1	10-bit ×6	1	10-bit ×3	3	—	I ² C×1	16NSOP 20SSOP
HT66FM5240	20MHz	4.5V~ 5.5V	32kHz~ 20MHz	4K×16	256×8	64×8	8	26	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×8	1	10-bit ×3	3	—	I ² C×1 UART×1	20/28SSOP 24QFN
HT66FM5242	20MHz	4.5V~ 5.5V	32kHz~ 20MHz	4K×16	256×8	—	8	18	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×7	1	10-bit ×3	—	—	—	16NSOP 20SSOP
HT66FM5440	16MHz	4.5V~ 5.5V	32kHz~ 16MHz	4K×16	384×8	—	8	26	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×9	1	10-bit ×3	3	2	I ² C×1 UART×1	28SSOP
BD66FM5243*	20MHz	4.5V~ 5.5V	32kHz~ 20MHz	4K×16	256×8	—	8	18	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×10	1	10-bit ×3	3	—	—	16NSOP 20SSOP

* Under development, available in 1Q, 2021.
 Note: HT66FM5440 is a new HT8-1T architecture MCU which takes one clock cycle to execute one instruction. It improves 4 times the CPU performance of the original HT8-4T architecture MCU which takes four clock cycles to execute one instruction.

BLDC Motor Flash MCU with Gate-Driver

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Stack	I/O	Timer	ADC	OCP	PWM	Comp- arator	Gate- Driver	LDO	Package
HT66FM5340	20MHz	6V~ 15V	4.5V~ 5.5V	32kHz~ 20MHz	4K×16	256×8	8	19	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×8	1	10-bit ×3	3	√	5V	24SSOP

BLDC Motor Flash MCU with Driver

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Stack	I/O	Timer	ADC	OCP	PWM	Comp- arator	Driver	LDO	Package
BD66FM8143*	20MHz	6V~ 15V	4.5V~ 5.5V	32kHz~ 20MHz	4K×16	256×8	8	9	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×8	1	10-bit ×3	3	2.5A	5V	16SSOP-EP 24SSOP-EP 32QFN

* Under development, available in 1Q, 2021.

Motor Driver Peripheral

H-Bridge Driver

Part No.	Supply Voltage	Max. Motor Voltage	Typ. Motor Peak Current (A)	Typ. Motor RMS Current (A)	Max. Sleep Current (μA)	Max. PWM Frequency (Hz)	# of H-Bridge	Protections	Package
HT7K1201	1.8V~6.0V	6V	1.3	0.8	0.1	200K	1	UVLO, OCP OTP, OSP	SOT23-6
HT7K1211		7.5V	2.1	1.5					8SOP-EP
HT7K1311	2.5V~5.5V	15V	3.0	2.4	1.0	200K	1	UVLO, OCP OTP, OSP	8SOP-EP
HT7K1312									8DFN
HT7K1401	2.5V~5.5V	24V	2.0	1.8	1.0	200K	1	UVLO, OCP OTP, OSP	8SOP-EP
HT7K1411			3.2	2.5					

Motor MCU & Peripheral

OPA Flash MCU
Flash MCU with OPA

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	DAC	RTC	PWM	PFD	OPA	Comparator	Interface	Package
HT45F23A	910kHz 2MHz 4MHz 8MHz	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	2K×15	128×8	64×8	6	22	8-bit×1 16-bit×1	12-bit ×6	12-bit ×1	√	8-bit ×2	√	2	2	SPI/I ² C×1	16NSOP 20/24SSOP
HT45F24A	910kHz 2MHz 4MHz 8MHz	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	4K×16	192×8	64×8	6	26	8-bit×1 16-bit×1	12-bit ×8	12-bit ×1	√	8-bit ×2	√	2	2	SPI/I ² C×1	20/24/28SSOP

Advanced Flash MCU with OPA

Part No.	Internal Clock	Input Voltage	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	DAC	RTC	Voice DAC	Comparator	OPA	Interface	Package
HT66F4530	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	2K×16	128×8	32×8	6	18	10-bit STM×1 10-bit PTM×1	12-bit ×5	8-bit ×3	√	—	2	2	SPI/I ² C×1	16NSOP 20SSOP
HT66F4540	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	4K×16	256×8	64×8	8	26	10-bit STM×1 10-bit PTM×2	12-bit ×8	8-bit ×3	√	—	2	2	SPI/I ² C×1 UART×1	24/28SSOP
HT66F4550	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	8K×16	384×8	64×8	8	26	10-bit STM×2 10-bit PTM×2	12-bit ×8	8-bit ×3	√	16-bit ×1	2	2	SPI/I ² C×1 UART×1	24/28SSOP
HT66F4560	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	16K×16	512×8	128×8	16	46	10-bit STM×2 10-bit PTM×2	12-bit ×8	8-bit ×3	√	16-bit ×1	2	2	SPI/I ² C×1 UART×1	28SSOP 48LQFP

Note: The MCUs internal OPA gain bandwidth are software programmable.

24-Bit A/D MCU

24-Bit A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	MDU#	Stack	IAP	I/O	Timer	ADC	RTC	OPA	Interface	Package
BH66F5232	4MHz 8MHz 12MHz	2.2V~ 5.5V	4/8/12MHz or 32kHz	2K×16	128×8	32×8	—	4	—	4	10-bit CTM×1	24-bit ×2	—	—	SPI/I ² C×1 UART×1	10SOP
BH66F5233	4MHz 8MHz 12MHz	2.2V~ 5.5V	4/8/12MHz or 32kHz	2K×16	96×8	32×8	—	4	—	14	10-bit CTM×1	24-bit ×2	—	—	SPI/I ² C×1	10SOP 16/20NSOP
BH66F5242	4MHz 8MHz 12MHz	2.2V~ 5.5V	4/8/12MHz or 32kHz	4K×16	256×8	64×8	—	6	—	14	10-bit CTM×1 16-bit PTM×1	24-bit ×12	—	1	SPI/I ² C/UART×1	16NSOP/SSOP 20NSOP/QFN
BH66F5250	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	512×8	128×8	16-bit	8	√	37	16-bit STM×1 10-bit PTM×3	24-bit ×16	√	1	SPI/I ² C/UART×1 SPI×1	48LQFP
BH66F5252	8MHz	2.2V~ 5.5V	8MHz or 32kHz	8K×16	256×8	32×8	—	8	—	23	10-bit CTM×1 16-bit PTM×1	24-bit ×4	—	—	SPI/I ² C/UART×1	24/28SSOP

Note: # MDU: Multiplier Divider Unit.

Enhanced 24-Bit A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	ENOB	SCOM	Comparators	CRC	Interface	Package
BH66F5362	8MHz 12MHz 16MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	2048×8	1024×8	16	√	32	10-bit PTM×2 16-bit PTM×2 16-bit STM×1	12-bit×9 24-bit×4	19.4 @5V	4	2	√	SPI/I ² C×1 SPI×1 UART×2	48LQFP

BLE Beacon 24-Bit A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Frequency	Data Rate	Output Power	Package
BH66F71252	8MHz	2.2V~ 3.6V	8MHz or 32kHz	8K×16	256×8	32×8	8	25	10-bit CTM×1 16-bit PTM×1	24-bit ×4	2402/2426/2480 MHz	1Mbps	-10~+8 dBm	46QFN

24-Bit A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	MDU##	Stack	IAP	I/O	Timer	ADC	LCD	RTC	Touch Key	Interface	Package
BH67F5235	8MHz	2.2V~ 5.5V	8MHz or 32kHz	3K×16	192×8	32×16#	—	4	—	5	10-bit CTM×1	24-bit ×2	16×4	—	2	—	24/28SSOP 32QFN
BH67F5245	4MHz 8MHz 12MHz	2.2V~ 5.5V	4/8/12MHz or 32kHz	4K×16	256×8	32×8	—	6	—	21	10-bit CTM×1	24-bit ×4	17×4	—	4	UART×1	24/28SSOP
BH67F5250	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	512×8	128×8	16-bit	8	√	46	10-bit PTM×3 16-bit STM×1	24-bit ×16	28×4 26×6 24×8	√	—	SPI/I ² C/UART×1 SPI×1	64LQFP
BH67F5260	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1024×8	256×8	16-bit	8	√	46	10-bit PTM×3 16-bit STM×1	24-bit ×16	42×4 40×6 38×8	√	—	SPI/I ² C/UART×1 SPI×1	64/80LQFP
BH67F5270	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	2048×8	512×8	16-bit	16	√	46	10-bit PTM×3 16-bit STM×1	24-bit ×16	42×4 40×6 38×8	√	—	SPI/I ² C/UART×1 SPI×1	64/80LQFP

Note: # Emulated EEPROM.
MDU: Multiplier Divider Unit.

Enhanced 24-Bit A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	LCD	ENOB	RTC	CRC	Comparators	Interface	Package
BH67F5362	8MHz 12MHz 16MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	2048×8	1024×8	16	√	45	10-bit PTM×5 16-bit PTM×2 16-bit STM×3	12-bit×14 24-bit×4	36×4 34×6 32×8	19.4 @5V	√	√	2	SPI/I ² C×1 SPI×1 UART×2	64LQFP

24-Bit A/D Peripheral

Enhanced 24-Bit A/D Peripheral

Part No.	Internal Clock	VDD	ADC	ENOB	Data Rate	PGA	Interface	Package
BH45B1225	4.91MHz	2.4V~5.5V	24-bit×4	19.4@5V	5Hz~1.6kHz	1~128	I ² C×1	8SOP, 16NSOP

Health Care Flash MCU

Ear Thermometer Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	LCD	OPA	Interface	Package
BH67F2742	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×16	256×8	32×8	6	—	21	10-bit CTM×1	24-bit ×8	17×4 15×6	1	SPI/I ² C/UART×1	28SSOP 32QFN
BH67F2752	8MHz	2.2V~ 5.5V	8MHz or 32kHz	8K×16	384×8	128×8	6	—	17	10-bit CTM×2	24-bit ×8	32×4 30×6	2	SPI×1 UART×1	48/64LQFP
BH67F2762	4MHz 8MHz 12MHz	2.2V~ 5.5V	4/8/12MHz or 32kHz	16K×16	1024×8	256×8	8	√	38	10-bit CTM×2 16-bit PTM×1	24-bit ×8	39×4 37×6	2	SPI/I ² C/UART×1	48/64LQFP
HT67F5652	4.91MHz 9.83MHz 14.74MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	8K×16	512×8	128×8	8	√	32	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	24-bit ×8	40×4	1	SPI/I ² C×1 UART×1	64/80LQFP

Glucose Meter Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	MDU [#]	Stack	IAP	I/O	Timer	ADC	LCD	RTC	OPA	DAC	Audio DAC	Inter- face	Package
HT45F67	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	512×8	—	—	12	√	59	10-bit CTM×2 16-bit STM×1 10-bit ETM×1	12-bit ×8	32×4 30×6	√	2	10-bit ×1	16-bit ×1	SPI/I ² C×1 SPIA×1 UART×1	64/80 LQFP
BH45F68	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	1024×8	64×8	—	12	√	57	10-bit CTM×2 16-bit STM×1	12-bit ×10	32×4 30×6 28×8	√	2	12-bit ×1	—	SPI/I ² C/ UART×1	64/80 LQFP
BH66F2470	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	512×8	64×8	16-bit	8	√	39	10-bit PTM×3 16-bit STM×1	12-bit ×4	—	√	1	10-bit ×1	—	SPI/I ² C×1 SPIA×1 UART×2	48LQFP
BH67F2470	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	768×8	64×8	16-bit	8	√	34	10-bit PTM×3 16-bit STM×1	12-bit ×4	48×4 46×6 44×8	√	1	10-bit ×1	—	SPI/I ² C×1 SPIA×1 UART×2	64/80 LQFP
BH67F2472	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	2048×8	2048×8	—	16	√	58	10-bit PTM×2 16-bit STM×1 10-bit ATM×1	12-bit ×10	36×4 34×6 32×8	√	2	12-bit ×1	—	SPI/I ² C/ UART×2 SPI×1	64/80 LQFP
BH67F2480	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	48K×16	1024×8	64×8	16-bit	12	√	46	10-bit PTM×3 16-bit STM×1	12-bit ×6	48×4 46×6 44×8	√	2	12-bit ×1	—	SPI/I ² C×1 SPIA×1 UART×2	64/80 LQFP

Note: # MDU: Multiplier Divider Unit.

AC Impedance and Electrochemical Measurement Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	MDU [#]	Stack	IAP	I/O	Timer	ADC	LCD	RTC	OPA	DAC	Phase Detect	Inter- face	Package
BH67F2485	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	48K×16	4096×8	128×8	16-bit	12	√	44	10-bit PTM×3 16-bit STM×1	24-bit ×6	36×4 34×6 32×8	√	4	12-bit ×2	√	SPI/I ² C×1 SPIA×1 UART×2	64/80LQFP
BH66F2663	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1024×8	256×8	16-bit	8	√	35	10-bit PTM×3 16-bit STM×1	24-bit ×6	—	√	—	—	√	SPI/I ² C×1 SPIA×1 UART×1	48/64LQFP

Note: # MDU: Multiplier Divider Unit.

Body Fat Measurement Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	MDU [#]	Stack	IAP	I/O	Timer	ADC	LCD	RTC	Electrode	Inter- face	Package
BH66F2632	8MHz	2.2V~ 5.5V	8MHz or 32kHz	3K×16	256×8	32×8	—	6	—	9	10-bit CTM×1	24-bit ×2	—	—	4	SPI/I ² C/ UART×1	24QFN
BH66F2650	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	64×8	16-bit	8	√	28	10-bit PTM×3 16-bit STM×1	24-bit ×4	—	√	8	SPI/I ² C×1 UART×1	48LQFP
BH66F2652	8MHz	2.2V~ 5.5V	8MHz or 32kHz	8K×16	384×8	32×8	—	8	—	17	10-bit CTM×1	24-bit ×4	—	—	4	SPI×1 UART×1	32QFN
BH66F2652-2										14							28SSOP
BH66F2660	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1024×8	256×8	16-bit	8	√	28	10-bit PTM×3 16-bit STM×1	24-bit ×4	—	√	8	SPI/I ² C×1 UART×1	48LQFP
BH66F2662	8MHz	2.2V~ 5.5V	8MHz or 32kHz	16K×16	512×8	64×8	—	8	—	17	10-bit CTM×1 10-bit STM×1	24-bit ×4	—	—	4	SPI×1 UART×1	32QFN
BH66F2662-2										14							28SSOP
BH67F2662	8MHz	2.2V~ 5.5V	8MHz or 32kHz	16K×16	512×8	64×8	—	8	—	12	10-bit CTM×1 10-bit STM×1	24-bit ×4	16×4 14×6	—	4	SPI×1 UART×1	48LQFP

Note: # MDU: Multiplier Divider Unit.

BLE Beacon Body Fat Measurement Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Frequency	Data Rate	Output Power	Package
BH66F71652	8MHz	2.2V~ 3.6V	8MHz or 32kHz	8K×16	384×8	32×8	8	17	10-bit CTM×1	24-bit ×4	2402/2426/2480 MHz	1Mbps	-10~+8 dBm	46QFN
BH66F71662				16K×16	512×8	64×8			10-bit CTM×1 10-bit STM×1					

Health Care Flash MCU
R-Type Blood Pressure Meter Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	MDU*	Stack	IAP	I/O	Timer	ADC	LCD	RTC	PGA	Const. Current	Audio PWM	Interface	Package
BH66F2232	4MHz 8MHz 12MHz	2.2V~5.5V	4MHz 8MHz 12MHz or 32kHz	2K×16	128×8	32×8	—	4	√	4	10-bit PTM×1	12-bit ×6	—	—	3	1	—	SPI/I ² C×1 UART×1	16NSOP 16QFN
BH66F2260	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	512×8	64×8	16-bit	8	√	35	10-bit PTM×3 16-bit STM×1	12-bit ×4	—	√	3	1	—	SPI/I ² C×1 SPIA×1 UART×1	48LQFP
BH67F2260	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	512×8	64×8	16-bit	8	√	32	10-bit PTM×3 16-bit STM×1	12-bit ×4	32×4 30×6 28×8	√	3	1	—	SPI/I ² C×1 SPIA×1 UART×1	64LQFP
BH67F2261	8MHz	2.2V~5.5V	8MHz or 32kHz	12K×16	512×8	32×8	—	8	√	32	10-bit PTM×1 16-bit STM×1	12-bit ×4	31×4 29×6	√	3	1	—	—	64LQFP
BH67F2262	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	512×8	64×8	16-bit	8	√	52	10-bit PTM×3 16-bit STM×1	12-bit ×4	45×4 43×6 41×8	√	3	1	√	SPI/I ² C/ UART×1, SPIA×1	64/80LQFP
BH67F2265	8MHz	2.2V~5.5V	8MHz or 32kHz	16K×16	512×8	1024×8	—	12	√	30	10-bit CTM×2 16-bit STM×1	12-bit ×4	32×4 30×6	√	3	1	—	SPI/I ² C×1 UART×1	64LQFP
BH67F2270	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	1024×8	64×8	16-bit	8	√	43	10-bit PTM×3 16-bit STM×1	12-bit ×4	46×4 44×6 42×8	√	3	1	—	SPI/I ² C×1 SPIA×1 UART×2	64/80LQFP

Note: # MDU: Multiplier Divider Unit.
The BH67F2262 device uses the PWM function together with the external SPI flash to implement the voice playing function.

Measurement Flash MCU
Ultrasonic Distance Measurement Flash MCU

Part No.	VDD	VIN	System Clock	Program Memory	Data Memory	Stack	IAP	I/O	Timer	ADC	OPA	SCF	AEP	Interface	Package
HT45F39	—	8V~16V	16MHz	2K×16	160×8	4	√	11	10-bit CTM×2	8-bit×8	2	1	1	BCU	16NSOP
HT45F391	4.5V~5.5V	—													

Note: 1. The HT45F39 device power, VDD, is internally regulated by an integrated shunt regulator.
2. An external resistor should be serially connected between the external power supply VIN and MCU VDD pins.

Proximity Sensing Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Touch Key	IR Driver & Receiver	Battery Voltage Detector	DC Motor Driver	Interface	Package	
BS45F3232	8MHz	—	2.2V~5.5V	8MHz or 32kHz	2K×14	64×8	32×8	4	11	10-bit STM×1	12-bit ×8	—	√	—	—	SPI/I ² C/ UART×1	8SOP 16NSOP 16QFN	
BS45F3235																	24SSOP	
HT45F3230	8MHz	3V~12V	2.2V~5.5V	8MHz	2K×16	128×8	64×8	8	16	10-bit PTM×1 10-bit CTM×1	12-bit ×8	—	√	√	√	—	16NSOP 24SSOP	
BS45F3340*	8MHz	—	1.8V~5.5V	8MHz or 32kHz	4K×16	192×8	32×8	6	20	10-bit CTM×1 10-bit STM×1	12-bit ×8	4	√	—	—	UART×1	16NSOP 16QFN 24SSOP	
BS45F3345*																	V _M =7.5V	16NSOP 24SSOP
BS45F3346*																	V _M =15V	28SSOP

* Under development, available in 4Q, 2020.

R to F MCU
Ultra-Low Voltage R to F Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	LCD	R to F	LVD	Package
BH67F2132	1.1V~2.2V	32/64/128kHz	2K×16	128×8	128×8	4	24	10-bit CTM×1	21×3 22×2	2CH	1.15V	48LQFP

R to F Mask MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Stack	I/O	Timer	LCD	R to F	BZ/BZ	Package
HT47C07L	1.2V~2.2V	32kHz~128kHz	1K×16	48×8	4	18	16-bit×1	20×2, 19×3	1CH	1	48LQFP
HT47C08L	1.2V~2.2V	32kHz~128kHz	2K×16	96×8	4	21	16-bit×1	21×3	2CH	1	48LQFP

Note: R to F: Resistance to Frequency.
These devices are only available in mask versions.

Security & Safety MCU
Shock Detector Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	DAC	Comparator	PGA/Gain	Package
HT45F56	8MHz	2.2V~5.5V	8MHz or 32kHz	1K×14	32×8	32×8	2	6	10-bit CTM×1	6-bit×1	1	1~1000	8SOP

PIR & Microwave Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	OPA	Interface	Package
BA45F6622	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×14 [#]	4	6	10-bit STM×1	10-bit×2	2	—	16NSOP/QFN
BA45F6630	2.2V~5.5V	2/4/8MHz or 32kHz	2K×16	256×8	32×8	6	15	10-bit STM×2	12-bit×4	2	SPI/I ² C/UART×1	24SSOP/QFN

Note: # Emulated EEPROM.

Smoke Detector Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Audio DAC	AFE	IR Driver	Temp. Sensor	Interface	Package
BA45F5220	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×14 [#]	4	—	4	10-bit PTM×1	10-bit×3	—	√	2	—	—	8/10SOP
BA45F5240	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	64×8	8	—	13	10-bit PTM×1	12-bit×4	—	√	2	—	SPI/I ² C/UART×1	16NSOP, 20SSOP
BA45F5240-2								11	10-bit STM×1	16NSOP						
BA45F5250	2.2V~5.5V	2/4/8MHz or 32kHz	8K×16	1024×8	128×8	8	√	22	10-bit PTM×1 10-bit STM×2	12-bit×8	16-bit×1	√	2	—	SPI/I ² C×1 UART×1	16NSOP 20/24/28SSOP
BA45F5260	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	2048×8	256×8	8	√	26	10-bit PTM×3 10-bit STM×2	12-bit×12	16-bit×1	√	2	√	SPI/I ² C×1 UART×2	24/28SSOP 48LQFP

Note: # Emulated EEPROM.

9V Battery Smoke Detector Flash MCU

Part No.	VCC (HV)	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	ADC	Timer	Audio DAC	AFE	IR Driver	LDO	Buzzer Driver	Interface	Package
BA45F5420	4.3V~12V	8MHz or 32kHz	1K×14	64×8	32×14 [#]	4	—	4	10-bit×3	10-bit PTM×1	—	√	2	√	√	—	16NSOP
BA45F5440	4.3V~12V	2/4/8MHz or 32kHz	4K×16	256×8	64×8	8	—	9	12-bit×4	10-bit PTM×1 10-bit STM×1	—	√	2	√	√	SPI/I ² C/ UART×1	20SOP 20SSOP
BA45F5450	4.3V~12V	2/4/8MHz or 32kHz	8K×16	1024×8	128×8	8	√	17	12-bit×8	10-bit PTM×1 10-bit STM×2	16-bit×1	√	2	√	√	SPI/I ² C×1 UART×1	20/24/28SOP

Note: # Emulated EEPROM.

Smoke Detector Flash MCU with Power Line Transceiver

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	AFE	IR Driver	Power Line Transceiver	Temp. Sensor	Interface	Package
BA45F5542	2/4/8MHz	5.3V~42V	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	64×8	8	—	9	10-bit PTM×1	12-bit×4	√	2	√	—	SPI/I ² C/ UART×1	16NSOP
BA45F5542-2										7	10-bit STM×1	12-bit×3						16NSOP
BA45F5552	2/4/8MHz	5.3V~42V	2.2V~5.5V	2/4/8MHz or 32kHz	8K×16	1024×8	128×8	8	√	13	10-bit PTM×1 10-bit STM×2	12-bit×8	√	2	√	—	SPI/I ² C×1 UART×1	16NSOP 20/24SOP
BA45F5562	2/4/8MHz	5.3V~42V	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	2048×8	256×8	8	√	23	10-bit PTM×3 10-bit STM×2	12-bit×12	√	2	√	√	SPI/I ² C×1 UART×2	24/28SOP 28SSOP 48LQFP

Smoke Detector Flash MCU with Calendar

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Audio DAC	AFE	IR Driver	Temp. Sensor	Interface	Package
BA45F5740	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	64×8	8	—	13	10-bit PTM×1	12-bit×4	—	√	2	—	SPI/I ² C/ UART×1	16NSOP
BA45F5740-2								6	10-bit STM×1	12-bit×2						16NSOP
BA45F5750	2.2V~5.5V	2/4/8MHz or 32kHz	8K×16	1024×8	128×8	8	√	22	10-bit PTM×1 10-bit STM×2	12-bit×8	16-bit×1	√	2	—	SPI/I ² C×1 UART×1	16NSOP 20/24SOP 48LQFP
BA45F5760	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	2048×8	256×8	8	√	26	10-bit PTM×3 10-bit STM×2	12-bit×12	16-bit×1	√	2	√	SPI/I ² C×1 UART×2	24/28SOP 48LQFP

Security & Safety MCU
Sub-1GHz RF Transceiver Smoke Detector Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	AFE	IR Driver	Band	Data Rate	Max. Output Power	Rx Current Consumption	Temp. Sensor	Package
BA45F5640	2.2V~3.6V	2/4/8MHz or 32kHz	4K×16	256×8	64×8	8	—	13	10-bit PTM×1 10-bit STM×1	12-bit ×4	√	2	315/433/ 470/868/ 915MHz	2~250 Kbps	13dBm	4.2mA@433MHz 5.5mA@868MHz	—	46QFN
BA45F5650			8K×16	1024×8	128×8		√	17	10-bit PTM×1 10-bit STM×2	12-bit ×5							—	46QFN
BA45F5660			16K×16	2048×8	256×8		√	22	10-bit PTM×3 10-bit STM×2	12-bit ×8							√	48LQFP-EP

Fire Protection Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	LVR/LVD	Interface	Package
BA45F5241	2/4/8MHz	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	64×8	8	18	10-bit PTM×2 10-bit CTM×2	10-bit×4	√	UART×1	16NSOP 20SSOP

Fire Protection Flash MCU with Power Line Transceiver

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Power Line Transceiver	LDO	Interface	Package
BA45F5541	2/4/8MHz	5.3V~42V	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	64×8	8	13	10-bit PTM×2 10-bit CTM×2	10-bit ×4	√	√	UART×1	16NSOP 20SSOP

CO/GAS Detector Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	AFE	LCD Driver	Temp. Sensor	LVD	Interface	Package
BA45F0096	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×8	2	—	14	10-bit PTM×1 10-bit STM×1	12-bit ×4	—	—	—	—	—	16NSOP
BA45F6720	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×8	4	—	4	10-bit PTM×1	12-bit ×4	√	—	√	—	—	8/10SOP
BA45F6730	2.2V~5.5V	2/4/8MHz or 32kHz	2K×16	128×8	32×8	6	—	14	10-bit PTM×1	12-bit ×5	√	—	√	SPI/I ² C/UART×1	10SOP 16NSOP 20SSOP	
BA45F6740	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	128×8	8	√	22	10-bit PTM×1 10-bit STM×1	12-bit ×8	√	—	√	√	SPI/I ² C/UART×1	16NSOP 20/24/28SSOP
BA45F6746	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	128×8	8	√	31	10-bit PTM×1 10-bit STM×1	12-bit ×8	√	12SEG ×4COM	√	√	SPI/I ² C/UART×1	28SSOP 32QFN 48LQFP

CO/GAS Detector Flash MCU with Calendar

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	AFE	LCD Driver	Temp. Sensor	LVD	Interface	Package
BA45F6742	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	128×8	8	√	22	10-bit PTM×1 10-bit STM×1	12-bit ×8	√	—	√	√	SPI/I ² C/UART×1	28SSOP 48LQFP
BA45F6748	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	128×8	8	√	31	10-bit PTM×1 10-bit STM×1	12-bit ×8	√	12SEG ×4COM	√	√	SPI/I ² C/UART×1	48LQFP
BA45F6753	2.2V~5.5V	8/12/16MHz or 32kHz	8K×16	512×8	128×8	8	√	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×8	—	—	—	√	SPI/I ² C×1 UART×1	28SSOP 48LQFP

Security & Safety IC
PIR Controller

Part No.	VDD	Standby Current	ZC Off/On for Override	Flash on Mode Auto-change	Comparator Window	Effective Trigger Width	CDS Debounce Time	Triac Drive	Relay Drive	LED	Buzzer	LVD	Package
HT7610A	5V~12V	100μA	2 Times	Flash	1/16 (V _{DD} -V _{EE})	>24ms	5s	—	√	—	—	—	16DIP
HT7612B	2.7V~5.5V	19μA	2 Times	Flash	V _{ref} ×(1/2±1/6)	>24ms	<3s	√	√	√	√	√	16NSOP

Note: Operating and standby current values are typical values.

Touch Flash MCU
Touch I/O Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	Touch Key	High Current LED Driver	LVR	Interface	Package
BS83A02A-4	8MHz	2.2V~5.5V	8MHz	1K×16	96×8	—	4	4	8-bit×1	2	—	2.10V	—	6DFN, SOT23-6 8SOP
BS83A04A-3	8MHz	2.7V~5.5V	8MHz	1K×16	96×8	—	4	8	8-bit×1	4	—	2.55V	—	8SOP, 10MSOP
BS83A04A-4		2.2V~5.5V										2.10V		
BS83B04A-4	8MHz	2.2V~5.5V	8MHz	2K×16	128×8	32×8	4	8	8-bit×1	4	—	2.10V	I ² C×1	8SOP 10MSOP/DFN
BS83B08A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~ 16MHz	2K×16	160×8	64×8	4	14	8-bit×1	8	—	2.55V	SPI/I ² C×1	16NSOP/SSOP
BS83B08A-4		2.2V~5.5V										2.10V		
BS83B12A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~ 16MHz	2K×16	288×8	64×8	4	18	8-bit×1	12	18	2.55V	SPI/I ² C×1	20SOP/SSOP
BS83B12A-4		2.2V~5.5V										2.10V		
BS83B16A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~ 16MHz	2K×16	288×8	64×8	4	22	8-bit×1	16	22	2.55V	SPI/I ² C×1	24SOP/SSOP
BS83B16A-4		2.2V~5.5V										2.10V		

Note: "4" V_{DD}: 2.2V~5.5V. Internal clock is 8/12/16MHz. For V_{DD}<3V internal clock is 8/12MHz.

Enhanced Touch I/O Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	Touch Key	High Current LED Driver	RTC	LVR	Interface	Package
BS83A01C	8MHz	1.8V~5.5V	8MHz	512×14	32×8	—	2	4	—	1	—	—	1.7V	—	6DFN, 8SOP SOT23-6
BS83A02C	8MHz	2.2V~5.5V	8MHz	1K×16	96×8	—	4	4	8-bit×1	2	4	—	2.10V 2.55V 3.15V 3.80V	—	6DFN, 8SOP SOT23-6
BS83A04C	8MHz	1.8V~5.5V	8MHz	1K×16	128×8	32×16 [#]	4	8	10-bit CTM×1	4	8	—	1.7V	I ² C×1	8SOP, 10DFN 10MSOP
BS83B04C	2MHz 4MHz 8MHz	1.8V~5.5V	2MHz~ 8MHz	2K×16	128×8	32×8	4	8	10-bit CTM×1	4	8	—	1.7V 1.9V 2.55V 3.15V 3.80V	I ² C×1	8SOP 10MSOP/DFN
BS83B08C	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~ 16MHz	2K×16	288×8	64×8	6	14	10-bit PTM×1	8	14	—	2.10V 2.55V 3.15V 3.80V	SPI/I ² C×1	16NSOP/SSOP 16QFN
BS83B12C	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~ 16MHz	2K×16	512×8	64×8	6	18	10-bit PTM×1	12	18	—	2.10V 2.55V 3.15V 3.80V	SPI/I ² C×1	20SOP/SSOP 20QFN
BS83B16C	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~ 16MHz	2K×16	512×8	64×8	6	22	10-bit PTM×1	16	22	—	2.10V 2.55V 3.15V 3.80V	SPI/I ² C×1	24SOP/SSOP 24QFN
BS83B24C	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~ 16MHz	3K×16	512×8	128×8	6	26	10-bit PTM×1	24	26	√	2.10V 2.55V 3.15V 3.80V	SPI/I ² C×1 UARTx1	28SOP/SSOP
BS83C40C	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~ 16MHz	4K×16	768×8	128×8	6	42	10-bit CTM×1 10-bit PTM×1	40	42	√	2.10V 2.55V 3.15V 3.80V	SPI/I ² C×1 UARTx1	44LQFP

Note: # Emulated EEPROM.

V_{DD}: 2.2V~5.5V. Internal clock is 8/12/16MHz. For V_{DD} < 3V internal clock is 8/12MHz.

Touch Flash MCU																	
Touch A/D Flash MCU																	
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Touch Key	High Current LED Driver	LVR	Interface	Package		
BS84B06A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	3K×16	288×8	64×8	6	18	8-bit×1	12-bit ×4	6	18	2.55V	SPI/I ² C×1	16NSOP, 20SOP		
BS84B08A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	3K×16	288×8	64×8	6	22	8-bit×1	12-bit ×8	8	22	2.55V	SPI/I ² C×1	16NSOP 20SOP/NSOP/SSOP 24SOP		
BS84C12A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	4K×16	384×8	128×8	6	26	8-bit×1	12-bit ×8	12	26	2.55V	SPI/I ² C×1	20/24/28SOP/SSOP		
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	RTC	Touch Key	High Current LED Driver	LVR/LVD	Interface	Package
BS66F340	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	128×8	8	√	26	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	√	12	26	√	SPI/I ² C×1 UART×1	28SSOP
BS66F350	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	128×8	8	√	40	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	√	20	40	√	SPI/I ² C×1 UART×1	44/48LQFP
BS66F360	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	16K×16	1024×8	128×8	12	√	46	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	√	28	46	√	SPI/I ² C×1 UART×1	44/48LQFP
BS66F370	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	32K×16	1536×8	128×8	16	√	60	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	√	36	60	√	SPI/I ² C×1 UART×1	44/48/64 LQFP
Enhanced Touch A/D Flash MCU																	
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Touch Key	High Current LED Driver	LVR	Interface	Package		
BS84B04C*	8MHz 12MHz 16MHz	1.8V~ 5.5V	8MHz~ 16MHz	2K×16	256×8	32×8	4	14	10-bit CTM×4	12-bit ×8	4	14	1.70V 1.90V 2.55V 3.15V 3.80V	I ² C×1	8SOP 10MSOP/DFN 16NSOP		
BS84B08C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	3K×16	288×8	64×8	6	22	10-bit PTM×1	12-bit ×8	8	22	2.10V 2.55V 3.15V 3.80V	SPI/I ² C×1	16NSOP/SSOP 20/24SOP/SSOP 20NSOP		
BS84C12C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	128×8	6	26	10-bit CTM×1 10-bit PTM×1	12-bit ×8	12	26	2.10V 2.55V 3.15V 3.80V	SPI/I ² C×1	20/24/28 SOP/SSOP		
* Under development, available in 4Q, 2020.																	
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Touch Key	RTC	High Current LED Driver	LVR/LVD	Interface	Package
BS66F340C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	128×8	8	√	26	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	12	√	26	√	SPI/I ² C×1 UART×1	28SSOP
BS66F350C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	128×8	8	√	40	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	20	√	40	√	SPI/I ² C×1 UART×1	44/48LQFP
BS66F360C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	16K×16	1024×8	128×8	12	√	46	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	28	√	46	√	SPI/I ² C×1 UART×1	44/48LQFP
Touch I/O Flash MCU with LED / LCD Driver																	
Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	LCD	Touch Key	RTC	High Current LED Driver	LVR	Interface	Package	
BS82B12A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	2K×16	384×8	64×8	6	22	10-bit CTM×1 10-bit PTM×1	16×4	12	—	22	2.55V	I ² C×1 UART×1	20/24SOP 24QFN	
BS82C16A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	64×8	6	26	10-bit CTM×1 10-bit PTM×1	20×4	16	√	26	2.55V	I ² C×1 UART×1	24/28SOP 32QFN	
BS82D20A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	64×8	8	26	10-bit CTM×1 10-bit PTM×1	20×4	20	√	26	2.55V	I ² C×1 UART×1	28SOP 28SSOP	

Touch Flash MCU
Touch A/D Flash MCU with LED / LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	LCD	Touch Key	High Current LED Driver	RTC	LVR	Interface	Package
BS86B12A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	2K×16	384×8	64×8	6	22	10-bit CTM×1 10-bit PTM×2	12-bit ×8	16×4	12	22	—	2.55V	SPI/I ² C×1 UART×1	20/24SOP
BS86C16A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	64×8	6	26	10-bit CTM×1 10-bit PTM×2	12-bit ×8	20×4	16	26	√	2.55V	SPI/I ² C×1 UART×1	24/28SOP
BS86D20A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	64×8	8	26	10-bit CTM×1 10-bit PTM×2	12-bit ×8	20×4	20	26	√	2.55V	SPI/I ² C×1 UART×1	24/28SOP

Enhanced Touch A/D Flash MCU with LED Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Touch Key	High Current LED Driver	RTC	LVR/LVD	Interface	Package
BS86C08C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	4K×16	384×8	32×8	8	26	10-bit CTM×1 10-bit PTM×1	12-bit ×8	8	26	—	√	I ² C×1 UART×1	24/28SOP 24/28SSOP
BS86D12C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	512×8	64×8	8	26	10-bit CTM×1 10-bit PTM×1	12-bit ×8	12	26	—	√	I ² C×1 UART×1	24/28SOP 24/28SSOP
BS86D20C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	64×8	8	26	10-bit CTM×1 10-bit PTM×2	12-bit ×8	20	26	√	√	I ² C×1 SPI×1 UART×1	24/28SOP
BS86E16C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	16K×16	768×8	64×8	8	42	10-bit CTM×1 10-bit PTM×2	12-bit ×8	16	42	√	√	I ² C×1 UART×2	28SOP 28SSOP 44LQFP

Touch A/D Flash MCU with OPA / Comparator

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Touch Key	LCD	High Current LED Driver	OPA/Comparator	RTC	LVR	Interface	Package
BS87B12A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	3K×16	384×8	64×8	6	22	10-bit CTM×1 10-bit PTM×1	12-bit ×8	12	16×4	22	√	—	2.55V	SPI/I ² C×1 UART×1	20NSOP 24SOP
BS87C16A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	64×8	6	30	10-bit CTM×1 10-bit PTM×2	12-bit ×8	16	20×4	30	√	√	2.55V	SPI/I ² C×1 UART×1	24/28SOP 44LQFP
BS87D20A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	64×8	8	42	10-bit CTM×2 10-bit PTM×2	12-bit ×8	20	36×4	42	√	√	2.55V	SPI/I ² C×1 UART×1	28SOP 44LQFP

Touch A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Touch Key	LCD	RTC	LVR/LVD	Interface	Package
BS67F340	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	128×8	8	√	31	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	16	24×4	√	√	SPI/I ² C×1 UART×1	48LQFP
BS67F350	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	128×8	8	√	39	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	20	32×4	√	√	SPI/I ² C×1 UART×1	48/64LQFP
BS67F360	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	16K×16	1024×8	128×8	12	√	43	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	28	40×4	√	√	SPI/I ² C×1 UART×1	48/64LQFP
BS67F370	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	32K×16	1536×8	128×8	16	√	59	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	36	48×4	√	√	SPI/I ² C×1 UART×1	48/64/80 LQFP

Enhanced Touch A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Touch Key	LCD	RTC	LVR/LVD	Interface	Package
BS67F350C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	128×8	8	√	43	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	12-bit ×8	24	32×4	√	√	SPI/I ² C×1 UART×1	48/64LQFP

Touch Flash MCU

Touch Voice A/D Flash MCU with Power Amplifier

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	SCOM/SSEG	ADC	RTC	Audio DAC	Power Amp.	Touch Key	Interface	Package
BS66FV340	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	4K×16	512×8	128×8	8	√	39	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	SCOM×6 SSEG×33	12-bit×8	√	16-bit×1	1.5W	20	SPI/I ² C×1 SPIA×1 UART×1	44/48LQFP
BS66FV350	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	8K×16	768×8	128×8	8	√	39	10-bit CTM×2 16-bit STM×1 10-bit PTM×2	SCOM×6 SSEG×33	12-bit×8	√	16-bit×1	1.5W	24	SPI/I ² C×1 SPIA×1 UART×1	44/48LQFP
BS66FV360	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	16K×16	1024×8	256×8	12	√	39	10-bit CTM×2 16-bit STM×1 10-bit PTM×2	SCOM×6 SSEG×33	12-bit×8	√	16-bit×1	1.5W	28	SPI/I ² C×1 SPIA×1 UART×1	44/48LQFP

Wearable Peripheral Integrated Flash MCU with Touch

Part No.	Internal Clock	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Touch Key	LDO	Linear Charger CV	Linear Charger CC	DC Motor Driver	Interface	Package
BS45F5830	4MHz 8MHz 12MHz	2.2V~5.5V	2K×16	128×8	32×8	4	16	10-bit CTM×1 10-bit STM×1	12-bit×6	4	3.3V	4.20V	40mA~400mA	150mA	I ² C×1	24QFN
BS45F5831											3.3V	4.35V				
BS45F5832											3.0V	4.20V				
BS45F5833											3.0V	4.35V				

Ultrasonic Atomiser Flash MCU with Touch

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Touch Key	Atomiser Processor	Interface	Package
BS45F3832	12MHz	2.7V~5.5V	12MHz or 32kHz	2K×16	64×8	32×8	4	8	10-bit CTM×1 10-bit PTM×1	12-bit×2	2	√	—	8/10SOP
BS45F3833	4MHz 8MHz 12MHz	2.2V~5.5V	4/8/12MHz or 32kHz	2K×16	128×8	32×8	4	18	10-bit CTM×3 10-bit STM×1 10-bit PTM×1	12-bit×4	4	√	—	16NSOP 20NSOP
BS45F3843	8MHz 12MHz 14MHz	2.2V~5.5V	8MHz or 32kHz	4K×16	256×8	32×8	8	26	10-bit CTM×3 10-bit STM×1 10-bit PTM×1	12-bit×8	8	√	UART×1	16NSOP 24SSOP 28SSOP

Ultra-Low Power Touch Flash MCU

Ultra-Low Power Touch I/O Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	Touch Key	Interface	Package
BS83A02L	8MHz	1.8V~5.5V	8MHz	1K×14	64×8	—	2	4	8-bit×1	2	—	6DFN, 8SOP SOT23-6
BS83B04L	2MHz 4MHz 8MHz	1.8V~5.5V	8MHz	2K×16	128×8	32×8	4	8	10-bit CTM×1	4	I ² C×1	8SOP 10DFN/MSOP

Note: The standby current is less than 150nA at 3.0V (1 Key).

Ultra-Low Power Flash MCU with LCD Driver & Touch Key

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Touch Key	LCD	RTC	Interface	Package
BS67F2563	4/8/12MHz	1.8V~5.5V	400kHz~12MHz or 32kHz	16K×16	2304×8	128×8	16	√	31	10-bit CTM×2 16-bit STM×1	12-bit×7	20	32×4	√	SPI×1 SPI/I ² C/UART×1	64LQFP

Note: The power consumption of the RTC on standby current is less than 200nA at 3V.

High Supply Voltage Touch Flash MCU

9V Touch A/D Flash MCU with HVIO

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Touch Key	RTC	HVIO	LVR/LVD	Interface	Package
BS86DH12C	8MHz 12MHz 16MHz	7V~10V	5.0V	8MHz~16MHz	8K×16	512×8	64×8	8	22	10-bit CTM×2 10-bit PTM×1	12-bit×8	12	√	6	√	I ² C×1 UART×1	20/28SOP 44LQFP

Touch MCU & Peripheral

Touch Key IC
Touch Key

Part No.	Touch Key	VDD	Standby Current at 3V		Key Output Type	Package	Serial Interface
			One-key Wake-up	Any-key Wake-up			
BS812A-1	2-Key	2.2V~5.5V	—	3.0μA	Active Low	SOT23-6	—
BS813A-1	3-Key	2.2V~5.5V	—	4.5μA	Active Low	8SOP	—
BS814A-1	4-Key	2.2V~5.5V	—	5.0μA	Active Low	10MSOP	—
BS814A-2	4-Key	2.2V~5.5V	—	5.0μA	—	8SOP	√
BS816A-1	6-Key	2.2V~5.5V	—	12μA/6.0μA*	Active Low/Active High*	16NSOP	—
BS818A-2	8-Key	2.2V~5.5V	—	12μA/6.0μA*	Binary*	16NSOP	√
BS8112A-3	12-Key	2.2V~5.5V	6.0μA/3.0μA**	13μA/6.5μA**	I ² C	16NSOP	√
BS8116A-3	16-Key	2.2V~5.5V	7.0μA/3.5μA**	17μA/9.0μA**	I ² C	20SSOP	√

Note: 1. The BS81x series devices have enhanced noise rejection performance.
 2. * pin selected option.
 3. ** option by I²C communication.

Enhanced Touch Key

Part No.	Touch Key	VDD	Standby Current at 3V		Key Output Type	Package	Serial Interface
			One-key Wake-up	Any-key Wake-up			
BS811C-1	1-Key	2.2V~5.5V	—	2.5μA	Active Low	SOT23-6	—
BS812C-1	2-Key	2.2V~5.5V	—	3.5μA	Active Low	SOT23-6	—
BS813C-1	3-Key	2.2V~5.5V	—	4.0μA	Active Low	8SOP	—
BS814C-1	4-Key	2.2V~5.5V	—	5.0μA	Active Low	10MSOP	—
BS814C-2	4-Key	2.2V~5.5V	—	5.0μA	—	8SOP	√
BS816C-1	6-Key	2.2V~5.5V	—	7.5μA/3.5μA*	Active Low/Active High*	16NSOP	—
BS818C-2	8-Key	2.2V~5.5V	—	8.5μA/3.5μA*	Binary*	16NSOP	√
BS818C-3	8-Key	2.2V~5.5V	3.5μA/2.5μA**	8.0μA/3.5μA**	I ² C	16NSOP	√
BS8112C-3	12-Key	2.2V~5.5V	4.0μA/2.5μA**	12.0μA/4.5μA**	I ² C	16NSOP, 20SSOP	√
BS8116C-3	16-Key	2.2V~5.5V	4.0μA/2.5μA**	16.0μA/5.5μA**	I ² C	20/24SSOP	√

Note: 1. The BS81x series devices have enhanced noise rejection performance.
 2. * pin selected option.
 3. ** option by I²C communication.

Cortex-M0+ 32-Bit Voice / Music MCU
Cortex-M0+ 32-Bit Music Synthesizer MCU

Part No.	Max. Freq.	VDD	Flash	Ext. Flash	SRAM	PDMA	Audio DAC	ADC	Timers ^{*1}	I ² S	RTC	USB ^{*2}	MIDI Engine ^{*3}	SB Coding	Echo	Interface	I/O	Package
HT32F0006	48MHz	2.0V~3.6V	128KB	SPI	16KB	6CH	16-bit x2	1MSPS 12-bit x16	BFTM x2 SCTM x4 GPTM x1	√	√	√	√	√	√	USART x1 UART x1 SPI x1 QSPI x1 I ² C x1 I ² S x1	52	48LQFP 64LQFP

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timers, GPTM: General-Purpose Timers.
 2. USB 2.0 Full Speed device.
 3. 32-CH Music Synthesis Engine.

Cortex-M0+ 32-Bit Music Synthesizer MCU with Data Flash ROM

Part No.	Max. Freq.	VDD	Flash	Data Flash ^{*7}	SRAM	PDMA	Audio DAC	ADC	Timers ^{*1}	I ² S	RTC	USB ^{*5}	MIDI Engine ^{*6}	SB Coding	Echo	Interface	I/O	Package
HT32F61355	48MHz	2.3V~3.6V	128KB	32Mbits	16KB	6CH	16-bit x2	1MSPS 12-bit x16	BFTM x2 SCTM x4 GPTM x1	√	√	√	√	√	√	USART x1 UART x1 SPI x1 QSPI x1 I ² C x1	43	48LQFP 64LQFP
HT32F61356				64Mbits														
HT32F61357				128Mbits														

Voice & Music Flash MCU
Voice Flash Peripheral MCU

Part No.	VDD	Voice ROM	Control Mode	PWM Mode	Speech	LVR	Voice Output	PWM Output Power	Support Sentence	Max Voice Capacity	Package
HT68FV022	2.3V~5.5V	16M-bit	One Wire Two Wire Direct	Normal Green	HT-ADPCM4 HT-uPCM8 HT-PCM12 HT-PCM16	√	PWM	0.5W into 5V, 8Ω	√	450s @ 8kHz Sample Rate	8SOP

Voice Flash MCU with Power Amplifier

Part No.	Internal Clock	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	RTC	LVR/ LVD	Audio DAC	Power Amp.	Interface	Package
HT66FV130	8MHz 12MHz 16MHz	2.2V~5.5V	2K x16	128 x8	32 x8	4	√	15	10-bit CTM x1 10-bit PTM x1	12-bit x4	—	√	16-bit x1	1.5W	SPIA x1	20/24SOP
HT66FV140	8MHz 12MHz 16MHz	2.2V~5.5V	4K x16	256 x8	64 x8	8	√	19	10-bit CTM x1 10-bit PTM x2	12-bit x8	√	√	16-bit x1	1.5W	SPI/I ² C x1 SPIA x1	24SOP/SSOP 28SOP
HT66FV150	8MHz 12MHz 16MHz	2.2V~5.5V	8K x16	512 x8	128 x8	8	√	27	10-bit CTM x2 10-bit PTM x2	12-bit x8	√	√	16-bit x1	1.5W	SPI/I ² C x1 SPIA x1 UART x1	28SOP 44LQFP
HT66FV160	8MHz 12MHz 16MHz	2.2V~5.5V	16K x16	1024 x8	256 x8	8	√	35	10-bit CTM x2 10-bit PTM x2 16-bit STM x1	12-bit x8	√	√	16-bit x1	1.5W	SPI/I ² C x1 SPIA x1 UART x1	44LQFP

Touch Voice A/D Flash MCU with Power Amplifier

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	SCOM/ SSEG	RTC	Audio DAC	Power Amp.	Touch Key	Interface	Package
BS66FV340	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	4K x16	512 x8	128 x8	8	√	39	10-bit CTM x1 16-bit STM x1 10-bit PTM x2	12-bit x8	SCOM x6 SSEG x33	√	16-bit x1	1.5W	20	SPI/I ² C x1 SPIA x1 UART x1	44/48 LQFP
BS66FV350	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	8K x16	768 x8	128 x8	8	√	39	10-bit CTM x2 16-bit STM x1 10-bit PTM x2	12-bit x8	SCOM x6 SSEG x33	√	16-bit x1	1.5W	24	SPI/I ² C x1 SPIA x1 UART x1	44/48 LQFP
BS66FV360	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	16K x16	1024 x8	256 x8	12	√	39	10-bit CTM x2 16-bit STM x1 10-bit PTM x2	12-bit x8	SCOM x6 SSEG x33	√	16-bit x1	1.5W	28	SPI/I ² C x1 SPIA x1 UART x1	44/48 LQFP

Voice Record / Playback Flash MCU
Voice Record / Playback Flash MCU with Power Amplifier

Part No.	Internal Clock	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	RTC	LVR/LVD	G.711 Voice Codec	16-bit PCM ADC	Audio DAC	Power Amp.	Interface	Package
HT66FV240	16MHz	2.2V~5.5V	4K×16	384×8	128×8	8	√	28	16-bit CTM×1 16-bit STM×1 16-bit PTM×1	12-bit ×8	√	√	√	√	16-bit ×1	1.5W	SPI/I ² C×1	48LQFP

Sound Effect Flash MCU
Waveform Generator Flash MCU

Part No.	VCC (HV)	VDD	Internal Clock	System Clock	Program Memory	Data Memory	Stack	I/O	Timer	Waveform Output	Package
HT45F2020	8V~16V	5.0V	8MHz	8MHz or 32kHz	1K×14	32×8	2	4	10-bit PTM×1	2	SOT23-6 8SOP
HT45F2022	—	2.2V~5.5V									

BLE
BLE Transparent Transmission

Part No.	VDD	Data EEPROM	Data Rate	Output Power	Sensitivity	Interface	Stamp Holes
BCM-7602-G01	2.2V~3.6V	8K×8	1Mbps	+3dBm	-90dBm	UART/SPI	8×2 (P=1.27mm)

BLE Beacon Transmitter

Part No.	VDD	Frequency	Beacon Packet Handler	Output Power	Oscillator	BQB 5.0	Interface	Package
BC7161	2.0V~3.6V	2402/2426/2480MHz	√	-10~+8dBm	32MHz	√	I ² C×1	8SOP-EP 10MSOP-EP

BLE Beacon 24-Bit A/D Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Frequency	Beacon Packet Handler	Output Power	Oscillator	Package
BH66F71252	2.2V~3.6V	8MHz or 32kHz	8K×16	256×8	32×8	8	23	10-bit CTM×1 16-bit PTM×1	24-bit ×4	2402/2426/2480 MHz	√	-10~+8 dBm	32MHz	46QFN

BLE Beacon Body Fat Measurement A/D Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Frequency	Beacon Packet Handler	Output Power	Oscillator	Package
BH66F71652	2.2V~3.6V	8MHz or 32kHz	8K×16	384×8	32×8	8	17	10-bit CTM×1	24-bit ×4	2402/2426/2480MHz	√	-10~+8 dBm	32MHz	46QFN
BH66F71662			16K×16	512×8	64×8			10-bit CTM×1 10-bit STM×1						

2.4GHz RF
2.4GHz RF Transceiver A/D Flash MCU

Part No.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	RTC	LVR/LVD	Built-in 2.4GHz RF Block	Comparator	Interface	Package
BC66F840	2.2V~3.6V	4K×16	256×8	128×8	8	21	16-bit CTM×1 16-bit STM×1 16-bit ETM×1	12-bit×8	√	√	√	1	SPI/I ² C×1 SPI×1	32QFN

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Frequency	Data Rate	Output Power	Sensitivity	Interface	Package
BC66F5652	1.9V~3.6V	400kHz~16MHz or 32kHz	8K×16	512×8	128×8	8	22	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×12	2402~2480 MHz	125/250/500Kbps	-10~+6 dBm	-97dBm @ 250Kbps	SPI/I ² C×1 UART×1	46QFN
BC66F5662			16K×16	2048×8	1024×8	16	24	10-bit PTM×2 16-bit STM×3	12-bit ×4						

2.4GHz RF Transceiver

Part No.	VDD	Frequency	Modulation	Data Rate	Output Power	Sensitivity	Oscillator	Interface	Package
BC9824	1.9V~3.6V	2400~2483MHz	GFSK	250K~2Mbps	-40~+3dBm	-96dBm@250Kbps	16MHz	SPI	20QFN
BC5602	1.9V~3.6V	2402~2480MHz	GFSK	125/250/500Kbps	-10~+6dBm	-97dBm@250Kbps	16MHz	SPI	16QFN

2.4GHz RF Transmitter with Encoder A/D Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Frequency	Modulation	Data Rate	Output Power	Package
BC66F5132	2.0V~3.6V	8MHz or 32kHz	2K×14	64×8	32×14 [#]	4	12	8-bit×1	10-bit×4	2402~2480MHz	GFSK	125/250/500 Kbps	-10~+8dBm	24SSOP-EP

Note: # Emulated EEPROM.

2.4GHz RF Transmitter with Encoder

Part No.	VDD	Frequency	Modulation	Data Rate	Output Power	Oscillator	Key Mode	Interface	Package
BC5161	2.0V~3.6V	2402~2480MHz	GFSK	125/250/500Kbps	-10~+8dBm	32MHz	√	—	8SOP-EP, 16QFN
BC5162							—	I ² C	8SOP-EP

Sub-1GHz RF															
Sub-1GHz RF Transceiver A/D Flash MCU															
Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Band	Data Rate	Max. Output Power	Rx Current Consumption	Package	
BC66F3652	1.9V~3.6V	400kHz~16MHz or 32kHz	8K×16	512×8	128×8	8	22	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×12	315/433/470/868/915MHz	2~250 Kbps	13dBm	4.2mA@433MHz 5.5mA@868MHz	46QFN	
BC66F3662	1.9V~3.6V	400kHz~16MHz or 32kHz	16K×16	2048×8	1024×8	16	22	10-bit PTM×2 16-bit STM×2	12-bit ×4	315/433/470/868/915MHz	2~250 Kbps	13dBm	4.2mA@433MHz 5.5mA@868MHz	46QFN	
Sub-1GHz RF Transceiver															
Part No.	VDD	Band	FSK/GFSK	Low Current	External Inductor	Data Rate	Max. Output Power	Sensitivity	Package						
BC3601	2.0V~3.6V	315/433/470/868/915MHz	√	—	—	2~250Kbps	17dBm	-121dBm@2kbps	24QFN						
BC3602	1.9V~3.6V	315/433/470/868/915MHz	√	√	√	2~250Kbps	13dBm	-120dBm@2kbps	24QFN						
Sub-1GHz RF Transmitter Flash MCU															
Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	LVR/LVD	Band	OOK/FSK	Symbol Rate	Output Power	Package
BC68F2123	2.2V~3.6V	8MHz	1K×14	64×8	32×8	2	—	9	10-bit STM×1 10-bit PTM×1	√	315/433/868/915MHz	√	0.5~25Ksps (OOK)	0/5/10/13dBm	16NSOP-EP
BC68F2130	2.0V~3.6V	16MHz or 32kHz	2K×16	256×8	—	8	√	8	10-bit CTM×1 10-bit PTM×1	√	315/433/868/915MHz	√	0.5~25Ksps (OOK)	0/10/13dBm	16NSOP-EP 16QFN
BC68F2140	2.0V~3.6V	16MHz or 32kHz	4K×16	256×8	—	8	√	14	10-bit CTM×1 10-bit PTM×1	√	315/433/868/915MHz	√	0.5~25Ksps (OOK)	0/10/13dBm	24SSOP-EP 24QFN
BC68F2150	2.0V~3.6V	16MHz or 32kHz	8K×16	256×8	—	8	√	14	10-bit CTM×1 10-bit PTM×1	√	315/433/868/915MHz	√	0.5~25Ksps (OOK)	0/10/13dBm	24SSOP-EP 24QFN
Sub-1GHz RF Transmitter Touch Flash MCU															
Part No.	VDD	System Clock	Program Memory	Data Memory	Stack	IAP	I/O	Timer	ADC	LVR/LVD	Band	OOK/FSK	Touch key	Output Power	Package
BC66F2235	1.8V~3.6V	8MHz or 32kHz	2K×16	384×8	8	√	8	10-bit CTM×2 10-bit PTM×1	12-bit×1	√	315/433/868/915MHz	√	8	0/10/13dBm	16NSOP-EP
BC66F2245	1.8V~3.6V	8MHz or 32kHz	4K×16	384×8	8	√	15	10-bit CTM×2 10-bit PTM×1	12-bit×4	√	315/433/868/915MHz	√	14	0/10/13dBm	24SSOP-EP
BC66F2255	1.8V~3.6V	8MHz or 32kHz	8K×16	384×8	8	√	23	10-bit CTM×2 10-bit PTM×1	12-bit×4	√	315/433/868/915MHz	√	16	0/10/13dBm	32QFN
Sub-1GHz RF Transmitter															
Part No.	VDD	Band	OOK/FSK	Symbol Rate	Output Power	Package									
BC2102	2.2V~3.6V	315/433/868/915MHz	√	0.5~25Ksps	0/5/10/13dBm	8SOP-EP									
Sub-1GHz RF Transmitter with Encoder															
Part No.	VDD	Band	OOK	Symbol Rate	Output Power	Encoding Format	Package								
BC2161	2.2V~3.6V	315/433/868/915MHz	√	1.5~24Ksps	0/5/10/13dBm	1527, 2262 and HT compatible	8SOP-EP 16NSOP-EP/QFN								
Sub-1GHz OOK Rx Flash MCU															
Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	Band	Demod.	Symbol Rate	Current Consumption	Sensitivity	Package	
BC68F2332	2.5V~5.5V	8MHz or 32kHz	2K×14	64×8	32×8	4	8	10-bit STM×1	315/433/868/915MHz	OOK	20Ksps (Max.)	3.2mA@433MHz 4.0mA@868MHz	-112dBm @10Ksps	16NSOP-EP	
BC66F2342			4K×15	128×8	32×15 [#]	6	13	10-bit STM×1 10-bit PTM×1						24SSOP-EP	

Note : # Emulated EEPROM.

Sub-1GHz RF
Sub-1GHz OOK Rx HVIO A/D Flash MCU

Part No.	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	HVIO	ADC	LDO Output Voltage	Band	Symbol Rate	Current Consumption	Sensitivity	Package
BC45F7930	7.5V~12V	4.5V~5.5V	32kHz~16MHz	2K×16	128×8	64×8	4	9	10	12-bit×4	5.0V	315/433/868/915MHz	20Ksps (Max.)	3.2mA@433MHz 4.0mA@868MHz	-112dBm@10ksps	46QFN 48LQFP-EP
BC45F7940				4K×16	256×8	128×8	8	13		12-bit×7						

Sub-1GHz OOK Rx

Part No.	VDD	Band	OOK	Symbol Rate	Current Consumption	Sensitivity	Package
BC2302A	2.5V~5.5V	315/433MHz	√	20Ksps (Max.)	3.2mA@433MHz	-112dBm@10Ksps	8SOP-EP
BC2302B		315/433/868/915MHz			4.0mA@868MHz		

NFC
A/D NFC TAG Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	SCOM	Comparator	High Current LED Driver	NFC Standards	Interface	Package
HT45F4050	4MHz 8MHz 12MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	8K×16	256×8	64×8	8	41	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit×13	4	1	41	ISO14443A	SPI/I ² C×1 UART×1 NFC×1	48LQFP

NFC Reader

Part No.	VDD	System Clock	RF Frequency	NFC Standards	RF Data Rate	RF Output Current	NFC FIFO-buffer	CRC	Receiver AGC	VDDIO	Interface	Package
BC45B4523	2.7V~5.5V	27.12MHz	13.56MHz	ISO14443A/B ISO15693	106/212/424/848Kbps @ ISO14443A/B	250mA	64×8	√	√	√	SPI×1	24QFN

Infrared / Encoder / Decoder
IR Remote Flash MCU with High Precision HIRC

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Stack	I/O	IR Carrier	Package
HT68F2420	4MHz±0.4%	1.8V~5.5V	4MHz or 32kHz	1K×13	32×8	2	16	√	8SOP, 16/20NSOP 20SSOP

RF Module								
BLE Transparent Transmission								
Part No.	VDD	Data EEPROM	Data Rate	Output Power	Sensitivity	Interface	Stamp Holes	
BCM-7602-G01	2.2V~3.6V	8K×8	1Mbps	+3dBm	-90dBm	UART/SPI	8×2 (P=1.27mm)	
Sub-1GHz Receiver								
Part No.	VDD	Band	Symbol Rate	Current Consumption	Sensitivity	Interface	Dimension	
BM2302-33-1	3.0V~5.5V	315MHz	20Ksps (Max.)	3.2mA@315MHz	-112dBm@10ksps	I ² C	43×10.5×5.2 (mm)	
BM2302-34-1		433MHz		3.2mA@433MHz	-112dBm@10ksps			
BM2302-38-1		868MHz		4.0mA@868MHz	-111dBm@10ksps			
BM2302-39-1		915MHz		4.0mA@915MHz	-110dBm@10ksps			
BM2302-63-1	3.0V~5.5V	315MHz	20Ksps (Max.)	3.2mA@315MHz	-112dBm@10ksps	I ² C	16×15×2.6 (mm)	
BM2302-64-1		433MHz		3.2mA@433MHz	-112dBm@10ksps			
BM2302-68-1		868MHz		4.0mA@868MHz	-111dBm@10ksps			
BM2302-69-1		915MHz		4.0mA@915MHz	-110dBm@10ksps			
Sub-1GHz Transceiver								
Part No.	VDD	Band	Data Rate	Output Power	Rx Current Consumption	Sensitivity	Interface	Dimension
BM3601-03-1	2.0V~3.6V	315MHz	2~250Kbps	17dBm (Max.)	13.5mA@315MHz	-120dBm@2Kbps	SPI	15×18.5×2.5 (mm)
BM3601-04-1		433MHz			13.0mA@433MHz			
BM3601-08-1		868MHz			13.5mA@868MHz	-119dBm@2Kbps		
BM3601-09-1		915MHz			13.5mA@915MHz			
BM3602-03-1	2.0V~3.6V	315MHz	2~250Kbps	13dBm (Max.)	4.1mA@315MHz	-120dBm@2Kbps	SPI	15×18.5×2.5 (mm)
BM3602-04-1		433MHz			4.2mA@433MHz			
BM3602-08-1		868MHz			5.5mA@868MHz	-119dBm@2Kbps		
BM3602-09-1		915MHz			6.0mA@915MHz			
2.4GHz Transceiver								
Part No.	VDD	Band	Data Rate	Output Power	Sensitivity	Interface	Dimension	
BM5602-60-1	1.9V~3.6V	2402~2480MHz	125/250/500Kbps	7dBm (Max.)	-98dBm@125Kbps	SPI	17×16×2 (mm)	

Interface Bridge

Bridge

Part No.	Description	VDD	Internal Clock	Interface	USB	Virtual COM	HID	FIFO/Buffer	Interface Data Rate	VDDIO	Package
HT42B532-1	USB to I ² C Bridge	3.3V~5.5V	12MHz	USB×1 I ² C×1	Full Speed	√	—	TX: 62 bytes RX: 62 bytes	Up to 400kHz	√	8SOP 10MSOP
HT42B533-1	USB to SPI Bridge	3.3V~5.5V	12MHz	USB×1 SPI×1	Full Speed	√	—	TX: 128 bytes RX: 128 bytes	Up to 8MHz	√	10MSOP 16NSOP
HT42B534-2	USB to UART Bridge	3.3V~5.5V	12MHz	USB×1 UART×1	Full Speed	√	—	TX: 128 bytes RX: 128 bytes	Up to 3Mbps Baud	√	8/10SOP 10MSOP 16NSOP
HT42B564-1	USB to UART Bridge	3.3V~5.5V	12MHz	USB×1 UART×1	Full Speed	—	√	TX: 32 bytes RX: 32 bytes	Up to 115.2kbps Baud	√	10SOP

CAN Bus Controller

Part No.	Description	VDD	System Clock	Protocol	Message Objects	Message Memory	Interface	Package
HT45B3305H	CAN Controller	3.0V~5.5V	8MHz~ 24MHz	CAN 2.0A/B ISO11898-1	32	32×139-bit	CAN×1 SPI×1, I ² C×1	16NSOP/QFN

Note: Operating temperature range -40°C~+125°C.
Based on BOSCH CAN IP module C_CAN.

Telecom IC

Telecom Peripheral

Part No.	Description	VDD	OSC Frequency	Package
HT9200A	DTMF generator	2.5V~5.5V	3.58MHz	8SOP
HT9200B				14SOP
HT9170D	DTMF receiver	2.5V~5.5V	3.58MHz	18SOP
HT9172	DTMF receiver	2.5V~5.5V	3.58MHz	18SOP

Note: The HT9172 has enhanced performance over the HT9170B/HT9170D devices.

Battery Management
Power Bank Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Protections	LDO	HVO	VREF	Q.C 2.0	Package
HT45F4MA	30MHz	—	2.55V~5.5V	470kHz~15MHz or 32kHz	2K×16	128×8	64×8	4	16	10-bit PTM×1 16-bit STM×1	12-bit ×8	OVP×1 OCP×1	—	—	—	—	16NSOP 20SSOP
HT45FH4MA-1		3V~28V							5V				2	20SSOP			
BP45F4MB	30MHz	—	2.5V~5.5V	470kHz~15MHz or 32kHz	2K×16	128×8	—	4	18	10-bit PTM×1 16-bit STM×1	12-bit ×7	OVP×1 OCP×1	—	—	2.4V ±1%	—	16NSOP 20SSOP
HT45F4N	30MHz	—	2.55V~5.5V	470kHz~15MHz or 32kHz	4K×16	192×8	64×8	8	26	10-bit PTM×3 16-bit STM×1	12-bit ×13	OCP×2 OUPV×1	—	—	—	—	28SSOP
HT45FH4N		3V~28V							5V				2	—			√
BP45F4NB	30MHz	—	2.6V~5.5V	470kHz~15MHz or 32kHz	4K×16	256×8	—	8	26	10-bit CTM×2 16-bit PTM×1	12-bit ×11	OCP×2 OUPV×1	—	—	2.4V ±1%	—	24/28SSOP 28QFN
BP45FH4NB		3V~28V							5V				2	—			√

Advanced Power Bank Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Auto-adjust H.R. PWM	Protections	LDO	HVO	VREF	Q.C 2.0	Package
HT45F5N	8MHz	—	2.55V~5.5V	4K×16	256×8	64×8	8	30	10-bit PTM×1 16-bit STM×1	12-bit ×14	2	OCP×2 OUPV×2	—	—	2.4V ±1%	—	28SSOP 32QFN
HT45FH5N		3V~28V						5V					2	√			28SSOP 46QFN
BP45FH6N	8MHz 12MHz 16MHz	3V~15V	2.55V~5.5V	6K×16	256×8	64×8	8	28	10-bit PTM×1 16-bit STM×1	12-bit ×14	2	OCP×2 OUPV×2	5V	8	2V/3V/4V ±1%	√	46QFN

Note: 1. H.R. PWM: High Resolution and Complementary PWM Outputs with dead-time control, the duty cycle resolution is 7.8ns when the HIRC is 8MHz.
2. BP45FH6N has 4 pin high voltage output with 12V/90mA and 4 pin High Voltage MOS Gate Driver with 12V/450mA.

Battery Charger Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	DAC	OPA	CRC	LVR	Interface	Package
HT45F5Q-1	8MHz	2.2V~5.5V	8MHz	1K×14	32×8	32×14 [#]	4	9	—	10-bit ×5	8-bit×1 12-bit×1	2	—	2.1V	—	16NSOP
HT45F5Q-2	8MHz 32kHz	2.2V~5.5V	125kHz~8MHz or 32kHz	2K×16	128×8	32×8	6	15	10-bit CTM×1	12-bit ×7	8-bit×1 12-bit×1	3	—	2.1V	UART×1	20NSOP
HT45F5Q-3	8MHz 32kHz	2.2V~5.5V	125kHz~8MHz or 32kHz	4K×15	256×8	32×15 [#]	6	23	10-bit CTM×1 10-bit STM×1	12-bit ×11	14-bit×1 12-bit×1	3	√	2.1V	SPI/I ² C/ UART×1	24/28SSOP

Note: # Emulated EEPROM.

Wireless Charger Tx Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	OCP	De-Modulation	PLL	Clock Gen.	Modulation	Interface	Package
HT66FW2230	20MHz	4.0V~5.5V	312kHz~20MHz	4K×16	128×8	64×8	8	21	10-bit CTM×1 10-bit STM×1	12-bit ×8	1	1	0	1	—	I ² C×1	28SSOP 28QFN
HT66FW2350	8MHz	4.0V~5.5V	125kHz~20MHz	8K×16	256×8	64×8	8	27	10-bit CTM×1 10-bit STM×1 16-bit PTM×1	12-bit ×7	1	2	32 MHz	1	FSK	I ² C×1	32QFN

Wireless Charger Rx Flash MCU

Part No.	Internal Clock	VIN	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	IAP	I/O	Timer	ADC	Sync. Rectifier	LDO	Linear Charge	Modulation	Receive Power	Package
BP66FW1240	8MHz 12MHz 16MHz	7V~-7V	1.8V~5.5V	400kHz~16MHz or 32kHz	4K×16	256×8	128×8	√	20	16-bit CTM×1 16-bit STM×1 10-bit PTM×1	12-bit ×11	√	30mA @5V	40~600 mA	√	5W	46QFN

Wireless Charger Tx Power Stage IC

Part No.	VIN	VDD	OCP	OTP	R _{DS(ON)}	Package
HT45B0016	4.5V~25V	4.5V~5.5V	√	√	12mΩ/30mΩ	23QFN

Battery Management
Handheld Product Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	PWM	High Current LED Driver	Linear Charger	N-MOS	H-Bridge Driver	Package
BP45F1120	8MHz	1.8V~5.5V	8MHz or 32kHz	1K×14	64×8	32×14 [#]	4	11	8-bit×1	10-bit×4	8-bit×1	11	40~800mA	—	—	16NSOP 16QFN
9												√		16NSOP		
9												—		2.1A	24SSOP-EP	
BP45F1130	8MHz	1.8V~5.5V	8MHz or 32kHz	2K×14	64×8	32×14 [#]	4	19	8-bit×1	10-bit×4	8-bit×1	19	40~400mA	—	—	16/20NSOP 24SSOP
BP45F0102	8MHz	1.8V~5.5V	8MHz or 32kHz	2K×14	64×8	32×14 [#]	4	13 14	8-bit×1	10-bit×4	8-bit×1	13	—	—	2.1A	20SSOP
BP45F1330												14	40~400mA	—	24SSOP	
BP45F1132	8MHz	2.2V~5.5V	8MHz or 32kHz	2K×15	128×8	32×8	4	18	8-bit×1	12-bit×4	8-bit×2	17	200~1000mA	—	—	16NSOP-EP 24SSOP-EP 24QFN
BP45F1332												14		—	2.1A	24SSOP-EP
BP45F0106	8MHz	1.8V~5.5V	8MHz or 32kHz	4K×15	128×8	32×15 [#]	6	16	10-bit PTM×1 10-bit STM×1	10-bit×8	—	16	—	—	2.1A	24SSOP

Note: # Emulated EEPROM.

Part No.	Internal Clock	VIN	VDD	System Clock	Program Memory	Data Memory	Stack	I/O	Timer	ADC	VREF	High Current LED Driver	LDO	HVIO	Protections	H-Bridge Driver	Package
BP45F1430	30MHz	6V~12V	2.6V~5.5V	235KHz~15MHz or 32kHz	2K×16	128×8	4	12	10-bit PTM×1 10-bit STM×1	12-bit×6	2.4V±1%	12	150mA@5V	4	OCP×1 OVP×1	—	24SSOP 24QFN
BP45F1632								8				8				2.1A	24SSOP

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Stack	I/O	Timer	PWM	High Current LED Driver	De-modulation	HV-MOSFET	Package
BP45F0044	16MHz	3.3V~5.5V	16MHz or 32kHz	512×13	32×8	2	4	8-bit×1	8-bit×1	4	1	1	8SOP

Li Battery & Power Management
Li Battery Protection Flash MCU

Part No.	Internal Clock	VIN	VDD	V _{MON} Accuracy	LDO	System Clock	Program Memory	Data memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	CRC	Interface	Package
HT45F8550	8MHz 12MHz 16MHz	7.5V~36V	1.8V~5.5V	1/n±0.5% (Ratio)	5V±1% 30mA	400kHz~16MHz or 32kHz	8K×16	512×8	128×8	8	√	22	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit×9	—	UART×1 SPI/I ² C×1	28SSOP 48LQFP-EP
HT45F8560							16K×16	2048×8	1024×8	16	√	33	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit×8	√	UART×2 SPI/I ² C×1 SPIA×1	48LQFP

Inverter Flash MCU
Inverter Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	SPWM	OCF	OVP	AC Detector	LVD/LVR	Interface	Package
HT45F5V	16MHz	4.0V~5.5V	250kHz~20MHz or 32kHz	4K×16	256×8	64×8	6	24	10-bit CTM×2 16-bit STM×1	12-bit×10	12-bit×1	2	1	√	√	UART×1	24/28SSOP

LDO & Detector
TinyPower™ LDO

Part No.	Maximum Input Voltage	Output Voltage, V_{OUT}	Max. Output Current	Typical Current Consumption	Chip Enable Function	Tolerance	Protections	Package
HT1015-1	12V	1.5V	18mA	2.2μA	—	±3%	—	SOT23-5, SOT89
HT71xx-1	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.4V/5.0V	30mA	2.5μA	—	±3%	Soft-Start	TO92, SOT23-5 SOT89
HT71xx-2	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.4V/5.0V	30mA	2.5μA	—	±1%	Soft-Start	SOT23-5, SOT89
HT71xx-3	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.4V/5.0V	30mA	1.0μA	—	±2%	Soft-Start	SOT23-5, SOT89
HT75xx-1	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100mA	2.5μA	—	±3%	Soft-Start	TO92, SOT23-5 SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150mA					
HT75xx-2	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100mA	2.5μA	—	±1%	Soft-Start	TO92, SOT23-5 SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150mA					
HT75xx-3	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100mA	1.0μA	—	±2%	Soft-Start	SOT23-5, SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150mA					
HT75xx-7	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100mA	2.5μA	√	±2%	Soft-Start, OCP, OTP	SOT23-5, SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150mA					
HT73xx	12V	1.8V	150mA	3.5μA	—	±3%	—	SOT89
		2.5V	180mA					
		2.7V	200mA					
		3.0V/3.3V/3.5V/4.15V/5.0V	250mA					
HT73xx-1	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250mA	2.5μA	—	±3%	Soft-Start	SOT89, 8SOP-EP
HT73xx-2	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250mA	2.5μA	—	±1%	Soft-Start	SOT89, 8SOP-EP
HT73xx-3	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250mA	1.0μA	—	±2%	Soft-Start	SOT89, 8SOP-EP
HT73xx-7	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250mA	2.5μA	√	±2%	Soft-Start, OCP, OTP	SOT89, 8SOP-EP
HT72xx	8V	1.8V/2.5V/2.7V/3.0V/3.3V/4.5V/5.0V	300mA	4.0μA	√	±2%	OCP, OTP	SOT23, SOT23-5 SOT89
HT78xx	8V	1.8V/2.5V/2.7V/3.0V/3.3V/5.0V	500mA	4.0μA	√	±2%	OCP, OTP	SOT23-5, SOT89
HT73Lxx	6.6V	0.9V/1.05V/1.2V/1.5V/1.8V/ 2.5V/2.7V/3.0V/3.3V/3.6V	250mA	1.0μA	√	±2%	Soft-Start, OCP, OTP	4DFN, SOT89, SOT23-5
HT75Hxx	40V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	150mA	2.5μA	√	±1.5%	Soft-Start, OCP, OTP	SOT89, SOT23-5 8SOP-EP
HT73Hxx	40V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250mA	2.5μA	√	±1.5%	Soft-Start, OCP, OTP	SOT89, SOT23-5 8SOP-EP

Note: The xx in the part number is the LDO output voltage.

TinyPower™ Voltage Detector

Part No.	Maximum Input Voltage	Detector Voltage, V_{DET}	Hysteresis Width	Typical Current Consumption	Tolerance	Package
HT70xxA-1	30V	2.2V/2.4V/2.7V/3.3V/3.9V/4.4V/5.0V/8.2V	$0.05V \times V_{DET}$	3.0μA	±3%	TO92, SOT23, SOT23-5, SOT89
HT70xxA-2	30V	2.2V/2.4V/2.7V/3.3V/3.9V/4.4V/5.0V/8.2V	$0.05V \times V_{DET}$	3.0μA	±1%	SOT23-5, SOT89
HT70xxA-3	30V	2.2V/2.4V/2.7V/3.3V/3.9V/4.4V/5.0V/8.2V	$0.05V \times V_{DET}$	1.0μA	±2%	SOT23-5, SOT89

Note: The xx in the part number is the detect voltage.

DC to DC Converter											
Asynchronous Step-Down DC to DC Converter											
Part No.	Max. Input Voltage	Output Voltage	Output Current	Switching Frequency	Current Limit	Accuracy	Shutdown Current, I _{OFF}	Operation Current, I _Q	Efficiency	Mode	Package
HT7463A	52V	1.0V~36V	0.6A	1250kHz	1.0A	0.8V±2.0%	1.0μA	0.7mA	95%	PWM/PSM	SOT23-6
HT7463B				550kHz							
HT74T35A	60V	0.8V~36V	0.6A	1250kHz	1.2A	0.8V±2.0%	1.0μA	0.2mA	95%	PWM/PSM	SOT23-6
HT74T35B				550kHz							
Synchronous Step-Down DC to DC Converter											
Part No.	Max. Input Voltage	Output Voltage, V _{OUT}	Output Current	Switching Frequency	Current Limit	Accuracy	Shutdown Current, I _{OFF}	Operation Current, I _Q	Efficiency	Mode	Package
HT74153	6V	0.6V~5V	1.8A	1200kHz	3.2A	0.6V±1.5%	0.5μA	0.05mA	95%	PWM/PFM	8SOP-EP SOT23-5
HT74173			3.0A	1200kHz	5.0A						
HT74U26L*	60V	0.8V~36V	0.6A	400kHz	1.5A	0.8V±1.5%	1.0μA	0.005mA	95%	PWM/PFM	8SOP-EP SOT23-6

* Under development, available in 2Q, 2021.

Asynchronous Step-Up DC to DC Converter											
Part No.	Input Voltage	Output Voltage, V _{OUT}	Output Current	Switching Frequency	Current Limit	Accuracy	Shutdown Current, I _{OFF}	Operation Current, I _Q	Efficiency	Mode	Package
HT77xxB	0.7V~6.0V	1.8V/2.2V	0.1A	115kHz	—	V _{OUT} ±2.5%	1.0μA	4μA	80%	PFM	SOT23, SOT23-5 SOT89
		2.7V/3.0V/3.3V/3.7V/5.0V							85%		
HT77xxBA	0.7V~6.0V	2.7V/3.0V/3.3V/3.7V/5.0V	0.2A	200kHz	0.8A	V _{OUT} ±2.5%	1.0μA	5μA	85%	PFM	SOT23, SOT23-5 SOT89
HT77xxC	0.7V~6.0V	1.8V/2.2V	— (External)	115kHz	—	V _{OUT} ±2.5%	1.0μA	4μA	80%	PFM	SOT23-5, SOT89
		2.7V/3.0V/3.3V/3.7V/5.0V							85%		
HT7991	2.6V~5.5V	3.0V~12.0V	1.0A	1000kHz	2.5A	0.6V±2.0%	1.0μA	210μA	85%	PWM	SOT23-6

Note: The xx in the part number is the output voltage.

Synchronous Step-Up DC to DC Converter											
Part No.	Input Voltage	Output Voltage, V _{OUT}	Output Current	Switching Frequency	Current Limit	Accuracy	Shutdown Current, I _{OFF}	Operation Current, I _Q	Efficiency	Mode	Package
HT77xxF	0.7V~6.0V	2.7V/3.0V/3.3V/3.7V/5.0V	0.1A	—	—	V _{OUT} ±2%	1.0μA	4μA	85%	PFM	SOT23, SOT23-5, SOT89
HT77xxFA	0.7V~6.0V	2.7V/3.0V/3.3V/3.7V/5.0V	0.2A	—	—	V _{OUT} ±2%	1.0μA	4μA	90%	PFM	SOT23, SOT23-5, SOT89
HT79171	2.2V~5.0V	2.6V~5.2V	2.0A	500kHz	5.0A	0.6V±1.5%	1.0μA	65μA	95%	PWM/PSM	8SOP-EP, 10QFN
HT79181	2.2V~5.0V	2.6V~5.2V	3.0A	500kHz	6.0A	0.6V±1.5%	1.0μA	65μA	95%	PWM/PSM	10QFN

Note: The xx in the part number is the output voltage.

Charge Pump DC to DC Converter											
Part No.	Input Voltage	Output Voltage, V _{OUT}	Output Current	Switching Frequency	Current Limit	Accuracy	Shutdown Current, I _{OFF}	Operation Current, I _Q	Efficiency	Mode	Package
HT7660	3V~12V	-V _{DD} ~V _{DD}	20mA	10kHz	—	V _{OUT} ±4.0%	—	0.08mA	98%	—	8DIP/SOP

AC to DC Converter											
AC to DC Converter											
Part No.	Topology	PF	Power MOS (BV)	Input Voltage	R _{DS(ON)}	Operation Current	Typical Power Capability	Frequency	Protections		Package
HT7A6312	Flyback (SSR), Buck, Buck-Boost	—	730V	9V~38V	19Ω	0.7mA	8W/13W [#]	60kHz	UVLO, OTP, OVP, OCP		8DIP/SOP
HT7A6322					12Ω		12W/20W [#]				
HT7L5820	Flyback (PFC+QR PWM)	> 0.97	Ext.	9V~28V	—	3mA	200W	—	Brown In/Out, UVLO, OCP, open/short, OVP (Auto Recovery), OTP (Auto Recovery)		16NSOP
HT7L5821											

Note: All of ICs operate from 85V_{AC} to 265V_{AC}.
[#] Max. output power from 85V_{AC} to 265V_{AC}/176V_{AC} to 265V_{AC}.

LCD Controller & Driver
RAM Mapping LCD Controller & Driver

Part No.	VDD	Max. Resolution Segment × Common	LCD Voltage	Bias	Gray Scale	Serial Data	Built-in OSC.	Ext. Crystal	Package
HT1620	2.4V~3.3V	32×4, 32×3, 32×2	3/2V _{DD}	1/2, 1/3	—	1	—	√	64LQFP
HT1621	2.4V~5.2V	32×4, 32×3, 32×2	≤ V _{DD}	1/2, 1/3	—	1	√	√	44LQFP, 48SSOP/LQFP
HT1621S	2.4V~5.5V								
HT1621G	2.4V~5.2V								Gold Bump
HT1621SG	2.4V~5.5V								
HT1622	2.7V~5.2V	32×8	≤ V _{DD}	1/4	—	1	√	—	44/52/64LQFP
HT1622G									Gold Bump
HT16220	2.7V~5.2V	32×8	≤ V _{DD}	1/4	—	1	—	√	64LQFP
HT1623	2.7V~5.2V	48×8	≤ V _{DD}	1/4	—	1	√	√	100LQFP
HT1625	2.7V~5.2V	64×8	≤ V _{DD}	1/4	—	1	√	√	100LQFP
HT1626	2.7V~5.2V	48×16	≤ V _{DD}	1/5	—	1	√	√	100LQFP
HT1629G	2.4V~5.5V	240×2, 240×1	2.4V~5.5V	1/1, 1/2	—	1	√	√	Gold Bump
HT1647	2.7V~5.2V	64×16	≤ V _{DD}	1/4, 1/5	4	4	√	√	100LQFP

High Noise Immunity LCD Controller & Driver

Part No.	VDD	Max. Resolution Segment × Common	LCD Voltage	Bias	Power Saving Mode	Keyscan	Interface	Package
HT16C21	2.4V~5.5V	20×4, 16×8	≤ V _{DD}	1/3, 1/4	—	—	I ² C	16NSOP 20/24/28SOP
HT16C22A*	2.4V~5.5V	44×4	≤ V _{DD}	1/2, 1/3	—	—	I ² C	48/52LQFP
HT16C22G								Gold Bump
HT16C23	2.4V~5.5V	56×4, 52×8	2.4V~5.5V	1/3, 1/4	—	—	I ² C	48/64LQFP
HT16C23G								Gold Bump
HT16C24	2.4V~5.5V	72×4, 68×8, 60×16	2.4V~5.5V	1/3, 1/4, 1/5	—	—	I ² C	64/80LQFP
HT16C24G								Gold Bump
HT16K23	2.4V~5.5V	20×4	= V _{DD}	1/3	—	20×1	I ² C	28SOP
		16×8		1/4		16×1		
HT9B92	2.4V~5.5V	36×4	≤ V _{DD}	1/2, 1/3	√	—	I ² C	48LQFP/TSSOP
HT9B95A	2.4V~5.5V	35×8	2.4V~5.5V	1/4	√	—	I ² C	48TSSOP, 52LQFP
HT9B95B		43×4		1/3				
		39×8		1/4				52LQFP

* Under development, available in 4Q, 2020.

Low Voltage LCD Controller & Driver

Part No.	VDD	Max. Resolution Segment × Common	LCD Voltage	Bias	LED	Interface	Package
HT16L21	1.8V~5.5V	32×4	2.4V~6.0V	1/2, 1/3	8	I ² C, SPI 3-Wire	44LQFP
HT16L23	1.8V~5.5V	52×4, 48×8	2.4V~6.0V	1/3, 1/4	8	I ² C, SPI 3-Wire	64LQFP

High Operating Voltage LCD Controller & Driver

Part No.	VDD	Max. Resolution Segment × Common	LCD Voltage	Bias	Duty	Charge Pump	Contrast Adjustment	GPO	Interface	Package
HT16H25	2.4V~5.5V	60×16	2.5~12V	1/1~1/5	Static, 1/2~1/16	×2, ×3, ×4, ×5	4-bit	4CH	I ² C, SPI 3-Wire	80/100LQFP

LED Controller & Driver
RAM Mapping LED Controller & Driver

Part No.	VDD	Max. Resolution Row×Common	Row Source Current (Min.)	Row Sink Current (Min.)	Com Source Current (Min.)	Com Sink Current (Min.)	PWM Gray Scale	Key-scan	Interface	Package
HT1632D*	4.5V~5.5V	32×8, 24×16	50mA	12mA	45mA	250mA	16Level for Global	—	4-Wire	52LQFP
		24×8								48LQFP
HT1635A	4.5V~5.5V	44×8	50mA	10mA	45mA	250mA	16Level for Global	—	4-Wire	64LQFP
HT1635B									I ² C	
HT16K33	4.5V~5.5V	16×8	20mA±5%	6mA	20mA	160mA	16Level for Global	13×3	I ² C	28SOP
		12×8								24SOP
		8×8								20SOP

* Under development, available in 4Q, 2020.

Advanced LED Controller & Driver

Part No.	VDD	LED_VDD	Max. Resolution Row×Common	Com Source Current (Min.)	Com Sink Current (Min.)	PWM Gray Scale	Constant Current	Fade	Auto Scrolling	Over Temp. Detection	Open/Short Detection	Interface	Package
HT16D31A	2.7V~5.5V	4.5V~5.5V	8×9	270mA	—	256Level for each dot	33mA±3% Max. 48mA	√	√	√	√	3-Wire SPI	16NSOP-EP
HT16D31B												I ² C	16QFN
HT16D33A	2.7V~5.5V	4.5V~5.5V	9×10 + 9×10 12×12 16×16	315mA	—	256Level for each dot	33mA±3% Max. 48mA	√	√	√	√	3-Wire SPI	24SSOP-EP
HT16D33B												I ² C	28SSOP 32QFN
HT16D35A	2.7V~5.5V	4.5V~5.5V	28×8	250mA	45mA	64Level for each dot	30mA±3% Max. 45mA	√	√	√	—	3-Wire SPI	48LQFP-EP
HT16D35B												I ² C	

White LED Backlight Driver
White LED Backlight Driver

Part No.	Input Voltage	Output Current	Switching Frequency	Efficiency	Typical OVP	Accuracy	Max. LED#	PWM Dimming Frequency	Power Element	Backlight Type	Protections	Package
HT7938A-3	2.6V~5.5V	200mA	1200kHz	90%	39V	300mV±5%	39	100Hz~200kHz	Internal	Parallel/Series	UVLO, OVP, OCP, OTP	SOT23-6
HT7939A	2.6V~5.5V	260mA	1200kHz	90%	17.6/32.0V	200mV±5%	39	100Hz~200kHz	Internal	Parallel/Series	UVLO, OVP, OCP, OTP	SOT23-6
HT7963	9.0V~30V	1200mA	200kHz	90%	Adjustable	300mV±3%	—	100Hz~1kHz	External	Parallel/Series	UVLO, OVP, OCP, OTP, Soft-Start, LED open, LED short, OSP	8SOP

AC / DC LED Lighting Driver
AC / DC LED Lighting

Part No.	Topology	PF	Power MOS	HV Start-up	Maximum Output Power	Current Accuracy	Protections	Package
HT7L5600	Flyback (PSR)	>0.9	Ext.	—	60W	±3%	UVLO, OVP, OTP, OCP, LED open/short	SOT23-6
HT7L5820	Flyback (PFC+QR PWM)	>0.97	Ext.	650V	200W	±2%	Brown In/Out, UVLO, OCP, open/short, OVP (Auto Recovery), OTP (Auto Recovery)	16NSOP
HT7L5821							Brown In/Out, UVLO, OCP, open/short, OVP (Latched), OTP (Latched)	

Note: All of LED Lighting Drivers operate from 85V_{AC} to 265V_{AC}.
Max. output power from 85V_{AC} to 265V_{AC}/176V_{AC} to 265V_{AC}.

Bank & Commercial MCU
Smart Card Reader Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP/ISP	I/O	Timer	ADC	RTC	Comparator	USB	LDO	EMVCo	Interface	Package
HT66F4360	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	3072×8	—	12	√	36	10-bit CTM×2 10-bit PTM×1 16-bit STM×1	12-bit ×8	√	2	√	1.8V 3.0V 5.0V	ISO7816-3 Class A/B/C	UART×2 SPI×2 I ² C×1	48/64 LQFP
HT66F4370	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	3072×8	—	12	√	36	10-bit CTM×2 10-bit PTM×1 16-bit STM×1	12-bit ×8	√	2	√	1.8V 3.0V 5.0V	ISO7816-3 Class A/B/C	UART×2 SPI×2 I ² C×1	48/64 LQFP
HT66F4390	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	64K×16	3072×8	256×8	16	√	36	10-bit CTM×2 10-bit PTM×1 16-bit STM×1	12-bit ×8	√	2	√	1.8V 3.0V 5.0V	ISO7816-3 Class A/B/C	UART×2 SPI×2 I ² C×1	48/64 LQFP

Ultra-Low Power Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	MDU [#]	Stack	IAP	I/O	Timer	ADC	LCD	RTC	Interface	Package
HT66F2560	1/2/4/8/12MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	16K×16	2048×8	256×8	16-bit	16	√	42	16-bit PTM×2 16-bit STM×3	12-bit ×8	SCOM ×4	√	SPI/I ² C×1 SPIA×1 UART×2	48LQFP
HT69F2562	4/8/12MHz	1.8V~5.5V	400kHz~12MHz or 32kHz	16K×16	2304×8	128×8	—	16	√	19	10-bit CTM×2 16-bit STM×1	—	32×4	√	SPI×1 SPI/I ² C/UART×1	64LQFP

Note: # MDU: Multiplier Divider Unit.
The power consumption of the RTC on standby current is less than 200nA at 3V.

Ultra-Low Power Flash MCU with LCD Driver & Touch Key

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Touch Key	LCD	RTC	Interface	Package
BS67F2563	4/8/12MHz	1.8V~5.5V	400kHz~12MHz or 32kHz	16K×16	2304×8	128×8	16	√	31	10-bit CTM×2 16-bit STM×1	12-bit ×7	20	32×4	√	SPI×1 SPI/I ² C/UART×1	64LQFP

Note: The power consumption of the RTC on standby current is less than 200nA at 3V.

Ultra-Low Power Flash MCU with EPD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	EPD [#]	RTC	Interface	Package
HT67F2567	4/8/12MHz	1.8V~5.5V	400kHz~12MHz or 32kHz	16K×16	2304×8	128×8	16	√	19	10-bit CTM×2 16-bit STM×1	12-bit ×7	SEG×64 COM×1 BG×1	√	SPI×1 SPI/I ² C/UART×1	100LQFP
HT67F2567G															Gold Bump

Note: # EPD: Electronic Paper Displays.
The power consumption of the RTC on standby current is less than 200nA at 3V.

Special Purpose MCU
Waveform Generator Flash MCU

Part No.	VCC (HV)	VDD	Internal Clock	System Clock	Program Memory	Data Memory	Stack	I/O	Timer	Waveform Output	Package
HT45F2020	8V~16V	5.0V	8MHz	8MHz or 32kHz	1K×14	32×8	2	4	10-bit PTM×1	2	SOT23-6 8SOP
HT45F2022	—	2.2V~5.5V									

Induction Cooker Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	PWM	PPG	Comp- arator	OVP	OPA	Inter- face	Package
HT45F0004	8MHz	2.2V~5.5V	400kHz~8MHz	4K×16	208×8	32×8	8	17	8-bit ×3	12-bit ×12	8-bit ×1	9-bit ×1	4	—	1	I ² C×1	16DIP/NSOP 20DIP/SOP
HT45F0057	8MHz	2.2V~5.5V	8MHz	4K×16	208×8	—	6	13	8-bit ×3	12-bit ×9	—	9-bit ×1	4	—	1	—	16DIP/NSOP
HT45F0058	16MHz	3.3V~5.5V	32kHz~16MHz	4K×16	256×8	32×8	8	13	8-bit ×3	12-bit ×10	—	9-bit ×1	4	1	1	—	16NSOP

Half-bridge Induction Cooker Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	MDU [#]	Stack	I/O	Timer	ADC	PWM	OPA	OVP	CRC	Inter- face	Package
HT45F0074	16MHz	4.5V~5.5V	32kHz~16MHz	8K×16	512×8	128×8	16-bit	8	20	10-bit CTM×3 10-bit PTM×1	12-bit ×8	12-bit ×1	1	7	√	SPI/I ² C/ UART×1	20NSOP 24SOP

Note: # MDU: Multiplier Divider Unit.

Low Power Flash MCU
Ultra-Low Voltage & Low Current Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	LCD	Power Switch	Package
HT69F3742L	2/4/8MHz	1.2V~5.5V	400kHz~8MHz or 32kHz	4K×16	128×8	128×8	4	9	10-bit STM×1	23×4 24×3	√	Dice 46QFN

CAN Bus Flash MCU
CAN Bus A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	SCOM	CAN Protocol	Message Objects	Message Memory	Inter- face	Package
HT66F3370H	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	3K×8	1K×8	16	√	58	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×16	4	CAN 2.0A/B ISO11898-1	32	32×139-bit	CAN×1 SPI/I ² C×1 SPIA×1 UART×3	48/64 LQFP

Note: Operating temperature range -40°C~+125°C.
Based on BOSCH CAN IP module C_CAN.

RF Module								
BLE Transparent Transmission								
Part No.	VDD	Data EEPROM	Data Rate	Output Power	Sensitivity	Interface	Stamp Holes	
BCM-7602-G01	2.2V~3.6V	8K×8	1Mbps	+3dBm	-90dBm	UART/SPI	8×2 (P=1.27mm)	
Sub-1GHz Receiver								
Part No.	VDD	Band	Symbol Rate	Current Consumption	Sensitivity	Interface	Dimension	
BM2302-33-1	3.0V~5.5V	315MHz	20Ksps (Max.)	3.2mA@315MHz	-112dBm@10ksps	I ² C	43×10.5×5.2 (mm)	
BM2302-34-1		433MHz		3.2mA@433MHz	-112dBm@10ksps			
BM2302-38-1		868MHz		4.0mA@868MHz	-111dBm@10ksps			
BM2302-39-1		915MHz		4.0mA@915MHz	-110dBm@10ksps			
BM2302-63-1	3.0V~5.5V	315MHz	20Ksps (Max.)	3.2mA@315MHz	-112dBm@10ksps	I ² C	16×15×2.6 (mm)	
BM2302-64-1		433MHz		3.2mA@433MHz	-112dBm@10ksps			
BM2302-68-1		868MHz		4.0mA@868MHz	-111dBm@10ksps			
BM2302-69-1		915MHz		4.0mA@915MHz	-110dBm@10ksps			
Sub-1GHz Transceiver								
Part No.	VDD	Band	Data Rate	Output Power	Rx Current Consumption	Sensitivity	Interface	Dimension
BM3601-03-1	2.0V~3.6V	315MHz	2~250Kbps	17dBm (Max.)	13.5mA@315MHz	-120dBm@2Kbps	SPI	15×18.5×2.5 (mm)
BM3601-04-1		433MHz			13.0mA@433MHz			
BM3601-08-1		868MHz			13.5mA@868MHz	-119dBm@2Kbps		
BM3601-09-1		915MHz			13.5mA@915MHz			
BM3602-03-1	2.0V~3.6V	315MHz	2~250Kbps	13dBm (Max.)	4.1mA@315MHz	-120dBm@2Kbps	SPI	15×18.5×2.5 (mm)
BM3602-04-1		433MHz			4.2mA@433MHz			
BM3602-08-1		868MHz			5.5mA@868MHz	-119dBm@2Kbps		
BM3602-09-1		915MHz			6.0mA@915MHz			
2.4GHz Transceiver								
Part No.	VDD	Band	Data Rate	Output Power	Sensitivity	Interface	Dimension	
BM5602-60-1	1.9V~3.6V	2402~2480MHz	125/250/500Kbps	7dBm (Max.)	-98dBm@125Kbps	SPI	17×16×2 (mm)	

Digital Sensor & Module										
PIR Module										
Part No.	Supply Voltage	Current Consumption	Detection Range (Typ.)	FOV H, V	Lens Color	Interface	Dimension			
HT7M2126	2.7V~5.5V	50μA	3.5~6 Meter	121°, 77°	Nature	I ² C or I/O	12.8×12.9×13.3(mm)			
HT7M2127			2.8~5 Meter	121°, 77°	Black					
HT7M2136			5.5~8 Meter	91°, 10°	Nature		12.8×12.9×14.4(mm)			
HT7M2156			8~12 Meter	20°, 10°	Nature					
HT7M2176			5~7.5 Meter	86°, 75°	Nature					
PIR Sensor										
Part No.	Supply Voltage	Current Consumption	Responsibility	Noise	Optical Window	Viewing Angle H/V	Interface	Package		
BM22S4021-1*	2.7V~5.5V	0.7mA	4.3kV/W (To=100°C, 1Hz @25°C)	33μVp-p (0.3~3Hz @25°C)	5×4mm	136°/123°	UART or I/O	TO-5		
* Under development, available in 3Q, 2020.										
Air Pressure Sensor										
Part No.	Supply Voltage	Current Consumption	Accuracy	Pressure Range	Linearity	Response	Operating Temperature	Interface	Dimension	
BM62S2201-1*	2.7V~5.5V	0.7mA	1.0%FS @25°C	0~1psi	0.3%FS	1ms	-20~+85°C	UART or I ² C	18×11×13(mm)	
* Under development, available in 3Q, 2020.										
Temperature and Humidity Sensor										
Part No.	Supply Voltage	Current Consumption	Relative Humidity Resolution	Relative Humidity Rang	Relative Humidity Precision	Temperature Resolution	Temperature Range	Temperature Precision	Interface	Dimension
BM25S2021-1	2.7V~5.5V	0.2mA	0.1%RH	10~95%RH	±3%RH @25°C	0.1°C	-40~+80°C	±0.5°C	I ² C or One-Wire	22×12×5.8(mm)
Smoke Detector Sensor										
Part No.	Supply Voltage	Current Consumption	Detection Sensitivity			Interface	Dimension			
BM22S2021-1	3V~5V	10μA	0.05dB/m-0.4dB/m			UART or I/O	36×36×27(mm)			
GAS Detector Sensor										
Part No.	Supply Voltage	Current Consumption	Detection Range			Interface	Dimension			
BM22S3021-1	5V	250mA	300ppm~10000ppm			UART or I/O	24×20×22(mm)			
BM22S3031-1*	2.5V	160mA	0ppm~10000ppm			UART or I/O	25×16.6×20(mm)			
* Under development, available in 4Q, 2020.										
Proximity Sensing Module										
Part No.	Supply Voltage	Current Consumption	Detection Range			Interface	Dimension			
BM32S2021-1	3.3V/5V	30μA	1~100cm			UART or I/O	17×10×7(mm)			
Water Level Sensor										
Part No.	Supply Voltage	Current Consumption	Accuracy	Resolution	Output Frequency Range	Pressure Range	Operating Temperature	Interface	Dimension	
BM62S3201-1*	2.7V~5.5V	0.7mA	10mmH ₂ O @25°C	1mmH ₂ O	—	0~1500mmH ₂ O	-40~+85°C	UART or I ² C	28×28×14.6(mm)	
BM62S3201-5*				5mmH ₂ O	20~40kHz; Step 33Hz			Frequency Output		
* Under development, available in 4Q, 2020.										

I²C EEPROM
I²C EEPROM

Part No.	Capacity	VDD	Clock Rate	Write Speed @2.4V	Operating Current @5V	Standby Current @5V	Package
HT24LC02	256×8	1.8V~5.5V	400kHz	5ms	5mA	3μA	8SOP
HT24LC02A	256×8	1.8V~5.5V	400kHz	5ms	5mA	2μA	8SOP, SOT23-5
HT24LC04	512×8	1.8V~5.5V	400kHz	5ms	5mA	3μA	8SOP
HT24LC08	1024×8	1.8V~5.5V	400kHz	5ms	5mA	3μA	8SOP
HT24LC16	2048×8	1.8V~5.5V	400kHz	5ms	5mA	3μA	8SOP
HT24LC32	4096×8	1.8V~5.5V	400kHz	5ms	5mA	3μA	8SOP
HT24LC64	8192×8	1.8V~5.5V	400kHz	5ms	5mA	3μA	8SOP

Note: Operating temperature range -40°C ~ +85°C.

General OP Amplifier

General Purpose OP Amplifier

Part No.	Description	OP No.	VDD	BW	Current/OP	Package
HT9231	220µA, 2.3MHz Single OP amplifier	1	2.0V~5.5V	2.3MHz	220µA	SOT23-5
HT9232	220µA, 2.3MHz Dual OP amplifier	2	2.0V~5.5V	2.3MHz	220µA	8SOP
HT9234	220µA, 2.3MHz Quad OP amplifier	4	2.0V~5.5V	2.3MHz	220µA	14SOP
HT9251	50µA, 550kHz Single OP amplifier	1	1.8V~5.5V	550KHz	50µA	SOT23-5
HT9252	50µA, 550kHz Dual OP amplifier	2	1.8V~5.5V	550KHz	50µA	8SOP
HT9254	50µA, 550kHz Quad OP amplifier	4	1.8V~5.5V	550KHz	50µA	14SOP
HT9274	Quad micropower OP amplifier	4	1.6V~5.5V	100KHz	3.0µA	14SOP
HT9291	TinyPower™ Single OP amplifier	1	1.4V~5.5V	11KHz	0.6µA	SOT23-5
HT9292	TinyPower™ Dual OP amplifier	2	1.4V~5.5V	11KHz	0.6µA	8SOP
HT9294	TinyPower™ Quad OP amplifier	4	1.4V~5.5V	11KHz	0.6µA	14SOP
HT92232	16µA, 300kHz, Rail to Rail, Dual OP amplifier	2	2.1V~5.5V	300KHz	16µA	8SOP/MSOP
HT92252	40µA, 1MHz, Rail to Rail, Dual OP amplifier	2	2.1V~5.5V	1MHz	40µA	8SOP/MSOP

Precision OP Amplifier

Part No.	Description	OP No.	VDD	BW	Current/OP	Package
HT92632	30µA, 300kHz, Rail to Rail, Dual OP amplifier	2	2.0V~5.5V	300KHz	30µA	8SOP/MSOP
HT92652	500µA, 1.5MHz, Rail to Rail, Dual OP amplifier	2	2.0V~5.5V	1.5MHz	500µA	8SOP/MSOP

Low Power OP Amplifier

Part No.	Description	OP No.	VDD	BW	Current/OP	Package
HT92112	0.6µA, 14kHz, Rail to Rail, Dual OP amplifier	2	1.4V~5.5V	14KHz	0.6µA	8SOP/MSOP
HT92122	0.6µA, 100kHz, Rail to Rail, Dual OP amplifier	2	1.4V~5.5V	100KHz	0.6µA	8SOP/MSOP

Audio Amplifier

Class AB Audio Amplifier

Part No.	Description	VDD	Output Power	Mute/Shutdown Function	Package
HT82V733	Mono audio power amplifier	2.4V~5.5V	400mW into 8Ω	√	8SOP
HT82V735	Stereo audio power amplifier with shutdown	2.4V~6.0V	330mW into 32Ω	√	8SOP
HT82V739	1200mW mono audio power amplifier with shutdown	2.2V~5.5V	1200mW into 8Ω	√	8SOP
HT82V73A	1500mW mono audio power amplifier with shutdown	2.2V~5.5V	1500mW into 8Ω	√	8SOP-EP

Audio PWM Driver

Part No.	Description	VDD	Output Power	Mute/Shutdown Function	Package
HT82V742	Audio PWM driver	2.0V~5.5V	1.5W into 5V, 8Ω	—	8SOP

Class D Audio Amplifier

Part No.	Description	VDD	Output Power	Mute/Shutdown Function	Package
HT82V7524	3W mono filter-free class-D audio power amplifier	1.8V~6.0V	3W into 5V, 4Ω	—	8SOP-EP
HT82V7534	3W Stereo Filter-free Class-D Audio Power Amplifier	1.8V~6.0V	3W into 5V, 4Ω	√	20TSSOP-EP

24-Bit A/D Peripheral

Enhanced 24-Bit A/D Peripheral

Part No.	Internal Clock	VDD	ADC	ENOB	Data Rate	PGA	Interface	Package
BH45B1225	4.91MHz	2.4V~5.5V	24-bit×4	19.4@5V	5Hz~1.6kHz	1~128	I ² C×1	8SOP/16NSOP

CCD / CIS Analog Signal Processor

CCD / CIS Analog Signal Processor

Part No.	AVDD/VDD	ADC (Bit)	Input CH.	MSPS	Clamp Bias	PGA	Prog. Offset	Full Scale	Power Consumption	Package
HT82V36	3.0V~3.6V	16	1	10 (CCD:6)	2.5V/2.0V	1~5.85V/V (6-bit)	±100mV (9-bit)	1.4V	56mW/1µA	28SSOP
HT82V38	3.15V~3.45V	16	3/2/1	30/30/20	0.45V~2.7V (4-bit)	1~6.25V/V (6-bit)	±250mV (9-bit)	1.6V/2V	300mW/10µA	28SSOP
HT82V42	3.0V~3.6V	16	1	15	0.4V~3.0V (4-bit)	0.7~7.84V/V (8-bit)	±315mV (8-bit)	2V	188mW/300µA	20SSOP
HT82V48	3.0V~3.6V	16×2	3×2	60×2	0.4V~3.0V (4-bit)	0.65~6.0V/V (9-bit)	±290mV (8-bit)	1.2V/2V	925mW/400µA	48LQFP-EP

Image Signal Processor

Image/Neural-network Processor

Part No.	Max. Freq.	VDD (I/O)	DSP				L2 RAM	DDR I/F	DMA	e-Fuse	ADC	CMP	Timers ²	Interface ³	Others ⁴	I/O	Power	Package
			Core	Cache	L1 RAM	FPU												
HT82V82	250MHz	3.0V~3.6V	2	I: 32KB D: 32KB ×2	I: 16KB D: 32KB ×2	1 ×2	256KB	DDR2 DDR3	EDMA: 2CH PDMA: 8CH	128-bit	1MSPS 12-bit ×16	1	RTC×1 WDT×1 BFTM×2 GPTM×4	UART×4 SPI×3, I ² C×2 CLSIF×2 CASIF×2 HSSPI SDIO EPI 8080 LCD I/F	AES-128 SHA-256 TG, LINFO SHDC JPG ENC HWE	40	750mW	256TFBGA

Note: 1. VDD Core: 0.9V~1.1V; VDD DDR: 1.425V~1.575V.
 2. BFTM: Basic Function Timer, GPTM: General-Purpose Timers.
 3. CLSIF: CMOS Line Sensor Interface; CASIF: CMOS Area Sensor Interface; HSSPI: 40MHz High Speed SPI; EPI: External Parallel Interface.
 4. AES-128: Advanced Encryption Standard; SHA-256: Secure Hash Algorithm; TG: Sensor, LED & AFE Timing Generator; LINFO: Scan Line Information; SHDC: Shading Correction; JPG ENC: JPEG Encoder; HWE: Hardware Matrix & Neural Calculation Engine.

Currency Recognition Processor

CIS Analog Front End Processor

Part No.	AVDD/VDD	ADC (Bit)	Input Channel	MSPS	Clamp Bias	PGA	Prog. Offset	Full Scale	Power Consumption	Package
HT82V48	3.0V~3.6V	16×2	3×2	60×2	0.4~3.0V (4-bit)	0.65~6.0V/V (9-bit)	±290mV (8-bit)	1.2V/2V	925mW/400µA	48LQFP-EP

CIS Digital Front End Processor

Part No.	AVDD/VDD	CIS Module				Shading Correction		Line Information	Others	Output	Power Consumption	Package
		Channel	MSPS	Element	LED	Gain	Offset					
HT82V70	3.0V~3.6V	3~6 ×2	120 ×2	1,584	6×2	0x~8x (10-bit)	0~255 (8-bit)	Index, Left/Right Boundary, Max, Min, Sum, Histogram	COMP, TG I ² C, SPI	VPFE, EMIFA	400mW/3mW	100LQFP

CIS Front End Processor

Part No.	AVDD/VDD	ADC (Bit)	Input Ch.	MSPS	PGA (V/V)	Prog. Offset (mV)	Full Scale	CIS Module		Shading Correction		Line Information	Others	Output	Power	Package
								Element	LED	Gain	Offset					
HT82V72	3.0V~3.6V	16×2	3×2	60×2	0.65~6.0 (9-bit)	±290 (8-bit)	1.2V/2V	1,584	6×2	0x~8x (10-bit)	0~255 (8-bit)	Index, Left/Right Boundary, Max, Min, Sum, Histogram	COMP, TG, I ² C, SPI	VPFE, EMIFA	1100mW/10µW	64TQFP-EP

Image/Neural-network Processor

Part No.	Max. Freq.	VDD (I/O)	DSP				L2 RAM	DDR I/F	DMA	e-Fuse	ADC	CMP	Timers ²	Interface ³	Others ⁴	I/O	Power	Package
			Core	Cache	L1 RAM	FPU												
HT82V82	250MHz	3.0V~3.6V	2	I: 32KB D: 32KB ×2	I: 16KB D: 32KB ×2	1 ×2	256KB	DDR2 DDR3	EDMA: 2CH PDMA: 8CH	128-bit	1MSPS 12-bit ×16	1	RTC×1 WDT×1 BFTM×2 GPTM×4	UART×4 SPI×3, I ² C×2 CLSIF×2 CASIF×2 HSSPI SDIO EPI 8080 LCD I/F	AES-128 SHA-256 TG, LINFO SHDC JPG ENC HWE	40	750mW	256TFBGA

Note: 1. VDD Core: 0.9V~1.1V; VDD DDR: 1.425V~1.575V.
 2. BFTM: Basic Function Timer, GPTM: General-Purpose Timers.
 3. CLSIF: CMOS Line Sensor Interface; CASIF: CMOS Area Sensor Interface; HSSPI: 40MHz High Speed SPI; EPI: External Parallel Interface.
 4. AES-128: Advanced Encryption Standard; SHA-256: Secure Hash Algorithm; TG: Sensor, LED & AFE Timing Generator; LINFO: Scan Line Information; SHDC: Shading Correction; JPG ENC: JPEG Encoder; HWE: Hardware Matrix & Neural Calculation Engine.

Miscellaneous									
IGBT Driver									
Part No.	Description	VIN	LDO	Level Shifter	Voltage Detect Protection	Package			
HT45B1S	IGBT Driver with LDO and Voltage Detector	6.0V~24V	5.0V	√	√	8SOP			
Timepiece									
Part No.	VDD	V _{BAT}	I _{DD} (μA)	I _{BAT} (μA)	I _{STB} (μA)	External X'tal Osc.	Build in Memory (Bytes)	Oscillator Compensation	Package
HT1380A	2.0V~5.5V	—	1.0 at 5V	—	0.1	32.768kHz	—	—	8DIP
HT1381A									8SOP
HT1382	2.7V~5.5V	2.0V~5.5V	15 at 3V	1.2 at 3V	0.1	32.768kHz	4	√	8SOP, 10MSOP

Infrared / Encoder / Decoder										
2 ¹² Encoder / Decoder										
Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Data No.	Data Type	Trig.	Check Times	Package	Pair
HT12E	Encoder	2.4V~12V	8	4	0	—	\overline{TE}	—	18DIP, 20SOP	HT12D/12F
HT12D	Decoder	2.4V~12V	8	0	4	Latch	—	3	18DIP, 20SOP	HT12E
HT12F	Decoder	2.4V~12V	12	0	0	—	—	3	18DIP, 20SOP	HT12E
3 ⁹ Encoder										
Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Trig.	Package				
HT6026	Encoder	4V~18V	0	9	\overline{TE}	16DIP/NSOP				
Learning Encoder										
Part No.	VDD	Addr. No.	Data No.	Trig.	Package					
HT6P20B	2V~12V		22	2	Data Low	8SOP				
HT6P20D			20	4		16NSOP				
IR Remote Controller										
Part No.	VDD	Addr. No.	Data No.	Key No.	Signal Gap Time	38kHz Carrier	Package			
HT62104	2.0V~5.0V	2	7	8	4T	√	16DIP/NSOP			
HT6220A	2.0V~3.6V	16	8	6	—	√	8SOP			
				30			16NSOP			
HT6221A	2.0V~3.6V	16	8	32	—	√	20SOP			
HT6221B				48						
HT6222A	2.0V~3.6V	16	8	64	—	√	24SOP, Chip, Wafer			

32-Bit MCU Programming Tools

Holtek is fully aware that the success of their microcontroller device range also depends upon the availability of high quality development tools. As a result, Holtek has developed a full suite of professional hardware and software tools to provide designers with an excellent set of development resources to ensure their application are designed and debugged as efficiently as possible.

In this section can be found details regarding which set of tools should be used for the HT32 series microcontrollers.

HT32 Series MCU

Device Part No.	Debug Adapter	Development Kit	Writer	e-Socket32
HT32F0006	e-Link32 Pro	N/A	e-Writer32	ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F0008	e-Link32 Pro	ESK32-30508, ESK32-20001, ESK32-21001	e-Writer32	ESKT3224QFN3B, ESKT3233QFN4B, ESKT3246QFNB, ESKT3248LQFPB, ESKT32ICPB
HT32F12345	e-Link32 Pro	ESK32-30106, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F12364	e-Link32 Pro	ESK32-30107, ESK32-20001, ESK32-21001	e-Writer32	ESKT3240QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F12365, HT32F12366	e-Link32 Pro	ESK32-30105, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32100LQFPB, ESKT32ICPB
HT32F22366	e-Link32 Pro	N/A	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32100LQFPB, ESKT32ICPB
HT32F50220, HT32F50230	e-Link32 Pro	ESK32-30506, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3228SOPC, ESKT3224QFN3B, ESKT3233QFN4B, ESKT3244LQFPB, ESKT3248LQFPB, ESKT32ICPB
HT32F50231, HT32F50241	e-Link32 Pro	ESK32-30507, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3228SOPC, ESKT3224QFN3B, ESKT3233QFN4B, ESKT3244LQFPB, ESKT3248LQFPB, ESKT32ICPB
HT32F50343	e-Link32 Pro	ESK32-30515, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F52220, HT32F52230	e-Link32 Pro	ESK32-30504, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3233QFN4B, ESKT32ICPB
HT32F52231, HT32F52241	e-Link32 Pro	ESK32-30503, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3233QFN4B, ESKT3248LQFPB, ESKT32ICPB
HT32F52243, HT32F52253	e-Link32 Pro	ESK32-30505, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F52331, HT32F52341	e-Link32 Pro	ESK32-30502, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3248LQFPB, ESKT32ICPB
HT32F52342, HT32F52352	e-Link32 Pro	ESK32-30501, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F52344, HT32F52354	e-Link32 Pro	ESK32-30509, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F52357, HT32F52367	e-Link32 Pro	ESK32-30510, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT3280LQFPB, ESKT32ICPB
HT32F57331, HT32F57341	e-Link32 Pro	ESK32-30512, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F57342, HT32F57352	e-Link32 Pro	ESK32-30511, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT3280LQFPB, ESKT32ICPB
HT32F59041	e-Link32 Pro	N/A	e-Writer32	ESKT3248LQFPB, ESKT32ICPB
HT32F59741	e-Link32 Pro	N/A	e-Writer32	ESKT3264LQFPB, ESKT32ICPB
HT32F65230, HT32F65240	e-Link32 Pro	N/A	e-Writer32	ESKT3248LQFPB, ESKT32ICPB

Hardware

ICE		
Model	Function	Support Software
e-Link32 Pro	On Chip Debug Support (OCDS) new debug adapter for HT32 series	Keil µVision, IAR EWARM
Programmer		
Model	Function	Support Software
e-Writer32	HT32 series MCU Dedicated Writer	HOPE3000 For HT32 series MCU
e-Socket32	Adaptors used together with e-Writer32	HOPE3000 For HT32 series MCU
Development Kit		
Model	Function	Note
ESK32-300SK	32-bit Arm® Cortex®-M3 HT32F1656 Starter Kit	This board has a built-in e-Link32 USB debug adapter
ESK32-30105	32-bit Arm® Cortex®-M3 HT32F12366 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30106	32-bit Arm® Cortex®-M3 HT32F12345 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30107	32-bit Arm® Cortex®-M3 HT32F12364 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30501	32-bit Arm® Cortex®-M0+ HT32F52352 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30502	32-bit Arm® Cortex®-M0+ HT32F52341 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30503	32-bit Arm® Cortex®-M0+ HT32F52241 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30504	32-bit Arm® Cortex®-M0+ HT32F52230 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
Development Kit		
ESK32-30505	32-bit Arm® Cortex®-M0+ HT32F52253 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30506	32-bit Arm® Cortex®-M0+ HT32F50230 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30507	32-bit Arm® Cortex®-M0+ HT32F50241 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30508	32-bit Arm® Cortex®-M0+ HT32F0008 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter

Hardware		
ESK32-30509	32-bit Arm® Cortex®-M0+ HT32F52354 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30510	32-bit Arm® Cortex®-M0+ HT32F52367 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30511	32-bit Arm® Cortex®-M0+ HT32F57352 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30512	32-bit Arm® Cortex®-M0+ HT32F57341 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30515	32-bit Arm® Cortex®-M0+ HT32F50343 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-20001	HT32 Series Expansion Board Basic	Expansion Board for ESK32-30xxx
ESK32-21001	HT32 Series Expansion Board Plus	Expansion Board for ESK32-30xxx
ESK32-A2A31	2.8 inches TFT-LCD Module	2.8 inches SPI / EBI LCD Module * This module can be used with the ESK32-20001 / ESK32-21001 providing a complete development kit.

Software		
Model	Function	Support Hardware
HOPE3000 or 32Bits	e-Writer32 programmer software for HT32 series MCUs	e-Writer32
HT32 Flash Programmer	In-System / In-Application programmer software for HT32 series MCUs	All series of HT32 Development Board or Starter Kit. ESK32-xxx, ESK32-xxxSK, ESK32-30xxx
HT32 Keil Support Package	Integrated Keil development environment software for HT32 series MCUs	
HT32 IAR Support Package	Integrated IAR development environment software for HT32 series MCUs	
HT32 Virtual COM Driver	HT32 USB Virtual COM Driver setup program	e-Link32 Pro. All series of HT32 Development Board or Starter Kit with USB Virtual COM example.

e-Link32 Pro Debug Adapter

The e-Link32 Pro is a new generation debug adapter for Holtek's 32-bit microcontrollers allowing users to program and debug their programs on their target boards. By using the e-Link32 Pro together with the Keil µVision IDE or IAR EWARM IDE, users are provided with a suite of development tools for rapid MCU product development.

The e-Link32 Pro package includes the e-Link32 Pro debug adapter, flat cable and USB cable.

8-Bit MCU Programming Tools

Holtek is fully aware that success of their microcontroller device range also depends upon the availability of high quality development tools. As a result Holtek has developed a full suite of professional hardware and software tools to provide designers with an excellent set of development resources to ensure their applications are designed and debugged as efficiently as possible. In this section can be found details regarding which set of tools should be used for each microcontroller device.

Hardware		
ICE		
Model	Function	Support Software
HT-ICE	LPT Type in-circuit emulator	HT-IDE3000
e-ICE	USB Type in-circuit emulator	HT-IDE3000
e-Link	On Chip Debug Support(OCDS) Type MCU debug adapter	HT-IDE3000
	On Chip Debug Support (OCDS) debug adapter for HT85 series	Keil C51 Development Tools
e-FPCB (e-Link selected item)	OCDS EV Flex Cable Converter	—
Programmer		
Model	Function	Support Software
e-WriterPro	Universal Writer for OTP/Flash MCU	HOPE3000
e-Socket	Adaptors used together with e-WriterPro	HOPE3000
EIC-300	Slimmed-down ICP programmer for Flash MCU	HOPE3000
Development Kit		
Model	Function	Note
ESK-66F-A01	HT66F50 Development Board (Starter Kit for HT66F50)	(ESK-200 + ESK-201 + e-Link + M1001D + D1003C + mini USB cable + e-cable1225A)
Development Platform		
Model	Function	Note
Holtek USB Workshop	Development Platform for USB MCU	This board can be used with the ESK66FB-200 + e-Link.

Software*		
Software		
Model	Function	Support Hardware
HT-IDE3000	Integrated development Environment software for all series of Holtek MCU	HT-ICE, e-ICE, e-Link
HOPE3000	Integrated software for Holtek e-Writer series Programmers.	e-WriterPro, e-Writer plus
HOPE3000 for e-Link	Engineering programmer for HT8 Flash MCU	e-Link
Holtek USB Workshop	Holtek USB MCU Library Generator	ESK66FB-200 + e-Link
Holtek Touch Key Workshop	Touch Key development platform	e-Link, e-Isolator
I3000	HT8 Flash MCU with Bootloader ISP Programming Tool (Program MCU by Bootloader)	

Note: It is strongly recommended to download the latest version.

HT-IDE3000 Development Environment

The HT-IDE3000 is a fully integrated development system for the Holtek range of microcontrollers. Working in conjunction with the Holtek ICE hardware emulator, the HT-IDE3000 system provides a user friendly workbench to ensure the process of application program development and debug is as efficient and trouble free as possible. By combining all software tools, such as editor, cross assembler, linker, library manager, symbolic debuggers as well as hardware tools, application designers have all the tools required at their disposal to ensure rapid development and debug of their new designs. An HT-IDE3000 User's Guide is available for download from the Holtek website, which provides much more detailed information on the HT-IDE3000 development system.

The HT-IDE3000 development system software is available for free download from the Holtek website. To ensure that users are provided with the latest modifications and enhancements to the system and to support new device releases, Service Packs are regularly provided.

HT-ICE – Holtek In-Circuit Emulator

The HT-ICEs are multi-featured hardware emulators to assist designers with the rapid development of their Holtek MCU applications. Their expansive integrated hardware and software features, provide designers with a full suite of tools for rapid and easy product development. At the heart of the system is the hardware emulator, which can fully emulate Holtek 8-bit MCU devices in real time as well as providing full debug and trace integrated functions. The HT-ICE package includes the hardware mainboard platform, CD, flat cables, power adapter, power cord and printer cable.

HT-ICE USB cable allowing customers to connect the HT-ICE LPT connector to the computer USB port. The part number of this USB cable is CUSBICECABLE4A. Please contact us for purchasing details.

e-ICE

The e-ICE is Holtek's new generation of MCU in-circuit emulators that uses a real chip EV for device emulation. In this way a more accurate emulation of device function and characteristics can be implemented. Together with the HT-IDE3000 software development system the user is provided with a suite of development tools for rapid MCU product development.

Holtek New Universal Writer – e-WriterPro

The e-WriterPro can be used not only as a programming tool for all of Holtek's OTP and Flash devices during the development stage but can also be used for small to medium volume production purposes.

The e-WriterPro must be used together with a corresponding e-Socket according to the package type of the MCU that is to be programmed. Devices with the same package type require only a single e-Socket, thus reducing the problem of changing different adaptors for different IC part numbers.

For all available Holtek devices, the following e-Socket table shows which one should be used with which device package type.

e-Socket			
No.	Product Name	Supported Package	Suggested Programming Times
1	ESKT6SOTC	SOT23-6	10,000
2	ESKT6DFNC	6DFN(2mm×2mm×0.75mm)	10,000
3	ESKT6DFNC-35	6DFN(2mm×2mm×0.35mm)	10,000
4	ESKT8SOP-RF	8SOP-EP(for BC2102, BC2161 only)	10,000
5	ESKT8SOP-RF2.4G	8SOP-EP(Dedicated for 2.4G RF IC)	10,000
6	ESKT8ICPL	ICP Adapter board	N/A
7	ESKT10SOPC	10SOP	10,000
8	ESKT10MSOPC	8MSOP, 10MSOP	10,000

e-Socket			
No.	Product Name	Supported Package	Suggested Programming Times
9	ESKT10DFNC	10DFN(3mm×3mm×0.75mm)	10,000
10	ESKT16NSOP-RF	16NSOP-EP(for BC2161 only)	10,000
11	ESKT16NSOPC	8SOP, 8SOP-EP, 14SOP, 16NSOP(Applicable beside the HT48RA0-6 series MCU)	10,000
12	ESKT16NSOPHIRCA	16NSOP(for HT48RA0-6 only)	10,000
13	ESKT16QFN-RF2.4G	16QFN(Dedicated for 2.4G RF IC)	5,000
14	ESKT16QFN4C	16QFN(4mm×4mm×0.75mm)	5,000
15	ESKT16QFN3C	16QFN(3mm×3mm×0.75mm)	5,000
16	ESKT20NSOPC	20NSOP	10,000
17	ESKT20QFN3C	20QFN(3mm×3mm×0.75mm)	5,000
18	ESKT20QFN4A	20QFN(4mm×4mm×0.75mm)	5,000
19	ESKT20QFN5A	20QFN(5mm×5mm×0.75mm)	5,000
20	ESKT20TSSOPA	16TSSOP, 20TSSOP	10,000
21	ESKT24QFN3C	24QFN(3mm×3mm×0.55mm)	5,000
22	ESKT24QFN4C	24QFN(4mm×4mm×0.75mm)	5,000
23	ESKT28QFN4C	28QFN (4mm×4mm×0.75mm)	5,000
24	ESKT28SSOPC	16SSOP(150mil), 20SSOP(150mil), 24SSOP(150mil), 28SSOP(150mil) (Applicable beside the HT48RA0-6 series MCU)	10,000
25	ESKT28SSOPHIRCA	20SSOP(for HT48RA0-6 only)	10,000
26	ESKT28SOPD	16SOP, 18SOP, 20SOP, 24SOP, 28SOP	10,000
27	ESKT30SSOPA	20SSOP(209mil), 24SSOP(209mil), 28SSOP(209mil)	10,000
28	ESKT32QFNA	32QFN(5mm×5mm×0.75mm)	5,000
29	ESKT32QFN4C	32QFN(4mm×4mm×0.75mm)(4mm×4mm×0.55mm)	5,000
30	ESKT40DIPC	8DIP, 16DIP, 18DIP, 20DIP, 22SKDIP, 24SKDIP, 28SKDIP, 40DIP	25,000
31	ESKT40QFN6A	40QFN(6mm×6mm×0.75mm)	5,000
32	ESKT44QFPA	44LQFP(FP3.2mm), 44QFP(10mm×10mm)	10,000
33	ESKT44LQFPC	44LQFP(FP2.0mm)	10,000
34	ESKT46QFNC	46QFN(6.5mm×4.5mm×0.75mm)	5,000
35	ESKT48LQFPC	48LQFP(7mm×7mm)(Applicable beside the HT48RA0-6 series MCU)	10,000
36	ESKT48LQFPHIRCA	48LQFP(7mm×7mm)(for HT49RA0-6 only)	10,000
37	ESKT48LQFPC_67F2132	48LQFP(7mm×7mm)(for BH67F2132 only)	10,000
38	ESKT52QFPA	52QFP(14mm×14mm)	10,000
39	ESKT52LQFPA	52LQFP(14mm×14mm)	10,000
40	ESKT56SSOPC	48SSOP, 56SSOP	10,000
41	ESKT64LQFP7C	64LQFP(7mm×7mm)	5,000
42	ESKT64LQFP10A	64LQFP(10mm×10mm)	10,000
43	ESKT80LQFPC	80LQFP(10mm×10mm)	10,000
44	ESKT100QFPC	100QFP(14mm×20mm)	5,000
45	ESKT100LQFPA	100LQFP(14mm×14mm)	5,000
46	ESKT128QFPC	128QFP(14mm×20mm)	10,000
47	ESKT128LQFPC	128LQFP(14mm×14mm)	10,000
48	ESKT144LQFPA	144LQFP(20mm×20mm)	5,000

Note: 1. Data in parentheses next to each package type shows the actual width of the IC package.

2. ESKxxxxxC is completely compatible with ESKxxxxxA.

8-Bit MCU Tools Indexing Table

The following table allows the correct tools to be quickly located against a device part number. In instances where tools are not listed for specific devices, this may infer that such tools are not required. Note that the "HT-ICE(S)" ICE type stands for the HT-ICE set and the corresponding I/O card.

8-Bit MCU Tools					
Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCK	OCSDSA / OCDSCK
BA45F5241	e-Link	e-Link + BA45V5241	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F0096	Demo Board	e-Link + DM20180501-BA45F0096	Flash Type-9	ICP-2C / PA0 / PA2	—
BA45F5220	e-Link	e-Link + BA45V5220 + (e-FADP08N3 or e-FADP10N3)	Flash Type-23	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
BA45F5240		e-Link + BA45V5240	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5240-2		e-Link + BA45V5240-2	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5250		e-Link + BA45V5250	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5260		e-Link + BA45V5260	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5420		e-Link + BA45V5420	Flash Type-23	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
BA45F5440	e-Link	e-Link + BA45V5440	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5450		e-Link + BA45V5450	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5542		e-Link + BA45V5542	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5542-2	e-Link	e-Link + BA45V5542-2	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5552		e-Link + BA45V5552	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5562		e-Link + BA45V5562	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5640	e-Link	e-Link + BA45V5640	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5650		e-Link + BA45V5650	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5660		e-Link + BA45V5660	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5740		e-Link + BA45V5740	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5750	e-Link	e-Link + BA45V5750	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5760		e-Link + BA45V5760	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6630	e-Link	e-Link + BA45V6630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6622		e-Link + BA45V6622	Flash Type-23	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6720		e-Link + BA45V6720 + (e-FADP08N3 or e-FADP10N3)	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
BA45F6730	e-Link	e-Link + BA45V6730	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6740		e-Link + BA45V6740	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6746		e-Link + BA45V6746	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6742	e-Link	e-Link + BA45V6742	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6748		e-Link + BA45V6748	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6753		e-Link + BA45V6753	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5541		e-Link + BA45V5541	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC45F7930	e-Link	e-Link + BC45V7930	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC45F7940		e-Link + BC45V7940	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F2342	e-Link	e-Link + BC66V2342	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F3652	e-Link	e-Link + BC66V3652	Flash Type-31	ICP-2C / PA0 / PA2	PA0/PA2
BC66F3662		e-Link + BC66V3662	Flash Type-31	ICP-2C / PA0 / PA2	PA0/PA2
BC66F5132	e-Link	e-Link + BC66V5132	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F5652	e-Link	e-Link + BC66V5652	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F5662		e-Link + BC66V5662	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F840	e-Link	e-Link + BC66V840	Flash Type-9	ICP-2C / PB4 / PB2	PB4 / PB2
BC68F2123	e-Link	e-Link + BC68V2123	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC68F2130		e-Link + BC68F2130	Flash Type-16	ICP-2C / PA0 / PA2	PA0 / PA2
BC68F2140		e-Link + BC68F2140	Flash Type-16	ICP-2C / PA0 / PA2	PA0 / PA2
BC68F2332	e-Link	e-Link + DEV-BC68F2332	Flash Type-9	ICP-2C / PA0 / PA7	OCSDSA / OCDSCK
BH45F68	e-Link	e-Link + BH45V68	Flash Type-9C	ICP-2C / PA0 / RESB	PA0 / RESB
BH66F2232	e-Link	e-Link + BH66V2232	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F2260		e-Link + BH66V2260	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2260		e-Link + BH67V2260	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2261		e-Link + BH67V2261	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2262		e-Link + BH67V2262	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2270		e-Link + BH67V2270	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F2470	e-Link	e-Link + BH66V2470	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2470		e-Link + BH67V2470	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2480		e-Link + BH67V2480	Flash Type-9D	ICP-2C / PA0 / PA2	PA0 / PA2

8-Bit MCU Tools						
Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCK	OCSDSA / OCDSCK	
BH66F2632	e-Link	e-Link + BH66V2632	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BH66F2650		e-Link + BH66V2650	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BH66F2652, BH66F2652-2		e-Link + BH66V2652	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BH66F2662, BH66F2662-2		e-Link + BH66V2662	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BH66F2660		e-Link + BH66V2660	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F2662		e-Link + BH67V2662	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BH66F5232	e-Link	e-Link + BH66V5232-10 + e-FADP10N3	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BH66F5233		e-Link + BH66V5233	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BH66F5242		e-Link + BH66V5242	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F5235		e-Link + BH67V5235	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F5245		e-Link + BH67V5245	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BH66F5252		e-Link + BH66V5252	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BH66F5250		e-Link + BH66V5250	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F5250		e-Link + BH67V5250	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F5260		e-Link + BH67V5260	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F5270		e-Link + BH67V5270	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BH66F5362		e-Link	e-Link + BH66F5362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F71252		e-Link	e-Link + BH66V71252	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F71652	e-Link	e-Link + BH66V71652	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BH66F71662		e-Link + BH66V71662	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F2132	e-Link	e-Link + BH67V2132	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F2485	e-Link	e-Link + BH67V2485	Flash Type-9D	ICP-2C / PA0 / PA2	PA0 / PA2	
BH66F2663		e-Link + BH66V2663	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F2742	e-Link	e-Link + BH67V2742	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F2752		e-Link + BH67V2752	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F2762		e-Link + BH67V2762	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BH67F5362	e-Link	e-Link + BH67F5362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2	
BP45F0044	e-Link	e-Link + BP45V0044	Flash Type-21	ICP-2C / PA0 / PA2	PA0 / PA2	
BP45F0102	e-Link	e-Link + BP45V0102	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2	
BP45F0106		e-Link + BP45V0106	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2	
BP45F1130		e-Link + BP45V1130	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2	
BP45F1330		e-Link + BP45V1330	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2	
BP45F4MB	e-Link	e-Link + BP45V4MB	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BP45FH6N	e-Link	e-Link + BP45VH6N	Flash Type-9B	ICP-2C / PA0 / PA7	PA0 / PA7	
BP66FW1240	e-Link	e-Link + BP66VW1240	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2	
BS45F3232	e-Link	e-Link + BS45V3232	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS45F3235		e-Link + BS45V3235	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS45F3832	e-Link	e-Link + BS45V3832-10 + (e-FADP08N3 or e-FADP10N3)	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS45F3833		e-Link + BS45V3833	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS45F3843		e-Link + BS45V3843	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS45F5830	e-Link	e-Link + BS45V5830	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS45F5831		e-Link + BS45V5831	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS45F5832		e-Link + BS45V5832	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS45F5833		e-Link + BS45V5833	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS66F340	e-Link	e-Link + BS66V340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS66F350		e-Link + BS66V350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BS66F360		e-Link + BS66V360	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BS66F370		e-Link + BS66V370	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BS66F340C	e-Link	e-Link + BS66V340C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS66F350C		e-Link + BS66V350C	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BS66F360C		e-Link + BS66V360C	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BS66FV340	e-Link	e-Link + BS66VV340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS66FV350		e-Link + BS66VV350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BS66FV360		e-Link + BS66VV360	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BS67F2563		e-Link	e-Link + BS67V2563	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
BS67F340	e-Link	e-Link + BS67V340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS67F350		e-Link + BS67V350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BS67F360		e-Link + BS67V360	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BS67F370		e-Link + BS67V370	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	

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Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCK	OCSDSA / OCDSCK	
BS67F350C	e-Link	e-Link + BS67V350C	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BS82B12A-3	e-Link	e-Link + BS82BV12A-3	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS82C16A-3		e-Link + BS82CV16A-3	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS82D20A-3		e-Link + BS82DV20A-3	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BS83A02A-4		e-Link + BS83AV02A + (Optional e-FADP06T)	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS83A04A-3, BS83A04A-4	e-Link	e-Link + BS83V04A + (Optional e-FADP08N-BS or e-FADP10M-BS)	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS83B04A-4		e-Link + BS83BV04A + (Optional e-FADP08N-BS or e-FADP10M-BS)	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS83B08A-3, BS83B08A-4		e-Link + 83V08AV15	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS83B12A-3, BS83B12A-4		e-Link + BS83V12A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS83B16A-3, BS83B16A-4		e-Link + BS83V16A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS83A01C		e-Link	e-Link + BS83AV01C	Flash Type-23	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
BS83A02C			e-Link + BS83AV02C	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
BS83A04C	e-Link + BS83AV04C		Flash Type-24	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS83B04C	e-Link + BS83BV04C + (Optional e-FADP08N-BS or e-FADP10M-BS)		Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS83B08C	e-Link + BS83BV08C		Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS83B12C	e-Link + BS83BV12C		Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS83B16C	e-Link + BS83BV16C		Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS83B24C	e-Link + BS83BV24C		Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS83C40C	e-Link + BS83CV40C		Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS83A02L	e-Link		e-Link + BS83AV02L	Flash Type-23	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
BS83B04L			e-Link + BS83BV04L + (Optional e-FADP08N-BS or e-FADP10M-BS)	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
BS84B06A-3	e-Link	e-Link + BS84BV06A-3	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS84B08A-3		e-Link + BS84V08A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS84C12A-3		e-Link + BS84V12A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS84B08C	e-Link	e-Link + BS84BV08C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS84C12C		e-Link + BS84CV12C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS86B12A-3	e-Link	e-Link + BS86BV12A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS86C16A-3		e-Link + BS86CV16A-3	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS86D20A-3		e-Link + BS86DV20A-3	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BS86C08C		e-Link	e-Link + BS86CV08C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS86D12C	e-Link + BS86DV12C		Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BS86D20C	e-Link + BS86DV20C		Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BS86E16C	e-Link + BS86EV16C		Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BS86DH12C	e-Link + BS86DHV12C		Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BS87B12A-3	e-Link	e-Link + BS87BV12A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS87C16A-3		e-Link + BS87CV16A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS87D20A-3		e-Link + BS87DV20A	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F0004	e-Link	e-Link + HT45V0004	Flash Type-9B	ICP-2C / PB0 / PB3	PB0 / PB3	
HT45F0057		e-Link + HT45V0057	Flash Type-9	ICP-2C / PB0 / PB3	PB0 / PB3	
HT45F0058		e-Link + HT45V0058	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F0060		e-Link + HT45V0060 + (optional e-FADP08N3 or e-FADP10N3)	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F0062	e-Link	e-Link + HT45V0062	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F0063		e-Link + HT45V0063	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F0074	e-Link	e-Link + HT45V0074	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F23A	e-ICE	M1001D + D1088A	Flash Type-6	ICP-2B		
HT45F24A		M1001D + D1095A	Flash Type-6	ICP-2B		
HT45F3230	e-Link	e-Link + HT45V3230	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F3630	e-Link	e-Link + HT45V3630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F39, HT45F391	e-Link	e-Link + HT45V39	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F4050	e-Link	e-Link + HT45V4050	Flash Type-10B	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F4630	e-Link	e-Link + HT45V4630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F4830	e-Link	e-Link + HT45V4830	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
HT45F4840		e-Link + HT45V4840	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F4842		e-Link + HT45V4842	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	

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Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCK	OCSDSA / OCDSCK
HT45F4MA	e-Link	e-Link + HT45V4MA	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45FH4MA		e-Link + HT45VH4MA	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45FH4MA-1		e-Link + HT45VH4MA-1	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45F4N		e-Link + HT45V4N	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45FH4N		e-Link + HT45VH4N	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45F5N		e-Link + HT45V5N	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45FH5N		e-Link + HT45VH5N	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45F56	e-Link	e-Link+HT45V56 + (Optional FPCB)	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F5Q-1	e-Link	e-Link + HT45V5Q-1	Flash Type-23	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F5Q-2		e-Link + HT45V5Q-2	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F5Q-3		e-Link + HT45V5Q-3	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F5V	e-Link	e-Link + HT45V5V	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F67	e-Link	e-Link + HT45V67	Flash Type-9C	ICP-2C / PA0 / RES	PA0 / RES
HT45F8550	e-Link	e-Link + HT45V8550	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F8560		e-Link + HT45F8560	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F002	e-Link	e-Link + HT66V002 + (Optional e-FADP08N or e-FADP10M2)	Flash Type-9	ICP-2C / PA0 / PA7	OCSDSA / OCDSCK
HT66F0021		e-Link + HT66V0021 + e-FADP08N	Flash Type-23	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
HT66F0025		e-Link + HT66V0025 + (Optional e-FADP08N or e-FADP10N2)	Flash Type-9	ICP-2C / PA0 / PA7	OCSDSA / OCDSCK
HT66F007		e-Link + HT66V007 + (Optional e-FADP08D or e-FADP08N or e-FADP10M)	Flash Type-9	ICP-2C / PA0 / PA1	OCSDSA / OCDSCK
HT66F008		e-Link + HT66V008 + (Optional e-FADP08D or e-FADP08N or e-FADP10M)	Flash Type-9	ICP-2C / PA0 / PA1	OCSDSA / OCDSCK
HT66F003		e-Link	e-Link + HT66V003	Flash Type-9	ICP-2C / PA0 / PA2
HT66F0031	e-Link + HT66V0031		Flash Type-23	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F004	e-Link + HT66V004		Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0041	e-Link + HT66V0041		Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2030	e-Link + HT66V2030, e-Link + HT66V2030-10		Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0042	e-Link	e-Link + HT66V0042	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0082		e-Link + HT66V0082		ICP-2C / PA0 / PA2	PA0 / PA2
HT66F017	e-ICE	M1001D + D1070A	Flash Type-6A	ICP-2B	
HT66F0172, HT66F0174	e-Link	e-Link + HT66V0174	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0175		e-Link + HT66V0175	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0176		e-Link + HT66V0176	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0181		e-Link + HT66V0181	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0186		e-Link + HT66V0186	Flash Type-14	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F019		e-Link + HT66V019	Flash Type-9B	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
HT66F3185		e-Link + HT66V3185	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F3195		e-Link + HT66V3195	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2350	e-Link	e-Link + HT66V2350	Flash Type-10B	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2360		e-Link + HT66V2360	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2362		e-Link + HT66F2362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2370		e-Link + HT66V2370	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2390		e-Link + HT66V2390	Flash Type-10D	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2630	e-Link	e-Link + HT66V2630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2730	e-Link	e-Link + HT66V2730	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2740		e-Link + HT66V2740	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F302	e-Link	e-Link + HT66V302 + (Optional e-FADP08N or e-FADP10N2)	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
HT66F303		e-Link + HT66V303	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F317	e-Link	e-Link + HT66V317	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F318		e-Link + HT66V318	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F319		e-Link + HT66V319	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F3370H	e-Link	e-Link + HT66V3370H	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F4360	e-Link	e-Link + HT66V4360	Flash Type-7C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F4370		e-Link + HT66V4370	Flash Type-7C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F4390		e-Link + HT66V4390	Flash Type-15J	ICP-2C / PA0 / PA2	PA0 / PA2

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Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCCK	OCSDSA / OCDSCK	
HT66F4530	e-Link	e-Link + HT66V4530	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66F4540		e-Link + HT66V4540	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66F4550		e-Link + HT66V4550	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66F4560		e-Link + HT66V4560	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66F489	e-Link	e-Link + HT66V489	Flash Type-9B	ICP-2C		
HT66FB540	e-Link	e-Link + HT66VB540	Flash Type-7A	ICP-2C / UDN / RES	PA0 / RES	
HT66FB542		e-Link + HT66VB542	Flash Type-7A	ICP-2C / UDN / RES	PA0 / RES	
HT66FB550		e-Link + HT66VB550	Flash Type-7A	ICP-2C / UDN / RES	PA0 / RES	
HT66FB560		e-Link + HT66VB560	Flash Type-7B	ICP-2C / PA0 / RES	PA0 / RES	
HT66FB570		e-Link + HT66VB570	Flash Type-7E	ICP-2C / UDN / RES	PA0 / RES	
HT66FB582		e-Link + HT66VB582	Flash Type-15N	ICP-2C / UDN / RES	PA0 / RES	
HT66FB572		e-Link	e-Link + HT66VB572	Flash Type-15A	ICP-2C / UDN / RES	PA0 / RES
HT66FB574	e-Link + HT66VB574		Flash Type-15E	ICP-2C / UDN / RES	PA0 / RES	
HT66FB576	e-Link + HT66VB576		Flash Type-15E	ICP-2C / UDN / RES	PA0 / RES	
HT68FB541	e-Link + HT68VB541		Flash Type-22A	ICP-2C / PA0 / PA2	PA0 / PA2	
HT68FB571	e-Link + HT68VB571		Flash Type-22A	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66FM5230	e-Link		e-Link + HT66VM5230	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FM5240			e-Link + HT66VM5240	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FM5440		e-Link + HT66VM5440	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66FM5340	e-Link	e-Link + HT66VM5340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66FV130	e-Link	e-Link + HT66VV130	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66FV140		e-Link + HT66VV140	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66FV150		e-Link + HT66VV150	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66FV160		e-Link + HT66VV160	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66FV240	e-Link	e-Link + HT66VV240	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66FW2230	e-Link	e-Link + HT66VW2230	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT66FW2350		e-Link + HT66VW2350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
HT67F2350	e-Link	e-Link + HT67V2350	Flash Type-10B	ICP-2C / PA0 / PA2	PA0 / PA2	
HT67F2360		e-Link + HT67V2360	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2	
HT67F2362		e-Link + HT67V2362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2	
HT67F2370		e-Link + HT67V2370	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2	
HT67F2390		e-Link + HT67V2390	Flash Type-10D	ICP-2C / PA0 / PA2	PA0 / PA2	
HT67F2432	e-Link	e-Link + HT67V2432	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2	
HT67F2567	e-Link	e-Link + HT67V2567	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2	
HT67F40	e-ICE	M1001D + D2004C	Flash Type-6	ICP-2B		
HT67F50		M1001D + D2004D	Flash Type-6	ICP-2B		
HT67F5652	e-Link	e-Link + HT67V5652	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
HT67F60A	e-Link	e-Link + HT67V60A	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
HT67F489	e-Link	e-Link + HT67V489	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
HT67F4892		e-Link + HT67V4892	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
HT68F0017	e-Link	e-Link + HT68V0017 (Optional e-FADP08N3 or e-FADP10N3)	Flash Type-20	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
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HT68F0036		e-Link + HT68V0036	Flash Type-23	ICP-2C / PA0 / PA2	PA0 / PA2	
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