

## **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, I<sup>2</sup>C, 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, 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](http://www.holtek.com).

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32-Bit Cortex <sup>®</sup> -M4 MCU															
32-Bit M4 USB MCU															
Part No.	Max. Freq.	VDD	Flash	SRAM	DMA	ADC	DAC	Timer	RTC	USB	CAN	Interface	Others	Max. I/O	Package
HT32F49153*	150MHz	2.4V~3.6V	128KB	48KB	7CH×2	5.33Msps 12-bit×24	12-bit×2	WWDT×1, BTMR×2 GPTMR×9, ACTMR×1	√	FS OTG	2	USART×8, SPI×3 I <sup>2</sup> S×3, I <sup>2</sup> C×3	CRC, XMC, IRTMR	87	32QFN 48/64/100LQFP
HT32F49163*			256KB												
HT32F49365	240MHz	2.6V~3.6V	256KB	224KB	7CH×2	2Msps 12-bit×16×3	12-bit×2	WWDT×1, BTMR×2 GPTMR×10, ACTMR×2	√	FS Device	2	USART×4, UART×4 SPI/I <sup>2</sup> S×4, I <sup>2</sup> C×3	CRC, SPIM, XMC, SDIO	80	48QFN 48/64/100LQFP
HT32F49395			1024KB												

\* Under development, available in 4Q, 2023.  
Operating Temperature: -40°C ~ 105°C  
Note:  
WWDT: Window Watchdog Timer  
ACTMR: Advanced Control Timer  
IRTMR: Infrared Transmitter  
BTMR: Basic Timer  
SPIM: External SPI Flash Memory Extension  
SDIO: Secure Digital Input Output  
GPTMR: General Purpose Timer  
XMC: External Memory Controller.

32-Bit Cortex <sup>®</sup> -M3 MCU															
32-Bit M3 USB MCU															
Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timer	RTC	USB	Interface	Others	Max. I/O	Package	
HT32F12345	96MHz	2.0V~3.6V	64KB	16KB	12CH	1Msps 12-bit×12	2	BFTM×2, GPTM×2 MCTM×2	√	√	USART×2, UART×2 SPI×2, I <sup>2</sup> C×2, I <sup>2</sup> S×1	CRC, EBI SDIO	51	46QFN 48/64LQFP	
HT32F12365	96MHz	2.0V~3.6V	256KB	64KB	12CH	1Msps 12-bit×16	2	BFTM×2, GPTM×2 MCTM×2	√	√	USART×2, UART×2 SPI×2, I <sup>2</sup> C×2, I <sup>2</sup> S×1	CRC, SCI EBI, AES, SDIO	80	46QFN 48/64/100LQFP	
HT32F12366				128KB											
HT32F22366	96MHz	2.0V~3.6V	256KB	128KB	12CH	1Msps 12-bit×16	2	BFTM×2, GPTM×2 MCTM×2	√	√	USART×2, UART×2 SPI×2, I <sup>2</sup> C×2, I <sup>2</sup> S×1	CRC, SCI, EBI AES, SDIO, CSIF	80	46QFN 48/64/100LQFP	
HT32F12364	72MHz	1.65V~3.6V	256KB	128KB	6CH	1Msps 12-bit×8	—	BFTM×2, SCTM×2 PWM×1, GPTM×1	√	√	USART×1, UART×2 SPI×2, I <sup>2</sup> C×2	CRC, SCI EBI, AES	52	40QFN 48/64LQFP	

Note:  
BFTM: Basic Function Timer  
GPTM: General Purpose Timer  
AES: Advanced Encryption Standard  
SCTM: Single Channel Timer  
MCTM: Motor Control Timer  
SDIO: Secure Digital Input Output  
PWM: Pulse Width Modulation  
SCI: Smart Card Interface  
CSIF: CMOS Sensor Interface

32-Bit Cortex <sup>®</sup> -M0+ MCU															
32-Bit M0+ MCU															
Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	DAC	Timer	RTC	Interface	Others	Max. I/O	Package		
HT32F52220	40MHz	2.0V~3.6V	16KB	4KB	—	1Msps 12-bit×8	—	BFTM×1, SCTM×2 GPTM×1	—	USART×1, UART×1 SPI×1, I <sup>2</sup> C×1	—	23	24/28SSOP 33QFN		
HT32F52230			32KB												
HT32F52231	40MHz	2.0V~3.6V	32KB	4KB	—	1Msps 12-bit×12	—	BFTM×2, SCTM×4 GPTM×1, MCTM×1	√	USART×1, UART×2 SPI×2, I <sup>2</sup> C×2	CRC	40	24/28SSOP 33QFN, 48LQFP		
HT32F52241			64KB	8KB											
HT32F52234*	60MHz	1.65V~3.6V	32KB	4KB	6CH	1Msps 12-bit×12	500ksps 12-bit×4	BFTM×2, SCTM×2 PWM×1	√	USART×1, UART×1 SPI×1, I <sup>2</sup> C×3	CRC, DIV	40	24/28SSOP 24/32/46QFN, 48LQFP		
HT32F52244*			64KB	8KB											
HT32F52243	40MHz	2.0V~3.6V	64KB	8KB	6CH	1Msps 12-bit×12	—	BFTM×2, SCTM×4 GPTM×1, MCTM×1	√	USART×2, UART×4 SPI×2, I <sup>2</sup> C×3	CRC, DIV	52	33/46QFN 48/64LQFP		
HT32F52253			128KB	16KB											

\* Under development, available in 4Q, 2023.  
HT32F52234/HT32F52244 Operating Temperature: -40°C ~ 105°C

32-Bit M0+ USB MCU															
Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	DAC	Timer	RTC	USB	Interface	Others	Max. I/O	Package
HT32F52331	48MHz	2.0V~3.6V	32KB	4KB	—	1Msps 12-bit×12	—	—	BFTM×2, SCTM×4 GPTM×1, MCTM×1	√	√	USART×1, UART×2 SPI×2, I <sup>2</sup> C×2	CRC, SCI	38	33QFN 48LQFP
HT32F52341			64KB	8KB											
HT32F52342	48MHz	2.0V~3.6V	64KB	8KB	6CH	1Msps 12-bit×12	2	—	BFTM×2, SCTM×2 GPTM×2, MCTM×1	√	√	USART×2, UART×2 SPI×2, I <sup>2</sup> C×2, I <sup>2</sup> S×1	CRC, SCI	51	33QFN 48/64LQFP
HT32F52352			128KB	16KB											
HT32F52344	60MHz	1.65V~3.6V	64KB	8KB	6CH	1Msps 12-bit×12	2	—	BFTM×2, SCTM×2 GPTM×1, MCTM×1	√	√	UART×2, SPI×2 I <sup>2</sup> C×1	CRC, DIV EBI	54	33/46QFN 48/64LQFP
HT32F52354			128KB												
HT32F52357	60MHz	1.65V~3.6V	128KB	16KB	6CH	1Msps 12-bit×12	2	500ksps 12-bit×2	BFTM×2, SCTM×2 PWM×2, GPTM×1 MCTM×1	√	√	USART×2, UART×4, SPI×2 QSPI×1, I <sup>2</sup> C×2, I <sup>2</sup> S×1	CRC, DIV SCI, EBI, AES	67	46QFN 48/64/80LQFP
HT32F52367			256KB	32KB											

**32-Bit Cortex®-M0+ MCU**

**32-Bit M0+ USB LCD MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	DAC	Timer	RTC	USB	LCD	Interface	Others	Max. I/O	Package
HT32F57331	60MHz	1.65V~3.6V	32KB	4KB	—	1Msps 12-bit×10	—	—	BFTM×2, PWM×2 GPTM×1	√	√	29×4~25×8	USART×1, UART×2 SPI×2, I²C×2	CRC, DIV SCI	53	46QFN 48/64LQFP
HT32F57341			64KB	8KB												
HT32F57342	60MHz	1.65V~3.6V	64KB	8KB	6CH	1Msps 12-bit×10	2	500ksps 12-bit×2	BFTM×2, SCTM×2 PWM×2, GPTM×1	√	√	37×4~33×8	USART×1, UART×2 SPI×2, I²C×2, I²S×1	CRC, DIV SCI, AES	67	46QFN 48/64/80LQFP
HT32F57352			128KB	16KB												

**32-Bit M0+ 5V MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timer	RTC	Interface	Others	Max. I/O	Package
HT32F50020	16MHz	2.5V~5.5V	16KB	2KB	—	500ksps 12-bit×12	—	BFTM×1, SCTM×3	√	UART×2, SPI×1 I²C×1	LEDC	42	24/28SSOP 24/32/46QFN, 48LQFP
HT32F50030			32KB										
HT32F50220	20MHz	2.5V~5.5V	16KB	4KB	—	1Msps 12-bit×12	—	BFTM×1, PWM×2 GPTM×1	√	UART×2, SPI×2 I²C×1	DIV	40	24/28SSOP 24/33/46QFN, 48LQFP
HT32F50230			32KB										
HT32F50231	20MHz	2.5V~5.5V	32KB	4KB	—	1Msps 12-bit×12	—	BFTM×2, PWM×2 GPTM×1, MCTM×1	√	USART×1, UART×2 SPI×2, I²C×2	CRC, DIV	40	24/28SSOP, 24/33/46QFN, 48LQFP
HT32F50241			64KB	8KB									
HT32F50431*	60MHz	2.5V~5.5V	32KB	4KB	6CH	2Msps 12-bit×12	—	BFTM×2, PWM×1 GPTM×1, MCTM×1	√	USART×1, UART×2 SPI×2, I²C×2	CRC, DIV LEDC	40	32/46QFN 48LQFP
HT32F50441*			64KB	8KB									
HT32F50442*	60MHz	2.5V~5.5V	64KB	8KB	6CH	2Msps 12-bit×12	2	BFTM×2, PWM×2 GPTM×1, MCTM×1	√	USART×2, UART×2 SPI×2, I²C×2	CRC, DIV LEDC, EBI	54	32/46QFN 48/64LQFP
HT32F50452*			128KB	16KB									

\* Under development, available in 4Q, 2023.  
HT32F504xx Operating Temperature: -40°C ~ 105°C

**32-Bit M0+ 5V USB MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	Timer	RTC	USB	Interface	Others	Max. I/O	Package
HT32F50343	60MHz	2.5V~5.5V	64KB	12KB	6CH	1Msps 12-bit×12	BFTM×2, SCTM×2 8-PWM×3, GPTM×1	√	√	UART×2, SPI×2 I²C×2, SLED×2	CRC, DIV	51	32/46QFN 48/64LQFP

**32-Bit M0+ 5V CAN MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timer	RTC	CAN	Interface	Others	Max. I/O	Package
HT32F53231*	60MHz	2.5V~5.5V	32KB	4KB	6CH	2Msps 12-bit×12	—	BFTM×2, PWM×1 GPTM×1, MCTM×1	√	√	USART×1, UART×2 SPI×2, I²C×2	CRC, DIV LEDC	40	32/46QFN 48LQFP
HT32F53241*			64KB	8KB										
HT32F53242*	60MHz	2.5V~5.5V	64KB	8KB	6CH	2Msps 12-bit×12	2	BFTM×2, PWM×2 GPTM×1, MCTM×1	√	√	USART×2, UART×2 SPI×2, I²C×2	CRC, DIV LEDC, EBI	54	32/46QFN 48/64LQFP
HT32F53252*			128KB	16KB										

\* Under development, available in 4Q, 2023.  
Operating Temperature: -40°C ~ 105°C

**32-Bit M0+ 5V Touch MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timer	RTC	Touch Key	Interface	Others	Max. I/O	Package
HT32F54231	60MHz	2.5V~5.5V	32KB	4KB	—	1Msps 12-bit×10	—	BFTM×2, SCTM×2 GPTM×1, MCTM×1	√	24	USART×1, UART×2 SPI×2, I²C×2	CRC, DIV LEDC	40	28SSOP, 32/46QFN 48LQFP
HT32F54241			64KB	8KB										
HT32F54243	60MHz	2.5V~5.5V	64KB	8KB	6CH	1Msps 12-bit×10	2	BFTM×2, SCTM×4 GPTM×1, MCTM×1	√	28	USART×2, UART×4 SPI×2, I²C×3	CRC, DIV LEDC	54	32/46QFN 48/64LQFP
HT32F54253			128KB	16KB										

**32-Bit M0+ 24-Bit A/D MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	ADC		Timer	RTC	Interface	Others	Max. I/O	Package	
HT32F59041	20MHz	2.5V~5.5V	64KB	8KB	SAR ADC	1Msps 12-bit×12	Delta Sigma ADC 24-bit×4	BFTM×2, PWM×2 GPTM×1, MCTM×1	√	USART×1, UART×2 SPI×1, I²C×1	CRC, DIV	30	48LQFP

**32-Bit M0+ 24-Bit A/D LCD MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	ADC		Timer	RTC	USB	LCD	Interface	Others	Max. I/O	Package	
HT32F59741	60MHz	1.65V~3.6V	64KB	8KB	SAR ADC	1Msps 12-bit×10	Delta Sigma ADC 24-bit×4	BFTM×2, PWM×2 GPTM×1	√	√	29×4~25×8	USART×1, UART×2 SPI×2, I²C×2	CRC, DIV SCI	53	64/80LQFP

Note:  
 BFTM: Basic Function Timer  
 GPTM: General Purpose Timer  
 QSPI: Quad serial peripheral interface  
 SCI: Smart Card Interface  
 AES: Advanced Encryption Standard  
 SCTM: Single Channel Timer  
 MCTM: Motor Control Timer  
 SLED: Strip LED Controller  
 LEDC: LED controller  
 PWM: Pulse Width Modulation  
 USB: 2.0 Full Speed device  
 DIV: Hardware Divider  
 EBI: External Bus Interface for NOR Flash/SRAM/LCD

8-Bit Flash MCU

Low Pin Count A/D Flash MCU

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	CMP	Interface	Package
HT66F302	8MHz	1.8V~5.5V	1K×14	64×8	32×8	2	—	8	10-bit STM×1 10-bit PTM×1	12-bit×4	—	—	8SOP, 10SOP
HT66F303								14					16NSOP
HT66F0025	8MHz	2.2V~5.5V	2K×14	64×8	32×8	4	—	8	10-bit STM×1	12-bit×4	—	—	8SOP, 10SOP
HT66F2030	8MHz	1.8V~5.5V	2K×15	128×8	32×8	4	—	14	10-bit CTM×1 10-bit PTM×1	12-bit×4	—	UART×1 SPI/I <sup>2</sup> C×1	8SOP, 10MSOP 16NSOP, 16QFN
HT66F2040	8MHz	1.8V~5.5V	4K×16	512×8	512×8	8	√	18	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit×7	2	UART×1 UART/SPI/I <sup>2</sup> C×1	8SOP, 10MSOP 16NSOP, 16QFN 20SSOP
HT66F2050			8K×16										

A/D Flash MCU

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	CMP	RTC	Interface	Package
HT66F004	8MHz	2.2V~5.5V	2K×15	96×8	32×8	4	—	18	10-bit PTM×2	12-bit×8	—	—	—	16NSOP, 20NSOP 24SSOP
HT66F3184	16MHz	1.8V~5.5V	4K×16	256×8	128×8	6	—	22	10-bit PTM×1 10-bit STM×1	12-bit×12	—	—	—	16NSOP, 24SSOP 20QFN, 24QFN
HT66F3185						8	√	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1		1	√	UART×1 SPI/I <sup>2</sup> C×1	16NSOP, 20NSOP 24SSOP, 28SSOP 24QFN, 28QFN
HT66F3194	16MHz	1.8V~5.5V	8K×16	512×8	128×8	6	—	22	10-bit PTM×1 10-bit STM×1	12-bit×12	—	—	—	20NSOP 24SSOP, 24QFN
HT66F3195						8	√	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1		1	√	UART×1 SPI/I <sup>2</sup> C×1	20NSOP 24SSOP, 28SSOP 24QFN, 28QFN
HT66F31A5	16MHz	1.8V~5.5V	16K×16	1024×8	1024×8	12	√	30	10-bit PTM×2 16-bit CTM×1 16-bit STM×1	12-bit×12	1	√	UART×2 SPI/I <sup>2</sup> C×1	24SSOP, 28SSOP 24QFN, 28QFN 32QFN
HT66F2362	16MHz	1.8V~5.5V	16K×16	2048×8	1024×8	16	√	44	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit×16	2	√	UART×2 SPI/I <sup>2</sup> C×1 SPIA×1	28SSOP, 32QFN 44LQFP, 48LQFP
HT66F2372	16MHz	1.8V~5.5V	32K×16	3072×8	2048×8	16	√	44	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit×16	2	√	UART×2 SPI/I <sup>2</sup> C×1 SPIA×1	28SSOP, 32QFN 44LQFP, 48LQFP

A/D Flash LCD MCU

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	LCD	CMP	RTC	Interface	Package
HT67F2355	12MHz	1.8V~5.5V	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	—	√	UART×1 SPI/I <sup>2</sup> C×1	44LQFP 48LQFP
HT67F2362	16MHz	1.8V~5.5V	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	√	UART×2 SPI/I <sup>2</sup> C×1 SPIA×1	48LQFP 64LQFP
HT67F2372A*	16MHz	1.8V~5.5V	32K×16	3072×8	2048×8	16	√	71	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	12-bit×20	27×8 42×8 52×8	2	√	UART×3 SPI/I <sup>2</sup> C×1 SPIA×1	48LQFP 64LQFP 80LQFP

\* Under development, available in 4Q, 2023.

I/O Flash LCD MCU

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	LCD	RTC	Interface	Package
HT69F340	16MHz	1.8V~5.5V	4K×16	256×8	64×8	8	√	39	10-bit PTM×1 10-bit CTM×1	24×4 25×3	√	SPI/I <sup>2</sup> C×1	48LQFP
HT69F350	16MHz	1.8V~5.5V	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 <sup>2</sup> C×1	48LQFP 64LQFP
HT69F360	16MHz	1.8V~5.5V	16K×16	1024×8	128×8	8	√	63	10-bit PTM×2 10-bit CTM×1 16-bit STM×1	48×4 49×3	√	UART×1 SPI/I <sup>2</sup> C×1	64LQFP 80LQFP

**8-Bit Flash MCU**
**Low Power A/D Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Temp. Sensor	RTC	Interface	Package
HT66L2530A	16MHz	1.8V~5.5V	2K×16	128×8	128×8	8	√	18	16-bit PTM×1 16-bit STM×1	10/12-bit×4	√	√	UART/SPI/I <sup>2</sup> C×1	16NSOP, 20NSOP 16QFN, 20QFN
HT66L2540A	16MHz	1.8V~5.5V	4K×16	256×8	256×8	8	√	26	16-bit PTM×1 16-bit STM×1	10/12-bit×8	√	√	UART/SPI/I <sup>2</sup> C×1	16NSOP, 24SSOP 28SSOP, 28QFN
HT66L2550A	16MHz	1.8V~5.5V	8K×16	512×8	256×8	8	√	30	16-bit PTM×2 16-bit STM×1	10/12-bit×8	√	√	UART/SPI/I <sup>2</sup> C×1	24SSOP, 28SSOP 32QFN

**Low Power A/D Flash LCD MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Temp. Sensor	LCD	RTC	Interface	Package
HT67L2540A	16MHz	1.8V~5.5V	4K×16	256×8	256×8	8	√	22	16-bit PTM×1 16-bit STM×1	10/12-bit×8	√	24×4	√	UART/SPI/I <sup>2</sup> C×1	48LQFP
HT67L2550A	16MHz	1.8V~5.5V	8K×16	512×8	512×8	8	√	30	16-bit PTM×2 16-bit STM×1	10/12-bit×8	√	32×4	√	UART/SPI/I <sup>2</sup> C×1	48LQFP 64LQFP

**OPA Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	DAC	Voice DAC	CMP	OPA	RTC	Interface	Package
HT66F4530	12MHz	2.2V~5.5V	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 <sup>2</sup> C×1	16NSOP 20SSOP
HT66F4540	12MHz	2.2V~5.5V	4K×16	256×8	64×8	8	26	10-bit STM×1 10-bit PTM×2	12-bit ×8	8-bit ×3	—	2	2	√	UART×1 SPI/I <sup>2</sup> C×1	24SSOP 28SSOP
HT66F4550	12MHz	2.2V~5.5V	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	√	UART×1 SPI/I <sup>2</sup> C×1	24SSOP 28SSOP
HT66F4560	12MHz	2.2V~5.5V	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	√	UART×1 SPI/I <sup>2</sup> C×1	28SSOP 48LQFP

**Advanced OPA Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Temp. Sensor	DAC	CMP	OPA	PWM	Interface	Package
HT66F4640	16MHz	1.8V~5.5V	4K×16	512×8	512×8	8	√	22	10-bit CTM×1 10-bit PTM×1	12-bit ×8	√	8-bit ×3	2	2	16-bit ×1	UART×1 SPI/I <sup>2</sup> C×1	24SSOP

Note: 1. The MCU internal OPA gain bandwidth is software programmable.  
2. PWM supports edge-aligned and center-aligned PWM mode and includes dead time, complementary, mask, protection functions.

**High Accuracy HIRC MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Touch Key	LCD	RTC	IR Driver	Interface	Package
HT68R2420	4MHz	2.0V~5.5V	1K×14	32×8	—	2	—	16	9-bit×1	—	—	—	—	√	—	8SOP, 16NSOP 20NSOP, 20SSOP
HT68F2420	4MHz	1.8V~5.5V	1K×13	32×8	—	2	—	16	9-bit×1	—	—	—	—	√	—	8SOP, 16NSOP 20NSOP, 20SSOP
HT67F2432	4MHz	1.8V~5.5V	2K×16	128×8	32×16	6	—	26	9-bit×1 10-bit CTM×1	10-bit×4	—	20×4	√	—	UART×1	24SSOP 28SOP, 28SSOP
BS67F2432*	4MHz	1.8V~5.5V	2K×16	128×8	32×16	6	—	21	9-bit×1 10-bit CTM×1	10-bit×4	8	15×4	√	—	UART×1	28SSOP 32QFN
HT67F2452*	4MHz	1.8V~5.5V	8K×16	512×8	128×8	8	√	44	10-bit CTM×1 10-bit PTM×1 16-bit STM×1	12-bit×8	—	30×4 29×5 28×6	√	√	UART×1	32LQFP 44LQFP 48LQFP

\* Under development, available in 4Q, 2023.  
Note: HT68R2420 Program Memory is OTP type.

**RGB LED Flash MCU**

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

**8-Bit OTP MCU**
**I/O OTP MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Stack	I/O	Timer	ADC	PWM	Package
HT68R002	8MHz	2.0V~5.5V	1K×14	64×8	2	8	8-bit×1, 16-bit×1	—	8-bit×1	8SOP, 10SOP
HT68R003	8MHz	2.0V~5.5V	1K×14	64×8	2	14	8-bit×1, 16-bit×1	—	8-bit×3	8SOP, 16NSOP
HT68R004	8MHz	2.0V~5.5V	2K×15	96×8	4	18	8-bit×1, 16-bit×1	—	8-bit×3	16NSOP, 20NSOP 20SOP, 20SSOP

**A/D OTP MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Stack	I/O	Timer	ADC	PWM	Package
HT66R002	8MHz	2.0V~5.5V	1K×14	64×8	2	8	8-bit×1, 16-bit×1	8-bit×4	8-bit×1	8SOP 10SOP
HT66R0025			2K×16	128×8	4					
HT66R003	8MHz	2.0V~5.5V	1K×14	64×8	2	14	8-bit×1, 16-bit×1	8-bit×5	8-bit×3	8SOP, 16NSOP
HT66R004	8MHz	2.0V~5.5V	2K×15	96×8	4	18	8-bit×1, 16-bit×1	8-bit×10	8-bit×3	16NSOP, 20NSOP 20SOP, 20SSOP

**8-Bit USB Flash MCU**
**I/O USB Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Stack	IAP/ISP	I/O	Timer	Endpoints	LDO 3.3V	Interface	Package
HT68FB550	16MHz	2.2V~5.5V	8K×16	512×8	8	√	25	10-bit CTM×2 10-bit STM×1 16-bit STM×1	6	√	SPI/I <sup>2</sup> C×1 SPI×1	24SSOP 28SSOP
HT68FB560	16MHz	2.2V~5.5V	16K×16	768×8	12	√	37	10-bit CTM×2 10-bit STM×1 16-bit STM×1	8	√	SPI/I <sup>2</sup> C×1 SPI×1	28SSOP 48LQFP

**A/D USB Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP/ISP	I/O	Timer	ADC	RTC	Endpoints	LDO 3.3V	Comparator	Interface	Package
HT66FB542	16MHz	2.2V~5.5V	4K×16	256×8	—	8	√	17	10-bit CTM×2 10-bit STM×1 16-bit STM×1	12-bit×4	—	4	√	1	SPI/I <sup>2</sup> C×1 SPI×1	24SSOP
HT66FB540	16MHz	2.2V~5.5V	4K×16	512×8	—	8	√	25	10-bit CTM×2 10-bit STM×1 16-bit STM×1	12-bit×8	√	4	√	2	SPI/I <sup>2</sup> C×1 SPI×1	28SSOP 48LQFP
HT66FB550	16MHz	2.2V~5.5V	8K×16	768×8	—	8	√	37	10-bit CTM×2 10-bit STM×1 16-bit STM×1	12-bit×16	√	6	√	2	SPI/I <sup>2</sup> C×1 SPI×1	28SSOP 48LQFP
HT66FB560	16MHz	2.2V~5.5V	16K×16	1024×8	—	12	√	45	10-bit CTM×2 10-bit STM×1 16-bit STM×1	12-bit×16	√	8	√	2	SPI/I <sup>2</sup> C×1 SPI×1	48LQFP 64LQFP
HT66FB570	16MHz	2.2V~5.5V	32K×16	1024×8	256×8	12	√	55	10-bit PTM×5 16-bit STM×1	12-bit×24	√	8	√	2	UART×1 SPI/I <sup>2</sup> C×1 SPI×1	48LQFP 64LQFP

Note: # MDU: Multiplier Divider Unit, 16-bit unsigned multiplier and a 32-bit/16-bit divider.

**RGB LED USB Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP/ISP	I/O	Timer	ADC	Endpoints	LDO 3.3V	LED PWM	Const. Current	Interface	Package	
HT68FB541	16MHz	3.0V~5.5V	4K×16	256×8	64×8	8	√	18	16-bit×2	—	4	√	3×8	—	SPI×1	24SSOP	
HT68FB551*	16MHz	2.2V~5.5V	8K×16	256×8	512×8	8	√	22	16-bit×2	—	4	√	6×8	—	SPI/I <sup>2</sup> C×1 SPI×1	28SSOP	
HT68FB571	16MHz	3.0V~5.5V	8K×16	512×8	64×8	8	√	41	16-bit×2	—	4	√	16×8	—	SPI×1	28SSOP 48LQFP	
HT66FB572	16MHz	2.2V~5.5V	8K×16	1024×8	256×8	12	√	34	10-bit PTM×3 16-bit STM×1	12-bit×8	—	8	√	15×8	15	UART×1 SPI/I <sup>2</sup> C×1 SPI×1	48LQFP 64LQFP

\* Under development, available in 4Q, 2023.

**2.4GHz USB Flash MCU**

Part No.	VDD	Program Memory	Data Memory	Timer	I/O	Modulation	Data Rate	Output Power	Sensitivity	Interface	Package
HT68FB6511*	2.2V~5.5V	8K×16	256×8	16-bit×2	22	GFSK	250K/1M/2Mbps	-25~+4dBm	-96dBm@250kbps	SPI×1 SPI/I <sup>2</sup> C×1	32QFN 46QFN

\* Under development, available in 1Q, 2024.

8-Bit CAN Bus Flash MCU

CAN Bus Flash MCU

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	CAN Protocol	Message Objects	Interface	Package
HT66F3352*	16MHz	1.8V~5.5V	8K×16	512×8	128×8	8	√	26	16 bit CTMx1 16 bit STMx1 10 bit PTMx1	12-bit×12	CAN 2.0A/B ISO11898-1	32	CAN×1 UART×1 SPI/I <sup>2</sup> C×1	28SSOP 46QFN 48LQFP
HT66F3362*			16K×16	1K×8	1K×8	12		28	16 bit CTMx1 16 bit STMx1 10 bit PTMx2				CAN×1 UART×2 SPI/I <sup>2</sup> C×1	

\* Under development, available in 1Q, 2024.  
Note: Based on BOSCH CAN IP module C\_CAN.



**32-Bit BLDC Motor MCU**
**Cortex®-M0+ 32-Bit BLDC Motor MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	OPA / PGA	Timer <sup>1</sup>	Cap. <sup>2</sup> or PWM	Cpm. PWM <sup>3</sup>	RTC	Interface	Others	I/O	Package
HT32F65232	60MHz	2.5V~5.5V	32KB	4KB	6CH	2Msps×1 12-bit×12	2	1 / 0	BFTM×2 SCTM×4 GPTM×1 MCTM×1 LSTM×1	12	3	—	USART×1 UART×1 SPI×1, I <sup>2</sup> C×1	CRC DIV	20	24SSOP
28															32QFN	
HT32F65230			44	48LQFP												
HT32F65240			64KB	8KB		1Msps×2 12-bit×8	3	2 / 0	BFTM×2 SCTM×4 GPTM×1 MCTM×1			√			40	48LQFP

**Cortex®-M0+ 32-Bit BLDC Motor MCU (CORDIC + PID Engine)**

HT32F66242**	80MHz	2.5V~5.5V	64KB	8KB	6CH	2.5Msps×1 12-bit×12	2	0 / 4	BFTM×2 SCTM×4 GPTM×1 MCTM×1 LSTM×1	12	3	—	USART×1 UART×1 SPI×1, I <sup>2</sup> C×1	CRC DIV	20	24SSOP
HT32F66246*															28	32QFN
													USART×1 UART×1 SPI×1, I <sup>2</sup> C×1		44	48LQFP

\* Under development, available in 4Q, 2023.

\*\* Under development, available in 1Q, 2024.

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timer, GPTM: General-Purpose Timer, MCTM: Motor Control Timer, LSTM: Low Speed Timer.

2. Cap.: Input Capture.

3. Cpm. PWM: Complementary PWM for 3-phase motor control or inverter application.

**8-Bit BLDC Motor MCU**
**8-Bit BLDC Motor Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	MDU	OCP	PWM	CMP	Inter- face	Package
BD66FM5245	20MHz	4.5V~5.5V	4K×16	512×8	—	8	√	22	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×14	√	√	10-bit ×3	3	UART×1	16NSOP 24SSOP
BD66FM5246*					512×8				10-bit PTM×2 16-bit PTM×2 16-bit CTM×2 16-bit CAPTM×1						UART×1 I <sup>2</sup> C×1	16NSOP 24SSOP
BD66FM5252			8K×16	2048×8	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1				12-bit ×11	24/28SSOP 32QFN						

**8-Bit 1-phase BLDC Motor OTP MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Stack	HVIAP	I/O	Timer	ADC	MDU	OCP	PWM	CMP	Inter- face	Package
BD66RM1241*	20MHz	4.5V~5.5V	4K×16	384×8	8	√	14	16-bit PTM×1 16-bit CTM×3	12-bit ×8	√	√	10-bit ×3	1	UART	10MSOP 16QFN/TSSOP

\* Under development, available in 4Q, 2023.

**32-Bit BLDC Motor MCU with Gate-Driver**
**Cortex®-M0+ 32-Bit BLDC Motor MCU with 36V P/N Gate-Driver**

Part No.	Max. Freq.	VCC	LDO	Flash	SRAM	PDMA	ADC	CMP	OPA / PGA	Timer <sup>2</sup>	Cap. <sup>3</sup> or PWM	Cpm. PWM <sup>4</sup>	RTC	Interface	Others	I/O	Package
HT32F65432A	60MHz	6V~32V	5V <sup>1</sup>	32KB	4KB	6CH	2Msps×1 12-bit×12	2	1 / 0	BFTM×2 SCTM×4 GPTM×1 MCTM×1 LSTM×1	12	3	—	USART×1 UART×1 SPI×1, I <sup>2</sup> C×1	CRC DIV	16	32QFN
HT32F65440A				64KB	8KB		1Msps×2 12-bit×8	3	2 / 0	28						48LQFP-EP 64LQFP-EP	

**Cortex®-M0+ 32-Bit BLDC Motor MCU with 36V P/N Gate-Driver (CORDIC + PID Engine)**

HT32F66442A*	80MHz	6V~32V	5V <sup>1</sup>	64KB	8KB	6CH	2.5Msps×1 12-bit×12	2	0 / 4	BFTM×2 SCTM×4 GPTM×1 MCTM×1 LSTM×1	12	3	—	USART×1 UART×1 SPI×1, I <sup>2</sup> C×1  CAN Bus ×1 USART×1 UART×1 SPI×1, I <sup>2</sup> C×1	CRC DIV	16	32QFN
HT32F66446A*																31	48LQFP-EP

**Cortex®-M0+ 32-Bit BLDC Motor MCU with 48V N/N Gate-Driver**

HT32F65532G	60MHz	6V~40V	5V	32KB	4KB	6CH	2Msps×1 12-bit×12	2	1 / 0	BFTM×2 SCTM×4 GPTM×1 MCTM×1 LSTM×1	12	3	—	USART×1 UART×1 SPI×1, I <sup>2</sup> C×1	CRC DIV	12	32QFN
HT32F65540G				64KB	8KB		1Msps×2 12-bit×8	3	2 / 0	28						48LQFP-EP 64LQFP-EP	

**Cortex®-M0+ 32-Bit BLDC Motor MCU with 48V N/N Gate-Driver (CORDIC + PID Engine)**

HT32F66542G**	80MHz	6V~40V	5V	64KB	8KB	6CH	2.5Msps×1 12-bit×12	2	0 / 4	BFTM×2 SCTM×4 GPTM×1 MCTM×1 LSTM×1	12	3	—	USART×1 UART×1 SPI×1, I <sup>2</sup> C×1  CAN Bus x1 USART×1 UART×1 SPI×1, I <sup>2</sup> C×1	CRC DIV	12	32QFN
HT32F66546G*																28	48LQFP-EP

**Cortex®-M0+ 32-Bit BLDC Motor MCU with 110V N/N Gate-Driver**

HT32F65732G*	60MHz	6V~20V	5V	32KB	4KB	6CH	2Msps×1 12-bit×12	2	1 / 0	BFTM×2 SCTM×4 GPTM×1 MCTM×1 LSTM×1	12	3	—	USART×1 UART×1 SPI×1, I <sup>2</sup> C×1	CRC DIV	22	46QFN
HT32F65740G*				64KB	8KB		1Msps×2 12-bit×8	3	2 / 0	26						48LQFP-EP 64LQFP-EP	

**Cortex®-M0+ 32-Bit BLDC Motor MCU with 110V N/N Gate-Driver (CORDIC + PID Engine)**

HT32F66742G**	80MHz	6V~20V	5V	64KB	8KB	6CH	1Msps×2 12-bit×12	3	0 / 4	BFTM×2 SCTM×4 GPTM×1 MCTM×1 LSTM×1	12	3	—	USART×1 UART×1 SPI×1, I <sup>2</sup> C×1  CAN Bus x1 USART×1 UART×1 SPI×1, I <sup>2</sup> C×1	CRC DIV	23	46QFN
HT32F66746G*																26	48LQFP-EP

\* Under development, available in 4Q, 2023.

\*\* Under development, available in 1Q, 2024.

Note: 1. LDO: Support external signal wakeup to realize zero standby power function.

2. BFTM: Basic Function Timer, SCTM: Single-Channel Timer, GPTM: General-Purpose Timer, MCTM: Motor Control Timer, LSTM: Low Speed Timer.

3. Cap.: Input Capture.

4. Cpm. PWM: Complementary PWM for 3-phase motor control or inverter application.

**8-Bit BLDC Motor MCU with Gate-Driver**
**8-Bit BLDC Motor Flash MCU with 36V P/N Gate-Driver**

Part No.	Max. Freq.	VCC	LDO	Program Memory	Data Memory	Data EEPROM	I/O	Timer	ADC	MDU	OCF	PWM	CMP	Interface	Package
BD66FM6445A	20MHz	6V~32V	5V	4K×16	512×8	—	15	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×12	√	√	10-bit ×3	3	UART×1	32QFN
BD66FM6452A				8K×16	2048×8	512×8	18	12-bit ×9	UART×1 I <sup>2</sup> C×1						
BD66FM6446B*			5V	4K×16	512×8	512×8	16	10-bit PTM×2 16-bit PTM×2 16-bit CTM×1 16-bit CAPTM×1	12-bit ×10					UART×1 I <sup>2</sup> C×1	
				BD66FM6452B*	8K×16		2048×8	18	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1					12-bit ×9	

**8-Bit BLDC Motor Flash MCU with 48V N/N Gate-Driver**

BD66FM6545G	20MHz	6V~40V	5V	4K×16	512×8	—	15	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×12	√	√	10-bit ×3	3	UART×1	32QFN
BD66FM6550G				8K×16	2048×8	512×8	24	12-bit ×10	UART×1 I <sup>2</sup> C×1					48LQFP-EP	

**8-Bit BLDC Motor Flash MCU with 110V N/N Gate-Driver**

BD66FM6746G*	20MHz	6V~20V	5V	4K×16	512×8	512×8	16	10-bit PTM×2 16-bit PTM×2 16-bit CTM×1 16-bit CAPTM×1	12-bit ×13	√	√	10-bit ×3	3	UART×1 I <sup>2</sup> C×1	32QFN 48LQFP-EP
BD66FM6752G*				8K×16	2048×8		24	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×10						

\* Under development, available in 4Q, 2023.

Note: LDO: Support external signal wakeup to realize zero standby power function.

**8-Bit 1-phase BLDC Motor OTP MCU with 36V P/N Gate-Driver**

Part No.	Max. Freq.	VCC	LDO	Program Memory	Data Memory	HVIAP	I/O	Timer	ADC	MDU	OCF	PWM	CMP	Interface	Package
BD66RM2441B*	20MHz	6V~32V	5V	4K×16	384×8	√	7	16-bit PTM×1 16-bit CTM×3	12-bit ×5	√	√	10-bit ×3	1	UART	16TSSOP-EP 16QFN

\* Under development, available in 4Q, 2023.

**32-Bit BLDC Motor MCU with Driver**
**Cortex®-M0+ 32-Bit BLDC Motor MCU with Driver**

Part No.	Max. Freq.	VM	LDO	Peak Current	Flash	SRAM	PDMA	ADC	CMP	OPA / PGA	Timer <sup>1</sup>	Cap. <sup>2</sup> or PWM	Cpm. PWM <sup>3</sup>	Interface	Others	I/O	Package
HT32F65C32F*	60MHz	6V~32V	5V	3.5A	32KB	4KB	6CH	2Msps×1 12-bit×12	2	1 / 0	BFTM×2 SCTM×4 GPTM×1 MCTM×1 LSTM×1	12	3	USART×1 UART×1 SPI×1 I <sup>2</sup> C×1	CRC DIV	28	48LQFP-EP
HT32F65C40F*					64KB	8KB		1Msps×2 12-bit×8	3	2 / 0						26	48LQFP-EP

**Cortex®-M0+ 32-Bit BLDC Motor MCU with Driver (CORDIC + PID Engine)**

HT32F66C42F**	80MHz	6V~32V	5V	3.5A	64KB	8KB	6CH	2.5Msps×1 12-bit×12	2	0 / 4	BFTM×2 SCTM×4 GPTM×1 MCTM×1 LSTM×1	12	3	USART×1 UART×1 SPI×1 I <sup>2</sup> C×1	CRC DIV	27 34	48LQFP-EP 64LQFP-EP
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\* Under development, available in 4Q, 2023.

\*\* Under development, available in 1Q, 2024.

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timer, GPTM: General-Purpose Timer, MCTM: Motor Control Timer, LSTM: Low Speed Timer.

2. Cap.: Input Capture.

3. Cpm. PWM: Complementary PWM for 3-phase motor control or inverter application.

**8-Bit BLDC Motor MCU with Driver**
**8-Bit BLDC Motor Flash MCU with Driver**

Part No.	Max. Freq.	VM	LDO	Peak Current	Program Memory	Data Memory	Data EEPROM	IAP	I/O	Timer	ADC	MDU	OCF	PWM	CMP	Interface	Package
BD66FM8345B	20MHz	6V~15V	5V	1.5A	4K×16	512×8	—	√	11	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×9	√	√	10-bit ×3	3	UART×1	24SSOP-EP 32QFN
BD66FM8446F*		6V~32V		3.5A					512×8	14	10-bit PTM×2 16-bit PTM×2 16-bit CTM×2 16-bit CAPTM×1					12-bit ×11	UART×1 I <sup>2</sup> C×1
BD66FM8452F*		8K×16		2048×8	13	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×9										

\* Under development, available in 4Q, 2023

**8-Bit 1-phase BLDC Motor OTP MCU with Driver**

Part No.	Max. Freq.	VM	LDO	Peak Current	Program Memory	Data Memory	HVIAP	I/O	Timer	ADC	MDU	OCF	PWM	CMP	Interface	Package
BD66RM3341C*	20MHz	6V~15V	5V	1.5A	4K×16	384×8	√	6	16-bit PTM×1 16-bit CTM×3	12-bit ×4	√	√	10-bit ×3	1	UART	16NSOP-EP 16QFN

\* Under development, available in 4Q, 2023

**Driver Peripheral**
**H-Bridge Driver**

Part No.	Supply Voltage	Max. Motor Voltage	Motor Peak Current (A)	Motor RMS Current (A)	Max. Sleep Current (μA)	Max. PWM Frequency (Hz)	Number of H-Bridge	Protection	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					

**24-Bit A/D Flash MCU**
**32-Bit M0+ 24-Bit A/D MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	ADC		Timer	RTC	Interface	Others	Max. I/O	Package
HT32F59041	20MHz	2.5V~5.5V	64KB	8KB	SAR ADC 1Msps 12-bit×12	Delta Sigma ADC 24-bit×4	BFTM×2, PWM×2 GPTM×1, MCTM×1	√	USART×1, UART×2 SPI×1, I <sup>2</sup> C×1	CRC, DIV	30	48LQFP

**32-Bit M0+ 24-Bit A/D LCD MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	ADC		Timer	RTC	USB	LCD	Interface	Others	Max. I/O	Package
HT32F59741	60MHz	1.65V~3.6V	64KB	8KB	SAR ADC 1Msps 12-bit×10	Delta Sigma ADC 24-bit×4	BFTM×2, PWM×2 GPTM×1	√	√	29×4~25×8	USART×1, UART×2 SPI×2, I <sup>2</sup> C×2	CRC, DIV SCI	53	64/80LQFP

Note:  
 BFTM: Basic Function Timer  
 GPTM: General Purpose Timer  
 QSPI: Quad serial peripheral interface  
 SCI: Smart Card Interface  
 AES: Advanced Encryption Standard  
 SCTM: Single Channel Timer  
 MCTM: Motor Control Timer  
 SLED: Strip LED Controller  
 LEDC: LED controller  
 PWM: Pulse Width Modulation  
 USB: 2.0 Full Speed device  
 DIV: Hardware Divider  
 EBI: External Bus Interface for NOR Flash/SRAM/LCD

**24-Bit A/D Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	ENOB	Temp. Sensor	CMP	OPA	Interface	Package
BH66F5350	12MHz	2.2V~5.5V	8K×16	512×8	128×8	8	√	13	10-bit CTM×1 16-bit PTM×1	24-bit×4	19.5	±0.2°C	—	2	UART/SPI/I <sup>2</sup> C×1	24SSOP 28SSOP
BH66F5355	12MHz	2.2V~5.5V	8K×16	512×8	512×8	8	—	10	10-bit CTM×1 16-bit PTM×1	24-bit×4	19.5	±0.2°C	—	2	UART×1 SPI/I <sup>2</sup> C×1	24QFN 24SSOP
BH66F5362	16MHz	1.8V~5.5V	16K×16	2048×8	1024×8	16	√	32	10-bit PTM×2 16-bit PTM×2 16-bit STM×2	12-bit×9 24-bit×4	— 19.5	—	2	— SPI×1, I <sup>2</sup> C×1	48LQFP	

**24-Bit A/D LCD Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	MDU	Stack	IAP	I/O	Timer	ADC	ENOB	LCD	OPA	RTC	Interface	Package
BH67F5255	8MHz	2.2V~5.5V	8K×16	512×8	512×8	—	16	√	30	10-bit PTM×2 16-bit STM×1	24-bit×4	19.1	24×4 22×6	2	—	UART×1 SPI/I <sup>2</sup> C×1	48LQFP
BH67F5265	16MHz	2.2V~5.5V	16K×16	1024×8	1024×8	√	16	√	43	10-bit PTM×3 16-bit STM×1	24-bit×6	19.1	30×4 28×6 26×8	2	√	UART×1 SPI×1 SPI/I <sup>2</sup> C×1	48LQFP 64LQFP
BH67F5275	16MHz	2.2V~5.5V	32K×16	2048×8	2048×8	√	16	√	57	10-bit ATM×1 10-bit PTM×3 16-bit STM×1	24-bit×6	19.1	44×4 42×6 40×8	2	√	UART×1 SPI×1 SPI/I <sup>2</sup> C×1	64LQFP 80LQFP
BH67F5362	16MHz	1.8V~5.5V	16K×16	2048×8	1024×8	√	16	√	45	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	12-bit×14 24-bit×4	— 19.5	36×4 34×6 32×8	—	√	UART×2 SPI×1 SPI/I <sup>2</sup> C×1	64LQFP

Note: Test Conditions of ENOB are PGA Gain = 64, Data Rate = 10Hz, and Vref=1.65V.

**24-Bit A/D Peripheral**
**24-Bit A/D Peripheral**

Part No.	Max. Freq.	VDD	ADC	ENOB	Data Rate	PGA	Interface	Package
BH45B1225	4.91MHz	2.4V~5.5V	24-bit×4	19.5	5Hz~1.6kHz	1~128	I <sup>2</sup> C×1	8SOP, 16NSOP
BH45B1525	4.91MHz	2.7V~5.5V	24-bit×4	21.3	10Hz~1.28kHz	1~128	SPI×1, I <sup>2</sup> C×1	20SSOP

Note: Test Conditions of ENOB are PGA Gain = 64, Data Rate = 10Hz, and Vref=1.65V.

**Health Care Flash MCU**
**Health Measurement Cortex®-M0+ 32-Bit LCD MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	I/O	ADC	ENOB	CMP	OPA	Timer	USB	RTC	LCD	Phase Detect	Interface	Package
HT32F59740*	60MHz	1.65V~3.6V	64KB	8KB	56	12-bit×10	—	—	3	BFTM×2, PWM×2 GPTM×1	√	√	29×4 27×6 25×8	√	USART×1 UART×2, SPI×2 I²C×2, SCI×1	80LQFP 100LQFP
						24-bit×6	19.1									
HT32F59750*	60MHz	1.65V~3.6V	128KB	16KB	56	12-bit×10	—	2	3	BFTM×2, SCTM×2 PWM×2, GPTM×1	√	√	37×4 35×6 33×8	√	USART×1 UART×2, SPI×2 I²C×2, SCI×2	80LQFP 100LQFP
						24-bit×6	19.1									

\* Under development, available in 4Q, 2023

Note: 1. They are Suitable for Glucose Meter (HCT), Blood Pressure Meter, Infrared Thermometer, Body Fat Scale, and so on.  
2. Test Conditions of ENOB are PGA Gain = 64, Data Rate = 10Hz, and Vref=1.65V.

**Impedance & Electrochemical LCD Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	MDU	Stack	IAP	I/O	Timer	ADC	ENOB	LCD	RTC	OPA	Phase Detect	USB	Interface	Package
BH67F2476	16MHz	2.2V~5.5V	32K×16	2048×8	2048×8	—	16	√	49	10-bit PTM×2 16-bit STM×1 10-bit ATM×1	24-bit ×10	19.1	36×4 34×6 32×8	√	2	√	—	UART×2 SPI/I²C×1	64LQFP 80LQFP
BH67F2495	16MHz	2.2V~5.5V	64K×16	4096×8	4096×8	√	16	√	52	10-bit PTM×2 16-bit STM×1 10-bit ATM×1	24-bit ×10	19.1	36×4 34×6 32×8	√	2	√	√	UART×2 SPI/I²C×1	64LQFP 80LQFP

Note: 1. They are Suitable for Glucose Meter (HCT), Body Fat Scale, and so on.

2. Test Conditions of ENOB are PGA Gain = 64, Data Rate = 10Hz, and V<sub>REF</sub> = 1.65V.

**Glucose Meter LCD Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	MDU	Stack	IAP	I/O	Timer	ADC	LCD	RTC	OPA	USB	Interface	Package
BH67F2472	16MHz	2.2V~5.5V	32K×16	2048×8	2048×8	—	16	√	58	10-bit PTM×2 16-bit STM×1 10-bit ATM×1	12-bit ×6	36×4 34×6 32×8	√	2	—	UART/SPI/I²C×2 SPI×1	64LQFP 80LQFP
BH67F2475	16MHz	2.2V~5.5V	32K×16	2048×8	2048×8	√	16	√	56	10-bit PTM×2 16-bit STM×1 10-bit ATM×1	12-bit ×6	36×4 34×6 32×8	√	2	√	UART/SPI/I²C×2 SPI×1	64LQFP 80LQFP
BH67F2480	16MHz	2.2V~5.5V	48K×16	1024×8	64×8	√	12	√	46	10-bit PTM×3 16-bit STM×1	12-bit ×6	48×4 46×6 44×8	√	2	—	UART×2 SPI/I²C×1, SPI×1	80LQFP

**Continuous Glucose Monitoring Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	MDU	Stack	IAP	I/O	Timer	ADC	OPA	CMP	Interface	Package
BH66F2475	16MHz	2.2V~5.5V	32K×16	2048×8	2048×8	√	16	√	9	10-bit CTM×2 16-bit PTM×1	24-bit ×2	3	√	UART×1 SPI/I²C×1	16QFN 24QFN

**Blood Pressure Meter LCD Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	LCD	RTC	OPA	Const. Current	Interface	Package
BH67F2265	8MHz	2.2V~5.5V	16K×16	512×8	1024×8	12	√	30	10-bit CTM×2 16-bit STM×1	12-bit ×4	32×4 30×6	√	3	√	UART×1 SPI/I²C×1	64LQFP

**Pulse Oximeter Cortex®-M0+ 32-Bit MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	I/O	RTC	Timer	ADC	Oximeter AFE	Others	Interface	Package
HT32F59045*	20MHz	2.5V~5.5V	64KB	8KB	34	√	BFTM×2, PWM×2 GPTM×1, MCTM×1	12-bit×12	√	CRC DIV	USART×1, UART×2 SPI×2, I²C×2	64LQFP

\* Under development, available in 4Q, 2023

**Pulse Oximeter Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	SCOM	Oximeter AFE	Interface	Package
BH66F2560	16MHz	2.2V~5.5V	16K×16	1024×8	1024×8	16	√	24	10-bit PTM×1 10-bit STM×2	12-bit×8	4	√	UART×1 SPI/I²C×1	24/32QFN 28SSOP

**Body Fat Measurement Cortex®-M0+ 32-Bit Flash MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	I/O	RTC	Timer	LCD	ADC	Electrode	Phase Detect	Interface	Package
HT32F59046*	20MHz	2.5V~5.5V	64KB	8KB	38	√	BFTM×2, PWM×2 GPTM×1, MCTM×1	—	12-bit×12	8	√	USART×1, UART×2 SPI×2, I²C×2	64LQFP
									24-bit×4				
HT32F59746*	60MHz	2.2V~3.6V	64KB	8KB	51	√	BFTM×2, PWM×2 GPTM×1	29×4 27×6 25×8	12-bit×4 24-bit×4	8	√	USART×1 UART×2, SPI×2 I²C×2, SCI×1	80LQFP

\* Under development, available in 4Q, 2023

**Health Care Flash MCU**
**Body Fat Measurement Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	IAP	Timer	ADC	RTC	Electrode	Phase Detect	Interface	Package
BH66F2665	8MHz	2.2V~5.5V	16K×16	1024×8	1024×8	16	26	√	10-bit CTM×1 10-bit STM×1	24-bit ×6	√	8	√	UART×1 SPI/I <sup>2</sup> C×1	24/32QFN 48LQFP

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

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	LCD	R to F	EL	LVD	Package
BH67F2132	128kHz	1.1V~2.2V	2K×16	128×8	128×8	4	24	10-bit CTM×1	21×3 22×2	2CH	√	1.15V	48LQFP
BH67F2142			4K×16	256×8									

**Smoke Detector Flash MCU**
**Smoke Detector Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	IAP	I/O	Timer	ADC	Voice DAC	AFE	IR Driver	Temp. Sensor	Interface	Package
BA45F5220	8MHz	2.2V~5.5V	1K×14	64×8	32×14	—	4	10-bit PTM×1	10-bit ×3	—	1CH	2	—	—	8SOP 10SOP
BA45F5240	8MHz	2.2V~5.5V	4K×16	256×8	64×8	—	13	10-bit PTM×1 10-bit STM×1	12-bit ×4	—	1CH	2	—	UART/SPI/I <sup>2</sup> C×1	16NSOP 20SSOP
BA45F5240-2							11								16NSOP
BA45F5250	8MHz	2.2V~5.5V	8K×16	1024×8	128×8	√	22	10-bit PTM×1 10-bit STM×2	12-bit ×8	16-bit ×1	1CH	2	—	UART×1 SPI/I <sup>2</sup> C×1	16NSOP 20/24/28SSOP
BA45F5260	16MHz	2.2V~5.5V	16K×16	2048×8	256×8	√	26	10-bit PTM×3 10-bit STM×2	12-bit ×12	16-bit ×1	1CH	2	√	UART×2 SPI/I <sup>2</sup> C×1	24/28SSOP 48LQFP

**Enhanced Smoke Detector Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	IAP	CRC	I/O	Timer	ADC	Voice DAC	AFE	IR Driver	Temp. Sensor	Interface	Package
BA45F25240	8MHz	2.2V~5.5V	4K×16	256×8	64×8	—	√	15	10-bit PTM×1 10-bit STM×1	12-bit ×4	—	2CH	2	√	UART/SPI/I <sup>2</sup> C×1	16NSOP 20/24SSOP
BA45F25240-2								11								16NSOP
BA45F25250	8MHz	2.2V~5.5V	8K×16	1024×8	128×8	√	√	22	10-bit PTM×1 10-bit STM×2	12-bit ×8	16-bit ×1	2CH	2	√	UART×1 SPI/I <sup>2</sup> C×1	16NSOP 20/24/28SSOP
BA45F25260	16MHz	2.2V~5.5V	16K×16	2048×8	256×8	√	√	31	10-bit PTM×3 10-bit STM×2	12-bit ×16	16-bit ×1	2CH	2	√	UART×2 SPI/I <sup>2</sup> C×1	28SSOP 48LQFP

**Smoke Detector Flash MCU with Buzzer Driver**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	IAP	I/O	Timer	ADC	Voice DAC	AFE	IR Driver	Temp. Sensor	Boost	Interface	Package
BA45F5320	8MHz	2.2V~5.5V	1K×14	64×8	32×14	—	4	10-bit PTM×1	10-bit ×3	—	1CH	2	—	√	—	20SSOP
BA45F5340	8MHz	2.2V~5.5V	4K×16	256×8	64×8	—	13	10-bit PTM×1 10-bit STM×1	12-bit ×4	—	1CH	2	—	√	UART/SPI/I <sup>2</sup> C×1	24SSOP 28SSOP
BA45F5350	8MHz	2.2V~5.5V	8K×16	1024×8	128×8	√	22	10-bit PTM×1 10-bit STM×2	12-bit ×8	16-bit ×1	1CH	2	—	√	UART×1 SPI/I <sup>2</sup> C×1	28SSOP 48LQFP
BA45F5360	16MHz	2.2V~5.5V	16K×16	2048×8	256×8	√	26	10-bit PTM×3 10-bit STM×2	12-bit ×12	16-bit ×1	1CH	2	√	√	UART×2 SPI/I <sup>2</sup> C×1	28SOP 48LQFP

**Enhanced Smoke Detector Flash MCU with Buzzer Driver**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	IAP	CRC	I/O	Timer	ADC	Voice DAC	AFE	IR Driver	Temp. Sensor	Boost	Interface	Package
BA45F25343	8MHz	2.2V~5.5V	4K×16	256×8	64×8	—	√	12	10-bit PTM×1 10-bit STM×1	12-bit ×4	—	2CH	2	√	√	UART/SPI/I <sup>2</sup> C×1	28SSOP
BA45F25353*	8MHz	2.2V~5.5V	8K×16	1024×8	128×8	√	√	22	10-bit PTM×1 10-bit STM×2	12-bit ×8	16-bit ×1	2CH	2	√	√	UART×1 SPI/I <sup>2</sup> C×1	28SSOP 48LQFP
BA45F25363*	16MHz	2.2V~5.5V	16K×16	2048×8	256×8	√	√	31	10-bit PTM×3 10-bit STM×2	12-bit ×16	16-bit ×1	2CH	2	√	√	UART×2 SPI/I <sup>2</sup> C×1	28SOP 48LQFP

\* Under development, available in 4Q, 2023.

**9V Battery Smoke Detector Flash MCU**

Part No.	Max. Freq.	VCC (HV)	Program Memory	Data Memory	Data EEPROM	IAP	I/O	Timer	ADC	Voice DAC	AFE	IR Driver	Temp. Sensor	LDO	Buzzer Driver	Interface	Package
BA45F5420	8MHz	4.3V~12V	1K×14	64×8	32×14	—	4	10-bit PTM×1	10-bit ×3	—	1CH	2	—	√	√	—	16NSOP
BA45F5440	8MHz	4.3V~12V	4K×16	256×8	64×8	—	9	10-bit PTM×1 10-bit STM×1	12-bit ×4	—	1CH	2	—	√	√	UART/SPI/I <sup>2</sup> C×1	20SOP 20SSOP
BA45F5450	8MHz	4.3V~12V	8K×16	1024×8	128×8	√	17	10-bit PTM×1 10-bit STM×2	12-bit ×8	16-bit ×1	1CH	2	—	√	√	UART×1 SPI/I <sup>2</sup> C×1	20SOP 24/28SSOP
BA45F5460	16MHz	4.3V~12V	16K×16	2048×8	256×8	√	24	10-bit PTM×3 10-bit STM×2	12-bit ×12	16-bit ×1	1CH	2	√	√	√	UART×2 SPI/I <sup>2</sup> C×1	48LQFP



**Smoke Detector Flash MCU**
**Smoke Detector Flash MCU with Addressable Power Line Transceiver**

Part No.	Max. Freq.	VCC (HV)	Program Memory	Data Memory	Data EEPROM	IAP	I/O	Timer	ADC	AFE	IR Driver	Power Line Transceiver	LDO	Temp. Sensor	Interface	Package
BA45F5542	8MHz	42V	4K×16	256×8	64×8	—	9	10-bit PTM×1 10-bit STM×1	12-bit ×4	1CH	2	√	√	—	UART/SPI/I <sup>2</sup> C×1	16NSOP 20SSOP
BA45F5542-2							7		12-bit ×3							16NSOP
BA45F5552	8MHz	42V	8K×16	1024×8	128×8	√	13	10-bit PTM×1 10-bit STM×2	12-bit ×8	1CH	2	√	√	—	UART×1 SPI/I <sup>2</sup> C×1	16NSOP 20/24SOP
BA45F5562	16MHz	42V	16K×16	2048×8	256×8	√	23	10-bit PTM×3 10-bit STM×2	12-bit ×12	1CH	2	√	√	√	UART×2 SPI/I <sup>2</sup> C×1	24SOP, 28SOP 28SSOP, 48LQFP

**Enhanced Smoke Detector Flash MCU with Addressable Power Line Transceiver**

Part No.	Max. Freq.	VCC (HV)	Program Memory	Data Memory	Data EEPROM	IAP	CRC	I/O	Timer	ADC	AFE	IR Driver	Power Line Transceiver	LDO	Temp. Sensor	Interface	Package
BA45F25543	8MHz	±42V#	4K×16	256×8	64×8	—	√	10	10-bit PTM×1 10-bit STM×1	12-bit ×4	2CH	2	√	3.3V 5.0V	√	UART/SPI/I <sup>2</sup> C×1	16NSOP 24SSOP
BA45F25553*	8MHz	±42V#	8K×16	1024×8	128×8	√	√	13	10-bit PTM×1 10-bit STM×2	12-bit ×8	2CH	2	√	3.3V 5.0V	√	UART×1 SPI/I <sup>2</sup> C×1	16NSOP 28SOP
BA45F25563*	16MHz	±42V#	16K×16	2048×8	256×8	√	√	28	10-bit PTM×3 10-bit STM×2	12-bit ×16	2CH	2	√	3.3V 5.0V	√	UART×2 SPI/I <sup>2</sup> C×1	28SOP 48LQFP

\* Under development, available in 4Q, 2023.  
Note: # Built-in MOSFET bridge rectifier can achieve non-polar voltage input.

**Smoke Detector Flash MCU with Sub-1GHz Transceiver**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	IAP	I/O	Timer	ADC	AFE	IR Driver	Band	Data Rate	Output Power	Temp. Sensor	Interface	Package
BA45F5640	8MHz	2.2V~ 3.6V	4K×16	256×8	64×8	—	13	10-bit PTM×1 10-bit STM×1	12-bit ×4	1CH	2	315MHz 433MHz 470MHz 868MHz 915MHz	2~250 kbps	13dBm	—	UART/SPI/I <sup>2</sup> C×1	46QFN
BA45F5650			8K×16	1024×8	128×8	√	17	10-bit PTM×1 10-bit STM×2	12-bit ×5						UART×1 SPI/I <sup>2</sup> C×1		
BA45F5660			16K×16	2048×8	256×8	√	22	10-bit PTM×3 10-bit STM×2	12-bit ×8						UART×2 SPI/I <sup>2</sup> C×1	48LQFP-EP	

**Smoke Detector Flash MCU with Calendar**

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

**Enhanced Smoke Detector Flash MCU with Calendar**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	IAP	CRC	I/O	Timer	ADC	Voice DAC	AFE	IR Driver	Temp. Sensor	Boost	Interface	Package
BA45F25742*	8MHz	2.2V~ 5.5V	4K×16	256×8	64×8	—	√	13	10-bit PTM×1 10-bit STM×1	12-bit ×4	—	2CH	2	√	√	UART/SPI/I <sup>2</sup> C×1	48LQFP
BA45F25752*	8MHz	2.2V~ 5.5V	8K×16	1024×8	128×8	√	√	22	10-bit PTM×1 10-bit STM×2	12-bit ×8	16-bit ×1	2CH	2	√	√	UART×1 SPI/I <sup>2</sup> C×1	48LQFP
BA45F25762*	16MHz	2.2V~ 5.5V	16K×16	2048×8	256×8	√	√	31	10-bit PTM×3 10-bit STM×2	12-bit ×16	16-bit ×1	2CH	2	√	√	UART×2 SPI/I <sup>2</sup> C×1	48LQFP

\* Under development, available in 4Q, 2023.

**Fire Protection Flash MCU**
**Fire Protection Flash MCU with Power Line Transceiver**

Part No.	Max. Freq.	VCC (HV)	VDD	Program Memory	Data Memory	Data EEPROM	IAP	CRC	I/O	Timer	ADC	Power Line Transceiver	LDO	Interface	Package
BA45F3541	8MHz	42V	3.3V	4K×16	256×8	512×8	√	√	13	10-bit PTM×2 10-bit CTM×4	12-bit ×4	√	√	UART×1	16NSOP 20SSOP

**CO/GAS Detector Flash MCU**
**CO/GAS(Catalytic Gas Sensor) Detector Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	AFE	Temp. Sensor	Voice DAC	Interface	Package
BA45F6730	8MHz	2.2V~5.5V	2K×16	128×8	32×8	6	—	14	10-bit PTM×1	12-bit×5	√	—	—	UART/SPI/I <sup>2</sup> C×1	10SOP 16NSOP, 20SSOP
BA45F6740	8MHz	2.2V~5.5V	4K×16	256×8	128×8	8	√	22	10-bit PTM×1 10-bit STM×1	12-bit×8	√	√	—	UART/SPI/I <sup>2</sup> C×1	16NSOP, 20SSOP 24SSOP, 28SSOP
BA45F6750	8MHz	2.2V~5.5V	8K×16	1024×8	256×8	8	√	36	10-bit PTM×1 10-bit STM×1	12-bit×8	√	√	16-bit ×1	UART×1 UART/SPI/I <sup>2</sup> C×1	28SSOP 32QFN, 48LQFP
BA45F6760*	8MHz	2.2V~5.5V	16K×16	2024×8	256×8	8	√	42	10-bit PTM×1 10-bit STM×2	12-bit×8	√	√	16-bit ×1	UART×1 UART/SPI/I <sup>2</sup> C×1	28SSOP 32QFN, 48LQFP

\* Under development, available in 4Q, 2023.

**CO/GAS(Catalytic Gas Sensor) Detector Flash LCD MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	AFE	LCD Driver	Temp. Sensor	Voice DAC	Interface	Package
BA45F6746	8MHz	2.2V~5.5V	4K×16	256×8	128×8	8	√	31	10-bit PTM×1 10-bit STM×1	12-bit ×8	√	12SEG ×4COM	√	—	UART/SPI/I <sup>2</sup> C×1	28SSOP 32QFN, 48LQFP
BA45F6756	8MHz	2.2V~5.5V	8K×16	1024×8	256×8	8	√	36	10-bit PTM×1 10-bit STM×1	12-bit ×8	√	16SEG ×4COM	√	16-bit ×1	UART×1 UART/SPI/I <sup>2</sup> C×1	28SSOP 48LQFP
BA45F6766*	8MHz	2.2V~5.5V	16K×16	2048×8	256×8	8	√	38	10-bit PTM×1 10-bit STM×2	12-bit ×8	√	20SEG ×4COM	√	16-bit ×1	UART×1 UART/SPI/I <sup>2</sup> C×1	28SSOP 48LQFP

\* Under development, available in 4Q, 2023.

**CO/GAS(Catalytic Gas Sensor) Detector Flash MCU with Calendar**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	AFE	Temp. Sensor	Voice DAC	Interface	Package
BA45F6742	8MHz	2.2V~5.5V	4K×16	256×8	128×8	8	√	22	10-bit PTM×1 10-bit STM×1	12-bit×8	√	√	—	UART/SPI/I <sup>2</sup> C×1	28SSOP 48LQFP
BA45F6752	8MHz	2.2V~5.5V	8K×16	1024×8	256×8	8	√	31	10-bit PTM×1 10-bit STM×1	12-bit×8	√	√	16-bit ×1	UART×1 UART/SPI/I <sup>2</sup> C×1	48LQFP
BA45F6762*	8MHz	2.2V~5.5V	16K×16	2048×8	256×8	8	√	31	10-bit PTM×1 10-bit STM×2	12-bit×8	√	√	16-bit ×1	UART×1 UART/SPI/I <sup>2</sup> C×1	48LQFP

\* Under development, available in 4Q, 2023.

**CO/GAS(Catalytic Gas Sensor) Detector Flash LCD MCU with Calendar**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	AFE	LCD Driver	Temp. Sensor	Voice DAC	Interface	Package
BA45F6748	8MHz	2.2V~5.5V	4K×16	256×8	128×8	8	√	31	10-bit PTM×1 10-bit STM×1	12-bit ×8	√	12SEG ×4COM	√	—	UART/SPI/I <sup>2</sup> C×1	48LQFP
BA45F6758	8MHz	2.2V~5.5V	8K×16	1024×8	256×8	8	√	32	10-bit PTM×1 10-bit STM×1	12-bit ×8	√	13SEG ×4COM	√	16-bit ×1	UART×1 UART/SPI/I <sup>2</sup> C×1	48LQFP
BA45F6768*	8MHz	2.2V~5.5V	16K×16	2048×8	256×8	8	√	32	10-bit PTM×1 10-bit STM×2	12-bit ×8	√	14SEG ×4COM	√	16-bit ×1	UART×1 UART/SPI/I <sup>2</sup> C×1	48LQFP

\* Under development, available in 4Q, 2023.

**GAS(Semiconductor Gas Sensor) Detector Flash MCU with Calendar**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Interface	Package
BA45F6753	16MHz	2.2V~5.5V	8K×16	512×8	128×8	8	√	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit×12	UART×1 SPI/I <sup>2</sup> C×1	28SSOP 48LQFP
BA45F6763	16MHz	2.2V~5.5V	16K×16	1024×8	1024×8	8	√	28	10-bit PTM×2 16-bit CTM×1 16-bit STM×1	12-bit×12	UART×2 SPI/I <sup>2</sup> C×1	28SSOP 48LQFP

**CO/GAS Detector Flash MCU**
**CO/GAS(Catalytic Gas Sensor) Detector Flash MCU with Buzzer Driver**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	AFE	Temp. Sensor	Voice DAC	Boost	Interface	Package
BA45F6830	8MHz	2.2V~5.5V	2K×16	128×8	32×8	6	—	14	10-bit PTM×1	12-bit×5	√	—	—	√	UART/SPI/I <sup>2</sup> C×1	24SSOP 28SSOP
BA45F6840	8MHz	2.2V~5.5V	4K×16	256×8	128×8	8	√	22	10-bit PTM×1 10-bit STM×1	12-bit×8	√	√	—	√	UART/SPI/I <sup>2</sup> C×1	24/28SSOP 48LQFP
BA45F6850	8MHz	2.2V~5.5V	8K×16	1024×8	256×8	8	√	34	10-bit PTM×1 10-bit STM×1	12-bit×8	√	√	16-bit×1	√	UART×1 UART/SPI/I <sup>2</sup> C×1	28SSOP 48LQFP
BA45F6860*	8MHz	2.2V~5.5V	16K×16	2048×8	256×8	8	√	34	10-bit PTM×1 10-bit STM×2	12-bit×8	√	√	16-bit×1	√	UART×1 UART/SPI/I <sup>2</sup> C×1	48LQFP

\* Under development, available in 4Q, 2023.

**CO/GAS(Catalytic Gas Sensor) Detector Flash LCD MCU with Buzzer Driver**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	AFE	LCD Driver	Temp. Sensor	Voice DAC	Boost	Interface	Package
BA45F6846	8MHz	2.2V~5.5V	4K×16	256×8	128×8	8	√	31	10-bit PTM×1 10-bit STM×1	12-bit×8	√	12SEG×4COM	√	—	√	UART/SPI/I <sup>2</sup> C×1	48LQFP
BA45F6856	8MHz	2.2V~5.5V	8K×16	1024×8	256×8	8	√	31	10-bit PTM×1 10-bit STM×1	12-bit×8	√	12SEG×4COM	√	16-bit×1	√	UART×1 UART/SPI/I <sup>2</sup> C×1	48LQFP
BA45F6866*	8MHz	2.2V~5.5V	16K×16	2048×8	256×8	8	√	31	10-bit PTM×1 10-bit STM×2	12-bit×8	√	13SEG×4COM	√	16-bit×1	√	UART×1 UART/SPI/I <sup>2</sup> C×1	48LQFP

\* Under development, available in 4Q, 2023.

**CO/GAS and Smoke Detector Flash MCU**
**CO/GAS(Catalytic Gas Sensor) and Smoke Detector Flash LCD MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	IAP	I/O	Timer	ADC	AFE	IR Driver	LCD Driver	Temp. Sensor	Voice DAC	Interface	Package
BA45F6956	8MHz	2.2V~5.5V	8K×16	1024×8	256×8	√	29	10-bit PTM×1 10-bit STM×1	12-bit×8	√	2	13SEG×4COM	√	16-bit×1	UART×1 UART/SPI/I <sup>2</sup> C×1	48LQFP
BA45F6966*	8MHz	2.2V~5.5V	16K×16	2048×8	256×8	√	29	10-bit PTM×1 10-bit STM×2	12-bit×8	√	2	13SEG×4COM	√	16-bit×1	UART×1 UART/SPI/I <sup>2</sup> C×1	48LQFP

\* Under development, available in 4Q, 2023.

**PIR Flash MCU**
**PIR Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	OPA	Interface	Package
BA45F6622	8MHz	2.2V~5.5V	1K×14	64×8	32×14	4	6	10-bit STM×1	10-bit×2	2	—	16NSOP 16QFN
BA45F6630	8MHz	2.2V~5.5V	2K×16	256×8	32×8	6	15	10-bit STM×2	12-bit×4	2	UART/SPI/I <sup>2</sup> C×1	24SSOP 24QFN
BA45F6640	8MHz	2.2V~5.5V	4K×16	384×8	64×8	8	18	10-bit STM×2 10-bit CTM×1	12-bit×8	2	UART/SPI/I <sup>2</sup> C×1	24/28SSOP 28QFN

Power Delivery MCU												
Cortex®-M0+ 32-Bit Power Delivery MCU												
Part No.	Max. Freq.	VDD	Flash	SRAM	ADC	I/O	Timer	RTC	PD 3.1	Others	Interface	Package
HT32F61030	16MHz	2.5V~5.5V	32KB	2KB	500ksps 12-bit×8	17	BFTM×1 SCTM×3	√	DRP	LEDC	UART×2 SPI×1,I <sup>2</sup> C×1	32QFN
HT32F61041	20MHz	2.5V~5.5V	64KB	8KB	1Msps 12-bit×10	28	BFTM×2, PWM×2 GPTM×1, MCTM×1	√	DRP	CRC DIV	USART×1, UART×2 SPI×2,I <sup>2</sup> C×2	46QFN

  

Power Delivery Flash MCU															
Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	CRC	PD 3.1	OPA	VREF	Interface	Package
HT45F9160	20MHz	2.2V~5.5V	16K×16	2K×8	1K×8	16	19	10-bit PTM×2 16-bit PTM×2, 16-bit STM×1	12-bit ×11	√	DRP	1	2/3/4V ±1%	UART×1 SPI/I <sup>2</sup> C×1	32QFN

Charger MCU															
Battery Charger Flash MCU															
Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	DAC	OPA	CRC	IAP	Interface	Package
HT45F5Q-1	8MHz	2.2V~5.5V	1K×14	32×8	32×14	4	9	—	10-bit ×5	8-bit×1 12-bit×1	2	—	—	—	16NSOP
HT45F5Q-2A	8MHz	2.2V~5.5V	2K×15	128×8	32×15	6	15	10-bit CTM×1	12-bit ×7	14-bit×1 12-bit×1	3	—	—	UART×1	16NSOP 20NSOP
HT45F5Q-3	8MHz	2.2V~5.5V	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	√	—	UART×1 SPI/I <sup>2</sup> C×1	24SSOP 28SSOP
HT45F5Q-5	8MHz	2.2V~5.5V	8K×16	512×8	512×8	8	27	10-bit CTM×1 10-bit STM×1, 16-bit STM×1	12-bit ×12	14-bit×2	3	√	√	UART×1 SPI/I <sup>2</sup> C×1	24/28SSOP 32QFN
HT45F5Q-6*	20MHz	2.2V~5.5V	16K×16	1024×8	1024×8	16	27	10-bit PTM×2, 10-bit CTM×1 10-bit STM×1, 16-bit STM×1	12-bit ×12	14-bit×2	3	√	√	UART×1 SPI/I <sup>2</sup> C×1	24/28SSOP 32QFN

\* Under development, available in 1Q, 2024.

Battery Charger Flash MCU with CAN Bus																
Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	DAC	OPA	CRC	IAP	CAN	Interface	Package
HT45F5Q-5C*	8MHz	2.2V~5.5V	8K×16	512×8	512×8	8	27	10-bit CTM×1 10-bit STM×1, 16-bit STM×1	12-bit ×12	14-bit ×2	3	√	√	√	UART×1 SPI/I <sup>2</sup> C×1	28SSOP 32QFN
HT45F5Q-6C**	20MHz	2.2V~5.5V	16K×16	1024×8	1024×8	16	27	10-bit PTM×2, 10-bit CTM×1 10-bit STM×1, 16-bit STM×1	12-bit ×12	14-bit ×2	3	√	√	√	UART×1 SPI/I <sup>2</sup> C×1	28SSOP 32QFN

\* Under development, available in 4Q, 2023.  
\*\* Under development, available in 1Q, 2024.

Battery Charger OTP MCU															
Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Stack	I/O	Timer	ADC	DAC	OPA	CRC	HVIAP	Interface	Package	
HT45R5Q-2*	8MHz	2.2V~5.5V	2K×16	128×8	6	11	8-bit×1	12-bit ×5	12-bit ×2	3	—	√	—	16NSOP	
HT45R5Q-3*	8MHz	2.2V~5.5V	4K×16	256×8	8	23	10-bit CTM×1 10-bit STM×1	12-bit ×10	14-bit ×2	3	√	√	UART×1 SPI/I <sup>2</sup> C×1	24SSOP 28SSOP	

\* Under development, available in 4Q, 2023.

Wireless Charger MCU														
Wireless Charger Tx Flash MCU														
Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	I/O	Timer	ADC	Protection	Demodulation	PLL	Modulation	Interface	Package
HT66FW2350	16MHz	4.0V~5.5V	8K×16	256×8	64×8	27	16-bit PTM×1 10-bit CTM×1 10-bit STM×1	12-bit ×7	OCP×1	2	√	FSK	I <sup>2</sup> C×1	32QFN

Wireless Charger Rx Flash MCU														
Part No.	Max. Freq.	Max. Power	5V LDO	VDD	Program Memory	Data Memory	Data EEPROM	I/O	Timer	ADC	IAP	Linear Charger	Modulation	Package
BP66FW1242	16MHz	5W	√	1.8V~5.5V	4K×16	256×8	128×8	18	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×6	√	1000mA	R/C type	32QFN

**BMS MCU**
**Cortex®-M0+ 32-Bit BMS MCU**

Part No.	Max. Freq.	Max. VIN	5V LDO	Flash	SRAM	ADC	I/O	Timer	NMOS Gate Driver	Cell Balance	HV Wake Up	Voltage Monitor Accuracy	Current Monitor	Others	Interface	Package
HT32F61630	16MHz	36V	√	32KB	2KB	500ksps 12-bit×6	22	BFTM×1 SCTM×3	Low-side×2 High-side×1	√	1	±0.5%	—	LEDC RTC	UART×2 SPI×2, I <sup>2</sup> C×1	48LQFP-EP
HT32F61641	20MHz			64KB	8KB	1Msps 12-bit×6		BFTM×2, PWM×2 GPTM×1, MCTM×1						RTC DIV CRC	USART×1 SPI×2, I <sup>2</sup> C×2	
HT32F61730*	16MHz	36V	√	32KB	2KB	500ksps 12-bit×6	22	BFTM×1 SCTM×3	Low-side×2 High-side×1	√	2	±0.36%	√	LEDC RTC	UART×2 SPI×2, I <sup>2</sup> C×1	48LQFP-EP
HT32F61741*	20MHz			64KB	8KB	1Msps 12-bit×6		BFTM×2, PWM×2 GPTM×1, MCTM×1						RTC DIV CRC	USART×1 UART×1 SPI×2, I <sup>2</sup> C×2	

\* Under development, available in 4Q, 2023.

**BMS Flash MCU**

Part No.	Max. Freq.	Max. VIN	5V LDO	Program Memory	Data Memory	Data EEPROM	I/O	Timer	ADC	NMOS Gate Driver	Cell Balance	HV Wake Up	Voltage Monitor Accuracy	Current Monitor	Interface	Package
HT45F8544	16MHz	36V	√	4K×16	256×8	128×8	14	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×5	—	—	1	±0.5%	—	UART×1 SPI/I <sup>2</sup> C×1	28SSOP
HT45F8554				21	8K×16		512×8	12-bit ×8	48LQFP-EP							
HT45F8566				25	16K×16		1024×8	1024×8	48LQFP-EP							
HT45F8640	16MHz	36V	√	4K×16	256×8	128×8	11	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×5	Low-side×1 High-side×1	√	1	±0.5%	—	I <sup>2</sup> C×1	28SSOP
HT45F8650				21	8K×16		512×8	12-bit ×8	Low-side×2 High-side×1	48LQFP-EP						
HT45F8662				25	16K×16		1024×8	1024×8	48LQFP-EP							
HT45F8750*	16MHz	36V	√	8K×16	512×8	128×8	20	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×8	Low-side×2 High-side×1	√	2	±0.36%	√	UART×1 SPI/I <sup>2</sup> C×1	48LQFP-EP
HT45F8762*				16K×16	1024×8			1024×8								

\* Under development, available in 4Q, 2023.

**Inverter MCU**
**Inverter Secondary Side Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	SPWM	Protection	AC Detector	VREF	Interface	Package
HT45F7550*	20MHz	4.5V~ 5.5V	8K×16	1024×8	512×8	8	22	10-bit CTM×2 16-bit STM×1	12-bit ×7	14-bit ×1	OVP×1, OUVV×1 OCP×2	√	2.4V ±1%	UART×1	24SSOP 28SSOP

\* Under development, available in 4Q, 2023.

**Inverter Primary side OTP MCU**

Part No.	Max. Freq.	Max. VIN	5V LDO	Program Memory	Data Memory	Stack	I/O	Timer	ADC	PWM	Protection	Gate Driver	VREF	Interface	Package
HT45R7130*	16MHz	28V	√	2K×16	128×8	4	9	10-bit CTM×1 10-bit PTM×1	12-bit ×6	12-bit ×1	OVPV×1 OCP×1	Low-side×2	2.4V ±1%	UART×1 SPI×1	16NSOP
HT45R7230*	16MHz	40V	√	2K×16	128×8	4	10	10-bit CTM×1 10-bit PTM×1	12-bit ×6	12-bit ×1	OVPV×1 OCP×1	Low-side×3 High-side×3	2.4V ±1%	UART×1 SPI×1	32QFN

\* Under development, available in 1Q, 2024.

**Power Bank MCU**
**Power Bank Flash MCU**

Part No.	Max. Freq.	Max. VIN	5V LDO	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	PWM	ADC	Protection	HVO	VREF	Package
HT45F4MA	15MHz	—	—	2.55V~5.5V	2K×16	128×8	64×8	4	16	10-bit PTM×1 16-bit STM×1	1	12-bit ×8	OVP×1 OCP×1	—	—	16NSOP 20SSOP
HT45FH4MA-1		28V	√						13					20SSOP		
BP45F4NB	15MHz	—	—	2.6V~5.5V	4K×16	256×8	—	8	26	10-bit CTM×2 16-bit PTM×1	1	12-bit ×11	OUVP×1 OCP×2	—	2.4V ±1%	24/28SSOP 28QFN
BP45FH4NB		28V	√						21					28SSOP		
HT45F5N	8MHz	—	—	2.55V~5.5V	4K×16	256×8	64×8	8	26	10-bit PTM×1 16-bit STM×1	2	12-bit ×14	OUVP×1 OCP×2	—	2.4V ±1%	28SSOP
HT45FH5N		28V	√						28					46QFN		

**Li-Battery BMS Peripheral**
**Battery Protection AFE**

Part No.	Cell #	Input Voltage	Control I/F	V <sub>MON</sub> Voltage Monitor Type	V <sub>MON</sub> Accuracy	I <sub>MON</sub> Gain Accuracy	V <sub>REF</sub>	Charge Balancer	Gate Driver	LDO	HV Wake Up	Package
HT7Q1521	3~8	7.5V~36V	I/O	Accumulative	1/n±0.5% (Ratio)	—	—	—	—	5V±1%	1CH	16NSOP 24SSOP
HT7Q1531	3~8	7.5V~36V	I <sup>2</sup> C	Accumulative	1/n±0.5% (Ratio)	—	—	120Ω/CH	L/S×2CH H/S×1CH	5V±1%	1CH	24SSOP-EP 24QFN
HT7Q2552*	3~8	7.5V~36V	I <sup>2</sup> C	Cell Voltage	4.2V±15mV	±5%	2.5V±8mV	120Ω/CH	L/S×2CH H/S×1CH	5V/3.3V±1%	2CH	32QFN

\* Under development, available in 4Q, 2023.



**Touch Flash MCU**
**Touch A/D Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Touch Key	High Current LED Driver	Interface	Package
BS84B04C	16MHz	1.8V~5.5V	2K×16	256×8	32×8	4	—	14	10-bit CTM×4	12-bit ×8	4	14	I <sup>2</sup> C×1	8SOP, 10MSOP/DFN 16NSOP/WLCSP
BS84B08C	16MHz	2.2V~5.5V	3K×16	288×8	64×8	6	—	22	10-bit PTM×1	12-bit ×8	8	22	SPI/I <sup>2</sup> C×1	16NSOP/SSOP 20/24SOP/SSOP
BS84C12CA	16MHz	1.8V~5.5V	4K×16	512×8	512×8	6	√	26	10-bit CTM×1 10-bit PTM×1	12-bit ×8	12	26	UART×1 SPI/I <sup>2</sup> C×1	16NSOP 20/24/28SOP/SSOP
BS84D20CA*	16MHz	1.8V~5.5V	8K×16	768×8	512×8	8	√	46	10-bit CTM×1 10-bit PTM×1 16-bit STM×1	12-bit ×12	20	46	UART×1 SPI/I <sup>2</sup> C×1	28SOP/SSOP 48LQFP

\* Under development, available in 4Q, 2023.

**Touch I/O Flash MCU with LED/LCD Driver**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	LCD	Touch Key	RTC	High Current LED Driver	LVD	Interface	Package
BS82C16CA	16MHz	1.8V~5.5V	4K×16	512×8	512×8	6	26	10-bit CTM×2 10-bit PTM×1	(SCOM/ SSEG) ×26	16	√	26	√	UART×1 I <sup>2</sup> C×1	24/28SOP/SSOP
BS82D20CA	16MHz	1.8V~5.5V	8K×16	768×8	512×8	8	42	10-bit CTM×2 10-bit PTM×2	(SCOM/ SSEG) ×34	20	√	42	√	UART×1 I <sup>2</sup> C×1	28SOP/SSOP 48LQFP

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

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Touch Key	High Current LED Driver	RTC	LVD	Interface	Package
BS86C12CA*	16MHz	1.8V~5.5V	4K×16	512×8	512×8	6	√	26	10-bit CTM×4 10-bit PTM×1	12-bit ×8	12	26	√	√	UART×1 I <sup>2</sup> C×1	24/28 SOP/SSOP
BS86D20CA	16MHz	1.8V~5.5V	8K×16	768×8	512×8	8	√	26	10-bit CTM×2 10-bit PTM×2	12-bit ×8	20	26	√	√	UART×1 SPI/I <sup>2</sup> C×1	24/28 SOP/SSOP
BS86E20CA	16MHz	1.8V~5.5V	16K×16	1024×8	1024×8	12	√	46	10-bit CTM×2 10-bit PTM×2	12-bit ×8	20	46	√	√	UART×1 UART/SPI/I <sup>2</sup> C×1	28SOP/SSOP 44/48LQFP

\* Under development, available in 4Q, 2023.

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

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Touch Key	LCD	RTC	LVD	Interface	Package
BS67F2432*	4MHz	1.8V~5.5V	2K×16	128×8	32×16	6	—	21	9-bit×1 10-bit CTM×1	10-bit ×4	8	15×4	√	—	UART×1	28SSOP 32QFN
BS67F350C	16MHz	2.2V~5.5V	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	√	√	UART×1 SPI/I <sup>2</sup> C×1	48LQFP 64LQFP
BS67F360	16MHz	2.2V~5.5V	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	√	√	UART×1 SPI/I <sup>2</sup> C×1	48LQFP 64LQFP
BS67F370	16MHz	2.2V~5.5V	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	√	√	UART×1 SPI/I <sup>2</sup> C×1	48LQFP 64LQFP 80LQFP

\* Under development, available in 4Q, 2023.

**Touch 24-bit A/D Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	Touch Key	Temperature Sensor	LVD	Interface	Package
BS45F6052	8MHz	1.8V~5.5V	8K×16	512×8	512×8	12	√	11	10-bit CTM×2	24-bit ×6	4	√	√	UART×1 I <sup>2</sup> C×1	16QFN 18WLCSP

**Ultra-Low Power Touch Flash MCU**
**Ultra-Low Power Touch I/O Flash MCU**

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

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



**Touch Key IC**
**Touch Key**

Part No.	Touch Key	VDD	Standby Current at 3V	Output Type	Package
BS211C-1*	1-Key	2.2V~5.5V	2.5μA	Active Low	SOT23-6
BS212C-1*	2-Key	2.2V~5.5V	3.5μA	Active Low	SOT23-6
BS213C-1*	3-Key	2.2V~5.5V	4.0μA	Active Low	8SOP
BS214C-1*	4-Key	2.2V~5.5V	5.0μA	Active Low	10MSOP
BS214C-2*	4-Key	2.2V~5.5V	5.0μA	2-Wire Series Interface Mode	8SOP
BS216C-1*	6-Key	2.2V~5.5V	7.5μA/3.5μA	Active Low / Active High	16NSOP
BS218C-2*	8-Key	2.2V~5.5V	8.5μA/3.5μA	2-Wire Series Interface Mode / 4-Wire Binary Parallel Mode	16NSOP
BS218C-3*	8-Key	2.2V~5.5V	3.5μA/2.5μA	I <sup>2</sup> C	16NSOP
BS8112C-3	12-Key	2.2V~5.5V	4.0μA/2.5μA	I <sup>2</sup> C	16NSOP, 20SSOP
BS8116C-3	16-Key	2.2V~5.5V	4.0μA/2.5μA	I <sup>2</sup> C	20/24SSOP

\* Under development, available in 4Q, 2023.

**Touch Ultrasonic Atomiser Flash MCU**
**Touch Ultrasonic Atomiser Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Touch Key	Atomiser Processor	LVD	Interface	Package
BS45F3833	12MHz	2.2V~5.5V	2K×16	128×8	32×8	4	18	10-bit CTM×3 10-bit STM×1 10-bit PTM×1	12-bit ×4	4	√	√	—	16/20NSOP
BS45F3843	8MHz	2.2V~5.5V	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 24/28SSOP

**Proximity Sensing Flash MCU**
**Proximity Sensing Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	IR Driver & Receiver	DC Motor Driver	Interface	Package
BS45F3232	8MHz	2.2V~5.5V	2K×14	64×8	32×8	4	11	10-bit STM×1	12-bit ×8	IR×1 OPA×2	—	UART/SPI/I <sup>2</sup> C×1	8SOP 16NSOP/QFN
V <sub>M</sub> =7.5V											24SSOP		

**Touch Proximity Sensing Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Touch Key	IR Driver & Receiver	DC Motor Driver	Interface	Package
BS45F3332	8MHz	1.8V~5.5V	2K×15	128×8	32×8	4	13	10-bit CTM×1	10-bit ×4	2	IR×2 OPA×1	—	—	8SOP 16NSOP
11							V <sub>M</sub> =7.5V					24SSOP		
9							NMOS RDS(on)=120mΩ					16NSOP		
BS45F3340	8MHz	1.8V~5.5V	4K×16	192×8	32×8	6	20	10-bit CTM×1 10-bit STM×1	12-bit ×8	4	IR×2 OPA×2	—	UART×1	16NSOP/QFN 24SSOP
17							V <sub>M</sub> =7.5V					16NSOP 24/28SSOP		

**Music/Voice Flash MCU**
**Cortex®-Mo+ 32-Bit Music/Voice Flash MCU**

Part No.	Max. Freq.	VDD	Flash	Data Flash	SRAM	I/O	Timer	ADC	PDMA	RTC	Echo	Sub-Band Coding	MIDI Engine	Audio DAC	Interface	Package
HT32F61244	48MHz	2.3V~3.6V	64KB	16Mbit	8KB	49	BFTM×2 SCTM×2 GPTM×1 LSTM×1	1Msps 12-bit×16	6CH	—	√	√	16CH	16-bit×2	UART×1, SPI×1 QSPI×1, I <sup>2</sup> C×1	48LQFP 64LQFP
HT32F61245				32Mbit												
HT32F61355	48MHz	2.3V~3.6V	128KB	32Mbit	16KB	43	BFTM×2 SCTM×4 GPTM×1	1Msps 12-bit×16	6CH	√	√	√	32CH	16-bit×2	USART×1, UART×1 SPI×1, QSPI×1 I <sup>2</sup> S×1, USB×1 I <sup>2</sup> C×1	48LQFP 64LQFP
HT32F61356				64Mbit												
HT32F61357				128Mbit												

Note: BFTM: Basic Function Timer, SCTM: Single-Channel Timer, GPTM: General-Purpose Timer, LSTM: Low Speed Timer.

**Music Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	MIDI Engine	Audio DAC	Interface	Package
HT37F290	12MHz	2.2V~5.5V	64K×16	1024×8	4096×8	12	√	22	10-bit CTM×2 16-bit CTM×1	16CH	16-bit×2	UART×1 SPI×1	16NSOP 28SSOP

**Voice MCU**
**A/D Voice Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	RTC	Audio DAC	Power Amp.	Interface	Package
HT66FV140	16MHz	2.2V~5.5V	4K×16	256×8	64×8	8	√	19	10-bit CTM×1 10-bit PTM×2	12-bit ×8	√	16-bit ×1	1.5W	SPI/I <sup>2</sup> C×1 SPI×1	24SOP 24SSOP 28SOP
HT66FV150	16MHz	2.2V~5.5V	8K×16	512×8	128×8	8	√	27	10-bit CTM×2 10-bit PTM×2	12-bit ×8	√	16-bit ×1	1.5W	UART×1 SPI/I <sup>2</sup> C×1 SPI×1	28SOP 44LQFP
HT66FV160	16MHz	2.2V~5.5V	16K×16	1024×8	256×8	8	√	35	10-bit CTM×2 10-bit PTM×2 16-bit STM×1	12-bit ×8	√	16-bit ×1	1.5W	UART×1 SPI/I <sup>2</sup> C×1 SPI×1	44LQFP

**I/O Voice Flash MCU**

Part No.	VDD	Voice Flash Memory	Control Mode	Speech	Voice Output	PWM Output Power	Support Sentence	Max Voice Capacity	Package
HT68FV022	2.3V~5.5V	16Mbit	One Wire Two Wire Direct	ADPCM μ-Law PCM	PWM	0.5W	√	400 sec	8SOP 16NSOP
HT68FV024		32Mbit						800 sec	

**I/O Voice OTP MCU**

Part No.	VDD	Voice Flash Memory	Control Mode	Speech	Voice Output	PWM Output Power	Support Sentence	Max Voice Capacity	Package
HT68RV032*	2.3V~5.5V	2Mbit	One Wire Two Wire Direct	ADPCM μ-Law PCM	Delta Sigma PWM	0.5W	√	85 sec	8SOP
HT68RV033*		4Mbit						170 sec	

\* Under development, available in 4Q, 2023.

**32-Bit ASSP Flash MCU**
**Cortex®-M0+ 32-Bit USB Data Logger LCD MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	PDF Create LIB	PDMA	I/O	Timer <sup>1</sup>	ADC	DAC	Cap. <sup>2</sup> or PWM	RTC	SCI <sup>3</sup>	LCD	Interface	Others	Package
HT32F5828	60MHz	1.65V~3.60V	128KB	16KB	√	6CH	67	BFTM×2 SCTM×2 PWM×2 GPTM×1	1Msps 12-bit×10	500ksps 12-bit×2	14	√	2	37×4~33×8	USART×1 UART×2 SPI×2, I <sup>2</sup> C×2 I <sup>2</sup> S×1, USB×1	AES CRC DIV	48LQFP 64LQFP 80LQFP

**Cortex®-M0+ 32-Bit 5V USB Smart Card Reader MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	I/O	Timer <sup>1</sup>	RTC	SCI <sup>3</sup>	Card LDO	USB <sup>4</sup>	Interface	Others	Package
HT32F61141	48MHz	2.5V~5.5V	64KB	16KB	36	BFTM×2 SCTM×2 GPTM×1	√	2	1.8V 3.0V 5.0V	√	UART×2 SPI×1 I <sup>2</sup> C×1	CRC	32QFN 46QFN 48LQFP

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timer, GPTM: General-Purpose Timer.  
 2. Cap.: Input Capture.  
 3. SCI: ISO7816-3 Smart Card Interface.  
 4. USB 2.0 Full Speed device.

**8-Bit ASSP Flash MCU**
**TWS Charging Case Flash MCU**

Part No.	Max. Freq.	Max. VIN	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Linear Charger	OVP	Boost Converter	PHY	Interface	Package
HT45F2440*	16MHz	28V	1.8V~5.5V	4K×16	256×8	128×8	8	17	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit×6	1000mA	1	5V/300mA	√	UART×1 I <sup>2</sup> C×1	32QFN

\* Under development, available in 4Q, 2023.

**Induction Cooker Flash MCU**

Part No.	Max. Freq.	VCC (HV)	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	PPG	Comparator	OVP	OPA	LDO	HVO	Interface	Package
HT45F0004	8MHz	—	2.2V~5.5V	4K×16	208×8	32×8	8	17	8-bit×3	12-bit×12	9-bit×1	4	—	1	—	—	I <sup>2</sup> C×1	16NSOP 20SOP
HT45F0058	16MHz	—	3.3V~5.5V	4K×16	256×8	32×8	8	13	8-bit×3	12-bit×10	9-bit×1	4	1	1	—	—	—	16NSOP
HT45F0059	16MHz	16V~20V	3.3V~5.5V	4K×16	256×8	32×8	8	12	8-bit×3	12-bit×9	9-bit×1	4	1	1	5V	1	I <sup>2</sup> C×1	16NSOP
HT45F0006*	16MHz	—	3.3V~5.5V	8K×16	512×8	512×8	8	17	8-bit×4	12-bit×14	9-bit×1	1	5	1	—	—	I <sup>2</sup> C×1 UART×1	16NSOP 20SOP
HT45F0036*	16MHz	16V~20V	3.3V~5.5V	8K×16	512×8	512×8	8	16	8-bit×4	12-bit×13	9-bit×1	1	5	1	—	1	I <sup>2</sup> C×1 UART×1	16NSOP 20SOP

\* Under development, available in 4Q, 2023.

**Half-bridge Induction Cooker Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	MDU	Stack	I/O	Timer	ADC	PWM	OVP	OPA	CRC	Interface	Package
HT45F0074	16MHz	4.5V~5.5V	8K×16	512×8	128×8	√	8	20	10-bit CTM×3 10-bit PTM×1	12-bit×8	12-bit×1	7	1	√	UART/SPI/I <sup>2</sup> C×1	20NSOP 24SOP
HT45F0075*	16MHz	4.5V~5.5V	16K×16	1K×8	1K×8	√	8	24	10-bit CTM×4 10-bit PTM×1	12-bit×11	12-bit×1	9	1	√	UART/SPI/I <sup>2</sup> C×1	16NSOP 20/24/28SOP

\* Under development, available in 4Q, 2023.

### Bluetooth Low Energy (BLE)

#### Cortex<sup>®</sup>-M0+ 32-Bit BLE MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	ADC	Timer <sup>1</sup>	BQB	Data Rate	Output Power	Sensitivity	SCI <sup>2</sup>	USB <sup>3</sup>	LCD	Interface	Others	I/O	Package
HT32F67741	40MHz	2.0V~3.6V	64KB	8KB	1Msps 12-bit×6	BFTM×2, SCTM×4 GPTM×1, MCTM×1	5.2	1/2Mbps	+3.5dBm	-94/-91dBm	—	—	—	USART×1 UART×2 SPI×2, I <sup>2</sup> C×2	CRC TRNG	25 38	46QFN 64LQFP-EP
HT32F67742	60MHz	2.0V~3.6V	64KB	8KB	1Msps 12-bit×4	BFTM×2, PWM×3 GPTM×1	5.2	1/2Mbps	+3.5dBm	-94/-91dBm	√	√	29×4~ 25×8	USART×1 UART×2 SPI×2, I <sup>2</sup> C×2	CRC DIV TRNG	49	80LQFP-EP

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timer, GPTM: General-Purpose Timer, MCTM: Motor Control Timer.  
2. SCI: ISO7816-3 Smart Card Interface.  
3. USB 2.0 Full Speed device.

#### BLE Controller IC

Part No.	VDD	BQB	Data Rate	Output Power	Sensitivity	Interface	Package
BC7701	2.0V~3.6V	5.2	1/2 Mbps	+3.5dBm	-94/-91dBm	UART	32QFN

#### BLE Beacon IC

Part No.	VDD	Frequency	Beacon Packet Handler	Output Power	Sensitivity	Oscillator	BQB	Interface	Package
BC7161	2.0V~3.6V	2402/2426/2480MHz	Transmitter	-10~+8dBm	—	32MHz	5.0	I <sup>2</sup> C×1	8SOP-EP, 10MSOP-EP
BC7262	1.9V~3.6V	2402/2426/2480MHz	Transceiver	-10~+7dBm	-93dBm	32MHz	5.2	I <sup>2</sup> C×1	10SOP-EP

### 2.4GHz RF

#### 2.4GHz Transceiver Cortex<sup>®</sup>-M0+ 32-Bit MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	Timer <sup>a</sup>	RTC	Frequency	Data Rate	Output Power	Sensitivity	Interface	Others	I/O	Package
HT32F67041	60MHz	2.0V~3.6V	64KB	8KB	6CH	1Msps 12-bit×16	BFTM×2 SCTM×4 GPTM×1	√	2402~2480 MHz	125/250 kbps	-10~+6 dBm	-97dBm @250kbps	UART×2 SPI×2 I <sup>2</sup> C×2	AES CRC	16	32QFN
HT32F67051			128KB												29	46QFN

Note: # BFTM: Basic Function Timer, SCTM: Single-Channel Timer, GPTM: General-Purpose Timer, MCTM: Motor Control Timer.

#### 2.4GHz Transceiver Flash MCU

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Frequency	Data Rate	Output Power	Sensitivity	Interface	Package
BC66F5652	16MHz	1.9V~3.6V	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	UART×1 SPI/I <sup>2</sup> C×1	28SSOP 46QFN
BC66F5662			16K×16	2048×8	1024×8	16	24	10-bit PTM×2 16-bit STM×3	12-bit ×4					UART×2 SPI/I <sup>2</sup> C×1	46QFN

#### 2.4GHz Transceiver IC

Part No.	VDD	Frequency	Modulation	Data Rate	Output Power	Sensitivity	Oscillator	Interface	Package
BC5602	1.9V~3.6V	2402~2480MHz	GFSK	125/250/500kbps	-10~+6dBm	-97dBm@250kbps	16MHz	SPI	16QFN

#### 2.4GHz Transmitter IC 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 <sup>2</sup> C	8SOP-EP

### NFC

#### NFC Reader

Part No.	VDD	System Clock	RF Frequency	NFC Standards	RF Data Rate	RF Output Current	NFC FIFO-buffer	CRC	Receiver AGC	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
BC45B4522*	2.3V~5.5V	27.12MHz	13.56MHz	ISO14443A/B	106/212/424/848kbps @ISO14443A/B	230mA	64×8	√	√	UART/SPI/I <sup>2</sup> C×1	32QFN

\* Under development, available in 1Q, 2024.

**Sub-1GHz RF**
**Sub-1GHz Transceiver Cortex®-M0+ 32-Bit MCU**

Part No.	Max. Freq.	VDD	Flash	SRAM	ADC	Timer <sup>#</sup>	Band	Data Rate	Max. Output Power	Rx Current Consumption	Interface	I/O	Package
HT32F67233	40MHz	2.0V~3.6V	32KB	4KB	1MSPS 12-bit×8	BFTM×1 SCTM×2 GPTM×1	315/433/470/ 868/915MHz	OOK: 0.5~20kbps GFSK: 2~250kbps	20dBm	5.8mA@433MHz 6.8mA@868MHz	USART×1 UART×1 SPI×1, I <sup>2</sup> C×1	21	46QFN

Note: # BFTM: Basic Function Timer, SCTM: Single-Channel Timer, GPTM: General-Purpose Timer.

**Sub-1GHz Transceiver Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Band	OOK/GFSK	Max. Output Power	Rx Current Consumption	Interface	Package
BC66F3652	16MHz	1.9V~3.6V	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	GFSK	13dBm	4.2mA@433MHz 5.5mA@868MHz	UART×1 SPI/I <sup>2</sup> C×1	46QFN
BC66F3662	16MHz	1.9V~3.6V	16K×16	2048×8	1024×8	16	22	10-bit PTM×2 16-bit STM×2	12-bit ×4	315/433/470/ 868/915MHz	GFSK	13dBm	4.2mA@433MHz 5.5mA@868MHz	UART×2 SPI/I <sup>2</sup> C×1	46QFN
BC66F3653*	16MHz	1.8V~3.6V	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	√	20dBm	5.8mA@433MHz 6.8mA@868MHz	UART×1 SPI/I <sup>2</sup> C×1	46QFN
BC66F3663*	16MHz	1.8V~3.6V	16K×16	1024×8	1024×8	12	24	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×11	315/433/470/ 868/915MHz	√	20dBm	5.8mA@433MHz 6.8mA@868MHz	UART×2 SPI/I <sup>2</sup> C×1	46QFN

\* Under development, available in 4Q, 2023.

**Sub-1GHz Transceiver IC**

Part No.	VDD	Band	OOK/GFSK	Low Current	External Inductor	Data Rate	Max. Output Power	Sensitivity	Package
BC3602	1.9V~3.6V	315/433/470/868/915MHz	GFSK	√	√	2~250kbps	13dBm	-120dBm@2kbps	24QFN
BC3603	1.8V~3.6V	315/433/470/868/915MHz	√	√	—	OOK: 0.5~20kbps GFSK: 2~250kbps	20dBm	-120dBm@2kbps	16QFN

**Sub-1GHz Transmitter Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	Band	OOK/FSK	OOK Symbol Rate	Output Power	Package
BC68F2123	8MHz	2.2V~3.6V	1K×14	64×8	32×8	2	—	9	10-bit STM×1 10-bit PTM×1	315/433/ 868/915MHz	√	0.5~25ksps	0/5/10/13 dBm	16NSOP-EP
BC68F2130	16MHz	2.0V~3.6V	2K×16	256×8	—	8	√	8	10-bit CTM×1 10-bit PTM×1	315/433/ 868/915MHz	√	0.5~25ksps	0/10/13 dBm	16NSOP-EP 16QFN
BC68F2140	16MHz	2.0V~3.6V	4K×16	256×8	—	8	√	14	10-bit CTM×1 10-bit PTM×1	315/433/ 868/915MHz	√	0.5~25ksps	0/10/13 dBm	24SSOP-EP 24QFN
BC68F2150	16MHz	2.0V~3.6V	8K×16	256×8	—	8	√	14	10-bit CTM×1 10-bit PTM×1	315/433/ 868/915MHz	√	0.5~25ksps	0/10/13 dBm	24SSOP-EP 24QFN

**Sub-1GHz Transmitter A/D Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	IAP	I/O	Timer	ADC	SCOM/SSEG	Band	OOK/FSK	OOK Symbol Rate	Output Power	Package
BC66F2123	8MHz	2.2V~3.6V	1K×14	64×8	32×8	2	—	9	10-bit STM×1 10-bit PTM×1	12-bit ×3	—	315/433/ 868/915MHz	√	0.5~25ksps	0/5/10/13 dBm	16NSOP-EP
BC66F2133	8MHz	2.2V~3.6V	2K×14	64×8	32×14	4	—	9	8-bit×1	10-bit ×4	—	315/433/ 868/915MHz	√	0.5~25ksps	0/5/10/13 dBm	16NSOP-EP
BC66F2143	16MHz	2.2V~3.6V	4K×16	256×8	128×8	8	√	22	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×12	(SCOM/ SSEG)×18 SSEG×4	315/433/ 868/915MHz	√	0.5~25ksps	0/5/10/13 dBm	32QFN

**Sub-1GHz Transmitter Hopping Code Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	Band	OOK/FSK	OOK Symbol Rate	Output Power	Package
BC68F3132	12MHz	2.2V~3.6V	2K×15	128×8	64×8	6	9	10-bit CTM×2	315/433/868/915MHz	√	0.5~25ksps	0/5/10/13 dBm	16NSOP-EP 16QFN

**Sub-1GHz Transmitter Touch Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Stack	IAP	I/O	Timer	ADC	Band	OOK/FSK	Touch key	Output Power	Package
BC66F2235	8MHz	2.0V~3.6V	2K×16	352×8	8	√	8	10-bit CTM×2 10-bit PTM×1	12-bit×1	315/433/868/915MHz	√	8	0/10/13dBm	16NSOP-EP
BC66F2245	8MHz	2.0V~3.6V	4K×16	352×8	8	√	15	10-bit CTM×2 10-bit PTM×1	12-bit×4	315/433/868/915MHz	√	14	0/10/13dBm	24SSOP-EP
BC66F2255	8MHz	2.0V~3.6V	8K×16	352×8	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**
**Sub-1GHz Transmitter IC**

Part No.	VDD	Band	Modulation	OOK Symbol Rate	FSK Data Rate	Output Power	Oscillator	Package
BC2102	2.2V~3.6V	315/433/868/915MHz	OOK/FSK	0.5~25ksp/s	0.5~50kbps	0/5/10/13dBm	16MHz	8SOP-EP

**Sub-1GHz Transmitter IC with Encoder**

Part No.	VDD	Band	Modulation	OOK Symbol Rate	Output Power	Oscillator	Package
BC2161	2.2V~3.6V	315/433/868/915MHz	OOK	1.5~24ksp/s	0/5/10/13dBm	16MHz	8SOP-EP 16NSOP-EP/QFN

**Sub-1GHz Receiver Flash MCU**

Part No.	Max. Freq.	VDD	Program Memory	Data Memory	Data EEPROM	Stack	I/O	Timer	ADC	Band	Demod.	Symbol Rate	Sensitivity	Interface	Package
BC66F2332-1	8MHz	2.4V~5.5V	2K×14	64×8	32×8	4	8	10-bit STM×1	12-bit ×4	315/433/868/915MHz	OOK	20ksp/s (Max.)	-106dBm @10ksp/s	—	16NSOP-EP
BC66F2342-1	8MHz	2.4V~5.5V	4K×15	128×8	32×15	6	13	10-bit STM×1 10-bit PTM×1	10-bit ×6	315/433/868/915MHz	OOK	20ksp/s (Max.)	-106dBm @10ksp/s	—	24SSOP-EP
BC66F2542*	16MHz	2.4V~5.5V	4K×16	256×8	128×8	8	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×12	315/433/868/915MHz	OOK FSK	40ksp/s (Max.)	-108dBm @10ksp/s	UART×1 SPI/I <sup>2</sup> C×1	46QFN
BC66F2552*	16MHz	2.4V~5.5V	8K×16	512×8	128×8	8	26	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×12	315/433/868/915MHz	OOK FSK	40ksp/s (Max.)	-108dBm @10ksp/s	UART×1 SPI/I <sup>2</sup> C×1	46QFN

\* Under development, available in 4Q, 2023.

**Sub-1GHz Receiver IC**

Part No.	VDD	Band	Demod.	OOK Symbol Rate	FSK Symbol Rate	Current Consumption	Sensitivity	Package
BC2302C	2.4V~5.5V	315/433MHz	OOK	0.5~40ksp/s	—	4.0mA@433MHz	-108dBm@10ksp/s	8SOP-EP
BC2302D		315/433/868/915MHz				5.5mA@868MHz		
BC2502C	2.4V~5.5V	315/433MHz	OOK/FSK	0.5~40ksp/s	1~50ksp/s	4.5mA@433MHz	-110dBm@10ksp/s	10SOP-EP
BC2502D		315/433/868/915MHz				5.8mA@868MHz		

**LDO & Detector**
**General LDO**

Part No.	Max. Input Voltage	Output Voltage	Max. Output Current	Current Consumption	Chip Enable	Tolerance	Protection	Package
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	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	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-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
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
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

**High Accuracy LDO**

Part No.	Max. Input Voltage	Output Voltage	Max. Output Current	Current Consumption	Chip Enable	Tolerance	Protection	Package
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
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	SOT23-5 SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150mA					
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

**Low Power LDO**

Part No.	Max. Input Voltage	Output Voltage	Max. Output Current	Current Consumption	Chip Enable	Tolerance	Protection	Package
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-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					
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
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

**Voltage Detector**

Part No.	Max. Input Voltage	Detector Voltage (V <sub>DET</sub> )	Hysteresis Width	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×V <sub>DET</sub>	3.0µA	±3%	SOT23-5 SOT89
HT70xxA-2	30V	2.2V/2.4V/2.7V/3.3V 3.9V/4.4V/5.0V/8.2V	0.05V×V <sub>DET</sub>	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×V <sub>DET</sub>	1.0µA	±2%	SOT23-5 SOT89

### DC to DC

#### Asynchronous Step-Down DC to DC Converter

Part No.	Max. Input Voltage	Output Voltage	Output Current	Switching Frequency	Current Limit	Accuracy	Shutdown Current	Operation Current	Efficiency	Mode	Package
HT7463C	60V	0.8V~36V	0.6A	1250kHz	1.2A	0.794V±2.0%	1.0µA	0.5mA	95%	PWM/PSM	SOT23-6
HT7463D				550kHz							

#### Synchronous Step-Down DC to DC Converter

Part No.	Max. Input Voltage	Output Voltage	Output Current	Switching Frequency	Current Limit	Accuracy	Shutdown Current	Operation Current	Efficiency	Mode	Package
HT74153	6V	0.6V~6V	2.0A	1200kHz	3.2A	0.6V±1.5%	0.5µA	50µA	95%	PWM/PFM	8SOP-EP SOT23-5
HT74173	6V	0.6V~6V	3.0A	1200kHz	5.0A	0.6V±1.5%	0.5µA	50µA	95%	PWM/PFM	8SOP-EP SOT23-5 SOT89-5
HT74U26L*	60V	0.8V~36V	0.6A	400kHz	1.5A	0.8V±1.5%	1.0µA	5µA	95%	PWM/PFM	8SOP-EP SOT23-6

\* Under development, available in 4Q, 2023.

#### Asynchronous Step-Up DC to DC Converter

Part No.	Input Voltage	Output Voltage	Output Current	Switching Frequency	Accuracy	Shutdown Current	Operation Current	Efficiency	Mode	Package
HT77xxB	0.7V~6.0V	1.8V/2.2V	0.1A	115kHz	V <sub>out</sub> ±2.5%	1.0µA	4µA	80%	PFM	SOT23-5 SOT89
		2.7V/3.0V/3.3V/3.7V/5.0V						85%		
HT77xxC	0.7V~6.0V	1.8V/2.2V	— (External)	115kHz	V <sub>out</sub> ±2.5%	1.0µA	4µA	80%	PFM	SOT23-5 SOT89
		2.7V/3.0V/3.3V/3.7V/5.0V						85%		

#### Synchronous Step-Up DC to DC Converter

Part No.	Input Voltage	Output Voltage	Output Current	Switching Frequency	Current Limit	Accuracy	Shutdown Current	Operation Current	Efficiency	Mode	Package
HT77xxFA	0.7V~6.0V	2.7V/3.0V/3.3V/3.7V/5.0V	0.2A	—	—	V <sub>out</sub> ±2%	1.0µA	4µA	90%	PFM	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

#### Charge Pump DC to DC Converter

Part No.	Input Voltage	Output Voltage	Output Current	Switching Frequency	Accuracy	Operation Current	Efficiency	Package
HT7660	3V~12V	-V <sub>DD</sub> ~V <sub>DD</sub>	20mA	10kHz	V <sub>out</sub> ±4.0%	0.08mA	98%	8SOP

### AC to DC

#### AC/DC Converter

Part No.	Topology	PF	Standby Power	Max. Output Power (110V <sub>AC</sub> / 220V <sub>AC</sub> )	Power MOSFET Maximum Voltage	Protection	Package
HT7A6312	Flyback (SSR), Buck, Buck-Boost	< 0.9	< 100mW	8W / 13W	730V	OVP, OCP, In-OTP	8SOP
HT7A6322	Flyback (SSR), Buck, Buck-Boost	< 0.9	< 100mW	12W / 20W	730V	OVP, OCP, In-OTP	8SOP

#### AC/DC Controller

Part No.	Topology	PF	Standby Power	Max. Output Power (110V <sub>AC</sub> / 220V <sub>AC</sub> )	Gate Driver Type	Protection	Package
HT7A8006*	Flyback (PSR)	> 0.9	< 500mW	75W / 150W	N-MOSFET	OVP, OCP, OSP In-OTP, Ex-OTP	8SOP

\* Under development, available in 4Q, 2023.

### LED Lighting

#### AC/DC LED Lighting Controller

Part No.	Topology	PF	Standby Power	Max. Output Power (110V <sub>AC</sub> / 220V <sub>AC</sub> )	Dimming Type	Protection	Package
HT7L5600	Flyback (PSR)	> 0.9	—	75W / 150W	—	OVP, OSP, OCP, In-OTP	SOT23-6
HT7L5502*	Flyback (PSR)	> 0.9	< 500mW	75W / 150W	PWM	OVP, OCP, OSP, In-OTP, Ex-OTP	8SOP
HT7L5503*	Flyback (PSR)	> 0.9	< 500mW	75W / 150W	Analog	OVP, OCP, OSP, In-OTP, Ex-OTP	8SOP

\* Under development, available in 4Q, 2023.



**LCD Controller & Driver**
**LCD Controller & Driver (I<sup>2</sup>C)**

Part No.	VDD	Segment × Common	LCD Voltage	Bias	Built-in OSC.	Key-scan	Interface	Package
HT16C21A	2.4V~5.5V	20×4, 16×8	≤ V <sub>DD</sub>	1/3, 1/4	√	—	I <sup>2</sup> C	24SSOP, 28SSOP
HT16C22A	2.4V~5.5V	44×4	≤ V <sub>DD</sub>	1/2, 1/3	√	—	I <sup>2</sup> C	48LQFP, 52LQFP
HT16C22AG								Gold Bump
HT16C23A	2.4V~5.5V	56×4, 52×8	2.4V~5.5V	1/3, 1/4	√	—	I <sup>2</sup> C	48LQFP, 64LQFP
HT16C23AG								Gold Bump
HT16C24A	2.4V~5.5V	72×4, 68×8, 60×16	2.4V~5.5V	1/3, 1/4, 1/5	√	—	I <sup>2</sup> C	64LQFP, 80LQFP
HT16C24AG								Gold Bump
HT16K23A	2.4V~5.5V	20×4, 16×8	= V <sub>DD</sub>	1/3, 1/4	√	20×1	I <sup>2</sup> C	28SSOP

**LCD Controller & Driver (4-Wire)**

Part No.	VDD	Segment × Common	LCD Voltage	Bias	Built-in OSC.	Ext. Crystal	Interface	Package
HT1620	2.4V~3.3V	32×2, 32×3, 32×4	3/2×V <sub>DD</sub>	1/2, 1/3	—	√	4-Wire	64LQFP
HT1621	2.4V~5.2V	32×2, 32×3, 32×4	≤ V <sub>DD</sub>	1/2, 1/3	√	√	4-Wire	44LQFP, 48SSOP, 48LQFP
HT1621G	2.4V~5.2V							Gold Bump
HT1622	2.7V~5.2V	32×8	≤ V <sub>DD</sub>	1/4	√	—	4-Wire	44LQFP, 64LQFP
HT1622G								Gold Bump
HT16220	2.7V~5.2V	32×8	≤ V <sub>DD</sub>	1/4	—	√	4-Wire	64LQFP
HT1623	2.7V~5.2V	48×8	≤ V <sub>DD</sub>	1/4	√	√	4-Wire	100LQFP
HT1625	2.7V~5.2V	64×8	≤ V <sub>DD</sub>	1/4	√	√	4-Wire	100LQFP

**Low Voltage LCD Controller & Driver**

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

**LED Controller & Driver**
**LED Controller & Driver**

Part No.	VDD	Row × Common	Row Source Current	Row Sink Current	Com Source Current	Com Sink Current	PWM Gray	Key-scan	Interface	Package
HT1632D	4.5V~5.5V	32×8, 24×16	50mA	12mA	45mA	250mA	16 Level for Global	—	4-Wire	48LQFP, 52LQFP
HT1632D-2		28×8								48LQFP
HT1635C	4.5V~5.5V	44×8	50mA	10mA	45mA	250mA	16 Level for Global	—	4-Wire	64LQFP
HT1635D									I <sup>2</sup> C	
HT16K33A	4.5V~5.5V	16×8, 12×8	20mA±5%	6mA	20mA	160mA	16 Level for Global	13×3, 10×3	I <sup>2</sup> C	24SSOP, 28SSOP

**Advanced LED Controller & Driver**

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

### OP Amplifier

#### General Purpose OP Amplifier

Part No.	VDD	Description	OP No.	BW	Offset Voltage	Slew Rate	Current/OP	Package
HT92232A	2.1V~5.5V	Rail to Rail, Dual OP amplifier	2	300kHz	5mV	150 (V/ms)	16µA @OP	8SOP
HT92252A	2.1V~5.5V	Rail to Rail, Dual OP amplifier	2	1MHz	5mV	500 (V/ms)	40µA @OP	8SOP

#### Precision OP Amplifier

Part No.	VDD	Description	OP No.	BW	Offset Voltage	Slew Rate	Current	Package
HT92632	2.0V~5.5V	Rail to Rail, Dual OP amplifier	2	300kHz	0.04mV	150 (V/ms)	30µA @OP	8SOP
HT92652	2.0V~5.5V	Rail to Rail, Dual OP amplifier	2	1.5MHz	0.01mV	500 (V/ms)	500µA @OP	8SOP

#### Low Power OP Amplifier

Part No.	VDD	Description	OP No.	BW	Offset Voltage	Slew Rate	Current	Package
HT92112	1.4V~5.5V	Rail to Rail, Dual OP amplifier	2	14kHz	3mV	24 (V/ms)	0.6µA @OP	8SOP
HT92122	1.4V~5.5V	Rail to Rail, Dual OP amplifier	2	100kHz	3mV	3 (V/ms)	0.6µA @OP	8SOP

### Audio Amplifier

#### Class AB Audio Amplifier

Part No.	VDD	Description	Output Power	Mute/Shutdown Function	Package
HT82V73A	2.2V~5.5V	1500mW mono audio power amplifier with shutdown	1500mW into 8Ω	√	8SOP-EP

### Comparator

#### Low Power Comparator

Part No.	VDD	Description	CMP No.	Output	Offset Voltage	Propagation Delay	Current	Package
HT93111*	1.4V~5.5V	Rail to Rail, Single comparator	1	Push Pull	12mV	High to Low: 1.6µs (Max.) Low to High: 5.0µs (Max.)	1.3µA	SOT23-5 8SOP
HT93121*				Open-Drain				

\* Under development, available in 4Q, 2023.

**Interface Bridge**
**CAN Bridge IC**

Part No.	Description	VDD	CAN Protocol	Message Objects	Temperature	Interface Data Rate	Interface	Package
HT42B536-1*	USB to CAN Bridge	3.3V~5.5V	CAN 2.0A/B ISO11898-1	32	-40°C~+85°C	—	USB×1 CAN×1	16NSOP
HT42B216-1*	I <sup>2</sup> C to CAN Bridge	3.0V~5.5V	CAN 2.0A/B ISO11898-1	32	-40°C~+105°C	Up to 400kHz	I <sup>2</sup> C×1 CAN×1	16NSOP
HT42B316-1*	SPI to CAN Bridge	3.0V~5.5V	CAN 2.0A/B ISO11898-1	32	-40°C~+105°C	Up to 5MHz	SPI×1 CAN×1	16NSOP
HT42B416-1*	UART to CAN Bridge	3.0V~5.5V	CAN 2.0A/B ISO11898-1	32	-40°C~+105°C	Up to 115.2kbps Baud	UART×1 CAN×1	16NSOP

\* Under development, available in 1Q, 2024.

**USB Bridge IC**

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

**CAN Bus Controller IC**

Part No.	VDD	Max. Freq.	Protocol	Message Objects	Temperature Range	Interface	Package
HT45B3305H	3.0V~5.5V	24MHz	CAN 2.0A/B ISO11898-1	32	-40°C~+125°C	CAN×1 SPI/I <sup>2</sup> C×1	16NSOP 16QFN
HT45B3315	3.0V~5.5V	24MHz	CAN 2.0A/B ISO11898-1	32	-40°C~+105°C	CAN×1 SPI/I <sup>2</sup> C×1	16NSOP 16QFN

\* Under development, available in 1Q, 2024.

Note: Based on BOSCH CAN IP module C\_CAN.

**CCD/CIS Analog Signal Processor**
**CCD/CIS Analog Signal Processor**

Part No.	AVDD/VDD	ADC	Input Channel	MSPS	PGA	Offset DAC	Full Scale	Power Consumption	LED Driver	Package
HT82V38	3.15V~3.45V	16-bit	3/2/1	30/30/20	1~5.85V/V	±250mV	1.6V/2V	300mW	—	28SSOP, 32QFN
HT82V39A	3.15V~3.45V	16-bit	3/2/1	40/40/20	1~5.85V/V	±250mV	1.6V/2V	390mW	3CH	40QFN
HT82V42	3.0V~3.6V	16-bit	1	15	0.7~7.84V/V	±315mV	2V	188mW	—	20SSOP
HT82V47	3.15V~3.45V	16-bit	4/3/2/1	60/60/60/45	0.76~3.27V/V	±300mV	1.6V/2V	600mW	—	32QFN
HT82V48	3.0V~3.6V	16-bit	3×2	60×2	0.65~6.0V/V	±290mV	1.2V/2V	925mW	—	48LQFP-EP

**Real-Time Clock**
**Real-Time Clock (RTC) / Calendar**

Part No.	VDD	V <sub>BAT</sub>	I <sub>DD</sub> (μA)	I <sub>BAT</sub> (μA)	I <sub>STB</sub> (μA)	External X'tal Osc.	Build in Memory (Bytes)	Oscillator Compensation	Package
HT1381A	2.0V~5.5V	—	1.0@5V	—	0.1	32.768kHz	—	—	8SOP
HT1382	2.7V~5.5V	2.0V~5.5V	15@3V	1.2@3V	0.1	32.768kHz	4	√	8SOP, 10MSOP

**Encoder / Decoder**
**2<sup>12</sup> Encoder/Decoder**

Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Data No.	Data Type	Trig.	Check Times	Pair	Package
HT12E	Encoder	2.4V~12V	8	4	0	—	$\overline{TE}$	—	HT12D	20SOP
HT12D	Decoder	2.4V~12V	8	0	4	Latch	—	3	HT12E	20SOP

**3<sup>9</sup> Encoder**

Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Trig.	Package
HT6026	Encoder	4V~18V	0	9	$\overline{TE}$	16NSOP

**Learning Encoder**

Part No.	VDD	Addr. No.	Data No.	Trig.	Package
HT6P20B	2V~12V	22	2	Data Low	8SOP
HT6P20D		20	4		16NSOP

**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

**I<sup>2</sup>C EEPROM**
**I<sup>2</sup>C 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.

### 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
HT32F0008	e-Link32 Pro	ESK32-30508, ESK32-20001, ESK32-21001	e-Writer32	ESKT3224QFN3B, ESKT3233QFN4B, ESKT3246QFN6B, ESKT3248LQFPB, ESKT321CPB
HT32F12345	e-Link32 Pro	ESK32-30106, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFN6B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT321CPB
HT32F12364	e-Link32 Pro	ESK32-30107, ESK32-20001, ESK32-21001	e-Writer32	ESKT3240QFN6B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT321CPB
HT32F12365, HT32F12366	e-Link32 Pro	ESK32-30105, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFN6B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32100LQFPB, ESKT321CPB
HT32F22366	e-Link32 Pro	N/A	e-Writer32	ESKT3246QFN6B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32100LQFPB, ESKT321CPB
HT32F49365, HT32F49395	e-Link32 Pro	ESK32-31401	e-Writer32	ESKT3248QFN_493x5, ESKT3248LQFN_493x5, ESKT3264LQFN10x10_493x5, ESKT32100LQFN_493x5, ESKT321CPB
HT32F50020, HT32F50030	e-Link32 Pro	ESK32-30520, ESK32-20001, ESK32-20001A, ESK32-21001	e-Writer32	ESKT3224QFN3B, ESKT3228SSOPB, ESKT3233QFN4B, ESKT3246QFN6B, ESKT3248QFN6B, ESKT321CPB
HT32F50220, HT32F50230	e-Link32 Pro	ESK32-30506, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3228SOPC, ESKT3224QFN3B, ESKT3233QFN4B, ESKT3244LQFPB, ESKT3248LQFPB, ESKT321CPB
HT32F50231, HT32F50241	e-Link32 Pro	ESK32-30507, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3228SOPC, ESKT3224QFN3B, ESKT3233QFN4B, ESKT3244LQFPB, ESKT3248LQFPB, ESKT321CPB
HT32F50343	e-Link32 Pro	ESK32-30515, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3246QFN6B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT321CPB
HT32F52220, HT32F52230	e-Link32 Pro	ESK32-30504, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3233QFN4B, ESKT321CPB
HT32F52231, HT32F52241	e-Link32 Pro	ESK32-30503, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3233QFN4B, ESKT3248LQFPB, ESKT321CPB
HT32F52243, HT32F52253	e-Link32 Pro	ESK32-30505, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3246QFN6B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT321CPB
HT32F52331, HT32F52341	e-Link32 Pro	ESK32-30502, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3248LQFPB, ESKT321CPB
HT32F52342, HT32F52352	e-Link32 Pro	ESK32-30501, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT321CPB
HT32F52344, HT32F52354	e-Link32 Pro	ESK32-30509, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3246QFN6B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT321CPB
HT32F52357, HT32F52367	e-Link32 Pro	ESK32-30510, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFN6B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT3280LQFPB, ESKT321CPB
HT32F54231, HT32F54241	e-Link32 Pro	ESK32-30518	e-Writer32	ESKT3228SSOPB, ESKT3233QFN4B, ESKT3248LQFPB
HT32F54243, HT32F54253	e-Link32 Pro	ESK32-30519	e-Writer32	ESKT3233QFN4B, ESKT3246QFN6B, ESKT3248LQFPB, ESKT3264LQFP7B
HT32F57331, HT32F57341	e-Link32 Pro	ESK32-30512, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFN6B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT321CPB
HT32F57342, HT32F57352	e-Link32 Pro	ESK32-30511, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFN6B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT3280LQFPB, ESKT321CPB
HT32F59041	e-Link32 Pro	N/A	e-Writer32	ESKT3248LQFPB, ESKT321CPB
HT32F59741	e-Link32 Pro	N/A	e-Writer32	ESKT3264LQFPB, ESKT321CPB
HT32F61030, HT32F61041	e-Link32 Pro	N/A	Writer32	ESKT3246QFN6B, ESKT3233QFN4B, ESKT321CPB
HT32F61141	e-Link32 Pro	N/A	e-Writer32	ESKT3248LQFPB, ESKT3246QFN6B, ESKT3233QFN4B, ESKT321CPB
HT32F61244, HT32F61245	e-Link32 Pro	ESK32-30605	e-Writer32 V1.1	ESKT3248LQFP_61244/5, ESKT3264LQFP_61244/5, ESKT321CPB
HT32F61355, HT32F61356	e-Link32 Pro	ESK32-30615, ESK32-30616	e-Writer32 V1.1	ESKT3248LQFP_61355(6), ESKT3264LQFP_61355(6)
HT32F61357	e-Link32 Pro	ESK32-30617	e-Writer32 V1.1	ESKT3248LQFP_61357, ESKT3264LQFP_61357
HT32F61630, HT32F61641	e-Link32 Pro	N/A	e-Writer32	ESKT3248LQFPB, ESKT321CPB
HT32F65230, HT32F65240	e-Link32 Pro	N/A	e-Writer32	ESKT3248LQFPB, ESKT321CPB
HT32F65232	e-Link32 Pro	N/A	e-Writer32	ESKT3232QFN6B, ESKT3228SSOPC, ESKT3248LQFPB, ESKT321CPB
HT32F65432A	e-Link32 Pro	ESK32-A5D30	e-Writer32	ESKT3233QFN4B, ESKT3248LQFP_65x40, ESKT321CPB
HT32F65440A	e-Link32 Pro	ESK32-A5E30	e-Writer32	ESKT3248LQFP_65x40, ESKT321CPB
HT32F65532G	e-Link32 Pro	N/A	e-Writer32	ESKT3232QFN6B, ESKT3248LQFPB, ESKT321CPB
HT32F65540G	e-Link32 Pro	N/A	e-Writer32	ESKT3248LQFP_65x40, ESKT321CPB
HT32F67041	e-Link32 Pro	N/A	e-Writer32	ESKT3232QFN_67041, ESKT321CPB
HT32F67051	e-Link32 Pro	N/A	e-Writer32	ESKT3246QFN6B, ESKT321CPB
HT32F67233	e-Link32 Pro	ESK32-30601, ESK32-20001, ESK32-20001A, ESK32-21001	e-Writer32	ESKT3246QFN6B_67233, ESKT321CPB
HT32F67741	e-Link32 Pro	N/A	e-Writer32	ESKT3246QFN_67741, ESKT321CPB
HT32F67742	e-Link32 Pro	N/A	e-Writer32	ESKT3280LQFP-EP_67742, ESKT321CPB

Hardware		
<b>ICE</b>		
Model	Function	Support Software
e-Link32 Pro	On Chip Debug Support (OCDS) new debug adapter for HT32 series	Keil $\mu$ Vision, IAR EWARM
<b>Programmer</b>		
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
<b>Development Kit</b>		
Model	Function	Note
ESK32-20001 ESK32-20001A	HT32 Series Expansion Board Basic	Expansion Board for ESK32-30xxx
ESK32-21001	HT32 Series Expansion Board Plus	Expansion Board for ESK32-30xxx
ESK32-30105	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M3 HT32F12366 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30106	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M3 HT32F12345 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30107	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M3 HT32F12364 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30501	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F52352 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30502	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F52341 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30503	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F52241 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30504	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F52230 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30505	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F52253 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30506	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F50230 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30507	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F50241 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30508	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F0008 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30509	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F52354 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30510	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F52367 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30511	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F57352 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30512	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F57341 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30515	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F50343 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30518	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F54241 Starter Kit with touch key	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30519	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F54253 Starter Kit with touch key	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30520	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F50030 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30601	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F67233 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30605	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F61244/61245 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30615	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F61355 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30616	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F61356 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30617	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M0+ HT32F61357 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-31401	32-bit Arm <sup>®</sup> Cortex <sup>®</sup> -M4 HT32F49395 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
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		
<b>Software</b>		
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  $\mu$ Vision 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		
<b>ICE</b>		
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	—
<b>Programmer</b>		
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
<b>Development Kit</b>		
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 )
<b>Development Platform</b>		
Model	Function	Note
Holtek USB Workshop	Development Platform for USB MCU	This board can be used with the ESK66FB-200 + e-Link.

Software		
<b>Software</b>		
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)	10,000
5	ESKT8SOP-RF2	8SOP-EP(for BC2162)	10,000
6	ESKT8SOP-RF2.4G	8SOP-EP(Dedicated for 2.4G RF IC)	10,000
7	ESKT8ICPL	ICP adapter board (for BH67F2132 only)	N/A
8	ESKT10SOPC	10SOP	10,000
9	ESKT10SOP-RF2	10SOP-EP(for BC2162)	10,000
10	ESKT10MSOPC	8MSOP, 10MSOP	10,000
11	ESKT10DFNC	10DFN(3mm×3mm×0.75mm)	10,000
12	ESKT16NSOP-RF	16NSOP-EP(for BC2161)	10,000
13	ESKT16NSOPC	8SOP, 14SOP, 16NSOP	10,000
14	ESKT16QFN-RF2.4G	16QFN(Dedicated for 2.4G RF IC)	5,000
15	ESKT16QFN4C	16QFN(4mm×4mm×0.75mm)	5,000
16	ESKT16QFN3C	16QFN(3mm×3mm×0.75mm)	5,000
17	ESKT16QFN-RF	16QFN(3×3mm; lead 0.25mm)(RF e-Socket for BC2161)	5,000
18	ESKT16WLCSPC	16WLCSP(1.545mm×1.618mm×0.4mm)	5,000
19	ESKT20NSOPC	20NSOP	10,000
20	ESKT20QFN3C	20QFN(3mm×3mm×0.75mm)	5,000
21	ESKT20QFN4A	20QFN(4mm×4mm×0.75mm)	5,000
22	ESKT20QFN5A	20QFN(5mm×5mm×0.75mm)	5,000
23	ESKT20TSSOPA	16TSSOP, 20TSSOP	10,000
24	ESKT24QFN3C	24QFN(3mm×3mm×0.55mm)	5,000
25	ESKT24QFN4C	24QFN(4mm×4mm×0.75mm)	5,000
26	ESKT28QFN4C	28QFN(4mm×4mm×0.75mm)	5,000
27	ESKT28SSOPC	16SSOP, 20SSOP, 24SSOP, 28SSOP	10,000
28	ESKT28SOPD	16SOP, 18SOP, 20SOP, 24SOP, 28SOP	10,000
29	ESKT30SSOPA	20SSOP(209mil), 24SSOP(209mil), 28SSOP(209mil)	10,000
30	ESKT32QFNA	32QFN(5mm×5mm×0.75mm)	5,000
31	ESKT32QFN4C	32QFN(4mm×4mm×0.75mm)	5,000
32	ESKT32LQFPC	32LQFP	10,000
33	ESKT40DIPC	8DIP, 16DIP, 18DIP, 20DIP, 22SKDIP, 24SKDIP, 28SKDIP, 40DIP	25,000
34	ESKT40QFN6A	40QFN(6mm×6mm×0.75mm)	5,000



e-Socket			
No.	Product Name	Supported Package	Suggested Programming Times
35	ESKT44QFPA	44LQFP(FP3.2mm), 44QFP(10mm×10mm)	10,000
36	ESKT44LQFPC	44LQFP(FP2.0mm)	10,000
37	ESKT46QFNC	46QFN(6.5mm×4.5mm×0.75mm)	5,000
38	ESKT48LQFPC	48LQFP(7mm×7mm) for Holtek 8-bit MCUs, except HT49RA0-6	10,000
39	ESKT48LQFPC_67F2132	48LQFP(7mm×7mm) (for BH67F2132 only)	10,000
40	ESKT52QFPA	52QFP(14mm×14mm)	10,000
41	ESKT52LQFPA	52LQFP(14mm×14mm)	10,000
42	ESKT56SSOPC	48SSOP, 56SSOP	10,000
43	ESKT64LQFP7C	64LQFP(7mm×7mm)	5,000
44	ESKT64LQFP10A	64LQFP(10mm×10mm)	10,000
45	ESKT80LQFPC	80LQFP(10mm×10mm)	10,000
46	ESKT100QFPC	100QFP(14mm×20mm)	5,000
47	ESKT100LQFPA	100LQFP(14mm×14mm)	5,000
48	ESKT128QFPC	128QFP(14mm×20mm)	10,000
49	ESKT128LQFPC	128LQFP(14mm×14mm)	10,000
50	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 / ICPCCK	OCSDSA / OCDSCK
BA45F25240	e-Link	e-Link + BA45V25240	Flash Type-26	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F25240-2		e-Link + BA45V25240-2	Flash Type-26	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5220		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-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5260	e-Link + BA45V5260	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2	
BA45F25543	e-Link	e-Link + BA45V25543	Flash Type-26	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5542		e-Link + BA45V5542	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5542-2		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	
BA45F5320	e-Link	BA45V5320	Flash Type-23	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
BA45F5340		BA45V5340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5350		BA45V5350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5360		BA45V5360	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F3541	e-Link	e-Link + BA45V3541	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5420	e-Link	e-Link + BA45V5420	Flash Type-23	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
BA45F5440		e-Link + BA45V5440	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5450		e-Link + BA45V5450	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5460		e-Link + BA45V5460	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	e-Link + BA45V5740	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5750		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
BA45F6622		e-Link + BA45V6622	Flash Type-23	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6630	e-Link	e-Link + BA45V6630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6640		e-Link + BA45V6640	Flash Type-9B	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
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
BA45F6752		e-Link + BA45V6752	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6758	e-Link	e-Link + BA45V6758	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6753		e-Link + BA45V6753	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6763		e-Link + BA45V6763	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6830	e-Link	e-Link + BA45V6830	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6840		e-Link + BA45V6840	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6846		e-Link + BA45V6846	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6850		e-Link + BA45V6850	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6856		e-Link + BA45V6856	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6956		e-Link + BA45V6956	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F2235	e-Link	e-Link + BC66F2235	Flash Type-16	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F2245		e-Link + BC66F2245	Flash Type-16	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F2255		e-Link + BC66F2255	Flash Type-16	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F2332-1	e-Link	e-Link + DEV-BC66F2332-1	Flash Type-9	ICP-2C / PA0 / PA7	OCSDSA / OCDSCK
BC66F2342-1		e-Link + BC66V2342-1	Flash Type-24	ICP-2C / PA0 / PA7	PA0 / PA2
BC66F3652	e-Link	e-Link + BC66V3652	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F3662		e-Link + BC66F3662	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F5652	e-Link	e-Link + BC66V5652	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F5662		e-Link + BC66F5662	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F2123	e-Link	e-Link + BC66V2123	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F2133		e-Link + BC66V2133	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
BC68F2123		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
BC66F2143		e-Link + BC66V2143	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BC68F2150		e-Link + BC68F2150	Flash Type-16	ICP-2C / PA0 / PA2	PA0 / PA2
BC68F3132		e-Link + BC68V3132	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BD66FM5245	e-Link	e-Link + BD66VM5245	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BD66FM5252		e-Link + BD66VM5252	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BD66FM6445A	e-Link	e-Link + BD66VM6445A	Flash Type-31	ICP-2C/PA0/PA2	PA0/PA2
BD66FM6452A		e-Link + BD66VM6452A	Flash Type-31	ICP-2C/PA0/PA2	PA0/PA2
BH45F68	e-Link	e-Link + BH45V68	Flash Type-9C	ICP-2C / PA0 / RESB	PA0 / RESB
BH66F2475	e-Link	e-Link + BH66F2475	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F2560	e-Link	e-Link + BH66V2560	Flash Type-31	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
BH66F5350	e-Link	e-Link + BH66V5350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F5355		e-Link + BH66V5355	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F5362	e-Link	e-Link + BH66F5362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2132	e-Link	e-Link + BH67V2132	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2142	e-Link	e-Link + BH67V2142	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2260	e-Link	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
BH67F2265		e-Link + BH67V2265	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2472	e-Link	e-Link + BH67F2472	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2475		e-Link + BH67F2475	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2480		e-Link + BH67V2480	Flash Type-9D	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2476	e-Link	e-Link + BH67F2476	Flash Type-31	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
BH67F2495		e-Link + BH67F2495	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F5255	e-Link	e-Link + BH67V5255	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F5265		e-Link + BH67V5265	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F5275		e-Link + BH67F5275	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F5362		e-Link + BH67F5362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BP45F4NB		e-Link	e-Link + BP45V4NB	Flash Type-9B	ICP-2C / PA0 / PA2
BP45FH4NB	e-Link + BP45VH4NB		Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BP66FW1242	e-Link	e-Link + BP66VW1242	Flash Type-31	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	
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	
BS45F3332		e-Link + BS45V3332	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS45F3335		e-Link + BS45V3335	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS45F3337		e-Link + BS45V3337	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS45F3340		e-Link + BS45V3340	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS45F3345		e-Link + BS45V3345	Flash Type-9	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK	
BS45F3833	e-Link	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	
BS45F6052	e-Link	e-Link + BS45V6052	Flash Type-31	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	
BS67F360	e-Link	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	
BS67F350C		e-Link + BS67V350C	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2	
BS82C16CA	e-Link	e-Link + BS82CV16C	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2	
BS82D20CA		e-Link + BS82DV20C	Flash Type-31	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	
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	
BS84B08C	e-Link	e-Link + BS84BV08C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
BS84C12CA		e-Link + BS84CV12CA	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2	
BS86D20CA	e-Link	e-Link + BS86DV20CA	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2	
BS86E20CA		e-Link + BS86EV20CA	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2	
HT37F290	e-Link	e-Link + HT37V290	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F0004	e-Link	e-Link + HT45V0004	Flash Type-9B	ICP-2C / PB0 / PB3	PB0 / PB3	
HT45F0058		e-Link + HT45V0058	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F0059		e-Link + HT45V0059	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F0060	e-Link	e-Link + HT45V0060 + (optional e-FADP08N3 or e-FADP10N3)	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F0062		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	
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	
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		
HT45F5Q-1	e-Link	e-Link + HT45V5Q-1	Flash Type-23	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F5Q-2A		e-Link + HT45F5Q-2A	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F5Q-3		e-Link + HT45V5Q-3	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2	
HT45F5Q-5		e-Link+HT45V5Q-5	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2	

8-Bit MCU Tools					
Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCCK	OCSDSA / OCDSCK
HT45F8544	e-Link	e-Link + HT45V8544	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F8554		e-Link + HT45V8554	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F8566		e-Link + HT45V8566	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F8640		e-Link + HT45V8640	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F8650		e-Link + HT45V8650	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F8662		e-Link + HT45V8662	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F9160	e-Link	e-Link+HT45F9160	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0025	e-Link	e-Link + HT66V0025 + (Optional e-FADP08N or e-FADP10N2)	Flash Type-9	ICP-2C / PA0 / PA7	OCSDSA / OCDSCK
HT66F004	e-Link	e-Link + HT66V004	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2030		e-Link + HT66V2030, e-Link + HT66V2030-10	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2040		e-Link + HT66V2040, e-Link + HT66V2040-10	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2050		e-Link + HT66V2050, e-Link + HT66V2050-10	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F3185	e-Link	e-Link + HT66V3185	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2362	e-Link	e-Link + HT66F2362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2372		e-Link + HT66F2372	Flash Type-31	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
HT66F31A5	e-Link	e-Link + HT66V31A5	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
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
HT66F4640	e-Link	e-Link + HT66V4640	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
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 / UDN / RES	PA0 / RES
HT66FB570		e-Link + HT66VB570	Flash Type-7E	ICP-2C / UDN / RES	PA0 / RES
HT66FB572		e-Link + HT66VB572	Flash Type-15A	ICP-2C / UDN / RES	PA0 / RES
HT68FB541	e-Link	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
HT68R2420	e-Link	e-Link + HT68EV2420	OTP Type-8	ICP-1C / PA0 / PA2	OCSDSA / OCDSCK
BD66FM6545G	e-Link	e-Link + BD66VM6545G	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BD66FM6550G		e-Link + BD66VM6550G	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BD66FM8345B	e-Link	e-Link + BD66VM8345B	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FV140	e-Link	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
HT66FW2350	e-Link	e-Link + HT66VW2350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT66L2530A	e-Link	e-Link + HT66LV2530A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66L2540A		e-Link + HT66LV2540A	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT66L2550A		e-Link + HT66LV2550A	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F2362	e-Link	e-Link + HT67F2362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F2355	e-Link	e-Link + HT67V2355	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F2432	e-Link	e-Link + HT67V2432	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
HT67L2540A	e-Link	e-Link + HT67LV2540A	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT67L2550A		e-Link + HT67LV2550A	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT68F2420	e-Link	e-Link + HT68V2420	Flash Type-21	ICP-2C / PA0 / PA2	PA0 / PA2
HT68FB550	e-Link	e-Link + HT68VB550	Flash Type-7A	ICP-2C / UDN / RES	PA0 / RES
HT68FB560		e-Link + HT68VB560	Flash Type-7B	ICP-2C / UDN / RES	PA0 / RES
HT68FV022	e-Link	e-Link + HT68VV022	Flash Type-23	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
HT68FV024		e-Link + HT68VV024	Flash Type-23	ICP-2C / PA0 / PA2	OCSDSA / OCDSCK
HT69F340	e-Link	e-Link + HT69V340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
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